





UNIVERSITY OF MASSACHUSETTS

LIBRARY

SPECIAL
COLLECTIONS

S

683

A42

v. 1

630.621

Alpha +

v.1



DIGEST
OF
AGRICULTURAL IMPLEMENTS

PATENTED IN THE UNITED STATES

FROM

A. D. 1789 TO JULY 1881.

[LIMITED TO 100 COPIES.]

COMPILED AND ARRANGED BY

JAMES T. ALLEN,

UNITED STATES PATENT OFFICE,

WASHINGTON, D. C.

*Entered according to
Act of Congress in the year
1881, by JAMES T. ALLEN, in
the Office of the Librarian,
at Washington, D. C.*

ALPHABETICAL LIST OF RI
ISSUES BY SUB-DIVISION.

CULTIVATORS.		Woodward, J. A. & S. S., & Mison, L.,	712	Gabbs, J.,	15
		PLOUGH—OF PLINGS.		Hart, G. D.,	473
		Underwood, F. L.,	933	Holmes, W. C.,	19
		PLUGS—WHEEL OF SILKS.		Hull, F. S.,	33
Clark, C. M.,	120	Baxter, R.,	1068	Johnson, M.,	151
Guptak, D.,	73	Benson, B. S.,	1034	Jonson, W. D.,	23
Mater, D.,	87	Brinckerhoff, C. R.,	964	Keezer, J.,	41
Melton, R. M.,	24	Burton, S. F.,	970	Knox, S. A.,	11
Morris, T. F., & Green, R. J.,	73	Casaday, W. L.,	1119	Land, H.,	108
Shates, D. W.,	13	Crossley, W. G.,	1013	Laybough, G. W. & Williams, J.,	41
Siemmons, M. G.,	34	Davenport, F. S.,	998	Lofler, A. B.,	37
Smith, A. C.,	125	Davison, G. A.,	1022	Mahon, L. B.,	40
Wright, L. K.,	84	Trubbing, W.,	1134	Meikle, T.,	127
CULTIVATOR—DISK		Hall, F. J.,	994	Melton, R. M.,	21
Bayless, E.,	265	Hall, I. J.,	1035	Michener, A. D. & Steigmeyer, J. W.,	96
Bramer, F.,	270	Hildreth, G. W.,	997	Mires, I.,	37
Bramer, F., & Badger, O. W.,	270	Hill, F. A.,	1111	Milroy, J. W.,	77
Corbin, J. S.,	275	James, W. A.,	1194	Moorehead, J. B. & Pool, T. A. & G. G.,	42
Crane, E.,	248	Lewis, J. B., & Udall, J. E.,	1025	Nauman, E.,	156
Crane, E.,	249	Matteson, D. C.,	990	Nauman, E.,	103
Cravath, M. A. & I. M.,	247	Ready, W. B.,	970	Oncal, C. W.,	167
Johnson, M.,	250	Slusser, B.,	1023	Oxer, W. J.,	62
Johnson, M.,	252	Volkman, B.,	1000	Parcell, F. B.,	114
La Dow, C.,	272	MODELS SAVED WHOLLY FROM THE FIRE OF 1877.			105
Norton, R. D.,	280	Culver, H.,	1033	Parsons, G. W. & Finley, W. S.,	121
Randall, S. G.,	243	Dale, W. P.,	786	Perkins, E. H. & S. D.,	167
Randall, S. G.,	263	Heaton, H. L.,	911	Pool, T. W.,	18
Underwood, J. K.,	269	Henry, A. P.,	172	Potts, J.,	62
CULTIVATORS—PARALLEL.		Neff, J. J.,	114	Reams, B. F.,	79
Eichholtz, M.,	340	Potter, J. H.,	942½	Rebman, J.,	110
Owen, G.,	337	MODELS TAKEN FROM THE DEBRIS OF THE FIRE OF 1877.			120
Pattee, J. H.,	344	Agnew, A., & Morrison, W.,	30	Rebman, J.,	119
Pratt, E.,	338	Arnold, H. B., & Grimm, J.,	78	Richardson, W.,	72
CULTIVATORS—STRADDLE ROW.		Arrington, W. J.,	122	Riggell, M.,	32
Norton, C. P.,	479	Barnett, J. A.,	148	Rogers, T. B.,	65
Sims, Z. B.,	477	Beach, C., & Brown, T.,	37	Routt, A. P.,	60
CULTIVATOR—TIE-BEL.		Belden, H. M.,	36	Sawyer, K.,	17
Hanis, J.,	522	Belden, C.,	52	Severy, S.,	148
Lynch, E. P., & Wright, E. A.,	539	Bell, W. C.,	147	Slater, D. S.,	80
Matteson, D. C., & Williamson, T. P.,	518	Benner, D. G.,	105	Smith, W. D.,	135
Rogers, D. B.,	508	Black, G. G.,	13	Snyder, J.,	79
Rowell, J. S. & J.,	517	Bloodworth, E. H.,	16	Speer, J. A., Jr.,	40
Sayre, C. H. & Kitch, G.,	509	Briggs, H. C.,	103	Stanton, R. S.,	15
Workman, W., & Hichecock, J.,	519	Brooks, W.,	134	Strowger, W. D.,	46
CULTIVATORS—WHEEL OR SILKY.		Burns, J.,	46	Thurston, F. G.,	146
Allison, A. H.,	675	Cain, M., & Stelfox, W.,	41	Tolle, M.,	13
Armstrong, J. H.,	650	Cameron, J. F.,	29	Toombs, S. A.,	47
Bertrand, T. F., & Sames, P.,	672	Chase, J. W.,	157	Yanhour, R. P.,	12
Blood, A. R., Hathaway, A. & Beach, V. R.,	707	Clark, C.,	102	Van Home, R. P.,	28
Boyd, J. C.,	700	Clifton, L.,	88	Van Home, R. P.,	118
Brinton, J. H.,	719	Clifton, W. C.,	115	Wagner, J. R.,	110
Cantfield, A.,	802	Copeland, J.,	151	Waite, T.,	80
Dryden, W. A., & C. E.,	685	Cox, B. S.,	104	Walton, W.,	83
Dunlap, J.,	580	Cox, B. S.,	134	Weaver, W.,	158
Elwood, R., & Pitcher, R. L.,	820	Craig, A. J.,	81	Webber, S. G.,	155
Foebes, J.,	869	Craltree, J. M.,	101	White, C. L.,	108
Hall, C. M., & D. E.,	592	Davis, J. B.,	75	CULTIVATORS—DISK.	
Heaton, H. L.,	611	Deweese, G. W.,	80	Bramer, F.,	264
Kinyon, A.,	639	Dickson, J. H.,	85	Buswell, E. T.,	250
Kissell, E. M., & M. L.,	822	Doyle, L. H.,	81	Coleman, L.,	247
Leeper, R. A., & Kolder, Z. B.,	601	Eberly, D.,	15	Hoyt, B. C.,	241
McDill, T. W.,	596	Elliot, R.,	52	Hoyt, B. C.,	258
McQuiston, T.,	591	Erywood, J. C.,	106	Johnson, M.,	250
Noble, D. J.,	956	Fish, R. A.,	143	La Dow, C.,	272
Packard, L.,	590	Fleming, J. S.,	123	Masten, J.,	268
Raper, W. B.,	745	Flory, C.,	74	Pond, J. F.,	258
Rhany, J. H.,	873	Folly, F. W.,	154	Schlosser, J.,	259
Robbins, K. B.,	790	Foshee, W. J.,	14	CULTIVATORS—PARALLEL.	
Schweeder, J.,	691	Freeman, E. L.,	935	Avery, R. H.,	345
Smith, I. R.,	594				356
Smith, H. B.,	618				351
Stafford, D. S.,	600				353
Tinkham, B.,	598				356
Unthank, D.,	804				349
Webb, W. S., Jr.,	612				338
Weir, W. S., Jr.,	935				353

Sho., J. T.,	342	Morrison, W.,	544	Vansickel, G. W., & McComan-	
Summers, J. o. Trumble J.	357	O'Call, R. P.,	555	ghley, C.,	942
CULTIVATOR ROTARY		Danah, E. & Cukkendall, G.,	552	PLOTTERS—WHITE OR SILKY.	
Collomb, J. H.,	384	Di prout, J.,	525	Boz, E. A.,	1091
Coon, J. H.,	497	Prout, J. A. Tuttl, S. S.,	528	Belden, C.,	988
Cooper, G. W.,	391	Rogers, D. B.,	508	Bullfin, H. M.,	1082
Deeche, M.,	397	Rodgers, D. B., S & L.,	511	Burlingame, A. H.,	1092
Fenky, G. W.,	477	Rogers, D. B.,	513	Burlingame, A. H.,	1131
Tutzeball, J. C.,	385	Sayre, C. H.,	510	Chapman, L.,	1129
Foye, W. H.,	450	Sayre, C. H.,	513	Derwent, E., Jr.,	1099
Freeborn, W.,	442	Smith, G. H.,	531	Dickie, W.,	1099
Hewitt, S.,	382	Snyder, S.,	530	Du Bois, N.,	1093
Hopkins, G. E.,	408	Stockdale, J.,	509	Fisher, S.,	973
Jones, J. G.,	402	Van Braclim, B.,	521	Flotance, J. L.,	1149
McDonald, T. E.,	391	Whate, M. R.,	538	Fowler, A. A.,	1139
Moody, L.,	392	Wood, J.,	531	Groves, G. A.,	1074
Nu-Dum, A. B. C.,	394	CULTIVATORS—WHITE OR SILKY			
Platt, H. M.,	380	Adams, J.,	751	Harris, J.,	1012
Smith, N. S.,	380	Alexander, J. T. D.,	599	Harrison, J. D.,	1088
CULTIVATORS—STRADDLE ROW.		Baker, A. S. & Landon, W. H.,	798	Hiltheth, G. W.,	966
Geisinger, J. B. & Williams, D. H.,	407	Barnett, M. & Wood, E.,	694	Hill, F. A.,	1111
S.,	407	Bashaw, J. N.,	809	Hoyt, B. C.,	1058
Guthrie, L.,	477	Bird, J. C.,	682	Hunt, T.,	1040
Matteny, R. G. & Barnes, L. R.,	496	Blaser, N. G.,	752	Kingston & Gore,	966
Sim, Z. B.,	482	Brinsel, A. C.,	730	Lathrop, L. B.,	1005
Stolk, M.,	479	Carlson, A. F.,	772	Legg, J. I.,	1007
Thomas, J. S.,	480	Carlson, A. F., Shupps, C. & Cameron, W.,	800	Mammel, D. A.,	1069
CULTIVATOR TFLH.		Carington, S. E. & E. H.,	588	Mammel, D. A.,	1100
Baclingham, C. P.,	539	Cox, R. C.,	812	Meyers, C.,	1101
Coh, J. R.,	540	Crowthers, J.,	734	Moore, G.,	1101
Custer, G.,	514	Guthrie, T. D., Jr.,	839	Murphy, M.,	1035
Dryden, W. A. & Turnbull, J. M.,	524	Hewitt, P.,	708	Richardson, W. M.,	1131
Dryden, W. A.,	528	Huffman, O.,	829	Russell, E. W.,	1110
Elwood, R.,	540	Ives, E.,	795	Rush, R. D., & F. W.,	1117
Esterly, G. W. & Van De Water,	553	Johnson, J. P.,	694	Sabett, G. & J.,	974
J.,	553	Jones, J.,	835	Slusser, B.,	1023
Ford, W. P. & T. H.,	511	Lynch, E. P.,	738	Smalley, D. A. & J. H.,	1092
Forsyth, F. R.,	510	Mahon, I. B.,	689	Sparks, O.,	974
French, H. F.,	524	Mahon, I. B.,	759	Stone, J.,	1089
Freeman, E. L.,	510	McColell, R.,	647	Vanasdale, W. A.,	1125
Hambton, T. F.,	530	Peabody, S. G.,	697	Watkins, J. T.,	1022
Hammont, T. W.,	515	Reynolds, J. H.,	678	Watt, G.,	994
Harris, J.,	515	Reynerson, J. H.,	705	Webb, L.,	978
Hooker, H. T.,	522	Roberts, C. S.,	670	Woodworth, S. F.,	1110
Hullbert, W. M.,	523	Sexton, J. B.,	728	Worrell, J. & Rynerson, J. H.,	1056
Hyer, B. S.,	515	Shaw, J.,	585	Worrell, J.,	1112
Kelly, W. H.,	519	Stool, M.,	779	EXTENSIONS.	
Lamborn, L.,	525	Wilkinson, G.,	813	Allen, M.,	May 10, 1859
Lawbaugh, G. W.,	520	PLOTTERS—COUPLINGS.			
Leonard, F.,	530	Carr, N. & J. Jr.,	933	Cramer, J. P.,	June 5, 1857
Little, J. R.,	527	Coons, S. P.,	940	Hall, T. J.,	May 1, 1855
Lynch, E. P. & Wright, E. A.,	538	Crossly, S.,	937	Hyde, W. S.,	June 21, 1853
Lynch, E. P. & Wright, E. A.,	540	Dryden, W. A.,	934	Lechenbaler, G.,	July 25, 1854
Oppen, L.,	511	Platt, W. H.,	939	McQuiston, T.,	Oct. 18, 1859
Maynard, G.,	511	Vanhuver, J., & Smith, H.,	937	Melton, R. M.,	May 31, 1859
Matheson, D. C. & Williamson,				Rogers, D. B.,	Nov. 1, 1845
T. P.,	517			Shares, D. W.,	Aug. 1, 1854
				Slemmons, M. G.,	Oct. 9, 1860
				Yost, G. W. N.,	Mar. 29, 1855

	<i>Plate Count</i>		<i>Plate Count</i>		<i>Plate Count</i>
Adams, W. K.	80	Atwood, C.	1051	Battell, W.	995
Adams, J.	412	Atwood, J.	286	Batten, J. P.	793
Adams, H. A.	750	Austin, J.	625	Baum, C. C.	650
Adams, S. J.	751	Austin, R. G. S.	187	Baumann, J. N.	607
Adams, J. A.	810	Austin, R. G. S.	488	Baxter, R.	1008
Adams, S. H.	681	Austin, R. G. S.	488	"	(R.) 1008
Adams, S. F.	1115	Avery, R. H.	343	Bayless, E.	204
Alderson, W. F.	854	Avery, R. H.	345	"	(R.) 205
Alderholt, E. A.	103	Avery, I.	603	Beach, C. and Brown, T.	37
Agnew, A. and Morrison, W.	30	Avery, G. C.	1009	Beale, T.	57
Aiken, G. C.	512	Avery, J. and Hunt, M. F.	938	Beale, I. W.	1021
Aiken, G. C.	513	Bachman, J. L.	880	Bean, J. C.	178
Aiken, S. W.	7	Badger, W.	384	Bean, S.	268
Airey, R. C.	1683	Badlam, E.	384	Bean, H. and Tyson, J. D.	693
Aker, A.	186	Bailey, J.	1130	Bean, E. C. and Welden, F. N.	742
Albertson, C.	1087	Bailey, J. and Marshall, G.	1147	Beard, C. A. and Evans, E. E.	120
Allen, M.	10	Bailey, S.	855	Beard, A.	191
Aldrich, W.	827	Bailey, J. H.	874	Beaver, J. T.	470
Alexander, R. W.	355	Baird, E. A. and Gale, A. T.	359	Buckelheimer, L. S. and Canady, H. H.	1117
Alexander, J. E.	1105	Baird, E. E.	1085	Beckwith, W. G.	524
Alexander, J. T. D.	509	Baker, J. B.	13	Beckwith, S.	525
Allen, D. R.	93	Baker, W.	133	Beeching, G.	6
Allen, S. L.	174	Baker, D. C.	140	Beers, E. A.	1001
Allen, W. K.	1168	Baker, J. M.	737	Beers, E. A.	1109
Alley, J. A.	793	Baker, W. T.	742	Beers, E. A.	1124
Allis, A. Q.	1015	Baker, A. S. and Lamborn, W. H.	708	Behl, J.	784
Allison, A. H.	974	Baker, H. H.	974	Behl, J.	807
"	(R.) 675	Barkwell, C. N.	1016	Behlen, H. M.	39
Allison, A. H.	992	Baldwin, P. O.	122	Behlen, C.	52
Allison, A. H.	712	Baldwin, L.	149	Behlen, C.	988
Allison, A. H.	1084	Baldwin, J.	9	Bibb, J.	1187
Alloways, J.	1048	Baldwin, J. and Poste, J.	9	Bibb, W. C.	147
Allott, P. H.	50	Ball, T. J. and Poste, J.	66	Bell, S. K.	189
Alick, W.	386	Ball, W. M.	160	Bell, S. and Hanson, G. W.	730
Alford, C.	521	Balgh, A. H.	1082	Belmont, H.	758
Alford, C.	710	Baltimore, J. T.	66	Belt, A. C.	75
Alford, C.	749	Bancroft, W.	11	Benjamin, E. D.	1029
Alford, W. D.	632	Banks, J.	10	Benedicler, H. F. and Smith, G.	68
Ament, W. A.	643	Banks, W.	936	Benedict, I. A.	96
Amcott, A. D.	1149	Bannigan, J. C.	820	Benedict, H.	68
Anderson, A. P. and Edwards, B.	692	Bannigan, J. C.	830	Benedict, I. A.	117
Anderson, A.	697	Bannigan, J. C.	538	Benedict, I. A.	174
Andrews, W. J.	61	Barber, I.	695	Benner, D. G.	105
Andrews, W. J.	394	Barber, I., Jr.	631	Bennett, G. T.	27
Andrews, J. H.	1025	Barber, I.	842	Bennett, W. H. and Height, H. R.	356
Andrews, J. H.	1040	Barcafar, G.	821	Bennett, A.	669
Andrew, W. W.	481	Barclay, J. W. and Sel- lar, R.	1214	Benson, J., S. and W.	687
Anstey, J. and G. W.	126	Barclay, J. H.	609	Benson, B. S.	1104
Anthonie, L.	844	Barnes, N.	3	"	(R.) 1104
Anthony, S. E.	258	Barnes, H.	53	Bentley, I. B.	35
Anyan, B.	795	Barnes, W. G.	839	Bentley, C. A.	828
Anyan, B.	729	Barnes, W. G.	848	Besquet, D. and Dumoulin, C.	999
Archer, D., Jr.	849	Barnett, J. A.	148	Berlan, I.	1163
Argerholt, D.	852	Barnett, M. and Wood, E.	664	Bergen, J.	964
Armstrong, J., Jr.	649	Barney, F.	628	Bergen, J.	680
"	(R.) 650	Barthart, P.	58	Bergqvist, A. F.	1212
Armstrong, J., Jr.	676	Barwell, A. S.	64	Berk-tresser, H.	338
Armstrong, I. and G.	1071	Barr, M. J.	128	Berninger, C.	390
Armstrong, J. and G.	1066	Barr, O. and Cox, F. F.	600	Berry, W. O. M.	1004
Armstrong, G. and Marcheson, D. L.	1170	Barr, O.	1172	Berthiaume, L.	1197
Arnold, T.	89	Barr, F. M.	77	Bertrand, F. T.	543
Arnold, O. J.	677	Barringer, J. H.	1001	Bertrand, T. F. and Sames, P.	659
Arnold, H. B. and Gramm, J.	78	Basalov, H.	973	Bertrand, T. F. and Sames, P.	672
Arrington, W. J.	122	Bartlett, I. W.	1000	"	(R.) 672
Arthur, I. B.	78	Barton, C. T.	178	"	(R.) 672
Arvin, J. N.	663	Barton, L. B.	639	Bethea, J. C.	91
Asay, A. M. and Wood, J. W.	266	Barton, L. B.	647	Bettendorf, W. P.	1186
Atchison, W. J.	271	Barshaw, J. N.	899	Beucler, P. P.	828
Atwater, J. B.	383	Batcheller, A. F.	495		
Atwood, C.	988	Batcheller, A. F.	842		
Atwood, C.	992	Bateman, F.	191		
		Bates, W. E.	640		
		Batson, J. W. and L.	20		

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Campbell, J.	1027 330	Chapman, L.	1057 344	Colver, A. B. and Priest, J.	783 225
Canaday, H. H.	852 243	Chapman, L.	1003 345	Colver, A. B.	810 232
Canaday, H. H.	1137 303	Chapman, L.	1005 346	Colvin, H. H. and Johnson, I. K.	1131 362
Canaday, H. H.	1142 304	Chapman, L.	1084 350	Cone, F. C.	392 125
Canaday, H. H.	1171 374	Chapman, L.	1129 301	Cone, T. S. and Potter, H. S.	602 174
Canaday, H. H.	1207 385	Chapman, L.	1132 302	Conley, J. H.	704 221
Canfield, A.	71 20	Chapman, L.	1168 382	Connelly, A.	94 28
Canfield, A.	71 20	Chappell, I. H. and Montgomery, J.	718 208	Connelly, J. W.	677 195
Canfield, A.	628 181	Chappell, I. H.	774 223	Connelly, J. W.	691 199
Canfield, J. Hess, C.	656 180	Charles, F. G.	1060 340	Conner, L. W. and R. G.	762 221
Canfield, A.	687 168	Charlton, I.	29 7	Conner, L. H.	884 254
Canfield, A.	801 230	Chase, J. W.	157 43	Connor, W. J.	1062 345
Canfield, A.	(R.) 1802 230	Chase, J. W.	192 45	Conolly, G. W.	48 13
Canfield, A.	820 236	Cheasbro, J. E.	998 328	Conover, S. B.	679 196
Canfield, A.	854 244	Cheatham, W. T.	166 46	Conrath, P.	1040 340
Cantelon, R.	65 18	Chenoweth, J.	395 126	Constant, I.	8 2
Cantelbury, A.	267 77	Children, E.	607 192	Conway, C. R.	1133 362
Capp, T. F.	764 221	Children, E.	676 195	Cook, J.	339 105
Carey, A.	591 171	Children, E.	676 195	Cook, A. M.	623 179
Cargo, H.	797 229	Children, E.	805 239	Cook, G. W.	708 205
Carhart, P. S.	44 11	Children, E.	195 40	Coon, J. H.	407 128
Carhart, P. S.	40 13	Christman, R. D.	27 6	Coonrod, P.	615 177
Carlow, J. H.	750 220	Christ-opher, J. G.	745 216	Coonrod, P.	696 201
Carlson, A. F.	772 223	Church, A. L.		Coons, S. P.	940 299
Carlson, A. F., Shippse, C. and Camron, W.	800 229	Churchill, D. and Brewer, S. C.	648 186	Cooper, N. B.	44 11
Carnagy, A. P.	534 154	Churchill, D.	697 202	Cooper, G. W.	68 19
Carns, J. C.	1101 354	Clapp, H. W.	743 215	Cooper, G. W.	68 19
Carr, N. Jr. and J.	498 138	Clark, C.	39 7	Cooper, C. J.	173 48
Carr, D. F.	731 212	Clark, C. A.	35 9	Cooper, A.	348 108
Carr, H.	746 216	Clark, C. M.	128 39	Cooper, G. W.	399 124
Carr, H.	746 217	Clark, C. M.	(R.) 129 36	Copeland, J.	51 14
Carr, H.	746 217	Clark, C. M.	145 40	Copeland, I.	113 33
Carr, N. Jr. and J.	933 297	Clark, W.	354 100	Copeland, J.	151 42
Carr, H. C.	1049 342	Clark, W.	507 149	Coppage, W.	864 247
Carrington, S. E. and C. H.	588 179	Clark, M. M.	620 178	Corbin, J. S.	275 80
Carson, H.	543 156	Clark, W. F.	675 195	" " (R.)	275 80
Carson, R.	342 109	Clark, R. M.	1205 385	Corbin, J. S.	288 86
Carter, N. C.	34 8	Clarridge, J.	57 16	Corbin, J. S.	288 86
Carter, W. H.	148 41	Clawson, L. G.	351 168	Coreth, R.	1062 345
Carter, G. D.	354 109	Clayton, J.	1159 369	Coreth, R.	1081 349
Carter, C. D.	350 111	Clayton, J.	1176 379	Coreth, R.	1166 356
Carter, C. H.	489 142	Cleaveland, G. D.	134 37	Cormick, T. R.	597 172
Carter, C. L.	810 231	Clees, J.	1032 358	Cormick, T. R.	616 177
Carter, C. L.	826 235	Clements, A. P. and Nealey, J. C.	107 31	Cornell, T. J.	992 325
Carter, C. D.	807 248	Clements, W.	869 231	Cornell, T. J.	997 327
Carter, G. R.	1036 339	Clifton, J. H.	86 25	Corr, C. W.	986 323
Carver, H. E.	1137 303	Clifton, I.	88 26	Cory, I.	793 228
Casaday, W. L.	1118 359	Clifton, W. C.	115 33	Coston, W. M.	798 229
" " (R.)	1119 359	Clime, S.	1 1	Coston, W. M.	813 232
Case, J.	621 179	Clime, S.	2 1	Collon, J.	1224 390
Case, J.	658 190	Clove, B. M.	95 28	Coulter, W. F., Trabue, G. F. and Lowrey, W. A.	717 208
Case, J.	761 220	Clover, C. C.	856 244	Coulter, W. F., G. and Lanery, J. A.	726 210
Case, J.	967 318	Cloyd, H. C.	100 32	Covell, A. T.	1008 331
Case, P. L.	1190 380	Cluckner, J.	100 31	Cowan, S.	917 178
Cass, A. B.	607 175	Coats, S.	8 2	Cowing, H.	710 205
Cass, A. B.	631 182	Cochrane, J.	1068 346	Cox, M. C.	101 30
Castor, I. H.	627 180	Cochran, B. C., T. W. and J. M.	683 197	Cox, B. S.	104 31
Caswell, L. J.	59 16	Coe, O.	243 69	Cox, B. S.	134 37
Cates, N. A.	72 21	Coggins, S. L.	189 53	Cox, J. and Throp, J. A.	601 174
Cato, W. W.	132 36	Collborn, L. H.	384 122	Cox, J. and Throp, J. A.	628 181
Cauthon, I. N.	346 107	Collburn, D. W.	679 196	Cox, S. H. and Fence, W. H.	698 202
Cavett, R. S.	348 108	Cole, N. C.	157 43	Cox, B. C.	812 232
Caylor, J.	142 39	Cole, J. H.	828 239	Cox, J. and S.	1044 341
Caywood, M. and J.	725 210	Cole, H.	868 249	Coyle, H. J.	123 35
Chace, E. A.	1004 329	Cole, J. H.	1045 342	Crabtree, J. M.	161 44
Chamberlain, H. W.	884 254	Coleman, J.	247 71	Craft, R. D.	476 140
Chamberlin, W. H.	388 123	Coleman, J. H.	723 209	Craig, R.	26 6
Chamberlin, T. B.	1155 368	Collins, J. W. and Wilkinson, R. V.	381 121	Craig, A. J.	81 24
Chambers, C. F.	1069 354	Collins, J.	605 174	Crain, O. A.	182 50
Chambers, C. F.	1133 362	Colt, J. R.	540 156	Cramer, J. P.	510 149
Chandler, H. C.	76 22	Colton, G. D.	969 319		
Chandler, M. and Nichel, J. B.	472 139	Colton, G. D.	970 319		
Chapman, J.	181 50				
Chapman, J.	646 186				
Chapman, L.	1037 339				

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Crane, E.	248 71	Darling, M. and Gray, H.	81 24	Donaldson, J. W., Sheets,	
"	(R.) 248 71	Darnell, D. E.	260 88	D. and Miller, A. C.	000 327
Crane, E.	248 71	Dart, A.	155 43	Donaldson, I.	1012 332
"	(R.) 240 71	Davenport, F. P.	110 34	Donley, T. and Cressler,	
Crane, R. J.	1071 347	Davenport, F. S.	070 321	J. B.	701 203
Crayath, M. A. and I. M.	247 70	Davenport, F. S.	008 327	Doolley, J.	97 29
"	(R.) 247 70	"	(R.) 008 327	Doolittle, G. W.	607 102
Crayath, M. A.	008 318	Davenport, F. S.	1133 362	Doolittle, E.	008 202
Creck, C. C.	474 130	Davenport, F. S.	1211 387	Doonan, J. M.	95 28
Cremor, F.	1055 344	Davey, J. H.	708 205	Dorsey, E. I.	54 15
Crenshaw, M.	379 121	Davidson, J. M.	03 28	Dorsey, W. D.	503 171
Criswell, R., Jr.	0 4	Davidson, W. J.	184 31	Dorsey, W. D.	015 177
Croll, G.	486 142	Davidson, W. J.	188 52	Doss, W. C.	20 4
Cropp, F. M.	850 242	Davies, F., Jr.	680 100	Doud, J. W.	790 227
Cross, B. H.	178 40	Davis, J. B.	75 22	Doud, J. W.	1014 332
Crossley, S.	037 208	Davis, J.	027 180	Douthitt, S. D.	140 41
Crossley, W. G.	1012 332	Davis, D. M.	028 181	Douthitt, J. H.	1002 320
"	(R.) 1013 332	Davis, J. R.	620 178	Doyle, I. H.	41 10
Crossley, W. G.	1004 345	Davis, L. J.	707 220	Doyle, I. H.	45 12
Crothers, F. R.	079 321	Davis, L., Jr.	857 244	Drake, S. E.	1150 367
Crothers, F. H.	1038 330	Dayson, G. A.	1021 334	Dryden, W. A. and Turn-	
Crothers, F. R.	1002 352	"	(R.) 1022 334	bull, J. M.	524 152
Crow, C.	103 30	Davidson, J. N. and Spen-		Dryden, W. A.	528 153
Crowley, G. G.	284 85	cer, N., Jr.	1028 337	Dryden, W. A.	509 173
Crowther, J.	704 204	Davidson, A.	1033 338	Dryden, W. A. and C. E.	685 107
Crumps, T. J.	040 304	Dawson, W. J.	303 125	"	(R.) 685 108
Cutcher, S.	347 107	Dawson, C. H.	070 310	Dryden, W. A.	934 207
Cuttenden, A. F.	1031 338	Day, S.	710 207	Dryden, W. A.	932 207
Culver, H.	1033 338	Day, W.	725 210	Dunne, J. B.	070 210
Cummings, W. H. and		Deal, I. I.	183 51	Du Bois, N.	1003 352
Childs, H. L.	732 212	Deal, J. J.	185 52	Dudlos, V. C.	1028 337
Cummings, W. H.	779 224	Deal, J. J.	102 54	Dufinici, W.	75 22
Cummings, W. H.	1218 380	Dean, D.	520 151	Dugdale, J. K.	43 11
Cummings, S. A.	480 141	Debolt, C.	400 137	Dulaney, N.	884 253
Cummings, W. B.	1000 340	Decelle, M.	307 120	Dundas, J.	588 170
Cummings, A. G. and		Deegen, F. W.	850 242	"	(R.) 580 170
J. R.	1083 350	DeHast, F. F.	600 100	Dunlap, J. R.	487 142
Cummings, J. R.	1136 303	Deighton, R., Jr.	50 13	Dunvant, J. U. and	
Cummings, J. R.	1170 370	Demaree, A. and Vice-		Hampson, W. A.	155 43
Cunningham, J.	588 170	Land, T.	194 45	Durant, A. P.	6-6 180
Cunningham, A.	1044 341	Denham, I.	647 180	Durant, A. P. and Buck-	
Curkendall, G.	1128 301	Dennett, D.	52 14	by, D. M.	083 322
Currier, A.	100 53	Dennis, O. H.	20 4	Durant, A. P.	080 324
Currie, J.	1154 308	Dennis, E. W.	705 204	Dutton, J. I., Jr.	25 6
Curry, J. I.	837 230	Denmore, J.	248 74	Duval, G. R.	1044 342
Curtis, H. W.	53 14	Denton, C.	657 180	Dwight, S.	408 138
Curtiss, M. S.	1010 331	Derwent, F. J.	1009 354	Dwight, S.	471 138
Curtiss, M. S.	1074 348	De Tink, J. D.	510 151	Dwight, G. M.	721 209
Curtiss, M. S.	1079 349	Dever, E. M. and Pratt,		Dwight, S. H. and Cham-	
Curtiss, M. S.	1100 354	L. C.	626 180	bers, W. B.	748 217
Curtiss, M. S. and E. W.	0423 300	Deweese, G. W.	80 23	Dyset, W.	5 1
Curtiss, M. S.	0448 300	Dewey, W. F.	830 238	Dyzen, W.	461 137
Custer, I.	240 70	Deyo, C. B.	470 138	Early, D. S.	87 26
Custer, J.	240 70	Dick, C. I., and Woehl,		Early, D. S.	93 28
Custer, G.	514 150	M.	1215 388	Earlywme, N.	131 36
Daggett, D. P.	587 170	Dickey, W. H.	544 157	Eastburn, C.	20 4
Dahl, G. J.	1017 333	Dickey, W. H.	544 157	Eastclay, E. S.	704 204
Dahlstrom, S.	834 237	Dickey, W. H.	343 157	Eastham, C. L.	1000 330
Darley, A. A.	1050 343	Duckie, W.	1000 354	Eastman, J. S.	507 149
Date, W. P.	786 226	Duckson, A. A.	24 5	Eaton, E. C.	1113 357
Date, W. P.	790 226	Dickson, J. H.	85 25	Eaton, E. C.	1116 358
Date, W. P.	808 234	Duckerson, L. W.	704 228	E'baugh, H. H.	1007 330
Daley, I.	520 153	Duchloff, J.	803 240	Eberhart, J. W.	1150 360
Dalton, H. N.	245 60	Dicks, W. I.	180 52	Eberly, D.	15 3
Dalton, H. N.	097 327	Dickeman, I. R. and		Eberly, D. B.	708 222
Dalton, H. N.	1041 340	Hewlett, J. J.	382 122	Eberly, D. B.	702 227
Dammor, W. H., Massey,		Dillon, T.	88 26	Eckert, J. H.	090 325
K. H. and Whitman,		Dils, O. P.	000 327	Eckles, H. P.	300 124
I. P.	008 202	Dils, O. P.	1003 320	Eddelman, D.	520 153
Dana, C. H.	10 2	Dixon, S.	1165 372	Eddleman, J. P.	1040 342
Daniel, C.	604 101	Doak, J.	030 181	Edgell, J. B., Alex-	
Daniels, T. F.	287 85	Dodge, T. H.	31 8	ander, J. W. and E. A.	007 327
Daniels, L. I.	854 243	Dodge, R. D.	007 175	Edwards, I.	6 1
Daniels, C. J.	415 130	Dodge, R. I., and Wall,		Edwards, W. H.	716 207
Daniels, H. L.	1150 307	et, E. M.	000 328	Edwards, D.	785 226
Daniels, F. S.	1178 370	Doming, L.	1010 341	Edwards, C. A.	1043 341
Daniel, H. L.	1220 380	Donschke, C.	1148 306	Edwards, W. L.	1138 303
Danner, J.	400 138				

P. & C. ...		P. & C. ...		P. & C. ...	
	P. & C.		P. & C.		P. & C.
Fiebigler, M.	310 100	Felker, A.	985 323	Frankberger, J. T.	474 139
" "	(R) 340 100	Feltus, H. H.	641 290	Franklin, B.	1170 370
" "	(R) 341 100	Fend V. G. W.	497 128	Franklin, D. D.	735 213
F. Strand, G. and Co.		Fenner, K. R.	1110 356	Frautz, W.	70 22
sol, M. P.	644 185	Ferguson, I.	741 210	Fraser, F. J.	385 122
Flam, J., F. P. and J. A.	1160 384	Ferguson, S. T.	1151 397	Fraser, F. J.	975 520
Eldler, J. M.	803 249	Ferguson, S. E.	1225 301	Fraser, N. W., and Mc-	
Elford, A.	5 1	Fernald, J.	948 180	ellan, A. J.	587 170
Elford, D.	974 319	Fichtl, G. B.	378 121	Fraser, F. J.	973 310
Ellett, J. F.	662 194	Fiehl, B. F.	618 178	Fraser, F. F.	399 120
Ellis, R.	52 14	Fillios, J. D. and De		Frederick, W.	112 120
Elliot, J. C.	493 127	Buy, W. H.	994 347	Fredlund, P. E.	463 137
Elliot, M. A.	1055 344	Fink, J.	42 11	Freeman, F. L.	9 2
Elliot, M. A.	1297 385	Finley, J. R.	49 13	Freeman, E. L.	510 149
Ellis, L. J.	484 111	Fink, T. P.	54 15	Freeman, E. F.	523 152
Ellis, J. E.	600 170	Fish, R. A.	143 49	Freeman, W. H.	982 322
Ellis, G. A.	1145 305	Fisher, J. B.	279 81	Freeman, A.	1068 340
Ellison, A.	1049 342	Fisher, S.	508 172	Freeman, H. M., Lowe, J.	
Elliston, C. L.	401 127	Fisher, W. D.	1050 100	and Stevens, J. F.	1075 348
Elliston, C. T.	1068 353	Fisher, S.	739 214	Freeman, M. J.	1173 375
Ellwood, R.	549 150	Fisher, S.	973 319	Freeman, H. M.	1150 399
Ellwood, R. and Pitcher,		Fisher, D. S.	1005 330	French, H. F.	524 152
R. L.	781 225	Fisher, J. B.	1150 368	French, J. C.	970 193
Ellwood, R. and Pitcher,		Fisher, J. B.	1159 390	French, J. C.	727 210
R. L.	780 227	Fisher, J. B.	1194 372	French, M. and J. C.	750 210
Ellwood, R. and Pitcher,		Fitch, O. F.	591 172	Frieburg, A.	518 151
R. L.	8.0 233	Fitzhan, L. S.	383 122	Frieburg, A.	532 154
" " (R.)	8.20 233	Fitzgibbon, T. C.	385 122	Frieburg, A.	939 298
Ellwood, R.	1223 399	Flauberg, P. H.	1040 312	Fried, J.	57 10
Elmer, N.	1152 397	Fleming, J. S.	123 35	Friehling, W.	1134 362
Ely, B. M.	349 100	Fleming, J. W.	186 52	" " (R.)	1134 393
Emmett, E.	32 8	Fleming, J. W.	192 54	Frye, J.	995 317
Emmett, E.	242 69	Fleming, S. W.	1298 380	Frye, J.	995 317
Emmons, W. and Wells,		Flecken, T. M. and		Frye, J.	998 318
D. A.	735 213	Hall, A.	850 244	Frye, J.	755 210
Emrick, L.	137 38	Fletcher, J. J. and Smea,		Fuller, D.	
Emshley, J. and Fletcher,		J. W.	1184 378	Fuller, H. and Boyd,	
L.	17 3	Flinn, M.	1010 334	L. I.	1135 363
Em, E. I.	802 230	Fisher, L. G. and Yates,		Fuller, H. and Boyd,	
Emmerson, G. A.	47 12	E. M. J.	51 23	T. L.	1147 366
Ernst, J. W.	75 22	Flouance, J. E.	1149 395	Funk, W. J.	1042 341
Ernst, J. G.	382 122	Floy, C.	71 21	Funk, D. M.	1146 395
Escobier, C.	109 31	Floyd, J.	1110 357	Furnas, F.	604 174
Eschman, A.	124 35	Flynn, J.	547 155	Furnas, F. and C.	610 170
Eschman, A.	479 140	Folios, S. B.	82 24	Furnas, W.	623 179
Eschman, J.	752 218	Folios, S. B.	93 28	Furst, C.	795 221
Esomson, G.	10 4	Folios, J.	806 249	Gale, A. H.	1141 364
Esterly, G. W. and Van		" " (R.)	809 249	Gale, A. H.	1187 379
De Water, J.	533 154	Fond, C.	49 13	Gale, A. I.	1225 301
Esterly, Geo.	584 169	Fond, W. P. and F. H.	511 149	Gallagher, W.	1010 334
Etes, C. F.	182 51	Fond, S. H.	542 156	Galt, T. A. and Tracy,	
Etter, O.	60 16	Fordman, G. G.	131 39	G. S.	280 87
Etter, S. P.	669 192	Forgard, G. A.	508 126	Ganong, I. M.	478 149
Eustace, M., Kennan,		Forshee, W. J.	14 3	Ganong, I. M.	483 141
J. and L.	152 42	Fosythe, F. R.	519 149	Garce, H. D.	585 160
Fu the, E. G.	1210 389	Fogarty, D. O.	1194 372	Gardner, T. E.	97 19
F. ans, J. A.	300 111	Fogarty, D. O.	1174 375	Gardner, C. O.	879 252
Evans, D. Z.	531 154	Foster, A. G. W.	150 44	Gardner, C. O. and	
Evans, W.	1123 360	Foster, C. R.	281 83	Downey, W. C.	880 252
Everest, D. O.	549 158	Foster, A. K. and E. H.	380 123	Gardner, C. O.	542 150
Ewack, C. A.	993 290	Foster, W.	1012 332	Gardner, J. M.	349 108
Eylar, J. F.	593 172	Foster, F. M.	1192 371	Gardner, T. H.	150 42
Fagan, T. B.	1120 390	Foster, F. M.	1290 383	Garnett, J. M.	2 1
Fanning, J. and Legler,		Fountain, J. L.	950 163	" " (A. L.)	597 149
F.	769 222	Fonna, N. J. L.	519 150	Garr, C. K.	697 201
Fanning, S. A.	10 57 346	Fowler, J. and Bacon,		Gaskill, R. R.	608 175
Fargo, C. A.	1039 330	F. M.	519 150	Gaskill, R. R.	980 324
Farmer, W. H.	149 41	Fowler, A. A.	1130 394	Gaskill, R. R.	996 327
Farnsworth, F.	749 217	Foy, J.	948 298	Gatton, H. A.	82 24
Farrow, A.	1015 333	Foye, W. H.	199 128	Gatton, H. A.	520 151
Fash, L. G.	879 251	Foye, W. H.	499 121	Gates, I. N.	935 298
Faulkner, J. J.	179 47	Fulphron, J. H.	23 5	Gatling, J.	377 121
Fawcett, G.	947 295	Furmeson, H.	515 159	Gatlin, W. S. and Huls-	
Fawkes, J. W.	934 182	Francisco, H.	514 159	ford, B. R.	1017 333
Fay, D. M.	1697 349	Frank, J.	79 29	Gay, C. F.	1048 339
Fay, J.	1104 355	Frank, J.	704 293	Gaylord, O. I.	749 214
Fay, J.	1129 350	Frank, J. H.	793 227	Geb, W.	471 138
Felker, A.	975 320	Frank, C.	1122 396	Geiges, P.	184 51

GENERAL ALPHABETICAL INDEX

	<i>Plat. Claim</i>		<i>Plat. Claim</i>		<i>Plat. Claim</i>
James, W. A.	1194 381	Jenkins, M. D.	1139 207	Kroner, S. A.	74 21
James, J. H., Fucker, H.	1194 381 (R.)	Judy, A. C.	1044 349	Kuehn, W.	978 321
James, W. D.	1190 382	Jay, F. W.	354 169	Kugler, O.	483 141
James, L. D.	1077 349	Keamer, E. A.	100 39	Kugler, O.	483 141
Jay, J. B.	728 211	Kay, J.	1028 330	Kugler, O.	487 142
Jefferson, J. E.	286 85	Keason, J. I.	1011 332	Kuntz, J.	473 139
Jefferson, L. E.	299 88	Keason, J. I.	1018 333	Kyatt, H. B.	678 196
Jefferson, L. E.	1177 370	Keck, P. H.	9 2	Kyatt, H. P.	766 221
Jefferson, L. E.	1181 377	Keck, A.	933 182	Kyatt, H. P.	838 239
Jefferson, P. F.	1179 377	Keizer, J.	47 10	Lacey, J.	624 179
Jefferson, T. E.	1264 384	Keith, A.	987 324	Lacey, J.	624 179
Jefferson, T. E.	1229 391	Keller, J. H. B.	714 207	Lacey, J.	643 185
Jefferson, T. E.	1227 392	Kelly, I. W.	17 3	Lacey, J.	658 189
Jelms, W. L.	1034 338	Kelly, W. H.	43 11	Lacy, J. G.	128 39
Jenkins, J. C.	198 29	Kelly, W. H.	515 150	Landenberg, F. D.	156 43
Jenkus, J. C.	351 168	Kelly, L. M.	1177 370	Landow, C.	272 79
Jenne, P. R.	798 222	Kendall, F. W.	353 169	"	(R.) 272 79
Jenne, C. M.	629 181	Kendall, F. B.	544 157	Landow, C.	283 84
Jenne, C. M.	643 185	Kendig, D.	1111 357	Landow, C.	282 84
Jenne, C. M.	642 200	Kennedy, A. H.	120 34	Lafferty, J. W. and Brown,	
Jennings, J. Jr.	479 50	Kennedy, J.	1147 390	G. B.	544 157
Jennings, E.	1043 341	Kennev, I. B.	1102 371	Laid, H.	168 32
Jessops, J. W.	475 149	Kent, F. H.	94 121	Lake, H. J.	35 9
Jessop, G.	134 37	Kerschmer, D. Monger,		Lamb, M. B.	797 221
Jewell, F. C.	738 219	I. S. and F. M.	851 242	Lamb, A.	52 14
Jobe, J.	676 165	Kerschmer, T. A.	409 119	Landon, L.	509 149
Johnson, J.	881 253	Kessler, F. P.	681 187	Landon, F. J.	878 252
Johnson, W. D.	23 5	Kessler, J.	674 164	Landis, J. M.	112 32
Johnson, M.	151 42	Kewin, C.	673 348	Landis, H.	994 28
Johnson, M.	175 49	Kays, J. and De Mier,		Landon, T. R.	199 40
Johnson, J.	383 122	J. R.	1197 359	Landphere, P. F.	807 231
Johnson, J. G.	393 125	Kiddoo, W.	969 162	Lane, D. H.	278 82
Johnson, M.	544 150	Killam, H. and Val-		Lane, L.	251 83
Johnson, R. A.	187 52	leon, G.	993 317	Lane, W. B. and Colton,	
Johnson, R. A.	190 53	Kindall, G.	1174 375	W.	977 195
Johnson, R. A.	188 52	King, J. D.	1049 334	Lane, J.	1973 357
Johnson, H. M.	241 69	King, A. B.	97 19	Lane, J.	1197 373
Johnson, M.	259 72	King, M. D.	132 39	Lane, J.	1193 371
"	(R.) 259 72	King, J. M.	141 39	Lang, J. B.	133 37
"	(R.) 259 72	King, W. H. I.	647 181	Langford, S. P. and	
Johnson, M.	241 72	King, O. J.	871 249	Stood, W. N.	1132 362
"	(R.) 242 73	King, G. S.	1141 392	Lanham, W. M.	341 106
"	(R.) 242 73	Kinghorn, J. and R.	29 7	Lanham, W. M.	342 109
"	(R.) 252 73	Kings-ton, S. L. and Gore,		Latham, S.	583 169
Johnson, M.	253 73	J.	996 318	Laraway, R. K. and J.	1003 329
Johnson, M.	259 74	Kind, C. T.	1093 329	Lange, G.	621 179
Johnson, M.	269 75	Kinsey, C.	649 201	Larlee, J. T. W.	773 223
Johnson, M.	293 76	Kinyon, A.	930 181	Latham, A.	1209 386
Johnson, M.	293 77	"	(R.) 639 181	Lathrop, G. G.	65 18
Johnson, P.	278 82	Kirk, W. A. I.	245 79	Lathrop, I. B.	1065 330
Johnson, G. R.	283 84	Kirkman, J.	641 181	Laughlin, J. L.	1127 361
Johnson, J. P.	694 201	Kirkpatrick, S.	1123 360	Laughlin, J. L.	1224 391
Johnson, N. S.	792 203	Kissell, F. M. and M. I.	1103 371	Lawbaugh, G. W. and	
Johnson, M.	794 221	"	801 229	Williams, J.	41 10
Johnson, M.	852 243	"	(R.) 822 234	Lawbaugh, G. W.	525 152
Johnson, J. H.	859 245	"	822 234	Lawrence, J. L. and	
Johnson, P. G.	1117 358	Kissell, F. M. and M. I.	835 238	Thomas, G. S.	807 231
Johnson, L. S. and John-	478 119	Klett, W.	139 39	Leach, E. E.	806 231
son, C. A.	843 249	Knapp, J. G. and Libby,		Leber, J.	596 173
Johnson, D. M.	899 249	S. D.	194 31	LeBoeuf, J. H. and	
Jones, J. H. and H. P.	91 27	Knechtler, J. D.	1028 337	Ashton, C. A.	686 323
Jones, A.	173 48	Knechtler, J. A.	1009 354	Lechtenthaler, G.	492 137
Jones, J. B.	698 175	Kuepper, E.	95 28	Lee, Z. W.	85 15
Jones, J. G.	492 127	Knight, G.	699 162	Lee, S. I.	167 46
Jones, H. and Yard,	494 128	Knight, F. H.	689 169	Lee, J.	242 60
W. K.	803 249	Knoll, J.	2 1	Lee, J.	242 60
Jones, S.	827 245	Knoslow, W. A.	543 157	Lee, J.	997 318
Jones, J. E.	830 249	Knoslow, W. A. and		Lee, J.	997 318
Jones, J.	835 245	Rutledge, A.	854 243	Leiper, R. A. and Kid-	
Jones, W.	838 245	Knox, S. A.	11 2	ley, Z. B.	601 173
Jones, J. H.	874 250	Knox, J. M.	787 229	"	(R.) 601 173
Jordan, W. H.	698 175	Kochan, J.	683 167	Lee, J. A.	168 46
Jordan, H. P.	790 229	Krause, J. and C.	4 2 137	Lee, J. A. and	
Jordan, H. P.	774 223	Krils, P.	23 5	G. W.	290 75
Jordan, N. P.	399 129	Krib, I. S.	174 48	Leifer, F. C.	643 185
		Kuehle, H. K.	138 38	Leifer, F. C.	840 241
		Leung, G. W.	722 269	Leifer, A. B.	37 9
		Krogh, C. and P. G.	135 37	Leung, J. T.	1007 330

	P. of Gram	P. of Gram	P. of Gram
Ledy, J. C.	847 233	I. A.	549 150
Ledy, J. C.	1154 308	Lynch, F. P. and Rail,	
Leigh, A.	944 177	H. R.	737 213
Leland, A.	7 1	Lynch, F. P.	738 214
Leonard, A.	111 32	Lynch, F. P.	939 269
Leonard, A.	149 39	Mabbett, F. J.	108 32
Leonard, F.	539 155	McAllister, J. T. and	
Leonard, F. A.	259 75	McDonald, W. W.	100 40
Leslie, F. M.	190 53	McBride, J.	1149 300
Leslie, W.	257 74	McCall, E. R.	1088 351
Letz, J. P.	935 268	McCall, F. R.	545 157
Levee, E.	1013 333	McCarty, B. F., Ott, J.	
Lewellin, M.	139 38	W. and R. J.	90 29
Lewis, A. J.	95 28	McCughan, C. A.	380 123
Lewis, W.	144 40	McClain, J. B. and	
Lewis, J. F.	100 53	Mayes, C. A.	399 120
Lewis, J.	751 218	McClave, H. P.	1042 341
Lewis, J. B. and Ullall,		McClun, J. J.	547 158
J. E.	1025 330	McClunck, L. D.	721 209
(R.)	1025 330	McColleston, B. E.	50 15
Lewis, J. W.	1036 330	McConaughy, T. B.	1020 336
Lewis, J. W.	1037 337	McConnell, I. R.	1051 343
Lakes, M.	1959 344	McConnell, I. R.	1088 351
Landgren, A.	1195 381	McConnell, T. R.	1099 346
Lindly, J. J.	734 212	McCool, W. C.	1073 347
Lindgren, C.	934 183	McCool, W. C.	947 186
Little, J. R.	527 153	McCook, R.	710 205
Little, J. R.	527 153	McGerkell, R.	
Little, J. R.	727 210	McGinnick, J. R. and	
Litchfield, C. H.	1002 329	Baker, W. K.	243 69
Litzenberg, B. F.	1103 381	McGinnick, W.	660 160
Litzenberg, B. F.	1217 388	McGinnick, J. R.	1112 357
Livizev, J. B.	30 7	McGinnick, J. R.	1149 360
Lohdell, C.	80 20	McGinnick, J. R.	1212 387
Lohdell, C.	92 27	McGow, W. J.	39 9
Loeke, D.	444 130	McGrockan, W.	386 123
Loekie, J. H.	101 39	McGraw, T. H.	423 132
Lockwood, S. M.	991 325	McGright, A.	742 209
Logan, J. B.	1020 357	McGuire, A.	179 50
Long, P.	141 39	McDermott, A. S.	772 223
Long, J.	587 170	McDermott, A. S.	830 238
Long, J. M.	834 238	McDill, T. W.	359 110
Long, I.	1002 229	McDill, T. W.	596 172
Looker, W.	726 210	McDill, T. W.	500 172
Loud, I. and Wood-		(R.)	
man, S.	94 17	McDonald, T. E.	301 124
Louden, W.	353 109	McDonald, J. R.	787 220
Lowrie, W. E.	184 51	McDonnell, A. S.	491 127
Lowth, M. F. and Howe,		McEwen, F. S. and	
T. J.	519 151	Adams, O. R.	488 142
Lowth, M. F. and Howe,		McEwen, E.	644 185
T. J.	521 151	McGee, C.	357 110
Lowth, M. F. and Par-		McGee, J. D. W., and	
ter, O. H.	529 153	W. J.	796 229
Loy, I.	680 196	McGlew, P.	622 174
Lucas, J. B.	750 210	McGrew, C.	181 50
Lund, J. M. and Pruitt,		McHeavin, J.	739 211
S. C.	794 228	McKay, N.	939 213
Luth, J.	358 110	McKinley, R.	491 127
Lutkin, C. M.	934 297	McKinley, S. P.	180 50
Lund, G. H.	868 231	McLennan, J. K.	1075 348
Luney, S.	780 224	McMahon, M. S.	1135 363
Luppen, L.	796 228	McMeekin, F. M.	128 30
Luppen, L.	115 33	McNabb, D.	91 182
Luppen, L.	527 153	McNair, T. F.	109 47
Luppen, L.	527 153	McNeely, D. and Cady,	
Luppen, L.	936 268	C. J.	85 25
Luppen, L.	936 268	McNitt, M.	352 108
Luppen, A.	188 52	McNorton, I. T.	877 252
Lux, J.	188 52	McPike, J. M.	1150 398
Lynan, W. J.	799 229	McQuiston, T.	501 171
Lynch, J. D.	43 11	(R.)	
Lynch, J. D.	149 42	McSherry, D. E.	531 154
Lynch, G. F.	399 124	McTamahan, F.	1030 337
Lynch, E. P. and Wright,		Macy, I. and Watons,	
E. A.	538 155	J. C.	841 230
(R.)	539 155	Magruder, C. B.	14 3
Lynch, E. P. and Wright,		Mahon, I. B.	49 12
		Mahon, I. B.	675 195
		Mahon, I. B.	689 199
		Mahon, I. B.	759 229
		Mahon, I. B.	759 229
		Mahon, I. B.	1048 334
		Maret, P.	795 221
		Mallon, J.	277 81
		Mallon, J. and Von	
		Phul, M. H.	539 154
		Mallon, J.	715 207
		Mangas, J.	875 251
		Manley, W.	104 45
		Manly, E. B.	943 300
		Manly, E. B.	943 300
		Mann, H.	14 3
		Mann, H.	18 4
		Manny, A. J.	649 186
		Manny, A. M.	779 222
		Manny, A. M.	779 222
		Manny, J. P.	788 229
		Mannul, G. W.	1020 334
		Mannul, G. W.	1077 349
		Mannul, D. A.	1099 349
		Mannul, D. A.	1109 359
		Marloe, J. and Spicer,	
		W. E.	359 108
		Markel, J.	602 171
		Markham, D. A. S. and	
		Felhrd, D.	589 170
		Markham, A. S.	010 127
		Markham, A. S.	953 188
		Markham, A. S.	993 201
		Markillie, T. R.	972 319
		Markillie, T. R.	980 321
		Marks, G. M.	871 249
		Mari, J.	1080 349
		Marsh, 2nd, C.	135 37
		Marsh, 2nd, C.	136 37
		Marsh, 2nd, C.	133 37
		Marsh, J.	690 199
		Marsh, W. W. and McDu-	
		tye, H.	777 224
		Marsh, W. W.	1170 374
		Marshall, J. D.	1011 332
		Martin, A. T. Jr.	271 79
		Martin, I.	414 139
		Martin, A.	685 198
		Martin, S.	781 225
		Martin, T. J.	724 209
		Mason, J.	3 1
		Mason, R. E.	482 144
		Mason, W.	1031 337
		Mason, W.	1052 343
		Mason, W.	1072 347
		Mason, H. W.	1030 343
		Masterin, J.	268 77
		Matchett, J. F. and Smith,	
		P. W.	792 227
		Mater, D.	87 26
		(R.)	
		Matherly, R. G. and	
		Barnes, I. R.	466 137
		Mathes, W. McC.	410 129
		Mathews, W. W.	1015 333
		Matteson, D. C. and Wil-	
		lamson, T. P.	88 26
		Matteson, D. C. and Wil-	
		lamson, T. P.	517 151
		(R.)	
		Matteson, D. C.	999 318
		(R.)	
		Matteson, D. C.	999 319
		Matteson, D. C.	1021 334
		Matthews, E. G.	1195 381
		Mayn, rd, G.	511 150
		McCl, C. E. and Steven-	
		son, G. F.	610 177
		McCl, J. I.	1142 394
		McClom, C. A.	1198 373
		McClaris, F. A.	1054 343

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Meecher, C. A.	280	83	Moore, J. G.	1033	348
Meeks, G.	709	228	Moore, G.	1101	354
Mecqnon, C. F.	678	160	Moore, G.	1107	356
McCarthy, A.	810	233	Moore, G.	1112	357
McHenry, W. J.	1100	380	Moore, J. H.	1184	378
McHale, T.	127	35	Moorehead, J. B., Pool, T. A. and G. G.	42	10
McKee, F.	857	244	Morgan, B. S.	23	5
McKie, T.	1107	373	Morgan, L. B.	186	52
McKie, T.	1218	380	Morgan, B. S.	587	170
Meloy, F. and Stanley, A. R.	1054	343	Morgan, W. V. and Hackman, T. W.	1208	386
Melton R. M.	21	4	Morrel, A. H.	378	121
"	(R.)	21	Morris, E. F. and Green, R. J.	73	21
"	(R.)	21	"	(R.)	73
Melvin, M. A.	1000	349	Morris, B. F. and Austin, E. H.	175	49
Mendenhall, C.	881	253	Morris, J. R.	307	120
Merkel, P.	999	328	Morrison, J. E.	53	14
Merrill, A.	1070	347	Morrison, W.	514	150
Messenger, N. and Ewin, J.	170	47	Morrison, J. E.	338	105
Messenger, S.	407	137	Morrow, J. J.	100	20
Mettler, W.	626	180	Morse, J. M.	662	200
Mettler, W.	840	230	Morsman, J. A.	1221	389
Meyer, J.	45	11	Motter, G. W. and Berry, E.	60	27
Meyer, J.	85	25	Moseley, D.	110	34
Michener, A. D. and Stongweyer, J. W.	96	28	Motting, F. G.	342	103
Micklejohn, M.	1039	349	Mowrey, C.	1140	300
Miers, F.	37	9	Mowrey, C.	1140	300
Millard, J.	90	27	Mowrey, C.	1217	380
Miller, I.	110	32	Muir, W.	92	27
Miller, T.	150	44	Munford, J. and Wilson, J. W.	602	174
Miller, H.	525	152	Munger, W. P.	804	230
Miller, R. M.	349	107	Munson, A. K.	1100	385
Miller, G. D.	924	181	Munz, J. E.	1105	381
Miller, W. D.	795	228	Murphy, T.	20	6
Miller, F. and Kaller, H.	681	322	Murphy, J.	60	20
Miller, W. D.	1100	382	Murphy, M.	1035	338
Mills, J.	640	184	Murray W. H.	775	223
Mills, J.	785	226	Murry, J.	1050	344
Mills, J. R.	921	170	Muschler, B. F.	142	39
Mills, S. G.	652	187	Mussetter, I. S.	883	253
Milne, J. O.	152	42	Mustard, J. E.	850	242
Milroy, J. W.	77	22	Myers, J.	11	2
Milroy, J. W.	359	123	Myers, T. H.	172	45
Milroy, J. W.	400	127	Myers, D.	384	122
Miner, J. G.	520	153	Myers, A. H.	799	221
Miner, T. H. and S Heavenridge, S.	653	189	Myers, C.	1383	350
Mumch, F.	470	138	Myers, C.	1100	354
Munro, J. K.	127	36	Myers, C.	1100	373
Munro, H.	610	331	Myers, C.	1215	388
Munson, F. and P. A.	494	137	Nash, C.	851	243
Mitchell, J.	530	159	Nation, R.	980	321
Mitchell, S. H.	636	183	Nannan, E.	156	43
Mitchell, S. H.	610	178	Nauman, E.	163	45
Mitchell, S. H.	750	218	Neal, H. W.	1020	334
Mitchell, J. M.	858	244	Neal, H. W.	1039	340
Momany, O. F.	251	72	Neal, H. W.	1071	347
Monaghan, P.	25	6	Neallham, B. F. and I. W.	942	290
Montgomery, T. J. and G. W.	158	41	Neallham, F. M.	832	237
Moody, J. B.	110	32	Nett, J. Jr.	79	23
Moody, S. A.	249	70	Nett, J. Jr.	114	33
Moody, T.	302	125	Nett, J. Jr.	594	172
Moody, J. B.	523	152	Neff, S.	1085	350
Moody, W. A.	687	168	Neff, J. B.	1192	381
Moore, W. S.	847	242	Neff, J. B.	1193	381
Moore, W. S.	805	247	Neff, J. B.	1203	384
Moore, E. B.	159	43	Nedlich, J. and Girvin, E. K.	30	9
Moore, J.	275	80	Neesler, O. L.	772	223
Moore, M. H. and Satter- white, A.	497	137	Nellis, A. J.	101	53
Moore, T. B.	605	191	Nelson, R.	4	1
Moore, G.	687	168	Nelson, W.	1010	333
Moore, G.	779	223	Netherlands, J. B.	20	6
Moore, G.	850	245			
Moore, J.	1011	332			
			Nevill, G. W.	244	60
			Nevin, W.	45	11
			Newlin, W.	1052	343
			Newlin, W.	1084	350
			Newlin, W.	1100	380
			Newlin, E.	686	198
			Newman, W. B. and Wil- kinson, T. J.	1124	300
			Newman, W. B.	1135	303
			Newson, G. S.	395	120
			Newton, R.	1085	350
			Newton, E. W.	1182	378
			Nichol, T. M.	1104	355
			Nichols, W. D.	50	15
			Nichols, W. T.	411	129
			Nichols, H. W.	273	79
			Nicholson, J. W.	91	27
			Niece, R. K.	177	49
			Niederbauer, C.	878	252
			Nishwitz, F.	253	73
			Noble, W.	251	72
			Noble, D. J.	656	189
			"	(R.)	650
			Noble, D. J.	606	192
			Nolan, J. S.	124	35
			North, A. and C. A.	863	240
			North, D.	777	224
			North, C. P.	478	140
			"	(R.)	479
			North, X. B.	1027	330
			North, R. D.	280	83
			"	(R.)	280
			North, C. P.	674	194
			Notman, W.	109	31
			Nusbaum, A. B. C.	394	125
			Nutting, I. P.	987	324
			Odell, R. P., Jr.	535	155
			Odell, A. T.	581	169
			O'Heim, C.	150	44
			Ogblom, H. and Taylor, G.	589	170
			Ogblom, H.	595	172
			Ogdenborgh, H. and J.	1080	351
			Ogden, W. H.	621	179
			Ogels, A. W.	245	70
			Oker, J.	1057	344
			Olmsted, H. A.	1203	384
			Olin, O.	804	245
			Omel, C. W.	167	40
			Opp, H.	1108	356
			Orlando, J.	814	232
			Orr, J. and Martin, H. H.	1027	336
			Orr, W. T.	1143	305
			Osbom, B. F.	935	298
			Osbom, J. D.	630	181
			Osbom, O.	1032	338
			Osbom, O.	1100	356
			Ostom, H. W.	72	21
			Ostom, H. W.	750	218
			Ottwell, L. M.	179	50
			Ough, W.	1076	348
			Oveshiner, G. J.	1090	352
			Owen, G.	337	105
			"	(R.)	337
			"	(R.)	337
			Owen, J. H.	541	156
			Owen, D. C.	545	157
			Owen, G. W.	481	141
			Owen, G.	343	100
			Owen, C. N.	1006	346
			Owen, C. N.	1073	347
			Oxer, W. J.	62	17
			Packard, L.	590	171
			"	(R.)	590
			Packer, H.	816	233
			Padon, J. S.	608	175
			Padon, J. S.	977	320
			Padon, J. S.	687	324

<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>	
Page, G.	241 09	Pendley, W. and Moss,		Potts, T. J. and Vost,	
Page, J. G.	645 185	A.	877 252	P. C.	638 184
Paine, C. J.	715 207	Pennoek, S.	1142 304	Poundstone, C. N.	400 127
Palcer, J.	487 142	Peppler, T.	1053 343	Powell, I.	476 140
Palmer, N.	270 81	Percy, W. C.	131 36	Powell, E. R.	757 219
Palmer, N.	270 82	Peretz, F.	144 40	Powell, E. D.	874 250
Palmer, N.	270 82	Perkins, E. H. and S. D.	167 46	Powell, T.	1210 386
Palmer, I. A.	636 183	Perkins, H. H.	787 226	Powell, L. W.	1203 384
Palmer, I. A.	688 199	Perkins, H. H.	820 234	Pratt, E.	338 105
Palmer, I. A.	722 204	Perrigo, A. S.	934 297	" "	(R.) 338 105
Palmer, D. W.	1105 372	Perry, G.	526 153	Pratt, I. C.	684 322
Palm, J. H.	840 239	Perry, A. G.	175 48	Pratt, I. C.	687 324
Pangborn, C. S. and		Perry, G.	658 189	Prawl, P. and Wemple,	
Beers, G. W.	657 189	Perry, F. E.	66 28	F. H.	1101 354
Paradis, J. B.	944 300	Perry, F. L.	101 30	Preston, H.	709 205
Parcell, P. B.	114 33	Perry, F. L.	124 35	Price, W.	28 7
Parish, G. W.	105 40	Perry, G. W.	161 45	Price, W.	38 9
Parker, J. A. J. W.	360 111	Perry, H. L.	1004 320	Price, J. A.	157 44
Parker, H.	843 240	Perry, H. L.	1011 332	Price, T. J. and Hunt, A.	352 109
Parks, K. B. and J. R.	973 194	Peters, S.	1211 387	Price, J.	669 192
Parks, K. B. and J. R.	732 212	Peterson, G. W.	182 50	Price, G. W.	674 194
Parlin, W. H.	688 168	Pettengill, C. B.	76 22	Price, J.	1045 342
Parlin, W. H.	1151 307	Peugh, S. B.	1096 353	Price, J.	1172 374
Parmele, E. and Curken-		Phel, J. C.	982 322	Price, G. P.	1109 373
dall, G.	532 154	Phel, J. C.	1006 339	Price, C. G. and Merritt,	
Parmele, E. and Patter-		Phifer, E.	641 184	J. M.	1168 373
son, R. N.	660 190	Phifer, E.	681 196	Pro-set, T. T., Dai-	
Parr, S. E.	1075 348	Phifer, E.	707 205	ling, M. C. and K. A.	632 182
Parrish, W.	1058 344	Phillier, W. W.	070 193	Prout, H. N.	147 41
Parrish, W.	1070 347	Phillip, J. W.	100 32	Prout, H. N.	176 49
Parrish, W. H. and J. G.	1064 340	Phillips, J.	407 128	Prout, H. N.	814 232
Parsons, J., Jr.	4 1	Phillips, E.	117 33	Prugh, G. W. and Beard,	
Parsons, G. W. and Fin-		Pickering, I. P.	537 155	W. H.	654 188
ney, W. S.	120 134	Pierce, W.	834 258	Pulliam, E. P.	1108 356
Parsons, G. A.	104 45	Pierce, J.	981 322	Purcell, J. L.	1051 343
Pattee, J. H.	344 107	Pierce, J.	982 322	Purdy, S.	822 234
" "	(R.) 344 107	Pierpont, J. and Tuttle,		Pusey, F. W.	848 242
Pattee, J. H.	346 107	S. S.	528 153	Pusey, W. W.	1118 358
Pattee, J. H.	357 110	Pierpont, J.	525 152	Pyle, I. N.	24 5
Pattee, H. H.	355 109	Pierpont, J.	932 207	Pyle, I. N.	120 34
Pattee, H. H.	355 109	Pierpont, J.	157 43	Quarton, W. B.	244 69
Pattee, D.	6 1	Pierpont, J.	806 248	Quick, W. B.	1058 344
Pattee, D.	845 241	Pierpont, J.	1153 368	Quick, W. B.	1103 355
Patterson, J.	581 169	Pigg, H. E.	776 223	Quick, W. B.	1200 383
Patterson, E. C.	634 182	Pike, F. W.	74 21	Quirin, G. and Berkel,	
Patterson, L. M.	656 189	Pirkle, W. J.	183 51	I.	981 322
Patterson, T.	975 320	Pitkin, J. H.	403 127	Rabb, J. W.	795 228
Patterson, C. and Abra-		Pitts, J. K.	938 298	Ralston, A.	5 1
ham, H. L.	1212 387	Pitts, J. K.	1062 345	Ralston, J. B. and Har-	
Pattillo, R. M.	279 82	Platt, H. M.	380 121	vey, M.	1090 351
Patton, R. F.	97 29	Platt, W. H.	939 268	Ralston, J. B.	1121 359
Pattysson, P.	113 358	Poetz, J.	170 47	Ralston, J. B.	1129 361
Paul, D. H.	733 212	Poetz, J.	171 48	Ralston, D. W.	1102 355
Paxson, C. E.	42 11	Pollard, J. L.	798 229	Rand, N. A.	708 205
Payne, R. L.	112 32	Poling, T.	346 107	Randall, S. G.	243 69
Payne, J. T.	876 251	Pomeroy, H. A. G. and		" "	(R.) 243 69
Payne, J. M.	1124 360	Hudson, R. F.	381 121	Randall, S. G.	263 76
Payne, J. M.	1145 365	Pomeroy, S. G.	867 248	" "	(R.) 263 76
Payne, J. M.	1148 366	Pomeroy, S. G.	1220 368	Randall, S. G.	267 77
Payne, J. M.	1178 376	Pond, J. F.	245 70	Randall, S. G.	268 77
Payton, J. H.	1093 352	Pond, J. F.	258 75	Randolph, J. H., Jr.	400 127
Peabodday, S. G.	697 202	Pond, O. M.	703 221	Rankin, J. H.	694 201
Peabodday, S. G.	717 208	Pond, O. M.	786 226	Raper, W. B.	745 216
Peak, E.	1134 362	Poole, T. W.	18 3	" "	(R.) 745 216
Pearl, J. C.	740 214	Poole, J. F.	832 237	Rate, E. F.	714 207
Pearl, J. C.	1080 349	Pool, J.	258 75	Ravenscraft, H. C.	467 138
Peck, S.	541 156	Porter, M., Jenkins, C.		Ray, J. J. and Young,	
Peck, E.	339 105	E. and G. F.	931 297	J. R.	477 140
Pedrick, R. R.	419 131	Porter, J. F. and Norton,		Ray, G. W.	942 299
Peeler, J.	22 5	A.	1022 335	Rayl, S. G.	113 33
Peirce, J. H.	870 249	Porter, A. E. and A. L.	1045 342	Rayl, S. G.	743 215
Pelcor, P. D. and H. C.	411 129	Porter, J. E.	1140 364	Raymond, D. R.	844 241
Pelton, L. D. and Bar-		Potter, E. M.	154 43	Read, W. B.	118 34
row, J.	683 197	Potter, H. J.	942 300	Ready, W. B.	520 151
Pence, J. W.	256 74	Potter, H. J.	604 191	Realy, W. B.	976 320
Pendley, W.	865 248	Potter, J. O.	1052 343	" "	(R.) 976 320
Pendley, W. and Moss,		Potts, J.	62 17	Ream, B. F.	79 23
A.	870 249			Rehman, J.	116 33

Plate Claim		Plate Claim		Plate Claim	
Rebman, J.	129 36	Riggs, W. S.	39 9	Root, F. P.	582 166
Reck, W.	341 106	Riggs, D. C.	1008 331	Root, J.	753 218
Redfield, R. B.	297 77	Richter, J.	402 137	Rout, B. M.	860 248
Redinger, M.	684 107	Rimey, T. I.	1191 380	Rout, J.	1031 337
Reed, M.	479 140	Risley, C. M. and Rogers, C. B.	146 41	Roquemore, P. B.	153 42
Reed, S.	83 24	Ritson, E.	247 71	Rose, J. J.	739 213
Reed, J. J.	971 193	Rivers, W. B.	22 5	Rose, H. M.	760 220
Reed, S. J.	709 205	Roach, L.	380 121	Rosenkranz, A. C.	1189 380
Reed, T. M.	755 219	Robbins, R. B.	725 210	Ross, H. S.	107 31
Reese, F.	130 37	Robbins, R. B.	743 215	Ross, A. W.	50 16
Reese, E.	766 221	Robbins, R. B.	762 220	Rouse, T.	409 129
Reeves, W. F., A. B., and M. J.	355 109	Robbins, R. B.	790 227	Routt, A. P.	60 16
Reeves, A. B.	353 100	Robbins, R. B.	790 227	Routt, A. P.	84 25
Reeves, H. E.	1205 385	Robbins, R. B.	833 237	Rowell, J. S., and I.	516 150
Reeves, H. E.	1222 369	Robbins, R. B.	860 245	Rowell, J. S., and I.	517 150
Richard, J.	711 206	Robbins, R. B.	882 253	Rowell, G. D.	539 155
Reid, C. I.	748 217	Robbins, R. B.	1064 346	Rowell, G. D.	540 150
Reimer, J. K.	50 15	Roberts, L. C.	154 43	Rowell, J. S., and I.	82 24
Remy, B. W.	684 197	Roberts, M. I.	246 70	Rowell, G. D.	120 34
Remy, B. W., and N. J.	814 232	Roberts, T. B.	344 107	Rowell, M. M.	165 46
Remy, B. W., and N. J.	119 34	Roberts, E. B.	388 123	Rowell, J. S.	545 157
Remy, N. T.	855 244	Roberts, A. A. and Davis, B.	580 179	Rice, J. R. and Seeley, S. M.	116 33
Reñero, R. A.	1143 395	Roberts, C.	609 175	Rowen, N. and Amis, G.	1161 371
Repp, L.	64 18	Roberts, C.	610 176	Rowland, J. E.	681 197
Reuss, J. L.	1207 385	Roberts, C.	610 176	Roy, F.	143 39
Reynerson, J. H. and Wood, J.	1047 342	Roberts, C.	633 182	Ruddick, W. A.	1120 359
Reynerson, J. H.	678 199	Roberts, C.	633 182	Rue, J.	493 137
Reynerson, J. H.	795 204	Roberts, C.	612 185	Rue, J.	775 223
Reynolds, F. F.	90 20	Roberts, C. S.	670 193	Ruffner, S.	801 229
R.ynolds, F. D., and O. B.	139 38	Roberts, C.	691 335	Ramsey, J. B.	146 41
Reynolds, F. D., and I., C.	469 138	Robertson, H. H.	972 319	Runk, J. E.	978 321
Reynolds, E. D., and O. B.	799 228	Robertson, H. H.	972 319	Runk, J. E.	979 321
Reynolds, S. G.	273 79	Robertson, E., and Hamilton, A. A.	1163 355	Runk, J. E., Brown, J. H., and Morgan, E. M.	992 325
Reynolds, E. D., and O. B.	1126 366	Robertson, S. M. and Hamilton, A. A.	1216 389	Runn-teller, A. and Win- jack, A.	77 22
Rhany, J. H.	872 259	Robertson, W. H.	351 108	Rush, R. D. and E. W.	1117 358
Rhinehart, W. N., and (R.) Felken, H.	873 259	Robertson, H. H. and Can, C. G.	597 172	Russell, E. W., and J. N.	823 234
Rhinehart, W. N., and Felken, H.	61 17	Roberts, W. J., and I.	835 238	Russell, P. S.	856 244
Rhinehart, W. C., and Gaston, R.	718 268	Robertson, W. J.	826 235	Russell, E. W.	1110 357
Rhoades, A. A. and Eash, W.	105 31	Robinson, I.	585 199	Rutledge, A.	816 233
Rhodes, G. W.	104 34	Robinson, J.	731 212	Ryer, W. H.	1212 387
Rhodes, W., and Proter, M.	939 184	Robinson, J. H.	738 214	Sabin, S. A.	739 214
Rice, T. and Huchcock, L. R.	74 21	Robinson, W. R.	779 224	Sachse, L.	1076 348
Rice, R.	460 138	Robinson, J. G.	973 310	Sackett, C. E.	414 130
Ries, J. H.	484 141	Robinson, J. G.	1034 338	Sackett, C. E.	416 139
Ries, J. H.	954 188	Robson, J.	154 42	Sackett, C. E.	417 131
Ries, W. B.	1038 339	Roby, M.	487 147	Sackett, C. E.	417 131
Rich, J. C.	66 17	Rockafellow, S.	937 268	Sackett, C. E.	418 131
Rich, C. and Neister, O. I.	700 203	Rockafellow, S.	917 178	Sackett, C. E.	420 132
Richard, I.	1 1	Rockwood, J. O.	1105 355	Sackett, C. E.	421 132
Richard, J. M.	185 51	Rodehush, G. S.	244 69	Sackett, C. E.	424 133
Richardson, W.	72 20	Roden, A.	122 34	St. John, G. B. and Under- wood, J. K.	284 85
Richardson, W. C. B.	408 128	Rodger, G.	8 2	St. John, G. B.	219 88
Richardson, G. R., and Behel, J.	788 226	Rodgers, W.	80 26	St. John, G. B.	644 185
Richardson, J.	834 238	Rogers, W. A.	3 1	St. John, G. B.	719 208
Richardson, L. W.	1080 349	Rogers, M. I.	25 6	St. John, G. B.	748 217
Richardson, H.	1113 357	Rogers, I. B.	65 18	St. John, W. W.	648 186
Richardson, T. and Mc Innis, M.	1120 359	Rogers, D. B.	508 149	St. John, W. W.	671 193
Richardson, W. M.	1131 392	Rogers, D. B., S. and I.	511 149	Sanjoun, O.	1055 344
Richter, W.	7 2	Rogers, D. B.	513 150	Sandelin, N. F.	773 223
Rickerd, J. C.	763 203	Rogers, L.	519 151	Sandelin, N. F.	773 223
Riddle, W. N.	824 235	Rogers, D. B.	582 169	Sanders, H.	512 150
Riddle, W. N.	1136 393	Rogers, W. T.	994 329	Sanders, J. K.	938 298
Rider, J. J.	629 181	Rogers, J. C.	1060 330	Sanders, T. and Nich- ols, L. C.	274 80
Rigby, A.	160 44	Rogers, W. C.	1160 371	Sanders, A.	857 244
Rigell, M., and Ivey, W. D.	31 8	Rohrer, A. P., C. F., and Rose, J. H.	771 223	Sandford, R.	718 208
Rigell, M.	32 8	Romann, A. and Pot- erka, J.	686 198	Satterlee, M.	241 69
		Ronat, M. F.	1127 361	Sattison, J.	118 33
		Roney, H.	119 34	Sattley, M.	979 321
		Rood, E.	1074 348	Sattley, M.	688 324
				Sattley, M.	1075 348
				Sattley, M.	1114 358
				Sattley, M.	761 220

P. C. 1906		P. C. 1906		P. C. 1906	
Savage, W. G.	641 184	Sherrill, J.	1109 374	Smith, F. F.	1206 385
Savill, J.	654 188	Sherwood, J.	302 125	Smith, F. F.	1213 387
Sawin, G. W.	71 20	Sherwood, J.	632 182	Smith, F. F.	1107 382
Sawyer, R.	47 3	Sherwood, F. N.	952 188	Smith, F. P.	1026 339
Sawyer, A. and Barnes, H.	105 175	Sherwood, A. F.	780 224	Smith, F. P.	1026 339
Sawyers, F. H.	613 177	Shields, F. M.	70 20	Smith, Geo.	593 174
Sawyers, F. H.	633 182	Shields, N. S.	112 32	Smith, G. H.	531 154
Sayre, C. H.	14 3	Shields, I. M.	148 41	Smith, G. H.	1141 394
Sayre, C. H.	510 140	Short, T.	634 183	Smith, G. H.	113 33
Sayre, C. H. and Klinck, G.	500 140	Short, T.	682 322	Smith, G. M.	1058 344
" " (R.)	500 140	Shurtleff, J. D.	287 86	Smith, H. B.	1062 345
Sayre, C. H.	513 150	Shull, N. I.	2 1	Smith, H. B.	1030 339
Scarborough, J. L.	150 44	Shupe, E.	811 232	Smith, H. B.	1002 329
Schanck, G. H.	618 178	Sigordner, C.	1165 372	Smith, H. B.	661 199
Scheidem, J. and Hentz man, J.	710 208	Simons, A. D.	808 231	Smith, H. B.	618 178
Schenck, G. W.	813 232	Simpson, J.	102 39	" " (R.)	618 178
Schermerhorn, J. and Porter, K.	377 121	Simpson, M. P.	344 107	Smith, H. C.	989 324
Scheumack, S. S.	1103 355	Simpson, M. P. and Ella- cott, J. P.	789 227	Smith, I. R.	594 172
Schlag, E.	1483 378	Smus, Z. B.	99 20	" " (R.)	594 172
Schlosser, J.	259 75	Smus, Z. B.	477 149	Smith, J.	177 49
Schmieser, H. J.	1134 392	" " (R.)	477 149	Smith, J.	359 111
Schotfeld, S. C.	740 214	Smus, Z. B.	482 141	Smith, J. A.	741 215
Schradler, A.	813 232	Smitz, C.	754 218	Smith, J. B.	491 137
Schroeder, J.	691 200	Sisson, W. A.	686 198	Smith, J. D.	903 329
" " (R.)	691 200	Sisson, J. F.	792 227	Smith, J. D.	625 180
" " (R.)	691 200	Sivertsen, B. E.	393 125	Smith, J. D.	243 69
Schoeffel, J. and Dell, W.	255 74	Skages, N. J.	393 125	Smith, J. H.	279 81
Schuchard, J.	424 132	Skages, N. J. and True, L. W.	168 47	Smith, J. S.	41 27
Schultz, J. D. and Adams, K.	387 123	Skelly, J. H.	768 229	Smith, M.	180 59
Schwanger, C.	90 27	Skull, M. H.	769 205	Smith, N. E.	617 178
Schwartz, J.	127 30	Skull, M. H.	910 178	Smith, N. S.	380 121
Scofield, B. B.	969 319	Skollings, H.	413 130	Smith, P. E.	759 229
Scobrook, C. J. and Heine, H.	815 233	Skinner, H. M.	115 33	Smith, P. W.	688 168
Search, C. F.	1175 375	Skinner, J. B.	652 188	Smith, W.	97 20
Sears, D. A.	1047 342	Skinner, S. T.	699 202	Smith, W. D.	135 37
Sears, D. A.	1003 352	Skinner, J. B.	744 216	Smith, W. E.	932 297
Selbring, T. C.	771 222	Skinner, J. B.	747 217	Smith, W. H.	37 9
Sedley, S. F.	70 20	Skinner, J. B.	778 224	Smithson, F. L.	584 169
Sedley, S. F.	80 27	Skinner, J. B.	980 323	Smyth, H.	980 324
Seely, W.	591 171	Skinner, H. M.	991 325	Snider, S.	539 154
Seger, E. S. and Ormis- ton, J. C.	670 193	Slater, D. S.	80 23	Snook, W.	733 212
Seibel, J.	684 323	Slaughter, D.	92 28	Snow, C. P.	1162 371
Seibert, G. and J.	974 320	Slaughter, W. J.	1145 358	Snow, M.	27 6
Seibert, G. and J.	1035 339	Slemmons, M. G.	34 8	Snow, W.	1086 351
Seibert, G. and J.	713 207	" " (R.)	34 8	Snyder, H.	107 36
Seitz, P.	280 87	" " (R.)	35 8	Snyder, J.	70 23
Sewery, S.	148 41	Slater, R. H.	358 111	Soderlund, P.	179 49
Seward, E.	518 151	Slau, S.	925 180	Sohn, J. W.	172 48
Sexton, J. B.	700 203	Stocum, J.	39 9	Soniak, L.	402 127
Sexton, J. B.	728 211	Stocum, S. W. and Phil- lips, E.	625 180	Stanley, E. M.	54 15
Sexton, J. B.	757 210	Stoss, L. E.	339 105	Spum, J.	814 232
Sexton, E.	1004 320	Stoss, L. F.	342 106	Spangler, J. W.	705 221
Seymour, W. H. and L.	597 172	Stossion, E. and E. C.	868 248	Spangler, J. W.	774 223
Shabley, C.	384 122	Stossion, E.	1115 358	Sparks, A. J.	629 179
Shalters, M. R.	121 34	Slusser, G.	348 108	Sparks, O.	974 320
Shank, S. B.	475 149	Slusser, B.	1023 335	Spaulding, S. T.	103 30
Shank, S. B.	123 35	" " (R.)	1023 335	Speer, I. A. Jr.	49 10
Shares, D. W.	10 2	" " (R.)	1023 335	Speer, W. W.	547 158
Shares, D. W.	12 3	Slusser, B.	1023 335	Spencer, H. H.	423 132
" " (R.)	13 3	Small, B. B.	1039 349	Spencer, J. L.	1007 330
Shaw, A.	102 30	Small, B. B.	488 142	Spence, N. Jr.	1059 343
Shaw, T. M.	486 142	Small, J. J.	184 51	Spies, A. B.	718 268
Shaw, J. L.	191 53	Smalley, J.	589 171	Sprague, G.	680 196
Shaw, H. F. and G. F.	280 83	Smalley, D. A. and J. H.	1602 352	Sprague, E. J.	1105 356
Shaw, J.	585 169	Smith, A.	1026 337	Sprague, P.	739 211
Shaw, A.	732 242	Smith, A.	337 105	Springstead, R. H.	619 178
Sheller, S. C.	127 36	Smith, A.	403 137	Springsteen, A. B.	139 36
Shepard, J.	1037 339	Smith, A.	143 40	Sprigun, W.	149 42
Sherman, D. B.	410 129	Smith, A.	942 999	Squire, W. A.	158 44
Sherill, J.	782 225	Smith, A. and T. S.	995 317	Stafford, D. S.	600 173
Sherill, J.	830 238	Smith, A. and Watson, W. P.	1024 335	" " (R.)	600 173
		Smith, A. C.	145 40	Stafford, D. S.	612 176
		Smith, A. C.	125 35	Stafford, H. P.	686 169
		" " (R.)	125 35	Stafford, J.	1000 331
		Smith, D.	1160 372	Stafford, P. and Duffen- bacher, J.	805 230
				Stalcup, W. P.	461 137
					824 235

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Staman, J. K.	494 137	Stroud, W. D.	529 153	Thomas, J. K.	117 33
Stamm, F.	79 10	Stowger, W. D.	40 12	Thomas, J. C. B.	357 110
Stanchfield, D.	174 47	Stoyker, J.	12 3	Thompson, A.	385 122
Stauchfield, D.	187 52	Stuart, H. C.	1101 380	Thompson, J.	396 126
Standish, P. H.	386 124	Studdifield, D. A. and Lase, W. H.	341 106	Thompson, J. A.	486 142
Standish, P. H.	1024 335	Studer, P.	831 237	Thompson, J. J.	480 141
Stanley, A. K. and Ensign, H. W.	1025 339	Stukey, J. S.	653 188	Thompson, J. J. and Col- lier, V. F.	475 139
Stanley, F.	1168 382	Stungis, W. B.	829 230	Thompson, W. L.	785 224
Stansburg, A. F. and T. M.	473 139	Summer, J.	15 3	Thompson, A.	777 224
Stanton, J. P.	74 20	Summers, J. and Frim- ble, J.	357 110	Thompson, J. P.	819 233
Stanton, S. R.	849 242	Summers, R. B. and De- ment, S.	997 327	Thompson, J. N. and Kenady, W.	1041 340
Stanton, S. R.	874 250	Summers, L. M. and Wil- son, M.	1188 380	Thomson, P. W.	623 179
Starl, A.	667 162	Sursa, J. W.	1005 329	Thorley, T.	80 25
Starrett, J. D.	404 127	Sursa, J. W.	1040 342	Thornton, S. C.	716 207
Starr, E.	55 15	Sursa, J. W.	1050 343	Thornton, S. C.	754 218
Stauffacher, A.	809 249	Sursa, J. W.	1055 344	Thrascher, T. L.	347 107
Staver, G. W.	847 241	Sutherland, J. A.	1105 355	Throp, J. A. and Cox, J.	613 177
Staver, G. W.	853 243	Sutherland, W. B.	1010 334	Thurston, F. G.	146 41
Stattman, W. H.	88 20	Sutter, J.	669 317	Tibbits, J. B.	111 32
Stearns, C. C.	616 177	Suydam, J. H.	1053 343	Tice, I. P.	259 75
Stearns, J. L.	1030 337	Svenson, B. J.	133 37	Tichenor, E. S.	44 11
Steinberger, G.	1010 333	Swallow, J. E.	1052 343	Tilden, H.	778 224
Steller, C. E.	474 139	Swaney, J. S.	178 44	Tinkham, B.	598 172
Stenton, R. S.	15 3	Sweeney, W. P.	1078 349	"	(R.) 598 172
Stephens, A. J.	392 125	Sweet, M.	680 190	"	(R.) 599 173
Stephens, C.	182 51	Sweet, Z. T.	1030 337	Tilley, J. R.	412 129
Stephens, J.	160 29	Swickard, J. W.	785 220	Tipton, J. B.	933 207
Sterling, W.	1094 352	Swickard, E. W.	876 251	Tipton, J. K.	779 224
Stevens, C. B.	1090 353	Tabor, B. D.	147 41	Tobias, J. C. and Bates, W. N.	880 253
Stevens, C. B.	1078 349	Tabor, B. D.	794 228	"	724 209
Stevens, C. M.	549 157	Tahaferro, C. W.	609 170	Todd, G. M.	1111 357
Stevens, J. C.	1088 47	Tahaferro, C. W.	662 161	Tolluust, G. W.	18 4
Stevens, L.	381 121	Tally, T. J.	420 132	Tolle, M.	13 3
Stevens, L. O.	608 192	Tanner, D. C.	821 234	Tolley, F. W.	132 30
Stewart, W. F.	722 209	Taplin, H. T.	303 125	Tolley, F. W.	180 50
Stevenson, G.	272 79	Tappan, G. S.	1216 388	Tolley, F. W.	533 154
Stevenson, G.	275 81	Tarlington, M. S.	353 109	Tondus, J. H.	790 222
Stiber, G.	131 36	Tanzner, J. P.	387 123	Tompkins, A.	707 222
Sullivan, A. F.	56 15	Tatt, P. S. and Wilson, G. F.	170 47	Tombs, S. A.	47 12
Sullivan, J.	853 243	Tate, J. E.	66 19	Tostevin, J. P.	617 178
Stockdale, J.	509 149	Tavean, A. J.	255 74	Tostevin, J. P.	646 186
Stocking, A. D.	54 15	Taylor, J. W.	38 9	Totten, P. K.	715 207
Stockstill, S. L. and Kurtz, H. D.	1977 349	Taylor, C. F.	79 23	Totten, J.	1032 338
Stockton, G. W.	682 197	Taylor, R. T.	87 20	Tournet, A.	259 75
Stoddard, J. C.	380 121	Taylor, A. C.	125 35	Tower, A. C.	482 141
Stoll, M.	80 25	Taylor, W.	138 38	Tower, A. C.	484 141
Stoll M.	479 140	Taylor, W. A. and Graves, W. W.	495 137	Town, B.	541 156
Stoll, M.	779 224	Taylor, S. H.	1214 387	Townsend, J.	649 186
Stone, J. C.	409 129	Teagle, T. J.	195 49	Tozer, G.	1071 347
Stone, D.	680 321	Teasdale, H. M.	49 13	Tracy, S. D.	244 60
Stone, J.	1089 351	Teller, D. C.	654 188	Tranter, J., Kinsey, J. and Carr, J. M.	396 126
Stone, J.	980 322	Terrell, H. D.	179 40	Traver, A. J.	94 28
Stone, O.	709 204	Terri, F.	84 24	Travis, D. W.	721 209
Stoner, A. F.	394 124	Terry, J. P.	173 48	Travis, D. W.	740 214
Stout, G.	837 238	Terry, T. D., Case, A. and Latkin, C.	1681 349	Travis, A. B.	802 246
Stotts, C. E., Keys, W. E. and Jones, D. W.	76 22	Tewell, L. S.	121 34	Travis, J. E.	984 322
Stossburg, F. W.	460 44	Tharp, C. and G. P.	290 75	Travis, J. E.	900 325
Stout, I.	40 10	Thayer, R. and McClelland, J.	51 13	Treadway, J. W.	162 45
Stout, I. and S.	940 178	Thede, C.	787 226	Treney, N. J. and Sisley, J. L.	1051 343
Stout, S.	909 327	Thielwell, J.	463 137	Trouard, A.	1186 379
Stover, D. C.	520 151	Thomas, J. H. and Mast, P. P.	638 184	Trout, J. H.	400 127
Stover, D. C.	934 207	Thomas, J. H., Mast, P. P. and Harling, T.	649 187	Trowbridge, J. T.	795 228
Stover, A. J.	655 188	Thomas, J. H. and Mast, P. P.	651 187	True, L. W.	793 221
Stover, D. C.	663 161	Thomas, J. H. and J. W.	534 154	Trumble, H. E.	809 231
Stover, D. C.	755 219	Thomas, J. W.	349 108	Trumbo, E.	1234 390
Stover, D. C.	820 235	Thomas, J. S.	486 140	Tucker, A. G.	179 50
Stowe, J. G.	779 223	Thomas, J. K.	72 20	Tucker, A. W.	627 180
Stowe, J. G.	782 225			Tucker, A. W.	1158 369
Strat, R. E.	254 74			Tucker, M.	1189 380
Stockland, I.	653 188			Turley, M.	585 160
Stuebel, W.	39 9			Turley, M.	665 317
Strong, W. H.	793 228			Turley, M.	668 318
Stroud, A. L. W.	121 34				
Stroud, G. F.	533 154				
Stroud, J. C.	743 207				

	<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>
Furmer, J.	18	3	Waddell, J.	124	35	Weir, W. S. Jr.	611	176
Furmer, J. and Smith, T. F.	514	150	Wadsworth, W.	383	122	" "	(R.)	612 176
Furmer, J. B.	601	173	Wadsworth, H.	734	212	Weir, W. S. Jr.	635	183
Furmer, J. B.	604	174	Waffle, C. L.	110	32	" "	(R.)	635 183
Fur-tin, J.	1032	338	Waggoner, G.	783	225	Weir, W. S.	1138	303
Tutbill, T. J.	377	121	Wagner, J. R.	110	32	Welch, S. G.	623	179
Tuttle L. G.	93	17	Wagner, D. S.	845	241	Welch, S.	1044	341
Tuttle, S. D. and Gans, J. H.	692	200	Wagner, J. Jr.	859	245	Welch, S. F.	1128	301
Tyson, J. W.	677	166	Waite, T.	89	26	Weld, H.	481	141
Tweedy, J.	137	38	Walker, W. T.	141	30	Welden, F. N.	762	220
Uehling, T.	394	125	Walker, L. B.	646	180	Wellman, D. L.	847	241
Uhl, C. A.	607	175	Walker, E. and Weed, A. M.	693	201	Wells, H.	22	5
Underwood, A.	267	77	Walker, E. and Platt, J. J.	737	213	Wells, W. J.	732	212
Underwood, J. K.	290	77	Walker, E. and Platt, J. J.	741	215	Wells, C. C.	953	188
" "	(R.)	290 78	Walker, T.	794	221	Wells, C.	724	209
Underwood, J. K.	271	78	Walker, A.	1024	335	Wells, P. F.	780	227
Underwood, J. K. and St. John, G. B.	287	85	Walker, R.	1072	347	Wells, J. T.	1103	355
Underwood, F. J.	933	297	Wall, J. B.	274	80	Welsh, J. C.	1104	372
" "	(R.)	933 297	Wallis, T. R.	827	235	Welti, J.	799	205
Unthank, D.	894	247	Walter, J. A. and Bush- man, E.	116	33	Wentzenberger, L.	823	235
" "	(R.)	894 247	Walton, E. W.	83	24	Wentzenberger, L. and Annis, G. W.	837	239
Unthank, D.	883	254	Walton, W.	83	24	Werles, N.	749	218
Urban, J.	1086	351	Walton, S.	158	44	West, W. B.	253	73
Uter, M. L.	841	239	Walton, E. W.	1047	342	West, B. J.	284	84
Uter, I.	802	240	Walton, F. W.	1133	362	West, R. and Paul, H. F.	519	151
Vail, A.	1024	335	Ward, B. F.	104	31	West, P. L.	679	196
Vanarsdell, W. A.	1125	360	Ward, M. N.	171	48	Wharton, G.	1022	335
Van Bracklin, P. C.	46	12	Ward, W. C.	359	110	Wharton, G.	1034	338
Van Bracklin, B.	524	152	Ward, P. J.	845	241	White, C. L.	112	32
Van Brunt, G. W.	521	152	Warner, J.	7	2	White, M. K.	538	155
Van Brunt, W. A. and Davis, S. E.	542	156	Warner, C.	345	107	Wheeler, E. P.	658	189
Van Buren, J.	877	252	Warren, T. P.	98	10	White, M. F.	534	154
Van Camp, W. W.	818	233	Warren, G. W.	993	191	White, E. J.	666	175
Vandegrift, T. F. and W.	803	230	Warren, G. H.	1167	382	Whitehall, N.	584	169
Vandegrift, T. F. and W.	812	232	Warren, G. H.	1222	390	Whitehall, N.	586	170
Van De Mark, C.	1220	389	Warren, G. H.	1222	390	Whitehall, N.	590	171
Van Gorder, J. L.	1048	342	Warwick, J.	1121	359	Whitehall, N.	707	222
Van Gorler, J. L.	1091	345	Warwick, J. and A. T.	1177	376	Whitehead, J.	379	121
Van Gorler, G. W.	1087	351	Waterman, L. P.	667	176	Whiteside, J. and Cra- bill, H. F.	24	5
Vangundy, E. W.	338	105	Waterman, L. B.	110	176	Whitlock, C.	116	33
Van Horne, R. P.	12	2	Waterman, L. B.	627	180	Whitman, L. M.	10	2
Van Horne, R. P.	28	7	Watkins, W.	105	31	Whitney, S. M.	60	17
Van Horne, R. P.	118	34	Watkins, W. M.	126	35	Whitney, S. M.	931	297
Van Horn, J.	44	11	Watkins, J. T.	1022	335	Whitney, J. M.	589	170
Vanlunavee, J. and Smith, H.	937	298	Watson, W. T.	60	17	Whitney, J. M.	970	319
Van Meter, H.	739	211	Watson, C. H.	345	107	Whitney, J. R. and Noble, C. T.	1175	375
Van Sickle, G. W. and McConaughy, C.	940	299	Watson, C. H.	532	154	Wiard, T.	4	1
Van Sickle, G. W. and McConaughy, C.	943	300	Watson, W. M.	348	108	Wiard, E.	78	29
Van Winkle, G.	1102	354	Watson, W. M.	359	108	Wiard, E.	103	30
Vairin, A. L. P.	254	74	Watson, W. M.	602	325	Wiard, E.	138	38
Vaughn, J. and Cham- ness, E.	389	124	Wattles, H. J.	728	211	Wiard, E.	163	45
Veal, F.	22	5	Wattles, H. J.	735	213	Wiard, E. and Avery, G. C.	815	232
Veber, W. F.	49	10	Wattles, H. J.	744	210	Wiard, E. and Avery, G. C.	1161	371
Verharen, F. T.	853	243	Watt, G.	1010	331	Widman, J.	699	202
Viars, J. A.	708	222	Way, S.	994	326	Widman, J. and Mullica, F.	990	324
Vick, W. H.	129	36	Way, S.	717	268	Wilcox, A.	67	19
Vickery, D. F.	162	45	Way, S.	1014	332	Wilcox, E.	620	179
Volkmann, B.	1000	328	Weaver, W.	155	43	Wilde, D.	469	138
" "	(R.)	1000 328	Weaver, T.	1098	352	Wiles, T. and McGin- nis, J.	632	182
Volkmann, F.	1006	330	Webb, T. W.	471	138	Wilhelm, J.	47	12
Von Phul, H., Jr. and Mallon, J.	144	40	Webb, T. W.	1030	337	Wilkins, A. W. and Esk- ridge, S. T.	102	30
Von Phul, H., Jr. and Mallon, J.	145	40	Webber, N. G.	108	32	Wilkinson, J. E.	539	156
Von Phul, H., Jr. and Mallon, J.	405	128	Weber, K.	166	46	Wilkinson, L. H.	731	211
Vowles, J.	592	171	Weber, H., Jr.	1222	390	Wilkinson, G.	813	232
Vowles, J.	602	174	Webster, H. H.	645	185	Willard, C.	676	165
Vowles, J.	716	208	Webster, H.	683	222	Willey, G. F.	1018	334
Wade, T. I.	1155	368	Webster, L. T.	1045	342	Williams, J. M.	29	7
			Webster, I. T.	1060	345	Williams, B. and Morgan, C. C.	176	49
			Weems, T. P. S.	846	241			
			Weir, W. S. Jr.	931	297			
			Weir, W. S.	939	299			
			Weir, W. S. Jr.	693	174			

	<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>	
Williams, A.	626	180	Wood, J. F.	400	137	Wray, S. A.	60	17	
Williamson, S. D.	352	108	Wood, L. S.	545	157	Wright, I. R.	84	25	
Wilcotton, W.	786	226	Wood, J. A.	848	242	" "	(R.)	84	
Willmot, W.	588	170	Woods, A., Wells, D.,			" "	(R.)	85	
Wilson, F. O.	20	0	and Bates, I.	3	1	Wright, J. R.	135	37	
Wilson, F. R.	83	24	Woods, C. J., and Phil-			Wright, W.	160	44	
Wilson, J. F. and Morrow,			lips, J. A.	102	30	Wright, E. A.	865	247	
R. G.	174	40	Woods, S. E. and Whe-			Wright, E. A.	882	253	
Wilson, M.	474	130	well, A. H.	1183	378	Wright, G. W.	1162	371	
Wilson, W. J.	509	171	Woodward, J. A., S. S.			Wyant, D.	476	140	
Wilson, J. C.	595	172	and Mason, T.	712	200	Yost, G. W. N.	11	2	
Wilson, J.	984	107	" "	(R.)	712	200	Yost, G. W. N.	31	8
Wilson, N.	733	212	Woodward, J. A., S. S.			Yost, G. W. N.	495	137	
Wilson, J. A.	745	210	and Mason, T.	733	212	Young, J.	21	5	
Wilson, W. C.	709	222	Woodworth, S. F.	1110	357	Young, A.	339	105	
Wilson, R.	683	322	Woodbridge, S. H.	1210	386	Young, J.	377	121	
Wilson, G. H.	1138	393	Workman, W. and			Young, W. B.	688	199	
Winfield, H. and Flynn,			Hitchcock, J.	528	153	Young, B. F.	660	190	
W. P.	485	141	" " " (R.)	540	153	Young, B. F.	756	219	
Wingo, B. W.	145	49	Wortell, J. and Ryncer-			Young, B. F.	725	210	
Wing, I.	683	107	son, J. H.	1056	344	Young, S. L.	785	226	
Winters, E. C.	407	128	Wortell, J. and Ryncer-			Young, J.	847	241	
Witter, B.	138	38	son, J. H.	1050	344	Young, P.	904	326	
Witt, J. W.	1221	399	Wortell, J. and Ryncer-			Zane, W. P.	12	2	
Wolcott, G. E.	1182	378	son, J. H.	1063	345	Zeigler, G. W.	53	14	
Wolfe, A. K.	832	237	Wortell, J. and Ryncer-			Zeigler, G. W.	80	23	
Wolfe, T.	989	324	son, J. H.	1069	347	Zeigler, G. W.	517	151	
Wolf, J.	706	204	Wortell, J.	1074	348	Zeigler, G. W.	522	152	
Wolf, L.	978	321	Wortell, J.	1077	348	Zeller, J. P.	734	212	
Wolpert, J.	107	31	Wortell, J.	1112	357	Zimmerman, J.	370	121	
Wood, N. S.	400	128	Worthen, S. A.	1060	345	Zimmerman, C.	472	139	
Wood, J.	531	154	Wotting, R.	478	140	Zocher, C.	142	30	

Pat. Claim		Plate Claim		Plate Claim				
Adams, W. R.	85	23	Brittain, J. T.	125	35	Dana, C. H.	10	2
Adolph, E. A.	103	45	Brook, R. M.	24	6	Darling, M. & Gray, H.	81	24
Agnew, A. & Morrison, W.	30	7	Brooks, W.	134	37	Dart, A.	155	43
Aiken, S. W.	7	2	Brown, G. W.	8	2	Davenport, F. P.	110	34
Aker, A.	186	52	Brown, W. P.	188	52	Davidson, J. M.	93	28
Alden, M.	10	4	Bunn, W. T.	115	33	Davidson, W. J.	184	51
Allen, D. R.	63	18	Burlank, R. I.	91	27	Davidson, W. J.	188	52
Allen, S. I.	174	48	Burke, J. M.	48	13	Davis, J. B.	75	22
Allstott, F. H.	50	13	Burns, J.	40	12	Deal, J. J.	183	51
Andrews, W. J.	64	18	Bushnell, W.	27	6	Deal, J. J.	185	52
Ansley, J. & G. W.	126	35	Butt-n, W. J.	50	13	Deal, J. J.	102	54
Arnold, T.	80	20	Busenger, A.	169	47	Deighton, R., Jr.	50	13
Arnoldt, H. B. & Grimm, J.	78	22	Buslett, J. L.	183	51	Demarce, A. & Vreeland T.	104	45
Arrington, W. J.	122	34	Cain, S. M. & Steffos, W.	41	10	Denmett, D.	52	14
Arthur, I. B.	78	22	Cameron, J. F.	29	7	Dennis, O. H.	0	4
Austin, R. G. S.	187	52	Campbell, A.	82	24	Deweese, G. W.	85	23
Baker, I. B.	13	3	Canfield, A.	71	20	Dickson, A. A.	24	5
Baker, W.	133	36	Canfield, A.	71	20	Dickson, J. H.	85	25
Baker, P. C.	140	39	Cantelon, R.	65	18	Deitz, W. L.	186	52
Baldwin, P. O.	122	34	Carhart, P. S.	44	11	Dillon, T.	88	26
Baldwin, L.	140	38	Carhart, P. S.	49	13	Dodge, T. H.	31	8
Ball, T. J. & Poste, J.	9	2	Carter, N. C.	34	8	Dooley, J.	97	29
Ball, W. M.	66	19	Carter, W. H.	148	41	Dorman, J. M.	95	28
Bancroft, W.	11	2	Caswell, L. J.	59	16	Dorsey, E. L.	54	15
Banks, J.	16	3	Cates, N. A.	72	21	Doss, W. C.	20	4
Barnes, N.	3	1	Cato, W. W.	132	36	Douthitt, S. D.	146	41
Barnes, H.	53	15	Caylor, J.	142	39	Doyle, L. H.	41	10
Barnhart, P. J. A.	148	41	Chandler, H. C.	76	22	Doyle, L. H.	45	12
Barnhart, P.	58	16	Chapman, J.	181	50	Duffner, W.	75	22
Barnwell, A. S.	64	18	Charlton, J.	20	7	Dugdale, J. K.	43	11
Barrier, F. M.	77	22	Chase, J. W.	157	43	Dunnivant, J. U. & Hamp-	155	43
Barr, M. J.	128	36	Chase, J. W.	102	45	son, W. A.	25	6
Barton, C. T.	178	49	Cheatham, W. T.	166	46	Dutton, J. L., Jr.	5	1
Bateman, F.	191	53	Christman, R. D.	165	46	Dysert, W.	87	26
Batson, J. W. & L.	20	4	Christopher, J. G.	27	6	Early, D. S.	93	28
Beach, C. & Brown, T.	37	9	Clark, C.	30	7	Early, D. S.	131	36
Beale, T.	57	16	Clark, C. A.	35	9	Earlywine, N.	20	4
Bean, J. C.	178	49	Clark, C. M.	125	36	Ea-thurn, C.	15	3
Beard, C. A. & Evans, E. E.	120	34	Clark, C. M.	120	36	Eberly, D.	6	1
Beard, A.	191	53	Claridge, J.	145	40	Edwards, I.	5	1
Beeching, G.	6	1	Cleaveland, G. D.	57	16	Elliott, R.	52	14
Belden, H. M.	36	9	Clements, A. P. & Nealey, J. C.	134	37	Emrick, I.	137	38
Belden, C.	52	14	Clifton, J. H.	107	31	Emmert, E.	32	8
Bell, W. C.	147	41	Clifton, L.	86	25	Endsley, J. & Fletcher E.	17	3
Bell, S. R.	189	53	Clifton, W. C.	88	26	Erickson, G. A.	47	12
Belt, A. C.	75	22	Clima, S.	115	33	Ernst, J. W.	75	22
Bemendefer, H. F. & Smith, G.	68	19	Clima, S.	1	1	Erwood, J. C.	106	31
Benedict, I. A.	96	28	Close, B. M.	2	1	Escudier, C.	124	35
Benedict, H.	98	20	Cloyd, H. C.	95	28	Essington, G.	19	4
Benedict, I. A.	117	33	Cluckner, J.	109	32	Estes, C. E.	182	51
Benedict, I. A.	174	48	Cook, S.	106	31	Etnier, O.	66	19
Benner, D. G.	105	31	Coggan, S. L.	8	2	Eustace, M., and Kennan, J. & T.	152	42
Bennett, G. T.	27	6	Cole, N. C.	180	53	Farmer, W. H.	149	41
Benton, I. B.	35	9	Connelly, A.	157	43	Faulkner, J. J.	170	47
Bethen, J. C.	61	17	Conolly, G. W.	94	28	Fink, J.	42	11
Bever, J. T.	51	14	Constant, L.	48	13	Finley, J. R.	49	13
Bishop, C.	9	2	Cooper, N. B.	8	2	Fish, T. P.	54	15
Black, G. G.	13	3	Cooper, G. W.	44	11	Fish, R. A.	143	40
Blackstone, Z. D.	139	38	Cooper, G. W.	68	19	Fleming, J. S.	123	35
Blackstone, Z. D.	139	38	Cooper, C. J.	68	19	Fleming, J. W.	186	52
Blake, J. W.	126	35	Copeland, J.	173	48	Fleming, J. W.	102	54
Blomsten, B. C.	123	35	Copeland, I.	51	14	Fisher, I. G. & Bates, E. M.	81	23
Bloodworth, E. H.	16	3	Copeland, J.	113	33	Flory, C.	74	21
Blue, D. G.	45	12	Cox, M. C.	151	42	Forbes, S. B.	82	24
Boles, A.	99	29	Cox, B. S.	101	30	Forbes, S. B.	93	28
Bolis, V.	114	33	Coyle, H. I.	104	31	Ford, C.	49	13
Borden, T.	1	1	Craltree, J. M.	123	35	Foreman, G. G.	131	36
Bott, W. H.	101	30	Craig, R.	161	44	Forshee, W. J.	14	3
Bower, J.	107	31	Craig, A. J.	26	6	Foster, A. G. W.	159	44
Bowman, D. W.	126	35	Crain, O. A.	81	24	Frampton, J. H.	23	5
Boyd, J. C.	57	16	Criswell, R., Jr.	182	50	Frank, J.	70	20
Briggs, E.	31	7	Cross, B. H.	6	1	Frantz, W.	76	22
Briggs, E.	142	39	Crow, C.	178	49	Freeman E. I.	9	2
Briggs, H. C.	163	45	Curnier, A.	103	30	Fridy, J.	57	16
Brinly, T. E. C.	33	8	Curtis, H. W.	190	53	Gardner, T. E.	67	19
Brinly, T. E. C.	122	34		53	14			

<i>Plate-Claim</i>		<i>Plate-Claim</i>		<i>Plate-Claim</i>	
Garland, T. H.	150 42	Holt, R. C.	100 32	Lobdell, C.	92 27
Garnett, J. M.	2 1	Honrighouse, L.	108 32	Loebl's, J. H.	101 30
Gaston, H. A.	82 24	Hoover, W. C.	90 27	Long, P.	141 39
Geiges, P.	184 52	Hopkins, W. A.	17 3	Lord, I. & Woodman, S.	61 17
Geut'sch, H. J., Sr.	177 47	Houck, J.	16 3	Lowry, W. E.	184 51
George, J.	175 49	Hulber, S.	98 29	Luppen, L.	115 33
Gibson, W. O.	58 16	Huff, E. S.	33 8	Lupton, A.	188 52
Gibbs, J.	15 3	Huff, E. S.	6 28	Lyman, W., Jr.	43 11
Gifford, J.	59 16	Hughes, A.	28 7	Lynch, J. D.	14 42
Gifford, G. L.	81 50	Hunt, M. J.	4 1	Mabbett, F., Sr.	108 32
Gilbert, I. R. & Weston, S. R.	33 8	Hunter, S. C.	180 53	McAllister, T. T. & McDonald, W. W.	166 46
Gilliland, H.	25 6	Hunter, W. and D. M.	100 29	McCart, B. F., Orr, J. W. & K. J.	99 29
Gilliland, D. C.	43 11	Hyde, W. S.	10 2	McConaughey, T. B.	50 15
Gilpatrick, J.	64 18	Ingraham, H.	48 13	McCoy, W. J.	36 9
Gibbler, J.	161 44	Ingraham, H.	50 13	McCurley, A.	179 50
Goff, M. B.	100 32	Ingraham, H.	69 20	McGrew, C.	181 50
Gogel, J. A.	187 52	Isgrigg, N. L.	105 31	McKinny, S. P.	180 50
Goodwyn, G. W.	185 51	Jackson, S. W.	62 17	McMeekin, F. M.	1 8 36
Gooden, A.	65 18	Jackson, J. R.	160 47	McNair, T. F.	1 9 47
Goslee, O. W.	39 10	Jenkins, J. C.	163 46	McNeely, D. & Cady, C. J.	85 25
Goslee, O. W.	150 42	Jennings, J. Jr.	179 50	Magruder, C. B.	14 3
Goslee, O. W.	189 53	Jessup, G.	134 37	Mahon, I. B.	46 12
Goss, F.	104 31	Johnson, W. D.	23 5	Manley, W.	164 45
Gowen, W.	118 34	Johnson, M.	151 42	Maun, H.	14 3
Graham, E. M.	141 39	Johnson, M.	175 49	Mann, H.	18 4
Grant, K. P.	177 49	Johnson, R. A.	187 52	Marsh, 21, C.	135 37
Gregory, E. S.	98 29	Johnson, R. A.	188 52	Marsh, 21, C.	136 37
Green, H. D.	156 43	Johnson, R. A.	190 53	Marsh, 21, C.	133 37
Green, H. D.	162 45	Jones, J. H. and H. P.	91 27	Mason, J.	3 1
Green, T. & Sommer, J.	78 23	Jones, A.	173 48	Mater, D.	87 26
Grolmann, A.	94 28	Kamerer, E. A.	100 39	" " (R.)	87 20
Grove, A. F.	59 17	Keck, P. H.	9 2	Matterson, D. C. & Wilkenson, T. P.	88 26
Guice, T.	117 33	Keczen, J.	41 10	Meikle, T.	127 35
Guptail, D.	73 21	Kelly, C. W.	17 3	Melton, R. M.	21 4
" " (R.)	73 21	Kelly, W. H.	43 11	" " " (R.)	21 4
Guy, J. C.	181 50	Kennedy, A. H.	120 34	" " " (R.)	21 5
Gwynn, C. S.	63 18	King, A. B.	67 19	Messenger, N. & Erwin, J.	170 47
Hall, J. S.	32 8	King, M. D.	132 36	Meyer, J.	45 11
Hall, S.	51 14	King, T. M.	141 39	Meyer, J.	85 25
Hamilton, J. H.	113 33	Kinghorn, T. and R.	29 7	Meheuer, A. D. & Steigmeier, J. W.	96 28
Hand, J. R.	78 23	Kleffel, W.	130 36	Mirz, I.	37 9
Harwell, V.	28 7	Knaapp, J. G. & Libby, S. D.	104 31	Milford, J.	90 27
Harrier, H.	111 32	Knepper, E.	65 28	Mills, I.	110 32
Harris, D.	55 15	Knool, J.	2 1	Mills, I.	159 44
Harrison, A.	5 1	Knoo, S. A.	11 2	Milne, J. O.	152 42
Haskell, J.	63 18	Krils, P.	23 5	Mitroy, J. W.	77 22
Hassenpflug, G. F. & Barnhart, G.	48 13	Krick, L. S.	173 48	Mintz, J. R.	127 36
Hasslock, H. W.	106 31	Kriedle, H. K.	138 38	Monaghan, P.	2 6
Hatfield, G. W.	61 17	Krogh, C. and P. G.	135 37	Montgomery, T. J. & G. W.	158 44
Haverstick, L.	144 40	Krumer, S. A.	74 21	Moody, J. B.	110 32
Hawkes, N.	58 16	Lacy, J. G.	128 36	Moorhead, J. B., Pool, T. A. & G. G.	42 10
Hawley, A. W.	16 3	Ladenberger, F. D.	150 43	Moore, E. B.	156 43
Hawley, J. M.	69 19	Laird, H.	108 32	Morgan, B. S.	3 5
Henton, C. W. S.	38 9	lake, H. J.	35 9	Morgan, L. B.	186 52
Heaton, C. W. S.	47 12	Lamb, A.	52 14	Morter, G. W. & Berry, E.	6 27
Heerman, T.	19 4	Landes, H.	94 28	Morrison, J. E.	53 14
Heiges, J. M.	136 38	Landes, J. M.	112 32	Morris, B. F. & Austin, E. H.	175 49
Heisey, S. L.	70 20	Landon, T. R.	166 46	Morris, E. F. & Green, R. J.	73 21
Henry, A. P.	172 48	Lang, J. B.	133 37	" " " (K.)	73 21
Herr, J. B.	58 16	Lathrop, C. G.	65 18	Morrow, I. J.	100 29
Herrick, S. H.	69 20	Lawbaugh, G. W. & Williams, J.	41 10	Moseley, D.	119 34
Hicks, T.	92 27	Lee, Z. W.	55 15	Muir, W.	92 27
Higley, H.	1 1	Lee, S. F.	167 46	Murphy, T.	26 6
Hildreth, G. W.	40 10	Lees, J. A.	168 46	Murphy, J.	60 20
Hill, P. P.	149 42	Lellet, A. B.	37 9	Muschert, B. F.	142 39
Himman, J. & French, D. S.	30 7	Leland, A.	7 1	Myers, J.	11 2
Holton, R. G.	137 38	Leonard, A.	111 32	Myers, T. H.	172 48
Hoffman, A. & Limebeck, H. W.	42 10	Leonard, A.	149 39	Nauman, F.	150 43
Holleridge, M.	185 51	Leslie, F. M.	190 53	Nauman, E.	163 45
Holladay, J. M.	151 42	Lewellin, M.	139 38	Neff, J. Jr.	79 23
Hood, J. L.	97 28	Lewis, A. J.	95 28	Neff, J. Jr.	114 33
Hollinger, J.	55 15	Lewis, W.	144 40	Neidich, J. & Girvin, F. R.	39 0
Hollinger, J.	67 19	Lewis, J. F.	190 53		
Holmes, W. C.	10 4	Vivezey, J. B.	30 7		
Holmes, J. C.	103 30	Lobdell, C.	80 26		

<i>Plat</i>	<i>Claim</i>	<i>Plat</i>	<i>Claim</i>	<i>Plat</i>	<i>Claim</i>
Nellis, A. J.	191 53	Rigby, A.	100 44	Sohn, J. W.	172 48
Nelson, R.	4 1	Rigell, M. & Ivey, W. D.	31 8	Sonley, F. M.	54 15
Netherland, J. B.	20 6	Rigell, M.	32 8	Spaulding, S. T.	103 30
No-cins, W.	45 11	Riggs, C. M. S.	39 0	Sper, J. A. Jr.	40 10
Nichols, W. D.	50 15	Ridley, C. W. & Rogers, C. B.	146 41	Springsteen, A. B.	130 36
Nielhol, J. W.	91 27	Rivers, W. I.	22 5	Spurgin, W.	149 42
Niece, R. K.	177 49	Roberts, I. C.	154 43	Squire, W. A.	158 44
Nolan, J. S.	124 35	Robson, J.	154 42	Stamm, F.	39 10
No-tman, W.	106 31	Roden, A.	122 34	Stanchfield, D.	171 47
Ochrlin, C.	150 44	Rodger, C.	8 2	Stanchfield, D.	187 52
Omeal, C. W.	107 46	Rodgers, W.	86 26	Stanton, J. P.	71 20
Ostrom, H. W.	72 21	Rogers, W. A.	3 1	Starr, E.	55 15
Otwell, L. M.	179 10	Rogers, M. L.	25 6	Startman, W. H.	88 20
Oxer, W. J.	62 17	Rogers, T. B.	65 18	Stenton, R. S.	15 3
Parcell, P. B.	114 33	Roney, H.	119 34	Stephens, J.	160 29
Parish, G. W.	105 46	Rojumero, P. B.	153 42	Stephens, C.	182 51
Parsons, J. Jr.	4 1	Ross, A. W.	59 16	Stevens, J. C.	163 47
Parson, G. W. and Finney W. S.	121 34	Ross, H. S.	107 31	Stiber, G.	131 36
Parsons, G. A.	104 45	Routt, A. P.	66 19	Stillwell, A. F.	56 15
Patterson, D.	6 1	Routt, A. P.	84 25	Stocking, A. D.	51 15
Pattin, R. F.	97 29	Roy, F.	143 39	Stoll, M.	86 25
Payson, C. E.	42 11	Rowell, J. S. & J.	82 24	Storrs, C. E., Keyes, W. E. & Jones, D. W.	76 22
Fayne, R. I.	112 32	Rowell, E. G., A. D., Rice, J. R. & Seely, S. M.	116 33	Stossberg, F. W.	160 44
Petler, J.	22 5	Rowell, G. J.	120 34	Stout, I.	40 10
Pency, W. C.	131 36	Rowell, M. M.	105 46	Strieby, W.	39 9
Per z, F.	144 40	Rumsey, J. B.	106 41	Stroud, A. L. W.	121 34
Perkins, E. H. and S. D.	107 46	Rumtler, A. & Windeck, A.	77 22	Strowger, W. D.	46 12
Perry, F. L.	66 28	Sattison, J.	118 33	Stryker, J.	12 3
Perry, F. L.	101 30	Sawin, G. W.	71 20	Summer, J.	15 3
Perry, F. L.	124 35	Sawyer, R.	17 3	Svenson, B. J.	133 37
Perry G. W.	161 45	Sayre, C. H.	14 3	Swaney, J. S.	158 44
Perry, A. G.	173 48	Scarbrough, J. L.	159 44	Tabor, B. D.	147 41
Pittingill, C. B.	76 22	Schwanger, C.	90 27	Tart, P. S. & Wilson, G. F.	170 47
Peterson, G. W.	182 50	Schwartz, M.	127 36	Tate, J. E.	66 19
Phillip, J. W.	109 32	Seely, S. F.	70 20	Taylor, J. W.	38 9
Phillips, E.	117 33	Severy, S. F.	89 27	Taylor, C. F.	79 23
Pierpont, J.	107 43	Shalters, M. R.	121 34	Taylor, R. T.	87 26
Pike, E. W.	74 21	Shank, S. B.	123 35	Taylor, A. C.	125 35
Pirde, W. J.	183 51	Shares, D. W.	10 2	Taylor, W.	138 38
Poet, J.	170 47	Shares, D. W.	12 3	Teagle, T. I.	105 48
Poet, J.	171 48	" " " (R.)	13 3	Tea-dale, H. M.	49 13
Poole, T. W.	18 3	Shaw, A.	102 30	Terrill, H. D.	170 49
Pots, J.	62 17	Shaw, J. L.	101 53	Terril, E.	84 24
Potter, E. M.	154 43	Sheller, S. C.	127 36	Terry, J. P.	173 48
Priest, W.	28 7	Shields, F. M.	70 20	Tewell, L. S.	121 34
Priest, W.	38 9	Shields, N. S.	112 32	Thayer, R. & McClelland, J.	51 13
Priest, J. A.	157 44	Shields, F. M.	148 41	Thomas, J. R.	72 20
Proud, H. N.	147 41	Shull, N. I.	2 1	Thomas, J. R.	117 33
Prou, H. N.	176 49	Simpson, J.	102 30	Thorley, T.	86 25
Pyle, I. N.	24 5	Sims, Z. B.	99 29	Thurston, F. G.	146 41
Pyle, I. N.	120 34	S'aggs, N. J.	168 47	Tibbitts, J. B.	111 32
Ralston, A.	5 1	Skinner, H. M.	113 33	Tichenor, E. S.	44 11
Rayle, S. G.	113 33	Slater, D. S.	80 33	Tolle, M.	13 3
Reid, W. B.	115 34	Slaughter, D.	92 28	Tolley, F. W.	132 36
Ream, B. F.	79 23	Slemmons, M. G.	34 8	Tolley, F. W.	154 43
Rebman, J.	116 33	" " " (R.)	34 8	Tolley, F. W.	185 50
Rebman, J.	106 36	" " " (R.)	35 8	Tolhurst, G. W.	18 4
Reed, S.	83 21	Slocum, J.	36 9	Toombs, S. A.	47 12
Reese, F.	136 37	Small, E. B.	184 51	Traver, A. J.	94 28
Reiner, J. K.	56 15	Smith, W. H.	37 9	Triaweck, R. C.	162 45
Kenny, B. W. and N. T.	119 34	Smith, J. S.	91 27	Tumbo, E.	179 50
Kepp, L.	64 18	Smith, W.	97 29	Turner, T.	18 3
Keynolds, F. F.	99 29	Smith, G. H.	113 33	Tuttle, L. G.	63 17
Keynolds, E. D. and O. B.	136 38	Smith, A. C.	125 35	Tweedy, J.	137 38
Rhinehart, W. N. and Felken, H.	61 17	" " " (R.)	125 35	Van Brocklin, P. C.	46 12
Rhoades, A. A. and Tash, W.	105 31	Smith, W. D.	135 37	Vanborn, R. P.	12 2
Rhodes, G. W.	101 44	Smith, A. C.	145 40	Van Horne, R. P.	28 7
Rice, T. and Hitchcock, L. R.	74 21	Smith, A.	143 40	Van Horne, J.	44 11
Richard, J.	1 1	Smith, J.	177 49	Van Horne, R. P.	188 34
Richards, J. M.	185 51	Smith, M.	180 50	Veal, F.	22 5
Richardson, W.	72 20	Snow, M.	27 6	Veber, W. F.	40 10
Rich, J. C.	60 17	Snyder, J.	79 23	Vick, W. H.	129 30
Richter, W.	7 2	Snyder, H.	167 46	Vickers, D. F.	162 45
		Soederlund, P.	170 49	Von Phil, H. Jr., and Malon, J.	144 40

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>		
Von Phul, H. Jr. and Mal-		Wells, H.	22	5	Wilson, J. L. & Morrow, R.		
lon, J.	145	White, C. L.	112	32	G.	174	49
Waddell, J.	124	White-side, J. & Crabill, H.			Wingo, B. W.	145	40
Waffle, C. L.	110	F.	24	5	Witter, B.	138	38
Wagner, J. R.	110	Whitlock, C.	116	33	Wolpert, J.	107	31
Waite, T.	89	Whitman, L. M.	10	2	Wray, S. A.	60	17
Walker, W. T.	141	Whitney, S. M.	60	17	Wright, L. R.	84	25
Walter, J. A. and Bushman,		Wiard, T.	4	1	" " " (R.)	84	25
E.	116	Ward, E.	98	29	" " " (R.)	85	25
Walton, E. W.	83	Wiard, E.	103	30	Wright, L. R.	135	37
Walton, W.	93	Wiard, E. E.	138	38	Wright, W.	160	44
Walton, S.	158	Wiard E.	163	45	Woods, A. Wells, D. &		
Ward, B. F.	104	Wilcox, A.	67	19	Bates, T.	3	5
Ward, M. N.	171	Wilhelm, J.	47	12	Woods, C. J. & Phillips, J.		
Warner, J.	7	Wilkins, A. W. & Eskridge,			A.	102	30
Warren, T. P.	68	S. T.	102	30	Yost, G. W. N.	11	2
Watkins, W.	105	Williams, J. M.	29	7	Yost, G. W. N.	31	8
Watkins, W. M.	126	Williams, B. & Morgan, C.			Young, J.	21	5
Watson, W. T.	65	C.	176	49	Zane, W. P.	12	2
Weaver, W.	155	Wilson, F. O.	6	26	Ziegler, G. W.	53	14
Webber, N. G.	108	Wilson, F. R.	83	21	Ziegler, G. W.	80	23
Weber, R.	166				Zocher, C.	142	39

T. BORDEN, POKESMOUNT, N. H.—*Cultivators*.—*January 13, 1830*. (No claim.)

H. HIGLEY, CANAAN, CONN.—*Cultivators*.—*December 11, 1832*. (No claim.)

I. REICHARD, GILFORD, PA.—*Cultivators*.—*December 16, 1833*.

Claim.—I do not claim as I have described them, but the general arrangement and combination of the whole, which gives to it that character by which it is distinguished from other forms of cultivators or harrows.

SAMUEL CLIME, PLUMSTEAD, PA.—*Cultivators*.—*July 17, 1835*. (No claim.)

J. M. GARNETT, ESSEX, VA.—*Cultivators*.—*February 3, 1836*.

Claim.—The form and fixing of the cast iron No. 3, as shown and described.

S. CLIME, NEW BRITAIN, PA.—*Cultivators*.—*October 15, 1836*. (No claim.)

X. I. SHULL, BENNSALEM, PA.—*Cultivators*.—*November 26, 1836*. (No claim.)

No. 1,543.—J. KNOWLE, BAKERSVILLE, MD.—*Cultivators*.—*April 8, 1840*.

Claim.—The using of several mold boards of cast iron of the ordinary construction of such mold boards, but without land sides, and the so arranging said mold boards as that the point of either of those in the rear shall follow that which precedes it, within the width of its furrow slice, in the manner and for the purpose herein set forth.

No. 1,779.—N. BARNES, FAIRHAMILTON, N. V.—*Cultivators*.—*September 10, 1840*.

Claim.—The described combination of the share, teeth and frame for dressing crops planted in rows, as herein set forth.

No. 2,526.—W. A. ROGERS, SUMMERSVILLE, ALA.—*Cultivators*.—*April 1, 1842*.

Claim.—The manner of arranging the back and side rows of teeth, in combination with the frame and beam as described, for cultivating cotton.

No. 2,647.—A. WOODS, D. WELLS AND I. BATES, ADAMS, N. Y.—*Cultivators*.—*May 28, 1842*.

Claim.—We do not claim and we hereby disclaim any pretensions to an improvement in the corn cultivator frames, basing our claim upon the combination of three teeth of the aforementioned description, to be used with the corn cultivator.

No. 2,650.—JOHN MASON, HADDONFIELD, N. J.—*Cultivators*.—*May 28, 1842*.

Claim.—The hands are entirely a new invention, and their operation is as described in the specification, and for as much as they may be usefully applied to other instruments. I wish all secured.

No. 2,792.—M. J. HUNT, CINCINNATI, OHIO.—*Cultivators*.—*September 30, 1842*.

Claim.—The employment of two sliding bars carrying two cultivator teeth; or two mold boards, which may be shifted and set in the manner and for the purpose set forth.

No. 2,879.—J. PARSONS, JR., DEBLIN, IND.—*Cultivators*.—*December 12, 1842*.

Claim.—The combination of the slotted cross piece and hook-braces, and sliding clips with the forward connecting cross-pieces of the shafts rendering the aforesaid combined plows convertible into agricultural implements of various descriptions, for various purposes, as before described.

No. 3,356.—T. WIARD, EAST AVON, N. V.—*Cultivators*.—*November 24, 1843*.

Claim.—The combination of a pole or shafts with a frame and gang of plows in the manner described, in such a way as that they will have an up and down motion, while all lateral motion is prevented, in the pole or shafts, independent of the plows.

No. 3,406.—R. NELSON, WEST POINT, IND.—*Cultivators*.—*January 15, 1844*.

Claim.—The manner in which I have combined and arranged the bars B, and lever E, so as to effect the contraction and expansion of the cultivator, and in combination with the above, the iron comb F.

No. 4,170.—A. HARRISON, BLISSFIELD, MICH.—*Cultivators*.—*September 2, 1845*.

Claim.—The manner of securing the cultivator beam to one of the cross pieces of the handles or standards, (upon which it turns,) in combination with the manner of fastening and securing the same to each other, and regulating the angle of inclination of the handles and cultivating points, and the position of the beam, by means of the adjusting braces and nuts, constructed and operating substantially in the manner and for the purpose herein set forth, and represented in the different modifications of my new and improved shovel-pointed cultivator.

No. 4,171.—A. RALSTON, WEST MIDDELTON, PA.—*Cultivators*.—*December 20, 1845*.

Claim.—1.—The attachment to the rear of the plow of the ad adjustable hinged shoe, guiding cutter attached thereto, and adjusting brace; all combined and operating substantially in the manner and for the purpose herein set forth.

2.—The attachment to the plow standards and shafts of the lateral adjusting braces, substantially in the manner and for the purpose herein set forth.

No. 4,320.—A. ELDRICK, OPPENHEIMER, N. Y.—*Cultivators*.—*December 20, 1845*.

Claim.—1.—Joining the sockets that receive the standards of the plows to the frame, as herein described, to admit of adjusting in a vertical as well as horizontal direction, as specified.

2.—The method of adjusting the front double tooth by means of the enlarged mortice and wedges, in combination with the journal projections on the standards as described.

No. 4,725.—W. DYSERT, GETTYSBURG, PA.—*Cultivators*.—*August 28, 1846*.

Claim.—1.—The movable and jointed frame for cultivators, constructed and arranged substantially in the manner and for the purpose set forth.

2.—In combination with the shovels of cultivators, the point having a shank thereon, for the purposes above set forth.

No. 4,762.—I. EDWARDS, ORANGE CO. IND.—*Cultivators*.—*September 16, 1846*.

Claim.—The manner of combining the hooks and eyes and clevis, as above described, by which the sides of the plow may be elevated and raised out of the ground, so as to conform to the inequalities and irregularities in the corn rows, without disturbing the other parts of the machine, and without the necessity of raising the entire plow.

No. 5,639.—D. PATTEE, YPSILANTI, MICH.—*Cultivators*.—*June 20, 1848*.

Claim.—The manner of attaching and regulating the front sheath, and in combination therewith the manner of regulating the depth of cultivation, as above set forth.

No. 5,755.—R. CRISWELL, JR., CHAMBERSBURG, PA.—*Cultivators*.—*September 5, 1848*.

Claim.—Giving the sides of a cultivating shovel point, the one a forward and the other a rearward curve, substantially for the purpose herein set forth and of the form represented in the accompanying drawing.

No. 5,859.—G. BEECHING, AUGUSTA, N. V.—*Cultivators*.—*October 17, 1848*.

Claim.—1.—The construction of the quadrangular teeth for cultivators, as described and represented.

2.—The construction of the U shaped iron brace having a clevis formed on its front, and two vertical transverse grooves on its sides, as combined with the parallel timbers A, A, of the frame and adjustable standards, &c., &c.

3.—The extra handles F, F, for raising the cultivators in turning at the end of the furrow or going over stones, as described.

5,998.—A. LELAND, MILTON, PA.—*Cultivator*.—*January 2, 1849*.

Claim.—The construction of the removable land sides with wings, substantially as represented, in combination with shares made without either bosses, loops or other projections upon the sides that would interfere with their being turned bottom side up, and attached to the shanks in that position, or obstruct their action when thus upturned; the land sides and shares so constructed being connected together by one or more screw bolts, or by other analogous means.

No. 6,007.—W. RICHTER, WILLIAMSBURG, IND.—*Cultivators*.—January 9, 1849

Claim.—The corn fender C, in combination with the cultivator teeth A A, and the plow acting in the manner and for the purpose set forth.

No. 6,167.—J. WARNER, READING, PA.—*Cultivators*.—March 13, 1849.

Claim.—Connecting the teeth of cultivators to the frames thereof, by attaching them to blocks adapted to slide in the frame, and provided with screws for regulating their position relatively to one another, and to the draft beam, substantially as described, and in combination with the foregoing.

2.—Connecting the teeth by means of a hinge or other turning joint, and provided with the jointed screw brace, the said joints and screw braces being attached to the sliding blocks to which the teeth are attached, as described.

No. 6,204.—S. W. AIKIN, SPRING HILL, TENN.—*Cultivators*.—March 20, 1849

Claim.—The grooved board (fig. 4) fitted to the scraper and bolted to the beam for the purpose of protecting the plants from falling clods of earth.

2.—The arrangement of teeth in one beam B, of the cultivator, and constructing them of different lengths for the purpose set forth.

No. 6,501.—S. COATS, LAFAYETTE, WIS.—*Cultivators*.—June 5, 1849.

Claim.—The auxiliary cultivator teeth H, in the outer ends of the drag F, as described and represented.

No. 6,511.—GEO. W. BROWN, TYLERVILLE, ILL.—*Cultivators*.—June 5, 1849.

Claim.—The mode of adjusting the position of the shovels D, so as to throw the earth from or towards the rows of corn, or to the right and left at pleasure, by means of the before described combination of the levers L, links N, and, adjustable bars I, with the parallel slotted bars B, and oblique hinged bars Q, as described.

No. 7,403.—C. RODGER, MONTPELIER, VT.—*Cultivators*.—June 25, 1850.

Claim.—The combination of the bar a, with the weed cutter b, in the manner and for the purpose set forth and represented.

No. 8,483.—I. CONSTANT, BUFFALO, HEART GROVE, ILL.—*Cultivators*.—November 4, 1851.

Claim.—The immediate jointed plows in combination with the main cultivating plows as described, for enabling the plowman to plow nearer to, or farther from, the rows at will.

No. 8,850.—T. J. BALL, and J. POSTE, PITTSFIELD, MICH.—*Cultivators*.—April 6, 1852.

Claim.—The construction of the long metallic inclined blades c, c, c, on the after part of the machine, for cutting the sods and lumps and pulverizing the ground, as set forth.

No. 9, 314.—C. BISHOP, NORWALK, OHIO.—*Cultivators*.—October 12, 1852.

Claim.—The manner herein described of constructing the mold boards D, and combining them with the blade E, in the manner substantially as herein specified.

No. 9,754.—PHILIP H. KECK, MORGANTOWN, VA.—*Cultivators*.—May 31, 1853.

Claim.—The combination of the balancing pivot P, with a cultivator constructed as above described, for aiding in turning the same.

No. 9,799.—E. L. FREEMAN, ANN ARBOR, MICH.—*Cultivators*.—June 21, 1853

Claim.—The precise construction of the tooth, and placed in the position as set forth, the vertical part and the horizontal part each having a backward slant.

No. 9,798.—W. S. HYDE, TOWN-SEND, OHIO.—*Cultivators*.—June 21, 1853.

Claim.—The cultivator herein described with adjustable supplementary wings, so constructed as to cultivate the soil near the roots of the plants superficially, and deeper at a distance therefrom, the wings being adjustable to any required angle with the bottom of furrow so as to give any desired degree of inclination to the sides of the ridges or hills, and to change their inclination from time to time to adapt them to the varying stages of the growth of the plant.

No. 10,123.—L. M. WHITMAN, WEEDSPORT, N. Y.—*Cultivators*.—October 11, 1853.

Claim.—The employment of the long inclined spring-wings c, c, secured at their front ends to the share and main standard, and turning upon the pin E', in combination with the mechanical contrivances herein shown, for expanding and contracting the wings, or setting them more perpendicular and nearer together, for the purpose of throwing more pulverized soil against or up to the hills, or setting them less inclined to the horizontal plane, and farther apart, for the purpose of allowing the pulverized soil, weeds, &c., to pass over them into the broad open spaces in the center, the wings, in either case, cutting up the weeds and pulverizing the soil, as fully set forth in the specification.

No. 11,301.—C. H. DANA, WEST LEBANON, N. H.—*Cultivators*.—July 25, 1854.

Claim.—Constructing each of the outermost teeth G, with a horizontal blade projecting more or less outwardly from its flank, and with an upright portion G, bent up at the extremity of said outwardly projecting blade, the edge of said upright portion being parallel, or thereabouts, with the longitudinal direction of the cultivator, for the purpose of cutting up the weeds close to the rows of corn or other plants, and at the same time drawing the weeds away from the rows, and also serving to guide the attendant in directing the cultivator, so as not to injure the plants by too near an approach to them, substantially as herein described.

No. 11,400.—D. W. SHARES, HAMDEN, CONN.—*Cultivators*.—August 1, 1854.

Claim.—Providing the expanding and contracting hoeing wings B, on either side, with cultivator teeth C, projecting downwards on the inside of the hoeing wings of scrapers, as and for the purposes specified.

No. 11,528.—J. MYERS, POWHATAN POINT, OHIO.—*Cultivators*.—August 15, 1854.

Claim.—The triangular wings upon the turned up portion of teeth C, with their land sides so inclined as to have a tendency from the plant when the implement is moving forward, constructed and arranged substantially as hereinbefore set forth, for pulverizing the earth and otherwise facilitating the cultivation of cotton.

No. 11,924.—W. BANCROFT, WHITEFORD, OHIO.—*Cultivators*.—November 14, 1854.

I am aware that a triangular knife like mine has been used before.

Claim.—The method of making the knife ad, stable upon the frame a, by means of standard c, and hinged standards f and g, as set forth.

No. 12,530.—S. A. KNOX, WORCESTER, MASS., assignor to RUGGLES, NOURSE, MASON & Co.—*Cultivators*.—March 13, 1855.

Claim.—Arranging the curved knife, or pointed tooth K, at or near the front end of the beam of the horse hoe, while the main or double hoe C, is disposed at or near the rear end of the beam, and so as to enable the said tooth to be used in the manner and for the purposes as stated; it being employed in a common plow simply for cutting the sod or opening it for the reception of the nose of the plow.

No. 12,571.—G. W. N. VOIST, PORT GIBSON, MISS.—*Cultivators*.—March 20, 1855.

Claim.—The combination of the ad stable scraper E, with the bar and point D, as described, for the purpose of bearing off the row and wrapping up the middle; also, for scraping off the row, and rolling the scrapings over into the furrow opened by the plow, substantially as set forth.

No. 12,600.—R. P. VANHORN, JACKSON TOWN, OHIO.—*Cultivators*.—March 27, 1855.

Claim.—The peculiar elongated rhombus-shaped, wrought iron frame and arrangement of teeth, the front angle bearing a light steel cutter tooth, and the rear angle a large shovel tooth, in the manner and purposes set forth.

No. 12,611.—W. P. ZANE, WOODLICH, N. J.—*Cultivators*.—March 27, 1855.

Claim.—The vine-hooks, f, g, g, arranged in such a manner in relation to the cultivating teeth h, h, h, that the said hooks will remove the vines out of the way of the said cultivating teeth, and allow them to operate upon the soil without injury to the vines, substantially as set forth.

No. 12,744.—J. STRYKER, SIX MILL RUN, N. J.—*Cultivators*.—April 17, 1855.

Claim.—The application or use of front and rear supports or supporters, which not only answer all the purposes of wheels, but regulate and govern the action of the coulters in the ground; constructed and arranged substantially in the manner and for the purpose herein set forth.

No. 16,408.—D. W. SHARES, HAMDEN, CONN.—*Cultivators*.—January 27, 1857.

Claim.—The construction and arrangement of the series of teeth H, on the side bars B, B', in relation to the said bars and to each other, in the manner and for the purpose specified.

No. 1,450.—D. W. SHARES, HAMDEN, CONN.—*Cultivators*.—January 27, 1857; re issued March 12, 1861.

Claim.—A series of coulters teeth H, formed substantially as specified, and arranged diagonally to the line of motion, so as to form a harrow that loosens, mollifies and harrows the soil as described.

2.—The tooth G, at the front end of the center bar, formed with two divergent wings, in combination with a series of harrow teeth H, on the diagonal bar B, B', as set forth.

No. 16,996.—J. B. BAKER, OSWEGO, N. Y.—*Cultivators*.—March 31, 1857.

Claim.—The arc or fender E', in combination with the adjusting bar E, whereby the stalks are laid aside, and the said bar rendered much more durable, the whole constructed as set forth.

No. 17,504.—M. TOLLE, NEWPORT, KY.—*Cultivators*.—June 16, 1857.

Claim.—The bracket c, in combination with the plow beam d, constructed, arranged and operated in the manner substantially as and for the purposes set forth.

No. 17,777.—G. G. BLACK, CROSVILLE, OHIO.—*Cultivators*.—July 14, 1857.

Claim.—In double plows with two beams joined at the clevis, and made to be ad-justed to rows of crops of different widths, is the rod Z, arranged between the beams and provided with a cross bar T, upon which the beams can vibrate when the plows are adjusted as described.

No. 17,707.—H. MANN, SAN FRANCISCO, CAL.—*Cultivators*.—July 14, 1857.

Claim.—The arrangement of shanks g, with rack bars f, l, and scapular plates h, h, in the manner and for the purposes herein set forth.

No. 18,073.—C. H. SAYRE, URICA, N. Y.—*Cultivators*.—August 25, 1857.

Claim.—A combined horse hoe and double mold board plow constructed, arranged and operated, substantially as set forth.

No. 18,330.—W. I. FORSHEE, INDIANAPOLIS, IND.—*Cultivators*.—October 9, 1857.

Claim.—The combination and arrangement of the bar B, the wheels C, the bar H, and levers G, G, G, when constructed and operated substantially as set forth.

No. 18,403.—C. B. MAGRUDER, THOMASVILLE, GA.—*Cultivators*.—October 20, 1857.

Claim.—The polygonal plate D, in combination with the arm C, and beam A, in the manner and for the purposes set forth.

No. 18,714.—J. SUMMER, RALEIGH, VA.—*Cultivators*.—November 24, 1857.

Claim.—The use of the hinged wings D, D, which are adjusted by rack and pinion, when arranged to move in and out over a stationary curved supporting and guide rod E, which has two springs F, F, coiled around it in combination with a stationary circular notched plate J, pivoted tilting lever K, and spring L, which are arranged as shown, substantially as and for the purpose set forth.

No. 18,739.—J. GIBBS, NEWARK, OHIO.—*Cultivators*.—December 1, 1857.

Claim.—A cultivator constructed as herein described, viz: having its frame A, made of wrought-iron in the form shown, with metallic lipped plates j, made to slide longitudinally on the frame, the share s, of the form shown, attached to the plates i, by bolts m, and capable of being adjusted and reversed, all as specified.

No. 18,825.—R. S. STENTON, NEW YORK, N. Y.—*Cultivators*.—December 8, 1857.

Claim.—Uniting two or more plows by an intermediate share, in the manner and for the purposes set forth; said share commencing it or near the point of the plow A, and extending backwards in the direction of the side of the land side of said plow, and receding obliquely at or about the angle of the share of said plow, until it meets the share of plow B, all substantially in the manner set forth.

No. 18,864.—D. EBERLEY, WAINSWORTH, OHIO.—*Sub. to Patents*.—December 22, 1857.

Claim.—Securing the shares E, E, to the beam A, by having the upper ends of them fast D, fitted in the bars C, the bars D, also passing through the loops or eyes F, of the levers G, and secured thereon by keys Z, the bars G, being secured to the beam A as shown, and the whole arranged as and for the purpose set forth.

No. 18,900.—A. W. HAWLEY, MIAMI, OHIO.—*Cultivators*.—December 22, 1857.

Claim.—The movable fender K, adjustable arm J, and movable brace B, with the peculiar shaped share E, when arranged as set forth, and for the purpose of protecting the plants from injury, as specified, and for changing the share and fender to the right or left of the frame, in the manner and for the purpose substantially as specified.

No. 19,248.—J. HUCK, CLINTON, IND.—*Cultivators*.—February 2, 1858.

Claim.—The arrangement of the triangular mold board C, and its adjustable standard B', with relation to beam A, standards B, B', handles H, H, and shovels S, S, in the manner and for the purpose set forth.

No. 19,491.—E. H. BLOODWORTH, THOMASTON, GA.—*Cultivators*.—February 16, 1858.

Claim.—The combination of beam Z, and handles O, with the double feet L, L, and braces C, D, the whole being arranged in the manner and for the purpose set forth.

No. 19,742.—J. BANKS, DAVENPATE, ALA.—*Cultivators*.—March 30, 1858.

Claim.—The construction, arrangement and combination of the body of the implement and its movable teeth, as described, whereby it is readily adapted to properly receive in turn the several scrapers employed for performing the various modes of cultivation specified.

No. 20,207.—L. W. KELLY, BRUNSWICK, OHIO.—*Cultivators*.—May 11, 1858.

Claim.—The combination and arrangement of the teeth beams B, B, with their attaching and adjusting bars E, E, and G, G, and the scrapers M, M, with their attaching and adjusting bars L and G', G', with each other, and with the central beam A, substantially in the manner and for the purposes set forth.

No. 20,260.—J. ENDSLEY and E. FLETCHER, ANGLING, IND.—*Cultivators*.—May 18, 1858.

Claim.—The arranging of shanks D, E, F, and shovels G, G', G'', with saddle L, L, and beam A, when constructed in the manner and for the purposes shown.

No. 20,712.—W. A. HOPKINS, VICKSBURG, MISS.—*Cultivators*.—June 29, 1858.

Claim.—The arrangement of the beam A, transverse beam B, handle C, bolts D, shares E, standard F, and stays G, when the several parts are constructed and united as described, and not otherwise.

No. 21,170.—R. SAWYER, assignor to W. G. BROWN, MEXMOUTH, ILL.—*Cultivators*.—August 10, 1858.

Claim.—My improved weeding and hilling plow, constructed substantially as described, viz: with a coulters A, a root cutter B, adjustable casters G, G, and turning shares L, L, applied to adjustable handles and a plow beam, and made to operate substantially as specified.

No. 21,625.—T. W. POOLE, BRUNSWICK, OHIO.—*Cultivators*.—September 28, 1858.

Claim.—The combination and arrangement of the hinged arms B, B, B, and fixed concentric guards D, D, D, in the manner specified.

No. 22,316.—T. TURNER, MARYSVILLE, OHIO.—*Cultivators*.—December 14, 1858.

Claim.—The combination of the pulverizing mold-board F, and hilling mold-board G, constructed as shown, and attached respectively to the longitudinally and laterally

adjustable beams A, B, the whole being arranged substantially as and for the purpose set forth.

No. 22,437.—H. MANN, EAST ALLENBOROUGH, MASS.—*Cultivator*.—December 28, 1858.

Claim.—The application of each wheel arbor to its wheel and the frame A, substantially as described, viz: so that the wheel may turn on the arbor, and the latter extend into slots; and having fastenings, as explained, whereby not only the wheel may be adjustable with reference to the cutters, but the arbor and its screw nuts may be employed to strengthen the frame, in the manner set forth.

2. The described arrangement of each of the slots of the wheel arbor with respect to the scraper of the periphery of the wheel, whereby the wheel, at whatever attitude it may be placed while its arbor is in the slots, will be at one uniform or proper scraping distance from the scraper.

3. The application or arrangement of the slide bar of the cutter G, so as to operate not only as a scraper to the wheel but as a supporter of the cutter post or rod.

No. 22,520.—GEORGE W. TOLBURST, LIVERPOOL, OHIO.—*Cultivator*.—January 4, 1859.

I support the lower part of the tooth by the braces C C', said braces are secured to the frame at the front end, the back end to the tooth about two thirds the way down. After placing the tooth at the desired point it is secured by means of the hooks E and quadrant F.

Claim.—The arrangement of the flanged quadrants F, pivots H, clamp hook E, braces C' and C, teeth A B, and rigid frame G, in the manner and for the purposes set forth and described.

No. 22,862.—GEORGE ESSINGTON, PLAINFIELD, OHIO.—*Cultivator*.—February 8, 1859.

The invention consists in the arrangement of mould board and centre piece in the combination with the standard point and shares.

Claim.—The arrangement of the mould boards I J, centre piece P, in combination with the coulters or standard H, point L, and shares J J, the whole being constructed substantially as described and for the purpose set forth.

No. 23,470.—THEODORE PEERMAN, SUMNER, TEXAS.—*Cultivator*.—May 5, 1859.

This invention consists in making the hindmost teeth A much smaller or of less width than the front tooth B and intermediate teeth C C, and arranging the same so that they stand out beyond the side edges of the front tooth, and in beyond the inner side edges of the intermediate teeth.

Claim.—1. The screw tapped shoulder or flange *c*, and screw shank *b*, of the cultivator teeth A B C, in combination with the screw nut *d*, having a series of auxiliary screws *f*, in the manner and for the purpose described.

2. In combination with the above the specified arrangement of large and small cultivator teeth A B C, for the purposes described.

No. 23,580.—W. C. HOLMES, BARKSVILLE, VA.—*Plow*.—April 12, 1859.

The interior limb of each beam *a a*, is bent up at right angles inwardly, *b* forming an adjustable brace by being attached; *d* is a hook to be attached when it is wished to change the double into a single stock; *f* is an attached seed dropper, of which *g* is a block through which the axle passes.

Claim.—1. The arrangement of the double beams *a a*, hook *d*, cross adjustable braces *b* and *c*, shanks *b*, and braces *m*, the whole being constructed in the manner described for the purpose specified.

2. In combination with the above, the seed-dropper *f* constructed for operation conjointly, as set forth.

No. 23,880.—MILTON ALDEN, AUBURN, N. Y.—*Cultivator*.—May 10, 1859.

This invention consists in connecting the thills, which are made of one piece with the handles, with the frame by means of braces, in such a manner that the thills pass over the growing crops, and that the same are in a horizontal position, or nearly so, when attached to a horse, and the frame is so arranged that the shares can be adjusted in the same, according to the width of the different rows, and that a larger or smaller number of shares can be secured in the same.

Claim.—The described arrangement and combination of the adjustable shares B, the frame A, and the raised thills C, which are made out of one piece with the handles D.

No. 23,900.—WILLIAM C. DOSS, LAWVA, TEXAS.—*Cultivator*.—May 10, 1859.

This invention consists of a triangular frame with five shares or ploughs and a scraper; three of said five shares have mould boards attached by means of screws, and should be used for hilling plants and keeping the ridge up as desired.

Claim.—The arrangement of the triangular frame A A B, of shares J K, with mould boards that may be taken off at pleasure, scraper X, and cultivators L M.

No. 24,013.—OLIVER H. DENNIS, ALBONA, ILL.—*Cultivator*.—May 17, 1859.

This improvement consists in so connecting the side beams B B with the handles C C, and arranging both the handles and side beams in connection with the central beam A, that the position of the side beams and the consequent breadth of cultivation shall be directly under the control of the holder of the implement, to be instantaneously raised by him at pleasure.

Claim.—The arrangement and combination of the hinged handles C C, hinged side beams B B, and connecting bars H H, in relation to the central beam A, substantially in the manner and for the purpose specified.

No. 24,080.—JOHN W. BATSON and LEONARD BATSON, CHARLESTON, MD.—*Cultivator*.—May 24, 1859.

It is a concave point applied in a similar manner to the shovel P, this point following in the rear and slightly to one or the side furrow made by the point F; it is unnecessary that a cutter should be applied to it. It is made with the four points *a a'*, *b b'*, each of which may be used in turn for entering the ground as the others become dull and worn.

Claim.—The arrangement of the reversible concave shovel point H reversible shovel point F and its cutter G, with beam A and standards C and D, the whole being constructed and applied in the manner described, for the purpose specified.

No. 24,203.—CELESTIN EASTBURN, SPENCER COUNTY, KY.—*Cultivator*.—May 31, 1859.

I first use the machine as a seed coverer. In this operation the wheel F is indispensably necessary, the rake H is taken off, it being of no use in seed covering. When I have used my machine as a seed coverer, I remove the wheel F by drawing out the knees G, and attach the rake H, for the purpose of raking the clois or trash of any kind that may lodge about the young plants. The rake is supported eight inches above the ground by the spring, and works on a spine of fifteen inches horizontally, making it convenient to strike anywhere necessary. The rake is taken off by removing the block J.

Claim.—The arrangement of the ploughs D, wheel F, block J, spring P, and rake H, as set forth and described, for the purpose specified.

No. 24,227.—REUBEN M. MELTON, CRIGGERSVILLE, VA.—*Cultivator*.—May 31, 1859.

Claim.—1. The combination of the adjustable links with the adjustable slide, arranged substantially as described, for the purpose of adjusting the distance between the ploughs.

2.—In combination with the curved plough beam, the coulters constructed and arranged substantially as described, whereby the draft of the side ploughs is regulated, by sliding the coulters on the beam, and firm support given to the coulters in passing through compact soil.

No. 4,875.—REUBEN M. MELTON, CRIGGERSVILLE, VA.—*Cultivator*.—Patent No. 24,227, May 31, 1859.—Re issued April 16, 1872.

Claim.—1. The adjustable links *h*, and adjustable slides *i*, constructed substantially as described, and arranged to operate with and for the purpose of adjusting the distance between the plow-beams, as set forth.

2. The coulters D, constructed substantially as described, with shovels or plows F, when both coulters and shovels are independently and freely adjustable up or down the curved beams, so as to run deep or shallow, or at different depths, as set forth.

No. 6,379.—REUBEN M. MELTON, CLEVELAND, VA.—*Cultivators*—Patent No. 24,227, May 31, 1859; reissue No. 4,875, dated April 10, 1872; reissued April 13, 1875; extended seven years. [Filed January 4, 1875.]

Brief.—The beams are adjustable laterally by means of links, and by slides keyed to the beams, which are curved and receive adjustable plows. A couler of novel form is attached to the center beam, and serves to steady the plows, and hold them in their work.

Claim.—1. The adjustable links *h* and adjustable slides, constructed substantially as described, and arranged to operate with, and for the purpose of, adjusting the distance between the plow beams, as set forth.

2. The shovels *F*, freely adjustable to any point up or down on the curved beams, so as to run deep or shallow, or at different depths, as set forth.

3. The couler attachment *D*, constructed substantially as described, and adjustable up or down the curved beams, for the purpose specified.

4. The couler attachment *D* and shovels *F*, operating in combination with the curved beams, substantially as and for the purpose specified.

No. 24,348.—JOHN YOUNG, JOHET, Ill.—*Cultivators*—*Jan.* 7, 1859.

This invention consists in the combination of the screw extension *A*, on the bottom of the standard *B*, with the oblique slotted castings *C, C*, attached to the front side of the cross bar *D* of the beam *E*; also, in the combination of the stationary vertically perforated bar *G*, with the adjustable rake or harrow *H*, arranged on a cultivator, whereby the harrow teeth can be cleared of all obstruction by raising the rake or harrow, so that its teeth rise through the vertical perforations in the transverse bar.

Claim.—1.—The combination of the screw extension *A*, on the bottom of the standard *B*, with the oblique slotted castings *C, C*, attached to the front side of the cross bar *D*, of the beam *E*, substantially as and for the purposes set forth.

2.—The combination of the stationary vertically perforated bar *G*, with the adjustable rake or harrow *H*, arranged on a cultivator, substantially as and for the purpose set forth.

No. 24,486.—JAMES PEELER, TALLAHASSEE, FLA.—*Cultivators*—*June* 21, 1859.

Claim.—The arrangement of the bars *D* and *E*, beam *A*, handles *B B*, and standard *C*, the bar *E* forming a brace, a couler, and a landside, and bars *D* being provided with an inclined or tapering point, on which any style of blade may be secured, the two bars being pivoted together at *a*, and the whole operating substantially in the manner and for the purpose specified.

No. 24,507.—FRANKLIN VEAL, HARTFORD, TEXAS.—*Cultivators*—*June* 21, 1859.

Claim.—Arranging the dovetailed projections *i*, at equal distances from the cutting edges of the shears, in combination with the slots *j* and recesses *k*, in the arms, and for the purpose of securing the shares to the arms, and to render them reversible, substantially as described.

No. 24,514.—HENRY WELLS, WALTON GROVE, Ill.—*Cultivators*—*June* 21, 1859.

Claim.—The arrangement of the share *F*, mould boards *G, G*, rods *H H*, and *I I*, the latter having the parts *d d*, formed on them, the said parts passing respectively through the bar *C* and beam *A*, thus making a very firm structure, in the manner and for the purpose set forth.

No. 24,580.—WILLIAM I. RIVERS, SUMNER DISTRICT, S. C.—*Cultivators*—*June* 28, 1859.

This plough is to enable the planter to thoroughly pulverize the land, breaking up the clods of earth, at the same time tearing out grasses of all kinds, being more especially adapted to the joint grass, with which some cotton lands are infested, and at the same time making the drill in which the cotton is to be planted.

Claim.—The handles *1*, helves *2*, beam *3*, foot bar *10*, plough *20*, harrow *45*, roller frame *6, 7*, and roller *8*, when the whole are arranged for joint operation, as described and for the purpose set forth.

No. 24,934.—PHILIP KRIBBS, JEFFERSON, PENNSYLVANIA.—*Cultivators*—*July* 5, 1859.

In the drawings, *A A* is in the centre and *B B*, the side bars, which are framed into the front bar *C*, with their ends fastened together by the bolt *D*, the whole making a strong frame, to which the other parts of the cultivator are fastened.

Claim.—The arrangement of the *A B C*, metal frame *G*, handles *H*, shafts *E*, teeth *F*, bar *I*, and shafts *F*, as described, for the purposes set forth.

No. 25,403.—J. H. FRAMPTON, HOPIWELL, OHIO.—*Cultivators*—*September* 13, 1859.

This invention consists in a novel way of attaching the shares to the plough, whereby they may be readily adjusted nearer to each other or further apart, or higher, or lower, as the nature of the work may require.

Claim.—The adjustable share standards *G G*, attached to the parallel adjustable bars *D D*, which are secured to the beam *A* by the bars *E E*, the whole being combined and arranged substantially as and for the purpose set forth.

No. 25,416.—W. D. JOHNSON, RAEBURN, N. C.—*Cultivators*—*September* 13, 1859.

This invention consists in a peculiar mode of constructing the frame of the implement, whereby, in combination with double shares, the same may be readily adapted for the cultivation of various crops.

Claim.—The bars *A A*, curved so as to form handles at one end, and having horizontal oblique positions to form the body of the frame, the draft bar *C*, and guide or retaining bar *D*, the front ends of the bars *A A*, being connected or secured together by the collar or loop *B*, in combination with the double scraper *F*, substantially as described and for the purpose set forth.

No. 25,754.—B. S. MORGAN, DEWITT, IOWA.—*Cultivators*—*October* 11, 1859.

By throwing the hand lever *f* in the direction of the arrow *1*, the levers *h h i*, are turned so as to come to a more upright or vertical position, and the frame *A* is raised; when the hand lever *f* is thrown in the direction of arrow *2*, the frame *A* is lowered. The raising as well as the lowering of the frame is done parallel to the ground.

Claim.—The arrangement and combination of the side wings *D* and wheels *H H I I* of a cultivator, with the levers *h h i*, bar *d*, rods *e*, and hand lever *f*, substantially as and for the purpose specified.

No. 26,121.—ISAAC S. PYLE, DEWITT, IOWA.—*Cultivators*—*November* 15, 1859.

This invention consists in an improved mode of adjusting the wings of the cultivator, and also the central beam so that the wings may be spread out or contracted.

Claim.—The arrangement and combination of the curved pivoted wing rods *A A*, curved adjustable central rod *C*, looped sockets *F*, vertical movable standards *J*, rods *M*, traces *L*, and handles *E*, as and for the purpose shown and described.

No. 26,110.—J. WHITESIDE and H. F. CRABILL, FULLER'S CORNER, N. Y.—*Cultivators*—*November* 22, 1859.

This invention consists in arranging the curved shovel beams in such a manner that they can be used with their concave sides facing each other, and also reversed, bringing their convex sides towards each other, whereby the cultivator may be adapted to different kinds of work. It consists also in combining with said hinged and curved shovel beam a cross-bar with a gauging wheel in such a manner that, by shifting said bar, the width of the shovel beams is adjusted, and that the depth to which the shovels cut is governed by said gauging wheel.

Claim.—1.—The arrangement and combination of the hinged curved shovel beams *A A*, cross-bar *D*, and gauging wheel *F*, substantially as and for the purpose set forth.

2.—The curved draft beam *B*, arranged as described, in combination with the cross-bar *D*, handles *G*, and rod *h*, substantially in the manner and for the purpose specified.

No. 26,250.—A. A. DICKSON, ANDERSON, S. C.—*Ploughs*—*November* 20, 1859.

This invention consists in an improved mode of constructing the plough, whereby the same is rendered simple and capable of being adapted to various kinds of work.

Claim.—The arrangement of the peculiar shaped bar *D*,

with the shares E F and G, beam A, and handles C C, substantially as described for the purpose set forth.

No. 20,503.—RHODOM M. BROOKS, GREENVILLE, GA.—*Plow*.—*December* 27, 1850.

A is the plow hoe or scraper; which is so arranged that it can be turned and sharpened by its operation in ploughing; B is the tuning wing or share, secured to the plough beam I by clamps U and screw bolt C; D is a piece of iron attached to the plow foot and extending back to protect the rod F from damage; E E are the nuts and washers on the end of rod F, by which the plow hoe A is confined.

Claim.—The arrangement of beam J, screw foot F, notch T, plow hoe A, opening P, mould boards, O, openings W, nuts E E, holes I I I, constructed as described for the purpose set forth.

No. 20,581.—HENRY GILLIARD, MOUNT HOPE, WIS.—*Cultivator*.—*December* 27, 1850.

This invention consists of a circle fastened permanently to the beam, and provided with holes for the bolts which hold the jointed bars carrying the cultivator teeth, which bars are hinged to the beam in the centre of the circle, so that they can be vibrated and arranged to stand forward opposite to or behind the centre of the circle.

Claim.—The arrangement of the permanent circle G and jointed bars J J, when the whole is constructed for joint operations, as set forth.

No. 20,606.—PETER MONAGHAN, CAMAK, GA.—*Cultivator*.—*December* 27, 1850.

Claim.—In combination with the hinged frame of a cotton cultivator, the spring H, which is secured to the tongue of said cultivator for the purpose of automatically raising the rear end of the machine, when the same is released by the operator, substantially in the manner described.

No. 20,648.—MORGAN L. ROGERS, SPRING, PA.—*Cultivator*.—*December* 27, 1850.

The blades are attached to the plow frame as follows: Two bolts 7 and 8 pass through the blades and frame, and also through a flat bar of iron a, and the plough blades by the screw bolts are held firmly in their places; by this arrangement the blades are raised or lowered, or turned out as desired.

Claim.—The arrangement of the hooked and double curved central bar C N, curved slotted arm F, wheel G, handles H I, sliding plates E D, frame pieces A B, and cross piece D, substantially as and for the purpose shown and described.

No. 20,676.—JOSEPH L. DUTTON, JR., CHERRY LAKE, FLORIDA.—*Plough*.—*January* 31, 1860.

This invention consists in the arrangement of devices forming a plough, which can be altered to cut deep or shallow furrows, and the handles of which can be easily adjusted.

Claim.—The arrangement of the beam A, notched adjusting bar I, handles D, cross bars C, hooked stipe H, and wedge E, with the notched heel C, and notched and slotted toe B, the whole of the parts being constructed for joint adjustment as set forth.

No. 27,144.—THOMAS MURPHY, CINCINNATI, OHIO.—*Cultivator*.—*February* 14, 1860.

A is the beam provided with the clevis B, by which it is drawn. It is mortised to the standard C, and both have connection with the bracing standard D, to which the handles E are connected. F is a common shovel plough share connected to the standard C and braced to the beam A by G. H I are staples through which the adjusting rods of the mould boards and cultivator frames respectively pass for fastening.

Claim.—The described arrangement of the plough frame A C D E F, detachable mould boards K, and detachable cultivator frames N O, the whole being constructed and operating in the manner and for the several purposes set forth.

No. 27,370.—JIMSEY B. NETHERLAND, LOUISVILLE, GA.—*Cultivator*.—*March* 6, 1860.

The lower extremities of the standards B C have points entering recesses of corresponding size and shape in the rear sides of the shovels or ploughs which are attached to them. The upper extremities of the

standards are provided with two or more bolt holes, for the purpose of adjusting their position according to the character of the work to be done.

Claim.—The arrangement of the peculiarly-shaped branched standards B C, constructed as described, in combination with blades or shovels, constructed as described, and attached to the standards in the manner specified.

No. 27,402.—F. O. WILSON, MOUNT OLIVE, N. C.—*Cultivator*.—*March* 6, 1860.

As the two side ploughs loosen the earth at the roots of the corn or cotton, and destroy the weeds or grass, the double mould turn plough advances and fills up the furrows created and leaves a shallow furrow in the centre of the two rows.

Claim.—The double mould turn plough F, and the side turn ploughs H H, in combination with the beam A, middle stock E, cross frame D, and side stocks G G, when said beam A and middle stock E shall be brace I and supported by the stay C, and the other parts constructed and arranged substantially as and for the purpose specified.

No. 27,406.—ROBERT CRAIG, STATE LINE CITY, IND., assignor to himself and J. D. LUDLOW, of said STATE LINE CITY.—*Cultivator*.—*March* 6, 1860.

This invention consists in the employment of bevel keys, interposed between the feet of the implement and the shares, for the purpose of adjusting the latter in oblique positions to the right or left, so as to throw the earth outward from the implement or inward toward its centre, as circumstances may require.

Claim.—The employment or use of the curved bevel keys F, interposed between the shares and their feet, and secured by the same bolts d which attach the shares to the feet, as and for the purpose specified.

No. 27,614.—WM. BUSHNELL, EASTON, PENN.—*Cultivator*.—*March* 27, 1860.

A is a beam, to the back part of which a plough a is attached; B B are two beams, having similar ploughs b b attached to their back ends. These beams are connected by the joints c to the end of the bars C, which pass loosely through the beam, and are pivoted to it at about their centres. The bars are allowed to turn in the beam, the mortises through which they pass being sufficiently long to allow it. In the outer part of the beam A, a pulley, D, is fitted horizontally. This pulley has a toothed periphery, and a chain, E, passes around its outer side, the ends of the said chain being attached to the front ends of the beams B B.

Claim.—The arrangement of the central beam A, movable bars B B, pivoted connecting bars C C, adjustable chain wheel, D, chain E, and ploughs, b, as and for the purpose shown and described.

No. 27,659.—MARK SNOW, AUBURN, MISS.—*Cotton Cultivator*.—*March* 27, 1860.

This invention consists in attaching two scraping mould boards, d, to the front part of the body of the plough in such manner that one shall travel on each side of the row to scrape the ridge and throw the scrapings into the centre of the furrow, where they will be covered by the earth thrown upon them by the rear part of the scraping mould boards; two hilling mould boards, e, are secured to the rear of the frame, and are so arranged as to cut deeper than the scraping mould boards and to throw the earth inwards upon the plants after the ridge has been scraped; shield plates or fenders, g, are secured to the rear end of the plough beam and project downwards on each side of the row.

Claim.—The combination of the scraping mould boards d, hilling mould board e, and fenders g, when arranged and operating, substantially as described.

No. 27,770.—JOHN G. CHRISTOPHER, BYRON, ILL.—*Cultivator*.—*April* 16, 1860.

Claim.—In combination with the ploughs C C D, the adjustable bar p, provided with the roller t, and arranged to permit of the adjustment, as shown, for the purpose set forth.

No. 27,962.—G. T. BENNETT, MOUNT OLIVE, N. C.—*Corn and Cotton Cultivator*.—*April* 24, 1860.

Claim.—The curved beam B as constructed, in combination with the straight beam A, side beam c, braces d and e, side and double turn ploughs F and G, and cotton-scraper

D, the whole being arranged in relation to each other substantially as and for the purpose set forth.

No. 28,487.—ALLEN HUGHES, GRAYDON, OHIO.—*Cultivating Ploughs*.—May 20, 1860.

The object of this invention is to connect the shanks carrying the shovels to the frame or beams of the cultivator in such a manner that the shovels may be raised or depressed, and inflexing the shovels in the shanks and carrying them rigidly to the beams by sector bars having pins passing through them and through the beams.

Claim.—The shovel cultivator described, capable of both a lateral and a vertical adjustment, when made in the manner and by the combined arrangement described and represented.

No. 28,523.—R. P. VAN HORNE, GRAYDON, OHIO.—*Cultivators*.—May 29, 1860.

This invention consists in a novel arrangement of tooth bars attached to a plate, the latter being connected to a bar provided with adjustable wheels, whereby the desired end is obtained.

Claim.—The arrangement of the plate A, draught bar B, tooth or share-bars K, and truck or wheel bar D, substantially as and for the purpose set forth.

2.—In connection with the plate A, draught bar B, share bar K, and truck or wheel bar D, the transverse bar M, provided with teeth or shares N, substantially as and for purpose specified.

No. 28,576.—VINES HARWELL, WALKER COUNTY, GA.—*Cultivators*.—June 5, 1860.

This invention relates to a new and improved arrangement and construction of the different parts of a cultivator, whereby it may be readily adapted either for one or two horses, and when for one, either with or without shafts.

Claim.—The peculiar arrangement and combination of the removable shafts C, centre beam A, and guide G, with a cultivator; the whole being constructed and operated in the manner, and for the purposes set forth.

No. 28,601.—WHITMAN PRICE, WAYNE COUNTY, N. C.—*Ploughs*.—June 5, 1860.

This invention consists in the construction of the mould-board and bar, and attaching the same to a circular beam.

Claim.—The arrangement of A, the circular beam B, the standards, C, the shovels, D, the main beam, e, the handles, a, the screw on the upper end of the standards, and b, the screw nut, combined, and operating as described, and for the purposes set forth.

No. 28,831.—JOSHUA F. CAMERON, LIVINGSTON COUNTY, MO.—*Cultivators*.—June 26, 1860.

This plough consists of a main helve, A, through main beam B, to which is attached the heel bar, C, and braces, D E, so constructed, that any form of share, right or left, can be fastened on the main helve by means of a screw through the socket into the helve upon which the share is fastened; and by unscrewing or moving the front brace and changing the hind bolt in the hind brace, the beam can be raised or lowered to any pitch; and by means of holes in the different helves, the bar and braces, and beam B, can be hoisted or lowered at the will of the operator.

Claim.—The described arrangement and combination of the rotary cutters Z Z, beam B, bar C, helves A F G H I K and L, cross bars M N, and braces D E O P Q R S T U V, in the manner and for the purposes set forth.

No. 28,833.—JAMES CHARLTON, ALLEGHENY, PA.—*Cultivators*.—June 26, 1860.

Claim.—The arrangement of the flanged bar e, bent so as to form the segment of a circle, and furnished with slots a and f, the bar point or mould board and scraper being attached to said flanged bar, arranged, constructed, and operated as described, and for the purpose set forth.

No. 28,870.—THOMAS KINGBORN and ROBERT KINGBORN, MORGAN, OHIO.—*Cultivators*.—June 26, 1860.

A, shows the central draft beam, the front end of which is curved up, as at A', and is supported at its front end by a castor wheel, E, whose standard, F, passes up through the clevis, G, and the end of the draft beam, A; the clevis is fastened to the standard F by a set screw, whereby the end A can be sustained on the wheel E, at any

desired height, while the clevis and wheel can freely turn to follow in the direction of the team, although the team turns abruptly.

Claim.—The combination of the adjustable side pieces B B, with their teeth H, and adjusting rear supports D D, with the central beam A, hooks e e, and castor wheel E, arranged to operate in relation to each other substantially as and for the purposes set forth.

No. 28,920.—JOHN M. WILLIAMS, GREENVILLE, GA.—*Cultivators*.—June 26, 1860.

Claim.—The arrangement of the beam A, the two collateral beams B B, the graduated bars a a, the handles M M, the supports F F, and the bar D, when the said bar is secured to the main beam and rests upon the collateral beams, and when the several beams are provided with vertical and horizontal mortises for receiving the bars and shanks, as is fully set forth, and for the purpose specified.

No. 28,968.—COUNCIL, CLARK, ANDERSONVILLE, GA.—*Cultivators*.—July 3, 1860.

A brace, consisting of two straight and parallel ends e e, and an arched connecting part c, is fastened to the plough beam d, by means of the bolts e e, passing through both ends of the brace. The upper end of the plough shank a, is also secured to the rear end of the plough beam by the bolt e, while the lower part of the shank a, is bolted to the brace c at d.

Claim.—The arrangement of the arched brace e e c, in combination with the plough beam d, standard a, and runner f, in the manner and for the purposes set forth.

No. 29,043.—ALLEN AGNEW, CHESTER CO., and WILLIAM MORRISON, CHADDS FORD, PA.—*Cultivators*.—July 10, 1860.

This invention consists mainly in the shape of the teeth and the manner of hanging them to the frame, so that the soil will freely rise up and fall behind them without clogging; and so that the teeth may be let down on the frame or its branches as they are worn away by use.

Claim.—A cultivator composed of a stem and branches and teeth projecting from the ends thereof, and secured and made adjustable thereon, as set forth, the whole being constructed and arranged substantially in the manner and for the purposes described and represented.

No. 29,087.—JOSEPH B. LIVEZEV, Clark'sboro, N. J.—*Cultivators*.—July 10, 1860.

This invention consists in the arrangement and combination of a sliding head with the side wings, operated with a hand-lever and fastened to both wings in front, together with two pivoted links, which connect the rear parts of said wings to the beam in such a manner that the said wings on being expanded or contracted, receive, at the time, a longitudinal sliding motion.

Claim.—The arrangement of the sliding cross head D, pivoted links E, and hand-lever F, in combination with the side wings C and beam A, constructed and operated substantially as and for the purpose specified.

No. 29,127.—JOSEPH HINMAN, WATERTOWN, MASS., and D. S. FRENCH, MARIETTA, GA., assignors to themselves and NATHAN KING MIDDLESEX, MASS.—*Cotton Cultivators*.—July 10, 1860.

This invention consists in the use of a series of runners or plates provided with cutters, or shares, and attached to a suitable framing a requisite distance apart, and in such a way that a certain degree of vertical adjustment will be allowed them, and the plants thinned out by the cutters by drawing the implement transversely over the drills in which the plants are growing.

Claim.—The employment or use of a series of plates B, provided with cutters C, and attached to a frame A, substantially as shown, for the purpose set forth.

2.—Attaching the cutters C to the plates B, by means of tangs h, secured by set-screws in semi-circular bars g, on the plates directly over slots f, therein, as and for the purpose specified.

No. 29,136.—EPHRAIM BRIGGS, MEDINA, OHIO.—*Cultivators*.—July 17, 1860.

Claim.—The arrangement of the main beam A and the side beams or wings C C, the posts D D D D, the shovels E E E E, bars F F F F, bolts G G G G G G, changeable

braces H H, handles I I, and round K, in the manner and for the purpose set forth.

No. 20,147.—THOMAS H. DODGE, WASHINGTON, D. C.—*Cotton Cultivators*.—July 17, 1860.

As this machine is drawn forward by the beam A the plough-shape attached to E turns the earth towards the plants, while the guard or shield F prevents it from falling on and covering up the same. The couler H, which runs in advance of the shield F and the plough-scrapes the top of the earth away from the plants, thus cutting up the weeds while the plough which follows turns back the earth towards the plants.

Claim.—In combination with a plough or cultivator, the self-adjusting rotary shield F, arranged to protect the young plants, as described, and as shown in Fig. 1.

2.—In combination with the plough or cultivator, the self-adjusting guard couler H and rotary shield F, as and for the purposes set forth.

No. 20,160.—MARK RIGILL, and W. D. IVEY, DAWSON, GA.—*Cotton Cultivators*.—July 17, 1860.

A guard wheel G is attached to a brace or plate H on a fulcrum d, the brace or plate H being pivoted at the end e, while its other end is perforated with the holes f f, whereby it can be adjusted to set the wheel G up or down, by means of the bolt g, which passes through the beam A and one of the holes f in the plate H.

Claim.—The arrangement of the guard wheel G, plate H, adjusting rod F, with the beam A, and standard E, as and for the purposes set forth.

No. 20,211.—G. W. N. YOST, of YELLOW SPRINGS, OHIO.—*Cotton Cultivators*.—July 17, 1860.

Claim.—The combination and arrangement of the body of the implement and its movable ploughs B, scraper E, and standards G, constructed as described, whereby it is readily adapted to receive, in turn, the several ploughs and scrapers, in order to perform the various modes of cultivation specified.

No. 20,308.—EZRA EMMERT, FRANKLIN GROVE, ILL.—*Cultivators*.—July 31, 1860.

This invention consists in the combination, with an ordinary shovel plough or cultivator, of a wheel, rotating on the side of the plough, and provided with hoos on its edge, for the purpose of preventing the plough from covering the growing plants as it is drawn forward, and also for the purpose of giving steadiness to the plough and enabling the attendant to guide it more readily, and, at the same time, for the purpose of digging up and pulverizing the soil around the roots of the growing plants.

Claim.—The combination, with an ordinary shovel plough or cultivator A, of the rotary wheel F, furnished with hoos h, and operating in the manner and for the purpose specified.

No. 20,500.—JOHN S. HALL, WEST MANCHESTER, PA.—*Ploughs*.—August 14, 1860.

This invention consists in uniting the standard of a plough to the beam by means of a ratchet and flanged plates, which admit of several adjustments that are very advantageous in implements of this kind.

Claim.—Uniting a plough standard to a plough beam by means of ratchet and flanged plates arranged on the sides of the beam and standard, so as to admit of folding up, substantially as described.

No. 20,618.—MARK RIGELL, DAWSON, GA.—*Cultivators*.—August 14, 1860.

The stocks B B are pivoted or hinged to the beams A, so that, by means of the rods F and the nuts c, they can be set at different angles with the beams A. The shackle G performs the office of a self-adjusting connection to the beams A, that of a draft piece to the machine, and also that of a safety draft spring, to prevent sudden strains on the machine.

Claim.—The combination of the spring shackle G, and adjusting bar E, with the beams A A, and stocks B B, arranged and operating in relation to each other, as and for the purpose set forth.

No. 20,780.—ENOCH S. HUFFE, ZANESVILLE, OHIO.—*Cultivators*.—August 28, 1860.

The arms e c are perforated with numerous holes, which pass across a hole in the beam b, and as these arms are shifted by turning them around the first pivot k, they are secured in place by the key l. The arms e c, are also

pivoted to cross beams h h, which beams are also pivoted to the main beam b. By virtue of the two pivoted connections with the main frame b, the beams e c and ploughs may be shifted into a great variety of positions in relation to the centre beam b.

Claim.—The combination of the segmental arcs e c, plough beams h h, and pivoted cross beams h h, substantially in the manner and for the purposes set forth.

No. 20,870.—JAMES R. GILBERT, STARKVILLE, and STEPHEN R. WESTON, DAWSON, GA.—*Cultivators*.—September 4, 1860.

Claim.—The arrangement of the handles, beams, hinged standards, and hinged curved and notched braces, by which we are enabled to change the plough from a double beam adjustable cultivator plough to two single beam ploughs, substantially in the manner described.

No. 30,110.—T. E. C. BRINLY, LOUISVILLE, KY.—*Cultivators*.—September 25, 1860.

Claim.—The combination and arrangement of the plough beam A, provided with removable feet or standards D C F, and the two pairs of adjustable rings or arms H H N N, provided respectively with the shares J, and teeth L, as and for the purposes set forth.

No. 30,205.—N. C. CARTER, UNION CITY, IND.—*Cultivators*.—October 9, 1860.

This invention consists of a peculiar device for the purpose of regulating the distance between the cultivator teeth, for the purpose of enabling the same instrument, or implement, to be used successively on different crops where the distance between the drills is various.

Claim.—The arrangement of rods e c, rods e c, with the hooked heads d d, and terminal screw bolt d', in connection with rods g and h, and screw link i, all constructed and operated in the manner as and for the purpose set forth.

No. 30,357.—MATTHEW G. SLEMMONS, CADIZ, OHIO.—*Ploughs*.—October 9, 1860.

Claim.—The arrangement of the two curved shoulder beams A A a, clevis B, transverse bar D m, slotted, adjustable, forked handles E F h, and notched and mortised shovels C C c, in the manner and for the purpose described.

No. 3,514.—MATTHEW G. SLEMMONS, CADIZ, OHIO.—*Plows*.—October 9, 1860; No. 30,357; reissued June 22, 1869.

Claim.—1. Two converging beams A A, each one of which has a shovel standard, A', formed by bending its rear end, substantially as described.

2. The converging beams A A, connected together, and constructed with curved shovel standards, A' A', upon them, substantially as described.

3. The union of the front ends of plow-beams, which have their rear ends bent to form shovel standards, by means of a clevis, or device, by which the team is hitched to the implement, substantially as described.

4. The converging plow-beams A A, having shovel standards, A' A' formed on them, in combination with handles F F, and handle-supporting braces E E, substantially as described.

5. In combination with the foregoing, also, the manner substantially as described, of adjusting the handles F F, and securing them to the beams at any desired angle.

6. Constructing of one piece of metal, a plow-beam A and a curved shovel standard A', with a shoulder d, formed on the latter, substantially as described.

No. 6,131.—*Plows*.—MATTHEW G. SLEMMONS, IOWA CITY, IOWA, assignor to LEGGETT & LEGGETT.—No. 30,357, October 9, 1860; reissue No. 3,514, June 22, 1869; reissue November 10, 1874; extended seven years. [Filed October 12, 1874.]

Brief.—The curved diverging beams unite at the front rigidly, and receive shovels at their rear ends. The handles are adjustable upon the beams.

Claim.—1. Two diverging beams, A A, that have their rear ends bent to form shovel standards, the said beams being fastened rigidly together, substantially as described, and springing from the point of attachment for the draft.

2. Two diverging beams, A A, that have their rear ends bent to form shovel standards, and their front ends fastened rigidly together and merged into a device, substantially as described, whereby the plow may be attached to the draft.

3. The combination, substantially as described, with the two plow beams A A, of the handles F F and adjustable handle supporting braces E E.

No. 30,711. LUTHER B. BENTON, PENN. VAN, N. Y.—*Cultivator*.—*November 27, 1860.*

Claim.—The arrangement of the beam C, shares and land side D, frame A, and bars E; the whole being constructed as described for the purpose set forth.

No. 30,720. C. A. CLARK, BROOMFIELD, IOWA—*Cultivator*.—*November 27, 1860.*

This invention consists in the arrangement of the crank, axle, gauge, or propelling wheels, lever, rear shares, forward shares, longitudinal bars, perforated transverse bars and handles.

Claim.—The arrangement of the crank axle D, gauge or propelling wheels F F, lever G, rear shares $B' B'$, forward shares $h h$, longitudinal bars A A, $b b$, d, transverse perforated bars $c c$, and handles $m m$, all in the manner and for the purposes described.

No. 30,737.—HIRAM J. LAKE, CONQUEST, N. Y.—*Cultivator*.—*November 27, 1860.*

Claim.—In combination with a cultivator, the swiveling of the thills thereto, so that they may assume a horizontal position when the cultivator is working on a hillside, for the purpose of relieving the horse from the pressure or gouging of the thills on his sides, and enable the operator to better guide and direct the cultivator as set forth and described.

No. 30,744.—WILLIAM J. MCGOY, CARFERSVILLE, GA.—*Cultivator*.—*November 27, 1860.*

Claim.—The arrangement of the reversible beam A, stock B, with its braces E C, ploughs F, cutter K, landside J, standard b , handles D, and springs H, substantially as and for the purposes set forth.

No. 30,751.—JOHN NEIDICH and ELIM R. GIRVIN, LANASTER COUNTY, PA.—*Cultivator*.—*November 27, 1860.*

Claim.—The gauge or guide rod K, with the sliding and binding plates H, set or binding screw J, in combination with the shovels F, and their projecting screw ends f_1 secured on said plates by the nuts h for adjustment, when made substantially in the manner and for the purpose specified.

No. 30,767.—JOSEPH SLOCUM, SYRACUSE, N. Y.—*Cultivating Harrow*.—*November 27, 1860.*

Claim.—A cultivating harrow composed of the two frames C D, furnished with suitable teeth or plough, the side pieces of which frames are hinged at their ends, and can be spread or contracted at their rear ends, and which are united by a centre beam A I B, composed partially of wood and partially of an arched iron bar, and supported on a pair of wheels; the whole being arranged to operate in the manner and for the purpose set forth and represented.

No. 30,766.—HIRAM M. BELDEN, FARMINGTON, OHIO.—*Cultivator*.—*December 4, 1860.*

Claim.—The frame A composed of a single iron bar, bent in the form as and for the purpose set forth.

No. 30,926.—ISAAC MIERS, CLAY LICK, OHIO.—*Cultivator*.—*December 18, 1860.*

Claim.—The arrangement of the longitudinally adjustable side beams C D, straps $a' b' b'$, and adusting plate d , with the centre beam B, ploughs E F G, adjustable handles $h h$, and standards $p p$, all as shown and described, for the purposes set forth.

No. 31,132.—W. H. SMITH, WYANET, IL.—*Cultivator*.—*January 15, 1861.*

This invention consists in so pivoting and bracing the rear stocks, or standards carrying the shovels to the cultivator frame, and attaching said stocks to the handles of the cultivator, that the rear shovels may be moved laterally while the cultivator is being drawn through the field, and thus made to work up close to rows of plants which are irregularly laid out.

Claim.—The brace rod $l g$, pivoted pieces $h h$, notched plates $k k$, and arms $m m$, in combination with the pivoted shovel-stocks E E, and handles G G, all arranged and operating substantially as and for the purposes set forth.

No. 31,178.—ANDREW B. LEELER, CANTON, IND.—*Cultivator*.—*January 22, 1861.*

The reversible shares are bolted at their centres to the respective standards, the lower part of which are curved to correspond with the form of the said shares and strengthen the same to their extremities. The upper end of the share is held between the beam and a washer, confined by a nut and bolt, by which the standard is attached to the beam.

Claim.—The described combination of the beam B B, reversible shares E E' and standards D D', with the brace C and washer F, the said parts being constructed, arranged, and connected in the manner and for the purposes described.

No. 31,397.—CHARLES BEACH and THOMAS BROWN, JACKSONTOWN, OHIO.—*Cultivator*.—*February 12, 1861.*

The shovels are slightly concave on the face, and may be attached to the beam by screws and bolts, so as to be removable at pleasure.

Claim.—The arrangement of the concave shovel c , shield or guard b , beam A, with its curved neck a , the curved standards M M, and the handles N N, the whole being constructed as and for the purposes set forth.

No. 31,400.—WILLIAM PRICE, MOUNT OLIVE, N. C.—*Cultivator*.—*February 12, 1861.*

This invention consists in the arrangement of the several devices.

Claim.—The arrangement of the beam A, side frames A' handles B B', shovels C, standards M , rake-head A', and teeth b , pin, and yoke d , the whole being constructed, combined, and operating as and for the purpose set forth.

No. 31,416.—J. W. TAYLOR, ASHLAND, VA.—*Cultivator*.—*February 12, 1861.*

This invention consists of a cultivator that can be opened and closed at pleasure, and set to any width of furrow required.

Claim.—The arrangement of the parallel stays c , draw bar d , with its hinge e , cultivator frame X, and harrow frame r , the whole being constructed as and for the purpose described.

No. 31,695.—C. W. S. HEATON, SALEM, ILL.—*Cultivator*.—*March 12, 1861.*

This invention consists in constructing the end and side pieces with mortises or slots in such a manner that the shovels may be arranged in various positions and removed a greater or less distance from the main beam. The standards and braces are also made adjustable as to height and degree of inclination.

Claim.—The arrangement of the slotted adjustable cross-pieces B B', reversible adjustable braces F F', and adjustable standards D D', with the curved main beam A, deflecting rod I, and cross-pieces C C, in the manner and for the purposes shown and described.

No. 31,683.—WM. STRIEBY, WAGON TOWN, PA.—*Cultivator*.—*March 12, 1861.*

This invention consists in a main beam having two teeth and two hinged vanes or shares rendered adjustable by means of hooked rods and a perforated plate in combination with side beams having teeth, and so connected to the main beam as to be adjusted laterally as well as vertically, in order that the relative position of the teeth and vanes may be altered every time the machine is drawn over the same track, thus effectually turning up, breaking and spreading the soil.

Claim.—The beam A, its teeth c and f , and its hinged shares or vanes $h h'$, the latter being rendered adjustable by the hooked rods i and perforated plate j , and their teeth m and n , when the said beams are so connected to the beam A as to be adjusted laterally as well as vertically by means of the devices described or their equivalents, and when the whole of the above mentioned parts are arranged as and for the purpose set forth.

No. 31,742.—WILLIAM S. RIGGS, HIGHTSTOWN, N. J.—*Cultivator*.—*March 19, 1861.*

The forward ploughs are so connected to the frame that they can be moved sideways and their inclination to the planted row changed, for the purpose of either simply loos-

ening the ground or casting up a furrow, as may be desired.

Claim.—The arrangement, substantially as set forth, of the standards B B', and shares a a and frame A, the whole operating as and for the purposes set forth and described.

No. 31,753.—FREDERICK STAMM, LANCASTER, PA.—*Cultivators*.—March 10, 1861.

The side beams are connected to the rear end of the draught beam by hinges, and are adjusted to required width by means of arc-shaped stays in front.

Claim.—The arrangement of the draught beam B, side beam A, stays D, hinge C', and curved shovel E, with its head Z, the whole being constructed, operated, and operating in the manner and for the purpose set forth.

No. 31,884.—O. W. GOSLEE, GASTENBURY, CONN.—*Cultivators*.—April 2, 1861.

The object of this invention is to obtain a machine which can be used either as a cultivator or hoe. This is effected by inserting the teeth, which are constructed with dovetail shanks, in mortises in the frame, and retaining them by a key-block. They can thus be readily removed and changed from one side to the other, reversing the sides of the right and left teeth in the frame-work, either throwing the earth outward or up to the hill. The adjustable ground wheel on the end of the frame regulates the depth to which the teeth enter the soil.

Claim.—The arrangement of the frame a f, axis i, hand les h, braces c, plates z, clevis d, axle e, and cultivator teeth 1 2 3, the whole being constructed in the manner and for the purpose described.

No. 31,917.—WM. F. WEBER, BOWLING GREEN, OHIO.—*Cultivators*.—April 2, 1861.

The frame consists of two curved side-pieces, which are connected together at their front ends by a bolt, and attached to the cross-beams c d. These cross-beams are placed together in pairs, a narrow space being left between for the insertion of the shanks or standards of the shares, the standards being slotted for the reception of keys, which hold them firmly. By this means the shares can be easily adjusted to any desired position. The handles are connected together by a cross-bar, and attached to the frames by uprights. The shares are connected by rods to the front part of the frame.

Claim.—The arrangement of frame A, handles B B, slotted standard C, shares C', wedges i, rods D D D k, and slotted cross-beams c d g, the whole being constructed in the manner and for the purposes shown and explained.

No. 32,010.—JAMES A. SPEER, JR., MANCHESTER, PA., assignor to WILLIAM J. KANE, of same place.—*Cultivators*.—April 9, 1861.

Attached to the draught beam and standard is a second curved beam, provided with lugs, to which a scraper may be attached. The several attachments of the second beam and scraper, are made by bolts passing through slots and secured by nuts, by which means the point of the draught-beam and the scraper may be raised and lowered.

Claim.—The arrangement of the draught-beam a, second beam c, scraper d, and slots 1 2 3 and x, when constructed substantially as described, for the purpose set forth.

No. 32,032.—ISAAC STOUT, FREMONT, ILL.—*Cultivators*.—April 10, 1861.

The stocks of the front cultivators or ploughs are attached to the handles that serve to guide the cultivator, and the handles are pivoted to a cross-bar in such a manner that the operator, while guiding the cultivator, may vary the distance laterally between the furrows formed by the ploughs, as desired.

Claim.—Attaching the front cultivator teeth to the guiding handles of the plough, when arranged substantially as described.

No. 32,366.—GEORGE W. HILDRETH, LOCKPORT, N. Y.—*Cultivators*.—May 21, 1861.

The cultivator is made to expand and contract by means of horizontal slide irons lapping upon each other, with a bolt passing through slots to hold them at any desired point; connected to the ends of these horizontal irons are two additional slotted irons, crossing each other upwards, and se-

cured in any desired position to a post on the centre bar, for the purpose of giving additional strength to the machine when adjusted to various widths.

Claim.—The double slide irons FF', or their equivalents, with the horizontal slide irons, when used to form a triangular contracting or expanding truss for strengthening the cultivator, as herein set forth.

No. 32,468.—S. M. CAIN, and W. STELFOX, AUSTIN, TEXAS.—*Cultivators*.—June 4, 1861.

The parts of the plough are so constructed that it can be made to plough a row of any given width from three to five feet; it can be made to plough on each side of a row of corn or cotton; also, the diamond ploughs can be made to run on each side of a row so as to hill it up, the horse walking on the top of the row.

Claim.—The arrangement of diamond ploughs f f, the crescent couler h, sweep g, wing hinges m m, wings b b, slides c and d, beam a, and handles k, as described, for the purposes set forth.

No. 32,507.—JOHN KEEZER, CHILICOTHE, OHIO.—*Cultivators*.—June 18, 1861.

The teeth ff, are constructed each with a long shank fitting in adjustable fastenings, so that they can be firmly held at any distance apart. Attached to the main beams are stay rods i i, which pass through shanks of the cultivator teeth f. Connected with the front frame are stays E F, carrying a swivel, to which the whiffletree is attached; by means of a screw and nuts the swivel is rendered adjustable as to height, for the purpose of varying the depth of the cultivators in the ground.

Claim.—1.—Adjusting the distance between the teeth ff, or those used in their stead, by means of the adjustable fastenings h h and g g, and stay rods i i, when used in combination with the gallews frames B and C, and stay rods a a, constructed and arranged substantially as and for the purpose set forth.

2.—In combination with the foregoing, the stays F and E, swivel G, screw h, and nut e, when arranged in relation to each other, and operated in the manner and for the purpose described.

No. 32,700.—L. H. DOYLE, WATERLOO, IOWA.—*Cultivators*.—July 9, 1861.

The central triangular-shaped spade is attached to the beam, as usual; in the rear of this are sockets and bolts, from which two curved arms extend laterally nearly to the ground, and have at their ends shares placed obliquely; above the shares is a horizontal cross-bar, provided with slots and bolts, by which the shares can be placed at the right distance apart to throw the soil upon the rows of plants on either side.

Claim.—The sockets D D', at the back of the beam A, with the feet or standards E E fitted therein shown, in connection with the bar F and braces h h, arranged to brace the feet or standards E E, and at the same time connect the same to the bar F at the distance apart desired, substantially as and for the purpose set forth.

No. 33,044.—G. W. LAWBAUGH, and JOHN WILLIAMS, SHANESVILLE, OHIO.—*Cultivators*.—August 13, 1861.

Claim.—The special arrangement of the side pieces A B, hinge D, arms C C' and H I, and handles J K, and shovels P O, the whole being constructed and operating as and for the purpose set forth.

No. 33,208.—J. B. MOORHEAD, T. A. and G. G. POOL, BELLEFONTAINE, OHIO.—*Cultivators*.—September 3, 1861.

Upon each side of the beam are sockets for receiving the shanks of cultivator teeth, the heads of the said shanks being formed with a square notch for receiving a square key. Another notched piece, driven in one side of the key, fastens the whole in the sockets, which arrangement admits of the ready detachment of the teeth when necessary.

Claim.—Arranging the shanks c, with a square notch e, in combination with the square key f, notched piece g, socket d, and adjustable handles B B, arranged in the manner and for the purposes described.

No. 33,740.—A. HOFFMAN and H. W. LIMEBECK, HALESDAY, ILL.—*Cultivators*.—November 19, 1861.

The seed-box is operated by means of a rod actuated by a cam on the shaft of the driving wheel. A series of teeth

are secured in the front part of the machine, and at the rear is a detachable curved harrow. Ploughs are arranged upon the inner and outer longitudinal beams.

Claim.—The seed box C, cam wheel *b*, lever *l*, harrow *e*, teeth *h h*, and ploughs *q q* and *z z*, when all are constructed and arranged substantially in the manner and for the purpose set forth.

No. 33,793.—C. E. FAXSON, SALEM, OHIO.—*Corn Ploughs*.—November 20, 1861.

This implement is designed for cultivating between the rows of corn. The parts are so constructed as to admit of an adjustment by which the implement is brought under complete control of the operator, and adapted to follow and cultivate opposite sides of two straight or crooked rows with facility at one operation.

Claim.—The fenders B B, hinged forked bars C C, hinged handles D D, with the guard F and draught beam A, when combined, arranged, and operating in the manner described.

No. 33,985.—JEREMIAH FINK, BALDWINVILLE, N. Y.—*Cultivators*.—December 24, 1861.

To each side of the beam of a shovel plough is attached an angular brace, to which additional fine teeth may be secured, and their positions shifted on the brace as may be desired, by which means it is designed to combine a shovel plough with a small tooth cultivator in one machine, to be used as required.

Claim.—Combining with the beam A, of a shovel plough, the triangular or double brace wings E E, substantially as and for the purpose specified.

No. 33,988.—D. C. GILLIAND, BROWNSVILLE, OHIO.—*Cultivators*.—December 24, 1861.

To the draught-beam is rigidly attached a plate, to which are pivoted beams, so that their rear ends can be expanded or contracted at pleasure. Secured to the rear ends of these beams are removable shanks carrying shares or cultivator teeth, which admit of being readily detached, and mould boards and a rake may be substituted.

Claim.—The combination of the draft beam A, hinged beams B and C, removable shanks *a b c*, and attachable shares H, shovels I, and rake J, all constructed, arranged, and employed in the manner and for the purpose shown and explained.

No. 34,578.—W. H. KELLY, OSONDAGA COUNTY, N. Y.—*Cultivators*.—March 4, 1862.

The shares are so attached to the rear of the main centre beam by means of a clasp and nut and screw, as to be readily adjusted forward and backward, and so that their rings may be made to face either side or outwards and inwards.

Claim.—The combination of the central beam, made as described, with the shares *g* and shanks *a*, when constructed and operating as set forth, and attached to the beam by means of clasps and bolts, as shown in figs. 7, 7.

No. 35,223.—J. K. DUGDALE, RICHMOND, IND.—*Cultivators*.—May 13, 1862.

This invention consists in the employment of two or more vertically-sliding frames provided with cultivator teeth, knives or drill teeth, &c., and attached to the front part of a frame mounted on a wheel or wheels. The sliding frames are raised and lowered to adjust the cultivator, &c., to the proper depth by means of a pinion wheel working in a rack on the frame, and connected by a rod to a perforated plate attached to the rear end of the frame. The rod is held in position by means of a pin passing into the holes of the plate and secured by a spring.

Claim.—The arrangement and combination of the adjusting apparatus composed of the perforated plate G, pin and spring I, rod F, with pinion E, working in rack *c*, substantially as described and for the purposes set forth.

Also, the combination of the device or guides D' with the frames B and C, as and for the purpose set forth.

No. 35,422.—WILLIAM LYMAN, JR., MALONE, N. Y., assignor to himself and S. M. WEAD, of the same place.—*Cultivators*.—May 27, 1862.

In the rear of the plough are attached two long pieces or hoers made adjustable to suit furrows of different widths by means of arms and bolts. Two short hoers are also provided

with similar adjustments, and serve to remove the earth and weeds from the hill, while the long hoers restore the earth to the hill in such quantities as may be desirable.

Claim.—The combination with the plough A, and beam D, of the long hoers B B, with their adjusting arms *d d*, and short hoers C C, with their adjusting arms *f f*, said parts being constructed and arranged to operate in relation to each other, substantially as shown and described.

No. 35,505.—P. S. CARIHART, COLLAMER, N. Y.—*Cultivators*.—Jan. 10, 1862.

This invention consists in attaching the draught pole to the front bar of the frame, in such a manner that the latter will be supported by the draught pole when in use. The rear end of the pole is attached to the back bar of the frame by means of a rack, to which is fitted a toothed lever, by means of which the rear end of the tongue may be raised or lowered, and thus regulate the depth of penetration of the teeth in the ground.

Claim.—The means, substantially as shown and described, for regulating the depth of the penetration of the teeth B of the implement in the ground, to wit, the attaching of the draught pole C to the front bar *a* of the frame by a bolt *d*, and having its back end connected to the back bar *a* of the frame by a rack plate E, lever F provided with a toothed segment *i*, and an adjustable pin *j*, which fits in notches *f* in the plate E, to operate as set forth.

No. 35,961.—JACOB VAN HORN, PHINFIELD, ILL.—*Cultivators*.—July 22, 1862.

The standards are formed as shown in the engraving, and are provided with wings near their lower ends, which may be readily removed or retained for certain operations. The standards are secured to longitudinal bars, which are made adjustable so as to regulate their distance apart.

Claim.—The combination of the peculiarly constructed standards S with the removable wings *a*, the regulating ears B B', and braces F, all arranged and operating as and for the purposes described.

No. 36,139.—N. B. COOPER, GRATON, OHIO.—*Cultivators*.—August 12, 1862.

The standards to which the shovels are attached are secured to a slotted beam A in such a manner as to admit of their being moved in the same. The beam A is connected at one end to a rod B provided with holes at its front end fitting upon a pin, by means of which the slotted beam can be adjusted to rows of different widths.

Claim.—The arrangement of the slotted beam A, adjustable rod B, and beam C, for the purpose and in the manner herein set forth and described.

No. 36,180.—E. S. TICHENOR, JACKSONVILLE, N. Y.—*Cultivators*.—August 12, 1862.

The front standard of this implement is attached to the plough beam by means of a hinge joint, and upon the sides of this standard, springs attached to the side beams are made to bear, for the purpose of guiding or steadying the same.

Claim.—The combination of the springs *c c* or their equivalents, with the hinged tooth of a cultivator, substantially as above described for the purpose set forth.

No. 36,909.—JOSEPH MEYER, LINDEN HALL, PA.—*Cultivator Ploughs*.—November 11, 1862.

This invention relates to the particular arrangement of parts for the purpose of adapting the cultivator plough to a variety of agricultural purposes, by which it may be adjusted both as to height and depth, as well as to width and draught.

Claim.—The cultivator plough, constructed, arranged, made capable of adjustment as to height, depth, width and draught, and operating in the manner and for the purpose herein set forth.

No. 37,005.—WILLIAM NEVINS, IRVING, N. Y.—*Cultivators*.—November 25, 1862.

Upon the sides of the central beam are placed wings provided with teeth on their under surface and secured at their forward ends by hinges, and at the rear by overlapping bars rendered adjustable by means of holes and a bolt. On the upper surface of the wings is a brace attached at each end by a bolt passing through one of a series of holes in the wings, by which means the latter may be set to any desired angle to pass between the rows of plants.

Claim.—The rigid angular wings C C connected with the

beam A, and made adjustable by means of the brace bar D, eye bolts *d d*, and adjusting holes *f f*, or their equivalent devices, the whole arranged, combined, and operating substantially as and for the purposes herein set forth.

No. 37,089.—L. H. DOYLE, WATERLOO, IOWA.—*Cultivators*.—December 9, 1862.

To the curved beam B is attached at each side a laterally projecting bar, to which are bolted two angle bars, the latter being also attached to the plough standards in such a manner as to admit of their being secured at a greater or less distance apart, and also to admit of the shares being raised or lowered as desired.

Claim.—The combination with the beam bar A and standards E E of the adjusting bars *b d*, in the manner herein shown and described.

No. 37,271.—D. G. BLUE, WINFIELD, IOWA.—*Cultivators*.—January 6, 1863.

In this invention the forward plough-stocks are made longer than the rear ones, and the draught so applied as to relieve the horses from the weight of the front of the plough. By the employment of removable shield, roller, and plough-stock, in the centre of the implement, it is adapted for use, either as an ordinary cultivator or a corn plough.

Claim.—1.—The rear posts, when made shorter than the front ones, in combination with the use of an adjustable draught connection, substantially as and for the purposes set forth.

2.—The combination of the gauge runners *d d* with the front posts, substantially as and for the purposes stated.

3.—The combination with the frames of the removable shield box G, plough H, and roller I, substantially as set forth.

No. 37,988.—P. C. VAN BROCKLIN, BUFFALO, N. Y.—*Cultivators*.—March 24, 1863.

The triangular frame of this cultivator is supported upon a wheel at each corner; the forward wheels being pivoted in arms projecting downwardly from the frame, and the socket of the rear castor wheel pivoted so as to be vibrated back and forth by the lever, with connecting rods to lower the frame at all corners simultaneously.

Claim.—Cultivators having a triangular frame with a wheel at each corner, supporting a castor wheel at the apex of the frame, in a socket or journal box which is hung upon a bolt or pin, in such a manner that it may turn or swing freely upon said bolt, in combination with a swivel lever shaft which connects with the wheel and extends upwardly for a handle, and operates as a swivel upon which the wheel turns freely, and which is connected with the forward wheels by means of rods, taking hold of the arms *l*, below the frame, so that all of the wheels may be raised or lowered simultaneously by the driver, substantially as and for the purposes described.

No. 38,006.—WILLIAM G. STROWGER, OSWEGO, N. Y.—*Subsoiling Implement*.—March 31, 1863.

This machine has two rows of chisel teeth diverging from the forward end and set in a metal plate with handles for the operator.

Claim.—An implement for subsoiling, ditching, &c., composed of a solid metal plate A and teeth B, the latter being fitted in the former, substantially as shown, and the plate provided with handles C C, and a clevis B, all being constructed and arranged as herein set forth.

No. 38,593.—ISAAC B. MAHON, MARION, OHIO.—*Cultivators*.—May 10, 1863.

The improvement is in the beams and handles, which are made of flat bars of the shape and construction indicated in the claim and illustration.

Claim.—The construction and arrangement of the bars A A and B placed vertically edgewise and welded together at their front ends, and braced by a thin cross-bar C placed vertically edgewise, in combination with the forked handle braces G G, each formed in one piece, in the manner and for the purposes herein specified.

No. 39,337.—JOHN BURNS, FRANKLIN, WARREN COUNTY, OHIO.—*Cultivators*.—July 28, 1863.

The handles of this cultivator are supported near their rear by rods passing downwardly to the beams, and in front

are attached to a prow-shaped clevis or continuation of the middle beam.

Claim.—The attachment of the handles G, at their forward end, to the upper end of the perforated prow-shaped clevis E, which is formed on and made a part of the central beam A, in the manner described, in combination with the stay rods H and beams A B B, when arranged in the manner and for the purpose specified.

No. 39,528.—CHARLES W. S. HEATON, SALEM, MARION COUNTY, ILL., assignor to JAREZ J. FEGGOT.—*Cultivators*.—August 11, 1863.

This improvement consists of devices for throwing the direct strain upon the plough beams and relieving the jar caused by collision with obstructions; the forward ends of the beams are attached to a slotted cross-bar which is stayed by angle rods from the tongue, the draught rods having a vertical play by the motion of the clevis pin in an upright slot in the tongue. The lateral adjustment of the plough beams is by means of slots in the cross beams, to which the former are clamped by set screws.

Claim.—1.—The arrangement in a cultivator of the brace rods *h h*, and stay rod *k*, in such manner that the longitudinal strain upon the implement shall be thrown upon the side beams B B, and front beam C, when the implement is obstructed by stones, &c., but when the implement is obstructed by stones, &c., the sudden jar due upon the tongue A shall be relieved by the oblong slot *c*, and finally be sustained by the stay rod *k*, all substantially in the manner set forth.

2.—The arrangement, in a cultivator, of the automatically shifting brace rods *h h*, pin *d*, and vertical slot *c*, in the manner and for the purposes described.

3.—The arrangement of the inclined stay rod *k*, beam C, and tongue A, substantially as and for the purpose set forth.

4.—A cultivator combining in its construction the tongue A, side beams B B, upper and under slotted cross beams C C, V-shaped adjustable braces or stocks E E, brace rods *h h*, and stay rod *k*, the several parts being constructed and arranged as described.

No. 39,724.—G. A. ERICKSON, SWEED BEND, WEBSTER COUNTY, IOWA.—*Cultivators*.—September 1, 1863.

The cultivator has two rows of shares and is supported on wheels. In the rear portion of the hinder bar is a reciprocating rod with harrow teeth, which is driven by a pinion and link from teeth on the driving wheel.

Claim.—The described combination of a vibrating harrow E with a cultivator, the whole being constructed and arranged to operate in the manner and for the purpose herein specified.

No. 41,562.—JOSEPH WILHELM, MUSCATINE, IOWA.—*Cultivators*.—February 9, 1864.

This invention relates to that class of cultivators which are constructed with two wings hinged together and designed to cultivate both sides of a row at one and the same time, and the improvement consists in an arrangement of devices by which the distance between the wings can be readily increased or diminished according to the width of the furrows.

Claim.—Having the arms *a a* jointed at the centre, and combined with the clevis *c*, in the manner and for the purpose herein shown and described.

Also, the arrangement of the spring latch *g*, with the beam A and arms D D, in the manner and for the purpose herein shown and described.

No. 42,737.—SAMUEL A. TOOMBS, assignor to himself and SAMUEL M. PURSE, ASHLEY, MISSOURI.—*Cultivators*.—May 10, 1864.

This invention consists of a curved bar, the ends of which form the rear part, and are connected by a curved cross-bar. Longitudinal bars are pivoted to the front of the curved bar, and are provided with standards that carry at their lower ends cultivator teeth, the rear ends of the bars serving as handles to govern the cultivator.

Claim.—A cultivator frame constructed of the curved bar A, united at its rear by the curved cross-bar *b*, and provided with the stationary standards and cultivator teeth *a*, and pivoted standards for handles *d*, the whole constructed and arranged substantially as herein set forth.

No. 43,671.—GEORGE W. CONOLLY, RICHMOND, N. Y.—*Cultivator*.—August 2, 1864; antedated July 20, 1864.

This invention consists in a combination of an adjustable arm, carrying at its rear end a scoop-shaped cultivator share arranged vertically, with vertical sharp-edged shares, which latter are for the purpose of preventing a lateral movement of the cultivator as it is drawn forward, while the former or main share moves the earth sidewise towards the plant.

Claim.—The combination of the adjustable plough P with the guides M, said guides being constructed and arranged in the manner and for the purpose substantially as described.

No. 45,019.—JOHN M. BURKE, DANVILLE, N. Y.—*Cultivator*.—November 15, 1864.

This invention consists in fastening the wings of the central plough by wooden pins to projections on the under side of the plough. The upper surface of the shank of the cultivator tooth in the rear is curved out, leaving sharp edges, which bite firmly into the wood of the beam, so that it can be firmly secured by a single nut.

Claim.—1.—The shovel E, having a narrow central rim and staples *e* formed on its inner or under surface, in the manner described and for the purpose set forth.

2.—The teeth J, with cutting hooks *i* and concave ends *j*, in the manner and for the purpose described.

3.—The arrangement of the shovel E, wings G G, side beams B B, handles D D, cross beam C, main beam A, and teeth J *j*, the whole constructing an improved cultivator, substantially as and for the purpose set forth.

No. 45,612.—HANFORD INGRAHAM, NAVES, N. Y.—*Cultivator*.—December 27, 1864.

In this invention the frame is T-shaped, carrying two teeth in front and one in the rear. The shafts are fastened directly upon the ends of the front bar, and are raised and lowered by a cast-iron flange-shaped wedge.

Claim.—1.—The construction and application of a cast-iron flange-shaped wedge, for the adjustment of the thills, substantially as in the manner and for the purpose herein described.

2.—The construction of a T-shaped frame, in combination with the adjustable thills, as herein arranged, substantially in the manner and for the purpose herein set forth.

No. 47,105.—GEORGE F. HASSENPLUG, and GEORGE BARNHART, GREEN TOWNSHIP, OHIO.—*Cultivator*.—April 4, 1865.

In this invention the frame is of a horse-shoe shape, and of one piece of bent timber. The plough standards are adjustable, and swing back upon hinges when the wooden pin is broken by any obstacle. The handles are also adjustable.

Claim.—The frame *a c*, when constructed as described, in combination with the plough standards *b b b b*, the same being attached as specified.

No. 47,534.—JAMES R. FINLEY, DELPHI, IND.—*Cultivator Plough*.—May 2, 1865.

In this invention the ploughs are double, and the shares and mouldboards are made of one piece of steel plate, the mouldboards are symmetrical in form, oblate, and curvilinear.

Claim.—The equal or symmetrical mouldboard when said parts form a continuation of the share, and have the peculiar form and configuration, as set forth and described.

No. 47,536.—C. FORD, FOREST CITY, ILL.—*Shovel Plough*.—May 2, 1865.

This invention consists in connecting to the frame of the plough by means of hinges, shafts, to which is connected at one end an adjustable bar provided with holes and made adjustable by bolts fastened rigidly to the handles of the shafts, having on their ends nuts for the purpose of adjustment.

Claim.—1.—The mode of making an even draught two-horse shovel plough as herein described; with the shafts F attached to the frame by the hinges *m* and *n*, and connected by the coupling bar H, which arrangement, while it holds the shovels evenly, enables the operator to change the face of the shovels at will, and thereby guide the plough.

2.—The false cutters K, in connection with the braces I,

made to slide in the groove in the head piece D, and secured by the clamps J, as herein set forth, in such manner, that the operator, by loosening the clamps J, may change the width between the shovels by sliding the tops of the braces in the groove.

3.—The ring headed bolt O for holding the double trees on the plough, substantially as herein set forth, in such manner that when the plough is thrown on its side they will balance, remaining parallel to the neck yoke.

No. 47,618.—PETERS, CARHART, COLLAMER, N. Y.—*Cultivator*.—May 9, 1865.

This invention consists in connecting a plate to the shares of a cultivator, and attached to a rod at one end, and at the other to a lever, for the purpose of adjusting the depth of penetration of the shares into the ground.

Claim.—The adjustable pivoted soles or plate D, attached to two or more of the shares B of the cultivator, and arranged with levers F, or their equivalents, substantially as and for the purpose specified.

No. 48,324.—H. M. TEASDALE, DANVILLE, N. Y.—*Cultivator*.—June 29, 1865.

In this invention wings extend obliquely up from the front plough to the beams just above the rear plough. A removable plough, with a continuation of the coulter on it, slides on with a groove and is secured by screws.

Claim.—1.—The arrangement of the inclined wings E' E', with the double plough E and the beams D D, in the manner and for the purpose described.

2.—The construction of the point represented in Figs. 4 and 5, in combination with the parts E b d, substantially as for the purpose herein described.

No. 48,783.—PARKER H. ALSTOFF, JEFFERSONVILLE, IND.—*Cultivator*.—July 18, 1865.

This invention consists in the arrangement of the connecting bars, bolts, screws and slots for changing the angle between the shares and beams.

Claim.—The relative arrangement of the shares and beam and the construction and arrangement of the connecting rods, bars, bolts, and screws and taps, so far as they assist in effecting the purpose and object of changing at will the angle between the shares and beams and thereby altering the draught of the tiller.

No. 49,111.—HANFORD INGRAHAM, NAVES, N. Y.—*Cultivator*.—August 1, 1865.

In this invention the shafts are firmly attached at their rear ends to the cross piece of the frame. The arms are elevated and depressed at will upon standards on the front cross piece. Shafts are secured at any height by a set screw, working in the slotted standard.

Claim.—The transverse beams A and C, and centre forward beam *a*, in connection with the knee-braces C, as constructed and arranged, substantially in the manner and for the purpose set forth.

No. 49,380.—RICHARD DEIGHTON, Jr., FAIRWEATHER, ILL.—*Plough*.—August 15, 1865.

This invention consists in making the frame for a double plough in the form of a triangle, and extending the handles to form a brace for the standard, also in the form of a triangle.

Claim.—The plough frame constructed of the two beams A and A', the cross piece B, the posts D and D', and handles C C, substantially as and for the purpose set forth.

No. 50,093.—WILLIAM J. BURTON, TURTLE, WIS.—*Cultivator*.—September 20, 1865.

In this invention a straight frame carrying teeth to cultivate two or three rows, runs at each end upon two bows or shoes affixed near the outside teeth; thus doing away with wheels entirely.

Claim.—The bows C C—this broadly—the whole arranged as and for the purpose described and set forth.

No. 50,403.—R. THAYER and J. MC CLELAND, PITTSBURG, PA.—*Cultivator*.—October 10, 1865.

The novelty of this invention consists in the combination and arrangement of the several parts of the cultivator for the purpose of obtaining strength and durability.

Claim.—The herein described arrangement and combination of the beam A, standards B' B', handles C' C', braces D D', and bolts *a d h k*, as and for the purpose specified.

No. 50,030.—STARKEY HALL, RUSSELLVILLE, KY.—*Cultivators*.—November 14, 1865.

The side beams in this cultivator are adjustable laterally, and in rear of the cultivator teeth is fixed an adjustable harrow. The tongue is pointed, and by lifting up the handles the harrow is raised, and by depressing the handles the ploughs are raised, and the ploughs and harrow respectively forming a fulcrum for the handles, which act as levers of the first and second order.

Claim.—The combination in a cultivator of laterally adjustable ploughs, with a longitudinally adjustable harrow, having a rigid attachment to the rear of the frame, when constructed, arranged, and operating substantially in the manner and for the purpose set forth.

No. 51,286.—JOHN T. BEVER, BELHEM, ILL.—*Cultivators*.—December 5, 1865.

The frame of this machine is of a triangular shape, and hinged at each corner, so that by removing a pin at one of the inner corners the triangle can be reversed or doubled around, so as to reverse the position of the shares. Thus, by a simple movement the rigid teeth can be reversed.

Claim.—1.—The inverting triangle frame A A A, constructed with free working joints or bolts *b b b b*, or their equivalents, for the purpose of reversing the order of the turning ploughs *f f f*, substantially as and for the purpose set forth.

2.—The double hook or clevis *d d*, with cross-bar or flanges *k k*, or their equivalent, for the purposes herein specified.

3.—The handles *e e*, in combination with the inverting triangle frame A A A, as and for the purposes herein set forth.

No. 51,428.—JOHN COPELAND, QUASQUETON, IOWA.—*Cultivators*.—December 12, 1865.

This invention consists in the attachment to cultivator beams of levers crossing each other and working on the pin that connects them together, and made adjustable by means of a perforated bar secured to one of the levers, and passing through a slot in the other, the perforations in the bar receiving a pin to allow of its expansion and contraction as required.

Claim.—The two cross levers H H, connected by a pin *a* and applied to the plough beams B B, to operate in the manner substantially as and for the purpose herein set forth.

Also the combination of the levers H H, perforated bar J, lever K, and pin *g*, arranged to operate in the manner and for the purpose specified.

No. 51,597.—DANIEL DENNETT, BUXTON, MAINE.—*Cultivators*.—December 19, 1865.

This invention consists in a method of bracing the plough standards to each other and to the beam. The front standards are extended up to form handles.

Claim.—The plough standards, constructed as herein described, in combination with the beam fastened by the cross-piece to the front standards, and with the braces or ties that confine the rear standards to the front standards, substantially as herein specified.

No. 51,817.—RICHARD ELLIOT, PLAINFIELD, N. J.—*Combined Plough and Scraper*.—January 2, 1866.

Attached to the plough beam are a share, a scraper, and an oblique grading bar for leveling.

Claim.—The scraper composed of the bar E and bottom F applied to or combined with a plough, to operate substantially as and for the purpose set forth.

Also, the bar G, in combination with the plough, substantially as and for the purpose specified.

No. 52,421.—ALFORD LAMB, SKANATELES, N. Y.—*Cultivators*.—February 6, 1866.

This invention consists of a triangular frame composed of iron rods and cross timbers. The braces coming from the rear beam are united to the front standards; the shafts are attached to the beam by a swivel, and by means of a gauge it may be so adjusted as to regulate the depth of the cut.

Claim.—1.—The arrangement for attaching the shafts to the beam by means of the swivel F and gauge G, for regulating the depth of the cut as set forth.

2.—The arrangement of the frame E D C and standards

A B H, with the frame K and handles, all constructed and combined, substantially as and for the purposes set forth.

No. 52,515.—CHARLES BELDEN, MIDDLEBURG, OHIO.—*Cultivators*.—February 14, 1866.

In this invention the handles are bolted to the sides of the beam. This beam is made of a bar of iron, double and bent round at the front end, through which a bolt passes for attaching the device to the end of the beam. The bar is turned at the front end and doubled closely together, excepting from where it is bent outward, and extends along so as to form a slotted opening. In this opening is fitted and secured a curved standard, being secured by the bolt that connects the handles to the beam; this standard curves down on the inside of the double plough in front. The point is made of such metal as hardened steel, so as to be a self-sharpener.

Claim.—1.—The frame B F, in combination with the changeable and reversible blades H K, when constructed and arranged as and for the purpose set forth.

2.—The herein-described cultivator with changeable and reversible blades H K, when constructed and arranged as and for the purposes set forth.

No. 53,212.—GEORGE W. ZEIGLER, TIFFIN, OHIO.—*Cultivators*.—March 13, 1866.

This invention consists in the construction of a shovel plough, with a movable cross arm or plate, and so arranging the same that the shovels can all be moved either to the right or left of the beam in oblique directions to the line of draught; and also in the application of spring braces to the pivoted shovels and standards.

Claim.—1.—Constructing the shovel plough with a movable cross arm or plate C, and so arranging the same that the shovels can all be moved either to the right or left of the beam in oblique directions to the line of draught, substantially as specified.

2.—The application of spring braces *k* to the pivoted shovels and their standards, substantially as described.

3.—The construction of the shovel-holding plate C, with lugs *e e*, to receive the out-side shovel standards, and also with a flat upper surface having notches in it to receive spurs which project from the bottom surface of the flanged casting B, substantially as described.

4.—The construction of the central standard *g'* with a pin *e*, so that the plates C B can be secured to the beam A, in the act of securing the central shovel to the plough, substantially as described.

5.—The combination of the flanged casting B with the shovel holder C, these two parts being constructed substantially as described.

6.—The construction of the shovels with detachable points *p*, substantially as described.

7.—Providing for adjusting all the shovels about a central axis simultaneously, when these shovels are positioned to standards that can be adjusted and secured in position independently of each other, substantially as described.

No. 54,122.—H. W. CURTIS, WORCESTER, MASS.—*Cultivators*.—April 24, 1866.

The wings which follow the central share are expanded or contracted by segmental racks and a pinion.

Claim.—The wings E E, connected at the rear of the plough or share D by means of joints, in combination with the segment racks G G, and the pinion H, for adjusting the wings E E, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 54,191.—JAMES E. MORRISON, WASHINGTON, D. C.—*Cultivators*.—April 24, 1866.

The cultivator beams have flexible connections to enable the standards to preserve their verticality and adjust themselves to hill-sides.

Claim.—1.—A cultivator having double plough beams U U, hooks *o o*, clevis *p*, standards *a a*, and cross-bars *y y*, constructed, combined, and arranged substantially as herein specified.

2.—In combination with double plough beams united at their front ends as described, the standards *x x*, and cross bars *y y*, constructed and operated substantially as and for the purposes set forth.

3.—The entire cultivator with its various devices, con-

structed, combined, and arranged substantially as and for the purposes herein mentioned.

No. 54,280.—HENRY BARNES, BURLINGTON, WIS.—*Cultivators*.—May 1, 1860.

The standards of the three shares are adjustably connected by clevises and stay to the cross pieces of the frame to which the thills are attached.

Claim.—The combination and arrangement of the thills A, standards G H, cross pieces C D, rods I M, and connecting bars O, constructed and employed in the manner and for the purposes specified.

No. 54,315.—T. PHELTON FISH, LEICESTER, N. Y.—*Horse Hoe*.—May 1, 1860.

The side ploughs are adjusted towards and from the median line to vary the width of till.

Claim.—In combination with a central plough carried by and adjustable on the beam, the side ploughs carried by and made adjustable on a divided frame, which is also carried by and made adjustable on the beam, substantially as and for the purpose herein described.

No. 55,175.—AMOS D. STOCKING, DOWAGIAC, MICH.—*Cultivators*.—May 29, 1860.

The rear castor wheel supports the cultivator; the plough standards are supported by stay rods and by transverse pins in themselves and in the frame, and are raised by the partial rotation of the board to which they are attached by chains.

Claim.—1.—The application of a swivel wheel *a* to the rear end of a frame of a cultivator, which is constructed substantially in the manner described.

2.—Keeping the shovel standards E in proper position during their passage through the soil by means of the transverse bars *h'* and notches *z*, combined with the forward braces *z*, substantially as described.

3.—The pivoted board G, or its equivalent, arranged transversely across the cultivator frame and connected to the shovel standards E, substantially as described.

No. 55,256.—EDWARD L. DORSEY, UXOH, IND.—*Cultivators*.—June 5, 1860.

The devices cited refer to the attaching and adjusting the main shares, and in addition to these an axle in the rear is provided with shares which, when reversed, form barrow teeth.

Claim.—1.—The rod E, arranged and used as and for the purpose set forth.

2.—The reversible and adjustable ploughs and rakes M and N, secured to the axle K, said axle being attached to the upright B by means of an adjustable plate H, arranged and used as and for the purpose set forth.

3.—The block R with the ploughs P, arranged in the manner substantially as herein specified.

4.—The guides *g*, arranged and used as and for the purposes herein set forth.

5.—The plough beam A, with the guide wheel F, upright B, and shovel M, in combination with the axle K, wheels I L, shovels *m n*, and block R, when used as and for the purposes specified.

No. 56,286.—E. M. SORLEY, NEENAH, WIS.—*Cultivators*.—July 10, 1860.

The bars of the frame are capable of adjustment to assume various shapes. The sides are connected by a pivoted brace and connecting rods, and the teeth present a convex edge to the soil.

Claim.—1.—The jointed adjustable cross bar B, with arms *b b*, in combination with the shifting braces *c c c*, and the side frame A, constructed and arranged substantially as and for the purposes herein described.

2.—The construction and arrangement of the shifting screw headed and saze shaped harrow teeth or cultivators with hollow backs, in combination with the frame A and the adjustable centre cross bar B, with its draught arms *b b*, applied and operated as herein stated.

No. 56,288.—ESEN STARR, ROYAL OAK, MICH.—*Cultivators*.—July 10, 1860.

The rear standards are laterally adjustable on the curved transverse brace-bar, and the front standard is adjustable as to its raking angle.

Claim.—1.—The curved or segment bar B, at the rear end of the beam A, in combination with the curved standard J, provided with upper bent ends *a'* to abut or fit

singly against the rear side of the said bar B, and to which they are secured by bolts, substantially as shown and described.

2.—The standard F, bent or curved as shown, and secured in position by a brace rod or bar H from the beam A, substantially as and for the purpose specified.

No. 56,555.—DANIEL HARRIS, CANAAN, MAINE.—*Horse Hoe*.—July 24, 1860.

The share has a middle portion including forward and sides having an angular inclination; it is followed by wings which have a lateral adjustment by means of segments supported by the rear of the beam.

Claim.—The share C, constructed or formed with sides *a*, inclined both transversely and longitudinally, and also formed with a central longitudinally inclined surface *b*, having a horizontal position in its transverse section, in combination with the adjustable mould boards E E, pivoted to the rear of the share C, and retained in position by the clamp F, and bars *c c*, all arranged substantially in the manner and for the purposes set forth.

No. 57,344.—Z. W. LEE, BRADFORD, GA.—*Plough*.—August 21, 1860.

The flanges of the brackets are attached by shackles and wedges to the central beam; the obliquity of the standards is determined by braces clamped to the brackets in which they are pivoted.

Claim.—The combination of the shank E, bracket F, pivoted arm I, shackle K and wedge L, all arranged and operating substantially as and for the purposes herein explained.

No. 57,710.—JACOB HOLLINGER, MILERSBURG, OHIO.—*Cultivators*.—September 4, 1860.

The shares are attached to an expansible triangular frame and the handles secured to the central longitudinal beam.

Claim.—The herein described construction of cultivators, consisting of the beam A, curved bars B B, braces D, shares C B' B', and handles E, several parts being constructed and operating as and for the purpose set forth.

No. 57,747.—THOS. B. MCCONAUGHEY, NEWARK, DEL.—*Cultivators*.—September 4, 1860. Antedated August 28, 1860.

A guard plate on an arm pivoted to the sides of the cultivator intervenes between the young corn and the outer share on that side to keep clods from the plant.

Claim.—The applications of a guard or guards to a cultivator, substantially in the manner as and for the purpose herein set forth.

Also, the pivoting the bar F to which the plate or guard G is attached between plates E E secured to the cultivator near its front end and provided with a rest *h*, substantially as described.

No. 57,792.—ADDISON F. STILLWELL, FAYETTE, IOWA.—*Cultivators*.—September 4, 1860.

Forward of the rear plough are two lateral shares which are attached by a brace frame to the beam, and are adjustable as to presentation and relative distance by the vibration of the pointed standards and the pivoted share.

Claim.—The bar E, beam A, and cross-bars G, in combination with the bars I, projections *h*, spurs J, shares J and brace rods K, all arranged to operate as and for the purposes set forth.

No. 57,952.—W. D. NICHOLS, CHICAGO, ILL.—*Cultivators*.—September 11, 1860.

The side beams of the plough are hinged to the middle beam, and are maintained at their lateral adjustment by slotted braces and a set screw, the forward ends of the scrapers traversing in a slot of the centre beam.

Claim.—1.—Connecting the mould boards or ploughs A A, with a hinge joint, substantially as described.

2.—The slot *s*, or its equivalent, in combination with the mould boards or ploughs, substantially as described.

No. 58,476.—JACOB K. REINER, LIND LEXINGTON, PA.—*Cultivators*.—October 2, 1866.

A lateral adjustment of the beams is made by a movement of stretchers in converging slide bars.

Claim.—The bars G G', having the handles H H attached and connected by the screw J, provided with the nut K, in combination with the bars F F, attached to the inner sides of the beams A A, and passing through eyes *a*, at the end of a bar L, secured to the under side of the front bar G, with

the clamp bar M, attached to the under side of the rear bar G, all arranged substantially as, and for the purpose set forth.

No. 58,578.—THOMAS BEALE, NEW MILFORD, ILL.—*Cultivators*.—October 9, 1866.

By means of the lever, the share and the scraper are reciprocated, and the earth stirred and killed against the plants.

Claim.—The bars A A having the bar B pivoted to them, with the spade or shovel C attached to the front end of the latter, in combination with the bar E connected to the bar F, which is pivoted to A A and connected to the pivoted bar B through the medium of the rod *b* and guide bar D, and the scraper and hilling device G pivoted to the front ends of the bars A A, and operated from one of the pendants *c* by the rod H, substantially as and for the purpose set forth.

No. 58,581.—JESSE C. BOYD, MILKOV, IND.—*Ploughs*.—October 9, 1866.

The side beams are pivoted to the fore-bar and adjusted laterally at the rear by slotted plates and set-screw.

Claim.—The beams A A in combination with the upright shovels and handles, when connected to the beam C by means of the swivels H H, and attached to the beam B by slotted bars F F and set screw *t*, arranged substantially as specified.

No. 58,597.—JOHN CLARRIDGE, PASCOENBURG, OHIO.—*Double Shovel Plough*.—October 9, 1866.

The plough has a lateral adjustment by slide racks and wedges.

Claim.—The combination and arrangement of the arms L and M, the toothed blocks N and P, and the wedges or keys O and K, with the beams B and A, the plough-head G, and the handle I, substantially as herein described, and for the purpose set forth.

No. 58,595.—JOHN FRIDY, WEST DONEGAL TOWNSHIP, PENN.—*Cultivators*.—October 10, 1866.

The pivot frame at the front of the beams has journal bearing for a wheel; lateral adjustment of the outside beams is accomplished by means of hooked bolts by which they are attached to a bar at their rear.

Claim.—The construction of the adjusting bar D, fixed in its centre to the central beam 2, and provided with a series of holes G, for the hook bolts E, supporting and embracing the side beams 1 and 3 in combination with the pivots A, when supported between the plates P and *p*, in the manner and for the purpose shown and specified.

No. 58,519.—NATHAN HAWKES, APPLETON, MAINE.—*Combined Cultivator and Ditcher*.—October 10, 1866.

This implement is for hoeing, subsoiling or shallower ploughing, or the planting of potatoes or grain. A two-faced mould board is followed by wings or shares attached or following in the rear. Bars trailing in the rear, mellow the ground. A toothed disk, adjustable as to depth, has side pins to work the slides at the bottom of the seed hoppers. A draw bar is pivoted in the beam, which for deep ploughing is carried up a rack at the fore end of the beam, and held to any one of the adjusting notches by a wedge.

Claim.—All the various parts, constructions, combinations and arrangements hereinbefore described, for planting, hoeing, digging and ditching, except so far as the mould boards A, the beam B B, and the handles C C, Fig. 1, are like those of the common mould board plough.

No. 58,733.—PETER BARNHART, CHILlicothe, OHIO.—*Corn Plough*.—October 23, 1866.

The standards are pivoted at their upper ends, and have arms running from thence horizontally, adjusted by means of pins in the beam. An adjustable fender is pivoted to the beam to keep clods from the young corn.

Claim.—The adjustable fender F and beam A in combination with the standards B B, for purposes and substantially as described.

No. 59,003.—WILLIAM O. GIBSON, CHARLESTON, S. C.—*Cultivator Plough*.—October 23, 1866.

An angular share has its landside to the corn, and a plough connected to the same frame follows, throwing the earth toward the corn.

Claim.—The two parallel beams A A, connected by two cross bars, *a a*, and provided with the gauge wheel C, in combination with the bar *d*, provided with the conlter projection *e*, and horizontal blade or knife D, and connected to the beam A by the standards *c c*, and the plough E, attached to the beam A', all being arranged substantially as and for the purpose set forth.

No. 59,013.—JOHN E. HERR, WEST LAMPETRE TOWNSHIP, PENN.—*Cultivators*.—October 23, 1866.

Attached to the tongue are two transverse beams carrying teeth adjustable laterally, in slots.

Claim.—The combination and arrangement of the parallel shovel beams A B, united by the tongue C, handles H, and braces D, when constructed and operating in the manner and for the purpose specified.

No. 59,269.—AMOS W. ROSS, NORTHFIELD, MASS.—*Cultivators*.—October 30, 1866.

The wheels and their arms are each adjustable, the latter on the frame, the shares also on their vertical bars. Inclined hoe blades are pivoted to a central share so as to admit of a spreading adjustment, and curved hoe bars connect to the ends of these blades, adjustable at both ends. A knife plate has a draught hook screwed to its shank. Slotted bars pivoted in the side beams are provided for lateral adjustment.

Claim.—1.—The combination of the adjustable wheels E, and adjustable supporting arms D, with each other, and with the front and rear ends of the central beam B, substantially as herein shown and described.

2.—The teeth F, and adjustable uprights G, in combination with the cultivator beams A B C, substantially as herein shown and described.

3.—The long hoes H, in combination with the central tooth F', and the rear side teeth of the cultivator, substantially as herein shown and described.

4.—The combination of the adjustable curved hoes I with the rear ends of the long hoes H, substantially as herein shown and described.

5.—The combination of the rear governors or adjusting rods J with the curved hoes I, and the rear ends of the side beams B C, substantially as herein shown and described.

6.—The combination of the central adjustable governor K with the central beam D, substantially as herein shown and described.

7.—The combination of the guard knife L, and draught hook M with each other, with the forward end of the central beam B, and with the front central tooth F, substantially as herein shown and described.

8.—The combination of the slotted adjusting bars N, bolt *n'*, and nut *n''*, with each other, and with the beams A B C, substantially as herein shown and described.

9.—A combined horse cultivator and hoe constructed and arranged substantially as herein shown and described.

No. 59,358.—LYMAN J. CASWELL, SCOTT TOWNSHIP, IND.—*Cultivators*.—November 6, 1866.

Links and brace rods connect the side beams to the middle beam to allow the longitudinal adjustment of the frame to arrange the share in plough or cultivator fashion. The obliquity of the standards is regulated by angular braces, and a slight rotation effects the shed of the earth from the shares.

Claim.—1.—The application of the turning armatures F F F F F to the cultivator, to change the positions of the side shovels, so as to form a shovel plough or a cultivator. The application of the braces G G to sustain the side beams and side shovels in their proper positions.

2.—The application of the braces E E E to the shovel standards, to elevate and depress the shovel points and turn the soil or sward; the application of the curve to the extension mould plates; the mortise in the ends of the shovel standards, and the flattening of the points of the shovels.

No. 59,584.—JOHN GIFFORD, WATERLOO, N. Y.—*Horse Hoe*.—November 13, 1866.

The adjust-ble wings in the rear of the share are attached at their forward ends to the standard, and at the rear are adjusted by slotted plates proceeding from the handles and beam respectively.

Claim.—The reversible wings I I, attached to and following the share and adjustably supported from the frame A B, substantially as described and represented.

No. 50,502.—A. F. GROVE, JAMES CREEK, PENN.—*Cultivators*.—November 13, 1860.

The side beams have longitudinal movement by which either plough may be put in the lead.

Claim.—The shing or adjustable plough or shovel beams C C, applied to the main beam A of the implement, and arranged in connection with suitable levers, or their equivalents, to operate substantially as and for the purpose set forth.

No. 60,422.—BARBARA S. RICH, DENFIELD, N. Y., administratrix of the estate of J. C. RICH, deceased.—*Cultivators*.—December 11, 1860.

The shares have longitudinal adjustment on iron strips, and these strips have lateral adjustment at the rear by an expandible cast metal frame to which the handles are attached.

Claim.—1.—The standard frame C, provided with lugs *i'* at the top, and the parts *h h' l n* at the bottom, when combined with expanding arms E E of a flexible metallic cultivator, the whole operating substantially as and for the purpose specified.

2.—The gauge wheel stirrups, composed of two counter parts *r r*, and provided with the projections *t t*, when combined with the flat side of *a*, of the cultivator frame, as herein set forth.

No. 60,449.—WILLIAM T. WATSON, NOTTINGHAM, MD.—*Cultivators*.—December 11, 1860.

The teeth are curved forward, and are inserted in metallic plates in the rails.

Claim.—1.—The teeth C of a cultivator when constructed as set forth.

2.—The combination of the frame A, teeth C, and metallic sockets D, when said several parts are respectively constructed, and the whole arranged substantially as set forth.

No. 60,982.—SAMUEL A. WRAY, GREENFIELD, IND.—*Cultivator Ploughs*.—January 1, 1867.

The beams are attached together by a flexible plate, and have a slotted adjustment plate near the rear end.

Claim.—The combination of the beams B and B', elastic plate D, and hinge joint E, with a device for retaining the beams in position, substantially in the manner set forth.

No. 61,294.—SILAS M. WHITNEY, GALESBURGH, ILL.—*Cultivators*.—January 15, 1867.

The standards are secured by eyebolts and sockets to the beams, and are braced by eyebolts to angle pieces, fastened to advance points on the beam. The plough is steered by a castor wheel at the rear.

Claim.—1.—The securing of the standard D to the beam A through the medium of the sockets B and screw bolts C, provided with eyes *a*, all constructed and arranged substantially in the manner as and for the purpose set forth.

2.—The braces E, applied to the beam, and standards, substantially in the manner as and for the purpose specified.

3.—The castor or gauge wheel H, applied substantially in the manner as and for the purpose set forth.

No. 61,705.—JAMES C. BETHEA, BLAKELY, GA.—*Cotton Cultivators*.—February 5, 1867.

The shares are attached by rings and wedges to the standards and braces, and the latter similarly fastened to the beams. The braces are thus rendered adjustable at either end.

Claim.—1.—The mode, substantially as described, of fastening together the standard brace and share by a shackle and wedge.

2.—The mode of adjusting the pivoted standard by slipping forward the shackle and the upper end of the brace upon the beam.

3.—The relative lateral adjustment of the beam by means of the bolts with their collars, washers, and set nuts, substantially as represented.

No. 61,760.—W. N. KHNEHART and H. FELKER, MIAMI CITY, OHIO, assignors to themselves and O. P. RUSSELL.—*Corn Cultivators*.—February 5, 1867.

The left side of the front plough and the right side of the second plough are turned forward in projecting flanges. The former, which runs nearer to the corn, turns the earth

from the plants, and the latter ferds off the clods but throws the mellow earth to the plants.

Claim.—The ploughs C C, when constructed substantially as described, and their arrangement with reference to the plough D and frame, in the manner and for the purpose specified.

No. 61,828.—G. W. HATFIELD, HOLLON, IND.—*Cultivator Ploughs*.—February 5, 1867.

Claim.—1.—The loop B, clips C, and keys or wedges D, all arranged to secure the front ends of the beams A together substantially as and for the purpose herein set forth.

2.—The beams A A, handles E E, brace K, held together by the clips F F, and key G, when all are combined and arranged as herein set forth.

No. 61,943.—IVORY LORD and SEWELL WOODMAN, SMO, MD.—*Cultivators*.—February 12, 1867.

The Shank or standard of the share is forked vertically, and the arms are traversed by rods which project laterally from the frame and on which the outer standards have side adjustment by set nuts.

Claim.—1.—The Shank *s*, as shown in all the figures of the drawings, elongated and perforated as described, and the brace *b*, connected therewith.

2.—The attachment of the teeth by the rods or arms at a distance from the wool, as shown in Figs. 1 and 4, and secured in place by nuts and keys, as described.

3.—The mode of widening or narrowing the machine by sliding the teeth on the arms *r r h h'*, in Fig. 4, and the combination of all, forming the cultivator as represented and described.

No. 62,060.—W. J. OXER, WILLIAMSPORT, IND.—*Cultivators*.—February 12, 1867.

The frame is made of four pieces—a draft piece carrying the forward share, two bent side bars, to which the rear shares are attached, and a transverse brace bar.

Claim.—An improved iron cultivator frame, formed by the combination of the bars A C and F, with each other; when said bars are constructed and arranged substantially as herein shown and described.

No. 62,223.—JONAS BETTS, BRIDGEPORT, W. VA.—*Cultivators*.—February 10, 1867.

To each beam is attached a share standard. By the use of all, or the removal of parts, the beams in the case of side ploughs, and the standard in the case of the middle ploughs, the implement is convertible into a treble, double or single shovel plough.

Claim.—1.—A cultivator, provided with movable uprights D D' D'', and their arms *d d' d''*, to enable it to be changed to a double or single shovel plough, substantially as and for the purposes described.

2.—The yoke C, provided with a plate C', having hooks *f* fastened to it, to hold and support the arms *d d' d''*, substantially as described.

3.—The plough beam A, provided with the projection *a*, and tapering at its end, substantially as and for the purpose set forth.

4.—The combination of the plough beam A, projection *a*, yoke C, plates C', hooks *f*, uprights D D' D'', with their arms *d d' d''*, substantially as and for the purposes described.

No. 62,272.—S. W. JACKSON, BALDVILLE, OHIO.—*Shovel Ploughs*.—February 10, 1867.

The standards are laterally adjustable by set nuts in screw bars that connect them to the beam. The braces are pivoted in the beam, and standards, and the handles vertically adjustable at their forward ends.

Claim.—The counter braces G, adjustable screw rods or arms D, provided with nuts I, in combination with the standards B C and adjustable handles E, arranged in the manner and for the purpose set forth.

No. 62,302.—LEWIS G. TUTTLE, NORTH HAVEN, CONN.—*Cultivators*.—February 10, 1867.

The plough beams are expandible laterally to vary the width of till; the shafts are adjustable vertically to vary the depth of furrow; the handles are adjustable vertically to suit the operator.

Claim.—The combination of the shafts G and H, when made vertically adjustable, with the beams C and D, when

made horizontally adjustable, and the whole is constructed and arranged substantially as herein described.

No. 62,326.—CHARLES S. GWINNUP, MILROY, IND.—*Cultivators*.—February 26, 1867.

The handles are pivoted at their forward ends to the frame and are regulated as to height by adjustment on their supporting post. The standards are adjustable laterally to vary the width of the tilth by means of slotted bars, segment bars, and adjustable draw rods.

Claim.—1.—The stanchion *d*, constructed and operating as and for the purpose herein set forth.

2.—The standards *E* in combination with plate *G*, rods *L*, plates *m* and *n*, and curved plate *T*, the whole constructed, arranged, and operating in the manner and for the purpose herein specified.

No. 62,329.—JAIRUS HASKELL, LISBON, ME.—*Cultivators*.—February 26, 1867.

The frame traverses on three wheels, whose holders are vertically adjustable so as to regulate the depth of the furrow cut by the ploughs, which are adjustable laterally as to relative distance.

Claim.—1.—The combination of the three wheels *h j k*, having their gauges *i*, pivots *m*, and clamps *u*, with the elongated teeth *M N P*, when the same are arranged in positions relative to each other on a cultivator frame of the described form, in the manner and for the purposes set forth.

2.—The combination of the splice beams *H I*, with the two rear wheels *j* and *k*, attached and adjustable as set forth, when the two beams *H I* are connected with the beams *B C*, in the manner and for the purposes set forth.

No. 62,385.—DANIEL R. ALLEN, CUMBERLAND, ME.—*Cultivators*.—February 26, 1867.

Claim.—1.—The relative arrangement and position of the teeth *c* and *d*, viz., upon their respective cross-bars *a* and *b*, converging at their lower ends, in the manner and for the purposes described.

2.—The combination and arrangement of the slots and holes in the cross bars, the shoulder, flange, and lip on the teeth, with the bolt and nut, for the purpose of securing the teeth.

3.—In combination with the shoulder, lip, and flange on the teeth, the additional slots and holes in the third cross bar, for the purpose of rendering the teeth *c* and *d* adjustable as described.

4.—The combination of the slots *p* and *t*, bolts *r* and *u*, and nuts, with the slides secured to the mold boards *e*, for the purpose of rendering the mold boards adjustable, as described.

5.—In combination with the diverging upper ends of the teeth *c* and *d*, the scooped parts *m* and *n* of the beam *A*, in the manner and for the purposes set forth.

6.—The combination and arrangement of the scorer *z*, constructed as described, with the hooks *v* and pin *u*.

7.—In combination with the subject of the first and fifth claims, the rounded top *t* of the teeth projecting above the frame of the cultivator, as and for the purposes specified.

8.—The concave shape to the upper part of the forward edge of the tooth *z*, when the said tooth is attached as described, for the purposes specified.

No. 62,386.—WILLIAM J. ANDREWS, COLUMBIA, TENN.—*Cultivators*.—February 26, 1867.

The broad-edged shares are attached to the frame at the desired obliquity to the line of draft, and are succeeded by harrow teeth attached to the same frame.

Claim.—The combined plow and harrow *G H* applied to the standards *F F*, substantially as and for the purpose specified.

No. 62,405.—JOHN GILPATRICK, BIDDFORD, ME.—*Cultivators*.—February 26, 1867.

The triangular frame has transverse bars having pointed projections at their ends, to which the shares are attached.

Claim.—The iron cross bars *B*, provided with tongues *a a*, and the cast iron teeth *C*, when constructed and arranged as herein set forth and for the purpose specified.

No. 62,808.—A. S. BARNWELL, SAVANNAH, GA.—*Cultivators*.—March 12, 1867.

A transverse bar is attached under the beam, extending on each side and carrying two adjustable standards and

shares. A central standard and double share follow in the rear, working the balk between the furrows just made.

Claim.—The two adjustable shares *G G*, in combination with the fixed double share *D*, applied to the beam *A*, and arranged to operate in the manner substantially as and for the purpose set forth.

No. 62,971.—LEVI REPP, Tiffin, OHIO.—*Cultivators*.—March 19, 1867.

The three-beam cultivator is expandible laterally, the central portion having a hinged rear section with a shovel thereon. Pivoted clevises connect the points of the side beams to the central. The handle supports rise from the central beam.

Claim.—1.—The construction of the central beam *A* of a three beam cultivator with a jointed extension *A'*, having a shovel applied to it, and also a spring *B* for keeping it down and staying it laterally, substantially as described.

2.—Pivoting the front ends of the three beams *A B B* to U-shaped clevis plates *a a*, substantially as described.

3.—The construction of the shovels *m m*, with narrow and wide wings, and so that they can be reversed at pleasure, substantially as described.

4.—In combination with the forward pivot connections of the three beams *A B B* the lateral extension braces *C C*, and still standards *E*, connected to beam *A*, in front of the joint *d* by a bolt *e*, substantially as described.

No. 63,439.—THEODORE B. ROGERS, WETHERSFIELD, CONN.—*Cultivators*.—April 2, 1867.

The cutter is obliquely set, and is secured by posts to the frame; the depth is regulated by bearings.

Claim.—The frame *A*, arm *B*, posts *D*, in combination with the blade *E* and bearers *F*, substantially as and for the purpose described.

No. 63,534.—C. G. LATHROP, SAN JOSE, CAL.—*Weed Cutters*.—April 2, 1867.

The V-shaped horizontal cutter has hooks on the ends of its wings, and is secured to a stand beneath the plough beam which is supported on wheels.

Claim.—1.—A weed cutter made and operating substantially as herein shown and described.

2.—The V shaped horizontal cutter *I*, provided with knives *K*, at its ends, substantially as and for the purposes herein shown and described.

3.—The circular revolving coulter *G*, arranged in front of the plough beam in combination with the cutters *I* and *K*, all made and operating substantially as herein shown and described.

4.—The adjustable draft attachment *E* and *F*, in combination with the cutters *G I* and *K*, as set forth.

5.—A weed cutter so constructed that either the knives or the wheels on which the whole device is supported can be adjusted up and down so that the cutters can be brought more or less into the ground.

No. 63,610.—RAINSFORD CANTELON, MONTGOMERY, ALA.—*Ploughs*.—April 9, 1867.

The vertical circular frame has perforations for attaching the plough shank and beam in front, and the handles and adjusting arm behind. To the arm and shank are attached perforated curved bars, to which cultivator or harrow teeth can be bolted.

Claim.—The rim wheel *A*, constructed in the manner herein represented, or in any other manner substantially the same, when used with the necessary devices for forming a plough, as herein specified.

No. 63,717.—ALEXANDER GORDON, ROCHESTER, N. Y., assignor to H. D. GORDON, same place.—*Cultivators*.—April 9, 1867.

The middle plough has adjustable wings; the rear ploughs, one on each side, are pivoted to the cross-bar and are laterally adjustable by brace bars which connect them crosswise to each other.

Claim.—1.—The adjustable or swinging clamps *a* in combination with the mould board *B*, for the purpose of holding the wings *w*, substantially as shown and for the purposes specified.

2.—The skeleton metallic cross-bar or tie *C*, constructed as shown and described, and arranged in connection with the shovel and teeth or hoe standards, for the purposes set forth.

3.—The diagonal guide or extension bars δ in combination with the teeth bars D, as shown and described.

No. 64,830.—WILLIAM M. BAILL, MCKEES TOWNS, IND.—*Cultivators*.—April 16, 1897.

The middle shovel standard is attached to a central beam; the others are curved right and left, and stayed by rods. The handles rest upon a vertical post on the rear portion of the beam.

Claim.—1.—The arm α , provided with screw thread and nuts β , as described, in combination with bar γ , for the purpose herein specified.

2.—The arm α , provided with screw thread and nuts β , the bar γ , handle d , standards C C C, braces $b b b$ and beam A, when the whole are combined, arranged and operating in the manner and for the purpose substantially as herein set forth.

No. 64,086.—OLIVER E. ENDER, MOUNT UNION, PA.—*Cultivators*.—April 23, 1897.

The rubber blade is attached to the rear end of the centre beam, and is adjusted by a lever held in position by a rack above. The handles are attached to the cross beams, and united by a cross-bar behind.

Claim.—The combination of the guide blade or rubber D, placed on the rear of the projecting centre beam B, and the handles C C attached to the cross beams $a b$, arranged and operating substantially as and for the purpose herein described.

No. 64,165.—J. E. TATE, COLUMBIA, TENN.—*Cultivators*.—April 23, 1897.

The forward teeth and the scrapers are adjustable to have a wider or narrower row. The clevis hook is on one side to enable the horse to walk beside the row. The cover is a transverse bar of wood concave beneath.

Claim.—1.—The adjustable scrapers F constructed as herein shown and described, in combination with the bars G and frame A of the cultivator, substantially as and for the purpose set forth.

2.—The cotton coverer L, constructed as herein shown and described, in combination with the bars F and frame A of the cultivator, substantially as and for the purpose set forth.

No. 64,370.—ANSELL P. ROUTH, LIBERTY MILLS, VA.—*Cultivators*.—April 30, 1897.

The adjustable and reversible share is secured by loop and key upon the curved sheath whose point enters a hole in the back of the shovel to steady it.

Claim.—The changeable, reversible, and adjustable share secured by loops G, and keys or wedges g upon the curved sheaths or shanks C, whose points enter the holes or notches in the shovel or plough to secure and steady it in any position in which it may be adjusted, substantially as set forth.

No. 64,420.—ABRAHAM B. KING, CAMDEN, OHIO.—*Cultivators*.—May 7, 1897.

The two outer cultivators are coupled to the two inner ones by horizontal pieces, and have laterally-projecting independently acted blades.

Claim.—1.—The arrangement of the two outer cultivators F A S J F' A' S' J' and the two inner and smaller ones F' A' S' K F' A' S' K', so coupled together by the pieces C M D and their described accessories as to be held rigid, or to swing from side to side, or to be separated into two distinct double-share cultivators, in the manner described.

2.—The arrangement on the inner or landside, and in rear of a cultivator share of one or more independently attached laterally projecting blades or cutters T, substantially as and for the purpose stated.

No. 64,808.—JACOB HOLLINGER, MILLERSBURG, OHIO.—*Cultivators*.—May 21, 1897.

The salient heads of the curved beam serve as points of attachment for the standards which are adjustable on the beam and braces.

Claim.—The curved beam A, as arranged in combination with the adjustable standards B and braces E H, for the purpose and in the manner substantially as set forth.

No. 64,027.—ALBERT WILCOX, MARYSKELA, IOWA.—*Shovel Ploughs*.—May 21, 1897.

The extra side shovel is attached and secured by a curved supporting bar and brace, and the equilibrium of the draft is maintained by the extra curve and size of the high shovel.

Claim.—The attachment of the third shovel A, by means of the curved supporting bar B to the beam C of the main plough, also the manner of equalizing the draft of said plough, by making the left hand standard of the main plough more curved and the shovel on the same size larger, in the manner and for the purpose above set forth.

No. 64,967.—T. ELIZARE GARDINER, BRYANTOWNS, MD.—*Ploughs*.—May 21, 1897.

The two gang ploughs on each side bar of the frame throw the furrows into a ridge; drags and rollers follow the ploughs.

Claim.—A gang plough, constructed and operating in the manner substantially as shown and described.

No. 65,728.—GEORGE W. COOPER, OGLETHORPE, GA., assignor to himself and JAMES V. JONES, same place.—*Howe Plows*.—June 11, 1897.

Claim.—1.—A plougher horse hoe of four separate sections, viz: base A, centre plate B, and shares C C, constructed and arranged substantially as described and for the purpose specified.

2.—The shoulders $a a$ formed in the opposite sides of the plate B, substantially as described and for the purpose specified.

3.—The metallic sole D secured to the base plate A, for regulating the depth of furrow, substantially as described.

No. 65,847.—THOMAS P. WARREN, NORFOLK, VA., assignor to WARREN & WOODHOUSE, same place.—*Combined Cotton Plough and Scraper*.—June 18, 1897.

Side scrapers and shares are attached to the side bar in rear of the broad share to adapt the machine to different phases of corn or cotton cultivation.

Claim.—1.—The standard B having the broad flange α , the slots $b b$, and the arm γ , substantially as and for the purpose described.

2.—The combination of the standard B and the flanged supporting attachment C, substantially as and for the purpose specified.

3.—The scraper guide K attached to the landside in the manner and for the purpose above shown.

No. 65,877.—GEORGE W. COOPER, OGLETHORPE, GA., assignor to himself and JAMES V. JONES, HENDERSON, GA.—*Rice Cultivators*.—June 18, 1897.

The plough beams are adjustable laterally to the rear of the frame. The ploughs are attached to standards having brace bars running from their lower ends, and are followed by curved teeth.

Claim.—1.—The combination and arrangement of the braces F F' F', the beams A B B', and the braces G G, substantially as and for the purpose described.

2.—The method above described of fastening the teeth E E E to the beams by two bolts, situated obliquely to the grain of the wood, substantially as and for the purpose specified.

3.—The inclining and bending of the cultivator teeth E E outward and backward upon the point of attachment to the beams A B B', substantially as and for the purpose described.

No. 66,284.—HENRY F. BEMENDEFFER and GEO. SMITH, ARLICA, OHIO.—*Ploughs*.—July 2, 1897.

The notched bar and spring catch allow oscillation of the plough standards.

Claim.—1.—The bar D, spring catch e , and spring e when used for shifting the standards, substantially as specified.

2.—The arrangement of the beam A, bars $d f$, standards, B B B', with their ploughs and the roller h , when constructed, arranged, and used in the manner substantially as set forth.

No. 66,335.—JAMES M. HAWLEY, HOUTON, IND.—*Ploughs*.—July 2, 1897.

The plough standards have side bends by which they are attached to the plough beam when used in double shovel form. When three shovels are used these standards are attached to side brackets and an additional plough added. The scraper may be attached to the frame by standards.

Claim.—1.—The standards H and E, constructed substantially as herein described, in combination with the shovels K and G and beam A, in the manner and for the purpose set forth.

2.—The combination of the handles B and forked and

bolt connecting bar C with the beam A, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the bent bars or frame M with the beam A and standards H, substantially as herein shown and described and for the purpose set forth.

4.—The combination with the scraper plate P with the forward standards H, substantially as herein shown and described and for the purpose set forth.

No. 66,340.—STEPHEN H. HERRICK, GRINNELL, IOWA.—*Cultivators*.—July 2, 1867.

The metallic standards are turned forward in a horizontal direction and pivoted to the rear end of the beam. The fore end of these longitudinal bars meet in a vertical screw which passes through the beam and is adjusted by set nuts.

Claim.—The frame B, turned up and threaded at its forward end, and connected to and regulated at the rear end of the beam by the bolt D, as and for the purpose set forth.

No. 66,495.—HANFORD INGRAHAM, NAPLES, N. Y.—*Cultivators*.—July 9, 1867.

The horse is harnessed to the thills, and hitched to a hook attached to the central plough. The side ploughs are adjustable laterally.

Claim.—1.—The arrangement of the standards and cross-bars with the moulds or shares, as constructed, in combination with the thills, substantially in the manner and for the purposes as herein described.

2.—The adjustment of the shares to the required angle by means of adjustable plates with flanges, substantially in the manner and for the purposes herein described.

3.—The adjustable clasps in combination with cross bar E, the thills, rods, standards, and shares, substantially in the manner and for the purposes as herein described.

No. 66,871.—JOHN MURPHY, ALEXA, GA.—*Cultivators*.—July 16, 1867.

The beams are laterally adjusted on the transverse bolts, to which they are secured by nuts. The plough standards are attached to the beams and secured with braces above and below. An adjustable wheel in front regulates the draft. A blade with an extension arm is attached for hollow plowing on cotton lands.

Claim.—1.—The construction of the frame A, B, and C, in combination with the plough beams F, secured thereto substantially as and for the purpose described.

2.—The plough S, with its arm Q, substantially as and for the purpose specified.

No. 66,865.—F. MARION SHEPHERD, MYCON, MISS.—*Cotton Ploughs or Cultivators*.—July 16, 1867.

The triangular, convex, slide-plated hoes are attached by stocks to a horizontal beam, to whose tongue a team is attached.

Claim.—1.—The hoes D *d* *d*, when constructed in the manner and for the purpose herein described and represented.

2.—The combination of the hoes D D D, beam A, shares or stocks E F, draft tongue or beam B, and handles C C, all arranged substantially in the manner and for the purpose set forth.

3.—In combination with the above the fenders F F, applied in the manner and for the purpose set forth.

No. 67,430.—SAMUEL L. HEISEY, WEST DORSET, PA.—*Cultivators*.—August 6, 1867.

The tongue is pivoted with the hammer butt, and when the butt of the tongue is raised by the lever out of the recess of the semi-circular slide plate it will swing about one-quarter round before turning the cultivator.

Claim.—The arrangement of the sliding plate B with its guide *c*, recess *b*, in combination with the lever D, and springs S, all arranged and operating substantially in the manner and for the purpose specified.

No. 67,522.—JOHN FRANK, WEBSTER CITY, IOWA.—*Cultivators*.—August 6, 1867.

The outer legs turning in their hands are adjusted by the transference of the hooks from one staple to the other to present the shovel towards or from the plants.

Claim.—A cultivator or shovel plough, having the leg A, staple B, snap C, staples D D, hook E, and staple F, arranged, combined, constructed, and operating substantially as described.

No. 67,595.—S. F. SEELEY, Sylvania, OHIO.—*Cultivators and Ploughs*.—August 6, 1867.

The line of draft is regulated by the sliding link in combination with the share and wings, which are adapted to constitute it a cultivator or hilling plough.

Claim.—The jointed draft rod L, adjustable link G beam A standard C, with oblong slot *d*, brace D, handles B, share E, wings F, cross rod *e*, and brace rods *a*^s, combined, arranged and operated substantially as described for the purpose specified.

No. 67,843.—ANDREW CANFIELD, LYONS, IOWA.—*Corn Ploughs*.—August 20, 1867.

The two side beams are jointed to backward projections from the central beam, to which the single-tree is connected, and are adjustable transversely upon lateral stays of the beams and handles.

Claim.—The adjustable beams A A, with joint at B, and the open link C, also the slotted bar D, with the clamps E E, when constructed, arranged and operating substantially as and for the purposes above set forth and described.

No. 67,844.—ANDREW CANFIELD, LYONS, IOWA.—*Corn Ploughs*.—August 20, 1867.

The side beams are so hinged by the double bolted clevises, to the central frame as to be adjustable laterally or removable therefrom.

Claim.—1.—The double bolted clevis B, for the purpose described.

2.—The adjustable stay bar D, for the purpose above described.

3.—The combination and arrangement of any one horse corn plough that may be readily changed to any required width, also changed to any number of shovels, from one to three, making a single, double, or three shovel plough.

No. 67,917.—GEORGE W. SAWIN, NANTUA, N. H.—*Horse Hoos*.—August 20, 1867.

The frame is extensible at the rear end, its side beams being pivoted in front; and it has a detachable rake hinged to the rear.

Claim.—1.—The combination as well as the arrangement of the rake I with the blades D D' A and A', made substantially as described and for the purpose set forth.

2.—The combination and arrangement of the gathering in blades A A' with the blades D and D', made substantially as described and for the purpose set forth.

3.—The combination of the movable blade B, with the adjustable bars C and C', made substantially as described and for the purpose set forth.

No. 68,302.—JAMES P. STANTON, PEDRICK TOWN, N. J.—*Potato Ploughs*.—September 3, 1867.

Side ploughs turn the earth and the double mould board plough turns the potatoes out. The side plough beams are connected by bars to the central beam, and the bars are inclined, more or less, for lateral adjustment.

Claim.—1.—The employment of a hand lever for shifting laterally the side ploughs, substantially as described.

2.—Such lever combined with devices for locking the same in different positions.

3.—Such lever combined with a slide connected with the side plough beams.

4.—Such lever combined with a side spring, operating as a self-acting locking device.

No. 68,470.—JOHN R. THOMAS, MIDDLETOWN, PA.—*Corn Ploughs*.—September 10, 1867.

The pivoted standards fold up under the frame when the plough is moved from place to place.

Claim.—1.—The plough points *d d*, having the form above described, substantially as and for the purpose specified.

2.—The method of adjusting the direction of the ploughs, above described, by means of the bolts G G, the braces F F, and the hoes *e e*, passing in different directions through the side beams B B, substantially as and for the purpose described.

3.—The washers H H, substantially as and for the purpose specified.

No. 68,601.—WILLIAM RICHARDSON, HOOKSTONS, MD.—*Ploughs*.—September 17, 1867.

The rear plough standards slide vertically in boxes which slide laterally along a transverse rear bar of the frame.

Claim.—The boxes F F, substantially as and for the purpose described.

2.—The graduated beam C, for the purpose specified.

3.—The graduated plough shanks or plough standards G' G', for the purpose specified.

4.—The arrangement of the removable plough E with the adjustable and removable ploughs G G', substantially as and for the purpose specified.

5.—The combination of the plough shanks G' G', the boxes F F, the set screws H H, and the cross beam C, substantially as and for the purpose specified.

No. 60,230. HENRY W. OSTROM, GRAND RAPIDS, MICH.—*Harrow Cultivator*.—September 24, 1867.

The teeth are secured to the rear ends of the bars that are hung upon a frame supported by wheel in front. The teeth rise and fall with the inequalities of the ground and are adjusted by the levers above.

Claim.—The combination of the frame A mounted on guide wheels B B, the bars *a a* suspended on the cross rod *b*, the movable cross bar *d*, and the cross bar *m*, attached to the handles *k k*, arranged and operating as and for the purpose specified.

No. 60,314.—NATHAN A. CATES, THORNDIKE, ME.—*Cultivator*.—October 1, 1867.

The coultter guides the front of the machine and stirs the ground, while the scraper clears the space between the furrows made by the ploughs, which throw the earth outwards to form a ridge that is smoothed by their overlying wings.

Claim.—1.—The combination of the central beam, carrying the adjustable roller, the coultter and the scraper, with the laterally adjustable beams, carrying the edging and smoothing ploughs, the combination being and operating substantially as described for the purposes set forth.

2.—The combination with the scrapers of the laterally adjustable ploughs, all constructed and arranged for joint operation, as described.

3.—The laterally adjustable furrow turning and ridge smoothing ploughs, constructed and operating as described.

4.—The combination with the central beam and coultter of the clevis bracket and adjustable yoke carrying the leading roller, all constructed, arranged, and operating as described.

No. 60,801.—DAN GUPTAH, EDIN, ILL., assignor to himself and H. N. MOSELEY, same place.—*Cultivator*.—October 15, 1867.

The teeth of the cultivator are pliable and are supported in the rear by pendent bars, which limit their backward motion.

Claim.—The elastic or spring shovel B, in combination with wedge or key L, substantially as and for the purpose set forth.

No. 9,087.—DAN GUPTAH, EDIN, ILL., assignor, by mesne assignments, to CHARLENA DOW. Original number 60,801.—*Cultivator*.—October 15, 1867. Re-issued February 17, 1885. [Filed December 13, 1879.]

Claim.—1.—The combination, substantially as herein before set forth, of the frame and spring shovels which support it and are adjustable relatively thereto, whereby the depth of cut and extent of vibration of the shovels may be regulated.

2.—A V-shaped frame having spring shovels mounted thereon.

3.—The combination, substantially as herein before set forth, of the pivoted frame bars, spring shovels mounted thereon, and mechanism, substantially such as described, for adjusting the bars relatively to each other.

4.—The combination, substantially as herein before set forth, of the frame and ranks of spring shovels supporting the frame, the shovels in each rank being arranged one in advance of the other.

5.—The combination, substantially as herein before set forth, of the frame, the spring shovels mounted thereon and arranged one in advance of the other, and supports for resisting rearward strains upon the shovels.

6.—The combination, substantially as herein before set forth, of the frame, the spring shovels having hooks upon their upper ends, and wedges or locking devices for securing the shovels in place.

No. 60,028.—E. F. MORRIS and R. J. GREEN, CHICAGO, N. Y.—*Combined Harrow and Plow*.—October 15, 1867.

The double mouldboard plough is associated with shovel ploughs on laterally adjustable beams.

Claim.—The swinging beam B and wing, or lames F connected with yielding links *l l*, in connection with ploughs D *d*, frame A, and braces *g*, all constructed, arranged, and operating as herein shown and for the purpose set forth.

No. 7,057.—E. F. MORRIS and R. J. GREEN, CHICAGO, N. Y., assignors, by mesne assignments, to T. R. PORTER and GEO. A. PORTER. *Combined Harrow and Plow*.—Patent No. 60,028—October 15, 1867. Re-issued Jan. 6, 1876. [Filed April 18, 1870.]

Expandable beams carrying ploughs, and expandable inner wings linked to the beams.

Claim.—The expanding side beams B, bearing the ploughs D *d*, and the expanding wings F, joined to the shovel plough E, in combination with the main beam A, constructed, arranged, and operating substantially as herein shown, and for the purposes described.

No. 60,084.—CHRISTIAN FLORY, EAST DORSET, PA.—*Core Cultivator*.—October 22, 1867.

The metallic beams are pivoted to the tongue at their front ends, and are adjustable between vertical bolts in cross beams.

Claim.—The specified arrangement of the pole A, shovel beams E F, straight cross bars D D, with the screw bolts *d*, notched and terminal, straight edged shovels *g*, all constructed and combined in the manner and for the purpose specified and shown.

No. 70,258.—E. W. PIKE, GAITHERSBURG, ILL.—*Cultivator*.—October 20, 1867.

Improvement on W. H. Smith's patent, January 15, 1864.

The pivoted shovel standards are laterally adjusted in the slotted bows attached to the beams. The handles are adjusted and secured by hooked bolts. The standards are secured with rods nearly on the line of draft.

Claim.—1.—The combination of the plate S, jaws R, and coiled spring U, with the pivoted catch block P, and standard F, substantially as herein shown and described for the purpose set forth.

2.—The hinged plate W, and springs X, in combination with the cross beam B, and standards F, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the brace bar H with the beam A and cross beam G, substantially as herein shown and described and for the purpose set forth.

No. 70,472.—T. RICE and LUKE R. HUTCHCOCK, CAMDEN, N. Y.—*Harrow*.—November 5, 1867; ante dated October 13, 1867.

The handles are connected together by a pivoted bar and bent springs to allow oscillation to regulate the space worked.

Claim.—The combination of the curved perforated braces and hoe, as shown in Figs. 1 and 2, for the purpose of cultivating garden and field crops in the best and most desirable manner.

No. 70,578.—S. A. KRONER, NEW BRITAIN, PA.—*Cultivator*.—November 5, 1867.

The sections of the movable frame are attached by bolts and metallic plates. The draft is regulated by the points of attachment of the frame on the beam. The handles are pivoted in the middle so as to rotate and work from either end. The long clevis is attached to the hook on the pivot bolt of the handles.

Claim.—1.—The trestle H, in combination with the handles F and beam A, for the purpose of shifting the handles, in the manner and for the purpose specified.

2.—The movable sides C and C', in combination with the plates D and F, the slide E, and pin G, in the manner and for the purpose set forth.

3.—The arrangement of the shares K, in combination with the movable sides C and C', plates F and D, slide E, trestle H, and clevis I, in the manner and for the purpose set forth.

No. 70,785.—ALFRED C. BELT, GORESVILLE, VA.—*Cultivator*.—*November 12, 1867.*

The cultivator teeth are ranged in reversed positions, having their mould boards presented to opposite sides. The mould boards are perforated to pulverize and sift the soil. The couler is adjusted to the reversed position of the land-side.

Claim.—1.—The reversed arrangement of the alternate teeth of the cultivator, as described.

2.—The cultivator teeth arranged in reversed positions, as described, in combination with the adjustable couler.

3.—The grooved or recessed beam, in combination with the flanged teeth secured thereto, as described.

4.—The forward tooth, provided with the perforated sifter mould board, in combination with a following tooth having the reversed arrangement described, for the purpose set forth.

No. 70,972.—JONATHAN B. DAVIS, M. KAY, OHIO.—*Ploughs*.—*November 19, 1867.*

The frame is of iron, and the sides are hinged together so as to admit of single vertical movement, or of a side inclination of the whole frame.

Claim.—1.—Forming the beams A B, standards E, brace bars G, and handles H, and adjustably connecting them to each other, substantially in the form and manner herein shown and described and for the purpose set forth.

2.—The combination of the jointed or pivoted bars C and I with the beams A and B and handles H, substantially in the manner herein shown and described and for the purpose set forth.

No. 71,152.—JOHN W. ERNST, HEIDELBERG, PA.—*Adjustable Cultivator*.—*November 19, 1867.*

The four outside bars are hinged together, and the frame adjusted in which by a diagonal draft bar, which has movement between the front bars. The front bars have narrow teeth and the rear bar have cultivator teeth.

Claim.—The diamond shaped cultivator joined and adjusted as herein described, when combined with the teeth, shovels, and regulating clevis, for the purposes set forth.

No. 72,004.—WM. DUFENER, PLEASANT, IND.—*Cultivator*.—*December 10, 1867.*

The shaft is adjusted by varying the elevation of the wheel; its hinged supporters are actuated by the hand lever in the rear.

Claim.—The cultivator, composed of the elements A B C D E F H I J N and the device for regulating the depth of the shovels, composed of the elements G K L M P, all constructed and arranged as set forth.

No. 72,227.—CHARLES B. PETTINGILL, HEBRON, ME., assignor to FREEMAN C. MERRILL, PARIS, ME.—*Cultivator*.—*December 17, 1867.*

The side bars are hinged in front and expansible. The fore end of the frame has a curved beam giving support to a wheel. A longitudinal ground bar runs backward from the front plough.

Claim.—1.—The circular draw beam A, having the wheel snaps *a'*, draft bars *a'*, socket *a'*, and ears *a'*, cast solid therewith, substantially as herein shown and described.

2.—The combination of the bent adjusting rod F with the front tooth E and with the central beam C of the cultivator frame, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the ring bolt I, curved adjusting bars H, and beams C and D with each other, substantially as herein shown and described and for the purpose set forth.

4.—The combination of the bent adjusting rods F, circular draw beam A, and teeth E K L, of different lengths with each other with the beams C and D of the cultivator frame, substantially as herein shown and described and for the purpose set forth.

No. 72,560.—CHARLES E. STORRS, W. E. KEYES, and DAVID W. JONES, GRANVILLE, MICH.—*Cultivator*.—*December 24, 1867.*

The shares have "jumping" cutters attached to their upper sides to enable them to ride over roots in plowing new ground.

Claim.—1.—The scoop shaped ploughs D, for cultivators, substantially as and for the purpose shown and described.

2.—A scoop shaped cultivator plough D, secured to and

forming part of a couler or cutting edge C', substantially as and for the purpose shown and described.

3.—The ploughs D, in combination with the V-shaped frame, substantially as and for the purpose shown and described.

No. 73,087.—WILLIAM FRANTZ, PIQUA, OHIO.—*Cultivator*.—*January 7, 1868.*

Claim.—The combination of the standards D D', and shovel ploughs E E', adjustably attached to cross beams C C', and the adjustable rake F, arranged to operate substantially as set forth.

No. 73,231.—HIRAM C. CHANDLER, ERIC TOWNSHIP, IND.—*Shovel Ploughs*.—*January 14, 1868.*

The two fore standards are removable and are adjustable vertically by slotted brace rods, and laterally by the wedge block, which is inserted between the standards and beneath the beam.

Claim.—1.—The notched beam D, for the purpose of adjusting the handles to the desired height by a bolt passing through them and the notch.

2.—The double-slotted wedge F and method of application at the point G under the beam between the standards B B, to adjust them as to width, and the slotted rods E E securing a forward or backward movement of the standards B B and the shovels attached thereto, and fastened to the beam in the slots by a bolt or other similar device.

No. 73,045.—F. M. BARRIER, STEVENSON, ALA.—*Cultivator*.—*February 4, 1868.*

Claim.—The construction, arrangement, and combination of the central beam A with its shovel or plough, the side beams C C', with their shovels or ploughs, the U or arch-shaped brackets E E, and braces a, a, all as and for the purpose described.

No. 73,088.—JAMES W. MILLROY, GAUFSTON, IND.—*Corn and Cotton Cultivator*.—*February 4, 1868.*

The outer shares are attached to bars which are pivoted to the fore end of the beam and connected by toggle levers to a notched hand lever by which they are transversely adjusted.

Claim.—The movable arms D D, toggle-jointed lever F, beam G, notched lever F, rod G, key G', circular frame A, and self-adjusting hoe shovels B B E B B, the whole as constructed and arranged, substantially in the manner and for the purpose as herein set forth.

No. 74,005.—ANDREW RUNSTETLER and ALBERT WINDECK, PEORIA, ILL.—*Cotton Ploughs and Cultivators*.—*February 4, 1868.*

The fore ends of the side plough beams are connected by universal joints to the frame to which the tongue is attached. The side beams are connected together and to a central removable beam by transverse bars which allow lateral adjustment.

Claim.—The construction, combination, and arrangement of the frame pieces A B C, the iron gauge pieces D E F, book and ring, and removable shovel M, as attached to the beam or piece B, all as shown and for the purposes described.

No. 74,031.—H. B. ARNOLDT and JOHN GRIMM, St. LOUIS, MO.—*Cultivator*.—*February 4, 1868.*

The handles are pivoted to the beam, and slide on a segmental bar upon the rear end of the beam. An adjustable additional draw bar is provided for deep ploughing.

Claim.—1.—The weed cutter C, when combined with a cultivator A B, as and for the purpose herein shown and described.

2.—The movable arm A', when combined with the plough beam A, as described, and for the purpose set forth.

3.—The plough handles A', and the curved rack A', for the purposes herein set forth and described.

No. 74,032.—ISMAEL B. ARTHUR, SIDESBURG, PA.—*Corn Plough and Cultivator*.—*February 4, 1868.*

The central handle is fixed, but the other handle is hinged at the fore end and attached to one of two side posts to allow the operator to walk upon either side. The cross bars have slots traversed by bolts passing through the beams by which the beams may be adjusted, and secured firmly by engaging corrugations on the bars and beams.

Claim.—1.—The combination of the fixed central handle E with the sliding adjustable handle F', when used in a

corn plough and cultivator, substantially as and for the purpose specified.

2.—The wire guard C, when constructed in the form shown, hinged at its rear end, and allowed to rise and fall at its forward end, and, when held in position by rods *c, c'* at its forward end, preventing the two guards from changing their parallel position to each other, substantially in the manner and for the purposes set forth.

3.—The corrugated plates *e, e'*, when used in combination with the side beams A' A'', having corrugated ends, substantially as and for the purposes indicated.

No. 74,082.—JOHN R. HAND, COLLEGE CORNER, OHIO, assignor to himself and JOHNSON ORR, same place.—*Cultivators*.—February 4, 1868.

The fore end of the beam laps over the rear end of the tongue, and is pivoted thereto. The rear end of the tongue carries a rectangular strap ring in which the beam has vertical adjustment by a screw. The standards are secured to cross-bars, the lower pair of which are adjustable in a frame at the rear end of the beam. The standards are adjustable laterally upon the bars.

Claim.—1.—The draught pole M, capable of adjustment upon the beam A, by means of the clevis O and screw P.

2.—In combination with the elements of claim first, the shares G G' K K', and handles R R', adjustable in the manner set forth.

No. 74,344.—THOMAS GREEN and JACOB SOMMER, MILWAUKEE, ILL.—*Cultivators*.—February 11, 1868.

The ends of the singletree are connected by chains to the sides of the cultivator, and will assist in turning the latter.

Claim.—The combination of the adjustable pivoted draught rod C and adjustable draught chains E with the singletree D and with the plough beams A, pivoted to each other at their forward ends, substantially as herein shown and described, and for the purpose set forth.

No. 74,441.—JOSEPH SNYDER, ROCK LICK, W. VA.—*Cultivators*.—February 11, 1868.

Claim.—The cultivator, constructed with the curved main beam A and curved supplemental beam B, shares *c, d*, handles C, and braces *f, g*, and *m*, the whole arranged substantially as and for the purpose specified.

No. 74,721.—B. F. KEAM, ADA, OHIO.—*Shovel Ploughs and Cultivators*.—February 18, 1868.

The side beams are connected to the central beam by a transverse bar, and are either or both removable.

Claim.—The gauge beam E, constructed substantially as described, in combination with the beams A and *a*, guide-lug G, shovels or ploughs C C', or any of them, and coulter D, substantially as and for the purposes set forth.

No. 74,775.—C. F. TAYLOR, VASSALBORO, ME.—*Cultivators*.—February 25, 1868.

The bar of the A-shaped frame is connected with the apex by a centre piece and the flaring shovels thrown inward.

Claim.—The A-shaped cultivator A with its centre piece *a* and cross piece *a'*, in combination with the teeth *b*, so arranged as to throw the earth inward, as and for the purpose described.

No. 75,185.—JOHN NEFF, JR., PULINNY, N. V.—*Cultivators*.—March 3, 1868.

The draw bar and the handles are adjustable so as to work the plough with either side coinciding with the line of draught. The fore end of the draw bar is supported on a spring.

Claim.—1.—The draught rod B, when made and applied and supported by a spring, as specified.

2.—The method of fastening and adjusting the handles by means of the support E, as set forth.

3.—The teeth F, G, H, I and J, when constructed and arranged substantially as specified; also, the furrow board, when made and applied to the teeth substantially as set forth.

No. 75,211.—DAVID S. SLATER, POYNELT, WIS.—*Cultivators*.—March 3, 1868.

The frame is constructed of iron, and has a central and two laterally-adjusted side ploughs. The side ploughs are more clipped to the standards that they may be set sideways, more or less, to throw the soil in the required direction.

Claim.—A cultivator consisting of the central bar A, having the adjustable handles C and the rigid share O' attached thereto, in combination with the laterally-adjustable side bars B, having the adjustable shares *a* secured thereto, and all arranged to operate substantially as shown and described.

No. 75,718.—W. R. ADAMS, INDEPENDENT, MO.—*Corn Cultivators*.—March 24, 1868.

The beams are connected to a draw plate in front and to a hinged cross bar at the rear. The outer ploughs have adjustable connection to the draw plate, and their standards are connected by an adjustable cross bar which is hinged to them by ring bolts.

Claim.—1.—The semi-circular shaped plate *a*, substantially as described and for the purposes set forth.

2.—The cross piece D, as described, and for the purpose set forth.

3.—The adjustable slides E, substantially as described, and for the purpose set forth.

4.—The combination of these three ploughs, the plate *a*, the cross piece D, and the slide E, substantially as described and for the purpose set forth.

No. 76,412.—G. W. DEWEESE, LIMA, OHIO.—*Cultivators*.—April 7, 1868.

The ends of the handles have each a cross bar having a series of adjusting bolt holes by which, in combination with a pivot bolt, the handles are vertically adjusted.

Claim.—The adjustable arms C and handles *a* combined with the draught beams of a cultivator, substantially as and for the purpose set forth.

No. 76,687.—GEORGE W. ZEIGLER, MAUMEL, OHIO.—*Land Fillers*.—April 14, 1868.

The ploughs or cultivators are adjustably connected to the beam, and the beam may be so adjusted in relation to the draught attachments and handles as to plough a wider or narrower furrow.

Claim.—1.—Providing a single beam A, carrying a gang of ploughs or shovels, with a draught rod D, which is pivoted at or near the middle of the length of said beam, and supported at or near its front end by means of a laterally-vibrating beam L, substantially as described.

2.—Supporting the front end of a draught rod D, which is pivoted to the eye *h* of the intermediate stock B, by means of a laterally and vertically-adjustable segmental clevis N, applied to the beam L, substantially as described.

3.—The adjustable casting G, provided with the standard *j* and adjustable standards *l, l'* for sustaining the handles J, and allowing these handles to be secured at their front ends by means of a clamping bolt *j*, substantially as described.

4.—Providing for adjusting the handles J of a single-beam plough in line with a draught rod D, by means of devices G and L, which are arranged to operate substantially as described.

5.—A metallic standard stock and holder B, constructed with a curved front edge *h*, a swelled corrugated surface head *i*, and a slot *g*, substantially as described.

6.—The wooden shovel carrying standard C applied to a stock B, substantially as described.

7.—The construction of the clevis N of a segment form, with a notched flange *p*, and also with perforations through it for receiving the draught rod D, substantially as described.

8.—A single-beam gang plough which is provided with laterally-adjustable shovel standards B C, laterally-adjustable handles J, a vertically and laterally-adjustable clevis N, a laterally-adjustable arm or beam L, all arranged substantially as described.

No. 76,736.—I. G. FLISHER and E. M. BATES, STARK COUNTY, OHIO.—*Double Shovel Ploughs*.—April 14, 1868.

The sole is hinged at the toe and its screw threaded rear end turned up and passed through an eye in which it is adjusted by nuts.

Claim.—1.—The adjustable sole D E, constructed and arranged substantially as and for the purpose set forth.

2.—In combination with the adjustable sole D E, the slide *g*, and nuts *f, h*, arranged and operating substantially as and for the purpose described.

3.—The cutters or knives *a, a'* when used in combination

with the shovel *c*, substantially as and for the purpose described.

No. 77,476.—MARTIN DARLING and HALA GRAY, MARATHON, N. Y.—*Cultivators and Potato Diggers Combined*—April 28, 1868.

The earth is thrown outward from each side of the potato row, and the potatoes raised by the inclined rake.

Claim.—The frame *A*, oblique cultivator rake *B b*, laterally adjustable ploughs *C C* and adjustable supporting wheels and standards *d f*, all combined, constructed, and arranged as herein shown, and for the purpose set forth.

No. 77,260.—ANDREW J. CRAIG, ASHMORE, Ill.—*Double Shovel Plough*—April 28, 1868.

The handles and plough standards are pivoted to the beam, and the latter terminate at their rear in perforated segments, which permit the vertical adjustment of handles and standards.

Claim.—Adjustably attaching the plough standards *D* to the rear ends of the beams *A*, by means of the vertical cross heads *d'* formed upon the said rear ends of the said beams, substantially as herein shown and described, and for the purpose set forth.

2.—Adjustably connecting the handles *F* to the beams *A* and plough standards *D*, by means of the uprights *G*, constructed and arranged substantially in the manner herein shown and described, and for the purpose set forth.

No. 77,474.—SIMON B. FORBES, NEW CUMBERLAND, W. VA.—*Double Shovel Cultivator*—May 5, 1868.

The sole bar is pivoted to the standard, and its rear end is connected to the standard by an adjustable brace. The share is double winged, and the double mould board is removable.

Claim.—1.—The combination of the sole *D*, double winged point *E*, and the double mould board *F*, with each other, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the adjustable brace *G* with the curved rear parts of the beam *A* and with the sole *D*, substantially as herein shown and described, and for the purpose set forth.

No. 78,080.—HENRY A. GASTON, STOCKTON, CAL.—*Cultivator*—May 19, 1868.

When a "dot" or cultivator tooth needs to be turned end for end, the key is driven out and the bit slipped forward.

Claim.—In combination with an inclined reversible bit for a cultivator, the method of securing such bit to its standard, substantially as set forth.

2.—The combination of the series of bits (so applied to their vertical standards) with the cultivator frame or carriage, substantially as described.

No. 78,424.—ALEX. CAMPBELL, OXFORD, IND.—*Cow Cultivator*—June 2, 1868.

The standards are secured in mortises in the frames at any desired angle, by means of wedges and stay rods, so as to admit of their being changed and adjusted as required.

Claim.—The attaching of the upper ends of the standards *B* to the frame *A*, by pivoting the former in mortises *b* in the latter, in connection with the rods *d* and the adjustable bar *c*, attached to the draught pole, all arranged substantially as and for the purpose set forth.

No. 78,484.—J. S. ROWELL and IRA ROWELL, BY ALEX. DAVY, WIS.—*Elevator for Cultivator Bars*—June 2, 1868.

Two roller stands or bearings are arranged on the top of the frame over the cylinder rod and under the hopper, extending upward and to the rear to receive the end of a roller which is provided with suitable sheaves to receive the chains which elevate the bars.

Claim.—1.—The roller stands or bearings, constructed and arranged as and for the purpose set forth.

2.—The sheaves *D D'*, provided with the inclined catch *d* and hook *e*, in combination with the ratchet *b*.

3.—Pivoting the jaw, as described, out of line with the groove in the sheave, so as to form an automatic locking and unlocking device, as set forth.

4.—The combination of the sheaves *D D'*, bearings *B B'*, and roller *C*, as arranged, and operating in the manner and for the purposes set forth.

No. 78,626.—WILLIAM WALTON, EAST PALESTINE, OHIO.—*Cultivator*—June 2, 1868.

Designed for adapting the hoes to various widths of furrow and preventing contact between the handles and the plants.

Claim.—Attaching the handles *D* directly to the wings *B*, and providing an adjustable brace in the curved bars *H*, in the manner and for the purpose substantially as herein set forth.

No. 78,774.—ELISHA WIARD WALTON, STOCKTON, CAL., assignor to himself and WILLIAM H. DERRICK, same place.—*Horse Hoe*—June 9, 1868.

A brace between the handles enables either handle to be set in line with the beam. The shares are made with two sharp edges, so as to be reversible and self sharpening, and are provided with a point having a mortise for the reception of the lower ends of the standards.

Claim.—1.—The regulating brace *m*, constructed substantially as and for the purpose above shown.

2.—The standard *E E* of a horse hoe, constructed substantially as above described.

3.—The reversible hoe point *D*, with its slot or mortise *X*, constructed and operated substantially as above shown.

4.—The reversible shares *A*, and also their two sharpening edges, constructed and operated substantially as above shown.

5.—The mould board *B*, in combination with the share *A*, substantially as above shown.

6.—The wedge *h*, with its screw and nut, constructed and used substantially as and for the purpose above described.

7.—A horse hoe, with or without the mould-board *B*, constructed and operating substantially as above described.

No. 79,001.—SAMUEL REED, RISING SUN, MD.—*Cultivator*—June 16, 1868.

The pointed or rudder teeth may be readily inclined to one or the other side by means of the long lever.

Claim.—1.—The combination of the forked draught bar *I*, curved notched bar *J*, and sliding catch *K*, or their substantial equivalents, with each other and with the frame *A* of the cultivator, substantially as herein shown and described, and for the purpose set forth.

2.—The pointed or rudder teeth *C*, removably attached to the pivoted shanks *D*, for the purpose of pivoting the said teeth to the frame *A*, substantially as herein shown and described.

3.—The combination of the long lever *F*, short slotted levers *E*, pivoted shanks *D*, and pointed or rudder teeth *C*, with each other and with the cultivator frame *A*, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the lever catch *G*, with the long lever *F*, and with the curved and notched rack *H*, attached to the cultivator frame *A*, substantially as herein shown and described, and for the purpose set forth.

No. 79,042.—F. R. WILSON, COLUMBIAS, OHIO.—*Harrow*—June 16, 1868.

Designed as an improvement on a patent of the same inventor, of September 24, 1867. On the under sides of the inner and outer rails are a series of blocks formed with grooves in which are secured metal plates that constitute the harrow teeth.

Claim.—The arrangement of the outer rails *A A* and inner rails *B B*, and the grooved teeth-holding blocks *K K*, pivoted in the manner described, and the perforated bars *D D*, when the several parts are constructed and operated substantially as specified.

No. 79,161.—ELBERT TERRILL, COLD WATER, MICH.—*Cultivator*—June 23, 1868.

The handles, by which the implement is guided, serve as shanks for the outer cultivator blades, which are held in their normal working position by the lateral pressure of the springs upon the handles, which may be vibrated laterally in order to guide the outer blades without moving the beam or inner cultivator blades.

Claim.—1.—The arrangement herein described, for connecting the handles *C C* and cultivator blades *F F* with the beam *A* and stationary cultivator points *E E*, so that the

whole may be operated substantially as and for the purposes herein set forth.

2.—The round pieces D D, with their shoulders s and springs c , in combination with the handles C C, for controlling the action of the outside cultivators, as herein specified.

No. 80,015.—A. P. ROUFT, FERTY MILLS, VA.—*Cultivators*.—*Filed* 14, 1868.

A device attached to the plough standards for the purpose of eradicated weeds and grass between the rows.

Claim.—1.—The instrument, consisting essentially of the standard M, loop s , point m , and blades n n , having sharp front cutting edges, when the several parts thereof are constructed and arranged as above described, and for the purpose set forth.

2.—The combination of said instrument with the plough standard B and wedge W, substantially as described.

No. 81,054.—LEWIS R. WRIGHT, TROY, N. Y.—*Cultivators and Ploughs Combined*.—*August* 11, 1868.

All the parts may be aggregated to form the compound implement—plough and cultivator—but the teeth and standards are readily detachable, in order that the plough may be used alone, and *vice versa*.

Claim.—1.—The double mould board B and C, so hinged and connected together that the main part of said mould board B may be elevated or depressed at will, according to the height of furrow desired to cut, substantially as fully hereinbefore described and set forth.

2.—The hinging of the sections of the mould board C and C' to the centre standard E', whereby a lateral motion may be given to the mould boards B and B', to regulate the width of furrow to be cut, substantially in the manner and for the purposes more fully hereinbefore described and set forth.

3.—The slotted arms, or their equivalents, D D, in combination with the mould boards B and B', substantially in the manner and for the purposes herein described and set forth.

4.—The upright or tooth shoe E in combination with the brace F, or its equivalent, all cast in one solid piece, substantially in the manner and for the purposes herein fully described and set forth.

5.—The curved reversible tooth H, in combination with the tooth shoe E and brace F, each being constructed and operated substantially in the manner and for the purposes hereinbefore described and set forth.

No. 5,532.—LEWIS R. WRIGHT, SCHENECTADY, N. Y.—*Cultivators and Ploughs Combined*.—*Patent* No. 81,054.—*Dated* August 11, 1868.—*Re-issued*, August 12, 1873. [*Application filed*, May 21, 1873.]

Claim.—1.—The double mould board B and C, so hinged and connected together that the main part of said mould board B may be elevated or depressed at will, according to the height of furrow desired to be cut, substantially as hereinbefore described and set forth.

2.—The hinging of the sections of the mould board C and C' to the centre standard E', whereby a lateral motion may be given to the mould boards B and B' to regulate the width of furrow to be cut, substantially in the manner and for the purposes more fully hereinbefore described and set forth.

3.—The slotted arms or their equivalents D D, in combination with the mould boards B and B', substantially in the manner as and for the purposes herein described and set forth.

4.—The curved reversible tooth H, with concave sides, the front surface of which is nearly flat, as and for the purposes set forth.

No. 6,830.—LEWIS R. WRIGHT, IDHSON, N. Y., assignor by mesne assignments, to GIFFORD, JOHNSON & CO.—*Cultivators and Ploughs Combined*.—No. 81,054.—*Dated* August 11, 1868.—*Re-issued*, No. 5,532.—*Dated* August 12, 1873.—*Re-issued*, January 4, 1876.—[*Filed*, November 9, 1875.]

Claim.—1.—The double mould board B and C, hinged and connected together, so that the main part of the said mould board B may be elevated or depressed at will, according to the height of furrow desired to be cut, substantially as hereinbefore described and set forth.

2.—The sections of the mould board C and C', hinged to the centre standard E', whereby a lateral motion may be given to the mould boards B and B', to regulate the width of furrow to be cut, substantially in the manner and for the purposes more fully hereinbefore described and set forth.

3.—The slotted arms or their equivalents D D, in combination with the mould boards B and B', substantially in the manner as and for the purposes herein described and set forth.

4.—The cultivator tooth made with nearly straight edges and V-shaped end, sharpened upon the under side, curved in a vertical plane, and with the face flat, or nearly flat, transversely, substantially as and for the purposes specified.

No. 81,148.—J. H. DICKSON, ALFORD, IND.—*Plough*.—*August* 18, 1868.

The ends of the plate are bent up and slotted, and secured to the beam by bolts, so that it may be adjusted to change the depth of penetration of the clod-cutting knives.

Claim.—The adjustable plate C, and the curved knives D D, when used in combination with a shovel or other plough, B, and its beam A, the several parts being constructed and arranged substantially as and for the purpose herein set forth.

No. 81,180.—JACOB MEYER, BROOM TOWNSHIP, OHIO.—*Shovel Plough*.—*August* 18, 1868.

The outer plough standards vibrate upon pivots so that the movable ploughs may be placed nearer to or further from the central stationary plough, the desired relative position being maintained by means of the spring catches, and the rigid, notched bar.

Claim.—The upright centre bar A, provided with the notched cross bar L, in combination with the springs d d , and the lugs e e , substantially as and for the purposes herein set forth.

No. 81,807.—D. MCNEELEY and C. J. CADDY, SPRINGFIELD, ILL.—*Cultivator*.—*September* 1, 1868.

The rear plough standard is fixed to the draught beam, and the forward standards to the cross beam supported thereby, the wheel having its bearings below in plates pressing against the beam, and supporting the shaft in their ears, the parts being strengthened by braces. A detachable rake is also fastened behind and to the rear standard.

Claim.—1.—The combination of the draft beam A, with plates J, J, slots and set-screws c c , and wheel D, substantially as described.

2.—The arrangement of the beam A, handles B B, wheel D, ploughs E E, standards C C C', cross-beam L, braces K k k' , and attachable and detachable rake F, substantially as shown and described.

No. 82,043.—MICHAEL STOLL, CONESTOGA TOWNSHIP, assignor to himself, BENJAMIN SNAVELY and ANTHONY ISKE, LANCASTER, PA.—*Potato Ploughs*.—*September* 8, 1868.

The shovels are so arranged that when in one position the soil is thrown outward, and when reversed the soil is thrown inward.

Claim.—The arrangement and construction of my shovels 1, 2 and 3, with their respective beams, slots, screw bolts b , and counter sunk segment G, and adjustable bearings E, in combination, with or without the separate centre piece A, Fig. 2, all made in the manner and for the purpose specified.

No. 82,089.—JOSEPH H. CLIFTON, NEWCASTLE, PA.—*Cultivators*.—*September* 15, 1868.

The knives and spikes break up the soil, and the large wooden teeth on the cross-bar form drills.

Claim.—1.—The board A, provided with the knives a , &c., and teeth b , as and for the purpose set forth.

2.—The board A, in combination with the bar c and teeth d , as and for the purpose set forth.

No. 82,180.—THOMAS THORLEY, SOUTHFIELD, MICH.—*Cultivators*.—*September* 15, 1868.

The draught is attached to the widest part of the machine. Braces or "levers" are attached to the forward end of the hinged plough beam, and to a rod in a slotted plate, to admit of the ploughs being adjusted to a greater or less width.

Claim.—1.—The quadrant I, provided with flanges J,

when attached, and operating substantially as and for the purposes herein described.

2.—The levers K, the bolt and hand nut L, and the plate N, provided with the slot M, when arranged and operating substantially as, and for the purposes herein shown.

3.—The combination of the beam A, the vertical standard C, the teeth D and H, the handles E, and arms F, the standards G, the quadrant I, the flanges J, the levers K, the bolt and hand nut L, the slot M, and plate N, when constructed, arranged, and operating substantially as and for the purposes herein set forth, described and shown.

No. 82,753.—WILLIAM RODGERS, LINNVILLE, IND.—*Cultivators*.—October 6, 1868.

The rake is hung on the end of the beam, behind and under which is the steadying wheel, and a rod, attached near its centre, with its top passing through the end of the beam, is adjusted by means of a screw on top, the rake being also braced by rods movably pivoted at its ends, projecting toward the main beam, thus allowing it motion, its teeth being slightly inclined inwardly.

Claim.—The rake K, supported and braced as described by the vertical and lateral rods, and having itself vertical teeth, in combination with the cultivator, provided with the steadying wheel H, all constructed and arranged as and for the purpose set forth.

No. 82,814.—DANIEL S. EARLY, HUMMELSTOWN, PA.—*Cultivators*.—October 6, 1868.

A central beam has pivoted to it two side beams which fit in claps attached to a cross-bar which slides over the central beam, thus regulating the width of the rows, and is held in position by a bolt passing through it and one of a series of holes in the beam.

Claim.—1.—The sliding bar E, in combination with the central beam A, the hinged side beams D D', and the fastening P, substantially as described and for the purpose specified.

2.—The arrangement of the beams A, D D', slide E, clevis F, wheel B, handles C C, and plows or teeth P P, in the manner shown and described.

No. 82,858.—DANIEL MATER, BELLMORE, IND.—*Ploughs*.—October 6, 1868.

The coulter is attached to a lapped hanger which regulates the distance the coulter shall run from the shovel. The standards to which the shovels are secured are braced by rods extending from the beam and secured to the standards by clamps.

Claim.—1.—The arrangement of the transversely adjustable coulter or cutter F, with reference to the beam of the plough and shovel C, substantially as shown and described.

2.—In combination with the beam and standards, the brace rods H, clamps I, and nuts P, arranged substantially as and for the purpose set forth.

No. 34,888.—DANIEL MATER, BELLMORE, IND.—*Ploughs*.—Patented October 6, 1868. No. 82,858; reissued June 8, 1869.

Claim.—1.—The arrangement of the transversely adjustable shield F, with reference to the beam of the plough and shovel C, substantially as shown and described.

2.—In combination with the beam and standards, the brace rods H, clamps I, and nuts P, substantially as and for the purpose set forth.

3.—The construction of the shovel C' with its guides or studs for retaining the same in position, in connection with the staple for securing it to the standard.

4.—The arrangement of the bolts b b b, at equal distances apart, in combination with the rear standard and brace, as set forth for the purpose described.

No. 83,340.—R. T. TAYLOR, EVERTON, IND.—*Shields for Corn Plowers*.—October 20, 1868.

An adjustable shield allows the corn to be plowed as close as desired without injuring or covering it up.

Claim.—1.—The adjustable shield B, constructed and attached to the plow in the manner described, and operated by means of the slotted arms on the stay c, and the lever D, substantially as and for the purposes herein set forth.

2.—The ratch bar c, in combination with the bent spring h, for the purpose of holding the lever D at any point desired, thereby adjusting the shield B, substantially as and for the purposes herein set forth.

No. 83,504.—WILLIAM H. STARTZMAN, BIG LICK, VA.—*Cultivators*.—October 27, 1868.

The stay rods or the adjusting keepers of the pivoted shanks are attached to the respective ends of the oblique bar.

Claim.—The arrangement of the standards B B, oblique bar C, rack bar I, and keeper E, with nuts g and plunges D, all as herein set forth.

No. 83,719.—DON CARLOS MATTERSON, and TRUMAN PANE WILLIAMSON, STOCKTON, CAL.—*Horse Hoos*.—November 3, 1868.

The cutter is secured in the ends of curved bars, which are pivoted to the beam and held by adjustable braces, by means of which latter a greater or less "rake" may be given to the cutter.

Claim.—The combination of the reversible double-edged cutter D, the pivoted bars C C and adjustable braces E, with a beam A, substantially as described.

No. 83,931.—LEANDER CLIFTON, BARRY, ILL.—*Cultivators*.—November 10, 1868.

A safety spring clevis, which acts automatically, is formed on the forward part of the body. The handles may be adjusted to suit persons of different height and size.

Claim.—1.—The safety detaching device for a cultivator plough consisting of the curved piece B and spring piece H, substantially as and for the purposes described.

2.—The cultivator constructed of the iron low A A', curved piece B, spring piece H, ring I, pieces F F', standards C C', having bent and stotted ends a a', rod D, nuts b c, brace K, and plunges G G', all combined, arranged, and operating as and for the purposes described.

No. 84,094.—THOMAS DILLON, HIGHLAND, OHIO.—*Corn Ploughs*.—November 17, 1868.

The plough blade is adapted to any kind of a plough, single or double shovel, sulky plough, or subsoiler.

Claim.—1.—The tenoned plough beam E, pivoted in the beam A, and provided with a bent arm, F, by which it is adjusted at any height desired, substantially as herein set forth.

2.—The curved plough blade H, provided with an ear or lug, I, for the purpose of attaching it to the plough beam E, substantially as herein set forth.

No. 84,238.—THOMAS WAITE, PLYMOUTH, OHIO.—*Cultivators*.—November 17, 1868.

The shares can be adjusted for ploughing furrows of different widths.

Claim.—The side beams C, when provided with slots D, for the insertion and adjustment of the standards E, in combination with the beam A, for the purpose set forth.

No. 84,338.—THEOPHILUS ARNDT, MOUNT JOY, PA., assignor to himself and E. L. FLOWERS, same place.—*Cultivators*.—November 24, 1868.

The plough-beams extend backward through slots in the bolts which pass downward through the curved slotted bar, and through binding clips and nuts at the under side thereof. This mode of attachment, in connection with that at the forward end of the beams, admits of the ready lateral adjustment of the beams together with the shovels.

Claim.—1.—The ring or ring plate D, in combination with the central or main beam A of the cultivator, and with the hooked forward ends of the side or adjustable beams E, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the curved and slotted bar H, slotted bolts I, clips J, and nuts K, with the central beam A, and with the adjustable side beams E, substantially as herein shown and described, and for the purpose set forth.

No. 84,490.—CALVIN LOBBELL, FORT HILL, ILL.—*Cultivators and Scuders*.—December 1, 1868.

An adjustable lever is arranged to run between the shovels of an adjustable cultivator, so as to smooth the surface of the soil, and gauge the depth of the shovels in the ground.

Claim.—1.—The lever K K I, arranged to operate substantially as and for the purpose herein specified.

2.—The combination of the lever K K I, arm I, wings B, rods M G, and curved plate R, the whole being

constructed and arranged substantially as and for the purpose set forth.

No. 84,011.—SAMUEL E. SFEELY, WILTFOORD, MICH.—*Cultivators*.—December 15, 1868; antedated December 11, 1868.—An improvement on his patent of August 6, 1867.

A slotted arm attached to the cross rod, which secures the handles together, slides in a mortise on the end of the plough beam, and is held by a cam lever. The plough standard is attached to the plough beam in such a manner as to readily change the direction of the ploughs.

Claim.—1.—The tenon B', the cam lever C', the slotted arm F, in connection with the cross rod E, when operating substantially as and for the purposes set forth.

2.—The share O, wings P, and braces K, in connection with the standard I, when operating substantially as and for the purposes herein described.

3.—The adjustability of the standard I, for the purpose described, in combination with the share O, wings P, and tenoned beam A, substantially as set forth.

4.—The combination of the beam A, the tenons B' and B'', the cam levers C' and C'', the handles D, the cross rod E, the slotted arm F, the slot G in the same, the slotted slide H, the standard I, the bolt and nut J, the eye and ring K, the draught rod L, the hook M, the bolt N, the share O, the wings P, and the braces K, when arranged, constructed, and operating substantially as and for the purposes herein shown, set forth, and described.

No. 84,046.—W. UPTON HOOVER, DAYSVILLE, KY.—*Ploughs*.—December 15, 1868.

The two side ploughs admit of a reversal of position so as to turn the furrows to the right or left, and the implement is designed to be used for ploughing, planting, and cultivating.

Claim.—The combination of the three turn ploughs *f*, when arranged in relation to each other, and for adjustment, in the manner shown and described.

No. 85,467.—JOSEPH MILLARD, WINSLOW, IND.—*Cultivators*.—December 29, 1868.

The side bars are connected at their front ends to the center bar by springs, and their rear ends are moved toward or from the center bar by means of connecting rods operated by a lever adjustably pivoted in a forked standard.

Claim.—The arrangement of the side bars B B, rods D D and E, standard F, bar G, lever H, and bent notched bar I, all as shown and described.

No. 85,468.—G. W. MORTER AND EDWARD BERRY, HARKFELL, OHIO.—*Adjustable Shovel Ploughs*.—December 29, 1868.

Claim.—1.—The second beam E, pivoted to the main beam A by parallel bars G G G, and having attached to it the standard F, with brace rod N, substantially in the manner and for the purpose specified.

2.—The rod I, with bent front end and plate K, with one or more holes therein when used in combination with the beams A and E, pivot ed to each other by the bars G G, substantially in the manner and for the purpose specified.

3.—The double shovel plough herein described, consisting of the beam A, handles B B, cross bar C, standard D, second beam E, parallel bars G G, rod I, plate K, standard F, braces O N, and shovels M M, the several parts being constructed and combined substantially as and for the purpose specified.

4.—So constructing a shovel plough as that it may be changed from a double-shovel plough to a single-shovel plough, without any change of parts, except the change of the two shovels for a single-shovel, substantially in the manner herein specified.

5.—So constructing an interchangeable double or single-shovel plough, as that, when used as a double-shovel plough, the distance between the two shovels may be changed as desired, the several parts being so arranged as that the only change of parts required is a change from a double to a single-shovel plough shall be change of the two shovels for a single-shovel, substantially in the manner herein specified.

No. 85,862.—CYRUS SCHWANGER, MOUNT JOY TOWNSHIP, PA.—*Cultivators*.—January 12, 1869.

Claim.—1.—The construction and arrangement of the slotted clamps C for the curved plate M, when made to

staddle the beam, 1, 2, 3, 4, and 5, adjustable by a screw bolt, L, in the manner and for the purpose specified and shown.

2.—In combination with the stirrup E and cross plate *h*, the pole F, with its notch *i*, and shoulder *j*, when constructed and applied in the manner and for the purpose specified.

No. 86,069.—JOEL H. JONES and HENRY P. JONES, HEKTON, GA.—*Ploughs*.—January 16, 1869.

Claim.—1.—The brace D, having the elongation D' and the holes at its upper end, when attached to the plough standard and beam, so as to be adjustable, in the manner and for the purposes set forth.

2.—The harrows H H, projecting from each side of the beam A, when constructed with the bent teeth, a soden plate *h'*, and iron plate *h*, and both fastened to the plough beam by a single bolt I, so that they swing loosely on the bolt, and can be lifted, to clean their teeth, substantially as above described.

3.—The arched brace E, having the holes in its upper end, when arranged in connection with the plough-beam and the two handles, in the manner and for the purposes set forth.

4.—The arrangement of the forked standard C, beam A, arched brace E, and handles G G, the latter being clamped between the tops of the standard C, and being adjusted upon the brace E, as described, when the form of the handles G G, from the bolt *e'* to the bolt *e*, and from the latter to their upper end, is substantially as described and shown.

5.—The standard C, when curved as shown in fig. 1, bifurcated from its point upward, provided with lateral holes *a*, for fastening a mold board, and attached to the beam A and the handles G G, in the manner herein described and shown.

No. 86,185.—JAMES SCOTT SMITH, HELENA, ARK.—*Cultivators for Diving Cotton*.—January 26, 1869.

Claim.—Ploughs A and B, beams C and D, hinge F, dividing plate E, and thumb-screw G, all constructed, arranged, and combined, as shown and described.

No. 86,502.—ROBERT I. BURBANK, BOSTON, MASS.—*Cultivators*.—February 2, 1869.

Claim.—1.—The construction and arrangement of the removable and changeable plough-beams B and B', and the center-beam A, whereby the former may be applied or attached to the latter, at either end or side thereof, and changed from one side of the center-beam to the other, so as to turn or plough the furrows outward or inward, without removing the ploughs from their beams, all substantially as and for the purpose described.

2.—The combination with the removable and changeable plough-beams B and B', as shown and described, of ploughs C, forming a double series, for the purpose and substantially as described.

No. 86,577.—JAMES W. NICHOLSON, INDIANAPOLIS, IND.—*Combined Single and Double-Shovel Ploughs*.—February 2, 1869.

Claim.—The convertible double or single shovel plough, having the several parts of which it is composed constructed and arranged substantially in the manner and for the purpose herein set forth.

No. 86,759.—THOMAS HICKS, PRINCEDONIA, ILL.—*Cultivators*.—February 9, 1869.

Claim.—1.—The sliding clamps *l*, in combination with the standards G, bars F, and set-screws *f*, as and for the purpose described.

2.—The cultivator above described, consisting substantially of the frame A A' A', bars F F, wheels *e'*, H H, with their attachments, clamps *f*, and standards G, arranged and operated as and for the purpose set forth.

No. 87,060.—WILLIAM MUIR, WASHINGTON, ILL.—*Horse Hoes*.—February 16, 1869.

Claim.—The vertical standard D, transverse beam C, and pins *i*, in combination with the rods E, slotted rods F', and pin *f'*, constructed and operating substantially as and for the purpose described.

No. 87,347.—CALVIN LOBBDELL, FORT HILL, ILL.—*Horse Hoes*.—March 2, 1869.

Claim.—The biller S S, attached to the lever, as and for the purpose set forth.

No. 87,373.—DAVID SLAUGHTER, WEST HEMPHILL TOWNSHIP, PA.—*Cultivators*.—*March 2, 1860.*

Claim.—The construction of the central shovel or scraper Q with its side wings R R, hook ends r, in combination with the connecting-straps P, the slide beams B B', together with the wing-stay or guide Z, arranged and operating substantially in the manner and for the purpose set forth.

No. 87,400.—DANIEL S. EARLY, HEMPHILL TOWNSHIP, PA.—*Cultivators*.—*March 2, 1860.*

Claim.—The tongue c, in combination with the clevis b, as and for the purpose set forth.

2.—The tooth a, in combination with the socket d, in the manner and for the purpose explained.

3.—The tooth A, provided with the recesses a a and head a', substantially as described.

4.—The tooth A, provided with the recesses a a and head a', in combination with the conjoined slots b b' and key c, substantially as described.

No. 87,914.—JOHN M. DAVIDSON, PUTASKI, PA.—*Potato and Corn Cultivators*.—*March 16, 1860.*

Claim.—Frame A, bars b b', plates C C', rods C' C', adjustable legs B B, and drag-bar G, all constructed, combined, and arranged to operate as herein set forth.

No. 88,025.—SIMÉON B. FORBES, STEUBENVILLE, OHIO.—*Cultivator-Plow*.—*March 23, 1860.*

Claim.—1.—In a cultivator-plough, a half shovel a, with one or more side cutters g, attached to a beam, or standard, b, along the line of its inner or vertical edge, substantially as hereinbefore set forth.

2.—A cultivating apparatus, having two or more half shovels a, connected with adjustable beams and handles, and with one or more cultivator teeth c, constructed substantially as above set forth.

No. 88,334.—ANTHONY GROHMANN, SOUTH SAGINAW, MICH.—*Cultivators*.—*March 23, 1860.*

Claim.—The implement described, having the sickle-back cutters J, in combination with the adjustable beams C and F, and centre beam A, as described, for the purpose set forth.

No. 88,045.—HENRY LANDES, BATH, PA.—*Cultivators*.—*March 23, 1860.*

Claim.—1.—The arrangement of the beam A, bars D D, standard G, bar H, handles F F, wheel C, bar E, levers J, plate b, and hoies I, I, all constructed substantially as set forth.

2.—The hoies I, I, when constructed as described, and arranged, two on each side beam and one on the centre beam, substantially as set forth.

No. 88,130.—ALEXANDER CONNELLY, MIAMI, IND.—*Cultivators*.—*March 23, 1860.*

Claim.—The curved teeth G H I J K, secured to the rearwardly curved head, or cross-bar F, the said teeth having an outwardly diminishing length, as represented and described.

No. 88,283.—A. J. TRAVEL, LISBURN, PA.—*Ploughs*.—*March 23, 1860.*

Claim.—The levers E E and spiral springs F F, as constructed and arranged forward of the shafts or standards D D, substantially in the manner and for the purpose as herein shown and described.

No. 88,723.—ELI KNEPPER, COLUMBUS, OHIO.—*Slide Plows*.—*April 6, 1860.*

Claim.—1.—The two slit bars I I, and rollers K K K, in combination with the beams B B and C, constructed and arranged as described.

2.—The springs H H, fastened between the outer beam C and outer beams B B, which bring the middle shovels always back to their normal distance from the middle shovel, when contacted as herein described.

No. 89,505.—JAMES M. THOMSON, CHARLOTTE PARK, VA.—*Plows*.—*May 4, 1860.*

Claim.—The peculiarly formed plough-shares F F', in combination with the articulating and adjusting braces E E' when said plough-shares and said braces are constructed and operate as herein described.

No. 91,031.—ALFRED JOHN LEWIS, PITTSBURGH, PA.—*Cultivator Plows*.—*June 8, 1860.*

Claim.—1.—The slides D, in combination with the shovels D' and D'', substantially as described.

2.—The slides D, with the rods E and F, pins G and H, in combination with the stilts B and B', substantially as set forth.

3.—The knife B', rod B', in combination with the beam A, substantially as set forth.

4.—The shovel C, when attached to the beam A, by means of clamps C' and C', substantially as set forth.

5.—The combination of the above named devices in the construction of a shovel plough, whereby the shovels can be set at any position, by means of the slides and rods, substantially as described and set forth.

No. 91,212.—B. M. CLOSE, WEST CAMDEN, N. Y.—*Cultivators*.—*June 15, 1860.*

Claim.—1.—The combination, with the cultivator-frame, of the thills, pivoted to the same, substantially in the manner described, so as to be capable of swinging or turning upon their pivot from side to side, independently of the cultivator, for the purposes set forth.

2.—The combination, with the pivoted thills and cultivator frame, of the segment and its loop or guide, attached respectively to said thills and frame, and arranged to operate in connection therewith, substantially as and for the purposes shown and set forth.

3.—The combination, with the frame of the cultivator, of the thills, the hinged pivot or rod, on which the same turns, and the segment, and its loop or guide, under such an arrangement that the said thill may be capable both of rocking and of being turned or swung from side to side, substantially as shown and set forth.

No. 91,303.—I. A. BENEDICT, WEST SPRINGFIELD, PA.—*Cultivators*.—*June 15, 1860.*

Claim.—The combination, with the plough A, of the plates D, when arranged as specified.

No. 91,471.—A. D. MCHENNER and J. W. STEIGMEYER, ATRIA, OHIO.—*Corn Ploughs*.—*June 15, 1860.*

Claim.—1.—Adjusting the movable side-beams of a plough, by means of the handles, substantially as herein set forth.

2.—The combination of the adjustable side-beam D, plate G, ears h h, and handle H, all substantially as and for the purposes herein set forth.

3.—The arrangement on the under side of the handle H of the jaw i, spring d, rod c, and thumb-piece f, all substantially as and for the purposes set forth.

4.—The combination of the centre beam A, side beams D D, plates E, and G, and handles H H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

No. 91,847.—E. S. HUFF, ZANESVILLE, OHIO.—*Plough Cultivators*.—*June 29, 1860.*

Claim.—The employment of the metal plate A, constructed with the bars or projections c c, supplied with the pivoted arms h h, in combination with the handles of a cultivator, and arranged substantially as and for the purpose set forth.

No. 91,073.—F. L. PERRY, CANANDAIGUA, N. Y.—*Cultivators*.—*June 29, 1860.*

Claim.—1.—The attaching of the teeth E to the beams A, by having the front prongs e of the teeth pass through the front ends of plates d, and the rear prongs f fitted in the rear parts of the plates, in combination with the arms g of the plates, the arms of each pair of plates being fitted together, and all constructed and arranged substantially as shown and described, to admit of the turning or adjusting of the teeth as the beams A are expanded or contracted, as set forth.

2.—The adjusting of the clevis plates k k, by means of the bolt m, fitted in any of a series of holes, l, in said plates, in connection with the spring catch G, all constructed and arranged to admit of the adjustment of the gauge-wheel C, substantially as and for the purpose set forth.

No. 92,448.—J. L. HOOD, FLOYD COUNTY, GA., assignor to himself, J. F. MARTIN, and J. S. HAWK.—*Double-Footed Plough Stocks*.—*July 13, 1860.*

Claim.—1.—The within described plough-stock, consisting of the draught-beam A, the side-beams C, and C', the bolts c c, and blocks D D, &c., the plough-feet E E, and support-rod G G, all constructed and arranged substantially as and for the purpose shown.

2.—The side-beams C and C', in combination with the

bolts *r*, and *s*, and blocks D D, &c., substantially as and for the purpose specified.

No. 92,500.—JOHN DOOLEY, St. PAUL, MISS.—*Central Ploughs, Cultivators and Markers*.—July 13, 1860.

Claim.—1.—An adjustable plough, cultivator, and marker, having cultivators *v*, plough share *u*, and marker *t*, constructed and arranged substantially as and for the purposes specified.

2.—In combination with an adjustable plough and cultivator, nut and screw *h*, when working in the slotted standard, as described, and the perforated rods *z*, arranged and operating substantially as and for the purposes specified.

No. 92,641.—R. E. PATTON, QUINCY, ILL.—*Corn and Cotton Cultivators*.—July 13, 1860.

Claim.—1.—The draught beam A, provided with lugs or eyes *a a*, &c., both in front and in rear, in combination with the cross-bar B, substantially as and for the purpose shown.

2.—The cultivator or harrow-bars C C and E E, when so constructed as to permit of their being pivoted at their centre to the cross-bar B, and attached at either end to the eyes or lugs *a a*, &c., upon the draught beam A, substantially as shown and for the purpose specified.

3.—The handles F F, brace *r*, quadrant G, and set screw *g*, all combined and arranged substantially as and for the purpose shown.

4.—The within described agricultural implement, consisting of the draught beam A, provided with the eyes or lugs *a a*, &c., cross-bar B, harrow or cultivator bars C C and E E, handles F F, brace *r*, quadrant G, and set screw *g*, all constructed and arranged substantially as and for the purpose shown and described.

No. 93,017.—WALTER SMITH, BOONVILLE, IND.—*Cultivators*.—July 27, 1860.

Claim.—The frame B, the wheels C L, the gauge H, the gauge-level I and gauge-spring J, the slides E, the regulators G, and the set-screws O, and their application to, and co-operation with the ploughs, handles, and clevis.

No. 93,042.—HIRAM BENEDICT, DETROIT, MICH., assignor to himself and ALLEN CHANEY, same place.—*Cultivators and Harrows Combined*.—July 27, 1860;—antedated July 16, 1860.

Claim.—1.—The center bar A, the side bars D, and other bars G, when pivoted together and arranged relative to each other, as shown, for the purpose of expanding the implement.

2.—The harrow teeth M, in connection with the bars D and G, and the cultivator teeth K and L, when arranged substantially as and for the purpose herein set forth, described, and shown.

No. 93,203.—SAMUEL HUBER, DANVILLE, PA.—*Combined Ploughs and Cultivators*.—August 3, 1860.

Claim.—1.—The plate B, provided with several sets of holes, for the adjustable attachment of the plough-standards, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the adjustable plough-standards F with the plate B, substantially as herein shown and described, and for the purpose set forth.

3.—The ploughs E, constructed as described, in combination with the adjustable standards F and plate B, substantially as and for the purpose set forth.

4.—The combination of the double mould-board plough I with the adjustable standards F and plate B, substantially as herein shown and described, and for the purpose set forth.

5.—The combination of the fingers J with the mould-boards of the double mould-board plough I, adjustable standards F, and plate B, substantially as herein shown and described, and for the purpose set forth.

No. 93,507.—EDWARD WIARD, LOUISVILLE, KY., assignor to B. F. AVERY, same place.—*Expanding Double Shovel Ploughs*.—August 10, 1860.

Claim.—1.—Adjustably connecting the plough-standards to the plough-beam, by means of sockets, formed in the upper ends of said standards, and the hollow spindles E, substantially as herein shown and described, and for the purpose set forth.

2.—The plough-standard C, made of a thin plate, with

a flange upon both sides of its forward edge, substantially as herein shown and described, and for the purpose set forth.

3.—The slotted brace rods F and posts or arms G, in combination with the standards C and beam A, whether said braces be placed in front or rear of said standards, substantially as herein shown and described, and for the purpose set forth.

4.—An improved expanding double shovel plough, formed by the combination of the ploughs D, standards C, hollow spindles E, brace-bars F, posts or arms G, beam A, and handles B, with each other, substantially as herein shown and described, and for the purpose set forth.

No. 93,530.—E. S. GREGORY, LOCKPORT, N. Y.—*Cultivators*.—August 10, 1860.

Claim.—The slotted metal plate D, constructed as described, in combination with the clamp screw *r*, and bars *g*, arranged to operate substantially in the manner and for the purpose specified.

No. 93,543.—B. F. McCARTY, J. W. ORR, and R. J. ORR, FLORENCE, GA.—*Combination Ploughs*.—August 10, 1860.

Claim.—The combination of beams A D F, spreaders I J, bolts N *m*, plough-standards E G O, bolt *r*, braces H H, standards C and handles B B, all constructed to operate together, substantially in the manner and for the purpose set forth.

No. 94,133.—FREEMAN F. REYNOLDS, BETHANY, GA.—*Cultivators*.—August 24, 1860.

Claim.—The combination of the movable means I J, with the pivoted cross-bars K L, the fixed beam A, the curved plate M, and the adjusting-bolt *m*, adapted to be set in different holes in the curved plate, when the several parts referred to are constructed to operate together substantially in the manner and for the purpose described.

No. 94,351.—ZACHARIAH B. SIMS, BONHAM, TEXAS.—*Cotton Ploughs*.—August 31, 1860.

Claim.—The reversible ploughs *b b'*, in combination with the ploughs *a a*, for breaking up the soil and laying off seed-furrows, as and for the purpose set forth.

No. 94,554.—ABRAM BOLES, KINDER, IND.—*Ploughs*.—September 7, 1860.

Claim.—1.—Hinging the beveled forward ends of the plough-beams A to each other by means of the eye or hinge-plates B, and clevis C D, substantially as herein shown and described, and for the purpose set forth.

2.—Adjustably connecting the rear parts of the plough-beams A to each other by the adjustable overlapping hinged bars G, uprights H, and overlapping adjustable hinged bars I, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the springs K and projections L, with the plough-beams A and adjustable overlapping hinged bars G, substantially as herein shown and described, and for the purpose set forth.

No. 94,663.—JAMES STEPHENS, AGENCY CITY, IOWA.—*Ploughs*.—September 7, 1860.

Claim.—1.—In combination with the frame, constructed as described, two shovels, arranged as specified, the right-hand one being removable, and so twisted as to throw all the dirt to the right or left as may be desired.

No. 94,751.—WILLIAM HUNTER and DANIEL M. HUNTER, MEADVILLE, PA.—*Soil Tillers*.—September 14, 1860.

Claim.—The construction of the head-piece C, with the beveled edge at *s*, in combination with the tines or teeth, constructed as described, for the purposes set forth.

No. 95,035.—ISAAC J. MORROW, EVERTON, IND.—*Cultivators*.—September 21, 1860.

Claim.—The adjustable standard G, so constructed that the plough H may always work at a higher level than the plough C of the rear standard B, in combination with the beam A and rear standard B, substantially as herein shown and described, and for the purpose set forth.

2.—The adjustable pivoted lever K and fender J, in combination with the adjustable standard G, beam A, and rear standard B, substantially as herein shown and described, and for the purpose set forth.

No. 9,010.—E. A. KAMERER, GREENDOWN, OHIO.—*Shovel Ploughs*.—October 19, 1869.

Claim.—1.—A shovel plough, provided with one side and two movable shovels, when so constructed as that the movable shovels may be readily turned, so as to assume any required angle with the plough beam, and may be set at any desired distance from said beam, and, also, so that said movable shovels may be readily moved into, or nearly into line with said fixed shovel, substantially as is herein set forth.

2.—The arm M, rigidly attached to the shovel-standard G, and held by a bolt, P, working in a slot, *a*, in the plough-beam A, when said arm serves both to hold the shovel-standard G at the required distance from the plough-beam A, and, also, to regulate the angular position of said standard, with respect to said plough beam, substantially as is herein specified.

3.—Pivoting the standards G, of the side-shovels L, of a shovel-plough to the side beams F, by means of a hinge-pivot joint, H I K, and brace W, having a loose joint, *l*, with the standard G, substantially as is herein specified.

96,120.—JAMES H. LOCKIE, HUMPHREY, N. V.—*Cultivators*.—October 26, 1869.—antedated October 16, 1869.

Claim.—The combination, with the central beam A, of the outer beams B B, when the same are constructed, as described, and connected by the three arched piece C, substantially as described, for the purpose specified.

No. 99,344.—FRANCIS L. PERRY, CASANDABA, N. Y.—*Cultivators*.—November 2, 1869.

Claim.—1.—The arrangement of a series of cultivating-teeth, in front of and in combination with the horizontal knife or cutter S, which follows the teeth.

2.—Arranging the points of the teeth, which run in advance of the horizontal cutter, lower than the cutter, to protect the cutter from stones and other obstructions.

3.—Curving the ends of the horizontal cutter, as shown and described, so as not to cut too deep near the rows of plants cultivated.

4.—Making the horizontal cutter adjustable higher or lower on the frame, substantially as described.

5.—In combination with the stirring-teeth and horizontal cutter, the hilling-shares, arranged in rear of the horizontal cutter, substantially as described.

6.—The combined clevis and gauge-wheel stud or plate, arranged to vibrate in the end of the beam, and provided with a notched segment and spring-latch, so that the work man can release, adjust, and lock the clevis and gauge wheel in the position required while the cultivator is at work or in motion.

No. 96,399.—MICHAEL C. COX, BENEFITVILLE, S. C.—*Ploughs*.—November 2, 1869.

Claim.—The convertible plough, harrow, guano and seed sower and planter, having frame E, block G, ploughs and harrows, Figs. 3, 4, 5, 6, 7, 8, and 9, funnel C, and box D, with bolts, openings, and straps, as described, constructed and arranged substantially as specified.

No. 99,097.—WILLIAM H. BOTT, YORK, PA.—*Corn-Ploughs*.—November 9, 1869.

Claim.—1.—The curved standard O, when constructed with the lateral spread, and with the series of holes *a c c* on each side, and employed in connection with the guides N X, and beam A, substantially as and for the purposes set forth.

2.—The arrangement of the two wheels R R, and curved standards S S, in connection with the cross-beam B, longitudinal beam A, drag-bars I I, ploughs G G, cross-bar H, and handles E E, substantially as and for the purpose described.

No. 96,757.—CALVIN J. WOODS and JOSEPH A. PHILLIPS, CENTREVILLE, IND.—*Plough and Cultivator-Comb*.—November 9, 1869.

Claim.—The plough herein described, having beams and ploughs A, B, and C, bolt *a*, set-screws d, handles H, and sliding frame F, constructed and arranged as specified.

No. 96,079.—JAMES SIMPSON, CORDOVA, ILL.—*Cultivators*.—November 16, 1869.

Claim.—1.—The combination of the adjustable ploughs

d and *e*, and the shovel *e*, with the beam *a* and handles *h*, all arranged as described.

2.—The detachable shovel *e*, and the adjustable stem *l*, constructed and applied to the beam as herein set forth.

3.—The reversible brace-rod *h'*, in combination with recessed and detachable blocks *p*, arranged to operate as described.

No. 97,310.—ALEXANDER SHAW, MONMOUTH, ILL.—*Cultivators*.—November 30, 1869.—antedated November 22, 1869.

Claim.—The cutter C, with series of holes *c c c*, for regulating the depth, when combined with the mould-boards A, joint B, handles L, bow J, and the plate D, substantially as described, and for the purpose set forth.

No. 97,465.—A. W. WILKINS and S. T. ENKRIDGE, —KOMI, GA.—*Expanding Ploughs*.—November 30, 1869.

Claim.—1.—Adjustably supporting the lower ends of the plough-standards C, by means of the brace rods E, nuts *e'*, rods or bolts F, nuts *f'*, and brackets G, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purposes set forth.

2.—The combination of the rods and nuts D *d'*, rods and nuts E *e'*, rods and nuts F *f'*, and brackets G, with each other and with the beam A and standards C of the plough, substantially as herein shown and described, and for the purpose set forth.

No. 97600.—CHARLES CROW, COVINGTON, IND., assignor to himself and WILLIAMSON D. KERR, same place.—*Ploughs*.—December 7, 1869.

Claim.—1.—A plough, provided with two adjustable mould-boards, which may be moved nearer to or farther from each other, which may be used either as a ditcher or plough, substantially as set forth.

2.—The movable land side L, when used in the manner and for the purpose described.

3.—The mould boards H, cutter M, braces K, N and O, beam A, plates *a*, screws *a'*, and sheath D, when combined to form a plough, substantially as specified.

No. 97,921.—JOHN C. HOLMES, WYOMING, PA.—*Corn Cultivators*.—December 14, 1869.

Claim.—1.—The beams A A, constructed as described, each consisting of two bars *a a*, connected together at a suitable distance apart, and provide *l* at one end with ears *b b*, by means of which the beams are joined together, substantially as shown and described.

2.—The combination of the beams A A with ears *b b*, clevis B with ears *c c*, curved bars C C, and bar G with ears *f f*, all constructed as described and for the purposes set forth.

3.—The reversible handles E E, connected by means of the rod F, and provided with the rods D D, substantially as and for the purposes herein set forth.

4.—The combination of the beams A A with the loops *d d*, clevis B, curved bars C C, bar G, reversible handles E E, and rods D D and F, all constructed and arranged substantially as and for the purposes herein set forth.

5.—The reversible ploughs H H, secured to the beams A A, by means of the shanks I I, and plates *h h*, substantially as shown and described.

6.—The plate *h*, provided with projections *i i*, and passed over the plough-shank I, substantially as and for the purposes herein set forth.

7.—The combination and arrangement of the beams A A, clevis B, bars C C and G, reversible handles E E, and ploughs H H, all constructed and connected substantially as and for the purposes herein set forth.

No. 98,202.—S. T. SPAULDING, NORTH COHOCTON, N. Y.—*Cultivators*.—December 21, 1869.

Claim.—The combination, arrangement, and construction of the central beam *a*, cross bars *b b*, and side beams *c c*, the doubly adjustable clevis, and the adjustable single and double teeth *d d g*, the whole operating together as described.

No. 98,214.—EDWARD WIARD, LOUISVILLE, KY., assignor to B. F. AVERY, same place.—*Expanding Triple Shovel Ploughs*.—December 21, 1869.

Claim.—1.—The bars or frame C, constructed and secured to the plough beam, substantially as herein shown and described, and for the purpose set forth.

2.—Adjustably connecting the rear plough standard G to the rear ends of the bars or frame C, by the tube E and long bolt D, whether made in one piece or separate, and the washers F and set screws *L*, substantially as herein shown and described, and for the purpose set forth.

3.—Adjustably securing the forward standard I, to the forward end of the bars or frame C, by means of the washers N and bolt M, substantially as herein shown and described, and for the purpose set forth.

4.—The notched washers F N, constructed substantially as herein shown and described, when used for securing the plough standards in place, as and for the purpose set forth.

5.—The combination of the slotted and grooved washers K, eye bolts J, and slotted arms I, with the brace rods H and bars or frame C, substantially as herein shown and described, and for the purpose set forth.

No. 98,251.—FRANK GOSS, WEXFORD, PA.—*Shovel-Ploughs*.—December 28, 1860.

Claim.—1.—The combination, in a cultivating plough, of a beam A, standard B, sole-bar F, upright arm H, and tie-bolt G, constructed and arranged as herein described, and for the purposes set forth.

2.—The sole-bar F, as constructed, of the form represented and described.

3.—The shovel or share E, constructed with the flaring dovetail attaching socket *e*, substantially as represented and described.

4.—The combination, in a cultivating plough, of a frame A, B, F, G, H, handles C, clevis D, shovel or share E, wings or scrapers I I, device J J K for adjusting the wings or scrapers, an adjustable gauge-wheel L, and means *a m*, for holding the gauge-wheel, constructed and arranged as herein represented and described, for the purposes shown.

No. 98,471.—BOWMAN S. COX, PATUNBOROUGH, N. J.—*Cultivators*.—January 4, 1870. Antedated December 22, 1860.

Claim.—1.—In a cultivator, the fender F and tooth D, constructed and arranged substantially as and for the purpose set forth.

2.—Constructing the beam C with a portion bent, to contain a long tooth D, and prevent the vines from falling forward, substantially as set forth.

3.—Constructing the rear ends of the oblique frame-bars, as described, in combination with suitable bolt and screw, to connect and regulate the same.

4.—In combination with oblique bars, as described, constructing and arranging the shank G, as and for the purpose set forth.

5.—Constructing and arranging the standards H' H', as specified in combination with the oblique bars, as set forth.

No. 98,650.—B. F. WARD, INDIAN SPRINGS, GA.—*Cultivators*.—January 4, 1870.

Claim.—1.—The bow or frame D, cross-bar E, teeth F, adjustable cross-bar G, and stay or brace H, with each other, and with the standard C of the frame A B C, substantially as herein shown and described, and for the purposes set forth.

2.—The combination of the pivoted bars I, adjustable bars J, and cross-bar K, with the frame or bow D, cross-bar E, teeth F, adjustable cross-bar G, and standard C, substantially as herein shown and described, and for the purpose set forth.

No. 99,268.—JOSEPH G. KNAPP, MADISON, and SAMUEL D. LIBBY, BLOOMING GROVE, WIS.—*Cultivators*.—January 25, 1870.

Claim.—1.—The form of the side knives, made of steel, iron, or both combined, as described, and for the purposes hereinbefore set forth.

2.—The setting the knives, in the manner and for the purposes substantially as hereinbefore set forth.

3.—The iron or other metallic chair, substantially as and for the use and purposes hereinbefore set forth.

4.—The combination of the broad, straight knife in front, with the side knives, all made and set substantially as described, with the metallic chairs on the side-beams, as described, also, the same combination of similar knives set in beams by means of mortises, or otherwise, substantially as and for the purposes hereinbefore set forth.

No. 99,230.—ANTHONY A. RHOADES and WILEY TASH, BERLIN, ILL.—*Swiveling Attachment for Ploughs*.—January 25, 1870.

Claim.—1.—The detachable blades D, constructed and secured to the supporting bar C, substantially in the manner herein shown and described, and for the purpose set forth.

2.—The combination of the detachable blades D, adjustable supporting bar C, and adjustable brace-bar E, with each other, said parts being constructed and connected with an ordinary plough-frame, substantially as herein shown and described, and for the purpose set forth.

No. 99,377.—WILLIAM WATKINS, JOHN I, ILL.—*Subsoil Ploughs*.—February 1, 1870.

Claim.—The combination and arrangement of the share A, braces C C, crooked bar B, shin D, brace I, beam E, block F, and handles P P, as and for the purposes set forth.

No. 99,625.—DANIEL G. BENNER, HOLMESVILLE, OHIO.—*Cultivators*.—February 22, 1870.

Claim.—The combination and arrangement of the main centre beam *a*, side beams *d*, braces *m m*, and handles *r r p p s h*, the parts being constructed and operated substantially as set forth.

No. 100,040.—NATHAN L. ISGRIGG, MOORE'S HILL, IND.—*Cultivators*.—February 22, 1870.

Claim.—1.—The nut *f* upon the brace rod F, serving with the nut *f'*, the double purpose of securing the share to the standard and both to the brace, as set forth.

2.—The combination and arrangement of the beam A, standard C, brace F, nuts *f f'*, and slotted share I J K, substantially as and for the purpose described.

No. 100,277.—JOHN C. ERWOOD, VERNON, IND.—*Corn Cultivators*.—March 1, 1870.

Claim.—The combination of an adjustable mould board, A, with a triple toothed cultivator, for the purpose and in the manner substantially as shown.

No. 100,655.—WALTER NOTMAN, DEERFIELD, OHIO.—*Cultivators*.—March 8, 1870.

Claim.—1.—The arrangement and construction of the beams A A, clevis K, brace D, double cross-bar D', and handles B B, substantially as described.

2.—The peculiar construction and combination of the mould boards E E, share F, and braces G H I, substantially as and for the purpose set forth.

No. 100,984.—JOSEPH CLUCKNER, ARCADIA, IND.—*Dirt-Gauge for Ploughs*.—March 22, 1870.

Claim.—The gauge D F, guard-loop or keeper E, and adjusting ring G, in combination with each other and with the plough beam or frame, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

No. 101,010.—HERMANN W. HASSLOCK, NASHVILLE, TENN.—*Horse-Hoes*.—March 22, 1870.

Claim.—The combination of the cross-bar E, standards F, hoes or knives G, nuts H I, braces J, wheel P, and adjustable standard C, with each other and with the plough-beam A and handles B, substantially as herein shown and described, and for the purpose set forth.

No. 101,200.—JOHN WOLPERT, LOUISVILLE, KY.—*Combined Ploughs and Cultivators*.—March 22, 1870.

Claim.—The combination of the swiveling bars C C, clips D, side beams B B', and brace E, all arranged to operate substantially as and for the purpose set forth.

No. 101,976.—JACOB BOWER, DAYTON, OHIO.—*Cultivators*.—April 19, 1870.

Claim.—The combination of the cultivator teeth shanks B, shovels C, and frame A, the parts being constructed, arranged and operating in the manner and for the purpose substantially as described.

No. 102,015.—HERVY S. ROSS, MILLVILLE, OHIO.—*Cultivators*.—April 19, 1870.

Claim.—The construction, combination, and arrangement of the frame A B C D *d*, the standard attachment devices *r r s*, and the teeth or flukes F F, all as herein represented and described, for the purposes set forth.

No. 102,223.—ALBION P. CLEMENTS and JOHN C. NEALEY, MONROE, ME.—*Cultivators*.—April 26, 1870.

Claim.—The combination of the cultivator proper, the

from adjusting-wheel *a*, and the adjustable guiding and smoothing roller E, all constructed and arranged to operate substantially as described and shown.

No. 102,543.—LOUIS HOMRIGHOUS, BALTIMORE, OHIO.—*Cultivator Ploughs*.—*May 3, 1870.*

Claim.—1.—In combination with the frame A B C of a double shovel cultivator, constructed to cultivate simultaneously both sides of a row of corn, the two adjustable rotary fenders N, so combined and arranged with reference to each other and to the main shovels *b b*, as to inclose and shield both sides of the plants, substantially as herein set forth.

2.—The extra and auxiliary detachable shovels J and M, when so combined with a cultivator as that one of said shovels, M, shall be placed to work in the rear, and the other, J, in front of the main shovels *b b* of the implement, substantially as and for the purpose herein set forth.

No. 102,841.—TRUMAN MABBETT, SR., VINELAND, N. J.—*Cultivators*.—*May 10, 1870.*

Claim.—The combination with a cultivator of an adjustable cutting-bar or skimmer, B, substantially for the purpose shown and described.

No. 102,993.—NATHAN G. WEBBER, EAST SPRINGFIELD, PA.—*Cultivators*.—*May 10, 1870.*

Claim.—The arrangement of the fixed bow G, the adjustable shovels K, the hinged folding handles I, and the locking and bracing yoke J, as herein shown and described, and for the purpose specified.

No. 103,479.—HUGHLAIRD, MECHANISBERG, PA.—*Cultivators*.—*May 24, 1870.*

Claim.—1.—The means employed for rendering relatively adjustable the side-leams A and A', consisting of the arched braces C and D and bolts *d* and *e*, in combination with the pivoted cross bar B, substantially as and for the purpose specified.

2.—The means employed for adapting the tongue to the various widths of the cultivator-frame consisting of the coupling-irons F, provided with the bolts *f*, in combination with the slotted cross-bar H, substantially as shown and described.

3.—The scrapers K and K', secured upon and combined with the heretofore-described cultivator, substantially as and for the purpose set forth.

No. 103,982.—HENRY C. CLOYD, WEST ALEXANDRIA, OHIO.—*Ploughs*.—*June 7, 1870.*

Claim.—1.—The arrangement of the shanks C C, rods *f f*, and nuts *i i*, with the plough beams A A, and handles E E, connected by the boxes *h h*, through the slotted ends of the handles, all constructed substantially as set forth.

2.—The arrangement of the beams A A, clevis B, shanks C C, ploughs D D, handles E E, guides *a a* and *d d*, rods *f f*, nuts *i i*, and boxes *h h*, all constructed substantially as and for the purposes herein set forth.

No. 104,154.—RUFUS C. HOLT, MOREHOUSE PARISH, LA.—*Corn Choppers*.—*June 14, 1870.*

Claim.—The arrangement of the adjustable standards F F', E' E', F' F', brace rods H, cutters G' G' G' G', frames A B C, bounds J, tongue I, handles K, and wheels D D', when these several parts are constructed, united, and operate as herein described, for the purpose set forth.

No. 104,720.—MARCELLUS B. GOFF, DELAVAN, WIS.—*Corn Ploughs*.—*June 28, 1870.*

Claim.—The guide iron E, having a standard, provided with flange *a* and elongated slot *b*, and having a base or runner made with a rounded front, *f*, substantially as described.

No. 104,763.—JOHN WESLEY PHILP, HUMBOLDT, TENN.—*Cultivators*.—*June 28, 1870.*

Claim.—The arrangement of the frame A D, the arms E, set-screws *g*, keepers F, draft bar B, handles H H', I, cultivator-teeth K, harrow-teeth J, and crossed or inclined teeth, all constructed substantially as shown and described.

No. 105,358.—JOSEPH B. MOODY, LOUISVILLE, KY.—*Cultivator*.—*July 12, 1870.*

Claim.—1.—The arrangement of the bars G H *h* and *m*, arms D, handles B, beam A, and ploughs R, when the several parts are constructed as and for the purpose specified.

2.—In a cultivator, the arrangement of the plates P and

d, and clevis *o*, when constructed as shown and described. No. 105,745.—CHARLES L. WAFFLE, SHARON CENTER, OHIO.—*Cultivators*.—*July 26, 1870.*

Claim.—1.—The arrangement on one side of the standard A of two parallel staples, E E, the lower one slightly further forward than the upper, to form a rest for the plough-stand, and to enable the same to be adjusted by wedges vertically or horizontally, as set forth.

2.—The arrangement of the projecting points of fingers H below the edges of the shovels or shares of a cultivator, to pulverize the soil in advance, as set forth.

No. 105,828.—ISAAC MILLER, WORTH, MICH.—*Cultivators*.—*July 26, 1870.*

Claim.—The arrangement of the frame A B C D, hooks *a a*, tongue F, wheels G G, bars *b b*, pins *d*, teeth H I, braces F I, and handles J, all constructed and operating substantially as and for the purposes herein set forth.

No. 106,004.—JACOB R. WAGNER, MANADA HILL, PA.—*Combined Harrows, Cultivators, Wheelbarrows, and Sleds*.—*August 2, 1870.*

Claim.—1.—The arrangement in a harrow of handles B B, the cultivator-teeth *c*, and the swinging, elevating, or clearing bar B', substantially in the manner and for the purpose described.

2.—The gravitating swinging bar B', applied to a combined harrow and cultivator, in the manner and for the purpose described.

3.—The arrangement of the sliding bar C, cultivator teeth *c*, hooks *b*, and forked props or arms *f* upon the harrow, in the manner and for the purpose substantially as described.

4.—The arrangement of the harrow, having handles B, the wheelbarrow wheel D, and the sleigh-runners G G, the several parts being constructed and arranged and operated substantially in the manner described.

No. 106,235.—JAMES B. THIBTS, PORTLAND, MICH., assignor to himself and JOSEPH STEBBINS, same place.—*Cultivators*.—*August 9, 1870.*

Claim.—1.—The combination of the hinges I, M, with the ploughs K and standards E, substantially as herein shown and described, and for the purpose set forth.

2.—The combination with the beam A and standards E, of the hinged ploughs K, bars or rods N, and pivoted adjustable lever O, all arranged to operate as specified.

No. 106,693.—HENRY HARRIER, INDIANAPOLIS, IND.—*Corn Ploughs*.—*August 23, 1870.*

Claim.—The combination and arrangement of the beams C C and A, the stocks D D and B, pivoted handles F F, bar G, and plates E E, substantially as and for the purpose hereinbefore specified.

No. 106,702.—AUGUSTUS LEONARD, NEWELL'S RUN, OHIO.—*Potato Ploughs*.—*August 23, 1870.*

Claim.—The plough described, consisting of the beams A A', rigidly secured at the front ends, connecting beam B, arms *c c*, and handles *d d'*, when all the parts are constructed and arranged as described, for the purpose set forth.

No. 106,733.—NELSON S. SHIELDS, ROCKFORD, ILL.—*Cultivators*.—*August 23, 1870.*

Claim.—The springs B B, with bar *b*, when constructed specifically as described, and employed to connect the center C directly to the beams A A of the cultivator, as described.

No. 106,847.—JACOB M. LANDES, SOURDERS, PA.—*Combined Ploughs and Cultivators*.—*August 30, 1870.*

Claim.—The reversible ploughs J K, standards I D, draft bar F, and beams A G G, all constructed and relatively arranged, as and for the purpose described.

No. 106,950.—REUBEN L. PAVNE, RACEVILLE, VA.—*Cultivators*.—*August 30, 1870.*

Claim.—The arrangement of the interchangeable scrapers A, with harrows E and centre piece H, and with the right and left-hand teeth B, substantially in the manner and for the purposes set forth.

2.—The teeth B, constructed substantially as set forth.

No. 107,142.—CHARLES L. WHATE, Waverly, PA.—*Cultivators*.—*September 6, 1870.*

Claim.—The arrangement in a cultivator formed of wrought iron, of the double curved central plough-beam B, split clevis C, braces *m*, horizontal brace K, handles H,

bent brace *c*, thumb nut *d*, and screw *e*, and sectional side plough beams *F*, horizontally pointed by twisting the adjacent ends of the sections at *f*, all constructed as set forth.

No. 107,400.—SAMUEL GARRET RAYL, AGENCY CITY, IOWA.—*Des't. Sheet Ploughs*, September 15, 1870.

Claim.—The arrangement of the standards *B B'*, handles *C*, braces *b*, stirrups *a* and *d*, the bolt *e*, and hook bolt *f*, when constructed as described and shown, and for the purpose of adjusting said standards.

2.—The plough above described, consisting of the beam *A*, the standards *B B'*, the handles *C*, the clod fender *D*, the shovels *E* and *F*, the stirrups *a* and *d*, bolt *e*, and hook bolt *f*, when constructed and arranged as described and shown, and as and for the purposes set forth.

No. 107,416.—GEORGE H. SMITH, DES MOINES, IOWA.—*Cultivators*, September 13, 1870.

Claim.—The beam *A*, the handles *B B'*, braces *a a' a''*, and loop *b*, arranged as described, and for the purpose set forth.

No. 107,456.—IRA COPELAND, NORTH BRIDGE WAYER, MASS.—*Horse Hoes*, September 20, 1870.

Claim.—The combination of the clevis *K* with the housings *H H'*, the notched segments *L M*, and the key-piece *N*, substantially as described, and for the purpose set forth.

2.—In a horse-hoe, the bars *A A'*, when bent and arranged in combination with the clasps *E E'*, and cross bar *F*, substantially as described, and for the purpose set forth.

3.—The combination of the loop-bolt *N'* with the bars *C C'*, the cross-bar *F*, and the pointer *Q*, substantially as described, and for the purpose set forth.

5.—The combination of the loop-bolt *N'* with the cross-bar *F* and handle-bracket *K K'*, substantially as described, and for the purpose set forth.

No. 107,484.—JAMES H. HAMILTON, SILVERSON, ALA.—*Cultivators*, September 20, 1870.

Claim.—An improved cultivator, formed by the combination of the three parallel beams *A B C*, pivoted cross bars *D E*, brace bar or rod *F*, standards *G H I*, brace-rods *J K L*, and *M N*, brace bar *P*, and brace and gauge rod *Q*, with each other, substantially as herein shown and described, and for the purpose set forth.

No. 107,526.—JOHN NEFF, JR., PELINBY, N. Y.—*Cultivators*, September 20, 1870.

Claim.—The arrangement in a cultivator, of the beam *A*, the bars *F* and *F'*, the teeth *B*, *C*, *D*, and *E*, cutters *G*, handles *H*, puts *a*, *b*, *c*, and *i*, all constructed to operate as described.

No. 107,554.—VICTOR BOLIS, ST. MARY'S PARISH, LA.—*Cultivator Ploughs*, September 27, 1870.

Claim.—The hoe-ploughs *A*, when mounted on a diagonal front bar of a frame *B*, the said frame being provided with a cutter blade, *C*, in combination with the frame, consisting of the longitudinal bars *D D'*, a sufficient number of cross-bars, and the standards *E E'*, when said frame is provided with the adjusting elliptical runners *G G'*, and these latter are operated by a yoke-frame, *H*, and a lever, *I*, and all the parts are constructed, arranged, and operated substantially as described, for the purpose set forth.

No. 108,007.—PETER B. PARCELL, ASHMORE, ILL.—*Sheet Ploughs*, October 4, 1870.

Claim.—The arrangement of the beams *A A'*, hook *B*, screw rod *C*, handles *D D'*, round *E*, braces *G G'*, ploughs *H H'*, bolts *a a'*, nuts *b b'*, bolts *c c'* and *b b'*, and set-screws *f f'*, all constructed substantially as and for the purpose herein set forth.

No. 108,230.—WILLIAM C. CLIFTON, EIR RIVER TOWNSHIP, IOWA.—*Corn Ploughs*, October 11, 1870.

Claim.—The particular arrangement of the five shovels *A*, *B*, *C*, *D*, and *E* in an iron corn-plough located as described, with the adjustable slotted bar *F*, when constructed and arranged substantially as for the purpose above set forth.

No. 108,273.—LUCIE LUPFEN, ELKIN, ILL.—*Sheet Ploughs*, October 11, 1870.

Claim.—The arrangement, with reference to each other, of the plough-beams *A*, sockets *C'*, drawbar *D*, and bolt *E*, substantially as and for the purpose set forth.

No. 108,308.—HENRY M. SKINNER, ROCKFORD,

ILL.—*Cultivators*, October 18, 1870. Anticipated October 13, 1870.

Claim.—The machine described, having the longitudinal centre beam *A*, transverse end beams *B B'*, supporting-wheels *C C'*, hinged side levers *E E'*, and teeth *I*, when combined and arranged as described, for the purpose set forth.

No. 108,444.—WILLIAM THOMAS BUNN, HEMPHILL, TEXAS.—*Ploughs*, October 18, 1870.

Claim.—The arrangement of the draft beam *f* with the plough beams *a*, the latter being composed of the sections *b* and *c*, which are connected by the coupling *d*, and so arranged that the length of the beam *a* may be varied at pleasure, for the purpose of placing the shank *b* either abreast or in rear of the shank *b'*, the shanks *b*, *b'*, and the adjustable slats *k*, when all these parts are constructed and arranged to operate as described.

No. 108,741.—JOHN T. WHITLOCK, BRIDGPORT, Vt., administrator of CYRUS WHITLOCK, deceased. *Horse Hoes*, October 25, 1870.

Claim.—The beam *A*, with projection *a a'*, of stable legs *B B'*, plough point *D*, hinged to the sole piece *C*, and the pivoted wings *E E'*, braces *d d'*, and bolt *e*, all constructed and arranged substantially as set forth.

No. 108,834.—ELIJAH G. ROWELL, ALFONZO D. ROWELL, JAMES R. RICE, and SMITH M. SEELEY, HARTFORD, WIS.—*Sheet Ploughs and Cultivators*, November 1, 1870.

Claim.—A shovel plough and cultivator, constructed with centre frame *A*, handles *B B'*, stem *1084 C*, side frames *D D'*, cross-bars *E*, teeth *F*, and plough share *G*, arranged substantially as described.

No. 108,857.—JOHN A. WALTER and ELLI BUSHMAN, WHITE HOLE SP, PA.—*Corn Ploughs*, November 1, 1870.

Claim.—The standards *D D'*, articulated so as to fold backward, and provided with the draft-rod *O*, whereby they are secured in the vertically inclined or folded position, arranged with the beam *A*, standard *B*, handles *F*, as shown and described.

No. 109,247.—JOHN REBMAN, BINSKEY'S BRIDGE, PA.—*Cultivators*, November 15, 1870.

Claim.—The arrangement in a cultivator, of a fulcrumpully, *P*, adjustable bearings *F*, adjustable brace *G*, central shovel-arm *A*, curved bar *D*, clip *E*, and hook bolts *c c'*, all constructed to operate as described.

No. 109,558.—JOHN R. THOMAS, MIDDLETOWN, PA.—*Cotton Cultivators and Ploughs*, November 22, 1870.

Claim.—The standards *E* and *F*, having one straight and one beveled side, substantially as and for the purpose specified.

No. 109,803.—THOMAS GUCE, MOUNT ANDREW, VA.—*Cotton Ploughs*, December 6, 1870.

Claim.—The ploughs *a a'*, and double winged ploughs *C C'*, each constructed and both sets relatively arranged in the particular manner shown and described, whereby they are adapted to cut a furrow with a vertical side, and to scrape along each side of the cotton plant row or ridge, and clean the furrow of loose dirt.

No. 109,934.—ELWOOD PHILLIPS, CENTREVILLE IND.—*Corn Ploughs*, December 6, 1870.

Claim.—A one-horse cultivator, having a horizontally-curved beam, to admit of the horse and driver walking on the same side of the row of corn, the beam near its rear end being bifurcated downward, and on the extremities of which are pivoted the standards of the shovels, for the purpose of giving to the latter a lateral motion in the arc of a circle, substantially as herein set forth.

No. 109,990.—ISAAC A. BENEDICT, WEST SPRINGFIELD, PA.—*Sheet Ploughs*, December 13, 1870.

Claim.—The combination of, with a pair of wings, *D D'*, of arms *E E'* pivoted to the foot of beam *B* turning upwardly in an arc slot upon the top bolts *F F'*, and slotted at *G G'*, to allow the bolts *H H'* to slide thereon, to lift, expand, and contract said wings, all as described.

No. 110,082.—JACOB SATTISON, RIPLEY TOWNSHIP, OHIO.—*Cultivators*, January 3, 1871.

Claim. 1.—The adjustable slotted links or standards *H*, pivoted to the cross beam *G*, in combination with the shares

or wings E, substantially as described, and for the purpose specified.

2.—The adjustable slotted links H when pivoted to the vertically adjustable cross-beam G, adjustable slotted links F when pivoted to the standard C, in combination with the shares E, in the manner as described, and for the purpose specified.

3.—The arrangement of the shares E, adjustable slotted links F or standards H, cross beam G, beam A, and share D, in the manner as described, and for the purpose set forth.

No. 111,250.—WILLIAM BENJAMIN READ, GALVATIN, TENN.—*Cultivators*.—*January 24, 1871.*

Claim.—A cultivator, consisting of the reversible frame A, constructed as described, having the pivoted standards G and adjustable braces I and the adjustable handles B connected thereto, all as herein described.

No. 111,793.—ROBERT PATEY VAN HORNE, GRADY, OHIO.—*Double Shovel Ploughs*.—*February 14, 1871.*

Claim.—In combination with the main beam A, branch beam B, ploughs H H, hook D, handles I I, adjustable braces L L, stretchers K N, and clamping-bolts E F, arranged relatively one to the other, the removable plough-beam P provided with the shovel O, constructed as described for the purpose specified.

111,925.—WILLIAM GOWAN, BARRETT, TENN.—*Cultivator-Ploughs*.—*February 21, 1871.*

Claim.—The plough F, having the snake-head point, narrow neck, and the long mould-board, gradually widening upward from said neck, as shown and described.

No. 112,130.—FRANK PHILIP DAENPORT, CARTHAGE, ILL., assignor to himself, JOHN W. CHERRY, and THOMAS LOGAN.—*Abasco Cultivator*.—*February 28, 1871.*

Claim.—The combination of the bars E E E, cutting-fins F F F with the shear C, and the land-side bar D, beam and handles of the cultivator, operating substantially as set forth.

No. 112,481.—DANIEL MOSELY OSARK, ARKANSAS.—*Cotton-Choppers and Grain Cultivators*.—*March 7, 1871.*

Claim.—1.—The arrangement with each set of three chopper-blocks A A, of the scoops a a, blades b b, and plough d, substantially as shown and described.

2.—The arrangement of the adjustable bars J J, runner K, standards L L, and adjustable tongue M, substantially as shown and described.

No. 113,098.—HAMILTON RONEY, DAYTON, OHIO.—*Ploughs*.—*March 28, 1871.*

Claim.—In a soil plough, the arrangement of the frame A B C and auxiliary frame D E F in relation to each other and to the roller H, cutters a b, seat J, beam I, share G, and rods x, substantially as described.

No. 113,206.—BENJAMIN W. KEMV and NOAH T. KEMV, BROOKVILLE, IND.—*Corn-Ploughs*.—*March 28, 1871.*

Claim.—The combination of the beam A, shanks B C, ploughs E, handles G, braces E H, and double-tree I, all constructed and arranged substantially as and for the purposes herein set forth.

No. 113,306.—ALBERT H. KENNEDY, OBERLIN, OHIO.—*Cultivators*.—*April 4, 1871.*

Claim.—The combination of the rod F with the slides I I and the braces G G, substantially as and for the purposes hereinbefore set forth.

No. 113,934.—GUTHRIE D. ROWELL, MEMPHIS FALLS, WIS.—*Hoe and Hoe Cultivators*.—*April 18, 1871.*

Claim.—A horse hoe and cultivator, arranged as follows: horse hoe M with wings N N, hoe-beam C, cultivator teeth K, plough-share L, in rear of frame A, serrated nuts O on the tooth-stocks, and joints D in rear of share L, and frame A, substantially as described.

No. 113,990.—CHARLES A. BEARD and EZRA E. EVANS, ZANESVILLE, OHIO.—*Ploughs*.—*April 18, 1871.* Claim.—A plough, consisting of the beam A, arms C C and E E, braces e e e, and mould-boards B, D and F, all constructed and arranged substantially as and for the purpose set forth.

No. 114,040.—ISAAC N. FYLE, PEKASANT MILLS, IND.—*Cultivators*.—*April 25, 1871.*

Claim.—The bracket K, having the form and applied to the beams A, as shown, and the fender J and spring I, arranged therewith as specified, whereby the shank of said fender has a double bearing, and a vertical play in the bracket, for the purpose set forth.

No. 114,221.—ARCHIBALD L. W. STROUD, MUMFORD, ALA.—*Ploughs*.—*April 25, 1871.*—Antedated *April 19, 1871.*

Claim.—The side-beams D D, with their feet E E, ploughs H or I, and braces G G, when attached to the centre beam A by means of three bolts, a a, at equal distances apart, so that the side beams may be placed one in advance of the other or side by side, as may be desired, and the distance of said side beams from the centre beam is regulated by the slotted washers b b, all as herein set forth.

No. 114,611.—MOSES R. SHALTERS, ALLIANCE, OHIO.—*Ploughs*.—*May 9, 1871.*

Claim.—The arrangement of the plough beam A, provided with the seat a' having a corrugated upper surface, the cross-bar a'', provided with the enlargement or body a'' having a corrugated lower side, and the screw bolt a', when the cross-bar is placed upon the beam, the two corrugated surfaces being in contact, as specified.

No. 114,726.—LEONARD S. TEWELL, ELMSVILLE, PA.—*Cultivator-Ploughs*.—*May 9, 1871.*

Claim.—The curved beams C C and standards D D, with the handles G G attached to the standards and to the side beams, in combination with the straps B B and centre-beam A, constructed and operated as shown and described.

No. 114,994.—GEORGE W. PARSONS and WILLIAM S. FINNEY, HARRISBURG, PA.—*Cultivators and Shovel Ploughs*.—*May 16, 1871.*

Claim.—1.—The device for securing the front ends of the side-beams, consisting of angular ribs e e, in combination with grooves b b, in beams B B', bolt a, with a beveled head and triangular washer, W, substantially as described.

2.—The clevis C, provided with the angular ribs e e and square-shouldered recesses R R, in combination with beams A B B' and standards H, substantially as described.

No. 119,147.—THOMAS E. C. BRINLY, LOUISVILLE, KY.—*Cultivators*.—*June 20, 1871.*

Claim.—The herein-described shaft cultivator, composed of a rectangular frame, the elongated side-beams of which form the shafts A A, and carry at the rear the handles B B, fixed central beam D tied to the side beams by triangular stay D', laterally adjustable beams E and F, slotted iron standards H, which are provided with adjustable shovels G and adustably connected to their respective beams D E F, by braces I, and the gauge-wheel K, hung in a frame L, which is suspended from the side beams of the main frame, and raised or lowered by means of a brace, M, passing through the beam D, all the parts being constructed and arranged substantially as set forth.

No. 116,355.—ALFRED RODEN, MUMFORD, ALA.—*Ploughs*.—*June 27, 1871.*

Claim.—The combination, with a plough, H, of independent block G, standard plate F, and side brace I, to hold the shovel H firmly in the position required.

No. 117,034.—PHINEAS ORLANDO BALDWIN, SPRING LAKE, MICH.—*Cultivators*.—*July 18, 1871.*

Claim.—1.—The arrangement of the spring C, provided with bolt e, with the beam B, provided with the post m, and the tongue D, when each of said parts is constructed to operate substantially as and for the purposes set forth.

2.—In combination with the beams B K, the sectional extension guides G, lever F, and the extension of the spring E provided with latch bolts g and g', substantially as and for the purposes set forth.

No. 117,991.—WILLIAM J. ARRINGTON, L. FISHERVILLE, GA.—*Cultivators*.—*August 15, 1871.*

Claim.—The circular perforated plates E and F, the two sets of pivoted perforated bars H, I, J, and K, the side beams B C, and ploughs, all constructed and arranged in the manner shown and described, whereby said side beams may be adjusted simultaneously or independently of each other without changing the relation of parallelism between the ploughs and the central or fixed beam A, as specified.

No. 117,500.—HUGH J. COVILL, BUFFALO, N. Y.—*Cultivator, Apparatus, &c.*—*Aug. 15, 1874.*

Claim.—The central beam A, combined with the wing beams E F, adjustably arranged with respect to the former, as described, for the purpose of being readily adapted to serve the purpose of a cover, marker, or cultivator frame.

No. 118,150.—SAMUEL B. SHANK, MILLERSVILLE, PA.—*Cultivators.*—*August 15, 1874.*

Claim.—The cultivating devices K and P, shown in Fig. 3, in combination with the frame, consisting of the outer side pieces A V and inner beams B B, all pivoted to the front bar F, and made obliquely adjustable by means of the curved slots in the bar F, and fitted to receive either set of cultivating devices, as shown.

No. 118,180.—BENGT C. BLOMSTEN, WAPOVA, Wis.—*Cultivator.*—*Aug. 22, 1874.*—Ante-dated *Aug. 21, 1874.*

Claim.—The cultivator described, provided with the elastic side beams formed of a single metallic bar bent as described, and central beam united to the side beams by the connections described, each beam having standards provided with a longitudinally adjusting brace rod, the parts being combined and arranged as and for the purpose set forth.

No. 118,522.—JACOB S. FLEMING, 181 AND CREEK, OHIO.—*Cultivator.*—*Aug. 20, 1874.*

Claim.—The coupler F formed solid upon the forward end of the centre beam A of the cultivator, by bending the said forward end downward, substantially as herein shown and described, and for the purpose set forth.

No. 119,200.—JAMES WADDELL, LIBERTY, IND.—*Cultivator.*—*September 10, 1874.*

Claim.—The within-described adjustable cultivator-frame, to which the plough-shanks are attached, consisting of the four beams E E E' E', the two slotted cross beams A' and A secured by the headed bolts B B', the connecting bars A' A', and the oblique slotted braces G G, all constructed to operate substantially as and for the purposes herein set forth.

No. 119,588.—CHARLES ESCUDIER, PARISH OF BEREA, LA.—*Cultivator.*—*October 3, 1874.*

Claim.—The arrangement, in a cultivator, of the main frame *a*, bearing wheel and frame *c*, standard plates *d*, shoe *b*, lever *e*, rods *f*, and draft beam *h*, all constructed to operate as described.

No. 119,630.—JOHN S. NOLAN, PAINESBORO, CH. N. J.—*Cultivator.*—*October 3, 1874.*

Claim.—The oblong and eight-sided shovel P, adapted to be reversed or changed in position so as to adapt the implement for use as a harrow or cultivator, as specified.

2.—The improved agricultural implement formed of the central beam A, hinged adjustable side beams B, and adjusting devices H I G J F, the oblong reversible teeth P provided with self-sharpening teeth Q, the vine levers L, I, and N, all constructed and arranged as shown and described to operate as specified.

No. 119,786.—FRANCIS L. PERRY, CANNONDAUA, N. Y.—*Cultivators.*—*October 10, 1874.*

Claim.—The beveling the ends of the side bars H H' at different angles, and arranging them to be reversed to make the cultivator wide or narrow, substantially as described.

2.—The outriggers N N attached to the cultivator, substantially as described, and provided with rigid or spring teeth made of iron and of wire, for the purpose set forth.

No. 120,028.—JOHN T. BRITAIN, SPRINGFIELD, OHIO.—*Cultivator.*—*October 17, 1874.*

Claim.—The frame of the cultivator, when constructed of flat iron, as herein described, by combination of the handles C with the bent front and side beams A by means of the bolts *a* and the hinges D, and again with the side beams A by means of the connecting bar E, the short bars H, and the adjustment F, substantially as and for the purposes hereinafter set forth.

2.—The herein described construction of the two solid hand side rear wings I from a single square plate of metal without any waste of material, so as to make each plough adjustable and reversible right or left, formed from a right-angled triangle with an casting or forging, in combination

with the said described frame, substantially as hereinafter set forth.

No. 120,113.—ARTHUR C. SMITH, FAULDREDELL, N. C.—*Cultivator.*—*October 17, 1874.*

Claim.—The combination of the land marker L' adapted to slide along the pivoted arm L, and rendered adjustable by means of the arms X N and adjusting plate *m*, with the strap K, coil *n*, and post L', all arranged and operating as described.

No. 5,547.—ARTHUR C. SMITH, FAULDREDELL, N. C.—*Cultivator*—Patent No. 120,113.—*October 17, 1874.*—Re-issued *Aug. 10, 1873.*—Application filed *July 12, 1873.*

A cotton scraper combined with a cultivator.
Claim.—1.—In combination with the plough-beams D D and their handles E' E', connected by rod I with sleeve Z, the diagonal braces B' B', passing from the rear ends of the plough beams to and through the handle of the plough on the other side, and adjusted by nuts B' B', substantially as and for the purposes herein set forth.

2.—The combination of the land-marker L', adapted to slide along the pivoted arm L, and rendered adjustable by means of the arms X N and adjusting plate *m*, with the strap K, coil *n*, and post L', all arranged and operating as described.

No. 120,704.—ALEXANDER C. TAYLOR, NORTH FAIRFIELD, OHIO.—*Cultivator.*—*November 7, 1874.*

Claim.—The arrangement, upon the standard C, of the shate D, hinged and adjustable wings F, adjustable and reversible wings G, and stay-rod H, as and for the purpose set forth.

No. 121,228.—JOHN W. BLAKE, JOHNSON, WIS.—*Cultivator and Horse Hoe.*—*November 28, 1874.*—Ante-dated *November 17, 1874.*

Claim.—1.—In a cultivator, the central adjustable standard *a*, pivoted to the beam A, and connected to the clevis bolt by means of the draft rod D, whereby the pivot of the standard is relieved of strain, substantially as described, for the purpose specified.

2.—The brace or plate E, in combination with the shovels and standards, to reinforce the points of the shovels, as herein shown and described.

3.—The combined braces and handles M M sliding loosely upon the cross head B, in combination with the pivoted adjustable central standard *a*, as herein shown and described, for the purpose specified.

No. 121,267.—JOHN ANSELEY and GEORGE W. ANSELEY, MAKERS, MO. —*Cultivators.*—*November 28, 1874.*

Claim.—The plank pl form A carrying the pole B and cultivating teeth *a* *a*, &c., or equivalent ploughs, in combination with the runners C C, with or without tracking wheels, connecting fulcrum for D, and handle levers E E, constructed, connected, and operated substantially in the manner and for the uses set forth.

No. 121,439.—WILLIAM M. WATKINS, TAYLOR, VA.—*Cultivators.*—*November 28, 1874.*

Claim.—The combination of the shank E, wing G, and point H, when said joints are constructed and arranged substantially as and for the purposes herein set forth.

2.—The within-described cultivator, consisting of the frame A A, B B, C, and D D, metallic sockets *a* *a*, shanks E E, wings G with flanges *b* *b*, and grooved points H H, all constructed and arranged substantially as set forth.

No. 121,484.—DANIEL W. BOWMAN, TIPPICANOE CITY, OHIO.—*Cultivator.*—*December 5, 1874.*

Claim.—In combination with a single shovel plough, A B C, the secondary beam and shovel F E, when pivoted to the main beam at *f* and adjustably connected therewith at the rear end by means of the link G and perforated or slotted plate or bracket H, substantially in the manner set forth.

No. 121,535.—THOMAS MEIKLE, LOUISVILLE, KY.—*Shovel Plough.*—*December 5, 1874.*

Claim.—The combination of the beams A and B of a double shovel plough, the bolt E', and brace E, when the latter is constructed at each end with projections or flanges *e*, for enhancing the edges of the beams, substantially as and for the purpose set forth.

No. 123,128.—MITCHELL, SCHWARTZ, CENTER
FIELD, N. H.—*Cultivator*,—*January 30, 1872.*

Claim.—The combination and arrangement of the slotted bar A, the long pivot-rod B, B' carrying the teeth *b, b'*, the short bars C, C' pivoted to the bars B, B' and to the adjustable yoke D, and carrying the adjustable hoeing teeth F, the whole constructed and operating substantially as described and specified.

No. 123,416.—JOHN R. MINER, UNIONVILLE, S. C.—*Cultivator*,—*February 6, 1872.*

Claim.—The scrapers D, gauges H, and wings G, combined, as described, with cross bar E, and the whole applied to the standard of a cultivator, as and for the purpose described.

No. 123,583.—SAMUEL C. SHELLER, LEWISBURG,
PA., assignor to ALFRED S. SHELLER, same place.—*Cultivator*,—*February 13, 1872.*

Claim.—The cutters, *d, d'* and shovels D with their bent shanks, all connected to a single beam, B, in combination with notched, slotted, and adjustable stay plates G, adjustably hinged bars *e, e'*, turning bar I, all jointly operating substantially in the manner and for the purpose specified.

No. 123,717.—FRANCIS M. McMEKIN, PALM
GUM, FLA.—*Plough*,—*February 13, 1872.*

Claim.—The improved shovel beam G, having the forward and rear diagonal legs, *d, d'* together formed from a single bar of metal, bent to the form shown and described, in combination with the adjustable shovel P, secured and rendered adjustable by means of the bolt *q'* and nut *h*, substantially in the manner described.

No. 124,316.—MARION J. BARR, CENTREVILLE, IND.—*Cultivator*,—*March 5, 1872.*

Claim.—The combined subsoiler and surface-plough E, having the bushed or shouldered point *d*, neck *d'*, and leveled surface plate *d''*, constructed substantially as and for the purpose specified.

No. 125,057.—JOSEPH G. LACY, ERIKA, WIS.—*Cultivators and Potato Diggers*,—*March 20, 1872.* Ante dated *March 13, 1872.*

Claim.—1.—In a cultivator and potato-digger, the adjustable slide C, with shovel *B'*, and adjustable mould-board F, substantially as and for the purpose set forth.

2.—The herein-described cultivator, consisting of the draft-beam A, semicircular beam B, rake H, plate *C'*, and the adjustable slides C, provided with the mould-boards F, substantially as and for the purpose specified.

No. 125,036.—CORNELIUS M. CLARK, Seward,
NEB.—*Cultivator*,—*April 23, 1872.*

Claim.—1.—The standard *i*, pivoted to arm *f* so that it can move upward and outward, combined with wheel D and wires *r* to regulate the pitch of mould-board, all as set forth.

2.—The outwardly-inclined and loosely-pivoted arm *j* and wheel F, combined with and arranged with respect to the share E, to remove recumbent grass or weeds, as set forth.

No. 125,035.—CORNELIUS M. CLARK, Seward, NEB.—*Plough*,—*Patent No. 125,036.*—*June 18, 1872.* Re-issued, *April 23, 1872.*

Claim.—1.—The standard *i* pivoted to arm *f*, so that it can move upward and outward, combined with wheel D and wires *r* to regulate the pitch of mould-board, all as set forth.

2.—The outwardly-inclined and loosely-pivoted arm *j* and wheel F, combined with and arranged with respect to the share E, to remove recumbent grass or weeds, as set forth.

3.—The turn-pouch, formed of flat-bottomed and three-sided share *h, h'*, and wires *i, i'*, constructed and arranged as shown in the drawing and set forth in the description.

No. 126,412.—JOHN REBMAN, MANHEIM TOWNSHIP,
PA.—*Cultivator*,—*May 7, 1872.*

Claim.—In a cultivator, I claim the combination of the devices used, consisting of the detachable truck A, B, C, beams 1, 2 and 3, central plate E, scrapers K, and projecting-plates L, all arranged and made adjustable in the manner and for the purpose specified.

No. 126,658.—WILLIAM H. VICK, HOLLY SPRINGS,
MISS.—*Cultivator*,—*May 14, 1872.*

Claim.—The stocks H, H, in combination with the beams B, B, said stocks being adapted to receive the mould-boards I, I, or to serve as braces to the sub-soil or foot con-

struction K, K, substantially as and for the purpose herein specified.

No. 126,815.—WILLIAM KLEFFEL, MAPLE CREEK,
NEB.—*Cultivator*,—*May 14, 1872.*

Claim.—1.—The combination of harrow F, with the cultivator handles E by means of the lever-handles *d, d'* and vertical levers *h, h'*, and chain or its equivalent for attaching it to the frame of cultivator, substantially as set forth.

2.—The combination of harrow F, lever handles *d, d'*, vertical levers *h, h'*, cultivator handles E, sliding rings *a*, and adjustable vertical bar *u*, all arranged to operate substantially as set forth.

3.—The truck H, having its axle provided with the swivel-guide S, and chain *p* with ring *q* on its end, in combination with the tongue A having holes *t* and bolt *r*, the whole arranged to operate as shown and set forth.

No. 126,601.—ASA BENNETT SPRINGSTEEN,
SCHODAK, LANDING, N. Y.—*Cultivator*,—*May 21, 1872.*

Claim.—The combination, with a surface scraper, E, of a lever, F, provided with the root-extractor *p*, and arranged in the rear of said scraper, as described.

No. 127,469.—NATHAN EARLYWINE, CENTERVILLE, IOWA, assignor to himself and CHARLES A. DAVIS, ST. LOUIS, MO.—*Cultivator*,—*June 4, 1872.*

Claim.—The hinge B, constructed as described, in combination with bars A, *b*, *b'*, *b''*, standard D', roller plough-frame E, when arranged to operate as and for the purpose set forth.

No. 127,508.—WILLIAM C. PERCY, BAYOU SARA,
LA.—*Cultivator*,—*June 4, 1872.*

Claim.—The tapering plough H, curved upon the arc of a circle, and having an opening formed in its middle parts leaving the plough simply a rim or frame, substantially as herein shown and described, and for the purpose set forth.

No. 127,658.—GEORGE STIBER, COGAN STATION, PA.—*Cultivator*,—*June 4, 1872.*

Claim.—In combination with a cultivator constructed substantially as herein described, the shafts H, H, wheeltree I, and the bar J, pivoted to a standard on the centre beam of the cultivator, all substantially as and for the purpose herein set forth.

No. 128,632.—GLOVER G. FORMAN, STOKES, GA.—*Plough*,—*June 18, 1872.*

Claim.—The combination of the cross-bar G with the outer end plough-standards and the cross-bar E, pivoted to the beam F and provided with an adjusting device, H, as shown and described, to operate as specified.

No. 128,365.—WILLIAM WALKER CATO, HICKS-
FORD, VA.—*Cultivator*,—*June 25, 1872.*

Claim.—1.—The lifting-bar *m*, constructed and adapted to be used in combination with the plough, substantially as described, for the purpose set forth.

2.—The adjustable notched wings *u, u'*, in combination with the removable plates *t* and the plough-standard, having sockets, adapted to receive and hold the plates, when constructed in the manner and for the purposes herein set forth.

No. 128,734.—MARQUIS D. KING, KING'S FERRY,
N. Y.—*Cultivator*,—*July 9, 1872.*

Claim.—In combination with the quadrilateral frame A carrying the cultivator hoes, teeth, or ploughs B, a pair of thills C, and a pair of handles D, both pivoted centrally to said frame, as at *h*, and adjustable thereon, respectively by the arc pieces *e* and supports *e'*, substantially as described and represented.

No. 128,827.—FREDERICK W. TOLEY, CONNSKOTE,
N. Y., assignor to himself and ROBERT V. D. COLLIER,
same place.—*Cultivator*,—*July 9, 1872.*

Two wheels pivoted to the front part of the frame in such a manner that the frame can be tilted forward so as to rest entirely upon the wheels for the convenience of transportation.

Claim.—The arrangement of the arms I and wheels J, in connection with the frame A, tongue F, semicircular slotted plates G, G, and bolt H, substantially as herein shown and described, and for the purpose set forth.

No. 129,681.—WILSON BAKER, MEMPHIS, TENN.—*Cotton Cultivator*,—*July 16, 1872.*

A cultivator for scraping and chopping out cotton. Com-

laced with the ploughs are two adjustable scrapers and two revolving cutters, which act also as chisel-fenders, to protect the sowing plants.

Claim.—The combination, in a straddle-row cultivator, of a bar-shear plough, A, B, on each side, the scrapers C, D, next thereto, and the inner revolving cutters, as described, and for the purpose of enabling it to operate as set forth.

No. 126,804.—JOHN E. LANG, ILLINOIS, N. Y. Assignor of one-half of his right to J. S. REYNOLDS, same place. —*Cultivator*,—*July 30, 1872*.

• Has a central beam, with one shovel and two adjustable side shovels.

Claim.—1.—The frame *k*, when secured to the end of the beam *a*, in combination with the adjustable standards *b, b'*, and braces *k, k'*, substantially as shown.

2.—The combination of the rearward extension of the beam *a*, for the shovel hole *i*, to the Y-shaped frame *l* of the said frame *k*, and of the handles *b, b'*, making the braced and mutual-supporting frame work of the beam, frame, and handles, as set forth.

No. 133,384.—CYRUS MARSH, 2d, Natchez, Miss. —*Cultivator*,—*August 13, 1872*.

A combination of pivoted handles, having a peculiarly-formed securing-iron, with the main frame of the cultivator.

Claim.—1.—The machine described provided with the main frame A *a, a*, the removable side beam C, having wheels and shovels attached, as described, and pivoted handles B B, provided with the V-shaped iron *k*, all constructed and operating substantially as described.

2.—The pivoted handles B B, provided with the V-shaped irons *k*, with right-angle flange, in combination with the main frame, as described, the iron being so arranged that it may be readily adjusted and be held by a single pin or screw.

No. 130,705.—BENGT JOHAN SVENSON, MANOR STATION, TEXAS.—*Cultivator*,—*August 20, 1872*.

The parts are strengthened by the form and structure of the handles and brace.

Claim.—The combination of the beam A, cross-bar C, strap D forming the handles G G, V-shaped strap E, and the shovel-stands H H, passing through the straps D and E and cross-bar C, all substantially as set forth.

No. 131,150.—GEORGE D. CLEVELAND, FERRIS, IND.—*Cultivator*,—*Sept. 10, 1872*.

When it is desired to cultivate but two furrows at a time, the front and rear standards are detached from the outside of the plates E, and their ends inserted between the plates and the beam, thus bringing them nearer together, while the central one is swung back out of the way.

Claim.—The combination of the beam C, pivoted and adjustable standards A, in combination with the bent plates E, when the said parts are so arranged that the standards can be adjusted to cultivate two or three furrows at a time, substantially as set forth.

No. 132,501.—BOWMAN S. COX, PARISBOROUGH, N. J.—*Cultivator*,—*October 15, 1872*.

This cultivator has a centrally fixed beam, to which are pivoted two oblique beams, to which the cultivator teeth are attached. By means of a lever, placed in convenient reach of the operator, the hinged beams can be moved nearer to or further from the central one, as may be desired.

Claim.—The cultivator having the central beam A, holding the plate *a*, transverse bar E', and standard F'; the oblique beams C hinge I at their forward ends to the beam A, and connected to the bar E' by pivoted arms *a'*; the adjustable fenders E pivoted to the tooth B, and connected at their rear ends to the beam C, and the operative devices for adjusting the beams and fenders, all substantially as and for the purpose specified.

No. 132,704.—GILBERT JESSUP, SHORISVILLE, N. Y.—*Cultivator*,—*Nov. 5, 1872*.

A beam is pivoted to the forward end of diverging side pieces of a cultivator frame, the beam extending forward and carrying a bearing-wheel. The rear end of the beam is elevated or depressed and held in place by a toothed segment, thus regulating the depth of the cultivation.

Claim.—The pivoted bar B provided with a bearing-

wheel at its forward end, in combination with the cultivator frame and segment D, as and for the purpose specified.

No. 132,706.—WILLIAM BROOKS, LEANINGTON, GA. —*Cultivator*,—*Nov. 5, 1872*.

The wing or scraper is pivoted loosely upon the bolt so that the set-iron may accommodate itself to the inequalities of the ground.

Claim.—The combination, with an ordinary shovel plough, A B C, of the sectional laterally projecting curved wings D E, hung upon the fastening bolt F, and adapted to be used in the manner set forth.

No. 133,387.—WILLIAM D. SMITH, HOMERVILLE, GA.—*Cultivator*,—*Nov. 20, 1872*.

A zigzag bar, centre piece, and side brace, all of wrought-iron, form the frame, which is provided with iron handles. The cultivator teeth and shanks are each of one piece and secured one to each longitudinal angle of the frame.

Claim.—An improved cultivator formed by the combination of the zigzag bar A, made in one or more parts or pieces, the draft-bar B, handles C, braces D, and ploughs E with each other, substantially as herein shown and described, and for the purposes set forth.

No. 133,407.—CYRUS MARSH, 2d, Natchez, Miss. —*Cultivator*,—*Nov. 20, 1872*.

The wheels are very narrow so as to cut into the ground, in order to guide the machine and keep it steady.

Claim.—The machine described, consisting of the central beam A, with its removable shovel plough, wheels *a, a'*, elbow irons *a, a'* of cross-beam B, bars C C', side beams D D, with their shovels, and the handles E, all combined and arranged as described, for the purpose set forth.

No. 133,614.—LEWIS K. WRIGHT, TROY, N. Y.—*Cultivator and Plough*,—*December 3, 1872*.

The standard is secured to the mould-board by rivet, the whole secured by a nut. By sliding the standard upward or downward through the eye-bolt *k* the mould-board is raised or lowered.

Claim.—1.—The curved standard *a*, top bar *b*, inclined brace *c*, all of one piece of metal, and the curved tooth *h*, secured by the bolt *i*, and secured to the under side of the frame by the bolt and nut passing through the top bar *d* and the beam *e*, as shown and described.

2.—In combination with the frame beams *p, p, p*, I claim the hinged wings *h, h*, shrouds *q, q*, pivots *i, i*, movable rods *l, l*, and eye-bolts *k, k*, all constructed and arranged to operate substantially as set forth.

No. 133,805.—CASPER KROGGI and PETER G. KROGGI, KROGGVILLE, WIS.—*Cultivator*,—*December 10, 1872*.

A single shovel plough has a series of hoofs adjustably arranged in the rear of the shovel.

Claim.—In combination with a single shovel plough, hoofs which are hung in rear of the shovel upon a rod, H, passing through the handles and the standard, adjustably connected in pairs by slotted or notched bars, and fastened to the beam by tie-rods, substantially as specified.

No. 134,080.—CYRUS MARSH, NATCHEZ, MISS.—*Cultivator and Plough*,—*December 17, 1872*.

Devices for guiding the machine, consisting of sharp front-wheels, pivoted and having a lever extending backward to the handles so that the wheels may be turned in either direction in combination with heel-plates, attached to the rear of the ploughs.

Claim.—1.—In a machine of substantially the described construction, the combination of sharp guiding wheels in front with guiding heel-plates in rear, substantially as described.

2.—The combination, in a single machine, of guiding and elevating mechanism, substantially as described, the frame, and a pair of scraper blades having heel plates attached thereto, all substantially as described, for the purpose set forth.

No. 134,099.—FRANCIS REESE, WILSONVILLE, ALA. —*Cultivator*,—*December 17, 1872*.—Antelated *December 14, 1872*.

Claim.—The combination, in a cultivator, of beam A, gageable cross-bars C C', gageable bars B B, shouldered arms D D, shouldered bed-plate E bearing the cutter F and shovel G, and fenders H H attached to fenders B B,

made gaugeable by wedge N, all constructed, arranged, and operating substantially as set forth.

No. 134,695.—EDMUND D. REYNOLDS, and OLIVER BRADFORD REYNOLDS, North BRIDGEWATER, MASS.—*Cultivators*.—*Patent* 24, 1872.—Antedated *Dec. 10, 1872*.

The blades are made of thin sheet steel cut and bent at nearly right angles. Flexible wire teeth project rearwardly.

Claim.—1.—The gang of hoe blades, each formed with the blade and its standard both inclined in the directions as shown and described.

2.—In combination with the hoe blades, the spring rake teeth fastened to the hoe standard, and inclining downward, and diverging therefrom, substantially as shown and described.

3.—In combination with the hoe blades, constructed and arranged as described, the mould-board *v*, substantially as shown and described.

No. 134,695.—JOHN M. HEDGES, YORK, PA.—*Cultivators*.—*January 7, 1873*.

A cultivator having a curved mould-board pivoted to the rear end of either outside beam, and capable of being adjusted to act in connection with either of the cultivator teeth.

Claim.—The curved mould-boards *D*, having flanges *d* at the upper rear end, pivoted to the rear ends of beams *B*, *B*, and so arranged that the points of said mould-boards may be brought against the sides of the central tooth or turned to any desired position, substantially as specified.

No. 134,670.—RICHARD G. HOIBSON, HOT SPA, MISS.—*Ploughs*.—*January 7, 1873*.

The beams of the cultivator are parallel to each other, and are adjusted by means of bolts and nuts. The shorter beam is secured against backward strain by means of a spring-brace, attached by a hinge joint to its forward end, and by a bolt to the main beam.

Claim.—The beams *A*, *B*, when connected by the hinged and slotted spring-brace *C*, in combination with the screw-bolts *E*, *F*, all constructed, arranged, and operated as set forth.

No. 135,391.—JOHN TWEEDY, VERNON, IND.—*Corn Covers*.—*January 28, 1873*.

A clod mover of a triangular or V-shape, loosely attached to the rear part of a cultivator plough so as to adjust itself to the shape of the ridge and removes clods or other obstructions that might prevent corn from coming up.

Claim.—1.—The clod mover *I*, in combination with the semi-circular or arched mould-board *H* and ploughs *G*, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the long staples *J*, tool *K*, and guide or keeper *L*, with the clod mover *I*, semi-circular or arched mould-board *H*, and beam *A*, substantially as herein shown and described, and for the purposes set forth.

No. 135,414.—IRA EMRICK, VERNON, MD.—*Corn Cultivators*.—*February 4, 1873*.

The standards and beam of adjustable and reversible cultivator shovels are secured by means of a round cross bar, a staple, and eyebolts, which may be easily loosened for purposes of adjustment.

Claim.—The described method of securing the standards and beams together by means of the cross bar *I*, eyebolt *K*, and staple *J*, as and for the purpose set forth.

No. 135,730.—WILLIAM FAYLOR, MASSFIELD, MASS.—*Cultivators*.—*February 11, 1873*.

The expanding wings are connected by means of rods to a block sliding in the beam.

Claim.—The block *J*, arranged in a longitudinal slot of the beam *A*, the bars *I*, connected therewith at the inner side and pivoted to the middle portion of the wings *H*, the lever *N*, and plate *O*, all as shown and described.

No. 135,872.—BENJAMIN WITTER, SHREVE'S MOUNT, IOWA.—*Cultivators*.—*February 11, 1873*.

Claim.—The beam *E* with round tenon at its lower end, shoulder *v*, and groove *v*, in combination with the concealed block *v* with ears *z*, the shovel *G*, strap *h*, and bolts *i*, *i*, all substantially as and for the purposes herein set forth.

No. 136,249.—HOSEA K. KRIEBLE, LANSDALE, PA.—*Cultivators*.—*February 25, 1873*.

A saddle row cultivator, for a single horse. The inner triangular frame, having handles, is pivoted to the outer

frame, so that it may be swung to either side. In operation three hoes pass between two rows, while one hoe passes between the next two rows.

Claim.—1.—The combination of the frames *A* and *D*, constructed and arranged as shown, the said frames being pivoted or hinged together in front so as to permit the inner frame to be swung from side to side, as and for the purpose set forth.

2.—The cultivator, consisting of the triangular main frame *A* holding the plates *a*, cross guides *a'* with holes *a''* and standard *a'''* and shovels *C*, and the pivoted frame *D* having shovels *E'* and handles *E'*, substantially as specified.

No. 136,574.—EDWARD WIARD, LOUISVILLE, KY., assignor to BENJAMIN F. AVERY, same place.—*Cultivator*.—*May 4, 1873*.

A cultivator with means of adjustment to carry one, two or three shovels, and to change their relative positions upon the beam, and their distance therefrom, by means of posts of different lengths, through which pass screw bolts, as shown.

Claim.—The cultivator, with the described means for adjustment to carry one, two, or three shovels, and to change the same to different positions, as shown in the drawing.

No. 136,897.—ZECHARIAH D. BLACKSTONE, ST. MARY'S COUNTY, MD.—*Case A.—Tobacco Hillers*.—*March 18, 1873*.

A leveler, having a flat surface and central projecting rib for smoothing the ground and keeping the machine in a direct line.—A hiller, having flanges on each side for drawing in the earth to form hills.

Claim.—1.—A leveler, *E*, when provided with a rib, *h*, on its under side, for the purpose set forth.

2.—A hiller, *F*, when provided with side ribs *i*, constructed substantially as described, and for the purpose set forth.

3.—A hiller *F*, when provided with side ribs *i*, and a marking rib *h*, substantially as described, and for the purpose set forth.

4.—A hiller, *F*, when provided with side ribs *i*, marking rib *h*, and rearward projecting piece *h'*, substantially as described, and for the purpose set forth.

5.—The combination of a hiller, *F*, with a runner, *A*, each being constructed substantially as described, for the purpose specified.

6.—The combination of the leveler *E* and hiller *F* with a runner, *A*, all being constructed substantially as described, and for the purposes set forth.

7.—The combination of two or more runners, when each is provided with a leveler, *E*, and hiller, *F*, and with a single pair of handles, *G*, to guide the whole, substantially as described, for the purpose set forth.

No. 136,898.—ZECHARIAH D. BLACKSTONE, ST. MARY'S COUNTY, MD.—*Tobacco Cultivators*.—*March 18, 1873*.

The weeding blades are attached to spring arms, and may be raised or lowered by means of levers and connecting chains.

Claim.—1.—A runner *A*, when provided with a pair of cultivating implements, *W*, in front, and a pair of adjustable cutting or weeding blades, *m*, constructed and arranged as described, for the purpose set forth.

2.—The weeding blades *m*, when connected to the runner *A* by means of a curved spring arm, *n*, for the purpose set forth.

3.—In combination with the weeders *m* and curved spring arm *n*, the lever *p* and connecting rod or chain *v*, for the purpose set forth.

No. 137,221.—MYRON F. FEWELLIN, BERGEN, N. Y.—*Cultivators*.—*March 25, 1873*.

A pointed head armed with teeth for the purpose of raking through the rows of corn, and thus freeing them from weeds and dirt; arranged for attachment to a common cultivator.

Claim.—The cross beam *C*, with jointed heads *C' C'*, the beams *D*, *D*, stirrups *d*, *d*, brace bars *E*, *E'*, and loop *g*, when combined and arranged with an ordinary cultivator, in the manner and for the purpose specified.

No. 137,049.—LORENZO BALDWIN, STONE MILLS, N. Y.—*Cultivators*.—*April 8, 1873*. Application filed *November 23, 1872*.

A frame provided at the sides with bolts *m*: to receive

lotted arms of interchangeable harrow and cultivator, and to render them adjustable; to the forward part of the frame is secured a hoe-blade fastened to the frame by rigid arms, in rear of the hoe-blade is a hole into which a hook on the harrow or cultivator is inserted; in front of the hoe-blade is secured a cast-iron wheel for adjusting the depth of the hoe-blade.

Claim.—The combination of the frame and its blade C and adjustable wheel E, when fitted for the interchangeable plough and harrow substantially as specified.

No. 137,782.—AUGUSTUS LEONARD, NEWELL'S RIVS, OHIO.—*Cultivators*.—April 15, 1873. Application filed August 30, 1872.

The said beams are rigidly attached in front to the central beam, depending upon their elasticity for the lateral movement in rear to adjust them to a greater or less width. This movement is controlled by the handles pivoted to bars sliding through a mortise in the central beam and held in any desired position by a retaining-pin.

Claim.—1.—The combination of the central beam, the side beams, the sliding bars, and the pivoted handles, the handles being connected to the sliding bars at their front ends, substantially as described.

2.—The machine described consisting of the central beam A and the side beams B, united thereto as described, the handles C C, standards *c*, tie-bars *c'*, sliding bars D D, with holes, as described, and the securing-pin in the central beam, as set forth.

No. 138,838.—DEWITT CLINTON BARKER, FELTON, N. Y.—*Cultivators*.—May 13, 1873. Application filed March 24, 1873.

A corrugated brace-bar, by means of which the distance between the ploughs can be regulated, and which allows the plough-standards to be turned so as to throw the earth to or from the plants.

Claim.—1.—The corrugated brace bar G, constructed and arranged in combination with the stocks D D, substantially as and for the purpose herein specified.

2.—The combination of the adjustable and reversible hinged wings E E, constructed and arranged substantially as specified, with the shovel-stocks D D and brace bar G, substantially as and for the purpose herein specified.

3.—The herein described cultivator composed essentially of the central beam A, shovel-stocks C and D D, adjustable wings E E, corrugated brace-bar G, and beveled-edge shovels H H I, constructed and arranged substantially as herein specified.

No. 138,904.—WILLIAM T. WALKER, FONTENAY MILLS, GA.—*Cultivators*.—May 13, 1873. Application filed March 22, 1873.

The side beams are pivoted at the center in such manner that the ploughman by the handles can increase or diminish the width of the space cultivated while the machine is in motion. Springs attached rigidly to the center beam serve to restore the frame to its usual shape.

Claim.—The springs H H secured to the fixed central beam A, and connected at their free ends with the pivoted and handled side beams C C by means of staples or other equivalent guides, as shown and described, to operate as specified.

No. 139,001.—EVNER M. GRAHAM, VERNON, LA.—*Cultivators*.—May 20, 1873. Application filed May 16, 1872.

A frame adapted to receive interchangeable cultivating devices, so that the implement may be used in cultivating different crops.

Claim.—1.—The combination of the frame A B, wheels D, axles *e* hooks I rod L, and rack or frame E, adapted to receive ploughs H or other cultivating devices, substantially as shown and described.

2.—The combination of the bars E² E³, bolts and nuts I 2 3 4 5 6 7 8 9 10, and blocks F with the frame A B, substantially as shown and described.

3.—The grooves *p* in the frame A B, in combination with the notches *b* in the rack or frame E, substantially as and for the purpose described and set forth.

No. 139,065.—THOMAS M. KING, MURKESBOROUGH, TEXS.—*Harrow*.—Mar 20, 1873. Application filed January 6, 1873.

Two harrows, the frame of each being formed of a straight

bar and a semi-circular bar, and attached to a beam by bolts so as to be adjustable at various angles to each other.

Claim.—The improved harrow, consisting of the two like parts, each formed of a straight bar, D, perforated semi-circular bar F, central brace bar G, and teeth E, attached to the beam A by two adjusting bolts, *f'*, as shown and described, whereby they may be set at various angles to each other horizontally, and adjusted so as to leave a wide or narrow space between them at their front ends, as specified.

No. 138,320.—PHILIP LONG, PENN TOWNSHIP, near Junction Railroad Station, County of LANCASTER, PENN., assigner of one half his right to JOHN M. PHILLIPS, same place.—*Cultivators*.—May 27, 1873. Application filed January 25, 1873.

The side beams of the cultivator are pivoted at the front by a plate-hinge, which adds strength to the beam. The large number of teeth or shovels are narrow and pointed, set upon long standards for the purpose of deeply pulverizing the entire soil through which it passed.

Claim.—The above-described three-beam cultivator, with long standards passing through inserted bush plates, and narrow pointed shovels; the frame adjustable as to width at the front by means of the peculiar hinge and plate, with the curved slotted bar and set-screws at the rear, all combined and arranged substantially as set forth.

No. 139,750.—CHARLES ZOCHER, AUGUSTA, GA.—*Cotton Cultivators*.—June 10, 1873. Application filed March 20, 1873.

A series of notches or offsets, inclined backward and upward, are formed upon the sweep so that it may clear itself of trash.

Claim.—The sweep B, having its cutting edge notched and the portion of said edge between the offsets *b'* inclined, as specified, for the purpose of enabling the sweep to clear itself of obstructions, as set forth.

No. 140,724.—BENJAMIN F. MUSCHERT, MORRISVILLE, PA.—*Cultivators*.—July 8, 1873. Application filed December 7, 1872.

The cultivator has a fixed center shovel and two side shovels adjustable as to width by having their standards placed movably upon two cross rods or bars with screw-ends and adjusting-nuts, the whole held firmly in position by rigid braces.

Claim.—The combination, with the rods F F' and their adjusting-nuts and standards, of the rigid braces *b' b'*, and the beam D, as specified.

No. 140,885.—JACOB CAYLOR, FAIRVIEW, assigner of one half his right to CHARLES E. JONES, REDKEY, IND.—*Cultivators*.—July 15, 1873.—Application filed October 12, 1872.

Interposing a transversely recessed block having its outer faces plated with metal between the cultivator-shank and the beam to render easy adjustment of the shank, in connection with the adjustable brace provided with an eye, to which the brace is secured.

Claim.—In a cultivator, the combination of the transversely recessed block D, having its outer face plated with smooth metal, the laterally-adjustable shovel beam E, provided with the eye *e* and the adjustable perforated braces F, substantially as shown and described.

No. 141,400.—EPHRAIM BRIGGS, CLEVELAND, OHIO.—*Cultivators*.—July 20, 1873. Application filed July 18, 1872.

Furrows are thrown up on both rows at same time.

Claim.—The combination, in a cultivator, of a centre beam and two pivoted adjustable side beams with reversible shovels carried on tenoned wooden standards secured to the beams by double grooved metallic sockets, all arranged as described, and for the purpose set forth.

No. 141,404.—FREDERIC ROY, PARISH OF St. BERNARD, LA.—*Cultivators*.—August 5, 1873.—Application filed April 5, 1873.

Two pairs of scrapers are secured to the frame by which the earth from each side is thrown into the trench and a ridge formed, which is made uniform and pressed by a following plough and roller, the latter being adjustable in height. By means of a bent axle and lever the covering devices are raised from the ground at will.

Claim.—1.—The combination of the frame A with the

mould-board, F F, regulator or leveler E, together with its vertically adjustable frame F', its roller F'', standards G, and vertical screws G G G G, substantially as described and shown, and for the purpose set forth.

2.—The combination of the wheels and axle B', lever C', handle D, runners H H', screws J J, oscillating cross-piece I with fore-wheels B B with their mountings, all constructed and operating together substantially as described and shown, and for the purposes set forth.

No. 141,707.—RUFUS A. FISH, WORCESTER, MASS.—*Cultivators*.—August 12, 1873.—Application filed January 3, 1873.

The teeth are secured to the frame by means of metallic sockets bolted to the side of the beams, the teeth being held in the sockets by keys and pins.—The beams are adjusted in regard to width by means of notched segments and held in place by a tapering pin passing through flanges.

Claim.—1.—In combination with the cultivator frame, the independent metallic socket C', tooth D, and wedge for holding the tooth in said socket, as set forth.

2.—The socket C and pin of key E, in combination with the tooth D, formed with a slot to engage said key, and the wedge, or its equivalent, substantially as shown and set forth.

3.—The combination, with the notched expanding bars, of the holder G and pin H, substantially as shown and set forth.

No. 142,055.—ALBERT SMITH, PROVIDENCE TOWNSHIP, PA.—*Combined Shovel Ploughs and Cultivators*.—September 9, 1873.—Application filed March 17, 1873.

The combination of devices whereby a cultivator can in a moment and without removing bolts or screws be changed to a shovel plough.

Claim.—A cultivator with main centre-beam and standard, carrying a main shovel, with two side beams, each carrying a smaller shovel, the side beams adjustable in width, as shown, and attached in front, so as to be removed by unhooking alone, making a complete single shovel-plough, the whole constructed and arranged as shown and described.

No. 143,019.—WILLIS LEWIS, OXFORD, N. C.—*Cultivators*.—September 23, 1873.—Application filed April 3, 1873.

A centre beam, with diverging side beams, supplied with curved harrow-teeth, followed by flat shares, one in each beam. A semicircular blade is placed behind the shares, whose length is as wide as the rear end of the machine. A rake is attached by links to the rear end of the beams, for removing weeds.

Claim.—The combination of the cultivator teeth D D', semicircular blade C, and rake E, as described.

No. 143,380.—FELIPE PEREZ, HAVANA, CUBA.—*Cultivators*.—September 30, 1873.—Application filed August 4, 1873.

Two pairs of side bars, farthest apart at the centre, and converging at each end, carry in front a series of cutting blades. Behind them is a horizontal blade or scraper, extending across the entire width of the frame, followed by harrow teeth.

Claim.—A cultivator composed of a forward supporting roller, E, of the cutting blades F F', horizontal transversely blade H, and pointed teeth J J, to operate on light soil, substantially as herein shown and described.

No. 144,846.—LEVI HAVERSTICK, MASOK, PA.—*Cultivators*.—November 25, 1873.—Application filed April 23, 1873.

The irregular-shaped beams are jointed by one overlapping the other. The pivoted shovel-standards are slotted at the upper end, and held in position by a hooked brace, which engages a ratchet-wheel. The strain of a fixed obstruction causes the wheel to turn and releases the shovel-standards.

Claim.—The beams B B', held on a common centre pin or pivot bolt, A, in combination with the shovels C, ratchet M, and slip brace or pawl L, all arranged and operating substantially in the manner and for the purpose described.

No. 144,933.—HENRY VON PHUL, JR., and JAMES MALLON, HOLLY WOOD, VA.—*Combined Stubble Sharers and Scrapers*.—November 25, 1873.—Application filed August 10, 1873.

A curved, vertical cutter, designed to split the rows of sugarcane stubble, is mounted upon a frame with runners. The cutter is followed by a pair of oblique horizontal knives behind

which is a triangular scraper, the last two being adjustable as to height by means of bars and cranks operated by a lever.

Claim.—1.—The combination of the knives G, sliding angular bars H, connecting bars I, crank arms J, shaft K, lever L, and catch bar M, with each other and with the frame A D, substantially as herein shown and described.

2.—The combination of the scraper K, bar Q, and lever P with the shaft K, having crank arms O, the lever L, knives G, and bars H, all as shown and described, whereby the two cutting devices may be simultaneously raised and lowered by operating said levers, as set forth.

3.—The combination of the cutter T with the knives G, scraper K, and frame A D, substantially as herein shown and described.

No. 145,038.—BURKELW. WINGO, CHHICOTH, Mo., assignor of one-half his right to JESSE H. DAVIS, same place.—*Cultivators*.—November 25, 1873.—Application filed June 28, 1873.

The standards extend above the beam to which they are pivoted. They are adjusted by a pin, which passes through them and through holes in a semi-elliptical plate which is secured to and rises above the beam.

Claim.—The plough herein described, having the adjustable standards B B pivoted one on each side of the beam A, and the bent brace C secured at one end to the standard B and at the other end to the semi-elliptical plate D, and plough beam A, as and for the purpose specified.

No. 145,027.—CORNELIUS M. CLARK, SEWARD, NEB.—*Ploughs*.—December 10, 1873.—Application filed September 27, 1873.

To a widened portion of the beam-standards, rising from a horizontal portion, are attached a cutting share—being fixed to the front by rivets, clamps, and keys—and a soil-turner extending to the rear from the base-plate. The side-cutting portions are inclined or flaring.

Claim.—The standard portion C, having attached thereto the share C', with inclined sides, and the mould-board turner G extending slightly over the rear edge of share C', combined substantially as shown, and for the purpose specified.

No. 145,091.—ARTHUR C. SMITH, FAVELTOWN, N. C.—*Cultivators*.—December 10, 1873.—Application filed September 15, 1873.

Diagonal braces, having swiveled screw joints, connect each beam with the others, and also with the upper part of the handles.

Claim.—1.—In an implement consisting of two or more ploughs, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, and the diagonal braces G G, connecting the upper and lower parts of opposite handles, substantially as herein set forth.

2.—In an implement consisting of two or more ploughs, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, and the diagonal braces J J, connecting the front and rear ends of opposite plough-beams, substantially as herein set forth.

3.—In an implement consisting of two or more ploughs, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, the diagonal braces G G, connecting the upper and lower parts of opposite handles, and the diagonal braces J J, connecting the front and rear ends of opposite beams, all substantially as herein set forth.

No. 146,216.—HENRY VON PHUL, JR., and JAMES MALLON, HOLLY WOOD, near BYTON ROVER, VA.—*Sugar-Cane Com. Cultivators*.—January 6, 1874.—Application filed September 20, 1873.

A long bar or land-side runs parallel with the line of draft. Its front is made sharp, and there is hinged to it a broader plank or mould-board having its edge beveled and shod with iron for a scraper. A curved lever and links expand or contract the rear end of the machine.

Claim.—The combination of board A and land-side C, hinged together, and having levers D and studs F F', with pivoted bar P and lever E, capable of being fastened at different points of adjustment on a stud, P', as and for the purpose set forth.

No. 146,848.—FREDERICK G. THURSTON, NEW YORK, assignor to M. MA DEL GADRO and JOAQUIN LEFRA, same place.—*Inventor's Scrap.*—*January 27, 1874.*—Application filed *August 23, 1873.*

The scraper blade has oblique ends narrowing towards the rear, where the blade is sharply cut away to gather the soil and allow it to fall over the centre.

Claim.—In a furrow-scraper, the plate A provided with lateral vertical flanges a^1 B^1 converging to the cut away central portion of said plate, as and for the purpose set forth.

No. 146,952.—JESSE B. RUMSEY, WASHINGTON, D. C.—*Cultivators.*—*January 27, 1874.*—Application filed *December 31, 1873.*

The handles are hinged to the rear of the cultivator frame, and shovels attached to them, which may be turned in or out at pleasure. The tooth or plough is reversible, and has a narrow flange on one side, meeting the opposite portion or mould-board at an angle.

Claim.—1.—The combination of the cultivator frame A, bars D, braces E, handles G G, and handles G G, hinged to the rear ends of the beams A, substantially as and for the purposes herein set forth.

2.—The reversible concave plough or tooth I, provided with the angular narrow side flange I, substantially as shown and described, and for the purposes herein set forth.

3.—The combination of the frame A B, teeth C, bars D B, braces E, E, hinged handles G G, and the ploughs attached thereto, substantially as and for the purposes herein set forth.

No. 147,068.—CALEB M. RISLEY, WOODBURY, N. J., and CLAYTON B. ROGERS, PHILADELPHIA, PA.—*Cultivators.*—*February 3, 1874.*—Application filed *May 18, 1872.*

The lateral adjustment of the drag-bars is effected by curved bars, extending inwardly through slots in the braces which join the handles to the middle bar, a wedge or key securing them in the slots at any desired width.

Claim.—The two sliding back bars H H, the slotted stays I, and wedge-key K, in combination with the bars A B C, and handles of the frame of the cultivator, the said parts being constructed and arranged as and for the purposes herein before set forth and described.

No. 147,616.—SAMUEL DAVIS DOUTHITT, BOYDSVILLE, KY.—*Cultivators.*—*February 17, 1874.*—Application filed *December 6, 1873.*

A series of teeth are arranged obliquely upon the beam in front of the shovel-plough, which carries a wing or scraper for throwing the fine earth up to the plants after the weeds and clods have been thrown away from the plants by the reversely inclined teeth.

Claim.—In combination with the teeth a , beam A, and shovel D, the wing E, attached to the shovel D at an angle the reverse of that formed by the teeth a , substantially as described.

No. 148,262.—BYRON D. TABOR, WILSON, N. Y., assignor to himself and C. D. TABOR, same place.—*Cultivators.*—*March 3, 1874.*—Application filed *January 20, 1874.*

Upon a rod connecting the rear ends of the frame bars or thills the broad curved bearings of the plough-standards are pivoted adjustably, a brace-lever extending forward to a slotted hanger, also laterally adjustable.

Claim.—1.—The plough-shank E, formed with the broad hook m at its upper end, in combination with the shaft h , eye-screw i , and nut j , substantially as and for the purposes herein set forth.

2.—In a cultivator, the clamp H constructed as shown, with bearings 1, 2, 3 and 4, on all four sides of the cross-bar B, preventing any forward or backward movement, but allowing it to move laterally on the bar, substantially as herein set forth.

No. 148,845.—HORACE N. PROCT, WESTFIELD, MASS.—*Wing Attachments.*—*March 24, 1874.*—Application filed *February 19, 1873.*

The main plate or land-side runs upon its edge. The front end is beveled to form a sharp point. To it are attached a horizontal knife, and a curved wing or cutter, to operate between the plants and the track of a cultivator. The whole is connected to the cultivator beam by a curved standard.

Claim.—1.—The hinged attachment to a cultivator above described, consisting of the land-side A, with angular points A^1 , provided with the wing-spring B, and curved horizontal cutter C, in combination with the standard D, whereby the whole is attached to a plough or cultivator, as and for the purpose described.

2.—The wing-spring B, constructed as described, and attached to the land-side A, or secured directly to a cultivator-beam or mould-board of a plough, as and for the purpose set forth.

No. 149,090.—WILLIAM C. BELL, ORANGE COURT-HOUSE, VA.—*Cultivating Ploughs.*—*March 31, 1874.*—Application filed *January 17, 1874.*

An oblique reversible point is slipped upon the standard, where it is held in position by a shovel, which bears upon its upper surface. The shovel is secured to the standard by a lug on the back, one bolt, and an angle washer.

Claim.—1.—The combination, with the standard A, having toe-point and heel-notch, of the point B, having slot as shown, and a shovel C, secured to standard, as set forth.

2.—The shovel C, having lug P , and the right-angled bar or washer E, and the bolt D, in combination with the standard A, as shown and described.

No. 149,181.—JOSEPH A. BARNETT, CLAYSVILLE, OHIO.—*Corn-Ploughs.*—*March 31, 1874.*—Application filed *February 4, 1874.*

The side leams are hinged to the cross-bar and pass through a keeper bolted to the centre beam, in which they may be freely drawn together by the handles, and are thrown out again by the springs. A rear drag-bar carrying a plough is attached to the centre beam.

Claim.—The combination of the centre beam A, with beam A^1 attached to it, arms E, E, frame H, hinged side beams G, handles G, and springs I , all constructed substantially as and for the purposes herein set forth.

No. 149,719.—WALLACE H. CARTER, WATERVILLE ME.—*Clay-Cutters.*—*April 14, 1874.*—Application filed *October 30, 1873.*

Upon a right-angled cutter-frame, attached at its ends to a runner-frame, an adjustable and reversible knife and mould-boards are applied.

Claim.—1.—The sled A, frame C, mould-boards D, and reversible cutter E, the several parts being arranged and combined in the manner and for the purpose set forth.

2.—The inclined metallic frame C, fitted by its ends to and upon the inside faces of the runners, as described, and combined therewith, and with the movable and reversible clay cutter E, as and for the purpose set forth.

No. 150,719.—SOLOMON SEVERY, WALPOLE, MASS., assignor of one-half his right to LAWSON D. GRAY, same place.—*Cultivators.*—*May 12, 1874.*—Application filed *February 12, 1874.*

In a cultivator, the beams A C D E F, hinged together at their rear ends and spreading towards the front, adjustable by the bars h e c f , and provided with the curved teeth G, attached directly to the front ends of the beams, in the manner and for the purpose specified.

No. 151,549.—FRANCIS M. SHIELDS, HASHUQUA, MISS., assignor to himself and JOHN C. HOLMES, same place.—*Plough-Supporters.*—*June 2, 1874.*—Application filed *October 18, 1873.*

Claim.—The wedge-shaped plough-iron support A, having flange E on its upper face, hollowed out and provided with points G on the lower, and having central slot H, as and for the purpose specified.

No. 152,623.—WILLIAM H. FARMER, ROME, GA.—*Cultivators.*—*June 30, 1874.*—Application filed *June 9, 1874.*

Three beams, each carrying a shovel, are hinged at their forward ends. The rear ends of the outer ones can be expanded and held in place by set braces. On one side of the middle beam is an extra hook, into which the beam on that side can be secured, and the set brace removed accordingly and placed at the rear.

Claim.—The combination of the beams H B and the beam E, adjustable from the hook h to the hook e , with the adjusting brace or swinging plate F, substantially as shown and described.

No. 153,127.—WM. SPURGIN, BROWNSVILLE, Mo.—*Combinal Cultivators and Harrows*.—July 14, 1874. [Filed Jan. 18, 1874.]

The hinged side beams have jointed spring bar connections, which allow a rocking motion, and may be guided in or out by the handles.

Claim.—1.—The combination of the side beams C C, centre beam A, eye-bolts *a*, loops or straps *b*, and jointed perforated spring arms D D, substantially as and for the purposes herein set forth.

2.—The combination of the beams A and C C, spring arms D D, ploughs G G, and spring cutters H H, all constructed substantially as and for the purposes herein set forth.

No. 153,168.—PETER F. HILL, CRESTON, ILL.—*Cultivators*.—July 12, 1874. [Filed February 20, 1872.]

The frame consists of a tongue, and cross bars, to which the adjustable standards are attached. The depth to which the shares penetrate the soil is regulated by adjustable shoes or runners upon each side, and provision is made for the substitution of a "gopher blade," in place of the shares.

Claim.—The combination of the standards B B, frame A, sleds C C, gopher-lays D D, and spindles or hubs *e*, to which cultivator plough beams may be attached when desired, substantially as specified.

No. 153,586.—J. D. LYNCH, INDEPENDENCE, MISS.—*Cultivators*.—July 28, 1874. [Filed May 16, 1874.]

In addition to the adjustable winged beams of a parallel cultivator, a fixed plough standard is attached to the rear of the draft-tongue.

Claim.—The central plough *b* of a gang of ploughs, rigidly but removably attached to a draft pole A, in combination with ploughs *g g*, of which the beams D D are pivoted to a transverse cross bar, B, which is rigidly secured to the rear end of the draft pole A, which beams D D are laterally adjustable for different widths of rows, and which are connected together at or near their rear ends, substantially as and for the purposes specified.

No. 153,942.—O. W. GOSLEE, BUCKINGHAM, CONN.—*Cultivators and Ridges*.—August 11, 1874. [Filed May 21, 1874.]

The draft may be applied to the other end of the adjustable cultivators bars, and a coverer and scrapers substituted for the teeth, forming a ridger and potato coverer.

Claim.—The combination of the scrapers *d'*, double share teeth *d* and wheel and draft regulator *c* with the cultivator frame *a*, having hinged adjustable side bars and reversible handles, to adapt it to carry the scrapers *c* and curved horizontal plate *g* of a coverer and ridger, substantially as shown and described.

No. 156,847.—THOS. H. GARLAND, WEST CLEVELAND, OHIO.—*Cultivators*.—November 17, 1874. [Filed September 21, 1874.]

The beam, the handles, side bars, and braces, are constructed of one piece of metal, and adapted for various interchangeable cultivators.

Claim.—The triangular frame A, constructed in the shape described and shown, the handles E, and braces *a a*, the whole made of one piece of metal, and adapted to carry a shovel plough having adjustable wings, or various forms of cultivator blades, with horizontal cutters and rakes, substantially as and for the purpose set forth.

No. 157,496.—JAS. COPELAND, BLOOMINGDALE, OHIO.—*Core Covers and Cultivators*.—November 24, 1874. [Filed October 10, 1874.]

The bars may be adjusted in width by their spring, and a shovel carrying standard replacing the wheel standard when used as a cultivator.

Claim.—The combination of the beams A A with curved flexible front ends, and the draw beam B, having a notched recess, with the spring braces C D, the perforated cross bar E, and the standard F, having a wedge shaped seat at its upper end, forming an adjustable cultivator, adapted to receive a wheel when used as a coverer, or shovels of various shapes when used as a cultivator or shovel plough, substantially as shown and described.

No. 157,368.—JAMES M. HOLLADAY, TRYMAN'S STORE, VA.—*Cultivators*.—December 1, 1874. [Filed October 19, 1874.]

Adjustable standards with right angled shanks, work-

ing between frame bars, and held by break-pins.

Claim.—1.—The standards B, bent at right angles at their upper ends, in combination with the frame A of double bars *a b*, and the break-pins *c*, substantially as shown and described.

2.—In combination, the hook F, having its rear portion bifurcated, bent in the shape of an arc, and provided with adjusting holes, the brace and draft bar E, and the front standard, all having a common bolt, *d'*, substantially as described.

No. 159,331.—MOSES JOHNSON, THREE RIVERS, MICH.—*Cultivators*.—February 2, 1875. [Filed January 8, 1875.]

A cultivator-tooth is cut from a metal plate, and shaped to present a mould-board form with a cutting or couler edge. The main frame, made of a single metal bar, has removable wings, the front of the whole being of diamond shape.

Claim.—1.—A cultivator tooth, having the inclined couler *a*, the concave mould-board *m*, with its oblique cutting edge, and the sloping rear edges *p p'*, forming the acute angle or notch X, substantially as described.

2.—The draft frame A, made of one piece of metal, consisting of the parallel bars *a a*, meeting in front and doubled to form the draft beam *b*, in combination with the detachable wings B and inner bars *c c*, substantially as and for the purpose set forth.

No. 159,523.—JOHN O. MILNE, MINNEAPOLIS, MINN.—*Cultivators*.—February 9, 1875. [Filed November 7, 1874.]

The adjustable beams are moved by arms attached to a gear wheel, and turned by a pivoted lever having a geared segment.

Claim.—In combination with the hinged beams C C' the lever *d*, having toothed segment *a*, gear wheel *m*, levers *n n'*, and connecting bars *o o*, as described, and for the purpose specified.

No. 159,658.—M. EUSTACE, HIGHFIELD, DRUMCONDRRA, and JAS. KENNAN and T. KENNAN, DUBLIN, IRELAND.—*Machines for Thinning or Spacing Crops*.—February 9, 1875. [Filed December 6, 1873.]

A series of longitudinal slotted bars carrying a runner or guide at each end, and a hoe with side cutters in the centre. Two cross bars adjustably connect the whole, being fastened firmly to two, and loosely to the others. The machine is driven across the rows, and the curved guides allow the hoes to strike the ridge of plants, and then raise them to deposit the earth and plants in the furrow. The guides may be adjusted as to length and the hoes as to height.

Claim.—1.—The combination of two guide-frames, II and IV, fixed to transverse bars B B, with other frames, I, III, and V, connected to the transverse bars by guides L and springs, chains or links K, so as to be capable of independent vertical motion, substantially as herein described in reference to Figs. 5, 6, and 7 of the drawings.

2.—The guides A' A', formed of metal bars, and secured so that they can be adjusted in length and position to suit drills of different widths, substantially as described with reference to Figs. 1 and 5 of the drawings.

3.—The combination of a straight guide, A', with a curved guide A', and hoe blade F, placed either behind or in front of A', substantially as described with reference to Fig. 14 of the drawings.

No. 160,353.—PETER D. ROQUEMORE, PANOLA COUNTY, TEX.—*Cultivators*.—March 2, 1875. [Filed November 9, 1874.]

Standards pivoted to handles, allowing change of pitch by slots in the beam; the centre standards removable.

Claim.—The combination of beam A, having diagonal slots *s s*, adjusting-braces *d*, adjusting cross-roads and nuts *b b* *c*, and standards *a*, pivoted to the handles, all arranged and operating substantially as set forth.

No. 160,545.—JOS. ROBSON, OSAGEA, WIS.—*Head-Cutters and Hillers*.—March 9, 1875. [Filed May 7, 1874.]

The standard has arms extending backward and hinged to the rear end of beam. This gives vertical adjustment to the point, and holds the bars which govern the expansion of the cutting and hilling wings.

Claim.—1.—The adjustable standard C, with rear ward projecting arms C' C', which are hinged to the rear end of the beam G, and have a socket to receive the adjusters J, in combination with the triangular weed-cutter A and horizontal knives H, substantially as and for the purposes described.

2.—The combination of the standard C, having arms C', weed-cutter A, knives H, having adjusters J, and mould-board E, substantially as described and shown, and for the purposes set forth.

No. 101,157.—LEONARD C. ROBERTS, GORHAM, ME.—*Cultivators*.—*March 23, 1875*.—[Filed *August 1, 1874*.]

The frame consists of three beams, pivoted together at the rear ends, and made laterally adjustable in front, the front end of each outside beam being provided with gauge wheels, independently adjustable. The cultivator teeth are secured to the outer beams.

Claim.—The outer beams, pivoted at the rear ends and made laterally adjustable in front, in combination with an adjustable gauge wheel on each, as shown and described.

No. 101,455.—F. W. TOLLEY, COXSACKIE, N. Y.—*Cultivators*.—*March 30, 1875*.—[Filed *January 4, 1875*.]

The entire frame turns upward and forward to be transported upon the wheels.

Claim.—1.—A cultivator-frame consisting of curved bars A, long rods B, with end-screws receiving nuts, and tubular washers C, all substantially as shown and described.

2.—The combination, with frame and pivoted tongue, adjustable in slotted guides F, of the pivoted draft hook K, having link L, adapted to couple with the hook M or N, in the manner and for the purpose specified.

No. 103,523.—ELIAS M. POTTER, RUTHERFORD DEPOT, TENN.—*Cultivators and Harrows Combined*.—*May 18, 1875*.—[Filed *February 13, 1875*.]

A rectangular frame consisting of three beams, each carrying a cultivator-tooth, with handles secured to the outer ones. To the middle beam, at its rear end, is attached a triangular harrow, which has a limited vibration to the right and left.

Claim.—In combination with the plough stock A the triangular harrow, loosely connected by means of the pin c, and limited in lateral vibration by the steady pins d', d, substantially as described.

No. 103,921.—ALBERT DART, ROCKVILLE, CONN.—*Cultivators*.—*June 1, 1875*.—[Filed *April 17, 1875*.]

The frame consists of a central beam to the upper side of which the handles are attached. A cultivator-tooth is adjustably secured to the front end, and a wing-standard a little in the rear, to the upper end of which is secured a spring, extending rearwardly, terminating in a bifurcation, which supports a beaving-wheel. Stationary wings are attached to the wing-standard, and adjustable wings are attached to pivoted arms upon each side of the centre beam.

Claim.—The combination, with spring adjusting wheel, of stationary wings I I and adjustable wings J J, as and for the purpose specified.

No. 103,552.—JAMES U. DUNNAVANT and W. A. HAMPSON, BYRAMIA, MISS.—*Cultivators*.—*July 13, 1875*.—[Filed *March 15, 1875*.]

A light triangular frame strengthened by flanges, and secured to the front end of the centre beam by longitudinal plates and cross-bands.

Claim.—The flanged metal frame C D E, with its connecting-bands a, adapted to allow of the adjustment of the side beams, all constructed and arranged as set forth.

No. 106,044.—WILLIAM WEAVER, GREENWICH, N. Y.—*Cultivators*.—*July 27, 1875*.—[Filed *May 15, 1875*.]

An angular-shaped cultivator with alternate devices, to adapt it for use as a cultivator, hiller, or potato digger.

Claim.—1.—The angular bars A A, slotted in their front sections, in combination with the angular draft-bar B and standard D, forming a cultivator of nearly diamond shape, and adapted to receive alternate cultivating devices, as shown and described.

2.—The combination of an angular slotted frame A A, draft-bar B, slotted handle-socket O, standards D F H, and ploughs C G E, all arranged substantially as and for the purpose specified.

No. 106,200.—EDWARD NAUMAN, UNIONTOWN, OHIO.—*Cultivators*.—*August 3, 1875*.—[Filed *June 10, 1875*.]

A swivelled-caster wheel adjusted by a lever and notched bar.

Claim.—The combination, with the cultivator beams A, carrying shovels as described, of the gauge-wheel F, having an extended shank or tenon, the lever G, and notched round bar H, joining the handles H, all as shown and described, to operate as specified.

No. 170,540.—HERMAN D. GREEN, THOMA, N. V., assignor to FREEMAN, VALENTINE & GREEN, same place.—*Cultivators*.—*November 30, 1875*.—[Filed *May 27, 1875*.]

Claim.—1.—The beam a, cast in one piece, and consisting of the extensions or parts a', b, c, and e, as shown and described.

2.—The beam a, constructed as shown and described, in combination with the cross-bars f and h, standards i i, and handles k k', arranged substantially as and for the purpose set forth.

3.—In a shovel-cultivator, the beam a' b and arm c, cast in one structure, in combination with the front shovel plough, and the two rear hoes and their standards i, the arm c supporting said rear standards near their top, as set forth.

No. 170,882.—ENOS B. MOORE, BELL'S MILLS, ALA.—*Cultivators*.—*December 7, 1875*.—[Filed *August 20, 1875*.]

Harrow frame in front of ploughs, with slotted bars to allow the whole to be closed or expanded.

Claim.—The combination of the main beam A, stationary slotted cross-beam B, adjustable cross-beam C, the slotted beams D D, carrying the plough feet and shares, and the adjustable harrow bars, all substantially as and for the purposes herein set forth.

No. 171,301.—FREDK D. LAEDENBERGER, GREENBELL, WIS.—*Harrow Attachments for Cultivator-Ploughs*.—*December 21, 1875*.—[Filed *September 17, 1875*.]

In the rear of an opening or shovel plough are hinged two diverging beams, that are made adjustable by a curved brace bar. These beams each carry first a share, which throws the soil outward. The rear ends of the beams carry harrow teeth which level down the furrow made by the plough.

Claim.—A combined implement, consisting of the shovel or breaking plough A, side ploughs B, and harrows C, the beams of the ploughs B and C, being rigidly bolted together and made adjustable in width by a curved bar D, and connected to the breaking plough A by means of eyebolts a and brace rods b, all constructed as and for the purpose specified.

No. 171,420.—JOSHUA PIERPONT, BUSHNELL, ILL.—*Cultivators*.—*December 21, 1875*.—[Filed *November 6, 1875*.]

An adjusting plate upon a cultivator-standard, for holding the brace at various lengths.

Claim.—1.—The block G, constructed, as described, with lugs g, series of holes g', and prongs h, substantially as and for the purpose specified.

2.—The block G, having prongs h and lugs g, with a series of holes g', combined for operation with the brace E, pin i, standards B, and plough beams A, substantially as and for the purpose specified.

No. 171,503.—JOSEPH W. CHASE, MIDDLETOWN, OHIO.—*Cultivators*.—*December 28, 1875*.—[Filed *June 25, 1875*.]

A clamp in two parts, to adjust the width of the cultivator by sliding upon the beams, and permits vertical adjustment by a step-block.

Claim.—The clamp a, composed of the upper plate c, having the mortised lugs a' b, and the lower plate d', having the central mortised lug e, in combination with the gib g, the set-screw i, and the plough-beams, as and for the purposes set forth.

No. 172,869.—NELSON C. COLE, BEAVER DAM, WIS.—*Cultivators*.—*February 1, 1876*.—[Filed *August 4, 1875*.]

Devices for coupling together the drag-bars of seeders or wheel cultivators, to form an ordinary cultivating implement.

Claim.—In a cultivator, the loops or clasps B E, the rods D and F, wedges G G', and draft-hooks H H, in combination with the tooth bars A A, as and for the purposes described and set forth.

No. 173,238.—JAMES A. PRICE, HOUSTON, TEXAS.—*Cultivators*.—February 8, 1876. [Filed October 8, 1875.]

Claim.—A cultivator provided with rear adjustable side beams D E, one placed in advance of the other, on opposite sides of the main beam, pivoted in front and curved backwardly therefrom, as and for the purpose specified.

No. 173,425.—WILLIAM A. SQUIRE, GORHAM, N. V.—*Cultivators*.—February 15, 1876. [Filed November 4, 1875.]

Devices for connecting the parts, whereby the thills are pivoted at their centres and vibrate vertically.

Claim.—In a cultivator, the loops L, provided with the perforations P, the elbows C, and extensions I, in combination with the vibrating thills T, handles H, and cross-bars C C', arranged for the purposes substantially as set forth.

No. 173,554.—THOMAS J. MONTGOMERY and GEO. W. MONTGOMERY, WINCHESTER, PENN.—*Cultivators*.—February 15, 1876. [Filed September 17, 1875.]

An extensible rear support or runner for a shovel-plough.

Claim.—The combination of the outwardly, downwardly, and forwardly curved standard B, the extension-braces D d', and the flanged bar E e', all constructed and arranged as and for the purpose specified.

No. 175,200.—JOHN S. SWANEY, MARENGO, IOWA.—*Root-cutting Ploughs*.—March 21, 1876. [Filed January 15, 1876.]

Claim.—In a root-cutting or transplanting plough, the combination with two diverging beams, of the side cutters B B, inclined base cutter C, inclined plate E, and wedge-shaped sole D, substantially as herein shown and described.

No. 175,210.—SILAS WALTER, MOORESTOWN, N. J.—*Cultivators*.—March 21, 1876. [Filed February 5, 1876.]

The curved standard and its combination with the curved beam.

Claim.—1.—The standard S, curved downwardly, and outwardly and terminating in a vertically-inclined stem or blade holder, arranged as described, for the purpose set forth.

2.—The standard S, curved downwardly and outwardly, and terminating in an inclined blade holder, in combination with the reversible blade B, cut away at A, as and for the purpose described.

3.—The combination, with the main beam A, having an offset at its rear end, of the curved standard S, for the purpose of centering the blade in such a manner as to allow obstructions to pass over the top of the same, substantially as described.

No. 175,251.—LEWIS MILLER, RICHMOND, IND.—*Con Ploughs*.—March 28, 1876. [Filed January 24, 1876.]

The standard brackets, in two parts, united by disks, one having a slot and the other a stud. Handle fastenings clamp the round beam, giving lateral adjustment.

Claim.—1.—The arrangement and combination of the arms D D', circular plates E, slot E', and arms D' D', in the manner and for the purpose set forth.

2.—The clutches O O', braces C C', and handles B B, in combination with the beam A, as herein set forth.

No. 176,072.—JOHN L. SAKBROUGH, FAYETTEVILLE, ALA.—*Combined Ploughs and Harrows*.—April 11, 1876. [Filed December 13, 1875.]

Claim.—In a combined plough and cultivator, the adjustable hinged harrow-beam B, with its teeth E E, perforated adjustable arc C, and beam A, in combination with the adjustable hinged and slotted standard G, plough-point F, and adjustable abutment K, substantially as set forth and described.

No. 176,240.—CASPER OEHRLEIN, ST. PAUL, MINN.—*Cultivators*.—April 18, 1876. [Filed November 10, 1875.]

A plough as shown, capable of carrying interchangeable parts, to adapt it to various uses.

Claim.—The combination, with plough-beam A and

standard B, of the shoe C, with flat sole and curved sides rising to an edge, and having a triangular point, I, curved plate J, and eyes b', the whole adapted to use as a furrow-opener, or to receive a pair of extensible mould-boards, M, or rakes K, all constructed as herein shown and described.

No. 176,466.—ABRAHAM G. W. FOSTER, NEWMAN, GA.—*Cultivators and Subsoilers*.—April 25, 1876. [Filed December 1, 1875.]

The bar carrying the standards is pivoted under the plough-beam, to be swung around at any angle. Standards and bars are adjusted and held by serrated plates.

Claim.—The cross-bar g, swiveled to the plough-beam by the bolt l, and the ratchet plates h i, in combination with standards 2, having serrated top notched plate o, and bolt 4, whereby said cross-bar is adjusted in line with the beam for a subsoiler, or at an angle with it for a cultivator, as described.

No. 176,704.—F. W. STOSSBERG, POND, MO.—*Cultivators*.—April 25, 1876. [Filed February 19, 1876.]

The construction of cultivator-frame and combination with the guards.

Claim.—The perforated adjustable cross-bars H H, with screws on their outer ends, in combination with the standards J, adjustable forward and backward in a vertical plane, braces K K, nuts h, pin f, and guard-rods I L attached to the cross bars H H at their rear ends, and adjustable therewith, substantially as described and for the purpose set forth.

No. 177,007.—A. RIGBY, UPTER STILLWATER, ME.—*Cultivators*.—May 2, 1876. [Filed March 11, 1876.]

A harrow attached to an adjustable beam-cultivator.

Claim.—The combination, with the adjustable side beams of a gang-plough, of the hooked rods h h, harrow G, with elongated staple i, chain k, and round m, with its hook, substantially as and for the purposes herein set forth.

No. 178,820.—WILLIAM WRIGHT, LOCKPORT, N. Y.—*Cultivators*.—June 13, 1876. [Filed November 20, 1875.]

The teeth made in two parts, having a beveled socket and tenon, and a web upon each, that receives a vertical bolt in the rear cavity.

Claim.—The cultivator tooth D, constructed as described, in combination with the tapered tenon h on the standard, the web d, and the bolt J, substantially as described.

No. 178,840.—JOSEPH GLIDDEN, LIBERTY, ME.—*Cultivators*.—June 20, 1876. [Filed February 7, 1876.]

A centre beam carries two ploughs, the forward one narrow and the rear one wide. On either side is pivoted a plough-standard capable of lateral adjustment. A pair of handles are supported from a central standard from the main beam.

Claim.—The described improved cultivator, composed of the handles C, bar D, support-piece d, heel and toe spades E F, differing in widths, as described, and the lateral adjustable spades A A, having their stocks pivoted to a rock-shaft, B, and furnished with support-rods h h and perforated curved braces f f, all being arranged and applied substantially as specified.

No. 178,912.—JOHN M. CRAIFREE, WELLINGTON, OHIO.—*Cultivators*.—June 20, 1876. [Filed February 21, 1876.]

There are two sets of shares and two mould-boards, which extend the whole length of the machine in diverging lines. The shares are adjustable both horizontally and vertically. The forward end of the centre beam is mounted upon an adjustable pilot-wheel.

Claim.—In cultivators, the vertically and horizontally adjustable mould-boards N X, in combination with the vertically and horizontally adjustable shares J J and adjustable pilot-wheel Q, substantially as and for the purpose set forth.

No. 179,220.—GEO. W. RHODES, FENSA, N. V.—*Cultivators*.—June 27, 1876. [Filed June 14, 1876.]

By detaching the brace from the pin on the lever, the resistance of the front teeth, operating in connection with the draft of the team, will cause the cultivator to tilt forward upon the wheels.

Claim.—In a cultivator, the arrangement of the different parts, consisting of the frame A B, the tongue F, having the roller H, the wheels K, lever D, and notched brace E, con-

structed and operating substantially as described, and for the purpose set forth.

No. 170,600.—GEORGE W. PERRY, BOONVILLE, MISS.—*Ploughs*.—July 4, 1876.—[Filed April 15, 1876.]

The frame consists of a centre beam, to which the tongue is attached, two side beams and two cross-beams. These beams and cross pieces are pivoted together in such a manner that, by pushing one forward and the other backward, the distance between them is increased or diminished. The outside beams carry each a share. An adjustable head-block, carrying another share, is secured to the under side of the middle beam, and which can be removed at pleasure.

Claim.—1.—In combination with the beam A, the detachable and longitudinally-adjustable bar D, provided with a mortise, the foot E, provided with a tenon fitted into said mortise, and said bar and foot, secured to the frame A by the clips a, as and for the purposes herein set forth.

2.—The side beams B B, perforated and pivoted bars C C, and graduated plate O, in combination with the beam A and the longitudinally adjustable bar D, and its foot E, all substantially as and for the purposes herein set forth.

No. 180,396.—DANIEL F. VICKERY, OXFORD, ALA., assignor to himself, G. F. MATTHEWSON, and A. D. STARNES, same place.—*Cultivators*.—July 25, 1876.—[Filed May 8, 1876.]

A beam is provided with a slotted cross bar, which is bolted to its rear end, and secured at any desired angle by curved slotted braces. The central portion of the beam is also slotted, to allow of greater adjustment.

Claim.—The improved cultivator, formed of the slotted beam A, curved braces E E, pivoted cross bar D, and share standards C C, said parts being slotted in the manner shown and described, and the clamp bolts *a d h*, all combined and arranged as specified.

No. 180,009.—HERMAN D. GREEN, THUYA, N. Y.—*Cultivators*.—August 15, 1876.—[Filed April 15, 1876.]

Claim.—1.—The metallic top piece *h*, between the standard *a* and handles *c*, and having *e* cast as part of, and extending from it, wings or flanges, to which the handles are bolted, and the standards pivoted laterally, directly underneath the handles, substantially as set forth.

2.—The hoe piece *e*, fitted to the base of the standards *a* and held fast to it by the brace rod *g* and bolt *f*, and having hoes *d* adjustable to it by bolts, substantially as set forth.

3.—The hoe piece *e*, cross bar *h*, and standard *a*, held together about the rear end of the brace *g*, substantially as set forth.

4.—The top joint piece *h*, and hoe piece *e*, made as described, in combination with the standards *a*, handles *c*, braces *g* *h*, and hoes *d*, as set forth.

No. 181,041.—JOSEPH W. CHASE, MIDDLEPORT, OHIO.—*Cultivators*.—August 15, 1876.—[Filed March 8, 1876.]

The frame is made of iron, and consists of three bars, curved at the rear end to receive the shares. The outer bars are pivoted to the centre bar, and are adjustable outward and vertically.

Claim.—The combination of the beams *a d*, handles *e*, guide *r*, links *g*, bolts *t*, plates *h*, set screw *3*, and a fastening device for connecting the end of the links to the beam *d*, substantially as specified.

No. 181,746.—R. C. TRAWEEK, BLANCO, TEX.—*Ploughs*.—August 29, 1876.—[Filed June 26, 1876.]

The two cross-bars holding the braces and the standards pivot upon the beam, and the standards and braces pivot upon the cross-bars. When the latter are adjusted, the shovel-standards are automatically kept square with the line of draft.

Claim.—The combination of the cross-bars C C, pivoted at their centers to the beam A, the standards D, pivoted at their upper ends to the cross-bar C, the braces F pivoted at their forward ends to the cross-bar G, the adjustable chain H, and the adjustable hook-plate I, with each other and with the plough-beam A, substantially as herein shown and described.

No. 182,128.—EDWARD NAUMAN, BRIDGEPORT, OHIO.—*Cultivators*.—September 12, 1876.—[Filed June 12, 1876.]

A short central beam embraced by a U-shaped bend in a cross-rod for adjusting the beams.

Claim.—The combination of short bent central beam F, rod G G', and braces J I, with beams and handles, as and for the purpose specified.

No. 182,347.—HORACE C. BRIGGS, WEST AUBURN, ME.—*Cultivators*.—September 10, 1876.—[Filed June 29, 1876.]

The frame adjustable in width, and the tongue and its braces adaptable to any width.

Claim.—1.—The combination of curved uprights C, having perforated flanges *c'*, the bent posts F, braces H, cross-bars D G, and plough-beams B, provided with notched brackets R, substantially as herein shown and described.

2.—The curved uprights C, with perforated flanges *c'*, rigidly secured to the front ends of plough-beams B, and adjustably secured to cross-bar D, in combination with the hooks J and tongue I, as and for the purpose specified.

No. 182,390.—E. A. ADERHOLT, OXFORD, ALA.—*Cultivators*.—September 10, 1876.—[Filed April 15, 1876.]

A cultivator with a main beam, to which is attached a bifurcated brace, two adjustable side beams.

Claim.—1.—The beams A and C C, in combination with the bow D and the bars E E, with graduated holes for holding and spreading the front of the side beams, as is herein set forth.

2.—The bars G F and G' G', in combination with the beams C C, the handles, and the bars E E, and bow D, as and for the purpose set forth.

No. 183,000.—EDWARD WILARD, LOUISVILLE, KY., assignor to B. F. AVERY, same place.—*Cultivators*.—October 10, 1876.—[Filed April 17, 1876.]

A single straight iron beam supports the handles. Upon one side, near the rear end, is mounted an arm, secured by bolts, for the reception of the plough-standard. About the middle of the beam, and upon the opposite side, is mounted another arm, to receive the forward standard.

Claim.—1.—The combination in the double-shovel plough, of the single iron-beam, the two shovels, and the braced and stayed brackets, all constructed and arranged as and for the purpose set forth.

2.—The plough-shovel bracket F, constructed with the slitting side plate, the tubular stay, flanged plate, and diagonal brace, in the manner and for the purpose described.

3.—The lever-bracket, as described made with an open loop, to receive the plough-beam edgewise, and with a passage through its looped portion, to permit the insertion through it and the beam of a wooden pin, substantially as described.

No. 183,147.—A. DEMARCE and TEUNIS VREE- LAND, FAIRFIELD, IOWA.—*Combined Cultivators and Harrows*.—October 10, 1876.—[Filed September 9, 1876.]

A frame hinged centrally by connecting-bars, operating with vertically adjustable runners.

Claim.—1.—The beams A, having teeth, as described, and connected to each other by the hinged bars B B', and arranged to operate with the runners G, substantially as described, and for the purpose specified.

2.—The beams A, having teeth, as described, handles E, chain F, draft-hook C, and connected to each other by the hinged bars B B', and arranged to operate with the runners G, substantially as and for the purpose specified.

No. 183,183.—WILLIAM MANLEY, MINDEN, LA.—*Cultivators*.—October 10, 1876.—[Filed July 29, 1876.]

Curved standards arranged to curve outward and carry each a shovel, or to curve inward and both support one shovel.

Claim.—The combination of beam D with bent standards E E and shovel G, whereby said standards may be adjusted far apart or close together by simply transposing them, substantially as and for the purpose set forth.

No. 183,202.—GARLAND A. PARSONS, HOVER, ARK.—*Cultivators*.—October 10, 1876.—[Filed July 31, 1876.]

Devices for adjusting and bracing the cultivator-beams. A cultivator-frame consisting of the central, intermediate, and outside plough-beams A B C, the beam B having the cross-bars G passing through beam A, and the beam C having cross-bars E F passing through both beams A B, substantially as and for the purpose specified.

No. 183,868.—MARK M. ROWELL, OREGON, WASH.—*Cultivator*.—October 31, 1876. [Filed June 22, 1876.]

A single beam supports upon pivoted hangers a series of share-bars, so coupled that an immovable obstacle will turn all the shares backward, to prevent injury to the parts. By removing a part of the cultivator teeth a horse-hoe is formed.

Claim.—A cultivator constructed with frame A, standards H, teeth D, ears F, swinging on bolts G, connected with rods I, all in combination, substantially as described.

No. 184,058.—GEORGE W. PARISH, SAVANNAH, GA.—*Re- Cultivator*.—November 21, 1876. [Filed Aug. 19, 1876.]

Claim.—The cultivator teeth D, having horizontal blades *a*, vertical cutting-edges *b*, brace *c*, and shanks rounded and adapted to form the pivot for their carrying-frame, substantially as and for the purpose described.

2.—The combination, with the frame E, composed of loosely-jointed parallel bars, of the cultivator-teeth D, having shanks rounded at the top, and provided with nuts to form the front pivots of said frame, and having a rearwardly-inclined brace, *c*, extending to the rear pivots of the frame, and secured thereto by the same bolt *d* that forms the pivot for the frame, and secures the adjusting-bar, substantially as described.

No. 184,074.—THOMAS I. TEAGLE, INDEPENDENCE, MISS.—*Cultivators*.—November 21, 1876. [Filed July 3, 1875.]

Claim.—In a cultivator, the combination, with the adjustable side beams C C' and the upper and lower transverse connecting-bars G J, of the upper and lower front transverse bars *b b'* and the central draft-beam A, extended in rear to rest on the lower or transverse bar J, connecting said side beams, substantially as specified.

No. 184,838.—ROBERT D. CHRISTMAN, JOHNSON COUNTY, N. C.—*Gang Ploughs*.—November 28, 1876. [Filed July 29, 1875.]

Claim.—In combination with the frame A or similar frame, the bolts *m*, the plate D, with the frame or stirrup G, made with the land-side in one piece, or adapted to receive a land-side in a separate piece, and with wing *f* for the attachment of the point *h*, all constructed and arranged substantially as shown and described.

No. 185,030.—THOMAS T. McALLISTER and WILLIAM W. McDONALD, NEW ALBANY, MISS.—*Cultivating Ploughs*.—December 5, 1876. [Filed February 5, 1876.]

Claim.—In a cultivator the combination, with the beams A and colters F, of the fallow-blocks H, having the form specified, and arranged horizontally, as shown and described, to operate as specified.

No. 185,211.—WILLIAM T. CHEATHAM, RIENZI, MISS.—*Ploughs*.—December 12, 1876. [Filed October 14, 1876.]

The standards raised or lowered in loops; the construction of the parts; an attachment for drawing off clods left upon the plants.

Claim.—1.—The plough standards R, arranged to slide in loops of the bars D E against a spring, H, as shown and described.

2.—The combination, with beam A and plough stand arms B, of the spacing bars D and braces E, correspondingly adjustable, as and for the purpose set forth.

3.—The handle-bars F, attached to the upper part of braces E, and provided with an end hook, that connects with the loops of bars D, as and for the purpose specified.

4.—The knocker O P, arranged under, and at the rear of beam A, as shown and described, to drag the clods off the corn-row.

No. 185,551.—THOMAS R. LANDON, STADES-VILLE, N. C.—*Cultivators*.—December 19, 1876. [Filed August 24, 1876.]

Claim.—The angular standard-bars F H, slanted in their vertical arms, in combination with the braces I, having slotted horizontal upper arms, and with the slotted adjustable cross-bar E and beam A, substantially as herein shown and described.

No. 186,284.—ROBERT WEBER, NEW CUM, TEX.—

Plough-Stocks.—January 16, 1877. [Filed October 14, 1876.]

The form of the sockets for securing the standards, and devices for changing, to adapt the frame to various cultivating implements.

Claim.—1.—The keeper L, provided with a square socket in its forward part, and a round socket in its rear part, in combination with the beam A, for securing a standard to said beam, substantially as herein shown and described.

2.—The combination, with the beam A, of the U-bars X and keepers P, the latter provided with square forward and round rear sockets, as shown and described, so that standards may be fastened thereto by screws and wedges, in the manner specified.

No. 186,611.—E. H. PERKINS and S. D. PERKINS, VISALIA, CAL.—*Cultivators*.—January 23, 1877. [Filed June 6, 1876.]

The beam is supported upon two standards, to the lower end of which is secured a slotted sole-piece, forming also a point. The forward section of this is horizontally slotted, and in which are pivoted two thin steel plates or blades, which overlap at their forward ends. A sliding brace moves fore and aft between the wings upon the sole, and is secured by a set-screw. By this means the wings are adjusted.

Claim.—1.—A pair of cutter-wings, D D, made to overlap each other within a slot of foot C, as and for the purpose set forth.

2.—The slotted adjustable bar E, having cross head *e'*, in combination with wings D, having notches *d'*, as and for the purpose specified.

No. 187,100.—H. SNYDER, CONWAY, MICH.—*Horse Fork-Hooks*.—February 6, 1877. [Filed December 14, 1876.]

Claim.—The horse fork hook, consisting of the curved hooks *a*, united to form the shank draft-hook *b*, and combined with the centrally rearward-projecting handle or lever *d*, and its rigid bar *c*, upon the back curve of the tines, for use as described.

No. 187,470.—S. F. LEE, NEW SCOTLAND, N. Y.—*Cultivators*.—February 20, 1877. [Filed January 3, 1876.]

A square frame having in front adjustable arms, projecting forward, and carrying castor-wheels and rear adjustable arms with fixed wheels.

Claim.—In combination with the cultivator-frame A, the rear wheels D mounted on pivoted arms C, provided with slotted arms *d* and set-screws *a*, and the castor-wheels D' mounted on the adjustable arms F, substantially as and for the purpose set forth.

No. 187,905.—CHARLES W. ONEAL, SHOP SPRING, TENN.—*Plough Couplings for Double Shovels*.—February 20, 1877. [Filed October 14, 1876.]

Claim.—The plough having the long straight rudder-beam B, in line with the draft, and the short laterally-bent beam A, having its clevis and rear ends parallel with the beam B, the handles F connected to the parallel portions of said beams, the links K K', and the clevis-pin *c*, whereby the clevis ends of the straight and bent beams are pivoted together, substantially as specified.

No. 187,238.—J. A. LEE, PHILADELPHIA, PA.—*Weed-Destroyer*.—April 3, 1877. [Filed February 28, 1877.]

A weed-destroyer combining clearing teeth and blades with sharpened side edges, for cutting weeds and grass even with the surface of the ground.

Claim.—The teeth B and cutters C, in combination with the central beam E and pivoted side beams D, and with the pivoted rear beams G, straps F, and rods *d*, substantially as and for the purpose set forth.

No. 186,406.—J. C. JENKINS, LEBANON, TENN.—*Ploughs*.—April 10, 1877. [Filed February 26, 1877.]

Cultivator-beams loosely shackled together. A shield to protect the forward connecting-joint.

Claim.—1.—The beams of a double-shovel plough pivoted at their forward ends, said joint being protected by a bridge, substantially as and for the purpose set forth.

2.—The combination of the plough-beams A B, bars C F, and bridge D, substantially as and for the purpose set forth.

No. 186,513.—JAMES C. STEVENS, PLASANT HILL, LA.—*Cultivators*.—April 10, 1877. [Filed January 22, 1877.]

Construction of the frame for adjustment, and to adapt it for interchangeable working devices.

Claim.—The combined cultivator and seed coverer herein described, composed of the main beam D, the angular beam C, adjustable on the main beam, the slotted standards A, B, the adjustable cross-bars, F, G, M, and the laterally-adjustable handles K, K', adapted to carry the covering devices O, P, Q, or cultivator-teeth and shovels, substantially as shown and described.

No. 100,002.—N. J. SKAGGS, TALLEDEGA, ALA.—*Plough-Stocks*.—April 24, 1877. [Filed March 24, 1877.]

Claim.—The combination of pivoted standard F with brace-bar I and curved pivoted bar H, having a series of holes near its upper end, substantially as and for the purpose set forth.

No. 100,280.—A. BESENGER, MILL BROOK DEPOT, VA.—*Shovel-plough*.—May 1, 1877. [Filed March 17, 1877.]

A shovel-plough having three beams, to be used in combination, or separated and used as single-shovel ploughs, each beam being provided with a set of handles.

Claim.—The plough-beam A, constructed as described, and provided with the handles D, in combination with the plough-beam J, provided with the eye I, perforated plate H, of plough-beam J, and upright K', hinged to the beam J, at K' whereby the cultivator may be transformed into a double-shovel plough with a single pair of handles, and the upright K' folded down on its plough-beam out of the way, substantially as described.

No. 102,503.—J. R. JACKSON, COLDWATER, MISS.—*Plough*.—May 8, 1877. [Filed March 31, 1877.]

A double-shovel plough constructed with devices to place both shovels parallel with each other, or to place one before the other, as may be deemed best.

Claim.—The combination, with beam A', handle E', and fixed standard F', of beam A' having perforations a, a', a'', a''' , brace I, standard F, having perforations f, f' , and handle E, having perforations e, e' , substantially as and for the purpose set forth.

No. 101,458.—THOMAS F. MCNAIR, WORTHVILLE, GA.—*Cultivators*.—May 20, 1877. [Filed April 28, 1877.]

The plough-standards are interchangeable from front to rear, and can be turned up and held out of the way on a line with the beam.

Claim.—1.—The combination, with the beam A and pivoted braces I, L, perforated at their rear ends, of the slotted interchangeable plough-feet G, G', connected to the beam by the bolt d , and capable of being folded on a line with the beam and there secured, substantially as and for the purposes herein set forth.

2.—The plough-foot G', pivoted to the rear extremity of the beam A, and capable of being thrown upward when not in use, as set forth.

No. 101,000.—NELSON MESSENGER and JAMES ERWIN, NEWARK, ILL.—*Cultivators*.—June 12, 1877. [Filed September 20, 1876.]

The shovel-standards are braced both to the frame and to each other. The draft is pendent from the double tree.

Claim.—The combination, with the pole A, stationary cross-bar B, and pivoted double-tree E, of the V-shaped brace O, draft-rod K, link L, rod or chain M, and hook or clevis N, all constructed and arranged substantially as and for the purposes herein set forth.

No. 102,029.—PEMBROKE S. TARTT and GEORGE F. WILSON, WISCONSIN'S STATION, KY.—*Cultivators*.—June 12, 1877. [Filed November 13, 1876.]

Standards with cutting-edges, and horizontal shovels with sharp edges on all sides; devices for fastening shovel and plough-feet.

Claim.—1.—A cultivator constructed with standards a, a' , sharpened on their front edges, and provided with horizontal flat feet b, b' , combined with shovels B, B', slightly convex transversely, and with edges on a horizontal plane, as and for the purpose set forth.

2.—The shovels B, B', of the form described and shown, with sharp rear edges c, c' , as and for the purpose set forth.

3.—The horizontal flat feet b, b' , having depressions or cells in the upper surface, with tapped screw-holes in said cells, combined with the shovels B, B', having projection on the under side to fit said depressions, and cells on the upper side to receive the flush heads of the holding-bolts e, e' , whereby both upper and under surfaces are smooth and unobstructed, and the bolts e, e' are relieved of all shearing strains.

No. 102,000.—JAMES L. FAULKNER, LOUISVILLE, KY.—*Cultivators*.—June 10, 1877. [Filed September 30, 1876.]

A short beam adjustable forward and back upon the other, and details of construction to adapt the frame for various cultivating implements.

Claim.—1.—The main beam A, having the curved rear arm B and two sets of perforations, the one in rear of the other, in combination with the branch beam C, having a single set of perforations, whereby the branch beam is adjustable longitudinally, and the whole adapted to receive either a turn-plough, cultivator-shovel, or chisel-cutter, substantially as and for the purpose described.

2.—The combination of the main beam A, having a curved standard, B, the longitudinally-adjustable branch beam C, having a like teeth b , the narrow beam m , provided with spaced teeth n , having their shanks at right angles to their cutting blades, and the curved arms r , corresponding to the curvature of the standards B, B', substantially as specified, and for the purpose set forth.

No. 102,387.—JOHN POETZ, SHARONVILLE, MISS.—*Walking-Cultivators*.—June 26, 1877. [Filed March 1, 1877.]

The thills are rigid and secured to two cross-bars in front. The cultivator-beams are pivoted upon the front bar and play loosely upon the rear bar, except the two central beams, which are rigidly fastened thereto.

Claim.—1.—The combination of the cross-bars A and B, the rigid beams C, and adjustable beams C', C', provided with the shovels E, the rigid thills L, rigid handles I, and wheels J, as shown and described.

2.—In combination with the oblique outside shovels E attached to the swinging beams, the braces F and clamping device G, as shown.

3.—In a cultivator, the combination of the two cross-bars A, B, having thills L, attached, two parallel rigid beams, C, attached to the cross-bars, connected by a bar, a , and provided with rigid handles I and outside swinging beams C', C', pivoted to the bar A, and held by the slotted bars D and bolts i , as shown.

No. 104,000.—D. STANCHFIELD, DAVENPORT, IOWA.—*Cultivators*.—August 7, 1877. [Filed March 24, 1877.]

A wheel cultivator in which the handles and the central beam are made of a single piece of iron or steel, the side bars also of a single piece bent back upon itself, and clamped together at the teeth. The lever S, attached to the rear wheel, is designed to regulate the direction of the cultivator.

Claim.—1.—The combination, with the main beam A of a cultivator having the angular operating handle B, B', B', of the vertically adjustable caster wheel G, the lever S, extending from said caster-wheel beyond the cross-bar of the handle and the spring T, binding the latter on the cross-bar, substantially as specified.

2.—The combination, with a cultivator having a front traveler wheel, C, of a vertically-adjustable and horizontally-vibratory steering-wheel, G, substantially as specified.

3.—The combination, with a cultivator having a front transporting wheel, C, and the triangularly extended beam having a notched cross-bar B', of the vertically adjustable and vibrating wheel G, its operating lever S, and a spring binding the said lever against the said bar, substantially as specified.

4.—The combination, with the beam A having a triangular operating-handle, B, B', B', and the laterally-adjustable beam C' pivoted to said beam A, of the curved plate E, having slots f and perforated offset p , the threaded bolts f' secured to said beams C', the clamp-nuts q, q' , the shank o' of the caster-wheel G, the operating-lever S, and spring T, substantially as specified.

5.—The plough-beam A and handle B B', formed of a single piece of metal, substantially as specified.

6.—The combination, with the main beam of a cultivator having a front transporting-wheel, C, of the single-tree D, pivoted to said beam, and having its lever-arms extending to the front at each side of said wheel, substantially as specified.

No. 104,108.—J. POETZ, SHAKOPEE, MINN.—*Cultivators*.—August 14, 1877. [Filed April 16, 1877.]

Fixed centre-beams, on which is mounted a rotating plate. Two or more outer swinging beams on each side are connected, by rods, to the plate at different distances from its pivot-point, so that the beams shall be at equal distances from each other, whether spread or contracted.

4 Claim.—The combination, in a cultivator, of one or more stationary central beams, a plurality of laterally-swinging beams on each side of said central beams, a plate or arm pivoted upon the central beams, and a series of independent arms extending from the individual beams inward to the opposite side of the plate, and pivoted thereto at different distances from its centre, in the manner shown and described, whereby the beams are moved different distances and uniform spaces maintained between them at all times.

No. 104,504.—M. N. WARD, CEDAR RAPIDS, IOWA, assignor of one-half his right to J. BUCKLEY.—*Cultivators, Wooders and Markers*.—August 21, 1877. [Filed July 11, 1877.]

Claim, 1.—In combination with the beam A, having the shorter and side beams A' A' connected thereto, as shown, the marking-hoes B' adapted to be set at any desired angle horizontally on standards b, substantially as described.

2.—In a cultivator, the hoes B', adjustable horizontally by means of beams A' and spread-irons C, and also on the standards b by means of arms g, straps h, and lever j, substantially as set forth.

3.—In the within-described device, the combination of the side-beams A' with main beam A by means of strap B, adjustable lengthwise on said beam, and, by means of spread-irons C, adjustable parallel or at an angle therewith, substantially as described.

4.—In combination with the frame A B A A, constructed and adapted to operate as described, the triangular sub-cutter a a a, and hoes B' B' and b' b', forming thereby a weeding device, substantially as herein set forth.

No. 104,713.—T. H. MYERS, PLEASANT DALE, W. VA. assignor to J. W. PAINTER and J. S. VEACH, STRASBURG, VA.—*Shovel Ploughs and Cultivators*.—August 28, 1877. [Filed May 4, 1877.]

The spliced and removable centre-standard, the removable side-bars, secured by a hinged latch and hooks, providing for the use of from one to five shovels.

Claim, 1.—The combination of the beam B, the stock C, the removable standard D, fitted to the end of the stock C by an oblique joint gained for the reception of the beam-tenon, and secured by the side plates A A, bolts d d, and brace-rod E, as and for the purposes set forth.

2.—The combination of the removable lateral stock or standards F F', the stationary tenons G G, and the hinged latches I, formed with pins i, as and for the purposes described.

No. 105,125.—ALVANES P. HENERY, MALLA, OHIO.—*Cultivators*.—September 11, 1877. [Filed July 14, 1877.]

Claim, 1.—In a cultivator, the pivoted clamp H, with side arms I, in combination with the centre beam A and diverging side beams G G, operated substantially as and for the purpose set forth.

2.—In combination with the beams A and G G and the connecting-links a d, the pivoted clamp H, with side arms I, and lever J, substantially as and for the purposes herein set forth.

No. 105,450.—JOHN W. SOHN, HAMILTON, OHIO.—*Cultivators*.—September 26, 1877. [Filed June 4, 1877.]

A centre harrow-frame with gravitating wings, the latter prevented by blocks from descending to a level position. The wings carry curved cutting-blades and harrow teeth.

Claim, 1.—The concavo-convex cutting and elevating blades D, arranged obliquely, in combination with the self-

adjusting wings B, provided with teeth, substantially as and for the purpose specified.

2.—In a cultivator having self-adjusting wings, the combination of cultivating-teeth, obliquely arranged elevators, and stops d, or their equivalents, as and for the purpose specified.

No. 106,670.—ASA JONES, SNOW HILL, N. C., assignor of one-half his right to JOHN H. DALL, same place.—*Cultivators*.—October 30, 1877. [Filed September 8, 1877.]

Claim.—The combination, with the plough-beam A, of the adjustable board D, slotted at each end at e, and in the centre at h, with the adjusting ploughs G E, fastened thereto by means of the bolts f h, and operating in the manner as set forth.

No. 107,100.—CHARLES J. COOPER, CLEVELAND, OHIO.—*Double-Winged Cultivators*.—November 13, 1877. [Filed August 13, 1877.]

A pair of standards carrying shovels and scraper-wings are united at the top in a screw-shank, the halves being separate, and held together by the nut.

Claim.—The feet D, provided with ploughs G and wings G', and forming half-round threaded tenons a a, in combination with the mortised beam A and nut b, as set forth.

No. 107,184.—JOSEPH P. TERRY, LAKE CITY, FLA.—*Cultivators*.—November 13, 1877. [Filed September 7, 1877.]

Claim.—The curved plough-standards having the right-angular arm c, the lip f, and the flange g, in combination with the beams having lateral notches or slots, as shown and described.

No. 107,660.—ALVY G. PERRY, HICKORY FLAT, MISS.—*Ploughs*.—November 27, 1877. [Filed February 24, 1876.]

Claim.—In combination with the plough-bares and the standards the detachable and interchangeable mold-boards, whereby the plough is adapted to turn right or left furrows, substantially as described.

No. 107,867.—IRWIN S. KIRK, CONRAUTVILLE, PA.—*Cultivators*.—December 4, 1877. [Filed August 25, 1877.]

Claim, 1.—The combination, with the adjustable handles D-D and the vertical rod G, of the sleeve E, having tubular sockets E', brace-rods e, and clip f, for the purpose hereinbefore set forth.

2.—The combination, with the beam A, gauge-wheel C, and breaking tooth L, set at an angle of the plough M, provided with hinged wings M', yoke N, with bolts k k, and the hinged ad adjustable spreaders O and thumb bolts m, substantially as described.

No. 100,017.—ISAAC A. BENEDICT, WEST SPRINGFIELD, PA.—*Cultivators*.—January 8, 1878. [Filed October 25, 1877.]

To an ordinary shovel-plough side shares are attached by means of adjustable braces, with a cross-bar between the side beams, so that by adjusting this cross-bar backward or forward the side shares are brought nearer together, and set at a greater distance apart.

The combination, with end-slotted and adjustable standards H H, of the connecting-bar J, clamps K, and rods L, the latter being vertically adjustable on standard A, as and for the purpose specified.

No. 200,681.—SAMUEL L. ALLEN, PHILADELPHIA, PA.—*Cultivators*.—February 26, 1878. [Filed December 8, 1877.]

A scraper-blade with both ends sharp—the point of one end downward, and the other upward. Secured to a curved and pivoted standard with segmental cross-head, which may be turned to cause the scraper to throw in or out. Device for a clevis, removable when turned backward.

Claim, 1.—The within-described reversible blade J, curved throughout its length, having an inclined end, m, and a curved end, m', the latter merging into the lower edge n of the blade, and forming with the upper edge n' a point, p, and both ends m m' being sharpened, as specified.

2.—The combination of the frame of a machine and a furrowing-blade with a pivoted frame, G, as described, whereby, without changing the point of connection of said

device, the blade may be reversed, so as to cause it to throw either from or toward the row as specified.

3.—The combination of the T-head *t*, having openings near the rear edge than the front, as described, with the elevis *g*, having an opening *h*, as set forth.

No. 202,972.—J. S. WILSON and R. G. MORROW, CALHOUN, GA.—*Ploughs*.—April 30, 1878. Filed *February 16*, 1878.

Claim.—In combination with an ordinary plow-beam, the side beam *F*, formed with the angular lip *a* at its forward end, and arranged for adjustment laterally and forward and back, the bolts *a*, *b*, and notches *r*, formed in the top of the main plow-beam, substantially as and for the purposes herein set forth.

No.—203,048.—M. JOHNSON, LOCKFORD, N. Y.—*Cultivators*.—April 30, 1878. Filed *January 17*, 1878.

Claim.—1.—The beam *A*, bent connecting-bars *a*, constructed to turn in sockets *C*, and the plates *b*, *b*, in combination with the wings *B*, *B*, adjustable by braces *D*, and pins *g*, substantially as shown, and for the purpose described.

2.—The adjustable braces *D*, secured by pins *g*, in connection with plate *y*, to beam *A*, in combination with connecting bent bars *a*, constructed to turn in sockets *C*, the plate *b*, *b*, and wings *B*, *B*, substantially as shown and specified.

No.—205,630.—J. GEORGE SPRINGFIELD, MO.—*Cultivators*.—July 2, 1878. Filed *April 10*, 1878.

Claim.—1.—The combination, with an eyebolt, *a*, handles *D*, and clamping plates *C*, of a plow-beam, *e*, arranged as described, to simultaneously secure the forward ends of the handles and bind together the clamping plates, substantially as described.

2.—The combination of the perforated plow beam *A*, the notched side beams or standards *E*, *E*, the clamp plate *C*, having lugs *b*, the clamp plate *C*, having tongues *y*, the bolt *c*, handles *D*, and vertical bars *G*, attached to the handles above and the side standards below, substantially as described.

3.—A bar having its forward end notched to receive the end of the clamp-plate, combined with the said clamp-plates *C*, the vertical bars *G*, and the handles *D*, and extending rearwardly from the clamp plates to support the handles, substantially as described.

No.—205,668.—B. F. MORRIS and E. H. AUSTIN, SCOTT'S HILL, TENN.—*Cultivators and Seeders*.—July 2, 1878. Filed *March 16*, 1878.

Claim.—1.—The combination with a plow-standard having spaced loops *e*, and a ratcheted bar having a rear tooth, *i*, of the adjustable subsoil plow *F*, having a ratcheted shank *e*, and a wedge or key *h*, behind said shank, substantially as specified.

2.—The combination, with the beam *C*, a ratcheted plow-standard *f*, having spaced loops *e*, and an adjustable subsoiler, *E*, having ratcheted shank *h*, of the slotted brace *D*, correspondingly ratcheted, and having a rear tooth *i*, adapted to engage the ratchets of the stand of said subsoiler, substantially as specified.

No. 206,505.—H. D. TEWELL, STANVILLE, GA.—*Scraper Attachment for Shovel-Plows*.—July 30, 1878. Filed *June 14*, 1878.

Claim.—The scraper having a flat middle portion and two side wings, which are inclined to the rearward, and provided with downwardly and rearwardly twisted upper corners, curved forward, as and for the purpose set forth.

No. 206,654.—B. WILLIAM and C. C. MORGAN.—*Plows*.—July 30, 1878. Filed *May 29*, 1878.

Claim.—1.—The foot *D*, made of bar iron, with its ends bent to straddle the beam, as seen at *a*, and having bolts *n*, *n*, for holding them in position, and provided with a set-screw *e*, for securing and allowing of their adjustment on the beam substantially as and for the purposes set forth.

2.—The revolving eccentrically pivoted plate *y*, in combination with a plow foot and shoe, substantially as and for the purposes herein set forth.

No. 206,752.—P. SÖDERLUND, SWEDEN POINT, IOWA.—*Corn-Plows*.—August 6, 1878. Filed *May 11*, 1877.

Claim.—1.—In a corn-plow and cultivator, the swivel from, bifurcated, and perforated standard-bearers *g*, carrying the pivoted and adjustable standards 2 and 3, in combi-

nation with rigid branches *r* of the beam *a*, substantially as and for the purposes shown and described.

2.—The adjustable braces or stays *m*, linked key-bolts *n*, swivelled bearers, *a*, and fixed fastenings and adjusting devices *r* in combination with a plow-beam and a plow-standard, substantially as and for the purposes shown and described.

3.—The rigid forked beam *a*, *b*, *b*, the central, front pivotal, and guiding standard 1, the adjustable pivoted and swivelled standards 2 and 3, each carrying an adjustable handle *h*, arranged and combined to operate substantially as and for the purposes shown and described.

No. 207,443.—H. N. PROUT, WESTFIELD, MASS.—*Hoing-Machines*.—August 27, 1878. Filed *June 24*, 1878.

Claim.—1.—The improved wing-springs or hoes *G*, with inner and outer surfaces straight, vertically or crosswise, and of uniform thickness and elasticity, with the lower and front edge leveled to a cutting edge, said hoe being wider in front than in rear, substantially as and for the purposes set forth.

2.—The adjustable plate *C*, having the flanged socket and the lateral and longitudinal slots, substantially as shown and described.

3.—The adjustable flanged plate *C*, constructed as described, in combination with standard *B* and main supporting frame *a*, as and for the purpose set forth.

No. 207,767.—REUBEN K. NIECE, FRENCHTOWN, N. J.—*Cultivators*.—September 3, 1878. Filed *July 27*, 1873.

Claim.—1.—A cultivator-frame consisting of the side beams, *A*, *B*, with posts *A*, *A* and *B*, *B*, adjustable bars *C*, *C*, adjustable rear beams, *D*, *D*, and adjustable cross beam *F*, substantially as set forth.

2.—The combination of the beam *A* or *B*, beam *D*, eyebolt *d*, brace *f*, and rod *h* with adjustable bolt *e* in the bar *C*, for the purpose set forth.

No. 207,778.—JOSEPH SMITH, ELYRIA, OHIO.—*Cultivators*.—September 3, 1878. Filed *August 12*, 1878.

Claim.—In a cultivator, the combination of the frame *a*, handles *b*, slotted plate or frame *d*, clamping screw rods or bolts *i*, and the bent arms *h*, for the attachment of different implements, substantially as shown and described.

No. 207,960.—HENRY J. GENTZSCH, Sr., GHIRCAGO, ILL.—*Plows*.—September 10, 1878. Filed *July 18*, 1878.

Claim.—The double share *A* and the standard *C*, supported on a rearward extension of such share, in combination with the mold-boards *H*, pivoted to the share and adjustably connected to the said standard by the lapping perforate-latches *K*, secured in the casting *L*, and the brace-rods *M*, attached at their upper ends to the slotted plate *N*, vertically adjustable on the standard, constructed and arranged substantially as described and shown.

No. 208,084.—KENNETH P. GRANT, SAN BUENAVENTURA, CAL.—*Weeder*.—September 17, 1878. Filed *June 17*, 1878.

Claim.—In a weeder, the beam *A*, curved standard *B*, having T-feet *C*, and the inclined overlapping reversible blades *D*, constructed and arranged substantially as shown and described.

No. 208,284.—CLARK T. BARTON, TUSCUMBIA, ALA.—*Cultivators*.—September 24, 1878. Filed *March 19*, 1878.

Claim.—In a cultivator, the combination of short central beam *D*, long side beam *B*, short side beam *A*, bolt *d*, washers *e*, inclined cross-bar *E*, and U-bolt *a*, substantially as shown and described.

No. 208,964.—BENJ. H. CROSS, CARANISS, GA.—*Cultivators*.—October 15, 1878. Filed *August 24*, 1878.

Claim.—A combined plow and cultivator having the bracket *o*, bent as described, and arranged between the two sides of the doubled and offset standard 3 upon the bolt *f*, and held at the outer end by a bolt, *e*, as shown and described.

No. 209,005.—JOHN C. BEAN, CROSSVILLE, ILL.—*Cultivators*.—October 15, 1878. Filed *September 7*, 1878.

Claim.—A cultivator-plow consisting of the hinged beams *a*, with tongue and groove, the removable cross-pieces *h*, the removable cross clamping-bolts *i*, *e*, the removable vertical brace *m*, the hinged braces *n*, and the rigid frame-handles whereby the beams are closed together or

adjusted to any desired width, and adapted for use with the plough, as described.

No. 209 366.—ELIAS TRUMBO, RUTLAND, ILL.—*Cultivators*.—October 29, 1878. Filed August 1, 1878.

Claim.—The combination, with the side beams, *D'*, of a cultivator and the standard *C*, attached thereto, of the independent detachable end-iron *B*, each having a perforated stem, *b*, at the top, bent at right angles to the body of the curved iron, and a share, *A*, with its forward edge circular and faced to the independent iron *B*, all constructed and arranged to operate as shown and described.

No. 209 481.—JOHN JENNINGS, JR., NAIKICK, MASS.—*Cultivators*.—October 29, 1878. Filed July 20, 1876.

Claim.—The combination of the mould-board *C* with the brush *F*, attached to its end, substantially as and for the purpose described.

No. 209 823.—A. M. CURLEY, MADISON, ALA.—*Combined Harrows and Cultivators*.—November 12, 1878. Filed August 15, 1878.

Claim.—A harrow or cultivator frame consisting of the beam *A*, tooth-bars, *B E F*, and adjustable spacing bars *C C'*, the bars on one side being longer than on the other, as shown and described, so that in cultivating on both sides of a row the line of draft may be thrown to one side, to prevent the horse or workman from tramping on the plants in the row.

No. 210 351.—LITTLETON M. OTWELL, ROSWELL, GA.—*Ploughs and Cultivators*.—November 26, 1878. Filed July 20, 1878.

Claim.—The combination, with the angular foot-plate *C*, having horizontally-slotted wings *cd* of the laterally-adjustable blades *D D'*, and the rake or harrow *F*, set at an angle, and the body of which, *G*, is slotted vertically, to permit its vertical adjustment, all arranged and operating substantially as herein described, and for the purposes shown and specified.

No. 210 348.—STEPHEN P. MCKINNY, BARRINGTON, ILL.—Assignor to Joshua Dooley and James M. Bond, same place, one-third to each.—*Ploughs*.—December 3, 1878. Filed October 14, 1878.

Claim.—In combination with the plough-beams *A A'* and pivoted standards *D D'*, the adjustable braces *E E'*, having hooked shoulders *f*, bolts *h*, and nuts *i*, whereby said hooked shoulders may be secured in the notches *g* of the standards, so as to form additional supports or abutments for the shares or shovels attached upon the standards, substantially in the manner and for the purpose set forth.

No. 210 718.—MATTHEW SMITH, WAXAHACHE, TX.—*Cultivators*.—December 10, 1878. Filed November 6, 1878.

Claim.—1. A cultivator having a forked expandible beam *A*, one branch, *a'*, of which is terminated with a curved shovel-support, *a*, and the other branch, *a*, made straight and without a shovel-support, and adapted to have a removable shovel-support, *G*, attached to it, either forward or abreast with the curved permanent shovel-support *a*, substantially as and for the purpose set forth.

2. In combination with a cultivator, *A*, having a draft hook *a'*, the goose-neck clevis plate *J*, having apertures *j' j'*, whereby it can be slipped upon the beam and confined to it by a single bolt, substantially as and for the purpose set forth.

3. The combination of the adjusting clevis plate *J*, reversible eccentric clevis hook *L*, and hook *a'* of the cultivator beam, substantially as and for the purpose set forth.

4. The draft-adjusting clevis plate *J*, having its shank *j* of goose-neck shape, provided with apertures *j' j'*, in combination with the hooked end of the **V**-shaped beam *A*, the two branches *a a'* of the beam, and the **T**-bolt fastening *K*, substantially as set forth.

No. 210 884.—FREDERICK W. TOLLEY, COXSACK, N. Y., assignor of one-third his right to SAMUEL STEPHENS, same place.—*Cultivators*.—December 17, 1878. Filed July 24, 1878.

Claim.—1. The head stock *D*, constructed in one piece, with the horizontal mouise *f*, lateral recesses *p p'*, vertical plate *o* front and rear side bearings, *r r'*, and bolt holes *v o'* and *s s'*, as shown and described.

2.—The improved cultivator blade having a uniform width about equal to one-third of its length, **V** shaped cutting-edges at each end with the point in the middle, and the whole in

the form of about a third-pointed portion of a band making one spiral turn around and from end to end upon a cylinder having its diameter about one-fourth of its length, as shown and described.

3.—In a cultivator, the improved blade having **V** shaped cutting end edges and the particular spiral form and proportions specified, in combination with the standard, and secured thereto with all straight lines in the spiral working surface of the blade inclined upward, rearward and laterally, and with the lower middle point, *h*, and the upper side corner, *m*, in a vertical plane *p p'*, coincident with that in which the blade is drawn forward in use, as shown and described.

No. 211 397.—JOHN C. GUY, FAYETTEVILLE, GA.—*Cultivators*.—January 14, 1879. Filed October 28, 1878.

Claim.—The removable and adjustable bifurcated standards *D*, in combination with the adjustable braces *d*, provided with a **T**-shaped head, *f*, arranged to serve also as a stop for the shovel, and the retaining-pin *g* on the opposite side of the standard, substantially as and for the purpose described.

No. 212 897.—JEREMIAH CHAPMAN, VIRGINIA CITY, NEV.—*Reversible Gang Ploughs*.—March 4, 1879. Filed February 25, 1878.

Claim.—In a reversible gang plough, the combination of the central beam, *C*, and double cross-slats *h, m*, and *r*, with the reversible beams *A, B*, constructed as shown and described, and parallel to the beam *C*, as and for the purpose set forth.

No. 213 341.—CHARLES MCGREW, BLOOMINGTON, ILL.—*Cultivators*.—March 18, 1879. Filed December 11, 1878.

Claim.—1.—The combination, in a cultivator, of the central beam provided with the curved or convex knife *E* and shovel *D*, and the side beams provided with the rear curved or convex knives, *E*, and rear shovels, and long diagonal and lateral cutting-blades *F*, the several parts arranged, relatively to each other, substantially as and for the purpose herein shown and described.

2.—In a cultivator, the combination, with side beams, *B*, of the diagonal and lateral cutting-blades *F, F'*, the central beam, *A*, and distributing-wheel *G*, arranged in rear of said blades, substantially as and for the purpose specified.

3.—The combination, in a cultivator, of the central beam provided with the curved or convex knife *E*, shovel *D*, and distributing-wheel *G*, and the side beams provided with the curved or convex knives *E*, rear shovels, *D*, and long diagonal and lateral cutting-blades *F*, substantially as herein shown and described.

No. 213 410.—GEORGE L. GIFFORD, SAN ANTONIO, TEX.—*Ploughs*.—March 18, 1879. Filed October 22, 1878.

Claim.—The slotted plough-beam *A*, having the curved perforated guide *B* and vertical portion *C*, with branched arms and holes *c*, in combination with the slotted standard *D* and adjustable handles *b*, substantially as shown and described.

2.—As an improvement in ploughs, the frame composed of side bars *i i'*, end bars *j j'*, and having quadrant-guides *B' B'* standards *l l'*, and pivoted stocks *d d'*, in combination with guides *B*, standards *C*, and beam *A*, substantially as described.

No. 215 885.—OSRO A. CRAIN, EVANSTON, ILL.—*Cultivators*.—May 27, 1879. Filed April 21, 1879.

Claim.—1.—The slotted colter *D*, constructed substantially as and for the purpose set forth.

2.—The slotted colter *D*, in combination with the adjustable mold-boards *E*, hinged to the colter in the manner specified.

3.—The colter *D* and adjustable mold-boards *E*, in combination with the pivoted straps *F*, adjustable side pieces, *B*, and beam *A*, all arranged and operating in the manner set forth.

No. 216 449.—GEORGE W. PETERSON, OXFORD, ALA.—*Cultivators*.—June 10, 1879. Filed March 20, 1879.

Claim.—A cultivator having the bent loam-beams *A, B*, perforated in front and having their faces flush with each other, and provided on their rear ends with flanges *a' a'*, adapted to receive one end of the adjustable pivoted elbow-link *b*, the other end of said link pivoted to the bent flanged braces *h, h*, said braces engaging the upper ends of the han-

dles B', B', and the lower ends of said handles being adjusted to said beams A, B by means of the adjustable bolt *d*, substantially as specified.

No. 217,507.—CHARLES E. ESTES, COLUMBUS, GA.—*Cotton-Wing Swoops*.—July 15, 1879. Filed May 13, 1879.

Claim.—The combination of the standard A, having wings *a'* and point C, with the thin narrow blades B, provided with transverse slots *b'*, and bolted to the wings, so that their forward ends will be clamped between the said wings and the point, substantially as shown and described.

No. 218,407.—COLUMBUS STEPHENS, CAVA SPRING, GA.—*Cultivators*.—August 12, 1879. Filed November 5, 1878.

Claim.—As the improvement in cultivators hereinbefore described, the combination, with the standards D and the beams A, having one or more rows of indentations, as specified, of the braces C, having their upper ends made hook-shaped to embrace the beams, and the set-screws H, passing through said braces opposite the row of indentations, all as and for the purpose set forth.

No. 218,482.—JAMES L. BUSKETT, ST. LOUIS, MO.—*Cultivators*.—August 12, 1879. Filed June 28, 1879.

Claim.—The fixed central beam, A, bearing a shovel-plough at its rear end, and provided with cross-bars C, C, bolted permanently to it, said bars being provided with recesses E E, in combination with two removable reversible beams, D D, carrying land-side shares near their forward ends, and capable of adjustment as a cultivator, ridger, or single-hovel plough as set forth.

No. 218,568.—WILLIAM J. PIRKLE, CUMMING, GA.—*Ploughs*.—August 12, 1879. Filed January 14, 1879.

Claim.—1.—The combination of the adjustable side beams, A A, the sectional cross-bars B, with hooks *b*, the self-adjusting clevis, composed of the doubled bars L, L, the bolt *p*, and link L', substantially as and for the purpose herein set forth.

2.—The combination, with the plough-foot D, of the hinged side wings, H H, connected by the slotted bar *h*, the lever I, having inclines *i*, and the plate *i*, substantially as and for the purposes herein set forth.

No. 219,227.—JOSIAH DEAL, MASSILLON, assignor to WILLIAM M. JOHNSTON, WILMOT, OHIO.—*Cultivators*.—September 2, 1879. Filed March 3, 1879.

Claim.—1.—In a cultivator, the handles D D, pivoted to the rear of the frame A at *d''*, in combination with the bent pivoted beams C, said handles being adjustably connected to said beams at *e'*, substantially as described.

2.—In combination with the frame A, the pivoted bent beams C, the pivoted handles D, and the wheel, B, journaled centrally to the front of the frame and adapted to be turned to either side by the movement of the handles, substantially as and for the purpose described.

No. 219,745.—WILLIAM E. LOWRIE, CLEAR PORT, OHIO.—*Ploughs or Cultivators*.—September 16, 1879. Filed May 22, 1879.

Claim.—1.—The combination, with the beams A and B, connected together by horizontal and vertical pivots C D, of the handles E, F, connected independently to said beams, as described.

2.—A double plough constructed with a main beam, A, a secondary beam, B, connected to the first by horizontal and vertical pivots C and D, handles E, F, attached independently to the said beams, and a clip brace, M, for fixing the beams rigidly together when desired, all substantially as herein set forth.

3.—The combination, with beams A B, connected by horizontal and vertical pivots C D, and handles E, F, of the clip brace M and triangular hinged brace L, for rigidly securing the beams and handles, as described.

No. 220,352.—WILLIAM J. DAVIDSON, BIG SPRING, VA.—*Shovel Ploughs*.—October 7, 1879. Filed February 14, 1879.

Claim.—1.—The reversible standards B, carrying ploughs on one end, and curved at the other to form colters, as set forth.

2.—The combination, with the standard, consisting of a plain bar adjustable on the bars *a a' a'*, of the securing-bolt and nut and gage *n*, adapted to be secured by the nut,

as specified.

3.—The combination, with the standard, of the ball-tongue *d* and the broader pointed end blade, *b*, constructed and to be secured by the same bolt, *m*, passing through both, and to be used together, or either separately, on the same standard, as specified.

4.—The combination, in a cultivator shovel, of the shoe *g* and the thin steel facing plate *l*, adjustable on the shoe, conforming thereto, and projecting slightly beyond the edges of the same, substantially as set forth.

5.—The combination of the shoe and adjustable thin steel facing plate *l*, provided with a set *w*, adapted to clamp the edges of the shoe, as specified.

No. 221,803.—PETER GERGES, SKIPPACK, PA.—*Cultivators*.—November 18, 1879. Filed August 14, 1879.

Claim.—The combination, in a cultivator with single beam A, of the standards E, F, carrying wide ploughs L, and the standards G, H, carrying narrow ploughs M, all of said standards being bolted to beam through blocks, and the said standards G H being secured at different angles but by the same bolt, as shown and described.

No. 222,087.—B. B. SMALL, NORTH LEEPS, ME.—*Combined Horse-Hoes and Cultivators*.—November 25, 1879. Filed July 8, 1879.

Claim.—The tongue A, and end-slotted cross-bars B C D, in combination with standards F, plows G, standards H, and hoes I, all constructed and arranged to operate as described.

No. 222,367.—JAMES M. RICHARDS, BRINDLE, ALA.—*Cotton Scrapers*.—December 9, 1879. Filed September 24, 1879.

Claim.—1.—The combination of beams A and D and intermediate block, G, constructed to present bearings at different angles, and devices for clamping the block and beams together, substantially as described.

2.—The combination of beams A and D, block G, and connecting bolts, hook H, stay, and standards B, substantially as set forth.

No. 222,783.—MARTIN HOLDREDGE, KENT, OHIO.—*Cultivators*.—December 23, 1879. Filed August 5, 1879.

Claim.—In a cultivator, the combination, with the center beam having a standard and plough, of two side beams pivoted back of their front ends to a cross-bar, and each carrying two shovels and made adjustable, so that when the rear ploughs are moved outward the front ploughs will move inward, and vice versa, substantially as shown and described.

No. 222,893.—GEORGE W. GOODWYN, PETERSBURG, VA., assignor of one-half of his right to PASCAL DAVIE, same place.—*Cultivators and Cultivator Teeth*.—December 23, 1879. Filed August 16, 1879.

Claim.—1.—A reversible cultivator tooth having practically a straight landside and an enlarged shovel-shaped and curved furrow-side, the straight line of the land side and the curved line of the furrow-side intersecting to form the cultivating points, said tooth being concave from point to point and convex from the land-side to the furrow-side, substantially as and for the purpose specified.

2.—A reversible cultivator-tooth having a straight landside and an enlarged shovel-shaped and curved furrow-side, the straight line of the land side and the curved line of the furrow-side meeting to form the share or chisel-shaped cultivating points in continuation of the straight landside, said tooth being concave from point to point and convex from land-side to furrow-side, substantially as described.

3.—A reversible cultivator-tooth having a straight landside provided with a cutting-share or mold-board formed at right angles thereto and an enlarged shovel-shaped and curved furrow-side, the straight line of the land side and the curved line of the furrow-side intersecting to form the cultivating points, said cultivator-tooth being concave from point to point and convex from the land-side to the furrow-side, substantially as described.

4.—A reversible cultivator tooth having a straight landside with a cutting-share or mold-board formed at right angles thereto and an enlarged shovel-shaped and curved furrow-side, the straight line of the land side and the curved line of the furrow-side meeting to form the share or chisel-shaped cultivating points *d, d*, in continuation of said straight landside, the cultivator-tooth being concave from point to

point and convex from the land-side to the furrow side, substantially as described.

5.—A reversible cultivator-tooth having, practically a straight land-side and an enlarged shovel-shaped and curved furrow side, the straight line of the land-side and the curved line of the furrow side intersecting to form the cultivating points, said tooth being concave from point to point and convex from the land-side to the furrow side, and having its greatest convexity at the point of attachment to the standard nearer the land-side than the furrow-side, as set forth.

6.—In a cultivator, the combination of the standards E, D, carrying the interchangeable and reversible teeth described with the standard F, carrying the tooth K, arranged and operating together substantially as describe for the purpose specified.

No. 223,713.—JOSIAH J. DEAL, WILMOT, OHIO.—*Cultivators*.—January 20, 1886. Filed September 16, 1879.

Claim.—1.—The combination of the longitudinally-sliding handles D', the steering bar D, having in one arm a pawl d, rod d', the quadrant-plate B, and vertical shaft D', carrying the wheel E, substantially as and for the purpose described.

2.—The combination of the bent plough bars A A, having eyes a' formed thereon, quadrant-plates B and C, having pivots a' a', on which the eyes a' a' are turned, substantially as and for the purpose described.

3.—The combination of the shovel-bars A A and A'', the quadrant-plates B C, handles D'', yoke D, pawl d, vertical shaft D', and wheel E, substantially as and for the purpose described.

No. 224,402.—WILLIAM L. DIETZ, SIOUXFALL, N. Y.—*Broom Corn and Cotton Scrapers and Cultivators*.—February 10, 1886. Filed November 13, 1879.

Claim.—1.—In a scraper and cultivator, the combination, with the frame A, of the frame D E E, provided with the straps G H and the friction rollers I L, and the scraper-plates K, substantially as herein shown and described, so that the scraper-plates K may be moved laterally without moving the main frame A, as set forth.

2.—In a scraper and cultivator, the combination with the frame A, and the frame D E E, that carries the scraper plates K, of the handles M and the bolts N P, substantially as herein shown and described, for moving the frame D E E and the scrapers K upon the frame A, as set forth.

No. 225,204.—ALFRED AKER, STERILIOR, ILL., assignor to one-half his right to JAMES G. WILSON, same place.—*Cultivators*.—March 9, 1886. Filed January 20, 1885.

Claim.—The cultivator for cutting the roots of weeds, substantially as before specified, composed of a beam formed with a curved standard, which standard is flattened out from the point a to the extreme end a' into a flat horizontal side, C, reaching about as far forward as the end of the beam, and flat knives or shares diverging from the extreme forward end of said side.

No. 225,535.—LEWIS B. MORGAN, WISE LIBERTY, W. VA., assignor to JOHN E. WAYT, same place, and WILLIAM RHEE, JR., WISE ADVANCE, VA., one third to each.—*Plough and Cultivator Handles*.—April 13, 1886. Filed September 5, 1879.

Claim.—The combination of the handles C, cross bars D, spring catch E, the rod and lever G H, the latter placed contiguous to the rear end of the handles, and the plough beam and notched arch B, as shown and described.

No. 226,050.—JAMES W. FLEMING, ST. JOSEPH, MO., assignor of one-half his right to FLORENCE H. STUMPF, same place.—*Combined Cultivators and Harrows*.—April 24, 1886. Filed March 6, 1886.

Claim.—The triangular-shaped frame A, with teeth c and shovel d, and having connected to it cross-beam a and segmental guide bars e f, in combination with the wings B C, having teeth g, and ploughs or shovels h, said wings being connected to the beam a, as described, and for the purpose set forth.

No. 227,687.—JOHN A. GOGEL, TOLEDO, OHIO.—*Cultivators*.—May 18, 1886. Filed February 27, 1886.

Claim.—The clamping plates b, composed of two half-sections embracing the rear end of the beam, having the pivot bolt b' and the curved vertical slots b'', in combination

with the round standards f and clamping-bolts b'', substantially as shown and described.

No. 228,853.—RICHARD G. S. AUSTIN, PINE BLUFF, ARK.—*Cotton-Cultivators*.—June 15, 1886. Filed May 4, 1886.

Claim.—1.—In a straddle row cultivator, the combination, with the two semi-circular wings C and the tongue-arches A, of the pivoted arms or frames D, adapted to slide upon the curved bars of said wings and be held adjustably thereon by the plates e and set-screws d, connecting the frames D to said wings, substantially as and for the purpose set forth.

2.—In a straddle row cultivator, the combination, with the tongue-arches A A, having inwardly projecting portions a, of the semi-circular wings C, carrying the pivoted standard arms or frames D, substantially as and for the purpose set forth.

No. 229,318.—RICHARD A. JOHNSON, NEWMAN, GA.—*Cotton-Cultivators*.—June 29, 1886. Filed May 27, 1886.

Claim.—In combination with a plough or cultivator standard and a cultivator tooth or shovel, a combined guard and cutter consisting of the vertical-wing G, which prevents the earth from being thrown upon the cotton, and the wing I, which serves as a scraper, substantially as shown and described.

No. 229,484.—DANIEL STANCHFIELD, DAVENPORT, IOWA.—*Ploughs*.—June 29, 1886. Filed November 18, 1879.

Claim.—The combination, with the beams B, adjustable toward or from each other, and a plough section D, having a shank, of side-mold boards, E, each provided with an independent shank, said section D and mold-boards E adapted to be secured as described to form a single wing plough, or detached to form cultivator-teeth, as specified.

No. 231,701.—WILLIAM J. DAVIDSON, BIG SPRING, VA.—*Ploughs and Cultivators*.—August, 31, 1886. Filed February 7, 1886.

Claim.—1.—The combination of the plough beam H, having the lateral arm A', the L-shaped bracket B, secured adjustably to the arm A' and adapted to be attached in different positions, and a standard E, carried by the bracket B, substantially as herein set forth.

2.—The combination of a curved standard E, turning on a fixed pivot, i, and having a slot, m, the plough beam or bracket having a slot, n, crossing the slot m, and the adjustable bolt z, passing through both slots, as herein specified, for the purposes set forth.

No. 232,133.—RICHARD A. JOHNSON, NEWMAN, GA.—*Cultivators and Scrapers*.—September 14, 1886. Filed July 22, 1886.

Claim.—In a cotton cultivator and scraper, the combination of the standard A, wing B, for protecting the young plants from the dirt, wing C, having the slot D, the bolt, G, and shovel H, the slot D in the wing C being of such a shape that the wing can be adjusted into different positions, substantially as shown.

No. 232,450.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Ploughs*.—September 21, 1886. Filed August 11, 1886.

Claim.—1.—In a plough, the combination of the wooden portion A and iron portions B B of the plough-beam with the rod H, bolts G G', and the revolving cups K, having flanges L, and steps N and O, and interposed cross-bars Q Q, secured in place in said steps by nuts, substantially as and for the purposes set forth.

2.—In a plough, the combination of the portions A and B B of the beam, the bolts G G', wedges T, rod H, handles D, cups K, bars Q, and nuts and washers R S, constructed and operating substantially as and for the purposes set forth.

3.—In a plough, the cups K, having flanges L, shoulders M, and steps N and O, in combination with the cross-bars Q, rod H, and beam A and B B, substantially as and for the purposes set forth.

No. 232,903.—ADOLPHUS LUPTON, TROY GROVE, assignor to himself, MYRON A. HOLBROOK, MATTHEW BULLER, and OLIVER CHADDOCK, LAMOLLE, ILL.—*Cultivators*.—October 5, 1886. Filed February 18, 1886.

Claim.—The combination, with the frame A B C, of the

plates D, acutely angled at each end, and provided with shafts E, twisted to incline them, the two outside plates being inwardly inclined and the inside plates being adjustable to incline either inwardly or outwardly, whereby both sides of a row of plants may be scraped or filled, as described.

No. 233,730.—SIMON J. COGGIN, OXFORD, MISS.—*Harrows and Cultivators*—*October 20, 1880*. Filed *July 17, 1880*.

Claim.—In a harrow or cultivator, the front blades or scrapers B, attached to the front teeth, and made both longitudinally and vertically adjustable by means of the slots *a* and set screws E, the rear scrapers, C, adjustably attached to the rear teeth, and the intermediate teeth, *a*, all combined and arranged substantially as described, and for the purpose specified.

No. 233,840.—OLAS W. GOSLIFE, GASTONBURY, CONN.—*Tobacco Hoe*—*November 2, 1880*. Filed *July 27, 1880*.

Claim.—1.—The blades G, attached to and supported by the tooth E, in combination with the tooth E and the beam A, said blades being adjustable from south by means of the bolts and sets E', substantially as described.

2.—The combination of the blades G, the supporting tooth E, the beam A, and the guide J in the rear of the tooth E, to form a cultivating device, substantially as described.

3.—The combination of the tooth D, the supporting tooth E, with the blades G, and the guide or cutter J, with the beam A and the roller C, substantially as described.

No. 235,087.—WILLIAM C. HUNTER, CHARLOTTE, N. C.—*Cultivators*—*December 7, 1880*. Filed *May 6, 1880*.

Claim.—The forwardly projecting diverging arm V, rigidly connected with the beam A, in combination with teeth arranged, the forward ones to work in close proximity with the row and to throw the soil outward or away therefrom, and the others in a reverse position for throwing the soil inward toward the row, as described.

No. 235,080.—SMITH R. BELL, PALESTINE, ARK.—*Cultivators*—*December 28, 1880*. Filed *September 7, 1880*.

Claim.—In a cultivator, the combination of the beam A, angular standards D, and shafts O, the upper ends of the standards being cut away, so that the standards will diverge at their lower ends, and the shafts O being bent backward at their upper ends, whereby the dirt is pressed inward toward the plants, substantially as shown and described.

No. 236,743.—JAMES F. LEWIS, ROCKY HILL, KY.—*Combination Cultivator and Harrow*—*January 4, 1881*. Filed *August 23, 1880*.

Claim.—The herein described cultivator, consisting of the beam A, the perforated plates B C, the laterally adjustable beams D E, the bifurcated slotted standards G, braces H, and rollers I, the said beam E adapted to be adjusted backward or forward to form a cultivator or scraper, as described.

No. 238,132.—FREDERICK M. LEWIS, CIVIL GROUN, GA.—*Cultivators*—*February 22, 1881*. Filed *March 10, 1880*.

Claim.—The beam A, standards A' and shovels, the differentially-slotted and differentially-arranged bars F and E, the serrated-slotted bars D I, the perforated beams C, the perforated tie-bar R, and the connecting bolts and nuts, the whole constructed, arranged, and combined to afford longitudinal, lateral, and differential adjustment at will, as and for the purposes set forth.

No. 239,300.—ALEX. CURRIER, WILSONSBORO, N. C., assignor of one half to CHARLES W. WOODFORD, FAYETTE, N. C.—*Harrow, Machine*—*March 20, 1881*. Filed *October 7, 1880*.

Claim.—1.—In a hoeing machine, the combination, with the frame hinged centrally, of bars secured adjustably to said frame, the means whereby they may set more or less obliquely, and the hand F F', adjustable with the handles and the handles, substantially as described.

2.—In a hoeing machine, the hand F F', passing, respectively, above and below the frame, secured thereto by bolts G, and having pivoted to their forward ends vertical slotted links K, a tabbed adjustably to thills, substantially as and for the purpose set forth.

3.—In a hoeing machine, the hand F F', secured to the

frame, as herein described, and having pivoted to their ends vertical slotted links K and M', attached, respectively, to the thills H and handles M, and capable of adjustment, substantially as and for the purposes set forth.

4.—The combination, with thills H, bands F F', and hinged frame A, of bolts G, passing through the same, and having on their upper ends projections G', as and for the purpose set forth.

No. 239,798.—RICHARD A. JOHNSON, NEWMAN, GA.—*Cultivator*—*April 5, 1881*. Filed *February 12, 1881*.

Claim.—In a cultivator, the combination of the standard A, the cultivator B, the clamping bolt C, and the two wings which have slots or openings made through them for the clamping bolt to pass through, and angles upon the top edge of the wing to catch against the under side of the shoulder on the standard, the parts being combined and arranged to operate substantially as shown and described.

No. 240,102.—JAMES L. SHAW, PRINCE GEORGE, ILL.—*Cultivators*—*April 12, 1881*. Filed *March 19, 1881*.

Claim.—In a gopher-cultivator, the combination, with the beams F F' and the arch B, of the blocks or slides D D, carrying the said beams, and secured adjustably upon the horizontal ends C C' of the arch, substantially as shown and described.

No. 240,642.—ANDREW BEARD, EASONSVILLE, VA.—*Double Plow*—*April 26, 1881*. Filed *September 4, 1880*.

Claim.—1.—The curved standard or drag bar H, formed of a double bar of iron and having a brace, J, inserted between the sides and across the bend, whereby the standards are stiffened and braced in any position to which the swinging beam may be moved.

2.—The combination of the curved standards H, the braces J, the swinging cross-bar D, plough beam A, and braces E, substantially as shown and described.

No. 240,945.—FRANK BATTMAN, SPRING MILLS, N. J., assignor of one half to EDWARD S. BATEMAN, same place.—*Cultivators*—*May 3, 1881*. Filed *November 22, 1880*.

Claim.—1.—The combination of the bar A of the frame, the presser plate D, the U shaped bar *U* having openings in both standards, and the bolts for confining the same, as specified.

2.—The combination of the side bar of the frame, the bent plate E, bolted to said bar, the cutting blade F, having a stem, *a*, and the bolt *b*, adapted to an opening in the laterally projecting portion of the plate E, and having an eye, *c*, for the reception of the said stem *a* of the blade, as set forth.

No. 241,607.—AARON J. SELLIS, PITTSBURGH, PA.—*Cultivators*—*May 17, 1881*. Filed *March 24, 1881*.

Claim.—1.—In a cultivator, the combination of longitudinal frame bars, expansion bars, or spread irons, pivoted at one end to one of said frame bars and independently adjustable longitudinally at the opposite end upon another of said frame bars, and cultivator shovels attached to the expansion bars, substantially as and for the purpose specified.

2.—In a cultivator, the combination of longitudinal frame bars, expansion bars, or spread irons, pivoted at one end to one of said frame bars, and independently adjustable longitudinally at the opposite end upon another of said frame bars, and spring or vibratory shovels attached to the expansion bars or spread irons, substantially as and for the purpose specified.

3.—In a cultivator, the combination of longitudinal frame bars, expansion bars or spread irons, pivoted at one end to one of said frame bars and adjustable longitudinally at the opposite end upon another of said frame bars, and a longitudinal coupling bar or bars connecting the transverse expansion bars or spread irons, substantially as and for the purpose specified.

4.—In a cultivator, the combination of a longitudinal center bar, adjustable longitudinal side bars, transverse expansion bars, or spread irons, pivoted at one end on the longitudinal side bars and longitudinally adjustable independently at the opposite end upon the center bar, cultivator shovels attached to the expansion bars or spread irons, longitudinal coupling bars for connecting the transverse expansion bars, and an independently adjustable rubber tooth pivoted on the

rear end of the longitudinal center bar, substantially as and for the purpose specified.

No. 241,855.—JAMES W. FLEMING, ASPEN, COLO.—*Combined Cultivators and Harrows*—May 24, 1881. Filed March 28, 1881.

Claim.—The triangular frame A, connected to the cross beam *a* and having the teeth *d* and shovel or plough *e*, and at its rear end elongated slots *i*, in combination with the wings B C, connected to the beam *a*, said wings having connected hereto strap irons D, with holes *g*, and fastened to the frame by suitable bolts *h* passing through said holes and through the slots *i*, as and for the purpose set forth.

No. 242,279.—JOSIAH J. DEAL, WILMOT, OHIO, assignor of one fourth to WILLIAM M. JOHNSTON, same place.—*Corn Cultivators*—May 31, 1881. Filed April 6, 1881.

Claim.—In a cultivator without wheels, the frame A, having the double back bar, A', in combination with the independent beams B B' and the adjustable handles C, whereby each plough beam can be swung separately while in action, substantially as and for the purpose described.

No. 5,218.—G. PAGE, WASHINGTON, D. C. *Rolling Mouldboards*.—*August 7, 1847.*

Claim.—The employment of the friction rollers in combination with the revolving mould boards substantially as specified for adjusting the heel of the mould board on or in to regulate the furrow.

No. 6,870.—MILTON SATTERLEE, LOUISA, ILL.—*Seed Planters*.—*July 26, 1853.*

Claim.—The arrangement of the drill and covering wheels, or their equivalents, on flexible axles, so that they will rise and fall to accommodate themselves to undulating ground, whereby the grain is all the furrows is planted at an equal depth and equally covered.

No. 11,102.—H. M. JOHNSON, CARLETON, PA.—*Rotary Cultivators*.—*June 27, 1854.*

Claim.—A system of sharpened disks or rotary coulters, a part of which are armed upon their peripheries with knives projecting laterally, said knives being set obliquely to the radius of the disks, as above described, the whole being combined and arranged in three several sets, so that the two sets armed with knives shall cut alternate sections of the soil, substantially as set forth.

No. 15,054.—B. C. HOYT, PORT WASHINGTON, WIS.—*Revolving Mouldboards*.—*September 2, 1856.*

Claim.—The adjustable rotary moul-board K K, combined with the beam D, and frame K, the whole being arranged in the manner described.

No. 18,414.—B. C. HOYT, PORT WASHINGTON, WIS.—*Revolving Mould boards (A D)* to patent No. 15,054.—*January 5, 1858.*

Claim.—The adjustable axle H, with angular journals C H', and adjusting arms I P, in combination with the stirrup or standard D, rotary mould-board G, and ground profiling or driving wheel N, as and for the purpose set forth.

No. 17,114.—EZRA FEMMET, FRANKLIN, GROVE, ILL.—*Seed Drill*.—*April 28, 1858.*

I do not claim broadly the use of edge wheels in seedling machines; neither do I claim broadly the use of extension tubes; but I claim the arrangement and combination of the wheels E, with the extension pieces *d*, in the manner and for the purposes substantially as described.

No. 18,608.—J. LEE, GALESBURG, ILL.—*Wheel Ploughs*.—*November 21, 1857.*

Claim.—1.—The peculiar arrangement, consisting of friction wheels *d*, incline planes *f* *g*, and lever K, for adjusting the plough frame to any required position, substantially as set forth.

2.—The peculiar arrangement, consisting of the flange or guard *e*, and pivoted axle *a* *a'*, for allowing the turning of the front track to a position at right angles, or nearly so, to the hind track, so that the machine may turn a square corner without liability of lifting the plough-bars out of the ground, substantially as set forth.

No. 18,821.—JOAL LEE, GALESBURG, ILL.—*Seed Planters*.—*December 8, 1857.*

Claim.—The bevel wheels D D', constructed, arranged and operated in the manner as set forth, when combined with the swivel tube C, for the purpose set forth.

No. 19,489.—ORMAN COE, WASHINGTON, WIS.—*Rotary Harrows*.—*March 2, 1858.*

Claim.—The combination with the bars *a* of a harrow-frame of a series of revolving, circular, conical or concave, forked harrow teeth; said teeth being arranged obliquely to the line of draft, and operating unitely, substantially as and for the purposes set forth.

No. 21,319.—J. B. MCCORMICK and W. R. BAKER, BOSTON, MASS.—*Seeding Machines*.—*August 31, 1858.*

Claim.—The arrangement and combination of the rotating wheel G, with the stationary plates or shares, substantially as and for the purpose shown.

No. 21,375.—J. D. SMITH, LANCASTER, OHIO.—*Seeding Machines*.—*August 31, 1858.*

I do not claim broadly the employment of two wheels for opening the furrow, the seed being dropped between the wheels.

Claim.—The arrangement and combination of the spout K, wheels M, frame H, and frame D, as and for the purpose shown and described.

No. 25,443.—S. G. RANDALL, NEW BRAINFIELD, MASS.—*Seeding Machine*.—*September 13, 1850.*

Claim.—The arrangement and combination of the series of plate wheels D D, seed boxes A, and horizontal bar B, substantially as shown and described, so that, as the bar B is drawn along, the plate wheels shall assume an oblique position, as set forth.

No. 3,404.—SHAS G. RANDALL, NEW BRAINFIELD, MASS.—*Seeding Machine*.—*September 13, 1850.*—No. 25,443; reissued *May 25, 1860.*

Claim.—1.—The harrowing plate-wheels D, revolving upon axles oblique to the line of draught, arranged in series, and inversely duplicated, substantially as shown and described, for the purposes specified.

2.—The arrangement and combination of the series of plate-wheels D D, seed boxes A, and horizontal bar B, substantially as herein described and shown, so that as the bar B is drawn along, the plate-wheels shall assume an oblique position, as set forth.

No. 26,630.—SAMUEL D. TRACY, VERMONT, N. Y.—*Seeding Cultivators*.—*December 27, 1850.*

Claim.—1.—Giving the zigzag or alternate opposite inclinations to the blades of the spur wheels C C, in the manner and for the purpose herein set forth.

2.—The combination of the movable or adjustable cutters D D and their slotted supports *g* *g* with the zigzag spur wheels C C, in the manner and for the purposes herein specified.

3.—The arrangement of the seed box H, in grooves, in the underside of the hinged seat G, so as to be adjustable beneath it, removable therefrom, or turning up therewith, substantially as herein described.

4.—The vibrating seed distributor I, constructed, operated and operating substantially as and for the purpose herein specified.

No. 30,645.—GEORGE S. ROUDEBUSH, NATCHEZ, MISS.—*Cotton and Corn Stalk Cutters*.—*November 13, 1860.*

This invention consists in the employment of a biconical roller, provided with flanches and cutters, used in connection with stationary scrapers and a rotating cutting cylinder, all the parts being placed in a suitable frame and arranged for joint operation.

Claim.—The biconical roller D, provided with the knives E, in connection with the knife cylinder H, and with or without the bars or scrapers G, all being placed in the frame A, essentially as and for the purposes set forth.

No. 31,650.—W. B. QUARTON, CARLISLE, ILL.—*Seeding Machine*.—*January 8, 1861.*

A number of wheels are placed side by side on a fixed shaft behind the seed-tubes, each of which is capable of a motion independent of the cutters, and so constructed and placed on the shaft as to rise or fall and accommodate themselves to the inequalities of the surface of the ground independently of each other, while they will each form a deep and sloped furrow and corresponding ridge, and thus press the seed completely into the soil.

Claim.—The arrangement of the rods E', cutters D, axle D', oscillating shaft D'', rod *k*, lever E, seed box B, rollers J, hub *e*, and hinged pivoted lever *h*, all as shown and described, for the purposes set forth.

No. 32,078.—GEORGE W. NEVILL, BALTIMORE, ILL.—*Seed Drills*.—*April 10, 1861.*

The wheels C are made with beveled edges tipped with steel, to make indentures in the ground, into which the grain is dropped. The wheels E are provided with spurs on their peripheries, and are so situated that a portion of their outer surface moves through openings in the hopper and agitates the grain, causing it to pass through openings, whence it falls into the conveyors. In the rear of the conveyors are shoes provided with plates at their sides which cover the grain, the heel of the shoe pressing the soil down upon the same.

Claim.—The wheels C and the wheels E, being fixed upon shafts, hopper B, conveyors D, and shoes F, the whole arranged and operating as set forth.

No. 33,072.—H. N. DALTON, JACKSONVILLE, CAL.—*Seeding Machine*.—*August 20, 1861.*

The hounds of the draught-pole are pivoted to the sides of the main frame. The front transverse bar of the hounds

is connected to the front end of the frame by a vertical adjusting screw which passes through a rocking nut, and is fastened at its lower end to the back edge of a bearing plate bolted to the bottom of a cross-bar of the bounds, so that by means of the screw the rear end of the frame may be depressed, and the ploughs adjusted to any depth or raised entirely from the ground.

Claim.—The bounds J J pivoted at *i i* to frame A, and mounted on the castor wheel N, in combination with the bearing plate E, adjusting screw K, and rocking nut *j*, all arranged in the manner and operating as described.

No. 33,103.—JOSEPH F. POXD, CLEVELAND, OHIO.—*Seed Planters*.—August 20, 1861.

This invention consists in the construction of a dropping tube, to which adjustable or reversible arms are attached; also, a bent bar, with stationary and reversible arms, upon which are disks or wheels placed obliquely to the line of draught, having cone-shaped bearings for equalizing the side draught and preventing friction on the axle, the cone being secured to the arm by a pin, and may be adjusted by shifting it to vary the width of the disks.

Claim.—1.—The two serrated or plain disks W W, oblique to the line of motion, upon stationary adjustable and reversible arms *a a*, attached directly to the dropping tube T, and the stationary and adjustable arms attached to a piece P P, for the purpose of covering grain, cultivating and hoeing vegetables in different manners, as set forth.

2.—The application of the cone bearings B, and cap *d* and pin *i* in the hub H and disk W, when placed or running obliquely to the line of motion, when applied to seed-planters, cultivating and hoeing machines, for the purpose of equalizing the side draught to obviate friction and secure a more easy action of the machine or implement, as specified, for the purposes set forth.

No. 36,724.—A. W. OLDS, GREEN OAK, MICH.—*Cultivators*.—October 21, 1862.

The cultivator is so constructed as to be supported in part by one or more bearing wheels, so arranged and adjusted that a forward movement of the vehicle will cause a positive rotation of the cultivator. The form of the teeth is shown in the engraving.

Claim.—1.—The adjustable axletree I, bearing wheels K and K', in combination with the cultivator frame A B, axis C, and pipe-box E, when these parts are arranged and operated as and for the purpose specified.

2.—The bell-shaped, round-shanked tooth, constructed and operating as and for the purpose herein set forth.

No. 45,026.—WILLIAM A. L. KIRK, HAMILTON, OHIO.—*Soil Cutters*.—January 17, 1865.

Claim.—1.—The arrangement of frame A, rollers B and C, and root-cutting blade E *e e e e*, substantially as set forth.

2.—The parts A B C D D' *e e e e* E F G K and L, as herein arranged and combined.

No. 55,826.—JOHN CUSTER, SANDUSKY, OHIO.—*Cultivators*.—June 26, 1866.

This clod-crushing roller has a series of cutters on its periphery whose intervals are occupied by hinged clearing plates which prevent the accumulation of soil.

Claim.—1.—The hinged cleaners H, in combination with the levers I, arranged to operate with the cutting rollers D, in the manner and for the purpose herein specified.

2.—The combination of the cutting rollers D, hinged cleaners H, frame A, bar K, and chain J, arranged and operating as described.

No. 58,951.—SILAS A. MOODY, SAN FRANCISCO, CAL.—assignee to PHILIP E. DIVINE.—*Soil Cutters*.—October 16, 1866.—The revolving shaft, armed with disk cutters, has a cover and seat, which assist in forcing the disks in the ground.

Claim.—A series of circular blades or knives upon a shaft or axle arranged to rotate, as described, in combination with the cover C and seat upon the cover, substantially as described.

No. 62,367.—M. L. ROBERTS, SMITHFIELD, CANADA.—*Ploughs*.—February 26, 1867.

Claim.—1.—The friction wheel G, having its axis inclined at an angle of 90° or thereabouts, one bearing being attached to the beam, and the other to the heel of the mold

board, so that the two faces of said wheel bear against the side and bottom of the furrow, with nearly equal force, in combination with the other parts of the plough, arranged and operating substantially as and for the purposes set forth.

2.—Constructing a plough without the land plate or slide, when the same is provided with a friction roller or rollers, which track in the furrow angle, which is cut by the share, substantially as set forth.

3.—The combination of the inclined wheel G, with the anti-friction mould board, composed of the series of rollers *e e e*, or their equivalent, arranged and operating substantially as set forth.

No. 63,224.—JOHN CUSTER, CORNICA, OHIO.—*Roller for Pulverizing Soil and Clods*.—March 26, 1867.

Claim.—1.—The continuous single ring cutters *s s*, secured by projections *a a*, in grooves *e e*, upon the periphery or the rollers D D, arranged as and for the purposes herein described.

2.—The cleaners or scrapers formed of a corrugated metal plate secured to the cross bar F, with the corrugations or volutes *c c*, placed between the cutters *s s*, in the manner and for the purpose herein described.

No. 66,802.—M. A. and I. M. CRAVATH, BLOOMINGTON, ILL.—*Revolving Ploughs*.—July 16, 1867.—

Each plough is made of a single plate of steel, concavo-convex in shape, the edge sharpened with the level on the outer side. The ploughs are arranged in oblique series *s s* to clear each other's furrows and have an obliquity on their axes relatively to the line of draught, to give the width of the furrow shoe.

Claim.—1.—The plough A, combined with the axle *a*, constructed as herein mentioned, as a new article of manufacture.

2.—The arms *e f g h*, or different shapes and lengths as shown for the purpose of combining and operating two or more ploughs.

3.—The combination of the slides F F, the bent lever G G, the swivels H H, the curved straps I I, or any equivalent device, to operate the wheels E E, in the manner set forth for the purpose herein mentioned.

No. 9,603.—MYRTILLUS A. CRAVATH, BLOOMINGTON, ILL., and JAY S. CORBIN, GOVERNORSBURG, N. Y.; said CORBIN assignee of said M. A. CRAVATH and of ELMIRA E. CRAVATH, Administratrix of ISAAC M. CRAVATH, deceased.—*Revolving Ploughs*.—No. 66,802, dated July 16, 1867.—Re-issued March 15, 1881.—[Filed November 23, 1880.]

Claim.—1.—In a rotating disk-plough, a rotating concavo-convex plough constructed of a single plate of metal, arranged, substantially as described, to have its front edge cut the soil, and adapted to turn the soil to form a furrow.

2.—In a plough, a revolving concavo-convex cutting-disk mounted upon and attached directly to the tongue or draft-frame, substantially as described.

3.—The combination, with a draft-frame, of a revolving concavo-convex disk arranged, substantially as described, to cut the soil to form the furrow, and mounted on said frame obliquely to the line of draft.

4.—The combination of a plough-frame, revolving disk-ploughs below said frame, and a driver's seat adapted to have the driver's weight enforce a uniform cutting action of the disk.

5.—The combination of a draft-frame and a gang of two or more concavo-convex disk-ploughs, arranged with the concave sides toward the front and at an angle with the line of draft.

6.—The combination of a draft-tongue, rotating concavo-convex cutting-disks, rotating axles for said disks, adapted to hold the concave sides of the disk in the direction of the draft, and an intermediate frame which connects said axle to the tongue.

7.—In a revolving plough, the combination of a concavo-convex cutting-disk and a rotating axle which has one end mounted in the rear of the other to hold the concave side of the disks in the direction of the draft.

8.—In a revolving plough, the combination, with the connecting frame, of the rotating concavo-convex cutting-

disks, adapted to support said frame above the ground and to have the concave sides at an angle to the line of draft.

9.—In a revolving plough, the combination of the supporting-frame, of a gang of rotating concavo-convex cutting-disks arranged in parallel planes, and adapted to have all the concave sides throw the soil in one direction.

10.—The combination, with the rotating ploughs A and the axes a , of the arms f , g , h , of different lengths, and each arranged to support the ends of two said axes.

11.—The combination of the slides F F, the bent levers G G, the swivels H H, and the curved straps I I to operate the wheels E E, as set forth.

No. 67,034.—L. COLEMAN, NEW ORLEANS, LA., assignor to WILLIS P. COLEMAN, same place.—*Harrows*.—*Invent* 13, 1878.

The frame is supported on wheels, and is adjustable thereon. Two rotating shafts carry serrated disks. The rear disks are cleared by spring fingers projecting forward from a transverse bar.

Claim.—1.—The combination of the two series of revolving disks B B B and C C C, or their equivalent, when the same are constructed and arranged substantially as described for the purpose set forth.

2.—The two series of revolving disks B B B and C C C, in combination with the sliding-standards K, lever E, arm P, rock shaft N, handles F and frame J, when these several parts are constructed and arranged with respect to each other and to the clearers D D D, as described for the purpose set forth.

No. 69,484.—EDWIN RITSON, MONTVILLE, N. Y., assignor to WILLIAM H. BURTIS, same place.—*Seedling Machines*.—*October* 1, 1867.

Claim.—1.—The combination of the rotary furrow openers E, and covers J, attached respectively to the frame C D, the former being connected by hinges or joints a to the front end of frame A, and the latter connected by hinges or joints b to the rear of the frames C, substantially as and for the purpose set forth.

2.—The combination of the furrow openers E, covers J, and the seed-distributing device composed of the vibrating shoes L, and perforated bottom of the seed box, provided with slides o , all arranged substantially as and for the purpose specified.

No. 71,589.—JAY DENSMORE, HOLLEY, N. Y., assignor to L. A. DENSMORE, and HIRAM CURTIS.—*Rotating Tooth Cultivators*.—*December* 3, 1867.

Claim.—1.—A rotating cultivator tooth, consisting of any number of teeth, attached to a hub or common centre, around which they are free to revolve, and set at an angle to the draft, substantially as described.

2.—The combination and arrangement with rotating cultivator tooth of the standard S, the pin P, the bush o , the washer r , and the keys T and n , substantially as set forth and described.

3.—The combination and arrangement with a rotating tooth cultivator of the frame B, the shaft G, the cranks F, the wheels A A, the lever L, the pin 3, the cross-bar N, and the holes 4 4 4 4 4 4, substantially as set forth and described.

4.—The combination and arrangement with a rotating tooth cultivator of the pole M, the guides K and I, the pin Z, the holes 2 2 2 2 2 2, the driver's seat C, and the spring E, substantially as set forth, and described.

No. 73,876.—ELISHA CRANE, ELKHART CITY, ILL.—*Device for Scarifying the Soil Preparatory to Ploughing*.—*January* 28, 1868.

A series of cutting disks are pivoted in standards attached to the inclined bars of a frame which is vertically adjustable upon rollers.

Claim.—1.—Arranging in a suitable frame a series of gang of cutting blades or disks, when the same are so adjusted as to cut the soil in parallel channels, substantially as described and for the purpose specified.

2.—The lever H and curved arm J, in combination with the windlass frame, when the same are arranged substantially as described and for the purpose specified.

No. 8,265.—ELISHA CRANE, ELKHART CITY, ILL., assignor to CHAS. LA DOW.—*Narrow Cultivators*.—Pat-

ent 73,876, dated *January* 28, 1868. Re-issued *May* 28, 1878. [Filed *May* 16, 1878.]

Claim.—1.—In a cultivator, the combination of a triangular frame with a leading cutting disk at its apex and a series of following disks on each side thereof.

2.—In a cultivator, the combination, with a frame, of opposing gangs of revolving disks, overlapping each other.

3.—In a cultivator, the combination, with a frame, of gangs of revolving disks, said gangs being set at opposite angles to each other, and confined by said frame to the same horizontal plane.

4.—In a cultivator, the combination of a frame and driver's seat with gangs of revolving disks, each gang being arranged at an opposite angle to the other on said frame, the driver's weight enforcing a uniform cutting action on the disks of said gangs.

5.—In a cultivator, the combination of a frame with gangs of vertically-rotating disks, each wheel having its cutting-edge adjustable relatively to the line of draft.

6.—In combination with a cultivator-frame, two gangs of disks attached thereto, said gangs extending rearwardly and outwardly from the line of draft.

7.—In combination with a cultivator-frame, a revolving cutting-disk having its axle supported at two points, its support being provided with a clamping device for holding said axle in the desired position relatively to the line of draft.

8.—In a cultivator, the combination of two disk-gang frames, a central draft-bar, and a transverse brace-bar with a seat for the driver supported from three points by connections attached to the frame.

No. 76,404.—ELISHA CRANE, ELKHART, ILL.—*Scarifying the Soil Preparatory to Ploughing*.—*April* 7, 1868.

Claim.—1.—The truck frame B B where the same is provided with a series of parallel rods or axles B' B', when the same are provided with a series of cutting blades or disks $b b$, and the whole is constructed and arranged so as to operate substantially as described and for the purposes specified.

2.—The truck B when the same is in combination with the uprights $a a$ and wheels $a' a'$ and the whole is so constructed as to operate substantially as described and for the purposes specified.

3.—The truck B, rods or axles B', cutting blades or disks $b b$ when the same is in combination with the windlass rollers $c c$, and its operating mechanism, and the whole is so constructed and arranged as to operate substantially as described and for the purpose specified.

4.—Arranging above the truck B when the same is provided with parallel rods or axles B' B', and cutting blades or disks $b b$, of the platform F and driver's seat g when the whole is so constructed and arranged as to operate substantially as described and for the purposes specified.

No. 8,264.—ELISHA CRANE, ELKHART CITY, ILL., assignor to CHAS. LA DOW, Patent 76,404, dated *April* 7, 1868. Re-issued *May* 28, 1878. [Filed *May* 15, 1878.]

Claim.—1.—The combination, with a cultivator-frame, of two or more gangs of revolving disks, mounted on through-axes, said axes being supported relatively to the frame at more than one point, and said gangs being arranged to prevent longitudinal rocking of said frame.

2.—The combination, in a cultivator, of disk-gangs, driver's seat, and frame with a pole pivoted to said frame, which pivotal connection allows the said pole to be raised or lowered without affecting the position of the driver's seat.

3.—In a cultivator, the combination of disk-gangs with a truck-frame and main frame, said main frame being arranged to brace said truck-frame against transverse strain.

4.—In a cultivator, the combination, with a truck-frame, of disk-gangs and axles passing through said gangs, each axle being secured to the truck-frame and said truck-frame attached to the main frame at more than one point.

5.—In a cultivator, the combination, with a frame, of disk-gangs mounted on through-axes, and each axle arranged transversely to the line of draft and at different distances longitudinally from the front of the machine.

6.—In a cultivator the combination of a frame and disks

arranged in gangs on through axes, so that a disk of one gang will overlap a disk of another.

7.—In a cultivator, the combination of two or more gangs of revolving cutting-disks, each gang turning with its axle and each axle journaled at two points to a truck-frame, said truck frame being connected to said main frame at more than one point.

8.—In a cultivator, the combination of a frame with revolving cutting-disks arranged in gangs on through-axes, each axle being attached to said frame by bearings which confine the gangs to a uniform horizontal plane.

9.—In a cultivator, the combination of a main frame and truck frame with gangs of revolving disks mounted on through-axes, the axle of each gang being secured to the truck-frame at two points, and the truck-frame being attached at two or more points to the main frame, whereby the said gangs are braced against vertical and transverse strain.

10.—In a cultivator, the combination of an axle having a square or equivalent shape in cross-section with a series of cutting-disks correspondingly perforated, so as to turn therewith.

No. 76,000.—MATTHEW GORDON, WASHINGTON, IOWA.—*Combined Corn-Stalk Cutters, and Cultivators.*—April 21, 1868.

The machine runs on two wheels and has a vertically adjustable frame which has a shaft on which are several toothed or bladed cylinders. These cylinders are removable and as many may be used at a time as necessary for the required width of filth, the vertical adjustment determining the depth of filth.

Claim.—The cylinders *a p q*, with cutters and teeth or hoes arranged upon the shaft, and operated substantially as and for the purposes herein recited.

No. 77,184.—JOSEPH S. GODFREY, LESLIE, MICH.—*Revolving Mould Boards.*—April 28, 1868.

The mould boards are circular tapering blocks, and are hung so as to turn with the friction of the earth upon them.

Claim.—The combination of the mould boards A A with the cutters B B, the shares C C, the shafts D D, and the frame E, when constructed substantially as described, for the purpose designed and set forth.

No. 82,793.—JOHN BREWER, NEW VIENNA, OHIO.—*Combined Land Rollers and Clod Pulverizers.*—October 6, 1868.

Claim.—The drums B B, provided with knives C C, in combination with the cultivator E, when constructed and operated substantially as and for the purposes herein set forth.

No. 84,121.—SIDNEY S. HOGLE, BEREA, OHIO.—*Seeding Machines and Cultivators Combined.*—November 17, 1868.

Claim.—1.—The revolving cultivators E, as arranged in combination with the jointed frame A, for the purpose and in the manner substantially as set forth.

2.—The combination of the revolving cultivators E and rollers B B', in the manner as and for the purpose specified.

3.—The combination of the revolving cultivator E rollers B B', and seeding boxes, substantially as and for the purpose specified.

4.—The special construction and arrangement of the drill box A', when operated in the manner as and in combination with the cultivators E and rollers B B', for the purpose described.

5.—The slotted standards *i*, revolving cutters or disk P', in combination with the box D, in the manner as and for the purpose set forth.

No. 85,451.—MOSES JOHNSON, THREE RIVERS, MICH.—*Ploughs.*—December 29, 1868.

The ploughing is done by means of the sharp corrugated wheels revolving on pins in stirrups attached to the beam. The width of the furrow can be regulated by means of the hinged beams, which are held in position on the arm by pins.

Claim.—A plough, having wheels A, beams D, stirrups B, axles C, and punctured arm K, constructed, arranged, and operated substantially as described.

No. 9,031.—MOSES JOHNSON, LOCKPORT, N. Y., assignor, by mesne assignments, to CHARLES L. A. DOW.

—*Ploughs.*—No. 85,451, December 29, 1868.—Re-issued January 6, 1880.—[Filed November 11, 1879.]

Beams hinged together and carrying wheels for turning or cultivating the soil; also adjustable at different angles to the line of draft.

Claim.—1.—Wheel-gangs hinged together at their inner ends, so as to admit of their horizontal movement, substantially as hereinbefore set forth.

2.—The combination, substantially as hereinbefore set forth, of wheel-gangs, their hinge which admits of their horizontal movement, and the draft-connection at or near the hinge.

3.—The combination, substantially as hereinbefore set forth, of wheel-gangs, an interposed hinge-connection, and mechanism, substantially as described, whereby the angle of the gangs relatively to each other may be varied.

4.—The combination, substantially as hereinbefore set forth, of disk-gangs, a hinge-connection, a cross-brace, and mechanism, substantially as described, for adjusting the gangs and holding them at regulated distances apart.

5.—The combination, substantially as hereinbefore set forth, of gang beams, mechanism, substantially such as described, for adjusting their relation to the line of draft, the concavo-convex wheels or disk-cutters, and the adjusting-clamp by which their angle relatively to the line of draft is adjusted.

No. 9,032.—MOSES JOHNSON, LOCKPORT, N. Y., assignor, by mesne assignments, to CHARLES L. A. DOW.—*Ploughs.*—85,451.—December 29, 1868.—Re-issued January 6, 1880.—[Filed November 11, 1879.]

Transverse beam with concavo-convex wheels or cultivating-disks and draft tongue.

Claim.—1.—The combination, substantially as hereinbefore set forth, of the tongue, the cross-beam connected therewith, the wheels which support said beam, and mechanism, substantially such as described, for adjusting the angle of the wheels relatively to the line of draft.

2.—The combination, substantially as hereinbefore set forth, of the tongue, the cross-beam connected therewith, the wheels which support said beam, mechanism, substantially such as described, for adjusting the angle of the wheels relatively to the line of draft, and a driver's seat mounted on the cross-beam.

No. 85,030.—WILLIAM MARTILLOUS BUSH, GREENSBURG, IND.—*Machines for Pulverizing Earth.*—January 5, 1869.

Claim.—1.—A roller or pulverizer, constructed substantially as described and as shown in the drawings.

2.—In combination with the disks or sections D and knives or cutters E of the pulverizers, the scrapers H, arranged substantially as shown and described.

No. 90,770.—OLIVER F. MORMAN, DOWAGIAC, MICH.—*Roller Grain Drills.*—June 1, 1869.

Claim.—1.—The construction and arrangement of the frame A and hopper C, in combination with the wheels B, sliding-frames *d*, and lever W, as and for the purpose specified.

2.—In combination with frame A, wheels B, hopper C, and the frames *d*, the construction and arrangement of slides *f* and *o*, the bars *i* and *3*, levers N, and handle *r*, and the arrangement of the covers S, in combination with the pedestals T, driver's seat X, all as and for the purpose specified.

No. 92,002.—WILSON NOBLE, NEW HAVEN, CONN.—*Ploughs.*—July 27, 1869; antedated July 3, 1869.

Claim.—The wheel D, constructed with a corrugated surface, in combination with the plough-share, substantially as and for the purpose set forth.

No. 93,307.—MOSES JOHNSON, THREE RIVERS, MICH.—*Potato-Diggers and Cultivators Combined.*—August 3, 1869.

Claim.—1.—The disks E, when constructed, applied, and operated as described, for the purposes specified.

2.—In combination with the disks E, the scrapers *d*, apron *g*, ploughs H, and roller C, constructed and arranged substantially as and for the purpose described.

3.—In combination with the foregoing devices, the adjustable-beam K, cross-bar N, disks R, scrapers *h*, and

spring ρ , constructed and arranged substantially as specified.

No. 8,222.—MOSES JOHNSON, LOCKPORT, N. Y., assignor, by mesne assignments, to CHARLES L. A. DOW. *Rotary Cultivator*,—93,307, dated August 3, 1890.—Re-issued May 7, 1878. [Filed April 27, 1878.]

Claim.—1.—In a cultivator, the combination of a concavo-convex cutting disk with a pendent scraper which enters the concavity of said disk.

2.—In a cultivator, the combination of a frame, pendent scrapers, axles, and concave cutting disks with adjusting mechanism, whereby the lateral distance between the scrapers and disks can be either lessened or increased.

3.—In the cultivator, the combination of a revolving concavo-convex disk with a support for said disk, having a pendent scraper attached thereto, and adapted to enter the concavity of said disk.

4.—In a cultivator, the combination of a supporting frame and a concavo-convex disk with a pendent clearing device, which presents a cutting edge rearwardly for the purpose of shaving the earth from the disk.

5.—In a cultivator, the combination of a revolving axle with a concavo-convex disk and clamping nuts working on screw-threads, so as to follow said disk and tighten it in place.

6.—The combination, in a cultivator, of a draft-frame with two revolving axles attached thereto, and having concavo-convex disks mounted on and firmly clamped to said axles by adjustable nuts.

7.—In a cultivator, the combination of a draft-tongue, cross-bar, and revolving disks attached to said bar, said disks being adjustable toward or from each other, and arranged to straddle a row of plants and turn the earth either toward or from the row, as described.

No. 9,108.—MOSES JOHNSON, LOCKPORT, N. Y., assignor, by mesne assignments, to CHARLES L. A. DOW. *Rotary Cultivator*,—93,307, dated August 3, 1890.—Re-issued No. 8,222, dated May 7, 1878.—Re-issued April 20, 1880.—[Filed November 11, 1879.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of a draft-bar, a cross-beam connected therewith, cutting-disks secured upon the cross-beam and supporting the same above the ground, and handles by which the implement may be controlled.

2.—The combination, substantially as hereinbefore set forth, of a main frame, a draft-bar, cutting-disks arranged on opposite sides thereof and supporting the frame, and handles to vary the angle of the disks.

3.—The combination, substantially as hereinbefore set forth, of a cross-beam or frame, supporting stirrups or yokes in which the disks are mounted, and laterally-movable adjusting-clamps, which permit the lateral adjustment of the disks upon the frame or cross-beam.

4.—The combination, substantially as hereinbefore set forth, of a rotating concavo-convex cutting-disk with a pendent scraper adapted to enter and clean the concavity of said disk.

5.—The combination, substantially as hereinbefore set forth, of a revolving concavo-convex disk, a support in which it is mounted, and a pendent scraper attached to said support and conforming to the concavity of the disk.

6.—The combination, substantially as hereinbefore set forth, of a revolving cutting-disk mounted on a down-hanging support, a scraper for the disk, and adjusting mechanism, whereby the distance between the disk and the scraper can be varied.

7.—The combination, substantially as hereinbefore set forth, of a draft frame, a down-hanging support, a concavo-convex cutting-disk revolving in bearings therein, and a pendent scraper provided with a cutting-edge in the rear to shave clogging matter from the disk.

8.—The combination, substantially as hereinbefore set forth, of a draft-frame, down hanging support, and axle mounted thereon, a concavo-convex cutting disk movable laterally on the axle, and clamping nuts working on screw-threads on each side of the disk to lock it in its adjusted position.

9.—The combination, substantially as hereinbefore set forth, of a draft-bar, a cross bar, a cutting-disk, a support therefor, a scraper supported by one end only, and mecha-

nism whereby the disk and scraper may be simultaneously adjusted relatively to the line of draft.

No. 9,109.—MOSES JOHNSON, LOCKPORT, N. Y., assignor, by mesne assignments, to CHARLES L. A. DOW. *Rotary Cultivator*,—93,307, dated August 3, 1890.—Re-issued No. 8,222, dated May 7, 1878.—Re-issued April 20, 1880.—[Filed November 11, 1879.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of a main frame, a draft bar, cutting-disks mounted on the frame at an angle with the line of draft and supporting the frame above the ground, mechanism for adjusting the angle of the disks, and a detent for locking the adjusting mechanism and the disks in their adjusted position.

2.—The combination, substantially as hereinbefore set forth, of a main frame, a draft bar, cutting-disks arranged on opposite sides of the draft-bar at an angle with the line of draft and supporting the frame, mechanism for varying the angle of the disks, and a detent for locking said mechanism and the disks in their adjusted position.

3.—The combination, substantially as hereinbefore set forth, of main frame, a slotted draft bar connected therewith, cutting-disks, an adjusting-bar passing endwise through the slot in the draft-bar, and a pawl or dog, whereby the angle of the disks may be varied and held relatively to the line of draft.

4.—The combination, substantially as hereinbefore set forth, of a draft-bar, a cross bar, cutting-disks arranged on opposite sides of the draft bar and supporting the frame above the ground, a perforated bar for varying the angle of the disks, and a dog which enters the perforations in the bar for holding the disks at the angle to which they are set.

5.—A revolving concavo-convex disk- cutter, constructed, substantially as hereinbefore set forth, with a continuous unobstructed rim or cutting edge connected with its hub by spores.

6.—In a cultivator or other earth-turning implement, a revolving continuous unobstructed cutting rim or edge connected with its axle or hub by means of spores.

No. 95,950.—WILLIAM B. WEST, UTRICA, Wis.—*Ploughs*,—October 10, 1890.

Claim.—The combination, with a plough, of the anti-friction rollers F, shaped and arranged substantially as specified.

No. 96,007.—MOSES JOHNSON, THREE RIVERS, MICH.—*Potato-Digger and Cultivator*,—October 19, 1890.

Claim.—1.—The concave wheels K, with their hooks α , staples S, and scrapers P, screws C, and nuts n , when constructed and arranged to operate substantially as specified.

2.—The shields Y, in combination with the wheels K and beam A.

3.—The potato-digger herein described, having adjustable concave wheels K, plough H, staples S, shield Y, and caster P, constructed and arranged to operate substantially as specified.

No. 97,680.—FREDERICK NISHWITZ, BROOKLYN, N. Y.—*Harrow-Cultivators*,—December 7, 1890.

Claim.—1.—The combination, in a harrow-cultivator, of a revolving disk, with a hollow boss, closed at its inner end, substantially as and for the purposes set forth.

2.—The combination, in a harrow-cultivator, of revolving disks, independently adjustable, relatively to the line of draught, substantially as set forth.

3.—The combination, with a harrow-cultivator frame, of a stud-axle, a thimble, and a clamping-bolt, substantially as set forth.

4.—The combination, with a harrow-cultivator frame, of the recessed thimble, the clamping-bolt, and the stud-axle, as set forth, whereby the disk is carried at an angle, both to the line of draught and to the horizon.

5.—The combination, in a harrow-cultivator frame, of a revolving disk with a scraper, which keeps the disk on its axle, substantially as set forth.

6.—The combination, in a harrow-cultivator, of a loose disk, an adjustable axle, and an adjustable scraper, substantially as set forth.

7.—The combination, in a harrow-cultivator, of revolving disks, arranged in two series or gangs, adjustable toward or from each other, substantially as set forth.

8.—The combination, in a harrow-cultivator, of an adjustable triangular frame, a leading disk, at the apex of the triangle, and a series of following disks, on each side of the triangle, substantially as set forth.

9.—The combination, in a harrow-cultivator, of an adjustable triangular frame, two series of revolving disks, and a seat for the driver, substantially as set forth.

10.—The combination, in a harrow-cultivator frame, of a long arm, a short arm, pivoted to the long arm, and the cross-pieces, admitting of the adjustment relatively to the line of draft, substantially as set forth.

No. 98,017.—ALBERT BONDELL, PHILADELPHIA, MO.—*Ploughing Machines*.—December 21, 1869.

Claim.—1.—The spade-wheels A *a'*, one or more, constructed substantially as herein shown and described, and set at an angle with the vertical line, and with the line of draft, substantially as and for the purpose set forth.

2.—The combination of the circular revolving cutters D with the spade wheels A *a'* and frame C, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the adjustable castor-wheel E F G and adjustable hinged or jointed tongue H, with the frame C, circular revolving cutters D, and spade-wheels A *a'*, substantially as herein shown and described, and for the purpose set forth.

4.—Adjustably connecting the truck-wheels I with the frame C, to which the spade-wheels A *a'* and the circular revolving cutters D are attached by the pivoted arms J and guide-slides K, or equivalent devices, substantially as herein shown and described, and for the purposes set forth.

5.—The combination of the levers L, or equivalent devices, with the arms J, to which the axes of the truck-wheels I are attached, and with the frame C, to which the spade-wheels A *a'* and circular revolving cutters D are attached, substantially as herein shown and described, and for the purposes set forth.

No. 98,120.—RANSOM E. SPRATT, GAITHERSBURG, MICH.—*Ploughs*.—December 21, 1869.

Claim.—1.—The slotted platform *a*, provided with a curved groove on its upper side, substantially as and for the purposes herein set forth.

2.—The box *b* and cap *d*, constructed as described, and made adjustable upon the platform *a*, substantially in the manner and for the purposes herein set forth.

3.—The disk E, provided with shaft *e* and rim *i*, substantially as and for the purposes herein set forth.

4.—The combination and arrangement of the plough beam A, landside B, handles C C, braces D D, platform *a*, box *b*, wheel mould-board E, and scraper *f*, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

No. 98,047.—A. L. P. VAIRIN, RIPLEY, MISS.—*Wheel of Harrows*.—January 4, 1870.

Claim.—In combination with the frame A, the disks B, arranged to rotate on the axle B, bent at its centre, all constructed as shown and described.

No. 101,256.—JOSEPH S. GODFREY, LESLIE, MICH., assignor to himself and SEARS M. LOVERIDGE, PITTSBURG, PA.—*Ploughs*.—March 29, 1870.

Claim.—1.—In a plough or cultivator, a horizontal flange, *n'*, to which to attach the box-plate of a revolving mould-board, substantially as described.

2.—Making in the flange or box-plate two or more slots, such that, forming a point at or near the forward edge of the revolving mould-boards as a centre, such mould-boards can be adjusted to any desired angle or pitch, substantially as described.

3.—In combination with such mould-board and box-plate, a sand-tight box, as a bearing for the mould-board shaft, substantially as described.

4.—In combination with a revolving mould-board, a scraper *g* attached to the box-plate, so as to be adjustable with it, substantially as described.

No. 101,522.—JOHN SCHROEFFEL and WILLIAM DELL, ALLEGHENY CITY, PA.—*Harrows and Earth Cutters*.—April 5, 1870.

Claim.—One or more series of cutting wheels *d*, each series being mounted on a shaft in a frame, in combination with a rocking harrow, *b*, substantially as described.

No. 101,549.—AUGUSTIN L. TAVEAU, CHAFFICO, MO.—*Revolving Sulky Harrows and Sowers Combined*.—April 5, 1870.

Claim.—The construction and arrangement of the cylindrical harrow M, sockets *h*, teeth *g*, braces *r*, and socket-ribs *n*, constructed and operating as and for the purpose herein set forth and described.

No. 105,446.—JOSEPH S. GODFREY, LESLIE, MICH., assignor to himself and SEARS M. LOVERIDGE, PITTSBURG, PA.—*Ploughs*.—July 19, 1870.

Claim.—The arrangement, substantially as described, of a concave-faced revolving disk mould-board, in connection with a plough, whereby it shall be caused to rotate by action of the mould from the furrow, without coming in contact with the bottom of the furrow, and without the necessary use of other appliances to impart to it a rotary motion.

No. 105,460.—MOSES JOHNSON, THREE RIVERS, MICH.—*Cultivators*.—July 19, 1870.

Claim.—The cultivator herein described, having cross-bar C, staples D, disk E, scrapers *a* and II, brace K, draw-bar N, and auxiliary handle P, when constructed and arranged to operate as and for the purposes specified, as an improvement upon my patent of August 3, 1869.

No. 106,118.—ERASTUS T. BUSSELL, INDIANAPOLIS, IND., assignor to himself and JOHN N. GREENE, same place, assignors for one-third their right to J. M. TILFORD, same place.—*Cultivators or Harrows*.—August 9, 1870.

Claim.—A cultivator or harrow, composed of the wave-sided frame A, disks B B and C, the toggle E, and handle P, in connection with ratchet-bar K, arranged, combined, and co-operating in the manner described, and for the purposes set forth.

No. 107,287.—JOHN W. PENCE, CLAYTON, OHIO.—*Earth Pulverizers*.—September 13, 1870.

Claim.—The arrangement of the boxes G, screw-rods H, and nuts I, with the shafts E, cutters F, and frame A C, substantially as shown and described.

No. 107,777.—LOUIS HOMRIGHOUSE, BALTIMORE, OHIO.—*Cultivators*.—September 27, 1870.

Claim.—An enlarged bearing-wheel, H, combined with the draft-beam A of a cultivator-plough, about midway of its length, to carry and support the machine, all substantially as herein described.

No. 108,712.—WILLIAM LESLIE, FORT MADISON, IOWA.—*Combinal Stalk and Wood-Cutters and Land-Rollers*.—October 25, 1870.—Ante dated October 15, 1870.

Claim.—1.—The frame, formed of the side-beams A A, centre-beam A', bars C C, cross-bars B B, and platform D, all constructed and arranged substantially as shown and described.

2.—The runners I I and I', connected by the cross-bar J, in combination with the screw-rods K K, substantially as and for the purposes herein set forth.

3.—The arrangement with the frame constructed as herein described, and provided with the runners I I and I', bar J, and screw-rods K K, rod O and coulters M M, all constructed to operate substantially as set forth.

4.—The arrangement, upon the rear part of the frame as constructed, of the two shafts E E, provided with circular cutters G G, and box H, said shafts being removable, as set forth.

No. 112,333.—JOSEPH S. GODFREY, LESLIE, MICH., assignor to himself and SEARS M. LOVERIDGE, PITTSBURG, PA.—*Attachment for Revolving Mould-Boards for Ploughs*.—March 7, 1871.

Claim.—1.—The arrangement of the standard *d*, shank *e'*, and eye *e* with the box *n* and mould-board *m*, with suitable connections to the plough-beam, substantially as set forth.

2.—The arrangement of the hollow standard *d* to admit the shank *e'*, with eye *e*, shank *a'*, and plough-beam *b*, substantially as described.

No. 113,760.—JOSEPH S. GODFREY, ROCHESTER, assignor to himself and SEARS M. LOVERIDGE, PITTSBURG, PA.—*Revolving Mould-Boards for Ploughs*.—April 18, 1871.

Claim.—A revolving, flat, plain-faced, circular disk mould-board, arranged in connection with and with reference to the lower level of the point and shin-piece, substantially as described.

No. 114,002.—JOSEPH S. GODFREY, ROCHESTER, assignor to himself and SEARS & LOVERIDGE, PHILADELPHIA, PA.—Attachment of Revolving Mould Boards to Ploughs.—April 25, 1874.

Claim.—1.—A circular rotating scraper, combined with a revolving mould board, substantially as described.

2.—A bent spindle, capable of both lateral and rotary adjustment, as a carrier for a revolving mould-board, and in combination therewith, substantially as described.

3.—The saddle-piece *c*, in combination with the slotted post *d'* and fastening-eye *e*, as a means of adjusting vertically the spindle *a* and mould-board *m*, substantially as described.

No. 114,088.—SHERMAN E. ANTHONY, STILLWATER, N. Y.—Potato Diggers.—April 25, 1874.

Claim.—1.—The combination of the tined disk *t u*, shaft *h*, journal-bearings *l h*, bevel-pinion *n*, bevel gear *E*, axle *B*, and frame *A*, when all said parts are arranged as shown and described.

2.—The disk *t*, provided with the teeth *u*, and combined with the shaft *h* and frame *F* in the manner described, and for the purpose of enabling the shaft *h* to be set at angle with the side pieces of the frame.

No. 114,707.—JOSEPH F. FOND, CLEVELAND, OHIO.—Revolving-Disk-Harrow.—May 9, 1874.

Claim.—1.—The semicircular bar *B*, to which shanks or pole may be attached, in combination with the disk-bars *A* and bar *C*, or its equivalent, to admit of the described adjustment, substantially as set forth.

2.—The disk *V*, in combination with hub *P*, box *R*, and axle *U*, when placed or running obliquely to the line of motion.

3.—In combination with disk *V*, hub *P*, box *R*, axle *U*, the yielding-washer *c*, friction-washer *h*, and picking, substantially as and for the purpose set forth.

No. 115,077.—BENJAMIN C. HOYT, FORT ATKINSON, WIS.—Rolling-Plough.—May 23, 1874.

Claim.—1.—The single pivoted lever *D*, slotted disk *A*, and wheel *G*, all combined as described, for the purpose specified.

2.—The bracket *K*, hub *H*, and shaft *B*, all combined as described, for the purpose specified.

No. 116,748.—JOSIAH POOL, RIO VISTA, CAL.—Rotary Soil-Cutters.—July 4, 1874.

Claim.—In a soil-cutter provided with a series of rotating disks, the series of beams *A* having curved bearing surface, as and for the purpose described.

No. 117,485.—ADOLPHE TOURNIER, BARNVILLE, N. Y.—Garden-Tools for trimming Soil.—July 25, 1874.

Claim.—The gardener's tool, composed of frame *A* with box *H* attached, shaft *B* with cutter *F* and guide-roller *O*, an *I* provided with the auxiliary rollers *J* on arms *K K*, the whole to be used by hand for the purpose of trimming the outside edges of soil, or of the lawn as specified.

No. 118,749.—JOHN SCHLOSSER, PRAGA, OHIO.—Clod-Crusher.—September 5, 1874.

Claim.—The combination and arrangement, in a clod-crusher, of the frame *A*, tongue *B*, hangers *C*, cutters *E E'* shafts or axles *D D'*, and arms *h h*, all as herein shown and described, for the purpose specified.

No. 118,758.—ISAAC P. TICE, NEW YORK, N. Y.—Ploughs.—September 5, 1874. Antedated August 21, 1874.

Claim.—1.—A series of parallel disks, *b*, having a distance of from three to twelve inches from each other and projecting from the face of the roller about the same distance, more or less according to the nature of the soil and the work to be done, as and for the purpose specified.

2.—The scrapers *D*, when made to fit the spaces between the flanges *b*, and held in contact with the face of the roller by a spring, *d*, or equivalent, as specified.

3.—The adjustability of the scraper *D* from *c* to *c'*, as and for the purpose specified.

No. 118,951.—FRANK A. LEONHARD, COLUMBIA, TENN.—Cotton-Choppers, Scrapers and Cultivators.—September 12, 1874.

Claim.—1.—The arrangement of the rollers *I* and scraper *J*, in connection with the arms *F*, whereby they are adapted to oscillate, as shown and described.

2.—The arrangement of the two sets of rollers *I* and

scrapers *J* and the vibrating chopper *S* in connection with the pivoted frame *F*, as shown and described.

No. 120,440.—JAMES LEFFEBER & GEORGE W. SHELLES, COLUMBIA CITY, IND.—Earth Pulverizers and Harrows.—October 31, 1874. Antedated October 21, 1874.

Claim.—1.—The two sets of star wheels *A B*, having straight blades, with their broad ends spread out in planes at right angles to each other, for the purpose specified.

2.—In combination with a set of star-wheel pulverizers, *A*, the rod *H* and lever *I*, arranged on the frame, as and for the purpose specified.

No. 121,021.—COLIN THARP AND GEORGE P. THARP.—BRYAN, OHIO.—Harrows.—November 14, 1874.

Claim.—1.—The teeth *D' D' D'* attached to bars *D D D* in combination with the rocking-bars *E E'*, connected together by suitable means, and operated by the mechanism *F F'*, as and for the purpose described.

2.—The improved harrow herein described and shown, consisting of the platform *A a a*, knives *G G'*, trucks *l l*, and the mechanism *E E' F F'* for operating the bars *D D D*, all in combination substantially as shown and described.

No. 124,585.—MOSES JOHNSON, THREE RIVERS, MICH.—Potato Diggers.—March 17, 1872.

Claim.—1.—In a potato-digger the combination of a plough with the pivoted converging lateral bars *E*, and the inclined separating wheels *G* journaled therein, substantially as specified.

2.—The combination of the centre-beam *A*, plough *C*, lateral beam *E*, draw-braces *D*, rear arch *F*, and inclined wheels *G*, substantially as specified.

3.—The combination with the plough-beam *A*, of the lateral beams *E*, and the oblique draw-braces *D*, pivoted at both ends, substantially as specified.

No. 125,684.—GEORGE E. HUTCHINSON, CLEVELAND, OHIO.—Cultivators.—April 16, 1872.

Claim.—The pivoted plate *E*, having slots *ee* and lugs *ff*, the plate *D*, nuts and bolts *g*, and casting *H*, in combination with the tongue *G* and harrow frame *A B C*, all substantially as herein described, for the purpose specified.

No. 127,677.—ERASTUS T. BUSSELL, assignor to WILLIAM M. BUSSELL, INDIANAPOLIS, IND.—Disks for Agricultural Implements.—June 11, 1872. Antedated May 25, 1872.

Claim.—1.—The disk *L*, composed of the metallic hub *A* and the narrow metallic continuous rim *B*, secured to the end of the light metallic spokes *C*, at a lateral angle of from five to fifteen degrees to the line of the spokes *C*, and beveled from its inner to its outer edge to form a cutting periphery, for the purpose hereinbefore set forth.

2.—The right-angled adjustable bracket *D*, having its horizontal face *E* serrated or roughened and provided with the slot *F*, and its perpendicular face *G* provided with the axes *H*, in combination with a cultivator-disk having a cutting periphery, for the purpose hereinbefore set forth.

No. 128,688.—ERASTUS T. BUSSELL, assignor to WILLIAM M. BUSSELL, INDIANAPOLIS, IND.—Ploughs.—July 2, 1872. Antedated June 15, 1872.

Claim.—1.—A revolving disk, *A*, composed of the metallic zone *C*, connected with a hub by radial spokes, and provided with a series of ribs or flanges, *B*, each of which extended across the inner face of the zone *C* in the direction of a cycloidal curve, for the purpose hereinbefore set forth.

2.—The roller-wheel *J* provided with the vertical flange *K* and supported in bearings in the adjustable bifurcated bracket *L*, the traction-arm *M*, the vibrating lateral pressure-rod *N*, and the tiller *O* provided with the rods *Q*, all arranged relatively one to the other, in combination with the plough-frame, as described.

No. 129,712.—ERASTUS T. BUSSELL, INDIANAPOLIS, IND.—Cultivators.—July 23, 1872. Antedated June 15, 1872.

Claim.—1.—A plain disk, *A*, and either a concavo-convex disk, *C'* or a disk, *C*, connected by a bar, *B*, provided with a stud, *D*, having sockets *h i j*, substantially as and for the purpose hereinbefore specified.

2.—The handle *F*, having shanks *E* and *G* and a vine-guard, *N*, in combination with a plain disk, *A*, and either a concavo-convex disk, *C'*, or a disk, *C*, connected by a bar,

B, having a staff, D, provided with sockets $\frac{3}{4}$ $\frac{1}{2}$, as and for the purpose hereinbefore specified.

No. 130,125.—BENJAMIN F. GREEN, SYRACUS, N. Y.—*Potato-Disks*.—*August 6, 1872*.

Diggers constructed of circular forks, mounted on sleds or frame-work; the circular forks suspended obliquely to the line of motion, and rotate when brought in contact with the earth.

Claim.—The rotary forks, composed of a center piece and radial tines, in combination with a sled or frame and adjusting layers of shafts, arranged to move the forks both laterally and vertically, all operating substantially as herein described.

No. 132,364.—MOSES JOHNSON, THREE RIVERS, MO. Assignor to one-half his share to EDWIN LANTY, same place.—*Potato Disks*.—*October 22, 1872*.

The machine is in two sections, the forward wider than the rear one. The forward shares turn a furrow outwardly from each side of the row into separating wheels, and the rear portion, having a double share, turns the hills of potatoes both ways into like separating wheels, which separate the potatoes from the soil.

Claim.—The potato-leger, constructed in two separate sections, A A', the former provided with the single-winged ploughs D and sifting wheels C, and latter provided with the double-winged plough D' and sifting wheels C', substantially as specified.

No. 137,020.—SHAS G. RANDALL, PROVIDENCE, R. I. Assignor to AMELIA A. RANDALL, same place.—*Sowing Machine*.—*May 18, 1873*.

Claim.—The combination of the seed box and the seed controlling apparatus with the axle bars B and B', each of which is provided with the series of plate-wheels and is pivoted to the top plate, substantially as described, by means of which the machine may be adjusted so as to cover the seed as it dropped with much or little earth, as may be required.

2.—In combination with a seeding-box and distributing device operated by axles which are adjustable at various angles the universal-joint coupling, H, F, as and for the purposes specified.

No. 6,053.—SHAS G. RANDALL, PROVIDENCE, R. I. Assignor to A. A. RANDALL, same place.—*Sowing Machine*.—137,020, *May 18, 1873*. Re-issued *September 15, 1874*. [Filed *May 6, 1874*].

Claim.—The combination with the main frame, of the independent disk frames, arranged in different vertical planes relatively to each other, and with their adjacent inner ends overlapping, and lying one behind the other, substantially as hereinbefore set forth.

2.—The combination of the main frame, the two disk-frames connected therewith in different vertical planes, with their adjacent ends lying one behind the other, a series of disks arranged in two independent sets, and an axle mounted on each disk-frame, on which axle each disk of the set is loosely mounted, substantially as hereinbefore set forth.

3.—The combination substantially as set forth, of a gang of disks, a disk frame in which they are mounted, and a main frame, near the outer end of which the outer end of the disk frame is pivoted, while its inner end is connected with the central portion of the main frame.

4.—The combination substantially as hereinbefore set forth, of the main frame, the adjustable-tongue and the disk-frames, adjustable not longitudinally, as well as angularly, relatively to each other at their inner ends.

5.—The combination of the seed-controlling apparatus with one of the disk-gangs by means of a universal-joint connection, whereby the seeding mechanism is driven by the disk-wheels.

6.—The combination of the disk-shaft, disks mounted thereon, thimbles interposed between the disks and clamps, these members being constructed and operating, substantially as set forth to hold the disks securely, and yet admit of their being readily removed and replaced.

7.—The combination of the disks and the forked pivoted scrapers overlapping the disks.

No. 140,682.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Combined Wheel Harrows and Seeders*.—*Jan. 24, 1873*. [Application filed *April 6, 1873*].

Concave disk-harrows have their adjustable frames made self-bracing to the main frame that carries the seed-box. The seed-slide is operated by a crank on one of the disks.

Claim.—1.—The main frame composed of the longitudinal bars A and oblique transverse bars A', in combination with the adjustable gang-bars C C', arranged to brace the frame, substantially as and for the purpose set forth.

2.—The seed distributor or agitator of a combined seeding machine and wheel-harrow, connected with and operated by a crank on the shaft of one of the wheel gangs through an adjustable pitman arranged at right angles to said shaft, substantially as and for the purposes set forth.

3.—The construction of the pitman-connection, of the seed-distributor and harrow wheel shaft, and of the parts I P P', to permit the adjustment of its length and angle, as described.

4.—The spools or thimbles L provided with notched or perforated hubs, or bosses, or pins for securing the harrow-wheels and causing their uniform rotation, substantially as described.

No. 144,433.—JEROME BLANCHARD EAST SAGINAW, MICH. Assignor of one half his right to H. WALLACE CARTER, same place.—*Ploughs*.—*November 11, 1873*. [Application filed *April 5, 1873*].

Claim.—The two sets of skeleton wheels A B, forming the entire mold-board, and used in connection with the bar D, all constructed and arranged as shown, and for the purpose specified.

No. 140,224.—EDWIN BAYLISS, MASSILLON, OHIO.—*Wheel Harrows*.—*January 6, 1874*. [Application filed *September 17, 1873*].

The disk-gangs have both a horizontal and vertical movement, chains or stops limiting the vertical motion. The disks are made adjustably axially to counteract any imperfection in shape and produce a true rotation.

Claim.—1.—The adjustable wheel or disk gangs D, and also the transverse frame bar A by a vertical pivot, and united by a horizontal pivot, whereby the angle of said wheel-gangs can be adjusted as described, while at the same time they are free to conform to the uneven surface of the ground, independently of the main frame and of each other, all combined substantially as described.

2.—The combination of the wheel-gangs D, connected with the main frame A by vertical pivots, as described, with the tongue C and adjustable draft rods F, substantially as and for the purpose set forth.

3.—The adjustable wheel-gangs D, united to the frame-bar by a horizontal pivot, as described, in combination with chains or stops for limiting the vibrations of said gangs on said horizontal pivot, as set forth.

4.—The harrow disk H, provided with the polygonal sockets, or an equivalent device, for permitting their adjustment, in combination with the ferrule K, constructed substantially as and for the purpose described.

No. 8,147.—EDWIN BAYLISS, MASSILLON, OHIO.—*Wheel Harrows*.—140,224, *January 6, 1874*. Re-issued *April 2, 1878*. [Filed *March 18, 1878*].

Claim.—1.—The combination, substantially as hereinbefore set forth, of a main frame (or main transverse bar) and wheel or disk gangs connected therewith by interposed swiveling hinge-connections, which permit the gangs to vibrate freely relatively to the main frame to conform to uneven surfaces over which they pass.

2.—The combination, substantially as hereinbefore set forth, of a main frame (or main transverse bar) a tongue connected therewith, wheel or disk gangs, united with the main frame by interposed swiveling hinge-connections, and an adjustable connection between the tongue and wheel or disk gangs, whereby the angle of the gangs relatively to the line of draft may be varied without interfering with their vibrations on their hinge-connections.

3.—The combination, substantially as hereinbefore set forth, of a main frame (or main transverse bar) wheel or disk gangs connected with the main frame by interposed swiveling hinge-connections, and chains or stops, for limiting the vibrations of the gangs relatively to the main frame.

4.—The combination, substantially as hereinbefore set forth, of a main frame (or main transverse bar) a tongue connected therewith, a driver's seat, wheel or disk gangs

connected with the main frame by interposed swiveling hinge-connections, and adjustable connections between the gangs and tongue, to adjust the angles of the disks relatively to the line of draft, and to limit their vibrations relatively to the main frame.

5.—Harrow-disks provided with polygonal sockets, or an equivalent adjusting device, in combination with the spacing ferrule constructed with projections interlocking with the disk-sockets, substantially as shown, and for the purposes described.

6.—The combination, substantially as hereinbefore set forth, of gang-bars, hangers having bearings enlarged at one end to constitute lubricating-chambers, friction-washers inclosed in said lubricating-chambers, and distal end spindles inclined to the line of draft, whereby wear of the spindles is prevented and lubrication insured.

No. 149,008.—MOSES JOHNSON, THREE RIVERS, MICH.—*Potato Diggers*.—January 27, 1874. [Filed January 10, 1874.]

The beam is made of iron, the rear part forming nearly three-quarters of a circle, with a lug *F* securing the handles. The circle terminates in a straight arm projecting forward and downward, at an angle of about twenty degrees, more or less, and to which the digging-share is attached. The share is pointed, elevated in the longitudinal centre line, and each wing provided with a separating-wheel with curved arms, and which are rotated by frictional contact with the ground.

Claim.—The potato-digger consisting of the draft beam having the extensions *b* and *d*, the angular ridged shovel *D*, having the corner notches *E*, the journal-arms *G*, and the inclined sifting-wheels having the peripheral fingers *c*, all arranged substantially as specified.

No. 151,192.—A MERRITT ASAY and JOHN W. WOOD, PHILADELPHIA, PA.—*Corn Planters and Fertilizer Distributors*.—May 26, 1874. [Filed December 30, 1873.]

Claim.—The combination of the disk-wheels *c c c*, adjustably mounted and arranged in their frames, as shown and described, the pivoted bar *O*, and the furrow-opening plough *P*, mounted just in advance of where the corn and fertilizer are dropped, as co-operating devices for placing the plantings properly under the surface, substantially as set forth.

No. 153,311.—ALEXANDER JACKSON and RICHARD IRWIN, MORTONSVILLE, IND.—*Levelers, Pulverizers and Corn Planters*.—September 22, 1874. [Filed July 3, 1874.]

Claim.—1.—The combination of leveling-beams *a a a a*, arranged, as shown, to rest upon the ground, axles or shafts *b b*, and a series of cutting-wheels *c c c*, substantially as and for the purpose described.

2.—The combination of leveler and pulverizer *A*, consisting of beams *a a a a*, shafts *b b*, and cutting-wheels *c c c*, with the corn planter *E*, flexibly attached thereto, substantially as shown and described.

No. 155,420.—ASA CANTERBURY, GIBSON CITY, ILL.—*Seed and Grain Drills*.—September 29, 1874. [Filed July 3, 1874.]

Claim.—The combination, in a seeder, with sharp, deeply furrowing-wheels *B*, curved spouts *D*, to drill the grain, reversely curved spouts *D*, to drill the grass seed on the nearly-filled furrow, and small blunt wheels *B'* that press the pulverized soil to and shallowly over the grass seed, all constructed and arranged substantially as and for the purpose specified.

No. 155,975.—K. B. REDFIELD, HARRISVILLE, OHIO.—*Cold Crushers*.—October 13, 1874. [Filed August 28, 1874.]

A gang of cutting-disks in front; several series of transverse oblique crushing bars; cutters fixed to the transverse bars.

Claim.—The combination of the revolving cutters *I*, stationary cutters *F*, and members *A B C*, arranged obliquely in relation to each other, in the manner substantially as described, and for the purpose specified.

No. 160,129.—ANGELINE UNDERWOOD, CARROLLTON, ILL.—*Land Pulverizers*.—February 23, 1875.—[Filed November 30, 1874.]

The pulverizing devices consist of a series of disks placed upon a shaft near together, and having cleaning-fingers between them. Two of these are mounted in rectangular frames, and placed end to end, each being journaled upon the end of a bent rod, which constitutes the hounds of the tongue.

Claim.—1.—In a land-pulverizing machine, the combination, with the pivoted oscillating frames *A A*, having friction-rollers *H*, of the bar *G*, having bearing-plates *g' g'*, as and for the purpose specified.

2.—The bent or V shaped rods *J*, connected to the pole *L* and bar *K* to form hounds or braces, and extended rearward through the castings *I* and front bar of the oscillating frames *A* to form the pivots or journals thereof, as shown and described.

No. 161,060.—S. G. RANDALL, GREENE, N. Y.—*Disk Harrow-Cultivators*.—March 23, 1875. [Filed February 20, 1875.]

Two revolving shafts are secured to the under side of a frame, in a position oblique to the line of draft. Upon these shafts are secured a series of disks, with their faces looking inward and forward. A space is left between the inner disks of each series, and between and forward of these is placed a pair of disks, the faces of which look forward and outward. The soil is thrown outward by the two inner disks, and inward by the others of the series.

Claim.—In a disk-cultivator, the combination, substantially as hereinbefore set forth, of a frame, two series of revolving disks arranged diagonally to the line of draft, with their axes inclined thereto, and leading disks interposed between the two series, and arranged to throw the earth in the opposite direction therefrom.

No. 163,527.—SILAS G. RANDALL, GREENE, N. Y.—*Disk-Harrows*.—May 18, 1875. [Filed March 17, 1875.]

The concave disks for each series are mounted upon a hollow shaft, which is hung upon short journals projecting inward from the hangers. A small rod with a head on one end, and a screw-nut or pin on the other, passes through both journals and the hollow shaft, to prevent the hangers from spreading.

Claim.—The combination of the hangers, having the lateral journals *a*, with the tubular axle mounted on said journals, and the shaft *G*, passing through the axle and connecting the hangers together, substantially as and for the purpose described.

No. 165,108.—JOHN MASTERN, WEST ALEXANDRIA, OHIO.—*Harrows*.—June 29, 1875. [Filed April 17, 1875.]

Claim.—1.—In combination with the outer coulters *I* and *J* of each section, the cutters *O O*, adapted to be secured at their ends to said coulters, and having their cutting-edges upon a line with the peripheries of the same, substantially as and for the purpose shown.

2.—In combination with the main frame of the harrow, the check row markers *N* and *N'*, pivoted to or upon the rear side of said frame, and capable of being brought into or removed from contact with the ground, substantially as and for the purpose set forth.

No. 169,134.—SAMUEL BEAN, CLINTON VALLEY, OHIO.—*Corn-Stalk Cutters*.—October 26, 1875. [Filed March 27, 1875.]

Claim.—In a corn-stalk cutter, the series of serrated and flanged sleeves *J*, and the flanged huls *H*, applied on each end of the axle *G*, in combination with circular cutters *a*, secured substantially as described, and for the purpose set forth.

No. 169,490.—JOHN K. UNDERWOOD, SAUK CENTRE, MINN.—*Rotary Gang-Ploughs*.—November 2, 1875. [Filed July 31, 1875.]

Claim.—1.—The frame *A C*, having two sets of axles, *D R*, hook-bolts *U*, standard *M*, and keepers *K*, adapted to receive rotary ploughs or cultivators, in the manner described.

2.—The combination, with rotary ploughs *H*, of beams *I*, pivoted upon the frame at *J*, and swinging in keepers *K*, the forked lever *L*, the bars *O*, standard *M*, and pin *N*, as and for the purpose specified.

No. 7,865.—J. K. UNDERWOOD, ANOKA, MINN.—*Rotary Gang Ploughs*.—160,499, November 2, 1875.—Re-issued August 28, 1877.—[Filed July 24, 1877.]

A pair of truck-wheels support, in an adjustable manner, a gang of disk-wheel ploughs having straight, smooth, flaring rims, standing at an angle of about forty-five degrees from a vertical plane. The rims are held by arms radiating obliquely from a central hub. A modification is shown and described in which the disks are adjustably mounted in pairs facing inward, thus making a straddle row cultivator.

Claim.—1.—In a rotary ploughing-machine, carried on truck-wheels, the rotary ploughing-wheels H H, with flaring rims, having sharp, smooth, and perfectly circular peripheries, mounted on truck-wheels, and working in planes diagonal to the line of draft, substantially as described.

2.—The rotary ploughing wheels O O P P, arranged in pairs upon a frame mounted upon truck-wheels B B, and the wheels in each pair diverging from each other from the ground upward, substantially as shown and described.

3.—The combination of the frame A, truck-wheels B B, hook-bolts U, lever V, standard M, and wheels O O P P, combined and arranged to operate substantially as described.

4.—The combination of the rotary ploughing-wheels H, pivoted beams I, keepers K, lever L, and standard M, all mounted on truck-wheels B B, and combined and arranged to operate substantially as described.

5.—In combination with the truck-wheels B B, frame A, and ploughing-wheels H H, set diagonally to the line of draft, the caster-wheel F, with its flange f, all arranged to operate substantially as described.

6.—The combination of the frame A C, having two sets of axles, D Q, hook-bolts U, standard M, and keepers K, adapted to receive rotary ploughs or cultivators, in the manner described.

7.—The combination, with rotary ploughs H, of beams I, pivoted upon the frame at J, and swinging in keepers K, the forked lever L, bars o, standard M, and pin N, as and for the purpose specified.

No. 171,092.—F. BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrows*.—December 14, 1875.—[Filed October 6, 1875.]

A series of disks placed in gangs upon two shafts, each gang facing in opposite directions to prevent side draft. A series of cleaners attached to a single bar for each gang, and arranged to operate simultaneously by a lever.

Claim.—In combination with a gang or series of rotating harrow-disks, the cleaners or scrapers united to a reciprocating bar, adapting them to be operated simultaneously by means of a lever, substantially as and for the purpose set forth.

No.—8,299.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrows*.—171,092, December 14, 1875.—Re-issued June 25, 1878.—[Filed June 10, 1878.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of a series of gang of harrow-disks having concave faces or sides with a series of scrapers or cleaners adapted to be vibrated or moved close to or in contact with said concave sides and removed therefrom while the machine is in motion.

2.—The combination, substantially as hereinbefore set forth, of a series of rotating concavo-convex harrow-disks, a series of pivoted, rocking, or adjustable cleaners or scrapers, connected together, and a lever pivoted on the gang frame, whereby the scrapers may be caused simultaneously to approach or recede from the concave faces of the disks.

3.—In combination with a gang or series of rotating harrow-disks, the cleaners or scrapers united to a reciprocating bar, adapting them to be operated simultaneously by means of a lever, substantially as and for the purposes set forth.

4.—The combination, substantially as hereinbefore set forth, of a draft frame, a gang or series of rotating harrow-disks connected therewith, a series of scrapers united to a bar mounted upon the gang bar or disk frame and adapted to vibrate in contact with or close to the sides of the disks, and a lever pivoted upon said gang-bar, extending to within reach of the driver while in his seat on the machine, whereby the scrapers may simultaneously be caused to clear the sides of the disks, and then removed therefrom when the

disks are free and clear, to prevent clogging by accumulation on the scrapers.

No. 174,767.—FRANK BRAMER, LITTLE FALLS, N. Y., and O. W. BADGER, WHITNEY'S POINT, N. Y.; said BADGER assignor to said BRAMER.—*Wheel-Harrows*.—March 14, 1876.—[Filed February 4, 1876.]

Upon each side of the tongue is hinged a triangular frame, the forward beam of which carries a gang of disk-teeth, whose axis of rotation is placed oblique to the line of draft. A seat for the operator is mounted upon a spring-bar, whose ends rest in stirrups that are supported in brackets rising from the rear beam of the triangular frame.

Claim.—1.—The wheel-gang frames or planks, hinged by their inner ends to the intermediate pole or tongue, or a rigid extension thereof, substantially as described.

2.—The gang-wheel frames, hinged to the intermediate pole or pole-frame, in combination with the seat-support extending transversely over said pole or frame, and connected with the gang-frames at points outside of the centres of their transverse length, for the purpose and substantially as described.

3.—The transverse seat-support or bar connected with the gang frames by means of the swinging compensating links or stirrups, substantially as described.

4.—The combination, with the hinged wheel-gang frames of the swivelling supports E, stirrups f, and transverse seat-support or bar G, arranged and operating substantially as described.

5.—The combination of the hinged gang-frames A A', intermediate pole or pole-frame B, swiveling standards E, swinging stirrups f, and seat spring or bar G, all arranged and operating as described.

No. 8,850.—FRANK BRAMER, LITTLE FALLS, and ORRIN W. BADGER, WHITNEY'S POINT, N. Y., said BADGER assignor to said BRAMER.—*Wheel-Harrows*.—174,767, March 14, 1876.—Re-issued February 12, 1878.—[Filed January 25, 1878.]

Claim.—1.—Wheel-gangs hinged by their inner ends to an intermediate pole or tongue, or to an extension thereof, substantially as hereinbefore set forth, whereby they are enabled freely to conform to the surface over which they travel.

2.—The combination, substantially as hereinbefore set forth, of independent wheel-gangs with an intermediate pole or pole-frame, to which they are hinged at two points, whereby they are braced against transverse strains, as well as allowed freely to conform to undulations of the surface over which they travel.

3.—The combination, substantially as hereinbefore set forth, of wheel gangs, an intermediate pole or pole-frame, to which their inner ends are directly hinged, and a transverse seat-support connected with the outer ends of the gang-frames, whereby the weight of the driver keeps the gangs down to their work without interfering with their vibrations on their hinges.

4.—A transverse seat-support connected with independently-hinged wheel-gangs by means of swinging compensating links or stirrups, substantially as hereinbefore set forth, whereby the vertical movements of the gangs are limited.

5.—The combination, substantially as hereinbefore set forth, of hinged wheel-gangs, swiveling socket-pieces mounted on the gang-frames, and a transverse seat-support pivoted to stirrups in the socket pieces, whereby both the vertical movements and angular adjustments of the wheel-gangs are compensated.

6.—The wheel-harrow hereinbefore described, consisting of the combination of wheel-gangs hinged to an intermediate pole or pole frame, swiveling socket-pieces mounted on the gang pieces, planks, or frames, swinging stirrups pivoted in said socket-pieces, and a transverse seat-support pivoted to the stirrups, substantially as hereinbefore set forth.

No. 177,668.—JOHN K. UNDERWOOD, SAUK CENTRE, MINN.—*Rotary Ploughs*.—May 23, 1876.—[Filed March 13, 1876.]

The shape and arrangement of the frame, the hanging, and means for elevating the disk ploughs.

Claim.—1.—In combination, in a rotary gang plough, the bent horizontal arm E, rigidly attached at its forward end

to the truck, the diagonal brace F attached to the rear part of the arm F, and to the forward part of the implement, the bent vertical part of the said brace forming the plough-beam guards or keepers, and the pivoted and diagonally arranged plough beam, having its free end arranged in the said keepers, substantially as and for the purposes specified.

2.—The combination of the bent arm E, pivoted plough-beam I, beam guide F, lever H, ratchet G, pawl *a*, piece *a'*, connecting cord *b*, and dish shaped plough-wheels J, set diagonally to the line of draft, all arranged substantially as described, in a rotary gang-plough, for the purpose set forth.

3.—The combination of the plough-beam I, having a broad or flat central part, the separate axles *c c*, elongated loops *d d*, nuts *e e*, and wheels J, journaled adjustably on the single beam, all substantially as and for the purposes specified.

No. 170,122.—ASA T. MARTIN, JR., BUTLER COUNTY, IOWA.—*Plough Shields and Cleaners*.—June 27, 1876. [Filed August 13, 1875.]

A revolving fender, concave and with serrated edges, attached to an arm or shic, which gravitates in the lox clamp attached to the plough beam.

Claim.—As a fender attachment for ploughs, the combination of the gravitating toothed wheel A, hub B, stud *b*, slide C, and stirrup D, with guide *d*, all constructed substantially as and for the purposes herein set forth.

No. 185,001.—W. J. ATCHISON, ZIONSVILLE, IND., assignor of one-half of his right to JNO. J. ATCHISON, same place.—*Revolving Harrows and Cultivators*.—December 5, 1876. [Filed October 27, 1876.]

A series of star-wheels are arranged in a frame, the arms of which interlock. On alternate sides of each arm, at varying distances, are projections, which penetrate and pulverize the soil.

Claim.—The star wheel B having radiating arms C and the sharp angular projections *a* upon either side of the wheel or arms, as and for the purpose set forth.

No. 185,209.—F. BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrows*.—December 12, 1876. [Filed June 14, 1876.]

Claim.—In a wheel-harrow, the reversely-acting wheel-gangs arranged one in rear of the other, and in the same, or nearly the same, longitudinal line, substantially as and for the purpose described.

No. 186,634.—GEO. STEVENSON, ZIONSVILLE, IND.—*Revolving Cultivators*.—January 23, 1877. [Filed December 11, 1876.]

Claim.—In a revolving cultivator or earth pulverizer the star-wheel G, having each of its arms provided with straight cutting-edge *a*, and inclined side cutters D D, set at an angle of about forty-five degrees, and in circular form, substantially as and for the purposes herein set forth.

No. 187,302.—C. LA DOW, ALBANY, N. Y.—*Harrows-Cultivators*.—February 13, 1877. [Filed December 13, 1876.]

A series of disk-wheels are mounted upon axles connected at their inner ends by a universal joint. The draft-bars are connected to the axle by universal joints. The wheel-gangs are adjustable relatively to the line of draft.

Claim.—1.—In a harrow-cultivator, the disk-gangs, connected at their inner ends by a universal joint, as herein described.

2.—The combination, in a harrow-cultivator, of two disk-shafts, connected at their inner ends by a universal joint, and adjustable relatively to the line of draft.

3.—The combination of the draft-bar G, boxes G', braces J, pole E, and seat I, with the flexibly-jointed axles C C and wheels A of a harrow-cultivator, as and for the purposes herein set forth.

4.—The combination of the draft-bars G G and universal joints G' G' with the axles C C and the centre joint D connecting the axles, and adjustably connected to the rear end of the pole, for the purposes herein set forth.

5.—The combination of the axles C C, universal joints G' G', braces G G, and universal centre joint D, with the pivoted rod *b*, adjustably pivoted stirrup H, pole E, and nut *a*, substantially as and for the purposes herein set forth.

No. 8,159.—CHARLES LA DOW, ALBANY, N. Y.—

—*Harrow Cultivators*.—187,302, February 13, 1877. Re-issued April 6, 1878. [Filed March 22, 1878.]

Claim.—1.—In a harrow-cultivator, the disk-gangs having the inner ends of their axles flexibly connected together.

2.—In a harrow-cultivator, the disk-gangs jointed at their inner ends to allow both vertical and horizontal vibration.

3.—In a harrow-cultivator, the disk-gangs connected at their inner ends by universal joints, substantially as set forth.

4.—In a harrow cultivator, the disk-gangs bearing directly against one another at their inner ends, for the purpose set forth.

5.—In a harrow-cultivator, the disk-gangs having their pivotal bearings directly upon their axles and at points between their ends, for the purpose of preventing bodily end-wise swing of the gangs when vibrating, as set forth.

6.—In a Harrow-cultivator, the disk-gangs doubly pivoted at points between their ends, and having their inner ends flexibly connected, so that opposite ends of both gangs may have corresponding vertical and horizontal vibration, substantially as set forth.

7.—In a harrow-cultivator, the vibratory disk-gangs having the draft devices connected directly to their axles.

8.—In a harrow-cultivator, having gangs of disks mounted on through-axes, a draft tongue connected, by lateral extensions or hounds, directly to said axes, and having vertical vibration independent thereon, substantially as described.

9.—The combination, in a harrow-cultivator, of the adjusting devices, the draft tongue and connections, and the adjustable disk-gangs, whereby the angles of the gangs may be adjusted at will for wide or narrow furrows without disconnecting any of the parts, as herein set forth.

10.—The combination, in a harrow-cultivator, of the disk-gangs, an adjusting-rod, and a pivoted bracket or holder, by which said rod and the disk-gangs may be adjusted, for the purpose set forth.

11.—In a harrow-cultivator, the combination, with the adjustable disk-gangs, of a pair of bars rigidly secured to the draft-pole at their forward ends, and serving both as draw-bars and braces for the disk-gangs.

12.—The combination, in a harrow-cultivator, of the draft devices and vibratory disk-gangs with an intermediate holding-piece, for the purpose of rendering the connection of the gangs rigid at will.

13.—The combination of the draft-bars G G and universal joints G' G' with the axle C C and the centre joint D, connecting the axles, and adjustably connected to the rear end of the draft-pole, for the purposes herein set forth.

14.—The combination of the axles C C, universal joints G' G', braces G G, and universal centre-joint D with the pivoted rod *b*, adjustably pivoted stirrup, H, pole E, and nuts *a*, substantially as set forth.

15.—The combination of the draft-bars G, boxes G', braces J, pole E, and seat I with the flexibly-jointed axles C C and wheels A of a harrow-cultivator.

No. 188,815.—H. W. NICHOLS, NORTHFIELD, IND.—*Cultivators*.—March 27, 1877. [Filed January 20, 1877.]

Claim.—In a revolving cultivator-wheel, the combination of two alternating series of long and short teeth or spokes, substantially as and for the purposes herein set forth.

No. 190,104.—S. G. REYNOLDS, BRISTOL, R. I.—*Ploughs*.—May 15, 1877. [Filed April 19, 1877.]

Two revolving disks for the mould-board and land-side of the plough. Cogs on the inner side of the circumference of the disks engage with each other. Tapering journals project inwardly, and work in tapering sockets, which compensate the wear.

Claim.—1.—In a plough having the two rotary disks, *h h*, the journals *o* made to cross each other, the bearings being cast in one piece, substantially as described.

2.—The two rotary disks *h h*, having their journals *o* arranged to cross each other, one journal being horizontal and the other inclined downward so as to cause the land-side to act in opposition to the mould-board, substantially as set forth.

3.—The concave-disk mould-board *h*, with conical journals *o*, and provided with cogs *o'*, in combination with convex land-side disk *h*, also provided with conical journal, and

with cogs that engage with the cogged mould-board, substantially as set forth.

No. 101,054.—JOHN L. HILL, CHICAGO, ILL.—*Comb-Planters and Grain Drills*.—May 22, 1877. [Filed February 26, 1877.]

Claim.—The combination of the seed-boxes M, the slides Q R, the brushes O, and the springs P, with the recessed hubs of the concave rotary cutters K, and with the beams I J, substantially as herein shown and described.

No. 103,999.—T. SANDERS and L. C. NICHOLS, HAMBURG, IOWA.—*Harrow and Cultivator*.—August 7, 1877. [Filed June 15, 1877.]

The ploughs capable of lateral adjustment, are arranged upon a shaft journaled in the frame near the front end. In the rear of the ploughs are two shafts, with star-wheels arranged alternately thereon, having bearings in the lower ends of levers pivoted to the sides of the frame, and having connection with a lever pivoted upon the frame, by means of which the harrow-wheels may be raised or lowered.

Claim.—1.—The plough G, constructed as described, with the reversed hood c, front cutting-edge d, and curved side flanges E F, substantially as herein set forth.

2.—The star-wheel herein described, constructed in two parts, each part consisting of an elongated hub, J, disk P, and radial arms I, and the two parts locked together by one or more lugs h and corresponding recesses i, substantially as and for the purposes herein set forth.

3.—The combination of the two shafts H H', each with a series of star wheels, as described, the pivoted levers I I', connecting rods k l m n, shaft K, with arms K' K'', the lever L, and ratchet L', substantially as and for the purposes herein set forth.

4.—The combination of the frame A, adjustable up and down on the wheels D D, the adjustable ploughs G, laterally adjustable on the shaft G, the adjustable shafts H H', with bisected star-wheels placed thereon, and the roller R, all constructed substantially as herein set forth.

No. 119,677.—JOHN B. WALL, CARHAGE, MO.—*Combined Harrow, Seed-Planter and Roller*.—September 15, 1877. [Filed February 26, 1877.]

Claim.—1.—The combination of the cutters M, harrow-frame K, drills X, and roller h, substantially as set forth.

2.—The frames K, hinged to the axle N, and provided with the beams U, in combination with the forks W, drills X, and roller h, substantially as set forth.

No. 127,545.—JAY S. CORBIN, GOVERNOR, N. Y.—*Wheel-Harrow*.—November 27, 1877. [Filed May 14, 1877.]

The disk gangs have separate pivotal bearings in hangers firmly bolted on the main frame, and are adjusted in the line of draft by a pawl and ratchet and rods from the inner ends of the gang shafts.

Claim.—1.—The combination, with the main frame, of hangers, rigidly connected thereto, and independent disk-gangs, vibrating upon the hangers, substantially as set forth.

2.—The combination, with the main frame, of hangers B B, rigidly attached thereto, and independent disk-gangs, pivoted to the lower ends of said hangers, and vibrating in both horizontal and vertical planes, substantially as set forth.

3.—In combination with the main frame and the disk-gangs, the hangers B B, provided with the enlarged pivot bearings or seats, and the thimble-bearings b b, provided with pivots, which are supported in said seats, substantially as set forth.

4.—The combination, with a gang of rotating harrow-disks, of a revolving scraper-bar, placed in a different plane from the disk-shaft, to permit the scrapers to enter the concave side of the disks, substantially as described.

5.—The combination, with a gang of rotating harrow-disks, of a lever, connected to the gangs for setting the same, at an angle with the line of draft, substantially as described.

6.—The combination, with a gang of rotating harrow-disks, of a lever for setting the same at an angle with the line of draft, and a rack and dog for holding the disks in position when set, substantially as described.

7.—In a wheel harrow, the disks attached to an axle by means of an irregular hole through the centre of the disk,

which permits it to touch the axle in but two points, and a tapering wedge, the two points and the wedge being equidistant, substantially as described.

8.—The combination, in a wheel-harrow, of independent disk-gangs, a lever G, and connecting rods F F, one or both rods being provided with holes f, whereby the inner end of one disk-gang may be arranged in advance of the inner end of the other disk-gang, substantially as set forth.

9.—The combination, in a wheel-harrow, of the main frame A, hangers B B, thimbles b b, connecting-rods F F, lever G, and scrapers H H, substantially as described.

No. 8,675.—JAY S. CORBIN, GOVERNOR, N. Y.—*Wheel Harrow*.—107,545, November 27, 1877. Re-issued June 24, 1879.—[Filed May 26, 1879.]

Claim.—1.—The combination, with the main frame, of hangers rigidly connected thereto, and independent disk-gangs vibrating upon the hangers, substantially as set forth.

2.—The combination, with the main frame, of hangers B B, rigidly attached thereto, and independent disk-gangs pivoted at the lower ends of said hangers and vibrating in both horizontal and vertical planes, substantially as set forth.

3.—In combination with the main frame and the disk-gangs, the hangers B B, provided with the enlarged pivot bearings or seats, and the thimble-bearings b b, provided with pivots, which are supported in said seats, substantially as set forth.

4.—The combination, with a gang of rotating harrow-disks, of a revolving scraper-bar, placed in a different plane from the disk-shaft to permit the scrapers to enter the concave side of the disks, substantially as described.

5.—The combination, in a wheel-harrow, of the following elements, viz: a draft frame or a draft-plank projecting laterally from the tongue, disk-gangs pivoted to the draft-frame or draft-plank, and a set-lever mounted on the tongue and connected with the disk-gangs between the points at which said gangs are connected with the draft-frame or draft-plank, substantially as set forth.

6.—The combination, substantially as set forth, in a wheel-harrow, of the following elements, viz: a tongue, a draft frame or draft-plank projecting laterally from the tongue, disk-gangs pivoted to the draft-frame or draft-plank, a lever mounted on the tongue, and rods connected with the levers and the metal bearings which support the inner ends of the disk-gangs.

7.—The combination, substantially as set forth, in a wheel harrow, of the following elements, viz: a tongue, a draft plank or draft frame projecting laterally from the tongue, disk-gangs pivoted to the draft-plank or frame, a lever mounted on the tongue connected with the inner end of the disk-gangs, and a rack and dog for holding the disks in proper position when set.

8.—The combination, substantially as set forth, in a wheel-harrow, of the following elements, viz: a tongue, a frame-plank or draft-plank projecting laterally from the tongue, disk-gangs pivoted to the draft frame or plank, a lever connected with the disk-gangs, for setting them at the desired angle to the draft-plank, and levers and scrapers supported upon and adjusted with the disk-gangs.

9.—In a wheel harrow, the disks attached to an axle by means of an irregular hole through the centre of the disks, which permits it to touch the axle in but two points, and a tapering wedge, the two points and the wedge being equidistant, substantially as set forth.

10.—The combination, in a wheel harrow, of independent disk-gangs, a lever, G, and connecting-rods F F, one or both rods being provided with holes f, whereby the inner end of one disk-gang may be arranged in advance of the inner end of the other disk-gang, substantially as set forth.

11.—The combination, in a wheel harrow, of the main frame A, hangers B B, thimbles b b, connecting-rods F F, lever G, and scrapers H H, substantially as described.

No. 200,327.—JOHN MOORE, SALISBURY, MO.—*Sod-Cutters and Cotton Choppers*.—February 12, 1878.—[Filed September 27, 1877.]

Claim.—The combination of the frame A, with clevis B and handles C C, the rotating wheel a D b, the circular cutters G, and the sectional cutters G' G'', all constructed substantially as and for the purposes herein set forth.

No. 200,355.—GEORGE STEVENSON, ZIONSVILLE, IND.—*Patent in 2 Cultivators*.—February 12, 1878.—[Filed July 10, 1877.]

Claim.—The thimbles or tubes *b b*, in combination with the rods *a* and the star-wheels *l*, having hubs *h*, and the frame, whereby the wheels may be adjusted to any desired distance apart in relation to each other, constructed and arranged substantially as and for the purpose set forth.

No. 201,562.—JAMES H. SMITH, MONROVIA, ARK.—*Stalk-Puller*.—March 14, 1878.—[Filed *Id.*, Oct 29, 1877.]

A reel operates near the rear inner edge of the disks to throw off the stalks. The broad surface guides direct the stalks between the disks. The rake serves to gather up the stalks.

Claim.—1.—In a stalk-puller, the disk-shaped and corrugated wheels *C C*, arranged at an angle with the line of motion of the machine, for the purposes herein set forth.

2.—The combination of the wheels *C C*, arranged and operated as described, and the reel *D*, substantially as and for the purposes herein set forth.

3.—The rake composed of the side bars *H H*, pivoted as described, the cross-bar *I*, with blocks *V*, independently-pivoted bars *K K*, and the teeth *L L*, in combination with a stalk pulling mechanism, all constructed substantially as and for the purposes herein set forth.

No. 201,705.—JAY BOSTWICK FISHER, DAVENPORT, IOWA.—*Sully Ploughs*.—March 26, 1878.—[Filed February 2, 1878.]

Attached to the mould-board are two pairs of concave disks, to cover the joint between the furrow, and also to cover the seed-rod. A seed-in device and spur-wheel to operate its seed-slide are also attached to the mould-board. A revolving coultter, with concave cut in its edges, is geared to a saw-cutter, and drives it at a higher speed. Various special devices.

Claim.—1.—In combination with a plough having a mould-board constructed substantially as described, the concave revolving mould-boards *T*, arranged to scrape smooth and fill up the crevice or joint between the furrows, substantially as set forth.

2.—In combination with a plough, *N*, constructed substantially as described, and with the revolving mould-boards *T*, a seeding device, *U*, consisting of the rimless wheel *V*, rod *V'*, spring *v'*, and seed-cup slides *W W'*, constructed and operated substantially as and for the purpose specified.

No. 204,743.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrow*.—June 11, 1878.—[Filed May 23, 1878.]

Claim.—1.—A wheel-harrow cultivator consisting of the combination of a pole or tongue, a main frame, wheel-gangs supporting the high frame through the medium of rigid fixed standards interposed between the gang-bars and main frame, and rods for bracing the wheel-gangs against independent movements and injurious strains.

2.—The combination, substantially as hereinbefore set forth, of the main frame, the gang-bar, the interposed supporting-standard, the brace-rods, the slotted plate secured to the brace-rods, and the adjusting-screw or set-bolt on the gang-bar.

3.—The combination, substantially as hereinbefore set forth, of the slotted main frame or beam, the pivoted gang-bars, and the doubly-slotted plates, said plates being connected to brace-rods by set-bolts working in one set of slots, and to the gang-bars by set bolts working in the other or curved slots, whereby the working angle of the disks relatively to the line of draft may be varied and the disks adjusted laterally relatively to said line of draft.

4.—The combination, substantially as hereinbefore set forth, of a main frame, reversible wheel or disk gangs, and mechanism for clanking the gangs, whereby each gang may be turned end for end on its pivot and securely locked.

5.—A wheel-harrow provided with reversible disk-gangs, the disks or wheels having concave-convex sides or faces, whereby either the concave or convex faces of the wheels may be brought opposite each other, as set forth.

6.—A wheel-harrow provided with reversible disk-gangs, one on each side of an intermediate tongue or draft-frame, the gangs being also capable of independent lateral adjust-

ment relatively to the line of draft to vary the space between the inner ends of the gangs.

No. 205,498.—N. FAIMER, NEW YORK, N. Y.—*Rotary Mould-Board Ploughs*.—July 2, 1878.—[Filed December 20, 1877.]

The beam and share are of ordinary construction. The mould-board is disk-formed, supported both on the convex and concave sides, having a radius greater than the depth of the furrow. The land-side of a single plough extends to some distance to the rear of the mould-board. Two ploughs or more may be arranged in a gang, and the beams connected by a spring-brace. When two or more ploughs are used, the advance ploughs have a short land-side to allow the turning of the furrow.

Claim.—1.—In a gang of disk mould-board ploughs, the extended land-side *D* of the rear plough, in combination with the short land-side *D'* of the advance plough, and connecting spring-brace *H*, as and for the purpose specified.

2.—The braces *F F'*, in combination with the plough-beam and disk mould-board, fitting closely to the concave surface, thus forming both a support and a cleaner, as shown and described.

3.—The supporting spring brace, in combination with the advance plough, substantially as and for the purpose described.

No. 205,608.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrow*.—July 2, 1878.—[Filed May 23, 1878.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of the tongue, the wheel gangs pivoted on opposite sides thereof, and capable of vibrating relatively thereto to conform to undulations in the surface over which they pass, and the stiffening-bar adapted to engage with the wheel-gangs and tongue to render the machine rigid, and capable of being disengaged to render the machine flexible.

2.—The combination, substantially as hereinbefore set forth, of the tongue and the gang-frames, hinged on opposite sides thereof, one gang-frame being hinged in advance of the other.

3.—The combination, substantially as hereinbefore set forth, of pivoted gang-frames, arched or inclined supports for the driver's seat, pivoted at their outer ends to the gang-frames and at their inner ends to the seat, and adjusting devices by which the inclination of the bars and the height of the seat may be varied.

4.—The combination, substantially as hereinbefore set forth, of the tongue or intermediate frame, gang-frames pivoted thereto, an arched or straddling seat-support pivoted upon the gang frames and to the seat, beneath which the inner ends of the supporting bars cross each other, and slotted plates provided with inclined surfaces, mounted on the supporting-bars and acting upon the under surface of the seat, or an extension thereof.

No. 200,185.—JAMES MALLOX, BATTON ROUGE, LA.—*Cultivator*.—July 23, 1878.—[Filed December 22, 1877.]

The frame is rectangular, and is supported upon two wheels having adjustable crank-axes. The cultivator-beams are pivoted to a rock-bar supported upon the forward beam of the frame, and have both a vertical and horizontal motion. The cultivators are of the disk form, the outer edges being cut into sections, the concave sides facing inward, and adjustable on their own axes in the line of draft, so as to take in more or less land.

Claim.—The improved cultivator herein described, provided with adjustable beams *L L'*, each furnished with revolving cutters, the blades of which are curved, substantially as described, and operated on an adjustable bearing, for the purpose set forth.

No. 200,218.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrow*.—July 23, 1878.—[Filed July 8, 1878.]

Claim.—1.—Wheel-gangs pivoted to a wheel or carrying frame, and capable of swinging freely laterally, relatively thereto, substantially as hereinbefore set forth.

2.—The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame suspended therefrom, and the wheel-gangs mounted on the coupling-frame.

3.—The combination, substantially as hereinbefore set

forth, of the wheel or carrying frame, the tongue, the coupling-frame pivoted in front of and crossing the axle, and the wheel-gangs mounted on the rear of the coupling-frame, whereby the gangs can swing clear of the carrying-wheels.

4.—The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame pivoted thereto, and the wheel-gangs pivoted on the coupling-frame, whereby the gangs can swing vertically, laterally, and at an angle, as well as be adjusted relatively to the tongue.

5.—The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling frame, the wheel-gangs, and the lifting-levers on the carrying frame, whereby the gangs may be lifted clear of the ground.

No. 206,886.—FELIX JOHNSON, PARIS, TEXAS.—*Ploughs*.—August 13, 1878. [Filed July 6, 1878.]

The revolving mould-board has cogs upon its inner side, which gear with a pinion upon a vertical shaft carrying a horizontal land-side roller. The pressure of the latter against the land imparts motion to the mould board. A frame upon the land-side of beam carries a toothed cutter upon a roller, which is also geared to, and assists to revolve the mould board.

Claim.—1.—The combination, in a plough, of a revolving mould-board, *f*, provided with cogs *c*, the vertical shaft *h*, having pinion *i*, the gear-wheel *n*, toothed cylinder *p*, and cutter-wheel *q*, substantially as described.

2.—The combination of the roller *p*, vertical shaft *h*, having pinion *i*, and the revolving mould-board *f*, having the teeth *c* upon its inner side, substantially as set forth.

3.—The combination of vertically-adjustable cutter *z*, toothed cylinder *p*, long pinion *o*, shaft *v*, and frame *s*, substantially as shown.

No. 207,858.—WILLIAM HENIGST, COLUMBUS, OHIO.—*Cultivators*.—September 10, 1878. [Filed March 30, 1878.]

Claim.—1.—In a grain plant cultivator, the combination of the wheeled frame A and a series of vertically swinging independent frames D, each frame D having a series of loosely-turning pointed cutter-wheels, F, and cultivator blades E, substantially as and for the purpose set forth.

2.—The combination, with the wheeled frame A, of the independent frames D, having the wheels F and blades E, and the vertically-swinging arms P, carrying either shanks or rakes, substantially as and for the purpose described.

3.—The combination of the cultivator-blades E, revolving pointed cutter-wheels F, and the penulionous frame D, carrying the blades E and wheels F, substantially as described.

4.—The combination of the seed hopper M, frame A, and frames D, having blades E, and wheels F, substantially as and for the purpose described.

5.—The combination of the seed hopper M and fertilizer-hopper L, provided with the cone-wheels I, inclined spouts P, and adjustable shaft Z, the revolving pointed cutter-wheels F, cultivator blades E, and frames D, substantially as and for the purpose described.

6.—The vertically-swinging shields I, applied in pairs, in combination with the vertically-swinging frames D, having the blades E and wheels F, substantially as and for the purpose described.

No. 208,246.—DAVID H. LANE, ANOKA, MINN.—*Rotary Ploughs*.—September 24, 1878. [Filed June 13, 1878.]

Claim.—1.—In a rotary ploughing implement carried on draft wheels, the combination of a rotary ploughing-wheel, K, having a concavo-convex cutting-edge arranged next to the soil, and without the interposition between it and said wheel of other parts, and for traveling on the bottom of the furrow, and having its flaring concavity turned partly forward, the rotatively-adjustable and obliquely-bent axle I, carrying the said ploughing wheel, and having thereon the tapering collar J, and adapted at one end to receive a wrench, and the axle-box F, vertically adjustable with relation to the said draft wheels, the said box being provided with a clamp for rendering the said axle either loose or rigid there-in, substantially as and for the purposes specified.

2.—In combination, the caster wheel S, mounted on the rotary stock or carrier S', having thereon the rigid notched collar B, the pivoted lever Q, applied to the frame carrying

the plough-disks, the bolt or slide *f*, carried by the said lever, the fixed serrated plate K, the lever U, pivoted to the lever Q, and the fixed loop V, substantially as and for the purposes specified.

3.—In combination, the supplemental frame E', provided with an axle-box, F', and carrying a vibrating lever, Q', having on its lower end the caster S, the removable half-axle B and its draft-wheel, the removable dish-shaped ploughing-wheel K, the removable axle box F and its clamps, the removable obliquely-bent axle J, and a locking device for engaging the lever Q', substantially as and for the purposes specified.

4.—The share K', arranged behind a rotary concavo-convex or dish-shaped plough-disk, and placed for cutting through and under the soil or land next to the furrow turned therefrom by the disk, substantially as and for the purposes specified.

5.—A cutting blade or share mounted on a vertically-vibrating caster-stock or carrier, in combination with a rotary concavo-convex or dish-shaped plough-disk, the said share being arranged to cut under the soil or land before the soil or land so cut is turned by the said disk, substantially as and for the purpose specified.

No. 209,508.—ROBERT M. PATILLLO, CARTERSVILLE, GA.—*Cotton-Seed Planters*.—October 29, 1878. [Filed August 20, 1878.]

No claims for the disks, described in the specification as covers.

No. 211,638.—NELSON PALMER, NEW YORK, N. Y.—*Rotary Mould-Board Ploughs*.—January 28, 1879. [Filed December 13, 1878.]

A concave-disk plough, with a convex-centre, either fixed or removable. A removable coultter to fit over the share and land side, and overlap and protect the joint between the share and disk.

Claim.—1.—In a machine or implement for turning the soil, the concave disk or mould-board E, provided with a convex centre, G, upon its front or concave face, substantially as and for the purpose herein shown and described.

2.—The combination, with a concave disk or mould-board E, of a removable convex-centre, G, substantially as and for the purpose herein shown and described.

3.—The combination, with the revolving disk or mould-board and the plough-share and land-side provided with the bottom cutting-flanges *n n'*, of the coultter D, provided with the rearwardly-projecting angular flange *d*, and bottom cutting-flanges *n n'*, forming forward continuations of the cutting-flanges *n n'*, substantially as and for the purpose herein shown and described.

No. 213,242.—NELSON PALMER, NEW YORK, N. Y.—*Rotary Gang Ploughs*.—March 11, 1879. [Filed January 6, 1879.]

An inner or second frame hinged at the front carries a series of concave disk-ploughs with convex centres. A third frame hinged at the rear carries shares, which work in front of and protect the edge of the disks. Either frame may be raised or worked independently of the other.

Claim.—1.—In an earth-turning machine, one or more shares immediately preceding, but detached from and adjustable independently of one or more disks, substantially as shown and described.

2.—In an earth-turning machine, a series of concave disks, with convex centres on their front or earth-turning surfaces, attached to a separate frame and adjustable independently of shares or cutting devices, which immediately precede them, substantially as and for the purpose set forth.

3.—In an earth turning machine a series of shares or cutting devices pivoted or hinged to the front end of a frame, which is pivoted at its rear end to an adjustable disk-frame, by which series of adjusting devices the shares or cutting-devices may be elevated or depressed in a horizontal position, substantially as shown and described.

4.—In an earth-turning machine, a series of disks attached to an adjustable frame, and a series of shares or cutting-devices attached to a separate adjustable frame, in combination with devices for adjusting said frames at different degrees of elevation separately or together, or relatively to each other, substantially as and for the purpose shown and described.

5.—In an earth-turning machine, the principal frame, C, secondary frame, D, and the third frame, G, in combination with the slotted bearings or guides (and the guides *V*), all constructed and operating substantially as set forth.

No. 214,180.—RICHARD D. NORTON, NEW SHARON, N. J.—*Pulverizing Disk-Harrows*.—April 8, 1870.—[Filed January 10, 1870.]

Claim.—1.—The combination of the slotted button M with the flattened holding-bar J, and with the tongue A and cross-bar B of the harrow, substantially as herein shown and described.

2.—The combination of the cam-button N with the slotted button M and the flattened holding-bar J, substantially as herein shown and described.

No. 9,676.—RICHARD D. NORTON, HIGH-TOWNS, N. J.—*Pulverizing Disk-Harrows*.—214,180, April 8, 1870.—Re-issued April 10, 1881.—[Filed May 17, 1880.]

Claim.—1.—The combination, in a wheel-harrow, of disk-gangs flexibly connected at their inner ends to a bearing, I, a main frame, and a draw-bar flexibly connected at its front end to the main frame, and having its rear end inflexibly attached to the bearing I, substantially as set forth.

2.—The combination, with the main frame, consisting of the tongue A and the cross-bar B, of the holding or draw bar J, the slotted button M, and the disk-gangs, substantially as and for the purposes set forth.

3.—The combination of the cam-button N with the slotted button M and the flattened holding-bar J, substantially as herein shown and described.

4.—The combination, substantially as set forth, of a main frame, disk-gangs flexibly connected at their inner ends, and also connected to the main frame, a lever, a bar connecting the lever and the flexible connection, and a button or guide-plate in which said bar works.

No. 216,592.—JOHN AUSTIN, CHICAGO, ILL.—*Ploughs*.—June 17, 1879. [Filed January 15, 1878.]

Concave ploughing-disks with the cutting edges made in sections, and placed at one end of an axle with bearings at both ends; a mould-board which both scrapes the disk and turns over the furrow; the irregular frame hinged in front, and connected by a lifting lever to an arched carriage-frame made rigid to the axle.

Claim.—1.—The rotary ploughing-disks *A' A'*, one or more, consisting of the annular concavo-convex dish-shaped or flaring working or cutting blades *G' G'*, made in sections, removably applied to the outer ends of radial arms or spokes, in combination with one or more axles arranged at an angle to the line of draft, and journaled in a vertically-adjustable beam or frame mounted on draft-wheels substantially as and for the purposes specified.

2.—The rotary ploughing-disks *A' A'*, one or more, consisting of the annular concavo-convex dish-shaped or flaring working or cutting blades *G' G'*, made in sections, removably applied to the outer ends of radial arms or spokes, in combination with and rigidly applied to a long axle, *E'*, set diagonally to the line of draft, and having double bearings in a vertically-adjustable frame or beam mounted on draft-wheels, substantially as and for the purposes specified.

3.—The rotary ploughing-disks *A' A'*, one or more, consisting of the annular concavo-convex dish-shaped or flaring working or cutting blades *G' G'*, made in sections, removably applied to the outer ends of radial arms or spokes, and set diagonally to the line of draft, in combination with the mould-boards *H' H'*, having convex faces arranged in or nearly in contact with the concave faces of the said disks or blades, the said disks and mould-boards being applied to a vertically-adjustable frame carried on draft-wheels, substantially as and for the purposes specified.

4.—The combination, in a rotary plough mounted on draft-wheels, of the frame M, pivoted or hinged at its forward end to the forward part of the carriage and carrying the rotary ploughing-disk *A' A'*, one or more, mounted rigidly on the long axle *E' E'*, set diagonally to the line of draft and journaled in double bearings in the said frame, and the lifting devices connected to the frame M, substantially as and for the purposes specified.

No. 216,878.—CHARLES A. MEEKER, GREENS

FARMS, CONN.—*Smoothing-Harrows*.—June 24, 1879. [Filed February 27, 1879.]

Claim.—The combination of a front and rear set of rotary cutters, the latter closer together than the former, with an intermediate smoothing-board or scraper, D, arranged in the frame A, as shown and described, to bring the soil into a fine tilth for the reception of seeds or plants.

No. 220,255.—HENRY F. SHAW, BOSCON, MASS., and GEORGE F. SHAW, DEFIHAM, MASS.—*Wheel Harrows*.—October 7, 1879. [Filed June 9, 1879.]

Claim.—1.—A harrow having all the disks or wheels arranged on one straight shaft on both sides of the central line of draft, and at an inclination to said shaft, as described, so as to partially raise the soil, and adjustable, so that they may throw the soil, with one adjustment, toward said central line, or, with another adjustment, outward from said line, substantially as hereinbefore set forth.

2.—In a harrow, a straight shaft having thereon disks or wheels on both sides of the central line of draft, placed at the angles therewith specified, and made adjustable, as and for the purpose specified, when said shaft is arranged at right angles to the pole or central line of draft, substantially as hereinbefore set forth.

3.—The combination of one straight shaft D, having the wheels or disks E, and collars G and H arranged thereon, as specified, portion of gear J, gear I, and lever K, substantially as hereinbefore described.

4.—In a wheel-harrow, springs F, intervening between the shaft D and cross-bar B, substantially as hereinbefore set forth.

No. 223,151.—JOSEPH LANE, CHICAGO, ILL., assignor of one-half of his right to SAMUEL STREET FULLER, STRATFORD, ONTARIO, CANADA.—*Rolling Cutters*.—December 30, 1879. [Filed October 24, 1879.]

Claim.—The combination, with a mould-board plough, of a rolling coultter made in dish-shaped form and arranged with its dish-shaped or concave side on the mould-board side of the plough, as described.

No. 224,006.—CHARLES R. FOSTER, CHICAGO, ILL.—*Rotary Gang Ploughs*.—February 3, 1880. [Filed August 2, 1879.]

Claim.—1.—The crank-axle C, having upon one end the disk-plough B, and mounted at the other end diagonally upon the wheeled supporting frame A, in combination with the movable bearings D, the crank-lever E, hand-lever G, and link-rods connecting the lever and axle, whereby the axle is made capable of adjustment in two directions to either raise and lower the disks or change their angle to the line of draft, substantially as described.

2.—The crank-axes C, mounted diagonally on the wheel-frame A, in combination with the disk-ploughs B, mounted on the axle cranks outside of the supporting frame, the crank-lever E, hand-lever G, and link rods connecting the levers and axle, whereby the disks are raised or lowered, substantially as described.

No. 225,431.—FRANK BRAMER, LITTLE FALLS, N. Y.—*Wheel-Harrows*.—March 9, 1880.—[Filed December 29, 1879.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of a slide having the capacity of moving freely in the line of draft, a bar or support upon which said slide moves, disk-gang bars, a frame, pivot-connections between said frame and disk-gang bars at or near the outer ends of said bars, and the pivot-connections between the slide and the inner ends of said bars, whereby the angle of the disks relatively to the line of draft may be varied.

2.—The combination, substantially as hereinbefore set forth, of the tongue, the slide moving freely longitudinally thereon, mechanism, substantially such as described, for locking the slide in any desired position, disk-gang bars, a frame, pivot-connections between said frame and bars at or near the outer ends of the bars, and pivot-connections between the slide and inner ends of said bars, whereby the disks may be adjusted as desired relatively to the line of draft and locked in position.

3.—The combination, substantially as hereinbefore set forth, of the tongue or draft-frame, the slide having the capacity of moving freely longitudinally thereon, the wheel or disk-gang bars or frames, their pivots or hinge connections

with the slide, the connecting-arms and their pivots or hinge-connections with the gang-bars or frames and tongue.

No. 225,304.—CHARLES L. A. DOW, ALBANY, N. Y.—*Wheel-Harrows*.—March 9, 1880. [Filed November 4, 1879.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of the main frame, the supplementary swinging frame, the disk-gangs mounted thereon, the lifting levers and their detents on the main frame, and the slotted sectional link-rods having set-screws connecting the disk-gangs and levers, whereby the supplementary frame may be left free to rise vertically or may be held rigidly in any desired position.

2.—The combination, substantially as hereinbefore set forth, of the main wheel-frame, the supplementary swinging frame, the disk-gangs mounted thereon, lifting mechanism, substantially such as described, mounted on the main frame, and the driver's seat mounted on the laterally-swinging disk frame to increase the pressure upon the disk-gangs.

3.—The combination, substantially as hereinbefore set forth, of the main frame, the supplementary frame, adjustable in width, the driver's seat, and the pivoted standards interposed between the seat and frame to compensate its adjustments.

4.—The combination, substantially as hereinbefore set forth, of a disk-gang, its standard, a sleeve in which it rocks, a crank plate or arm on the disk-gang standard, a rocking lever, a link connecting the crank arm and lever, and a stop to limit the movement of the lever.

5.—The combination, substantially as hereinbefore set forth, of the disk-gangs, their rocking standards, crank-arms, and links, with the rocking lever, whereby the disk-gangs move in harmony when changing their angle relatively to their line of draft.

6.—The combination, substantially as hereinbefore set forth, of the laterally-adjustable swinging frame beams, the disk-gangs mounted in sets, each set on its respective beam, the rocking standards, their crank arms, links, and rocking lever, the latter being connected by pivoted links to the side beams to compensate adjustments of their distance apart.

7.—The combination, substantially as hereinbefore set forth, of the rocking disk-gang standard, its crank arm or plate, the link connecting it with the rocking lever, and the adjustable connection between the crank-arm and link-rod, to enable the driver, while in his seat, to vary the angular relation between the disk-gangs and line of draft.

8.—The combination, substantially as hereinbefore set forth, of a disk-gang, its rocking standard, a foot-crank to rock the standard to vary the angle of the disk-gang relatively to the line of draft, and an adjusting-clip connecting the rocking standard and foot-crank, to compensate adjustments in the width of the supporting frame, and to maintain a proper relation to the driver's seat.

9.—The combination, substantially as hereinbefore set forth, of the disk-gang shaft or thimble and the adjustable sectional supporting-yoke to vary the inclination of the disk-gang shaft horizontally and transversely to the line of draft.

10.—The combination, substantially as hereinbefore set forth, of the axially-turning rakes and the shields in which they are mounted.

11.—The combination, substantially as hereinbefore set forth, of the laterally-swinging frame with the disk-gangs, the shields, and the rakes, all carried thereby.

12.—The combination, substantially as hereinbefore set forth, of the main axle, the main frame mounted therein, the swinging frame pivoted to the main frame in front of the axle, the disk-gangs hung from the swinging frame in front of the axle, and the driver's seat on the swinging frame in the rear of the axle, whereby the weight of the driver counterbalances that of the disk-gangs.

No. 225,526.—GEORGE R. JOHNSON, RUSSELL, IOWA, assignor to JOHN C. COOK, same place.—*Corn Cultivators*.—March 16, 1880. [Filed June 6, 1879.]

Claim.—The combination, with the tongue-yoke, of the pivoted seat bar and its seat, provided with a guide-support adapted to move up and down on the vertical portions of the yoke E, chains, and a hooked cross tree or bar on the tongue, substantially as and for the purpose specified.

No. 226,233.—CHARLES L. A. DOW, ALBANY, N. Y.—*Combust Seeders and Cultivators*.—April 6, 1880. [Filed November 7, 1879.]

Claim.—1.—The combination, substantially as hereinbefore set forth, of a straddling main frame, a gang of disk-cutters adjustable relatively to the line of draft beneath said frame, and guides mounted on the frame to counteract the lateral thrust of the gang.

2.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters adjustable relatively to the line of draft, a straddling main or draft frame, and guide-wheels on the frame adjustable relatively to the line of draft.

3.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters, and a reversible draft or main frame.

4.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters, a reversible draft frame, and supporting-wheels mounted upon said frame, whereby the frame is maintained in a horizontal position while being reversed.

5.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters arranged to turn the earth in one direction, a reversible draft-frame, and mechanism for locking the frame in the same position relatively to the cutters during the forward as well as the reverse movement of the machine, whereby the furrows are turned in a uniform direction.

6.—The combination, substantially as hereinbefore set forth, of a gang of revolving disk-cutters, a reversible draft-frame, a circular track upon which said frame turns, and mechanism for varying the gang relatively to the line of draft.

7.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters, a reversible draft-frame, a circular track upon which said frame turns, movable stops adjustable upon the track and a detent adapted to engage with said stops to lock the draft-frame in any desired position relatively to the disk-gang.

8.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters, a circular track supported above the disk-gang, a straddling main frame above said track, and grooved pulleys depending from the main frame and embracing the edges of the track, said pulleys constituting a draft-connection between the track and the frame.

9.—The combination, substantially as hereinbefore set forth, of a straddling main or supporting frame, a seed-box supported beneath said frame, a disk-gang the shaft of which revolves in bearings depending from the seed-box, and mechanism, substantially such as described, for simultaneously adjusting the angle of the seed box and disk-gang relatively to the frame and to the line of draft.

10.—The combination, substantially as hereinbefore set forth, of a gang of disk-cutters, a seed box, a series of seed-wheels constituting a forced feed capable of working either way, mechanism for driving said wheels in either direction directly from the disk-gang shaft, and a reversible frame, whereby the seed is distributed, during the forward movement of the machine as well as during its reverse movement without interference from the reversal of the frame.

11.—A gang or series of spoked or perforated disks mounted on a common axle, arranged to revolve together, substantially as described.

12.—The combination, substantially as hereinbefore set forth, of the disk-gang shaft, a series of spoked or perforated disks mounted loosely thereon, collars or spacing thimbles interposed between the disks, and clamping mechanism, whereby the spokes of the disks can be adjusted relatively to each other and the disks rigidly secured together on their shaft, with which they turn.

No. 226,601.—BENJAMIN J. WEST, NEW ORLEANS, LA.—*Cultivators*.—April 20, 1880. [Filed July 30, 1879.]

Claim.—1.—In a rotary cultivator, the right-angled standards E E', the lower ends of which are turned and fitted with horizontal spindles F F', of the construction described, carrying revolving disks, substantially as described.

2.—In a rotary cultivator, the combination, with the angled standards E E', horizontal spindles F F', and the

comprising a set of the top or below a washers I, with lever L attached thereto, substantially as described, and for the purposes set forth.

No. 22,584.—GEORGE G. GROWLEY, LITTLE FALLS, N. Y., assignor to FRANK BRAMER, same place. *Wheeled harrow*.—*Nov. 27, 1885*. Filed *May 23, 1878*.

Claim.—1.—The combination, substantially as hereinbefore set forth, of a series of concavo-convex harrow disks with a series of scrapers or cleavers fixed upon a turning bar or rock shaft, whereby the scrapers or cleavers may be operated to bring them close to or in contact with the concave sides of the disks, or to remove them therefrom, by simply rocking the scraper bar or shaft in its bearings.

2.—The combination, substantially as hereinbefore set forth, with a gang of rotating harrow-disks, of a revolving, rocking or turning scraper bar placed in a different plane from the disk shaft or axle to permit the scrapers or cleavers to enter the concave sides of the disk.

3.—The combination, substantially as hereinbefore set forth, of a gang bar or beam, a gang of rotating harrow-disks, the shaft or axle of which has its bearings in supports on the gang bar, a turning or rocking bar provided with scrapers or cleavers mounted on the gang bar in a different plane from the disk shaft or axle, and a lever for controlling the scrapers.

No. 22,570.—GARLAND B. ST. JOHN and JOHN K. UNDERWOOD, CHICAR RAPIDS, Iowa.—*Rotary Plow*.—*Dec. 27, 1885*. Filed *Feb. 10, 1885*.

Claim.—1.—In combination with frame D, as described, and rotary disks E, the horizontal under-revolving cutting disk S, substantially as and for the purposes set forth.

2.—The frame D, Y-shaped at the rear, having swinging side guide-wheel J, at the forward end, and carrying on the side the disks E, combined with lever K, ratchet E, and arm C, and wheels A, substantially as described.

3.—In a plough, the combination of a forward and vertically turning disk with a horizontal-cutting share blade located behind said disk and adapted to cut under and to the bottom of the furrow, substantially as described.

No. 22,724.—FRANK BRAMER and GEORGE G. CROWLEY, LITTLE FALLS, N. Y.—*Harrows or Cultivators*.—*Dec. 18, 1885*. Filed *April 6, 1885*.

Claim.—1.—The combination, substantially as hereinbefore set forth, of the main frame, disk-gangs mounted upon the opposite sides of said frame, and mechanism for causing each disk-gang shaft to assume a different angle from the other relatively to the line of draft, at the will of the driver, without interrupting the operation of the machine.

2.—The combination, substantially as hereinbefore set forth, of the main frame, the disk-gang, its vertical shaft, the socket therefor, the crank and pinion, the rock-shaft, and a lever for operating the rock shaft whereby the angle of the disk-gang shaft relatively to the line of draft may be varied at pleasure.

3.—The combination, substantially as hereinbefore set forth, of the disk-gang, its vertical shaft, the socket therefor, and the draft rod, whereby the gang shaft is promptly restored to its working angle by the draft of the team after having been turned to move the machine sidewise.

4.—The combination, substantially as hereinbefore set forth, of the disk-gang, its vertical shaft, the socket therefor, the adjustable bolt or plate and set screw, the stop or pin, and the shoulder against which it abuts.

5.—The combination, substantially as hereinbefore set forth, of the disk-gang, its vertical shaft, the socket therefor, the adjustable slotted plate and set screw, the stop or pin, the shoulder against which it abuts and the draft rod.

6.—The combination, substantially as hereinbefore set forth, of the main frame, the horizontal arm secured thereto, mechanism, substantially such as described, for elevating or depressing the outer end of said arm, and a disk-gang mounted thereon.

7.—The combination, substantially as hereinbefore set forth, of the main frame, the disk-gangs, their vertical shafts, the sockets therefor, levers for changing the angle of each gang, and draft-rods connected to the disk-gangs.

8.—The combination, substantially as hereinbefore set

forth, of the draft-rod, the steel flange or cross-rod, the horizontal arms secured to the ends of said rods, the side brace, disk-gangs mounted on the horizontal arms, and levers for controlling the angle of the gangs relatively to the line of draft.

No. 23,419.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Plow*.—*Jan. 27, 1885*. Filed *July 17, 1885*.

Claim.—1.—That which is shown in the drawing thereon, as B, of relatively large and small front tires or soles, in combination with a plough, whereby the ploughed soil is uniformly harrowed or cultivated, and also the pressure and friction on the land-side of the plough are avoided, substantially as set forth.

2.—In a plough, the furrow-side bearing wheel D, applied to an auxiliary frame C, having a plough attached thereto in combination with disks or wheels, as at B, applied to a main frame, A, whereby the frames are supported on the furrow-side by the disks or equivalent contrivance while ploughing and harrowing are going on, and by the furrow-side wheel when the said operations cease and the plough and disks are raised out of the soil, substantially as described.

3.—The combination of the seed-planting mechanism, as at E E', with the main frame, auxiliary frame, oblique disks or wheels, as at B, or an equivalent contrivance for relieving the plough from pressure and friction on its land-side, and also harrowing or cultivating the soil, and a plough for turning over the soil, substantially as described.

No. 23,152.—HENRY JAMES BALANEA, N. Y.—*Cultivator*.—*Dec. 24, 1885*. Filed *May 8, 1885*.

Claim.—1.—In a cultivator, the combination of two sets rotating point-irons or teeth E, a curved gang rearwardly, and curved point-irons or teeth K, arranged at suitable distances apart on the outer side of the sets of rotating teeth in planes parallel with the line of draft, whereby the ground is opened or scarified without being turned over on both sides of the same row of plants and between the rows or hills, arch G, and the drag-bars H, L, substantially as set forth.

2.—The combination, with two sets of rotating teeth E, of the connecting U-shaped bars G, and arms H, whereby the ends of the bar G are connected with the frame of the machine, substantially as set forth.

3.—The combination, with the rotating teeth E, U-shaped connecting bar G, and arms H, of the sleeve I, supporting the forward ends of the arms H, and made laterally adjustable on the frame of the machine, substantially as set forth.

4.—The combination, with the U-shaped bar G, provided with sockets G, of the elbow shaped arlors J, inserted with their vertical portions adjustable in the sockets G, and carrying upon their horizontal portions the hubs L, to which the teeth E are secured, substantially as set forth.

5.—The combination, with the shaft O of the wheels A, made laterally adjustable thereon, rotating tooth E, mounted on arlors J, which are attached to laterally adjustable frames G, H, and curved teeth K, arranged between the several sets of rotating teeth and secured to laterally adjustable arms L, substantially as set forth.

No. 23,455.—JOHN K. UNDERWOOD and GARLAND B. ST. JOHN, CHICAR RAPIDS, Iowa.—*Rotary Plow*.—*October 19, 1885*. Filed *February 16, 1885*.

Claim.—1.—The combination of the plough-frame A with the pivoted cast-standards E, finger Z, and recessed guiding and locking arm G, substantially as and for the purposes set forth.

2.—The combination of frame A and plough disks C with the axle E, pivoted standard F, and finger Z, as described, and wheel D, substantially as and for the purposes set forth.

3.—In a shifting axle, substantially as described, the collar O, stem S, nut A, and slotted cap L, in combination with the conical chamber or bearing K, substantially as and for the purpose set forth.

No. 23,699.—THEODORET DANIELS, MORRISON, ILL., assignor to himself, MARTIN V. AUSTIN, and HENRY S. FERGUSON, same place.—*Con-Plow*.—*November 2, 1885*. Filed *July 24, 1885*.

Claim.—In a corn planter, the combinations of the frame C, the seed boxes A, the hangers E, the disks H, the bent axle G, the rods J, the bar K, the slotted arms L, the bolts

and wheels M, substantially as herein shown and described, and for the purpose set forth.

No. 235,029.—J. DILL SHIRKLEY, IOWA CITY, IOWA.—*Combined Soil Drill and Rolling Cutter*.—November 30, 1880. Filed September 22, 1880.

Claim.—1.—The combined seed drill and rolling cutter comprising the frame A, hopper B, shaft C, drill tubes or teeth *b*, and the rolling cutters D, the points of the drill tubes being extended forward between and close to the sides of the cutters, and the discharge openings located above the points and on the posterior sides of the drill teeth substantially as described.

2.—The curved drill tubes or teeth having flattened points, posterior grain orifices, and shields, substantially as set forth.

No. 238,654.—JAY S. CORBIN, GOVERNEUR, N. Y.—*Disk-Harrow*.—March 8, 1881. Filed June 12, 1880.

Claim.—1.—The combination of the following elements, viz: two or more gangs of disks, each having a separate axle, a draft frame and transverse frame, joined rigidly together and supported entirely upon the cutting disks, two or more swinging gang frames situated entirely in the rear of the transverse frame and connected thereto independently of each other, and bearings for the gang-axes respectively situated between the ends of the axles, and supported upon the swinging gang-frames, whereby said bearings raise and fall with the axles relatively to the main transverse frame, substantially as set forth.

2.—In a rotating disk harrow, the combination, substantially as hereinbefore set forth, of the following elements, viz: a transverse connecting frame, two or more axles, each carrying a series of cutting disks, automatically swinging frames for supporting the cutting disks, and the bars E', rigidly attached to the gang-frames and hinged at their front ends directly to the transverse frame.

3.—The combination of the following elements, viz: a draft-tongue, a transverse frame rigidly connected to said tongue, cutting disks arranged to support the entire weight of the transverse connecting frame, gang frames pivoted independently of each other directly to the transverse frame on horizontal lines transverse to the lines of draft, whereby both ends of each gang-axle automatically rise together and fall together, and said axles swing independently of each other, substantially as set forth.

4.—The combination of the following elements, viz: rotating cutting-disks, a transverse frame supported entirely upon the cutting disks, gang frames hinged to the transverse frame on horizontal lines transverse to the lines of draft and arranged to rise and fall automatically, disk axles supported on the gang frames and arranged to have both ends of each axle rise together and fall together, and stops which limit the automatic movements of the gang frames, substantially as set forth.

5.—In a rotating disk harrow, the combination, substantially as hereinbefore set forth, of the following elements, viz: a transverse connecting frame, two or more gang frames hinged directly to the transverse frame and arranged to freely swing automatically thereon, rotating cutting disks, carried by said gang frames and arranged to support the entire weight of the frame, and an intermediate equalizing mechanism secured rigidly to the transverse frame and arranged to rest loosely upon the gang frames, whereby the weight of the frame is supported upon the cutting disks, and the gang frames are allowed to automatically conform to the surface of the ground.

6.—In a rotating disk harrow, the combination, with a transverse frame and two or more disk gangs arranged to automatically oscillate vertically, of the gang frames E E', which at their front ends are hinged directly to the transverse frame, and which, while oscillating, retain the gang axles in substantially horizontal lines, substantially as set forth.

7.—In a rotating disk harrow, the combination, with a vertically oscillating gang of disks mounted on an axle, of an automatic adjusting mechanism, whereby the inclination of the gang axle to the line of draft is automatically altered by the vertical movement of the gangs, substantially as and for the purposes set forth.

8.—The combination of the following elements, viz: a

main frame, a vertically swinging gang frame, hinged to the main frame, a sliding axle supported on the hinged gang frame, a sliding bearing and a pivoted bearing for the axle, both supported on said gang frame, and an adjusting mechanism, by which the position of said axle is adjusted both automatically and at the will of the operator, substantially as set forth.

9.—In a rotating disk harrow, the combination, with a gang frame and a disk axle, of a sliding bearing and an oscillating bearing for said axle supported on said gang frame, substantially as set forth.

10.—In a rotating disk harrow, the combination of the following elements, viz: a main frame, a gang frame pivoted to the main frame, a rocking mechanism hinged to the main frame, a gang axle arranged to rotate in a sliding bearing and in a pivoted bearing, and a link connected to the gang axle and attached eccentrically to the rocking mechanism.

11.—The combination, with the main frame and two or more disk gangs hinged thereto and mounted on sliding axles of the rocking bar I, connected to all of the disk axles, substantially as set forth.

12.—In a rotating disk harrow, the combination of the following elements, viz: a main frame, a gang frame pivoted to the main frame, a disk scraper rigidly attached to the gang frame, and a rotating cutting disk arranged to oscillate horizontally on the gang frame independently of the disk scraper, and to be in and out of the scraper when the disks are to be cleaned, substantially as set forth.

13.—The combination of the following elements, viz: a main frame, a gang of two or more cutting disks arranged to oscillate vertically on the main frame, a gang frame having the arms E E', situated between the adjacent disks and extending backward from the central line of the disks to their rear edges, the cross bar M, secured to the rear ends of said arms E E', and the scraper N, rigidly attached to the cross bar M, substantially as set forth.

14.—In a rotating disk harrow, the combination, with a rotating cutting disk and mechanism for adjusting the angle of said disk relative to the line of draft, of a scraper adapted to be brought into play by the angular adjustment of said disk.

15.—In a rotating disk harrow, the combination, with horizontally adjusting disk gangs and scrapers arranged to clean the disks, of mechanism operated by a single lever, whereby the inclination of the gangs is altered, and whereby the scrapers are brought into operation, substantially as set forth.

16.—The combination, with a gang frame of a rotating cutting disk mounted on said frame, a disk axle arranged to slide on said frame, and a bearing for said axle, pivoted to the frame in front of the axle, whereby the axle is caused to move enwise when it is oscillated about the pivot of said bearing, substantially as set forth.

No. 238,655.—JAY S. CORBIN, GOVERNEUR, N. Y.—*Disk-Harrow*.—March 8, 1881. Filed June 12, 1880.

Claim.—1.—In a disk harrow, the draft tongue, two opposed disk gangs, and the braces C C, secured directly to the disk gangs and to the tongue, in combination with the transverse connecting frame, situated in front of the gang axles, and arranged to rest vertically upon the braces C C, in front of said axles, and connected to the tongue above the disks, substantially as set forth.

2.—In a disk harrow, the combination, with the tongue and two opposing disk gangs, arranged to vibrate vertically independent of each other, of a transverse frame formed of a single connecting cutting bar shaped to have the downwardly projecting arms H' H' respectively connected to the outer bearings of the gangs and the intermediate part, H, formed in one piece with arms H' H', substantially as set forth.

3.—In a disk harrow, the combination, with the draft-tongue and two opposed disk gangs arranged to vibrate independently of each other, of a transverse connecting bar, which is flexibly connected directly to the gangs by horizontal pivots and is rigidly connected to the tongue, substantially as set forth.

4.—The combination with the disk gangs, of a transverse connecting bar or frame hinged to the disk frames below the

axles of the gangs, substantially as and for the purposes set forth.

5.—The combination, with the transverse connecting frame, of the disk gangs arranged to oscillate horizontally on a pivot situated below the axle of the gangs, substantially as and for the purposes set forth.

6.—The combination, with the transverse connecting frame, of disk gangs arranged to oscillate vertically on pivots which are situated below the axles of the disks, substantially as set forth.

7.—In a cutting disk harrow, the combination, substantially as herein set forth, of the following elements, viz: a transverse connecting frame, two or more opposing disk gangs supported independently of each other on said transverse frame, and each provided with a separate through axle, and separate springs connected to the gang frames at points between the ends of said frames, to cause the gangs to oscillate in vertical lines.

8.—The combination of the main frame, a disk gang pivoted to the main frame at a point between the ends of the gang, and a spring, which is arranged to oscillate the gang vertically, and is situated at the center of oscillation of the gang.

9.—The combination of the following elements, viz: the draft tongue, the main frame attached to the tongue transversely, the disk gangs pivoted horizontally to the transverse frame, and the metallic braces C, passing loosely through the transverse frame and connected both to the disk gangs and to the tongue in front of the transverse frame.

10.—The combination with the transverse gang frame and the disk gang, of devices arranged, substantially as described, to adjust said frame vertically upon the gangs, as set forth.

11.—The combination with a main frame and disk gangs connected to said frames by vertical pivots, of mechanism, substantially as described, arranged to adjust the main frame on said vertical pivots as set forth.

12.—The combination of the following elements, viz: the draft tongue, the main frame attached to the tongue transversely, the disk gangs pivoted to the main frame, the beams L, for the gang axles, the lugs L², attached to the beams L, in front of the axles, and the braces C, C, which pass loosely through the main frame and through the lugs L², and are bent upward to form the vertical pivots C² for the gang frames.

13.—In a disk harrow, the combination, with a rotating disk, of a scraper surmounting the axle and rotated therewith substantially as set forth.

14.—The combination, with a rotating disk, of a disk scraper which is supported at one end only, and has its fixed end at or near the center of the disk and its free end at or near the circumference of the disk, substantially as set forth.

15.—In a disk harrow, the combination of the following elements, viz: a series of rotating disks, a series of scrapers supported independently of each other and arranged to respectively engage with said disks, and a scraper operating mechanism which engages with the scrapers to bring them into action, and which is entirely disengaged from the scrapers when they are idle, substantially as set forth.

16.—The combination, with the rotating disks, and the series of the scrapers O, of the sliding bar F and arms *g*, adapted to engage with said scrapers, substantially as and for the purposes set forth.

17.—The combination, with the scrapers O and mechanism arranged to stop the rotation of said scrapers, of the levers G, arranged to automatically permit the further rotation of said scrapers, substantially as set forth.

18.—In a disk harrow, the combination, with a rotating cutting disk, of a hollow hub which is beveled at both ends, to have the planes of said ends oblique to the plane of the disk and to the axis of rotation, substantially as set forth.

19.—In a disk harrow, the combination, with a through axle, of disk hubs which are arranged in contact in a continuous series along the axle, and are beveled at their contiguous ends, to have the planes of said ends oblique to the axis of the hubs, substantially as set forth.

20.—In a disk harrow, the combination, with a series of rotating disks and the through axle revolving continuously with said disks, of a series of contiguous disk hubs, each

having a disk rigidly secured to its outer face and each beveled at the end contiguous to the adjacent disk hub, substantially as set forth.

21.—The combination, with the rotating disk and a scraper for said disk, of the hub *a'*, *a'*, having the collar *a* formed with the recess *a'*, to receive the scraper, substantially as set forth.

22.—The combination, with the axle B, the connecting rod D, and the series of disks, of the inner disk hub, A, provided with the flange *a'*, whereby said hub is adapted to be loosely attached to the connecting rod D, substantially as set forth.

23.—The combination, with the axle B, the connecting rods D, D, and the gangs of disks separate from each other at their inner ends, of hubs respectively mounted upon the gang axles and arranged to project inwardly from the innermost hub of each gang, to provide a fastening for the connecting rods D, D, substantially as set forth.

24.—The combination, with the disk and fixed stops *a'* of the ring N, having the inclined faces *a'*, *a'* and for the purpose set forth.

No. 239,219.—JAMES W. BODLEY, NEW ORLEANS, LA.—*Rotary Cultivator*.—March 22, 1881. Filed *January 5*, 1880.

Claim.—1.—In a combination, the standard C, adjustably held in the slotted beam B, and capable of rotary motion, the disks D, secured upon an axle formed by bending such standards C at right angles, the parallel beam A, having the slots *a*, and connecting braces secured to the axle of the disk and adjustable in said slots *a*.

2.—The combination with the beams A and B, provided with slots *a* and *b*, of the standards C C, constructed as herein shown, rotary ploughs D, and braces I K L, adjustably connected with the beams A and B by means of crank-pins *c* and *c'*, *c'*, substantially as herein shown, and for the purpose set forth.

No. 249,993.—THOMAS A. GALT and GEORGE S. TRACY, SHELBY, Ill.—*Disk Harrow*.—May 3, 1881. Filed *August 5*, 1880.

Claim.—1.—In a disk harrow composed of two gangs of disks having their inner ends contiguous to or approaching each other, substantially as shown, the combination of the two levers F F, fulcrumed on the tongue A, and the rods *d*, *d*, connecting said levers respectively to each gang of disks, whereby, by means of the separate use of said levers, either gang of disks can be thrown back past the end of the other to discharge intervening obstructions, and be returned to its position without affecting the position of the other gang of disks, substantially in the manner herein shown and described.

2.—The combination, with the concavo-convex disk D, of the revolving scraper E, having a continuous unbroken surface on the side contiguous to the concave face of the disk, and arranged so as to be presented to the concave face of the disk and operate between the axle and the periphery thereof, and project slightly beyond said periphery, substantially as and for the purpose herein shown and described.

3.—The combination, with the concavo-convex disk D, beam C, and pendant *g*, of the revolving scraper E, having a continuous unbroken surface on the side contiguous to the disk, and a unilateral journal, B, mounted in said pendant, said scraper arranged so as to be presented to the concave face of the disk, and operate between the axle and the periphery thereof, and project slightly beyond said periphery, substantially as and for the purpose herein shown and described.

No. 241,074.—PHILIPSEITZ, BAYON ROUGE, assignor of one half to RICHARD W. BOLAND, NEW ORLEANS, LA.—*Cultivator*.—May 3, 1881. Filed *August 6*, 1881.

Claim.—1.—In a cultivator, the combination, with the carriage A B C, the U shaped bar F, and the draw rods E, of the short beams I, the swiveled U shaped standards J, having locking turn-tables, or disks N, the sets of rotating circular cutters or plough plates L, the long beams H, the swiveled U shaped standards P, having locking turn-tables or disks R, and concavo-convex rotating disks or plough plates Q, and for the purpose specified.

2.—The combination, with the disks, of the shaft K, the swiveled U bar J, the turn-table N, having a number of holes for pins, and the beam I, as and for the purpose set forth.

No. 241,680.—GARLAND B. ST. JOHN, CEDAR RAPIDS, Iowa.—*Ploughs*.—May 3, 1881. Filed *February 11, 1881*.

Claim.—1.—In a plough, the half-share and mould-board C, cut away at *c'* in front on a curved line, its forward end or point extending about to the center of the disk C, and combined with said disk, which is mounted by sleeve E on the inclined arm F, extending from the plough beam, substantially in the manner and for the purposes set forth.

2.—In a plough, the combination of the revolving concavo-convex disk with the half share and mould-board arranged to work in unison, said disk cutting in advance of the mould board, substantially as described.

No. 242,115.—DAVID E. DARNELL.—MASONVILLE,

N. J.—*Marking Out Sled for Agricultural Purposes*.—May 31, 1881. Filed *December 31, 1880*.

Claim.—1.—The brackets C, with rear disk-like portions H', the disks H having cups G, the shares E having hubs D, combined as described, the disk and disk-like portions H H' being contiguous, and the disks being rotatable on the disk portions, and the cups G formed with said disks H, all constructed and operating as and for the purpose set forth.

2.—The riding-sled with runners of T metal, the brackets C, with the rear knees of the runners passed through them, the disks H, shares E, pins J, and bolts D, combined and operating as described, and forming an improvement in marking out sleds, as stated.

No. 243,676.—THOMAS E. JEFFERSON, BOSTON, MASS.—*June 28, 1881*. See *Ploughs-Wheel or Sleds*.

CULTIVATORS—PARALLEL.

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Alexander, R. W.	355 110	Hooper, W. L.	351 108	Pratt, E.	338 105
Avery, R. H.	343 106	Hoyman, H. S.	358 110	" "	(R.) 338 105
Avery, R. H.	345 107	Jenkins, J. C.	351 108	Price, T. J. and Hunt, A.	352 109
Baird, E. A. and Gale, A. T.	359 111	Joy, E. W.	354 109	Reck, W.	341 106
Bennett, W. H. and Height, H. K.	356 110	Kendall, T. W.	353 109	Reeves, W. F., A. B. and M. T.	355 109
Brown, W. P.	360 111	Lanham, W. M.	341 106	Reeves, A. B.	353 109
Carson, R.	342 106	Lanham, W. M.	342 106	Robertson, W. H.	351 108
Carter, C. D.	354 109	Lendon, W.	353 109	Roberts, T. B.	344 107
Carter, C. D.	359 111	Ladlow, J. M. and Pruitt, S. C.	358 110	Simpson, M. P.	344 107
Cantham, I. N.	346 107	McDill, T. W.	350 110	Slifer, R. H.	358 111
Cavett, R. S.	348 108	McGee, C.	357 110	Sloss, L. L.	339 105
Clark, W.	354 109	McNitt, M.	352 108	Sloss, L. L.	342 106
Clawson, L. G.	351 108	Markee, J. and Spicer, W. E.	350 108	Slusser, G.	348 108
Cook, J.	339 105	Miller, R. M.	346 107	Smith, A.	337 105
Cooper, A.	348 108	Morrison, J. E.	338 105	Smith, J.	359 111
Critchler, S.	347 107	Mourning, F. G.	342 106	Stubblefield, D. A. and Luse, W. H.	341 106
Eichholtz, M.	340 106	Owen, G.	337 105	Summers, J. and Trimble, J.	357 110
" " (R.)	340 106	" " (R.)	337 105	Tarlington, M. S.	353 109
" " (R.)	341 106	" " (R.)	337 105	Thomas, J. W.	349 108
Ely, B. M.	340 106	Owen, G.	343 106	Thomas, J. C. B.	357 110
Evans, J. G.	360 111	Parker, J. A. J. W.	360 111	Thrasher, T. L.	347 107
Gardner, J. M.	349 108	Pattee, J. H.	344 107	Vangundy, F. W.	338 105
Gibson, R. F. and Gowden, S. M.	360 111	" " (R.)	344 107	Ward, W. C.	356 110
Graham, J. L. and Wal- lace, S. J.	350 108	Pattee, J. H.	346 107	Warner, C.	354 107
Graves, J. M.	359 111	Pattee, H. H.	355 109	Watson, C. H.	345 107
Helem, J.	347 107	Pattee, H. H.	355 109	Watson, W. M.	348 108
Hooper, W. L.	349 108	Pattee, J. H.	357 110	Watson, W. M.	350 108
		Peck, E.	339 105	Williamson, S. D.	352 108
		Poling, T.	349 107	Young, A.	330 105

No. 12,240.—A. SMITH, St. LOUIS, Mo., U. S. Pat. Off. *July 21, 1885*.

Claim.—The manner of coupling plough A with plough B by means of hinged slide rods D, bar E, and fork F, for the purpose of all wing each plough a somewhat full and independent motion, and of placing the plough under the control of one hand of the ploughman, and in season of getting control both ploughs, as set forth.

No. 34,340.—GEORGE OWEN, JACKSONVILLE, Ill., *Copyright of Patent Office—Ex. Div. 1, 1892*.

Claim.—A combination of two single ploughs by means of the hinged coupling pieces or rods C, attached to the beams of said ploughs in the rear of the standards thereof, so as to bring the ploughs close together, and thereby form a double mouldboard plough, in the manner and for the purpose described.

2.—The combination of the curved or bent pieces *EE*, and the sliding joints of the bars C and D, in the manner and for the purpose specified.

3.—Connecting the compound curved or bent bar C with the bar D, by means of the chain *c*, or its equivalent, for the purpose set forth.

4.—The combination of the front curved stretcher bar B, and front bar C, and bar D, for the purpose of connecting two ploughs, as set forth.

5.—The combination of the front straight bar B, with the curved or bent joint bar C, and straight jointed bar D for the purpose of connecting two ploughs, as specified.

No. 15,518.—GEORGE OWEN, JACKSONVILLE, Ill.—*U. S. Pat. Off. Copyright—Ex. Div. 4, 1892*. Reissued *January 5, 1894*.

Claim.—A combination of two single ploughs by means of the hinged coupling pieces or rods C, attached to the beams of said ploughs in the rear of the standards thereof, so as to bring the ploughs close together, and thereby form a double mouldboard plough, substantially in the manner and for the purpose described.

2.—The combination of the curved or bent piece or pieces *EE* and the sliding joints of the bars C and D, in the manner and for the purpose herein specified.

3.—Connecting the compound curved or bent coupling bar C with the upper coupling bar D, substantially in the manner and for the purpose herein set forth.

4.—The combination of the front curved or bent stretcher bar B, and curve for bent coupling bar C, for connecting two ploughs, substantially in the manner and for the purpose herein set forth.

No. 37,315.—GEORGE OWEN, JACKSONVILLE, Ill.—*Pat. Office—Ex. Div. 4, 34,310, February 4, 1892*. Reissued *January 5, 1894, 15,518*; again reissued *November 2, 1894*.

Claim.—A coupling for or more ploughs, with rigid couplings, made of wood or iron, or partly of wood and partly of iron, and connected with the ploughs by loose or hinge joints, substantially as and for the purpose herein specified.

2.—The combination of the curved or bent piece or pieces *EE*, and the sliding joints of the bars C and D, in the manner and for the purpose herein specified.

3.—Connecting the compound curved or bent coupling bar C with the upper coupling bar D, substantially in the manner and for the purpose herein set forth.

4.—The combination of the front curved or bent stretcher bar B, and curved or bent coupling bar C, for connecting two ploughs, substantially in the manner and for the purpose herein set forth.

No. 41,474.—W. VAN CINDY, GARDENBURG, Ill.—*Cultivators—Ex. Div. 2, 1894*.

Claim.—The novel manner of connecting the frame by means of the peculiar arrangements of the pivoted yoked connecting bars E, with shaft S, working in an through the slots of open straight bar F, in combination with the draught beams A, A', the whole operating substantially in the manner and for the purpose herein set forth.

No. 44,747.—EDWARD PRAET, GRAND DEPORE, Ill.—*Cultivator—Oct. 18, 1894*.

Claim.—The two plough beams A, A', connected together at a proper distance apart by means of bars D or H attached to the A by pivot bolts *a*, to admit of an independent longitudinal movement of the beam A, the latter being used

with or without the standard F and at a plough G, and all arranged substantially as and for the purpose herein set forth.

No. 7,353.—EDWARD PRAET, ROCK GROVE, Ill.—a signor to SAMUEL J. WAHLE, E. KROCK, IOWA.—*Oct. 27, 1890—14,747, Oct. 18, 1894*. Reissued *October 17, 1896—Ex. Div. 12, 1875*.

Claim.—In cultivators a cross-bar, H, with elevated center, having at its ends vertical pivots *L, L'*, with upper and lower bearings, L' L' thereon, and intermediate P, connecting two plough frames, A, A', so as to hold their ploughs upright and allow them movement on the pivots, substantially as set forth.

2.—The combination, in a walking steady-row cultivator, of two plough beams, A, A', each bearing a handle, K, with an elevated cross-yoke, having at its ends pivots *L, L'*, and upper and lower bearings L' L', connecting the plough beams, so as to hold their ploughs upright, and allow either of them to be drawn freely in advance of the other as they are drawn forward, substantially as set forth.

3.—The elevated cross-yoke, having pivots *L, L'*, and intermediate P in its ends, in combination with two plough frames, A, A', connected in the rear to hold them from crowding apart or together, as they are drawn along in throwing furrows to the rear or apart, substantially as set forth.

4.—The cultivator, with two plow beams, A, A', connected without lower topsides, and having the front plows C' combined with vertically adjustable runners, M, substantially as set forth.

No. 54,101.—JAMES E. MORRISON, WASHINGTON, D. C.—*Cultivators—Apr. 24, 1896*.

Claim.—A cultivator having double plough beams U, U', hooks *u, u'*, clevis *v*, standards *x, x'*, and cross bars V, V', constructed, combined and arranged substantially as herein specified.

2.—In combination with double plough beams united at their front ends, as described, the standards *x, x'*, and cross bars V, V', constructed and operated substantially as and for the purpose set forth.

3.—The entire cultivator with its various devices, constructed, combined, and arranged substantially as and for the purposes herein mentioned.

No. 58,383.—JAMES COOK, COLLENSVILLE, OHIO.—*Cultivators—Oct. 15, 1896*.

Claim.—The inter-shaft frames A and *a*, constructed in the manner described, in combination with the standards *d* and *d'*, beam B, and drag bars *z, z'*, arranged, connected, and operating in the manner and for the purpose specified.

2.—The upper frame *a*, and spring connection *b*, in combination with the plough handles and notches or gains, to limit the oscillating motion of the ploughs, in the manner and for the purpose substantially as described.

No. 59,490.—ADAM YOUNG, MILLVILLE, Ill.—*Cultivators—Oct. 20, 1896*.

Claim.—The construction of the beams C, C', and their combination with the sockets *a*, or the handle B', as the case may be, for the purpose of forming the connection between two main ploughs.

2.—The adjustable clamp D, for the purpose of nutting the two parts of the beams C and C', substantially as herein described and set forth.

3.—The bars S, S', and the staples *s, s'*, for the purpose of attaching the handles L, to the other portions of the plough. No. 68,747—F. L. SLOSS, near SOUTH UNION, KY.—*Doors—March 1, 1897*.

Claim.—Connecting the plough frames to each other by the three adjustable bars D, E, F, not in the same horizontal plane, and pivoted or connected at end to plough frames by double jointed, hinged or equivalent connections, so as to have both a lateral and vertical movement, substantially as herein shown and described and for the purpose set forth.

No. 70,111.—EZRA PECK, CHICAGO, Ill.—*Cultivator—Oct. 13, 1897*.

Claim.—A frame work for carrying and drawing the ploughs of a steady-row cultivator, supported on runners, substantially as described.

2.—The frame supported on runners, in combination with two gangs of ploughs, substantially as specified.

3.—The main frame, supported on runners, in combina-

of the frame C D E, and ploughs whose beams are at their forward ends connected by link joints to the bar C of the frame, and whose land-side jans H' and P are pivoted to the fixed pivot arms F and G of the bar E of the frame, substantially as and for the purposes specified.

No. 144,740.—RICHARD S. CAYETT, BIRMINGHAM, TENN.—*Cultivator*.—*Nov. 18*, 1873. Filed *September 9*, 1873.

Claim.—The combination of beams A A', A' and standards B B' B'' with the loose like connections *g h c d* and *p n a s*, as and for the purposes described.

No. 145,060.—GEO. SLUSSER, HILLSBOROUGH, OHIO, assignor of one-half his right to C. S. BELL, and JAMES H. ANDERSON, same place.—*Cultivator*.—*December 10*, 1873. Filed *August 20*, 1873.

Claim.—The combination, in a double shovel walking cultivator, of the beams B B', slotted at their front ends, the adjustable arched yoke D, adjusting jans F, and curved fixed runners F', constructed, arranged, and operating as described.

No. 145,848.—ANDREW COOPER, MACOMB, ILL., assignor of one-half his right to MARTHA E. UPDEGRAFF, same place.—*Cultivator*.—*December 23*, 1873. Filed *October 10*, 1873.

Claim.—1.—In a parallel cultivator, the frames A A' carrying the wheel spindles E, the draft attachment J, and the plough beams C, all constructed and combined as shown, for the purposes set forth.

2.—The combination of the frames A A', draft attachment J, and cutter bar B, having arched arms, and connecting the frames by means of hinged joints *k*, substantially as shown and described, and for the purposes specified.

No. 145,733.—WILLIAM M. WATSON, TONICA, ILL.—*Cultivator*.—*Jan. 9*, 1874. Filed *February 21*, 1874.

Claim.—1.—In a straddle row cultivator, the neck yoke G, with staple *m*, in combination with the draft tongues D, having long staples *h*, substantially as and for the purposes set forth.

2.—The combination, in a straddle row cultivator, with the independent sliding plough draft tongues, of a neck yoke connected to said tongues, and arranged to prevent lateral swinging of the same, substantially as described.

No. 151,868.—JOHN W. THOMAS, SHAFER SPRINGS, TENN.—*Plough*.—*Jan. 9*, 1874. Filed *January 5*, 1874.

Claim.—The combination of the standards C with the bars of plates J M and their rollers K L, arranged to the beams A A' and standards D of the ploughs, and with the beams P of two shovel ploughs, substantially as herein shown and described.

No. 151,803.—HEFFERSON M. GARDNER, SHAFER SPRINGS, TENN.—*Plough*.—*Jan. 9*, 1874. Filed *January 23*, 1874.

Claim.—1.—The double swivel joint composed of the flanged and beveled sleeve C, the slotted axle D, with its key to the pinnaal pin E, and slotted pinnaal box coupling hook F, or their mechanical equivalents, all arranged as described and set forth.

2.—The double swivel joint, as shown, in combination with standard B and connecting rods or bars H, all arranged as described, and for the purpose set forth.

No. 150,150.—WM. L. HOPPER, MONROE, ILL.—*Cultivator*.—*Oct. 22*, 1874. Filed *August 10*, 1874.

Claim.—The combination of the upright axle A, beams B D, couplings C G, shaft plates E B, and runners C' C', the runners pinnaled in the draft plates, the draft plates pivoted to the axle, and the beams having free vertical and lateral motion, all operating as and for the purposes specified.

No. 157,044.—JESSE MARKEE and WM. F. SPICER, ALTON, ILL.—*Cultivator*.—*Nov. 17*, 1874. Filed *September 12*, 1874.

Claim.—1.—The combination, with the plough beams A A', of the forked castings E E' E'', arched axle G, with spindles *p z*, curved arms L, bolts K, swiveled runner H, and draft hooks K, all substantially as set forth.

2.—In a cultivator, the metallic socket J, connected to the rod *m*, having a hook at its end, which clutches into a staple in the plough beam, as and for the purposes herein set forth.

No. 157,125.—JOHN L. GRAHAM, CARBONATE, ILL.,

and SAMUEL W. WALLACE, KEOKUK, IOWA.—*Cultivator*.—*November 24*, 1874. Filed *December 1*, 1873.

Claim.—1.—The double curved teeth C, with flat horizontal base, attached to the top of the cross bars and projecting obliquely forward, and provided with rear braces attached to the under side of said bars, as set forth.

2.—The arched yoke K, with ends hinged to the plough beams and bent to the rear, or arranged to rest by bearings on one or both beams back of the hinges, to support the arched center right, substantially as set forth.

3.—In a straddle row cultivator, the combination of two plough frames, each separately and automatically held up, with arched yoke K, and to connecting joints to let them rock freely side-wise, substantially as set forth.

4.—The plough E, swiveled to turn on a nearly vertical axis, with breaking pin or other holding means, substantially as set forth.

5.—The combination of cultivating plough E, swiveled as described, and with safety holding device, with the revolving collar E', substantially as set forth.

No. 157,895.—WM. MIDD WATSON, TONICA, ILL.—*Cultivator*.—*December 15*, 1874. Filed *September 26*, 1874.

Claim.—The tongues A A', jointed together at their forward ends, and capable of a rearward or forward movement independently of each other, in combination with the runners E E', to the upper horizontal parts of which are pivoted, by the clevis F, the plough beams C C', by which the latter are capable of a forward or rearward movement with the tongues A A', a lateral movement to ward or from each other on the horizontal parts of the runners, and also a vertical movement on the same, substantially as described.

No. 162,577.—WM. H. ROBERTSON, BIRDA, ILL., assignor of two-thirds his right to RUFUS FORD and A. H. GUNN, same place.—*Cultivator*.—*April 27*, 1875. Filed *January 5*, 1875.

Claim.—The bar H, curved, as shown, to form a runner, *h*, and an adjusting handle, *h'*, arranged to operate with the plough beam C, eyelid I, axle A, and wheels B, substantially as described, and for the purpose specified.

No. 162,768.—FINN S. G. CLAWSON, PEYASAN HILL, MO.—*Gun Plough*.—*May 4*, 1875. Filed *April 11*, 1874.

Claim.—Two frames A' A', carrying a gang of ploughs having their respective sets of mold boards turned in opposite directions, in combination with the connecting bow L, pivoted loosely to each, as shown and described, so that they may by simply turning, and without any adjustment, be made to turn the soil to or from a row of plants.

No. 164,372.—WM. L. HOPPER, MONROE, ILL.—*Cultivator*.—*Jan. 15*, 1875. Filed *January 5*, 1875.

Claim.—1.—The axle A, constructed, as described, of an elevated short central part *a*, diverging side parts *a'*, and horizontal parts *a''*, and having the latter bolted thereto, substantially as described, and for the purpose specified.

2.—A plough elevating and setting device for tongueless cultivators, consisting of a runner carrying rod G, hinged to the plough beam, and to which is hinged a rod H, by which it may be fixed in any relative position, substantially as described, and for the purpose specified.

No. 166,278.—JOSEPH C. DENKIN, LEVANS, TENN., assignor to himself and JAMES G. POLLEY, same place.—*Cultivator*.—*Aug. 19*, 1875. Filed *April 17*, 1875.

Claim.—The combination, with two cultivators or gang ploughs, of a median coupling, consisting of the blocks K K', and pivoted bow J, as and for the purpose specified.

No. 167,458.—MARTIN MCNEFF, MONROE STATION, ILL.—*Cultivator*.—*September 7*, 1875. Filed *July 10*, 1875.

Claim.—The combination, with the draft bars F and the rock bars C, carrying to E, of the combined handles and pivot K, pivoted in supports L, and arranged to operate in the manner shown and described.

No. 170,140.—D. W. LILIAMSON, MILFORD, IND.—*Double Plough*.—*November 10*, 1875. Filed *September 18*, 1875.

Claim.—1.—The bars C, bolted to the axles B, and secured to the frame piece A by means of the flanged plate D,

with a ledge *a*, at *b*, over an annular part *c*, to meet at the end of the wheel hub in front, and a spindle being introduced and work being done by *a*, at its front end, to engage with the front *a*, *b*, and a ledge *d* to be secured to the arm *D* of the load arm *B* *C*, in the manner and for the purposes set forth and described.

3.—The combination of the pivot bolt *A*, and *B*, constructed as described, the arch bar *C*, pivot bolt *D*, and stop *E*, in the manner and for the purposes set forth and described.

4.—The sled *W*, provided with frame beam *X* and load *Y*, all arranged and adapted to be operated in the manner shown for the purpose specified.

5.—The load arm *B*, *C*, having a downwardly projecting arm *D*, connected to a hub *E*, at *F*, *G*, *H*, *I*, *J*, *K*, *L*, *M*, *N*, *O*, near the inner end of the lower jaw *P*, in the manner set forth and described, for the purpose specified.

6.—The two half bolts *F*, *H*, constructed to clasp the sleeves *G*, and to be in contact with each other at their central point, in combination with the axle *C*, and the axle being provided with a hub *E*, in the manner and for the purpose set forth and described, the axle being provided with a hub *E*, in the manner and for the purpose set forth and described.

7.—The lower end of the lower arm *E*, provided with the convex chamfer *F*, *G*, and curved portion *H*, bent or curved backward, not forward, and adapted to receive the load *I*, *J*, *K*, and to allow said load to be adjusted up or down for the purpose of adjusting the pitch of the shovel, as set forth and described.

8.—The load arm *B*, *C*, having a downwardly projecting arm *D*, located at or near the inner end *P*, combined with the bolt *E*, and with a pin *F*, adapted to be openings in the arm and bolt, as set forth.

9.—The combination of the bolt *A*, *B*, *C*, having a slotted arm *D*, the hollow spindle *E*, having a lug *F*, and the bolt *G*, adjustable with said spindle in the slot of the arm *D*, and confining the spindle to said position.

10.—The two half bolts *F*, *H*, arranged to clamp the pivot of plate *I*, in a manner in which the axle is bent or curved over and clamp in a lower manner *J*, *K*, *L*, *M*, *N*, *O*, and to connect to the axle *C*, in the manner and for the purposes set forth, at the lugs *F*, *G*, *H*, *I*, *J*, *K*, *L*, *M*, *N*, *O*, and to clasp the bolted off to the bolt *E*, in the manner and for the purposes set forth, at the rear bolt *E*, being in contact with the lugs *F*, *G*, *H*, *I*, *J*, *K*, *L*, *M*, *N*, *O*, in the manner set forth, as described.

No. 10,170.—R. W. MEXLANDER, GALESBURG, ILL., *Calligrapher*.—*Mach.* 4, 1877. Filed *Nov.* 9, 1876.

Claim.—A combination of a plow beam, made in two parts, *D*, *D'*, the latter made of bolt head, and both within the former as described, and having a forward end formed as a shoe or runner, substantially as, and for the purposes set forth.

2.—The plate *A*, *B*, being slotted at bolt *E*, arranged to engage with the beam *D*, *D'*, having slot *F*, and studs *G*, substantially as described, and for the purposes set forth.

3.—The combination of the axle *A*, a curved end of axle *B*, with the curved plough shoe *C*, substantially as described, and for the purposes specified.

No. 10,090.—H. H. W. M. GLENN, BAYVIEW, IOWA, *Chf. Eng.*—*Mach.* 8, 1877. Filed *July* 27, 1877.

Claim.—The combination of a long beam combination, constructed substantially as described, with an offset of vertical position *a*, the curved portion *b*, for the attachment of the plough beams, and several portions *c*, *d*, to which the runner *E* may be attached in front or behind *d*, substantially as described, and for the purposes specified.

No. 10,069.—WM. C. WARR, MIDDLETOWN, OHIO, assignor of one-half to J. H. KENNEDY and F. L. NIXON, same place. *Calligrapher*.—*Mach.* 10, 1877. Filed *July* 23, 1877.

Claim.—The combination, with the pivoted frames *A* and *A'*, *H*, and bar *F*, *E*, of the curved shackle bolt *G*, having the shoulder *C*, *D*, *E*, *F*, *G*, *H*, *I*, *J*, *K*, *L*, *M*, *N*, *O*, *P*, *Q*, *R*, *S*, *T*, *U*, *V*, *W*, *X*, *Y*, *Z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *a*, *b*, *c*, *d*, *e*, *f*, *g*,

which is held in position by the bolts *o*, and the spring *R*, is intended to be cut off substantially as herein shown and described.

7.—The combination of beam *L*, pivot *L*, handle *L*, and the plough standard, arranged as a handle pivot, substantially as specified.

8.—The combination of handle *K*, pivot *L*, *M*, and shaft *H*, substantially as herein shown and described, and for the purposes specified.

9.—The shaft *L*, pivot *L*, constructed as shown, having a mold-board in front of it and a being a part of a beam and mold-board for more or less of its length, and arranged substantially as specified.

10.—The combination of the forward end of the lever *K* with the device *C*, the shaft *H*, and draft bars *E*, *M*, substantially as herein shown and described, and for the purposes herein specified.

No. 199,695.—REUBEN H. SEIFER, HOUSTON, MO.—*Cult. m.*—*Dec. 20, 1877*. Filed *May 12, 1877*.

Claim.—1.—The combination of arch *A*, having horizontal ends *B*, *B*, bent forward and provided with pins *P*, the slot clips *I*, tubular shaft *S*, a fastener *U*, *E*, and the double beams *C*, *D*, having clamp bolts *V*, substantially as shown and described.

2.—The combination of the bar *I*, having a shoe formed up on its lower end and a notch in its forward edge, the connecting bar or bolt *J*, the connecting bar *P*, having a hook formed upon a bent end, the hook pin *I*, and the locking bolt *U*, with the inner plough *A* and *D*, substantially as herein shown and described.

No. 199,727.—JEFFERS ON, M. GRAVES, BLOSSOM FRANK, ILL.—*Cult. m.*—*February 5, 1878*. Filed *April 3, 1877*.

Claim.—The combination of beams *A*, *B*, *C*, *G*, having curved ends *A*, and the pivotal angle bars *H*, all arranged and used for the purpose specified.

No. 202,703.—JOSEPH SMITH, OWING, ILL.—*Cult. m.*—*Dec. 3, 1878*. Filed *February 11, 1878*.

Claim.—1.—In a cultivator or plough, the union of the right and left ploughs *A*, *A*, provided with the perforate bars or plates *B*, *B*, detachably connected together by headed screw bolts *d*, *d* and nuts *d'*, *d'*, with the pair of handles *B*, *B* and the slotted central upright *C*, all detachably secured to the ploughs *A*, *A*, substantially as shown and described, and for the purposes specified.

2.—The double bowed equalizer *F* and disk or plate *B'*, pivoted to and in combination with the tongue of the cultivator or plough, and connected to the flange or plate *L*, and possessing a limited horizontal movement in the arc of a circle, substantially as in *L* for the purpose specified.

No. 204,883.—CHARLES D. CARTER, ALTOONA, ASSIGNOR OF ONE HALF PART TO J. T. CARTER, SPRING ARROW, MO.—*Cult. m.*—*Jan. 18, 1878*. Filed *May 2, 1878*.

Claim.—1.—The combination of the axle *a*, plates *b*, rigidly secured thereto, plough beams, upright *c*, passing loosely up through the outer ends of the plates, and draft bars *d*, fastened to the upright *c*, between the ends of the plates, whereby the front ends of the beams may be raised upward to any desired degree, substantially as shown.

2.—The combination of the sleeve *e*, having the serrations *o* upon its front edge, and a groove *t*, in its lower front end, with the shoe block *m*, having the flange *u*, projection *v*, and clamping screw *w*, substantially as specified.

No. 211,314.—EDWARD A. BAIRD and ALVIN J. GALE, Piquette, OHIO.—*Cult. m.*—*Jan. 14, 1879*. Filed *August 23, 1878*.

Claim.—1.—In combination with the hinge plate *d*, the wedge plate *e*, adjustably secured to the forward ends of the plough beam, and having the side adjacent to the hinge plate beveled, substantially as shown, and for the purposes specified.

2.—The shoe *m*, pivoted between the clevis *D*, and provided with a hinge joint at *n*, and sliding collar *p*, in combination with the hinged plough beam *r* and hooked arm *z*, substantially as set forth.

3.—The arches *H*, pivoted in the braces *b*, *b*, in combination with the clevis *D*, constituting bearings for the axes of the wheel *L* cultivator, as herein shown, and for the purpose described.

4.—The swivelled arches *H*, adapted to turn in the arms *L*, provided with hooked ends, in combination with shoes *m* and clevises *D*, or equivalent supporting frame work for the axes of the carriages, substantially as shown and specified.

No. 210,599.—JOSEPH A. J. W. PARKER, WHITEVILLE, TENN.—*Ploughs*.—*Sept. 10, 1879*. Filed *August 1, 1879*.

Claim.—The combination, with the adjustably connected ploughs *A*, of the whiffletrees adjustably secured to the clevises of *A*, and reflexibly connected at their adjacent ends, and provided with trace-hooks at each end, substantially in the manner and for the purpose set forth.

No. 210,710.—RICHARD E. GIBSON and SYLVESTER M. COWDEN, TUSCALOOSA COUNTY, ALA.—*Cult. m.*—*Sept. 16, 1879*. Filed *July 12, 1879*.

Claim.—The combination, in a convertible cultivator, of the draft bar *B*, and its supporting wheels, the draft bar *B'*, the clevises *C*, *C'*, the plough beams *A*, *A'*, the former having its forward end beveled, the plough beams *D*, *D'*, the adjusting bolts *d'*, the handles *E*, and their braces *e*, *e'*, all arranged, constructed, and operating substantially as shown and described.

No. 220,571.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Cult. m.*—*October 14, 1879*. Filed *May 3, 1879*.

Claim.—1.—In a tongueless cultivator, the draft bar *A*, provided with the arm *B* and the spindle *C*, in combination with the wheel of a cultivator and the clevis *F*, as and for the purposes substantially as set forth.

2.—In a tongueless cultivator, the draw bar *A*, provided with the slot *D*, or its equivalent, in combination with the axle *E*, provided with the horizontal portion *d*, and the clevis *F*, as and for the purposes set forth.

3.—In a cultivator, the cultivator beam *G*, provided with the arm *H*, in combination with the clevis *F*, the axle *d*, and the arm *B*, as and for the purposes substantially as set forth.

No. 237,376.—JAMES G. EVANS, MACOMB, ILL.—*Cult. m.*—*February 8, 1881*. Filed *July 6, 1880*.

Claim.—1.—The combination, with the frame or rigidly connected draft bars of a cultivator, of the hinged standard *B*, provided with a handle, the pivoted lever *a*, the connections *g*, *h*, the pivoted standard *B'*, and the jointed rods *l*, *l*, substantially as shown and described.

2.—The combination of the hinged and handled standard *B*, standard *B'*, and its connecting devices, rods *m*, *n*, runner *D*, arch *J*, and frame *A*, substantially as shown and described.

<i>Plat. Claim</i>	<i>Plat. Claim</i>	<i>Plat. Claim</i>			
Adams, J.	412 129	Hall, J. M.	379 121	Roberts, F. E.	388 123
Ali, J., W.	389 123	Harper, C. A.	388 123	Rouse, T.	4 9 129
Andrews, W. J.	394 125	Haynes, J.	410 120	Sackett, C. E.	414 130
Arwater, J. B.	3 3 132	Henderson, J. T.	495 128	Sackett, C. E.	416 130
Balger, N.	381 121	Hessellom, E. M.	403 127	Sackett, C. E.	417 131
Ballou, E.	374 122	Hewitt, S.	382 122	Sackett, C. E.	417 131
Bat, Jellen, A. F.	405 128	Hoffmeyer, A. B. and		Sackett, C. E.	418 131
Barfresser, H.	385 123	Schmidt, J.	402 127	Sackett, C. E.	420 132
Berninger, C.	390 124	Hopkins, G. E.	408 129	Sackett, C. E.	421 132
Bicklemyer, L.	387 123	Hughes, G. R. and Wall,		Sackett, C. E.	424 133
Bleeker, W. E.	398 126	J. F.	412 129	Scheimerhorn, J. and Por-	
Bleeber, W. E.	401 127	Hyde, W. B.	399 126	ter, R.	377 121
Bourne, E.	395 126	Johanson, J.	383 122	Schuchard, J.	424 132
Bowen, H. W.	397 126	Johanson, J. G.	393 125	Schultz, J. D. and Adams,	
Bredlen, C. C. and		Jones, L. G.	4 2 127	R.	387 123
Wheeler, O. F.	413 130	Jones, H. and Vard, W. K.	404 128	Schalley, C.	384 122
Brea Inay, D. W., Sr.	408 128	Judd, N. T.	396 126	Sherman, D. B.	410 129
Burch, J. W.	394 125	Kant, E. H.	391 124	Sherwood, L.	392 125
Bussell, E. T.	387 123	Kerschner, T. A.	499 129	Swensen, B. E.	393 125
Cagwin, F. L.	391 124	Locker, D.	414 130	Skilling, H.	413 130
Cagwin, F. L.	388 123	Lynch, G. F.	399 124	Smith, N. S.	386 121
Chamerdin, W. H.	395 126	McLaughan, C. A.	386 123	Soniak, L.	402 127
Chenoweth, J.	384 122	McClell, J. B. and		Spencer, H. H.	423 132
Collin, J. W. and Wilkin-		Mayes, C. A.	399 126	Standish, P. H.	389 124
son, R. V.	381 121	McCracken, W.	386 123	Starratt, J. D.	401 127
Come, F. C.	392 125	McGray, T. H.	423 132	Stephens, A. J.	392 125
Coon, J. H.	407 128	McDonald, T. E.	391 124	Stevens, L.	381 121
Cooper, G. W.	396 124	McDonell, A. S.	401 127	Stoddard, J. C.	386 121
Crenshaw, M.	379 121	McKinley, R.	401 127	Stone, J. C.	409 129
Daniels, C. J.	415 130	Martin, L.	414 130	Stoner, A. F.	391 124
Dawson, W. J.	393 125	Mathes, W. McC.	410 129	Tally, T. J.	420 132
Decele, M.	397 126	Milroy, J. W.	389 123	Taplin, H. T.	393 125
Dukeman, I. R. and Hew-		Milroy, J. W.	400 127	Tarmutser, J. P.	387 123
lett, J. J.	382 122	Moody, L.	392 125	Thompson, A.	385 122
Eckles, H. P.	399 124	Morrel, A. H.	378 121	Thompson, J.	396 126
Elliott, J. C.	403 127	Morris, J. R.	397 126	Tilley, J. R.	412 129
Elliston, C. T.	401 127	Myers, D.	384 122	Tranter, J., Kinsey, J. and	
Ernest, J. G.	382 122	Nichols, W. T.	411 129	Carr, J. M.	396 126
Fenley, G. W.	407 128	Newsom, G. S.	395 126	Trouard, A.	400 127
Field, G. B.	378 121	Nusbaum, A. B. C.	394 125	Tuthill, T. J.	377 121
Fithian, L. S.	383 122	Pedrick, R. R.	419 131	Uehling, T.	394 125
Fitzgerald, J. C.	385 122	Pelton, P. D. and H. C.	411 129	Vaughn, J. and Channess,	
Fosgard, G. A.	398 126	Phillips, J.	407 128	E.	389 124
Foster, A. K. and B. H.	386 123	Pitkin, J. H.	403 127	Von Phul, H. Jr., and Mal-	
Foye, W. H.	406 128	Platt, H. M.	386 121	lon, J.	405 128
Foye, W. H.	409 129	Pomerooy, H. A. G. and		Wadsworth, W.	383 122
Freeborn, W.	412 129	Hudson, R. F.	381 121	Whithead, J.	379 121
Fraser, E. J.	385 122	Poundstone, C. N.	400 127	Winters, E. C.	407 128
Frazee, L. F.	396 126	Randolph, J. H. Jr.	400 127	Wood, N. S.	406 128
Gatling, J.	377 121	Richardson, W. C. B.	408 128	Young, J.	377 121
Grauer, J.	413 130	Roach, L.	380 121	Zimmerman, J.	379 121

J. GATLING, MURFREESBOROUGH, N. C.—*Rotary Cultivators*.—*June 10, 1855*.

Claim.—The manner in which I have combined the operation of the wheel and hoies in the interior of the frame so as to produce the application I have described of giving motion to the said hoies.

No. 2,049.—J. F. SCHERMERHORN, INDIANA and R. POTTER, NEW YORK.—*Rotary Cultivators*.—*April 10, 1851*.

Claim.—Combining the large or cutter cylinder A, and the revolving shaft of spindles I, arranged as set forth, in an open frame so constructed as to allow of their application to the purpose specified as herein described.

2.—In combination with the foregoing, the hopper L and operating cylinder J, the whole being constructed substantially as described.

3.—In combination with the cylinder A, and shaft of spindles I, arranged as set forth, the mode of raising the frame and cylinders from the ground by means of the shoes O, and levers Q, the whole being combined, arranged and operating substantially in the manner described.

No. 5,605.—J. YOUNG, JEFFERS IN, MAINE.—*Rotary Cultivators*.—*July 11, 1858*.

Claim.—The combination substantially as herein set forth of the several series of spades or plough plates *e e* with the cutter wheels A A

2.—The manner of operating the spades or plough plates by means of the arms *m*, and *n n*, projecting from each plough bar D, the stop *f* descending from the axle-tree, the elastic arms *r*, radiating from the rings *d d*, secured to the inner sides of the wheels and the pins *s s*, projecting from the inner sides of the wheels substantially as herein set forth; not intending by this claim to limit myself to the exact number, proportion and arrangement of ploughs or spade plates as herein set forth and represented, but shall vary the same as I may deem expedient, whilst I attain the same end by substantially the same means.

No. 6,091.—E. J. TUTTILL, ELMIRA, N. Y.—*Rotary Cultivators*.—*Feb. 20, 1849*.

Claim.—The rotary cutters K K, and screw shaft I J, in combination with the wheel and handle shafts, arranged in the manner and for the purpose herein described.

No. 10,024.—G. B. FIELD, ST. LOUIS, MO.—*Comb. of Plough and Harrow*.—*March 14, 1854*.

Claim.—The arrangement of the shield plates P and Q, on the shaft I, for the purpose set forth.

2.—The arrangement of the rotary harrows B B, sustained above the ground and in the rear of the cultivating cylinder for breaking and pulverizing the falling earth as set forth.

No. 12,090.—A. H. MORRELL, MARLEN, TEXAS.—*Rotary Cultivators*.—*April 10, 1855*.

Claim.—The combination of the adjustable thinning point (or points) *m*, at the forward end of the cultivating point (or points) *i*, at the rear end of the cultivator, substantially as herein set forth.

2.—Combining the rotating cutter *d*, with the laterally adjustable thinning point (or points) *m*, and the cultivating point (or points) *i*, substantially in the manner and for the purpose herein set forth.

No. 14,533.—M. CRENSHAW, SPRINGFIELD, TEXAS.—*Rotary Cultivators*.—*March 25, 1856*.

Claim.—In combination with the series of cutting plates or discs the series reciprocating hoies, when the hoies are so arranged as to work in lines parallel with the cutters or disks, and so inclined downward and rearward as to readily rise up over any obstruction without danger of clogging or choking, as set forth.

No. 15,453.—J. ZIMMERMAN, OSWEGO, ILL.—*Rotary Cultivators*.—*July 29, 1856*.

Claim.—The revolving rake and cleaner, in combination with the series of elastic cutters *e*, and flat cutters C, as set forth.

No. 17,091.—JOHN M. HALL, WARRENTON, GA.—*Rotary Cultivators*.—*April 21, 1857*.

Claim.—The combination with the wheel P, of the adjustable hoies *i* constructed, arranged, and operating in the manner as set forth for the purpose set forth.

No. 17,467.—JESSE WAITEHEAD, MANCHESTER, VA.—*Rotary Cultivators*.—*Jan. 2, 1857*.

Claim.—In combination with the couler E, and mould boards G, which scrape off and smooth the sides of the furrow, and serve to guide and direct the machine along said furrow, the horizontal plate F, which shows off the top of the furrow and receives all the excess of earth, and the distributors H, for scattering the earth therefrom, so as not to leave it in ridges, the whole being combined and operating together, substantially in the manner and for the purpose set forth.

No. 19,652.—L. ROACH, COVINGTON, KY.—*Rotary Cultivators*.—*March 16, 1858*.

Claim.—The described arrangement of spiral splines G, (to which the ploughs are attached) and adjustable arms *E e*, in combination with gravitating shaft E and gauge wheels I, as described and shown.

No. 20,659.—HENRY M. PLATT, DARTEN, CONN.—*Cultivators*.—*June 22, 1858*.

Claim.—The arrangement of the screw shaped plough share A, having wings E, with boxes H and F, wheels I, and roller D, the whole being constructed and operating conjointly in the manner and for the purpose set forth.

No. 21,377.—NATHANIEL S. SMITH, BUFFALO, N. Y.—*Rotary Cultivators*.—*August 31, 1858*.

I do not claim the flanged or broad cutting cylinder, nor placing a gang of hoies behind such cylinder the combination of the comb frame clearer with such cylinder.

Claim.—The use of the double joint piece D, to connect the gang of hoies to the axle, when said joint piece extends beyond the axle, and subserves also the purpose of a foot lever to throw the hoies out of the ground, in the manner and for the purpose set forth.

No. 23,407.—J. C. STODDARD, WORCESTER, MASS.—*Rotary Cultivators*.—*March 29, 1859*.

Claim.—The share A, and wings or blades C arranged relatively with the wheel or wheels behind I the share A and between the wings or blades C, substantially as and for the purpose set forth.

2.—The adjustable rotating scrapers J, applied to the wings or blades C, and arranged to operate as and for the purpose set forth.

3.—The combination of the lateral adjustable hoies *m*, share A, adjustable wings or blades C, rotating scrapers J, wheels H, one or more, arranged for joint operation substantially as and for the purpose set forth.

No. 28,087.—H. A. G. POMEROY, PROVIDENCE, R. I., and R. F. HUDSON, HARTFORD, CONN.—*Ploughs*.—*Jan. 12, 1860*.

Claim.—The combined arrangement of the rotary screw shaped ploughs C, on shafts H H H, arranged parallel with each other and with the path of motion of the machine, with the oscillating frame D, when the whole is constructed and operates as described for the purpose set forth.

No. 30,721.—I. W. COLLINS and R. V. WILKINSON, CINCINNATI, OH.—*Comb. Scrapers*.—*Nov. 27, 1860*.

Claim.—The arrangement of the hoe wheel E and shaft D with the yielding bar F and spring K, for the purpose of automatically raising the hoe wheel after it has been depressed by the operator, substantially in the manner described.

2.—In combination with a spring or yielding rotary hoe wheel for thinning cotton, the adjustable and non yielding mould ploughs secured to the rear supports of the machine, for the purpose of thinning and moulding cotton at one operation, substantially in the manner described.

No. 30,771.—I. STEVENS, DOVER, KY.—*Cultivators*.—*Nov. 27, 1860*.

Claim.—The arrangement of the bars B B, connected with the beam A by the clamps G, in connection with the adjustable feet or standards F F and bars J J, attached to the bars B B, and having the ploughs and scrapers respectively secured to them, the handles C C being attached to the bars B B and landsides *h h*, and all arranged as and for the purpose set forth.

No. 34,473.—N. BADGER, SHELBURNE, KY.—*Drigging Mach. ns*.—*February 25, 1862*.

Claim.—The combination of the oscillating gudgeon I, arms *d*, and crank G, with cylinder F, as and for the purpose shown and described.

2.—Also, the combination with the parts of the pulverizing rollers X P, as shown and described.

No. 35,087.—J. R. DIKEMAN and J. J. HEWLETT, HEMPSTEAD, N. Y. *Machinery and Engineering Times*, April 29, 1862.

Claim.—The combination of a reel or revolving mangle with shares or teeth J attached, or applied to a frame mounted on wheels, and arranged to operate substantially as and for the purpose set forth.

No. 38,109.—SIAS HEWITT, SENeca FALLS, N. Y. *Coal and Iron*, April 7, 1863.

Claim.—The adjustable clearers E, arranged as shown, in combination with the toothed cylinder D, for the purpose specified.

No. 30,389.—JOHN G. ERNST, YORK, PA. *Coal and Iron*, August 4, 1863.

Claim.—The combination and arrangement of the stationary teeth B' B' and roller C, framed to frame work A A, shafts b and C, wheels or cutters E E E, and wheels or cutters d d d, when constructed and operating as and for the purpose described.

No. 43,808.—W. WADSWORTH, SACRAMENTO, CAL. *Patent, the Sol.*, August 9, 1864.

Claim.—1.—The employment or use of a series of tines or teeth d attached to a suitable rock shaft D, and having an oblique or inclined position relatively with the surface of the soil to be operated upon, so that as said teeth or tines are propelled or drawn along in the soil the latter will be forked up, while weeds, straw, and similar trash will pass over the teeth or tines to the rear of the machine, substantially as herein set forth.

2.—The combination of the teeth or tines d, rotary toothed drum G, and roller C, all arranged substantially as and for the purpose specified.

No. 45,249.—JOHN JOHNSON, MOUNT WASHINGTON OHIO. *Earth Cult.*, August 29, 1864.

Claim.—In the construction of the implement herein described, the combination and arrangement of the frame A, pulvcrizer C, furnished with open teeth, curved in the manner described, traction wheels B, gearing d e f, and adjustable castor wheel D, substantially as and for the purposes herein specified.

No. 46,768.—JOHN B. ATWATER, CHICAGO, ILL. *Plough, the Mar.*, h 14, 1865.

Claim.—1.—The combination of one or more rotating augers with one or more turn ploughs and an adjustable swinging frame B, substantially as described.

2.—The employment of rotating augers upon a frame B, that carries the plough A, and which is hung at its rear or arched ends to the rear supporting axle D, and suspended near its front end from the beam C, substantially as described.

3.—Arranging the augers in a line with and over the points of the ploughs which both augers and ploughs are sustained beneath and by a vibrating frame, substantially as described.

No. 47, 05.—LEMOUEL S. FITZHAN, RAILWAY, N. J. *Road & Plough*, May 28, 1865.

Claim.—1.—A traction wheel or drum which is provided with horizontal slats or bars extending obliquely across it, and operating substantially as described.

2.—Securing the slats of a ground propeller to the radial spokes of three or more wheels, which are constructed and braced substantially as described.

3.—The employment of metal face plates e, in combination with the bevelled and obliquely arranged slats g, substantially as described.

No. 50,438.—EDWARD BATHAM, OGDENSBURG, N. Y. *Cultivators*, October 17, 1865.

Claim.—The combining and arranging of the cutter wheels C, on shaft B, with the cultivator teeth as arranged on bars F, with the drill teeth G, G, seed boxes L and O, and roller P, and conducting tubes H H, with the quadrangular frame A, and wheels M M, all combined and arranged in the manner and for the purpose herein set forth.

No. 51,757.—CHARLES STABLEY, BROOKLYN, N. Y. *Patent, the Sol. and Engineering, Practice*, December 25, 1865.

Claim.—1.—The furrow openers or shares I, attached to a frame mounted on wheels in combination with reciprocating toothed plates G G, arranged and applied to the machine,

to operate in the manner substantially as and for the purpose herein set forth.

2.—The attaching of the plates G G to the machine by means of arms E, two or more fitted on a bar F, and arranged substantially as shown, to admit of the raising and lowering of said plates as described.

3.—The operating of the plates G G from the driving wheels through the medium of crank shafts and pinions I, and connecting rods J, the shafts I having their bearings in sliding or adjustable rods or shafts H H, connected to a lever K, by which the plates G G may be readily rendered operative or inoperative as desired.

No. 52,499.—DAVID MYERS, assignor to himself and WILLIAM H. KRETSINGER, CHICAGO, ILL. *Rotary Plough*, February 6, 1866.

Claim.—The employment of a series of rings in combination with the revolving cylinder F, and shovels a, arranged and operating substantially as and for the purposes herein shown and described.

No. 53,577.—LEVI H. COLBORN, CHICAGO, ILL. *Rotary Plough*, April 3, 1866.

Claim.—1.—Giving the helical or screw plough blades of a rotary plough, in addition to their screw form, an additional curvature from the periphery toward the center, beginning at or near the entering edge, and gradually increasing toward the leaving edge, the same being a development of the mould board of the common plough around an axis of revolution.

2.—Attaching to a rotary plough blade, at any suitable place thereon, a horizontally projecting cutter, in order to give a horizontal slicing and rent to the furrow, substantially as set forth.

3.—Making rotary plough blades adjustable on their projecting shaft, so that they may be set to cut furrows of different widths by attaching two, three, or more blades to the shaft, as set forth.

4.—Connecting the plough blades to the plough shaft, so that their delivery end shall project in the rear of the shaft, and be left free and unobstructed, substantially as described.

5.—Connecting the plough shaft to the axle of the driving wheel by a loose journal D, so as to allow the plough to vibrate in order to pass small stones and other light obstructions, substantially as set forth.

No. 53,710.—ANDREW THOMPSON, OCEANVIEW, IOWA. *Road & Plough*, August 2, 1866.

Claim.—1.—The pendulum rods J, provided with bearings for the cylinder G, said bearings being guided in slots in the frame E, for the purposes and substantially as herein shown and described.

2.—The revolving cylinder in combination with the pendulum rods J and crowned braces H H, substantially as and for the purpose herein shown.

3.—The frame E, provided with the dot, which guides the bearings of the pendulum rods J and braces, substantially as herein shown.

No. 55,513.—J. FRASER, ERIE, PA., assignor to himself and ORANGE NOBLE F., same place. *Rotary Plough*, March 2, 1866.

Claim.—1.—The smooth faced cylinder C, set with rows of teeth a, b, c, m, and hung on the horizontal shaft a, in combination with the sliding clutch d, and the vertical rack e, and pinion f, for raising and lowering the cylinder, constructed and operated substantially as and for the purpose herein described.

2.—The rotating pulvcrizing arms g, in combination with the spring cylinder C, and connect of therewith by the gear wheels h h, operated by the epicycloidal wheel F, on the chime of the cylinder, constructed and operated substantially as and for the purposes herein specified.

3.—The spring scrap i, and the friction roller or bearing l, in combination with the rotating cylinder C, constructed and operated substantially as and for the purpose herein described.

No. 63,104.—JAMES C. FITZGERALD, WILLER, N. Y. *Rotary Cultivator*, December 4, 1866.

Claim.—1.—The arrangement of the slightly and inclined arm pulvcrizer H, resting in the eccentric bearings K, when said parts are combined with a vertically adjustable frame G,

suspended from the main frame and concentric with the axle as set forth.

2.—In combination with the frames G and C, the draught chains M, and the gauge arms N, operating substantially as and for the purpose specified.

No. 63,025.—A. K. and B. H. FOSTER, HAMILTONVILLE, TEXAS.—*Cotton Cultivator's*.—*December* 18, 1866.

Claim.—1.—The share E, composed of two parts *d d*, arranged in V form, with a space *e* between their front ends and attached to a standard fixed to front end of the handles B B, in the manner shown and described, or in an equivalent way, to admit of being adjusted at a great or less distance apart at their front ends, substantially as shown and described.

2.—The reciprocating cutter L, operated from the wheel D through the medium of the screws *f* and the rock bar I, provided with the arms *p p'*, in combination with the share H, substantially as and for the purpose specified.

3.—The fitting or securing of the screws *f* to the wheel D by means of the concentric annular gullets *e e'* in the side of the rim *b* of said wheel to receive the nuts *a* of the screws *f*, whereby the screws may be readily applied to and detached from the wheel and secured at an equal distance apart, substantially as described.

No. 61,845.—CHARLES A. McCAUGHAN, MISSOURI, TEXAS.—*Machinery for Thinning Cotton Plants*.—*February* 5, 1867.

Claim.—The double scraper E, attached to suspended frame F, combined with the double transverse cutter G, operated by the swinging frame H, for the purpose of thinning cotton plants in a row at one operation, constructed and operating substantially as herein described.

No. 62,602.—W. M. CRACKEN, BAINBRIDGE, IND.—*Cotton Cultivator's*.—*March* 5, 1867.

Claim.—1.—The scraper L, in combination with the plough the former being placed at the rear of the latter and arranged laterally therewith, substantially as and for the purpose set forth.

2.—The connecting of the share F to the mould board E by means of the dovetail arms *e*, cleats *d*, and keys *c*, substantially as described.

3.—The manner of attaching the wheel C to the beam, so that it may be adjusted higher or lower to regulate the depth of the penetration of the plough, as set forth.

4.—The combination of the hoe O, pivoted rod P, pendulum arm K, secured by the coupler bar, and cam L, operating in the manner and for the purpose specified.

No. 63,057.—WILLIAM ALTRICK, DAYTON, OHIO.—*Machinery for Cultivating Cotton*.—*April* 23, 1867.

Claim.—1.—The arrangement of the shaft C, with its clutch and bevel wheel, with the pinion T, shaft W, and wheel N, provided with its adjustable hoes, the several parts being constructed and used as and for the purpose specified.

2.—Adjusting the arms O O in the wheel N, by means of their grooves and the pins *b b*, substantially as and for the purpose specified.

3.—The bar H, upon which the ploughs or cultivator teeth are secured, used in connection with the grooved plates *a a*, rock shaft *k*, with its arms and lever J, substantially as and for the purpose specified.

No. 63,202.—JOHN P. TAKNUTZER, FORT DR. LA. WIS.—*Cultivator*.—*April* 30, 1867.

Claim.—1.—The shaft D, with pinion *y* and pinion rack *z*, and upright head C, and movable frame B.

2.—The rollers F F and sheave S, upon which a chain passes.

3.—The hinges *h h*, upon which the frame E is hung.

4.—The wings *a a*.

5.—The movable frame B and B.

No. 64,583.—J. DAVID SCHULTZ ROBERTSON, PA., and REUBEN ADAMS, same place, assignors to themselves and JOHN McKNIGHT.—*Cultivator's*.—*May* 7, 1867.

Claim.—1.—The arrangement of the frame A with its shafts G, arms T, bars *h h*, and springs *a a*, with rakes *d*, when operated in the manner and for the purpose set forth.

2.—The elevation or depression of the frame with its cutters *a a*, by means of the bar *g* and levers *p* attached to the

thill, in the manner substantially as and for the purpose specified.

No. 67,940.—LEWIS BECKELSHYMER, LEAVENWORTH, KANS., assignor to himself and GRANFERRON T. DELINGER.—*Harrows*.—*June* 20, 1867.

Claim.—1.—The harrow shoes *k k'* or *k*, to which the teeth *l* are attached, in combination with the connecting bars L, levers M, connecting bars N, and crank wheel O, by which motion is communicated from the gearing to the said shoes or shoe, substantially as herein shown and described.

2.—The combination of lever G with the stationary frame C, or tongue D, and with the movable frame F, substantially in the manner herein shown and described and for the purpose set forth.

No. 68,410.—E. T. BUSSELL, INDIANAPOLIS, IND., assignor to himself, W. H. CANDEE and JACOB ELDREDGE.—*Rotary Plough's*.—*September* 3, 1867.

Claim.—1.—Segment driving wheels S, comprising less than half a circle, when used in combination with pinions P, for the purpose of rotating each auger upon its own axis at the proper point for most effectually breaking and pulverizing the earth, substantially as shown.

2.—Supplementary yielding eggs *h h*, when the same are attached to flat springs, as shown, and these, in connection with the segments S, as and for the purpose stated.

3.—Burr shield *z*, and its adjunct *v*, when these are made and used substantially as shown and for the purpose specified.

4.—Castor wheel *p'* and roller *m*, or their equivalents, when the same are used for graduating the depth of this rotary plough, and for transporting the same from place to place.

No. 68,680.—HENRY BERKSFRESSER, QUAKER BOTTOM, OHIO.—*Rotary Plough's*.—*September* 10, 1867.

Claim.—1.—The ploughs *c c'*, fitted upon the periphery of the wheel E, constructed and arranged as shown and described, as and for the purpose specified.

2.—The combination of the wheel E with the tilting frame A, the draft pole F, and the lever *d*, arranged and operating substantially as and for the purposes set forth.

No. 73,181. C. A. HARPER, WHEELING, IND.—*Cultivator's*.—*January* 7, 1868.

Claim.—1.—The combination of the wheel D' with the cultivator frame A B, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the spiral or screw plate H with the wheel D', and with the cultivator frame A B, substantially as shown and described, and for the purpose set forth.

No. 74,991.—WILLIAM H. CHAMBERLIN, MIDDLETOWN, N. Y.—*Potato Digging's*.—*March* 3, 1868.

Claim.—1.—The wheels G, formed with three curved prongs *e'*, and removably arranged upon the shaft F, substantially in the manner herein shown and described and for the purposes set forth.

2.—The combination of the pronged wheels G, shaft F, frame B, gear wheels E and D, axle A, drive wheels C, and tongue I, with each other, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the tongue I, seat K, bars L, J, levers M, and catch N, with the frame B and axle A, all constructed, arranged, and operating substantially as herein set forth for the purpose specified.

No. 75,578.—ELEAZER B. ROBERTS, ROCHESTER, N. Y.—*Cultivator's*.—*March* 17, 1868.

Claim.—1.—The application, to cultivators, of rotary weed cutters hung on a vertical shaft, and operating substantially in the manner herein shown and described, and for the purposes set forth.

2.—The application, to cultivators, of rotating hoes hung on a vertical shaft, and operating substantially in the manner herein shown and described, and for the purposes set forth.

3.—The arrangement of the arm M, in combination with the rotary hoe D, substantially in the manner and for the purposes herein shown and described.

No. 77,832.—JAMES W. MILROY, GAITHERSON, IND.—*Rotary Plough's*.—*May* 12, 1868.

Claim.—1.—In a revolving spade plough, the hinged frame D, operating substantially as and for the purposes set forth.

2.—The employment of one or more revolving ploughs or forks, arranged to operate substantially as described.

3.—The combination of the lower spade or forked wheels R R, with the upper wheels R' R', gearing therein, substantially in the manner and for the purpose set forth.

4.—The combination of the frame A, roller H, pawl Z, and cords π , all arranged and operating substantially as and for the purpose specified.

No. 78031.—JOHN VAUGHN, MIAMI COUNTY, and ELI CHAMNESS, GRANT COUNTY, IND.—*Subsol Plow*, *U. S. Pat.*, *Nov 19, 1868.*

Claim.—1.—The construction and arrangement of the wheel B, substantially in the manner and for the purpose as herein set forth.

2.—The combination of the frame A and dashboard *d* with the wheel B, substantially in the manner and for the purpose as herein set forth.

3.—The combination of the plough D with the wheel B, substantially in the manner and for the purpose as herein set forth.

4.—The combination of the pack or cleaner C and frame A with the wheel B, substantially in the manner and for the purpose as herein set forth.

No. 78493.—PHELANDEE H. STANDISH, MARSHES, CAL.—*Mounted, the Cultivator for Rotary Ploughs*, *U. S. Pat.*, *May 25, 1868.*

Claim.—1.—The revolving hubs E E and the supports F F, constructed and operating substantially as and for the purpose described.

2.—A flexible or yielding arm, having the spring G, or its equivalent, together with the rotary cutter, substantially as and for the purpose described.

No. 78442.—HARMON P. ECKLES, CALIFORNIA, N. Y.—*Combination Cultivator and Hoe*, *Jan. 2, 1868.*

Claim.—1.—The fans or paddles *f f*, when attached to shafts K K, and operated substantially as and for the purpose specified.

2.—The combination of the shafts A and K K, gear wheels H H, and H H, and frame S, when arranged substantially as described, and for the purpose of operating the paddles or plates *f f*, as herein specified.

3.—The combination of the cultivator frame L with shaft M, secured to the frame C, as described, with the shafts K K, frame S, and paddles *f f*, for the purpose of cultivating or pulverizing the earth, and ridding or hilling the same, at one and the same time, as herein set forth.

No. 80,604.—GEORGE W. COOPER, OREGON, U. S. A.—*Rice Cultivator*, *U. S. Pat.*, *Aug 4, 1868.* Ant. dated *July 30, 1868.*

Claim.—1.—The cutter D of a rice cultivator, when arranged as described, with upturned cutting sides *a a*, substantially as set forth.

2.—The curved cutters E E, when arranged in the sides of the cultivator, so as to cut close to the plants, without injuring the same, as set forth.

3.—The revolving toothed breakers H H, when arranged with beveled edges, and when made and operating substantially as herein shown and described.

4.—The revolving breakers H H, when made as set forth, in combination with the washer *h*, and cleaners I I, all made and operating substantially as herein shown and described.

5.—Making the arms F, in which the axes G of the breakers has its bearings, adjustable on the beam A, so that thereby the height of the breakers can be adjusted, as set forth.

6.—A rice cultivator, consisting of the beam or frame A, with the cutters D E E, and breakers H H, all made and operating substantially as herein shown and described.

No. 80,043.—GEORGE F. LYNCH, MISSOURI, U. S. A.—*Rotary Cultivator*, *U. S. Pat.*, *Aug 4, 1868.*

Claim.—1.—The shape of the tooth and the manner of finding the curve of the same, to suit any sized head or cylinder, as herein recited.

2.—Having the heads loose on the axle, to prevent clog-

ging or choking, as herein described, in combination with the attaching the heads to the truck by straps, so as to permit each head or cylinder to act and move over obstructions independently.

No. 81,333.—CORNELIUS BERNINGER, MICHIGAN, U. S. A., assignor to himself, WILLIAM FRIEND, and GEORGE L. BAILY, same place.—*Self-Propelled Cultivator*, *U. S. Pat.*, *Aug 25, 1868.*

Claim.—The harrow teeth *d* and toothed cylinder F provided with the wheels G G, when said parts are applied or attached to a frame E, suspended to a mounted frame, A, and all arranged substantially in the manner as and for the purpose set forth.

No. 83,450.—FRANCIS L. CAGWIN, JOIET, ILL.—*Automatic Spade Plow*, *U. S. Pat.*, *October 27, 1868.*

Claim.—1.—The spades *a*, when operating in the manner and by the devices described, so as to enter the ground on the cycloid line, as set forth.

2.—The maintaining of the parallel between the spades *a*, from the time of their entry into the ground until the heel of the spades come to a rest up against the drum or disk *b*, to any given point, either before or past the hinge line, by means of the traction and weight of the machine, causing them to turn on their hinge, as described.

3.—The backward turn of the spades *a* from the cycloid entry line to their original position, as described, by means of the upright lever *i*, and spring *g*, as set forth, regulated to stop at any given cycloid point by means of the device shown in Fig. 5, or its equivalent.

4.—The spades *a*, constructed with a crank and hinge, when attached, as set forth, to the periphery of the drum or disk *b*, in combination with the upright lever *i* and spring *g*.

5.—A rotary spade or plough, constructed with spades *a*, hinged to the drum or disk *b*, as shown in combination with a frame, constructed and operating substantially as set forth.

6.—The mode of leverage, substantially as described, to force the spades into the ground, and to raise them out of the ground when disengaged, as set forth.

7.—The combination of all the parts described, when arranged and operating as set forth.

No. 82,730.—EDWARD H. KENT, PORTLAND, OREGON.—*Rotary Spade Plow*, *U. S. Pat.*, *November 3, 1868.*

Claim.—The spade bar E, moving in slots O, operated by pawls H and lever L, also, fastening the spade bars E, when extended outward in the slots O of the cylinder B, by the latches D, filling in and out behind the collars G, with the groove M, on the shaft N, and the concave segment I and bars J, and combination of the various parts as herein described, and for the purposes set forth.

No. 84,016.—ALFRED F. STONER, WEST USERY, OREGON, U. S. A.—*U. S. Pat.*, *Nov 16, 1868.*

Claim.—1.—The spiked roller B, in combination with the spring, convex, or toothed bar M, arranged and operated substantially as set forth.

2.—The arrangement of the hiller I, in combination with the sheaf C, in the front part of the frame, and the pulverizing roller and convex, substantially as described.

No. 84,430.—THOMAS E. McDONALD, NEW BRUNSWICK, N. J., assignor to P. P. RUXYON, JOHNSON LESFER and GEORGE L. JANEWAY, same place.—*Cultivator*, *U. S. Pat.*, *Nov 24, 1868.*

Claim.—1.—A machine, having a series of cultivator teeth arranged on a rotary shaft, in combination with a swinging or hinged frame, pivoted in rear of the cultivator, when the latter is operated by its progress over and in contact with the ground, substantially as described.

2.—The employment, in combination with the cultivator hinged frame, of the chains, or their equivalent, and a suitable moving and holding mechanism for retaining the adjustable frame while the cultivator is at work, substantially as and for the purposes set forth.

3.—Arranging the teeth of each hub, or each set of teeth, spirally, as and for the purpose specified.

4.—Method, shown and described, of constructing and combining the teeth and their connecting arms and hubs.

5.—A divided cultivator shaft, where by the machine is rendered capable of straddling a row of plants, and cultivating each side, as hereinbefore set forth.

No. 85,010.—LORING MOODY, MAIDEN, MASS.—*Spading Machine*.—*Dec. 15, 1898*.

Claim.—1.—Hanging up in cranks, spades, with handles passing through the axle, which serves as then inferior, operating substantially as and for the purposes described.

2.—Connecting the spade handles with the crank by means of the sockets and screws, in order to lengthen or shorten them at pleasure, substantially as and for the purposes described.

3.—The combination of the lever H with the axle, whereby the spades may be inclined at any angle with the earth, or thrown out of it, when desired, substantially as and for the purposes described.

4.—The combination of the lever I, the rotating bar J, the end arm K, with the crank C, for throwing the machine out of or into gear, at pleasure, substantially as and for the purposes described.

5.—The combination of the movable blocks M with the cranks C and posts N, substantially as and for the purposes described.

No. 87,721.—ABRAHAM J. STEVENS, EL DORADO, WIS.—*Rotating Cultivator*.—*March 9, 1899*.

Claim.—The revolving cylinder E, adjustable standards, casters, bent rods, teeth *a*, wedges *b*, cross bar D, and diam. *c*, combined and operating with the grooved wheel hubs, and the bands or belts herein mentioned, substantially as specified.

No. 88,308.—FRANCIS C. CONE, SAN FRANCISCO, CALIF.—*Spading Machine*.—*March 30, 1899*.

Claim.—1.—The above described machine spade, when provided with an adjustable arm, E, and a cutting edge, F, projecting in front of the blade G, substantially as set forth.

2.—The revolving flanges B, having the tangential slots D, for determining the angle of the spades, substantially as herein described.

3.—The notches or shoulders *a, a*, in the sides of the slots D, for holding the spades, substantially as herein described.

No. 92,756.—LYMAN SHEPWOOD, SPRINGFIELD, ILL.—*Spading Machine*.—*July 20, 1899*.

Claim.—1.—A spading machine, constructed and arranged with the revolving cylinder A, stationary shaft B, frame C, spades D, shank and toggles *a*, fingers *b*, studs *c*, grooved wheel E, studs *d*, slots *e*, substantially as herein described, and for the purposes set forth.

2.—The stationary grooved wheels E, constructed and arranged with the studs *d* and slots *e*, substantially as herein described, and for the purposes set forth.

3.—The combination of the spades D, shank and toggles *a*, with the revolving cylinder A, arranged substantially as herein described, and for the purposes set forth.

4.—The combination of the shank and toggles *a*, fingers *b*, and studs *c*, with the grooved wheel E, studs *d*, and slots *e*, for the purpose of creating the semi-revolution of the spades D, substantially in the manner herein described.

No. 92,834.—JAMES G. JOHNSON, CANTON, ILL.—*Cultivator and Spading Cultivator*.—*July 20, 1899*.

Claim.—The construction of the machine herein described, consisting of the combination of a main frame A, longitudinal frame C, roller E, cutters M, and prongs O, O, whereby I am enabled to turn in, in one machine, a corn stack cutter, which, by a slight interchange of parts, as set forth, may be used as a meadow cultivator, substantially as specified.

No. 93,238.—BREDE E. SIVERTSEN, PHILADELPHIA, PA.—*Rotary Spading Machine*.—*Aug. 3, 1899*.

Claim.—An improved rotary spader, consisting of the several parts specified, all combined, constructed, and arranged as described.

No. 95,003.—WILLIAM J. DAWSON, BROOKFIELD, MASS.—*Rotary Plow*.—*September 21, 1899*.

Claim.—1.—An improved revolving plow, formed by the combination of the plough or shovel plates K, arms J, shaft I, pivoted adjustable frame F, horizontal frame C, axle B, gear wheels L, M, and wheels A, with each other, and arranged to operate as herein shown and described, and for the purposes set forth.

2.—The combination of the long bolts G and pivoted lever H with the adjustable frame F and stationary frame C, substantially as herein shown and described, and for the purposes set forth.

No. 95,394.—HENRY T. TAPLIN, SOUTH NEW MARKET, N. H.—*Cultivator*.—*September 28, 1899*.

Claim.—1.—The combined cultivator and harrow teeth M, constructed substantially as herein shown and described, and for the purpose set forth.

2.—The reversible teeth M and adjustable radial arms L, in combination with the revolving plate *k*, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the teeth M, adjustable arms L, revolving plate *k*, shafts H and F, gear wheels I, and D, axle B, wheels A, and frame C, with each other, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the detachable circular cutter N with the shaft H, plate *k*, adjustable arms L, and teeth M, substantially as herein shown and described, and for the purpose set forth.

5.—The combination of the bent lever O and lever C with the shaft H, plate *k*, adjustable arms L, and teeth M, substantially as herein shown and described, and for the purpose set forth.

No. 95,956.—THEODOR UEHLING, LEWIS, NEBRASKA.—*Rotating Cultivator*.—*October 19, 1899*.

Claim.—1.—The cultivator A, constructed and operated substantially as described, for the purposes set forth.

2.—In combination with a rotating cultivator, the slide E, arranged and operated substantially as shown and described, for the purposes specified.

No. 97,870.—ISAAC W. BURCH, FAYETTE, MISS.—*Cotton Cultivator*.—*December 14, 1899*.

Claim.—1.—A cotton cultivator, having adjustable beams E, vibrating on joints C, in the front part of the frame, and adjustable, as to their distances apart, in the manner described.

2.—A cotton cultivator provided with a vibrating frame I, and rotary cutters N, arranged as described, to cut close to the plant, and cultivate on each side thereof, as set forth.

3.—A cotton cultivator, with a pair of ploughs F, E, to work on both sides of the row, and arranged in front of the frame, combined with a series of oblique cutters N, X, on the hinder part thereof, arranged to rotate on disks, at a less distance apart than the ploughs, and to clean up close to the plant, all as shown and described.

4.—The combination, with the frame A, mounted on wheels B, of the vibrating frame I and rotary oblique cutters N, arranged for adjustment and for operation, substantially as specified.

No. 100,183.—A. B. C. NUSBAUM, SACRAMENTO, CALIF.—*Cultivator*.—*February 22, 1899*.

Claim.—1.—The rotary cylinder or polygon H, having its teeth or shares attached to it as shown and described, when said cylinder or polygon is tilted within a swinging frame connected to the axle A, as described, and driven or rotated from the driving wheel C through the medium of a chain, F', fitted over pulleys F, I, having concave peripheries provided with transverse ribs, substantially as shown and described.

2.—The combination of the swinging frame G, cylinder or polygon H, with spirally attached teeth, driving chain F' working over the pulleys F, I, when all are constructed and applied to and used in connection with a suitable frame mounted on wheels C, C', one of which is used as a driver, substantially as herein shown and described.

No. 101,077.—WILLIAM J. ANDREWS, COLUMBIA, TENN.—*Cotton Cultivator*.—*March 22, 1899*.

Claim.—1.—The combination of screw rod G with rocking box E and shaft D, all operating substantially as and for the purpose set forth.

2.—The auxiliary frame M attached to main frame A, and arranged to operate substantially as and for the purpose described.

3.—The auxiliary frame M, provided with scrapers X, X and teeth O, O, arranged to operate as and for the purpose specified.

4.—The combination of shaft A, screw rod G, boxes E, wheel J with its adjustable hoes, frame A, and auxiliary frame M, all arranged substantially as set forth.

No. 101,710.—JAMES CHENOWETH, SHELBYVILLE, Mo.—*Rotary Spades*.—April 12, 1872.

Claim.—The wheel E, spades G, ball and socket joint G', and slide G'', when combined and arranged as specified.

2.—In combination with the wheels E and spades G, the rotating couplers C, as specified.

3.—In combination with the elements of the first claim, the cam F, when operating as and for the purpose specified.

No. 106,195.—GODFREY S. NEWSOM, NASHVILLE, TENN.—*Subsoil Pulverizer*.—August 9, 1872.

Claim.—The arrangement, in a subsoil pulverizer, and on a rotating tool stock thereof, of a series of triangular plough points, L, sharpened on two sides, and shanks K, drawn to an edge on their front sides, all for the purpose of cutting and breaking up without turning the soil.

No. 107,218.—ELIJAH BOURNE, NEW BERNA, ILL.—*Pointed Plow and Cultivator*.—September 13, 1870.

Claim.—The detachable rotary plough stock H, formed in two parts, hinged together, and constructed with tubular spokes, as described.

2.—The arrangement of double spur wheel D, pinions P, G, screw dropper M, and rotary ploughs L, operating as described.

No. 107,939.—JAMES TRANTER, JOSEPH KINSEY, and JOHN M. CARR, CINCINNATI, OHIO.—*Rotary Power Ploughs*.—September 20, 1870.

Claim.—The revolving head or heads I, J, K, armed with the series of movable ploughs or shares M, M', adapted to operate upon the soil, in the manner set forth.

2.—The described arrangement of one or more series of ploughs M or M', rotating head I, J, K, and fixed cam N, whereby the said ploughs are subjected, during the advance of the machine, to a continuous rotation, partly in and partly out of the ground.

3.—In the described combination, with the elements of the claim next preceding, the described arrangement of adjustable roller O, whereby the penetration of the plough is controlled.

No. 100,273.—JOHN THOMPSON, LOUISVILLE, KY.—*Rotary Pulverizer*.—Nov. 14, 1872.

Claim.—The combination of the pulverizer E, the gearing by which it is rotated, and the several devices for adjusting and maintaining it in position, all constructed, arranged, and operating substantially as herein described.

No. 100,741.—NELSON T. RUDY, WASHINGTON, D. C.—*Rotary Ploughs*.—Nov. 19, 1870.

Claim.—The frame F, pivoted centrally on the axle B, having a series of rotary ploughs mounted upon a transverse shaft at its rear end, and so arranged that by adjusting its front end, the ploughs can be raised or lowered at will, substantially as described.

2.—The arrangement of a series of gangs of rotary ploughs substantially as described, whereby the ploughs of each gang may be adjusted to cut at any required depth, independently of the other gangs in the series, so that, while one side of the machine is lower than the other, the whole series of ploughs may be adjusted to cut at a uniform depth, as set forth.

3.—The oscillating frame F, having levers *m* with their pins *n*, and springs *t* attached thereto, in combination with front frame or reach C, having the screw G, and inches *p* thereon, and the sliding clutches *i* and wheels D, with the clutches *h*, all arranged to operate as and for the purpose set forth.

No. 112,913.—LAWRENCE F. FRAZEE, JERSEY CITY, N. J.—*Ploughs*.—March 21, 1871.

Claim.—The diggers J, the coulters H, and the ploughs B, arranged in relation to each other substantially as described.

No. 113,197.—JOSEPH R. MORRIS, HOUSTON, TEXAS.—*Rotary Ploughs*.—March 28, 1871.

Claim.—A shaft having thereon a series of disks, to the circumference of each of which are attached at an obtuse angle to the radiuses, spades, operating as set forth.

No. 120,353.—HENRY W. BOWEN, PROCTOR, R.

I. *Cultivator*.—June 4, 1872. Antedated May 29, 1872.

Claim.—The automatic cultivator, substantially as shown and described, or in other words, the combination of the leading frame F and the guide bar *d*, provided with operative mechanism in substance as explained, with the carriage C and said series of rotary tool shafts G, having mechanism for operating them essentially as set forth; and

2.—In combination therewith, I claim one or more posts, B, arranged in manner and for the purpose as shown and explained.

No. 127,756.—MAXIME DECELLE, NEWBURG, OHIO.—*Rotary Cultivator*.—June 11, 1872.

Claim.—The cylinder C, provided with flat and sharp teeth, alternately arranged and mounted in the frame B, having a series of teeth *h*, and hinged, as shown, to the main frame; said frame B also carrying the traction driving wheels D, and having combined with it the lever *g* for raising or lowering the frame by a single movement, and the device *h* for supporting the frame when adjusted, all constructed, arranged, and operating substantially as herein described.

No. 129,206.—WILLIAM E. BLEECKER, BROOKLYN, a survivor of three-fourths of his right to HENRY BLEECKER, trustee, NEW YORK CITY, G. M. BLEECKER, COVYMAN, and EDWARD BLEECKER, trustee, WHITE PLAIN, N. Y.—*Rotary Ploughs*.—July 16, 1872.

Claim.—The combination of the cams *m m* and *k* with the ploughing teeth *h*, pivoted alternately on the two sides of the wheel *g*, and for the purposes herebefore described, and operating in the manner set forth.

2.—The combination of the levers *d* and *d'* and the wheels *h* and *h'* with the lever *h* and ploughing wheels *c c*, as and for the purposes herebefore set forth.

No. 131,163.—GUSTAVE A. FORSGARD, HOUSTON, TEX.—*Rotary Cutters*.—September 19, 1872.

Claim.—The rods *c*, spades *a*, attached at their inner ends to the ring *t* and passing through the rim of the wheel *e*, in combination with the eccentric *g*, rod *g'*, and lever *h*, for projecting such spades when the cultivator is in use or withdrawing them at the side in contact with the earth when going to or returning from the field, as set forth.

2.—The revolving cultivator, made of a series of changeable and reversible spades or knives with share shaped ends, retained in position between rings, and removable, substantially as specified, so that the arrangement of the spades may be varied, as specified.

3.—The frames *m*, connected at their upper ends to the frame *a* and carrying at their lower ends the shaft *o* of the revolving spades or knives, in combination with the gearing to, *l* and *l'*, and operating mechanism for moving said frames *m* and raising or depressing the said knives, substantially as set forth.

4.—The intermittent reciprocating turret *k*, constructed and operated substantially as and for the purposes set forth.

No. 131,411.—WILLIAM B. HYDE, OAKLAND, CAL.—*Rotary Soil Cutters*.—September 17, 1872.

Claim.—In a soil-cutter, the two rotary cutters G, F, revolved in close proximity to each other and in opposite directions, upon a common centre, by means of the shaft E and hollow shaft B, in the manner and for the purpose above specified.

2.—The hollow shaft B with its rotary cutter G and level wheel D, and the shaft E with its rotary cutter F and level wheel H, in combination with the transverse shaft A carrying the level wheels *o* and *l*, combined and arranged in a rotary soil-cutter, substantially as and for the purpose above described.

No. 135,388.—JAMES B. McLEAN and CHARLES A. MAYES, FRANKLIN, KY.—*Combined Crusher, Cultivator and Harrow*.—December 31, 1872.

Claim.—The cutters C C and rollers D D, arranged alternately and revolving independently of each other upon a common shaft, *a*, in the frame A, substantially as herein set forth.

2.—The lever J, pivoted to the L, shaped bar *d* and combined with the bar *h*, cutter G, and arms H, allowing the depth of the cutters to be regulated and operated from the front or rear, substantially as and for the purpose described.

No. 135,002.—JAMES W. MIYROY, HAYWOOD, CAL., assignor to himself, WILLIAM R. MOFFENER, and C. T. HOWARD, same place.—*Rotary Cultivator*.—*January 21, 1873*.

Claim.—The frame A and axle B, wheels D D', and spindles C C', in combination with the independent revolving ploughs *a* to G H I on the axle, and arranged to be raised or lowered by lever E, all substantially as and for the purpose herein specified.

No. 135,174.—ALCIDE TROUARD, NEW ORLEANS, LA.—*Sugar-Cane Cultivator*.—*January 21, 1873*.

Claim.—The improved machine for grubbing sugar cane stubble, the same consisting of frame G G', runners I I, and the cylinder A provided with the teeth B, having joints constructed as described, said cylinder being mounted on the axle shaft C journaled in the pivoted levers D, which are adjust. at their free ends by the standards E and pins *a*, all as shown and described.

No. 135,693.—CHARLES N. POUNDSTONE, LYONS, N. Y.—*Rotary Cultivator*.—*February 11, 1873*.

Claim.—The wheel D having arms *a* provided with flanges *c*, in combination with teeth *b*, so as to render the latter adjustable, substantially as and for the purpose set forth.

2.—The spindle *d* with shoe *a*, provided with pivotal ribs *e* and slot *h*, in combination with wheel D, bolt *i*, and stem C, substantially as and for the purpose set forth.

No. 138,931.—JOHN H. RANDOLPH, JR., BAYOR GOUVA, LA.—*Wheel-Cultivator*.—*May 13, 1873*. Filed *February 8, 1873*.

Claim.—The combination of the gear wheels T X, shaft W, and brace A V, with the propeller or screw blades Y Z A' and shaft E of the drive wheel D, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the keeper or long bearing G and loop B' with the adjustable standard H, shaft E of the drive wheel D, and brace V of the propeller shaft W, substantially as herein shown and described, and for the purpose set forth.

No. 139,013.—ROBERT McKINLEY, HYDE PARK, N. Y.—*Rotary Cultivator*.—*May 20, 1873*. Filed *February 7, 1873*.

Claim.—The hoe *a*, and its rock shaft and links, in combination with the rotating rake L, as and for the purpose set forth.

No. 142,094.—CHARLES T. ELLISTON, CLINTON, MO.—*Rotary Plough*.—*August 26, 1873*. Filed *June 9, 1873*.

Claim.—The double set of picks, having a forced rotation, arranged relatively to each other in the rear of the coulters, and in advance of the driving wheels, substantially as shown and described.

2.—The combination of the frame *e*, pivoted upon the geared shaft 2, with the pivotal frame *a*, the connecting rods 6, and a suitable lever for raising and lowering the picks and coulters, substantially as specified.

3.—The combination of the frame *d*, having the ratchet bars secured to its rear and pivoted frame *a*, with a pivoted frame *c*, connecting rods, and lever for raising and lowering the picks and coulters, substantially as shown.

No. 144,349.—ALLAN S. McDONNELL, OSAGO TOWNSHIP, CANADA.—*Cultivator*.—*November 4, 1873*. Filed *June 15, 1873*.

Claim.—A cultivator having its frame A mounted centrally on two wheels, with an adjustable cast-iron wheel, N, supporting its rear end, and having the rotating toothed cylinder J suspended in bearings from the rear end of said frame in combination with the lever *a*, all constructed and arranged to operate substantially as described.

2.—In combination with the frame A having the cylinder J and *a* arranged to operate as described, the adjustable *e* V, and the tongue hinged to the frame at or near its center, whereby more or less weight can be applied to the cylinder, and the frame with its attachments be left free to follow the undulations of the surface, as set forth.

No. 144,419.—JOHN D. STARRETT, CHESTER, N. Y.—*Rotary Cultivator*.—*November 11, 1873*. Filed *May 17, 1873*.

Claim.—In a rotary cultivator, the rotary knives F F', constructed and arranged substantially as described, and each having a free, independent, vertically yielding movement with relation to the other by reason of the attachment of each to a corresponding rotary shaft by means of a universal joint, and by reason of the arrangement of the stems G G' in the yokes H H', substantially as and for the purposes specified.

No. 145,177.—ANDREAS E. HOFFMEYER and JAMES SCHMIDT, COPENHAGEN, DENMARK.—*Rotary Plough*.—*December 2, 1873*. Filed *August 20, 1873*.

Claim.—The combination of the revolving cutters F, revolving shares A, and stationary shield or deflector D, all arranged and operating substantially as and for the purpose specified.

No. 145,737.—JOHN G. JONES, FAIRBURY, MASS.—*Spading Machine*.—*December 23, 1873*. Filed *April 7, 1873*.

Claim.—In a spading machine, the combination of the vertically arranged spade *d*, pivoted to the crank C, having balance wheel *h*, and operated by the pinion wheels *p p* gearing in the driving or traction wheels B B', with the braces *d* and *h* and *h* *i*, all arranged and operating as hereinbefore set forth.

2.—The combination of catches upon the inside of the pinion wheels *p p*, and of the spring head linch pins *s s*, by the insertion or removal of which the machine is put into or out of gear, as hereinbefore set forth.

No. 147,992.—LUCIEN SONIAF, JEFFERSON PARISH, LA.—*Cane Cultivator*.—*February 24, 1874*. Filed *August 12, 1873*.

Claim.—The longitudinal shafts K, having hubs provided with spring teeth *c*, in combination with the branched hanger L, journal boxes L, pinion wheels N, and rotary shaft E', substantially as and for the purpose described.

2.—The combination of the longitudinal toothed shafts K, pinion wheels N, rotary cultivators E F, bars D, standards H, yokes G, and beam A, substantially as and for the purpose described.

No. 148,060.—ERIK M. HESSELIJOM, HILAWARA, LA.—*Cotton Cultivator*.—*March 3, 1874*. Filed *January 7, 1873*.

Claim.—The combination, in a cultivator, of the band wheels C C', the movable frames H H', and cutters N N', as herein shown and for the purpose set forth.

No. 151,510.—JULIAN H. FITKIN, AKRON, OHIO.—*Rotary Plough*.—*June 2, 1874*. Filed *April 24, 1874*.

Claim.—The combination of the plough cylinder and ploughs revolving around the shaft or journals *a*, the cranks or cams C, turning with said shaft or journals, and the journals *c*, on which the main wheels are supported and turn, eccentrically arranged on said cranks or cams, as and for the purpose described and represented.

2.—In combination with the pole or double tree, to which the team is hitched, and which is movable longitudinally independent of the main frame, and with the cranks or cam C, the chains and pulley wheels for applying the power of the team to the raising of the ploughs from the ground, substantially as described.

No. 152,834.—J. C. ELLIOTT, SIMPSON COUNTY, KY.—*Cultivator*.—*July 7, 1874*. Filed *May 12, 1874*.

Claim.—The combination of parallel frames A, revolving harrows B *b* *a*, connecting arch rods *a*, and casing C, all constructed and operating as and for the purpose specified.

No. 154,138.—W. E. BLEECKER, BROOKLYN, assignor of part his interest to H. BLEECKER, Trustee, NEW YORK CITY, GEORGE M. BLEECKER, City, MASS., and E. BLEECKER, Trustee, WHITEHOUSE, N. Y.—*Rotary Plough*.—*August 18, 1874*. Filed *April 11, 1873*.

Claim.—The wheels *d d* carrying the ploughing forks *e*, in combination with levers *f f* and catches *g g*, the whole constructed and operating substantially as hereinbefore set forth.

2.—The wheels *d d*, arranged as described, in combination with the centre disk *a*, as and for the purposes described.

3.—The springs *p p* in combination with the frame *z*,

tongue *g*, and wheels *d* *z*, carrying ploughing forks *c*, substantially as hereinbefore set forth.

No. 151,480.—HEZEKIAH JONES and WILLIAM K. YAKI, RO KFORI, Ill.—*Rotary Plow, &c.*—*Inventors* 25, 1874. Filed *May 18*, 1874.

Claim.—1.—The combination in a revolving plough of the hand bell crank lever *D D'*, guide block *a''*, and circular grooved guide *D'*, with the revolving plough shaft *C*, carrying the ploughs *E*, constructed and operating as and for the purpose described.

2.—The combination of the cross girt or knife bar *F* with knives *E*, links *F'*, plough shaft *C*, carrying ploughs *E*, and pivoted hand bell crank lever *D D'*, constructed as and for the purpose described.

No. 150,268.—A. F. BATCHELDER, FINCHFORD, IOWA.—*Conc. Plow, &c.*—*Octob. 27*, 1874. Filed *July 18*, 1874.

Claim.—1.—The heads *G G*, vertically adjustable on the shafts *F F*, in combination with rods *J J* and nuts *h h*, and yokes *D D*, as and for the purposes described.

2.—Rods *J*, connected to handles *K* and combined with vertically adjustable heads *G* and laterally adjustable yokes *D*, as and for the purposes described.

3.—Supporting bar *h*, in combination with yokes *D* and shovel carrying heads *G*, substantially as described.

4.—The shaft *F*, on rod *J*, in combination with pendant *h* and eyebolt *h'*, substantially as described.

No. 157,803.—HENRY VON CHUL, JR., and JAMES MALLON, HOLLYWOOD, LA.—*Sugar Con. Stool, &c.*—*Inventors* and *Constructors*—*Dec. 15*, 1874. Filed *July 25*, 1874.

Claim.—1.—In a sugar-cane tubble digger, the curved teeth *E'*, the disks *F*, having enlarged notches or slots in their periphery, and the revolving shafts *D*, said disks being arranged alternating in position on the shafts, as shown and described.

2.—The combination of the digging mechanism formed of the teeth *E'*, disks *F*, and shafts *D*, the sliding blocks *a*, guides *h*, link *d*, crank shaft *c*, lever *g* and curved notched rod *z*, as shown and described, whereby the digger can be adjusted to and held at any desired height.

No. 158,374.—JAMES T. HENDERSON, WOODRUFF, TEXAS.—*Compound Reel, and Draw Harrows*—*January 10*, 1875. Filed *December 10*, 1874.

Claim.—The combination, with a harrow, having a series of revolving cutters arranged upon a transverse shaft pivoted in the side frames, of the stationary cutting blades or harrow teeth, arranged upon a transverse shaft, and extending in a diagonal rearward direction from said shaft, and terminating between the revolving cutters, substantially as herein shown and described.

No. 158,482.—WILLIAM H. FOVE, SAN FRANCISCO, CAL.—*Rotary Plow, &c.*—*January 5*, 1875. Filed *December 22*, 1874.

Claim.—1.—A rotary plough consisting of a series of concavo-convex cutting blades arranged spirally around a supporting and driving shaft, substantially as described, for the purpose specified.

2.—The spiral cutting blades adapted for adjustment upon the shaft, for the purpose of regulating their cut, and the consequent width of the furrows, substantially as described.

3.—The combination of the adjustable collars and shotted wedges with the concavo-convex cutting blades and the main supporting shaft, substantially as described, for the purpose specified.

4.—A rotary plough having two sets of concavo-convex blades arranged spirally around the supporting shaft, so as to extend outward in opposite directions from the centre thereof toward the ends, substantially as described, for the purpose specified.

5.—The blades of a rotary plough, each made with a spiral curve, and with a concavo-convex form transversely, substantially as described, for the purpose specified.

No. 158,603.—N. S. WOOD, BOONVILLE COUNTY, MO.—*Rotary Cultivator*—*January 12*, 1875. Filed *July 10*, 1874.

Claim.—1.—The combination of frames *1 1*, connected by yoke *2*, bars *3 3*, universally jointed bow shafts *4 4*, piv-

oted lever or handle *13*, and adjustable rods *11 11*, as and for the purpose described.

2.—In combination with the driving wheels, frames, and arches connecting *1 1*, the geared shafts *8 8*, universally jointed to the rotary shafts *5 5*, as and for the purpose described.

No. 161,657.—JAS. PHILLIPS, THORNTOWN, IND.—*Rotating Harrows*—*March 23*, 1875. Filed *August 1*, 1874.

Claim.—1.—The wheel *N'* on vertically movable larow shaft *J*, combined with flange *f* and holding down wheel *e*, substantially as described.

2.—The combination of the wheel *N'*, provided with flange *f*, the wheel *e*, the grooved shaft *J*, provided with fixed collar *e'* and sliding collar *e*, the rod *g*, arm *g'*, and lever *K*, operating substantially as described.

No. 163,614.—GEORGE W. HENLEY, NA. GOODWIN, TEX.—*Rotary Cultivator and Grubber*—*May 11*, 1875. Filed *March 6*, 1875.

Claim.—1.—The combination of the sliding bars *H*, the gear wheels *E F K L*, and the plough shaft *M* with the frame *D* and the wheels *A*, substantially as herein shown and described.

2.—The combination of the rods *I* and gear wheels *J* with the frame *D* and the sliding bars *H*, that carry the gearing *F K L* and the plough shaft *M*, substantially as herein shown and described.

No. 163 360.—E. C. WINTERS, CORLEA, ILL.—*Rotary Cultivator*—*May 18*, 1875. Filed *February 3*, 1875.

Claim.—In combination, the trussing frame *I*, the coulters *K K*, carried by said frame, the same *S*, the revolving and spirally arranged spades *a' a'*, carried by the frame *S*, the driving gearing, and the adjusting mechanism, all operating together substantially as described, in the same implement.

No. 164,428.—JAMES H. COON, DICK MORNS, IOWA.—*Rotary Cultivator*—*June 15*, 1875. Filed *August 6*, 1874.

Claim.—1.—The auxiliary frame *E*, carrying the cog wheels *N*, *O*, *P*, and *Q*, and the crank wheels *U*, in combination with the cog wheels *N*, *O*, *P*, and *Q*, substantially as described, to suspend and operate a series of spades.

2.—The combination of the spade carrying case *F* with the crank wheels *U*, substantially as described, to alternately thrust down and raise up a series of spades.

3.—The sliding frame *G*, carrying the series of spades *Z*, in combination with the suspended case *F*, substantially as described.

4.—The frame or forked bars *u u*, when pivoted to the fixed shaft *a*, their upper and front ends, and connected with pinion or rods *c c*, extending from their lower and rear ends to the adjustable auxiliary frame *F*, for the purpose of carrying rotary cutting cylinders and adjusting them relative to the series of spades *Z*, substantially as and for the purposes specified.

5.—The combination of the front wheel *M*, pinions *p*, shaft *v*, auxiliary frame *E*, and axle *u*, substantially as described, and for the purpose specified.

No. 166,721.—WILLIAM C. B. RICHARDSON, CHICAGO, ILL.—*Rotary Spades*—*August 17*, 1875. Filed *January 11*, 1875.

Claim.—1.—In combination with the hinged spade *J J'*, the scraper, consisting of the pivoted frame *M* and hoed *d'*, arranged to operate substantially as described, and for the purpose specified.

2.—The shaker *K*, as arranged in relation to, and in combination with, the spades *J J'*, as and for the purpose specified.

No. 170,061.—D. W. BROTHMAN, SR., ROCKDALE, TEXAS.—*Rotary Spade Cultivator*—*Dec. 7*, 1875. Filed *September 12*, 1875.

Claim.—1.—The combination, with the frame *D*, with supporting arches *E E'*, of the compound lever *F* and yoke *L*, for raising the cultivator wheel, as described.

2.—The rotary spade cultivator composed of frame *D*, supporting arches *E E'*, jointed hinged hand lever *F*, yoke *L*, rods *H*, and wheel *G*, all constructed, arranged, and adapted to operate as and for the purpose described.

No. 174,245.—GEORGE E. HOPKINS, WALTER WALKER & COMPANY, WASHINGTON, assignors of one-half in right to J. D. COOK, of same place. *Rotary Cult.*—*February 20, 1876. Filed July 7, 1874.*

Claim.—1.—The cylinder A, revolving loosely upon a stationary shaft E, slotted at each side around its periphery, and connected at each head with guides A', as and for the purpose described.

2.—The trans C, on the shaft with slots C', and G, pins, and rollers, as and for the purpose described.

3.—The operation D, with rollers and G', as and for the purpose described.

No. 174,700.—WILLIAM H. FOYE, SAN FRANCISCO, CAL.—*Rotary Cult.*—*March 14, 1876. Filed March 3, 1876.*

Claim.—The combination of the spirally curved steel cutting and reinforcing support C, with the concavo-convex spiral cutters A of a rotary plough, substantially as described, for the purpose specified and set forth.

No. 176,007.—JAMES C. STONE, LEAVENWORTH, KANS.—*Rotary Cult.*—*May 2, 1876. Filed February 5, 1876.*

Claim.—The combination of a series of circular saws, I, and the shaft G with the wheel, axle, and frame of a plough, substantially as herein shown and described.

No. 176,321.—THOMAS A. KERSHNER, SEYMOUR, a signor to himself and ALEXANDER CARR, MEMPHIS, TEN.—*Rotary Cult.*—*May 2, 1876. Filed January 27, 1876.*

Claim.—1.—The teeth H, made with curved forward edges, concaved rear edges, and front leads pointed to the rearward, in combination with the cylinder G, substantially as herein shown and described.

2.—The combination, with axle B and frame C, of the hinged lame E and pendant lugs F, arranged substantially as and for the purpose specified.

No. 179,427.—THOMAS ROUSE, INDIANAPOLIS, IND.—*Rotary Cult.*—*July 4, 1876. Filed January 21, 1876.*

Claim.—1.—In a rotary harrow, the combination of the main wheels A, pinions R, shaft R', harrow heads R R', and harrow bars P, arranged to be revolved in the adjustable boxes R', secured to the hangers C C' C' in the manner shown, for the purpose set forth and described.

2.—In combination with the adjustable boxes R' and hangers C, the lifting rods D D', provided at their upper ends with a rack, which engages with the pinions E E' that are operated by means of the lever N, in the manner shown for the purposes set forth and described.

No. 179,618.—JACOB HAYNES, BASTEVILLE, W. VA.—*Cultivating Plough and Harrow.*—*July 18, 1876. Filed May 11, 1875.*

Claim.—1.—The combination of the stationary rock D, the chains F, the connecting rod G, and the lever H, with the main frame B and with the frame E, that carries the ploughs I J K L, substantially as herein shown and described.

2.—The pivoted frames X, and spring catch bar V, in combination with the journals of drive-wheels A, frame P, and rotary ploughs L, substantially as and for the purpose specified.

No. 181,870.—DAVID E. SHEPARD, CALVERTON, VA.—*Rotary Cult.*—*and Field Harrow.*—*September 5, 1876. Filed July 15, 1876.*

Claim.—A frame consisting of sideboards A, front end board B, rear top board C, and handles K, in combination with roller, rotary hoe, and wheel-axle substantially as and for the purpose specified.

No. 181,559.—WILLIAM M. C. MATHES, CALDWELL, TEX., assignor of part of his right to THOMAS M. HUNT and WILLIAM PHILLIP, Sr., same place.—*Cultivating Spade, Plough and Subsoil Cutting Machine.*—*September 5, 1876. Filed July 5, 1876.*

Claim.—1.—A series of spades arranged in a plane parallel with the axis of the machine, and interposed spades in planes at right angles thereto, all attached to a reciprocating cross-bar and operating as herein set forth.

2.—The combination of the range of spades N O and the

range of blades T, of a rotary cultivator, and the ground into the manner substantially as herein described.

3.—The combination, with the spade N O, of the knuckle joints K and pins S', connected and applied as specified, for the purpose of adjusting backward and forward an upright roller body, and regulation of cutting position.

4.—The combination of the hanger D, roller A, guide X, and ploughs F, as and for the purpose set forth.

5.—The combination of the clutch wheel or pinion F', for throwing the spade in and out of gear, and the lock W, for securing the crank shaft S' so as to return the spade in their elevated position.

No. 181,970.—FREDERICK PELLER and HENRY C. PELLER, MEMPHIS, TEN.—*Rotary Spade, Subsoil Cult.*—*and Field Roller.*—*September 5, 1876. Filed January 15, 1876.*

Claim.—1.—The roller A, provided with rows of alternating slots *a' a'*, and with corresponding radial bars *a''* in its end, the side plates C, provided with circular grooves *c'* and eccentric branch grooves *c''* in their inner surfaces, the cutters G, and the cutters H, in combination with each other, substantially as herein shown and described.

2.—The combination, with rollers having slots *a' a'*, the bars H, and the spades G, of the side plates C, having eccentric grooves *c'*, and the guide blocks I, operated by mechanism J K L, as and for the purpose specified.

3.—The slots *a'*, form in the upper part of the side plate, and their matched cap-blocks P, to enable the cutter bars and cutters H to be withdrawn from the roller A, substantially as herein shown and described.

No. 187,790.—WILLIAM L. NICHOLS, CHICAGO, ILL.—*Rotary Harrow.*—*February 27, 1877. Filed December 28, 1876.*

Claim.—1.—The cross-bars, provided with inclined lugs *a'*, arranged in combination with the spirally wound metallic strips P, substantially as and for the purpose set forth.

2.—The view of spiral rotary carriers E, in combination with the jointed adjustable shaft C, substantially as and for the purpose set forth.

3.—The rotary screw carriers E, in combination with the jointed shaft C, adjustable hanger D, and tongue B, substantially as and for the purpose set forth.

4.—The cam L, attached to one end of a revolving screw, F, in combination with the sliding adjustable rock shaft K and sectoring lever L, substantially as and for the purpose set forth.

No. 190,706.—JOHN R. THILLEY, DUMFRIES, BRITISH GUAYANA, SOUTH AMERICA.—*Cultivat.*—*May 15, 1877. Filed October 7, 1876.*

Claim.—1.—The long cutting knives K and hubs J, on shaft G, having large chain wheel E, and made free to rise and fall in slotted bearings, in combination with the small bearing wheels A and axle B, having the small chain-wheel D and the endless chain E, whereby the knives are given a slow rearward motion beside that caused by the forward progress of the machine.

2.—The combination of lever N, rock shaft M, and slotted arm L, E, with the shaft G, that carries the ploughs, sliding bearings, H, and D, rollers, C, and the frame C, substantially as herein shown and described, for the purpose specified.

No. 191,332.—WILLIAM FREEBORN, SAN FRANCISCO, CAL.—*Rotary Plough.*—*July 26, 1877. Filed May 17, 1876.*

Claim.—1.—The horizontal shaft or hub A, with its eccentric roller or land slide disk C, and spiral mould-boards B B', said spiral mould-boards being continuous, so as to form a rotary plough, substantially as described.

2.—The offset D, arranged between and in combination with the spiral concavo-convex mould board and hub A, as and for the purpose described.

No. 194,450.—GEO. R. HUGHES and JOHN E. WALL, FRANKLIN, TEN.—*Harrow, and Roller.*—*August 21, 1877. Filed February 24, 1877.*

Claim.—The harrow frame A, provided with the sectional rollers B' C' and cutters E E', alternately arranged on their shafts between said rollers, the axes of the rollers and cutters being parallel to each other, substantially as described, and for the purpose set forth.

No. 196,017.—JESSE ADAMS, LEAVENWORTH, a signor of

one-half his right to JOHN S. SWEAR, WAVERLAND, IND.—*See Pat. Div. Files.—October 30, 1877. Filed March 21, 1879.*

Claim.—In a machine for pulverizing the soil, the combination of the frame X, pivoted on the axle, the adjustable draft-pole S, and standards Q Q, with cylinders F and G, having teeth H H, and bars J J, having knives I I, substantially as herein shown and described.

No. 198,163.—H. SKILLINGS, HUNTINGTON, MISS.—*See Pat. Div. Files.—December 11, 1877.—Filed October 13, 1877.*

Claim.—The independently rotating wheels D, having narrow and beveled rims, in combination with loose bands H, arranged between the wheels, substantially as and for the purpose set forth.

No. 198,339.—C. C. BREEDEN and OWEN T. WHEELER, BEDFORD, KY.—*Rotary Cultivator.—Dec. 11, 1877. Filed November 6, 1877.*

Claim.—The combination of the sleeves G, the bent shaft H, and the plough-wheels I J with the swinging bars F, the loops E, the axle B, the bars of frame C D, and the driving gearing K L A, substantially as herein shown and described.

No. 198,540.—JOHN GRANER, NEW ORLEANS, LA.—*Rotary Cultivator.—December 25, 1877. Filed August 2, 1877.*

Claim.—1.—The frame D, having tongue E, arranged to be attached to either end of the machine, and the axle B, having bearing wheels A and gear wheel I, in combination with the linged frame F, shafts G M, gear wheels h k l, chain R, and crank-shaft T, substantially as described.

2.—The blades v, of the shape described, attached to the shaft m in propeller form, and arranged to revolve in the direction of the line of draft, and made reversible to allow their points or opposite ends to enter the ground first, substantially as described.

No. 203,172.—LOUIS MARTIN, LYONS, N. Y.—*Mach. for Extirpating Noxious Grasses.—April 30, 1878. Filed January 2, 1878.*

Claim.—1.—In a machine for exterminating noxious grasses, the cylinder D, constructed of rings or disks v, resting upon the shaft and clamped at the ends, the said rings or disks being bolted together in pairs, and securing the teeth I between them, as shown and described, and for the purpose specified.

2.—The disks or rings v, having plane abutting faces, clamped together in pairs by the bolts z, and provided with the sockets p, enlarged at their inner ends to receive and hold the corresponding shafts of the teeth I, as shown and described, and for the purpose specified.

3.—The combination, with the cylinder D and clearers L, of the platform I, and endless apron K, the platform being attached to the springs u u at the inner end, and adjustable both at the inner and outer ends by the levers L M, as shown and described, and for the purpose specified.

No. 205,069.—DANIEL LOCKE, CRESTON, ILL.—*Clod Churn.—July 16, 1878. Filed June 24, 1878.*

Claim.—The combination of the frame A, toothed rollers G, driving wheels J, adjustable bars h, gears I and L, and center wheel z, substantially as set forth.

No. 2,6974.—CHARLES E. SACKETT, MATHEVA FURNACE, WAYNE TOWNSHIP, MITCHELL COUNTY, PA.—*Cultivator.—In. Oct. 13, 1878. Filed June 22, 1878.*

Claim.—1.—In a tilling implement, the combination of a revolving cutter, a revolving spade, and a sifting grate, substantially as described.

2.—In a tilling implement, the combination of a revolving cutter, a revolving spade, a sifting grate, and a hilling attachment, substantially as described.

3.—In a rotary tilling implement, the combination, with the revolving cutter and revolving spade, of the side frames 27 28, forming bearings for their journals and boxes which enclose the driving train of gear wheels connecting the two shafts, and forming, with the handles 29 30, levers for controlling the depth of the spade and cutter, and for lifting them from the earth either separately or jointly, substantially as shown and described.

4.—In a tilling implement, a revolving cutter, revolving spade, wheels 10 11, side frames 27 28 and handles 29 30, the connecting bars 17 18, and ratchet segment 33, com-

bined and arranged substantially as shown and described, whereby said frames and handles may act as levers of the first and second orders alternately in controlling the movements of the implement.

5.—In a tilling implement, substantially as shown and described, the combination, with the revolving cutter and revolving spade, wheels 10 11, side levers, and handles, of the draft bars 17 18, which move independently of the side frames or levers, and to which the draught shall be applied at one of the adjustable attaching holes, whereby the thrust of the revolving cutter into the earth is regulated, and the fulcrum of the wheels to 11 may be varied along said bars to raise the revolving cutter substantially as described.

6.—In a tilling implement, a revolving cutter and a revolving spade combined together for conjoint operation, the said parts being constructed and hung with relation to each other so that the spades shall play within the spaces afforded between the cutters, and the cutters shall run close to the axis of said spade, whereby the earth lifted by the spades shall be confined thereon, substantially as described.

No. 218,129.—CHARLES J. DANIELS, LEBANON, N. H.—*Combination Harrow and Plough.—In. Oct. 12, 1879. Filed June 23, 1879.*

Claim.—1.—The rings E, connected by bar G, in combination with the semi-circular rings E, cylinder I, having pinions N, and wheels C, having cogged flanges D, substantially as set forth.

2.—The platform A, supported on wheels C, in combination with rings F, semi-circular rings E, and toothed cylinder I, substantially as set forth.

3.—The platform A, provided with bar Q, having pins o, confined with ratchet R, lever S, bar G, rings F, having projection H, and semi-circular rings E, having slots z, substantially as set forth.

4.—In a rotary cultivator, the cylinder I, provided with teeth having the cutting blades O and the wedge-shaped portions P, constructed and arranged as shown and described, and for the purposes set forth.

No. 219,015.—CHARLES E. SACKETT, MATHEVA FURNACE, WAYNE TOWNSHIP, MITCHELL COUNTY, PA.—*Cultivator.—Machines.—Sept. 16, 1879. Filed March 17, 1879.*

Claim.—1.—In a tilling implement combining two or more revolving cutters and a rotary sifting grate or harrow, the interposition between them of a fixed spade composed of plowing points projecting between said cutters, and limiting back of them to form a common spade surface, so inclined that the earth divided by the cutters shall be raised, passed rearward and dropped into the furrow so made, or upon pulverizing or sifting devices, substantially as described and shown.

2.—In a tilling implement combining a fixed spade and a rotary sifting grate, the combination therewith of two side plates, 12 13, enclosing the said spade and sifting grate, and extending above and below the plane of their surfaces or centres a sufficient height and depth to confine the upcoming earth upon them, and to keep open the furrow-space below them for the redeposit of the earth after preparation by the sifting grate, substantially as described and shown.

3.—In a tilling or planting implement, the combination therewith of a rotary sifting grate provided with revolving toothed bars having a forced rotation, and for the purpose of harrowing or preparing the earth raised by the tilling devices in one continuous operation, or altered for the purpose of planting in the same operation or not, substantially as shown and described.

4.—In a tilling implement combining a revolving cutter, a fixed spade, and a rotary sifting grate, the combination therewith of an automatic planting attachment of convenient device, whereby the earth may be planted at the same time as tilled, and in one and the same continuous operation, substantially as described and shown.

5.—In a tilling implement, the seat 56 and draft bar 46 47, in combination with the T ratchet levers S 9, ratchet posts 35 36, frame 6 7, with its cultivating attachment, lever 43, and axle, arranged as described, to cause the driver S to act in forcing the implement into the earth, or to

raise and sustain it above the ground, substantially as shown and described.

6.—In a tilling implement, the combination therewith of an adjustable triangular lifting and carrying arrangement composed of the T locking levers 8, 9, supported on the axle 48, the cultivating attachment bars 6, 7, and rather posts 35 39, whereby the carrying wheels and axle serving as a fulcrum, the power of the team, acting through the T locking levers at either end, alternately serves to raise or sustain the implement from the earth at will, substantially as shown and described.

No. 219,116.—CHARLES F. SACKETT, MATHIDA FURNACE, WAYNE TOWNSHIP, MIFLIN COUNTY, PA.—*Combined Ploughs, Harrows, and Drills*.—*September* 2, 1879. Filed *September* 27, 1878.

Claim.—1.—In a tilling implement, combining two or more revolving cutters, 51 revolving with a central roller or axis, 52, the subdivision of that roller into, or the surrounding of that axis by, a number of smaller rollers, 2, 2, rotating on independent axes 3, and having sharpened cutting edges 4, that serve to cut up, crush, or disintegrate the weeds, stalks, or other field growth that may pass between said revolving cutters, substantially as described and shown.

2.—In a tilling implement, combining a revolving spade, composed of one or more rotating blades, 53, the combination therewith of a series of parallel bars, 5 then supporting wheels 6 and 7, eccentric track, and side plates, 8 and 9, for projecting and withdrawing the spade cleaners and forcibly ejecting the earth at each revolution, substantially as described and shown.

3.—In a tilling implement having a revolving or fixed spade, the combination therewith of a sifting grate of unequal spaces, the revolving toothed bars 12, with gear-train 13 and 14, the side frames, 11 and 15, the latter provided with an inclined gear-box, the chain 21, and chain-wheels 20 and 31, substantially as shown and described.

4.—In a tilling implement combining a revolving cutter, a revolving spade, and a sifting grate, the combination therewith of an automatic seed-hill, of a convenient device for planting the earth at the same time as tilting it, and in one continuous operation, substantially as described and shown.

No. 220,176.—CHARLES E. SACKETT, MATHIDA FURNACE, WAYNE TOWNSHIP, MIFLIN COUNTY, PA.—*Combined Ploughs, Harrows, and Drills*.—*September* 30, 1879. Filed *May* 14, 1879.

Claim.—1.—In a tilling apparatus, the combination, with a plough carried on a frame, of a wheel-supporting sub-frame and adapted to move on the bottom of the furrow last made, and to receive and pulverize the earth from the furrows in process of making, as set forth.

2.—In a tilling apparatus, a revolving pulverizer, closed or partially closed on the furrow side, adapted to receive the earth from the land side, and provided with internal pulverizing apparatus adapted to pulverize the earth and to let it drop in the furrow behind the pulverizing wheel, as set forth.

3.—In combination with the revolving pulverizer having bars and teeth, as set forth, the shield 8, fixed to the shaft and operating in connection with the plough and the revolving wheel, as and for the purpose set forth.

4.—In combination with a tilling apparatus, consisting of a plough and a revolving pulverizer, receiving the earth from the plough, moving in the furrow last made, and leaving the pulverized earth therein, a seeding device, the parts operating together as set forth.

No. 220,177.—CHARLES E. SACKETT, MATHIDA FURNACE, WAYNE TOWNSHIP, MIFLIN COUNTY, PA.—*Combined Ploughs, Harrows, and Soil-Drills*.—*September* 30, 1879. Filed *August* 13, 1879.

Claim.—1.—The combination of a carriage-frame, of a frame carrying ploughing and harrowing devices, and of the levers 23, lifting-bars 26, shackle-bars 25, lifting cranks 27, and of the shaft-crank, connecting-rod, and lever, as set forth.

2.—In combination with the lifting apparatus and the suspended frame, the springs 24, arranged upon the bolts of the principal lever-bars 23, and operating with the controlling lever, to raise the frame, as set forth.

3.—The combination of a carriage-frame and combined plough and harrow-frame with the lifting-springs 24, the principal levers 23, lifting-bars 26, the shackles-bars 25, lift-

ing cranks 27, crank shaft 28, angling crank 29, connecting rod 30, controlling-lever 31, and stop-frame 32, substantially as shown and described.

4.—In a vertical wheel-harrow, the combination of transverse removable bars and the perforated rims, whereby the spaces are made adjustable in width, as set forth.

5.—A vertical wheel-harrow, 2, in combination with a pulverizing plate, 15, having hinged finger bars or cleaners 17 and springs 19, whereby obstructions which will not pulverize are passed without injury to the implement, substantially as shown and described.

6.—The plough made laterally adjustable, in combination with the vertical wheel harrow, the mould board of the plough being adapted to the inner periphery of the harrow, as set forth.

7.—A vertical wheel-harrow, 2, in combination with a plough, 4, made fast to a sliding beam, 5, sliding upon rods, as 6, 6, and actuated by a screw, 7, and crank-handle 8, or similar device, all in connection with the common frame 11, whereby the amount of earth tined into the harrow may be regulated, substantially as described and shown.

8.—The combination of a carriage of substantially the construction described, of a supplemental frame suspended on one side and carrying the plough and pulverizing wheel, which operate in connection with each other, and of a seed-dropping device mounted on the opposite side, the whole apparatus operating to plough, pulverize, and plant at one operation, as set forth.

No. 221,695.—RICHARD B. FEDRICK, RICHMOND, IND.—*Ploughs*.—*October* 28, 1879. Filed *March* 25, 1879.

Claim.—1.—The revolving plough 1, of tubular form, for encircling, operating upon, and rearwardly delivering the soil, substantially as described.

2.—In a machine-plough, the combination of the cutter proper, *c'*, having plain or irregular edge for severing the slice of soil, and the revolving tube 1 for inverting the same.

3.—In a machine plough, a tube 1, and a cutter *c'*, the latter being provided with a lip, K, projecting into the tube, as and for the purpose set forth.

4.—In a machine-plough, the lip K, projecting rearwardly from the cutter *c'*, and formed to present an edge, *r*, obliquely to the carrying part moving away therefrom, for the purposes of facilitating the revolving of the tube, decreasing compression, and increasing breaking effect.

5.—The tube 1 and cutter proper, *c'*, the latter having a lip, K, projecting into the former, said lip being provided with a brush, S, radiating from the convex side of its rear edge, *r*, combined and operating as described.

6.—The combination of the cutter *c'*, lip K, and tube 1, having slots or escape-holes *i*, for the purpose set forth.

7.—In a machine plough, the fixed cutter G, *c'*, and the revolving tube 1, having gear holes, *f'*, in combination with shaft F and suitable gearing driven from the ground-wheel B, substantially as shown and described.

8.—The tube 1, having gear holes *f'*, and escape-holes *i*, guarded by outside plates T, substantially as set forth.

9.—The combination of the tube 1 and the cutter *c'* with lip R and guards T.

10.—The combination of the revolving tube 1, fixed cutter G, collar H, tie-rods J, and rollers K, substantially as shown and described.

11.—In a machine-plough, the tube-shaft F, collars G and H, and tie rods J, substantially as described, and for the purpose of supporting the bracing and tube.

12.—In a machine-plough, the drive wheel B, gearing *b*, *d*, cross-shaft D, bevels E, tube-shaft F, and gearing *f*, *f'*, for revolving the tube 1, substantially as set forth.

13.—In a revolving plough, the ribs or guides N, or their equivalents, to prevent any tendency of the soil to slide sideways.

14.—The combination of tubular plough 1 and frame G H J, or its equivalent, and rollers K, provided with retaining flanges *k*, as and for the purpose set forth.

15.—In a revolving tubular plough, the tooth or breaker W, substantially as described, and for the purpose set forth.

16.—In a revolving plough, the combination of tube 1, rear collar, H, and tooth or breaker W, substantially as shown and described.

No. 222,603.—CHARLES E. SACKETT, MATHEA FERNACE, PA.—*Combination Ploughs and Pulverizers*.—*Harvesters*.—*Dec 16, 1879*. Filed *Nov 16, 1879*.

Claim.—1.—In a tilling apparatus, the combination, with a wheel harrow, of a plough located by its side and adapted to turn the furrow into said harrow, and of a second plough arranged in a line (but on a higher plane) with the first, and forward of the harrow, as and for the purpose set forth.

2.—In a tilling apparatus, the forward plough, *H*, made vertically adjustable, in combination with a revolving pulverizer made vertically adjustable, so that the latter may direct the passage below it of any depth of cut or thickness of field-growth removed by the former, substantially as described and shown.

3.—In a tilling apparatus, the combination, with an ordinary beam plough, of a horizontal axle crossing the said plough beam and supporting upon the furrow side a revolving wheel pulverizer adapted to move in the furrow last made and to receive the earth from said plough, and upon the other end an adjustable gauge-wheel traveling upon the land, the two wheels when adjusted in combination supporting, steadying, and equalizing the movement and cut of the plough, substantially as described and shown.

4.—In a tilling apparatus, the combination, with an ordinary beam plough, of an axle connected to said plough and made vertically adjustable thereon, said axle carrying on one end a pulverizing wheel adapted to move in the furrow and receive earth from the ploughshare, and upon the other end an adjustable gauge-wheel traveling upon the land, as set forth.

5.—In a tilling apparatus, the combination in gangs of a series of ordinary beam ploughs and revolving wheel pulverizers adapted to move in their respective furrows and to receive and pulverize the earth from their respective ploughs, substantially as described and shown.

No. 229,200.—THOMAS J. TALLEY, ROCKFORD, ILL., assignor to himself and JOHN J. WELDEN.—*Rotary Plough*.—*Jan 22, 1880*. Filed *Aug 22, 1880*.

Claim.—1.—A rotary plough constructed substantially as herein shown and described, consisting of the drive wheels *A*, having cog *O*, the axle *B*, the swinging frames *J*, having guard boards *P* and guard rods *Q*, the cylinders *L*, carrying ploughs *M*, and the gear wheels *N*, whereby the plough cylinders are rotated by the advance of the machine, as set forth.

2.—In a rotary plough, the combination, with the axle *B* and the shafts *K*, carrying the plough cylinders *L*, of the swinging quadrantal frames *J*, having guard boards *P* and guard rods *Q*, substantially as herein shown and described, whereby the said plough cylinders are suspended from the said axle, as set forth.

3.—In a rotary plough, the combination, with the inner quadrantal frames, *J*, carrying the plough cylinders *L*, of the levers *R*, attached to said quadrantal plates and locking with them upon the axle, substantially as herein shown and described.

No. 233,809.—CHARLES E. SACKETT, MATHEA FERNACE, PA.—*Combination Ploughs and Pulverizing Apparatus*.—*October 26, 1880*. Filed *July 25, 1880*.

Claim.—1.—The pulverizing wheel adapted to operate in connection with a plough to receive the furrow-slice therefrom, said wheel having a cylindrical tread and frusto-conical furrow side, substantially as described.

2.—The combination, in a pulverizing wheel, of the hub-casting *F*, inclined radial bars *a*, rims *b*, *c*, and transverse bars *d*, substantially as described and shown.

3.—In a combined ploughing and pulverizing apparatus in which the furrow-slice is turned into the pulverizer, the combination of a pulverizing wheel, a straight axle, and a land-side wheel of the same size as the pulverizing wheel, and adjustably attached to the axle, substantially as described.

4.—The combination of the axle, the arm *a*, fixed directly to said axle, the plough, and a suitable elevating-arm, substantially as described.

5.—The combination of the plough, the arm *a*, fixed directly to said axle, the axle, and the double arm *b*, *c*, substantially as shown and described.

6.—The combination, with the plough arm *a* and axle, of

the shotted arms *b*, perforated handles, and connecting bolts, as described.

7.—The combination, in a combined plough and wheel-pulverizer, of a straight axle and a land-side wheel with the segment-cutting *b*, lever *a*, wheel spindle *p*, and the described wheel pulverizer, of the same diameter as the land-side wheel, substantially as described and shown.

No. 235,372.—THOMAS H. MC CRAY, TYRONZA, ARK.—*Rotary Plough*.—*December 14, 1880*. Filed *July 8, 1880*.

Claim.—In a rotary ploughing machine, the combination of the driving wheel *L*, intermediate gear and pinion wheels, *H*, *I*, the double cogged rack bar *G* and idler wheel *B*, to sustain the rack bar, and the stump which the shaft of the plough cylinder is sustained, all constructed and arranged substantially as and for the purpose described.

No. 236,641.—HENRY H. SPENCER, MOUND CITY, ILL.—*Spading Machine*.—*January 11, 1881*. Filed *May 21, 1880*.

Claim.—1.—A spading machine supported upon a wheel carriage, and consisting of a series of spades held in guides and arranged radially around an axle and caused to have a rotary reciprocating motion around and from the axle, in combination with a spring mechanism arranged between the axle and spades, whereby the said movement will be retarded as the spades shall enter the ground and accelerated as they are withdrawn from the earth, as shown and described.

2.—In a spading machine, the combination of the supporting wheels, the revolving axle, an independently revolving sleeve to fit around the axle, guide disks attached to said sleeve, supporting rotary reciprocating shovel, and the multiple gearing to cause the sleeve and its connections to revolve upon and in the direction with the axle and at an accelerated speed therewith, in the manner and for the purpose substantially as described.

3.—In a spading machine, the combination of the supporting wheels *B*, the driving axle *A*, the hollow sleeve *H*, guide disks *L*, carrying rotary reciprocating spades *K*, provided with cylindrical hubs that envelop the sleeve *H* and are connected therewith by a coiled spring, and a set screw in the one working in a segmental slot of the other, to limit their movement one upon the other and exert a yielding spring pressure upon the spades as they enter the ground, substantially as described.

4.—The combination, in spading machine, of the supporting wheels *B*, axle *A*, sleeve *H*, multiple gear to connect the axle with the sleeve, guide disks *L*, spades *K*, eccentric *I*, with grooved periphery *Z*, secured to peripheral rim *L'* by set screws *V*, and segment plates *K'*, pivoted to studs *K*, that slide in slot in the face of the peripheral rim, in the manner and for the purpose substantially as described.

5.—In a spading machine mounted upon a wheeled carriage, the guide disks *L*, supported upon a sleeve or axle and carrying rotary reciprocating spades, in combination with the eccentric *I*, adjustably connected to the frame of the machine by a ball, *E*, to regulate the thrust of the spades into the ground or to raise them out of contact therewith altogether, substantially as and for the purpose described.

No. 238,532.—JULIUS SCHUCHARD, FREDERICKSBURG, TEXAS.—*Rotary Spading Machine*.—*March 8, 1881*. Filed *Dec 13, 1880*.

Claim.—1.—In a rotary spading machine, the combination of the supporting and draught frame *A*, transverse axle *C*, the rotary spading drum *D*, mounted at one end of said axle, and the traction wheel *H* at the opposite end thereof, all as and for the purpose set forth.

2.—In a rotary spading machine, the combination of the supporting and draught frame *A*, transverse axle *C*, the rotary spading drum *D*, mounted at one end of said axle, the traction wheel *H* at the opposite end thereof, with the spading drum *G*, hinged frame *I*, cleaners *J*, mounted on axle *C*, and the elevators *K*, all constructed and relatively arranged as herein shown and described, for the purpose set forth.

3.—In a rotary spading machine, the curved tooth *E*, having a square chisel point and a triangular cross section, the concave face being of uniform width, and the thickness of the tooth increasing from the point of the base, as and for the purpose set forth.

No. 23,970.—CHARLES T. SACKETT, MANHATTAN, N. Y. *Compound Plow*.—*March 15, 1884*.
 Filed *June 14, 1884*.

Claim 1.—The combination of the pulverizing wheel, the bent axle, and the land wheel with the plough flexibly supported beneath said bent axle and disengaging into said wheel, and with devices for preventing lateral movement of said plough, whereby vertical movement of the plough and proper relation to the pulverizing wheel are maintained, substantially as described.

2.—The combination of the bent axle B, the tongue C, the yoke braces *a a*, fixed directly to said axle and adapted for connection either to the plough beam or to the tongue, as set forth.

3.—The combination of the plough beam, the yoke braces *a a*, fixed directly to the axle, the axle B, the pivotal supports 5 5, and the carrying frame composed of the jointed tongue C, the diagonal braces 3 3, the reinforcing braces 4 4, and terminating preferably in the frame 6 6 to support a seed drill, the whole being bolted firmly together and pivoted to the axle through the supports 5 5, substantially as described and shown.

4.—The combination, with the wheels, the bent axle, and the braces *a a*, adapted for pivotal connection either to the plough beam or the tongue C, of the described lifting devices, and adapted to raise either the plough or cultivator teeth, as set forth.

5.—The combination of the wheel, the bent axle, the tongue C, the hook *c*, the plough beam with pin *p*, and lifting lever, substantially as described.

6.—The combination of the wheels, the bent axle B, the lever handles *b b*, the tongue C, and the braces *a*, and lever handles *b b* being pivoted upon the braces *a*, as set forth.

7.—The combination of the tongue C, the guide posts *d*, fixed to its rear extension, the lever handles *b*, pivoted upon the brace *a*, bent axle B, wheels, and the devices for turning the earth, substantially as described.

8.—The tongue C, consisting of a fixed and movable part extended to the rear of the bent axle B and pivoted thereon, in combination with the frame 6 6, adapted to receive a seed box, and with braces *a a* and bent axle B, substantially as described.

9.—The combination, with the tongue C and braces 3 3, pivoted upon the bent axle B at its upper part, of the yoke braces *a*, fixed to said axle near the wheels and adapted to be pivoted to the tongue C or to the plough beam, and also in combination with the eyebolts 15, fixed to the rear of said axle and adapted to hold cultivator devices when desired, substantially as described.

10.—The combination, with the plough and pulverizer wheel to receive the furrow, of the seed tubes *z z* located directly in rear of the said wheel, whereby the seed are dropped in the mid of the earth as it falls from the wheel, substantially as described.

	<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>
Andrew, W. W.	481	141	Hami, J. O. and Slewder,		
Antin, R. G. S.	488	142	W. F.	494	137
Austin, R. G. S.	488	142	Hart, G. D.	473	139
Beaver, J. T.	470	138	Henderson, J. T.	484	141
Black, T.	475	137	Hernby, J.	461	137
Bouton, A.	470	138	Hoffelitz, J. C.	472	139
Breneman, M.	472	139	Hoover, T. J. and Hender-		
Briggs, H. C.	475	139	son, J. T.	486	142
Broadwell, W. B.	468	138	Hume, J. M.	473	139
Brown, J.	462	137	Ingersoll, C. P.	468	138
Bullock, R.	471	138	Jessop, J. W.	475	140
Carr, N. Jr., and J.	468	138	Johnston, B.	478	140
Carter, C. H.	489	142	Krauser, J. and C.	462	137
Chandler, M. and Nickels,			Kugler, O.	483	141
J. B.	472	139	Kugler, O.	483	141
Craft, R. D.	476	140	Kuntz, J.	473	139
Creek, C. C.	474	139	Lechenthaler, G.	462	137
Croll, G.	486	142	McEwen, E. S. and Adams,		
Cummins, S. A.	480	141	O. R.	488	142
Danner, J.	469	138	Mason, R. E.	482	141
Debolt, C.	466	137	Matheny, R. G. and Barnes,		
Deyo, C. B.	470	138	I. R.	466	137
Dualap, J. R.	487	142	Messenger, N.	467	137
Dwight, S.	468	138	Minnich, E.	470	138
Dwight, S.	471	138	Misner, F. and P. A.	464	137
Dyert, W.	464	137	Moore, M. H. and		
Ellis, T. J.	484	141	Satterwhite, A.	467	137
Eshleman, A.	479	140	Norton, C. P.	478	140
Frankeberger, J. T.	474	139	" " (R.)	479	140
Freeland, P. F.	463	137	Owens, G. W.	481	141
Ganong, L. M.	478	140	Palcer, J.	487	142
Ganong, L. M.	483	141	Powell, J.	476	140
Geahr, W.	471	138	Ravenscraft, H. C.	467	138
Geisinger, J. B. and Wil-			Ray, J. J. and Young, J. R.	477	140
hams, D. H. S.	467	138	Reed, M.	470	140
Graham, J. L.	484	141	Reynolds, P. B. and L. C.	469	138
Gathrie, L.	477	140	Rice, K.	479	138
Hall, C. M.	483	141			
			Rice, J. H.	484	141
			Richter, J.	462	137
			Roby, M.	487	142
			Rue, J.	463	137
			Shank, S. B.	475	140
			Shaw, T. M.	486	142
			Sims, Z. B.	477	140
			" " (R.)	477	148
			Sims, Z. B.	482	141
			Small, B. B.	488	142
			Smith, A.	463	137
			Smith, J. B.	461	137
			Stahl, P. & Duffenbacher, J.	461	137
			Staman, J. K.	464	137
			Stansbury, A. F. and T. M.	573	139
			Steller, C. E.	474	139
			Stoll, M.	479	140
			Taylor, W. A. and Graves,		
			W. W.	465	137
			Thirlwell, J.	463	137
			Thomas, J. S.	480	140
			Thompson, J. J. and Col-		
			lier, V. F.	476	139
			Thompson, J. J.	480	141
			Thompson, J. A.	486	142
			Tower, A. C.	482	141
			Tower, A. C.	484	141
			Webb, T. U.	471	138
			Weld, H.	481	138
			Wilde, D.	469	138
			Wilson, M.	474	139
			Winfield, H. and Flynn, W.		
			P.	485	141
			Wood, J. F.	466	137
			Wottring, R.	478	140
			Wyant, D.	476	140
			Yost, G. W. N.	465	137
			Zimmerman, C.	472	139

E. STALL and J. DUFFENBACHER, FARGO, TOWN, S. D.—*Cultivator's*,—*Sept. 1885*.

Claim.—1.—The shares or mould boards which are each cast in one piece and forming a coupler, shears and mould boards.

2.—The high standards C, D, E, F, G, and H, which carry the ploughs as far above the corn or potatoes as not to break or down so long as it needs cultivating.

3.—Placing them in such a manner as to plough or cultivate both sides of a row of corn or potatoes at one and the same time, of going over the same; We do not restrict the number of shares or mould boards and standards to three on each side of the ploughs as their number must be increased or diminished as the distance between the rows of corn or potatoes is increased or diminished.

No. 1,031.—J. HERNBY, EAST HAMPSHIRE, PA.—*Cultivator's*,—*Dec. 10, 1838*.

Claim.—The peculiar manner of constructing, affixing and connecting the mould boards, so as to admit of their being shifted and turned so as to regulate the distance apart and the breadth of the furrows as herein described.

No. 1,121.—I. B. SMITH, FRINLESS ANSE, VA.—*Cultivator's*,—*April 15, 1839*.

Claim.—The arrangement of the perforated beams in combination with the shifting and reversible ploughs for throwing the earth from or towards the rows of corn, regulated to any width required, in the manner to be described.

No. 3,709.—W. DYKLE, GAITHERSBURG, PA.—*Cultivator's*,—*August 10, 1841*.

Claim.—The curved iron braces which connect the two sides together, in combination with said sides and the tongue, constructed and arranged in the manner above specified.

No. 4,745.—J. and C. KRAUSER, RINDERS, PA.—*Cultivator's*,—*Sept. 5, 1846*.

Claim.—1.—The line or brace cast on the beam as explained.

2.—The longitudinal opening O, O, together with the metallic boxes H, H, as set forth.

No. 11,379.—G. LEITCHENHALFER, LINDENVALE, PA.—*Cultivator's*,—*July 25, 1854*.

Claim.—The method herein shown and described of attaching the shares G to the beams A, viz: having metal strips E, perforated with holes F, secured to the end sides of the beams A, and sockets formed of two lips G, G, made at the upper ends of the shares and put on by holes h, h, in which holes h, and in the holes i, in the plates E, wooden pins i, i, are passed, securing the shares to the beams as set forth.

No. 11,929.—J. BROWN, LAWS RIDGE, Ill.—*Cultivator's*,—*Nov. 14, 1854*.

Claim.—The combination of the angular shaped frame a a' having the two pieces a, a', united at their forward ends into a tongue, with the long standards d, d', e, e', and short standards h, h', in the manner and for the purpose herein set forth.

No. 18,928.—J. RIGHTER, CLARKSBURG, VA.—*Cultivator's*,—*Dec. 22, 1857*.

Claim.—The employment of the pinions a, and f, when in combination with the screw shaft h, and teeth of ploughs a, a, substantially in the manner and for the purpose set forth.

No. 24,411.—AZEL SMITH, WINDFIELD, OHIO.—*Cultivator's*,—*Jan. 14, 1859*.

Claim.—The a hinging brace plates C, C, frames B, B, and cutters D, D, when arranged as described, and in combination with the adjustable mould boards.

No. 24,418.—JOSEPH THIRLWELL, GAITHERSBURG, Ill.—*Cultivator's*,—*Jan. 14, 1859*.

Claim.—The arrangement of the frame A, the iron bars B, B, the hinge box C, the tongue braces D, D, and fitting chain F, when constructed and used in combination for the purposes set forth.

No. 25,006.—PARLEY T. FREELAND, NEWARK, Ill., assignor to V. R. DAVID, MORRIS, Ill.—*Cultivator's*,—*Dec. 10, 1859*.

Claim.—The arrangement of the tongue A, curved or segment bar B, beams E, E, with screw rod a, and pulleys d, d, and shares F, attached, substantially as and for the purpose set forth.

No. 25,008.—JAMES RUTLEDGE, NEWARK, N. J.—*Cultivator's*,—*Dec. 10, 1859*.

Claim.—The arrangement of the loose chain pole G, in a vertical cultivation frame H, having rods a, b, device c, d, h, bracket i, and pin j, all arranged and operating substantially in the manner and for the purpose described.

No. 25,005.—F. MINSER, and P. A. MINSER, FOX, Ill.—*Cultivator's*,—*Jan. 14, 1860*.

Claim.—The arrangement of the beam h, with m, transverse pins E, O, handles H, forked standard 2, legs a, shovel R, castings C, B, brace rods s, forked strap G, forked rod v, and transverse limb r, the whole being constructed and used together in the manner and for the purpose described.

No. 20,796.—J. K. STAMAN, MIDDLETOWN, OHIO.—*Cultivator's*,—*Jan. 14, 1860*.

Claim.—In combination with the bows A and D, arranged relatively as specified, and having their lower ends chamfered as described, the cultivating teeth or shares P, and the connecting brace strap Q, when the whole is constructed and arranged as before set forth, for the purposes specified.

No. 27,245.—J. O. HARRIS, and W. F. SLEWIDER, OTTAWA, Ill.—*Cultivator's*,—*Jan. 14, 1860*.

Claim.—In combination with a V shaped adjustable and reversible frame, the adjustable and hinged plough stocks B, when constructed and arranged substantially in the manner and for the purpose described.

No. 20,437.—W. A. FAYTOR and W. W. GRAVES, FORT ADAMS, Miss.—*Cultivator's*,—*Aug. 14, 1860*.

Claim.—The adjustable beams E, F, ploughs i, d, brace rods h, and the scrapes s, G, with their standard braces h, h, and the brace rods c, c, all combined and arranged in the manner herein set forth.

No. 20,775.—THOMAS BLACK, FRENCHVILLE, Ill.—*Cultivator's*,—*Aug. 14, 1860*.

Claim.—The arrangement of the elastic traverse bow bar C, with the rods a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, and the bars D, E, all as shown and described for the purpose set forth.

No. 20,840.—W. N. YOST, YELLOW SPRINGS, OHIO, assignor to himself and JOHN F. WATSON, EDWARDS DICK, Miss.—*Cultivator's*,—*Aug. 14, 1860*.

Claim.—The arrangement and combination of the two beam A, cross braces K and L, movable shares D, and wheels G; the whole being constructed as and for the purposes described.

No. 30,173.—JOHN F. WOOD, HOUMA, LA.—*Cultivator's*,—*Sept. 5, 1860*.

Claim.—The arrangement of the hinged adjustable wings E, when used in combination with the adjustable frame A, shovels D, and rollers C, substantially in the manner and for the purpose set forth.

No. 30,302.—CYRUS DEBROT, OTTAWA, Ill.—*Cultivator's*,—*Oct. 10, 1860*.

Claim.—The arrangement of the handles C, C, the points K, K, the brackets E, and the upright D, D, for the purpose set forth and as described.

No. 30,741.—R. G. MATHENY and L. R. BARNES, DE KALB, Miss.—*Pat. 18*,—*Nov. 14, 1860*.

Claim.—The arrangement of the bars B, B, connected with the beam A by the clamps G, in connection with the adjustable foot or standards F, F, and bars J, J, attached to the bars B, B, and having the plough and scrapes respectively secured to them, the handles C being attached to the bars B and landbars h, h, and all arranged as and for the purpose set forth.

No. 30,745.—NELSON MESSENGER, NEWARK, Ill.—*Cultivator's*,—*Nov. 14, 1860*.

Claim.—The arrangement of the horizontal boss G, G, with the pendling foot or bars H, having the shares I attached in connection with the standards F, being provided by the rods a, and the bars G, braced by the rods D, as and for the purpose set forth.

No. 30,748.—M. H. MOORE and ALEXANDER SATTEKWHITTE, ROMA, GA.—*Cultivator's*,—*Nov. 14, 1860*.

Claim.—The arrangement of the bars D, D, D, E, E, beam A, and foot F, with the bars G' attached, the two latter parts

being secured to the bars E E, as and for the purpose set forth.

No. 30,758.—HARRISON C. RAVENSCHRAFT, KINGWOOD, VA.—*Cultivators*.—November 27, 1860.

Claim.—The middle portion A, in combination with the outer sliding rings D and E, arranged and operating as above set forth.

No. 30,663.—JOHN B. GEISINGER and D. H. S. WILLIAMS, MONTEVILLE, OHIO.—*Cultivators*.—December 18, 1860.

Claim.—The arrangement of the curved slotted bar C, curved slotted braces M M hinged to bar J, standards N N, shares Q Q, eye bolts S S, links R R, bars K, bolt L, beam A, and handles E, the whole being constructed substantially as described.

No. 31,305.—SOLIMON DWIGHT, BYRON, ILL.—*Cultivators*.—February 5, 1861.

Claim.—The arrangement of the main frame A and tongue B of a single piece of timber, in combination with the retaining strap C, shaping block D, cross brace H, and standards E, the whole arranged and operating as specified and for the purpose set forth.

No. 32,588.—NATHAN CARR, JR., and JOHN CARR, MONMOUTH, ILL.—*Cultivators*.—July 23, 1861.

Claim.—1.—Making the frame in the form of a bow, in combination with supporting it by castor wheels H H, as shown and described.

2.—In combination with said bow A and castor wheels H H, the hinged plough beams C C and tongue B, arranged in relation to each other, as shown and described.

No. 35,434.—W. B. BROADWELL, SPRINGFIELD, ILL.—*Corn Ploughs*.—June 3, 1862.

Claim.—In combination with the bar G and clamps H H the fender or guard I, applied to the beams A A and bar G, as and for the purpose specified.

No. 31,908.—C. B. INGERSOLL, MORRIS, ILL.—*Cultivators*.—November 25, 1860.

Claim.—The combination and arrangement of the draught pole D, the double-tree A, the beams E, the cross beam F, the standards G, the supports C, and the whiffletrees B, when all are constructed, arranged, and operating substantially as and for the purposes herein delineated and set forth.

No. 37,219.—JOSEPHUS DANNER, MILTON, ILL.—*Cultivators*.—December 23, 1862.

Claim.—The combination and arrangement of the draught pole A, the adjustable beams B, the standards C, and shares G, the supports D, and the bar E, and the strap F, or its equivalent, all arranged and constructed substantially as and for the purposes delineated and set forth.

No. 37,789.—P. B. and L. C. REYNOLDS, PROPHETSTOWN, WILMINGTON COUNTY, ILL., assignors to themselves and CLARK G. REYNOLDS, all of same place.—*Cultivators*.—February 24, 1863.

Claim.—1.—The arrangement upon adjustable beams B C of two or more pairs of perforated lever adjusting plates H H, for the purpose of adjusting two or more pairs of shovel stocks G G I I, in the manner and for the purpose described.

2.—The arrangement of the bent sustaining bars F F, side beams B C, and slots h c s, in the manner and for the purpose described.

3.—The arrangement of the frame A B C D E, swingle-tree I, draught rods J, adjustable hangers K K, perforated lever adjusting plates H H I I, swivelling square or flat top standards G G, bent sustaining bars F F, and slots h c s, the whole constructed and operating together in the manner and for the purposes described.

No. 38,337.—ROBERT RICE, GEORGETOWN, VERMONT COUNTY, ILL.—*Cultivators*.—April 28, 1863.

Claim.—1.—The connecting of the front ends of the bars a a of the implement to the draught pole B, by means of the elastic plates b b, in combination with the cross-bars c c fitted to the draught pole B and passing loosely through the bars a a, and with the braces e e attached to the plough standards C C and the cross bars c c, as herein set forth.

2.—The handles E E, attached at their front ends to the draught pole B, by means of screws or bolts g, in combination with the spring or elastic bar i, and the upright D, on which the rod h bears, substantially as and for the purpose herein specified.

No. 45,549.—DANIEL WILDE, WASHINGTON, IOWA.—*Corn Cultivators*.—December 20, 1864.

Claim.—1.—The lever a, resting on the front bar of the frame, and supported near the middle by the notched plates w, secured to the uprights a, and operating as and for the purposes herein recited.

2.—The arrangement of the rocking bar g, elevated bar m, in relation to the handles and the shovel stakes, for the purpose herein set forth.

3.—In connection with the arrangement of the rocking bar g, bar m, and the shovel stakes, the stirrups q, for the purpose herein named.

4.—The plate j with its inclined and horizontal faces k and l, for the purpose herein set forth.

No. 46,376.—ELIAS MINNICH, McKEE'S HALF FALLS, PENN.—*Cultivators*.—February 14, 1865.

Claim.—The arrangement of the braces M M, connecting the plough shares to the tongue, with the teeth or rake L, as arranged and combined with the angular-shaped frame E, as herein described and for the purposes set forth.

No. 48,358.—JOHN T. BEYER, BETHEL ILL.—*Cultivators*.—June 27, 1865.

Claim.—1.—The lever handles I I containing uprights d d, with cross bars X X, made in solid framing to vibrate upon pivot P, in combination with beam or tongue A, and clevis N.

2.—The arrangement of the elevating clevis N, clevis guide o, cleats or notches r r, and corresponding notches s, as and for the purposes herein specified.

No. 53,217.—ANDREW BOULTON, NAPA, CAL.—*Cultivators*.—October 3, 1865.

Claim.—The right and left cultivators A A supported by the castor wheel F and adjustable wheels B, and connected by transverse bars G, all arranged substantially as and for the purpose herein set forth.

No. 52,542.—CALVIN B. DEVO, assignor to himself and EDGAR B. RINNER, MARIETTA, ILL.—*Cultivators*.—February 13, 1866.

Claim.—1.—The combination and arrangement of the triangular frame B B C, draught pole A, standards D, and braces E, constructed and operating as and for the purposes set forth.

2.—In combination with the said draught pole A, triangular frame B B C, standards D, and shovels D', the arrangement of the inclined posts F F, provided with the pulleys e e, the pulleys G, and cord or chain I, operating substantially as and for the purposes specified.

3.—The arrangement of the toothed plates L M. Slot m, bolt N, and O, with the draught pole A, cross bar C, and inclined posts F, sliding in the loops a, all arranged and operating substantially as herein set forth and described.

No. 53,592.—SOLIMON DWIGHT, ROCKFORD, ILL.—*Cultivators*.—April 3, 1866.

Claim.—The combination of the rigid tongue, the curved side pieces, the adjustable ream and middle cross-beams, the adjustable handles, the swivelling ploughs, and the yielding spring corn guard, when constructed, arranged, and operating as described.

No. 55,185.—TIMOTHY U. WEBB, SPRINGFIELD, ILL.—*Cultivators*.—May 29, 1866.

Claim.—1.—The construction of the frame, the timbers A A and the cross bars or timbers B B, so notched and halved together on an angle that the face of the cross bars B will place the straight standards C C C in the proper inclination for supporting and bracing the ploughs or cultivators, substantially as herein described.

2.—Making corresponding series of hole e e through the cross bars B B B for the purpose of bolting and bracing the cultivator standards C C C, so that the cultivators may be changed to work either right or left and the spaces adjusted between them, as and for the purposes herein set forth.

No. 56,173.—ROBERT BULLOCK, SOUTH MILLS, N. C.—*Cultivators*.—July 10, 1866.

Claim.—The combination of the stock with the weeding shears, the iron rod braces, the eye holes, and iron bolts, when these several parts are arranged, constructed, and adjusted substantially as described.

No. 57,698.—WILLIAM GEAHK, NEW HOLLAND, PA.—*Cultivators*.—September 4, 1866.

Claim.—The independent, adjustable, and reversible

beams D D, in combination with the upright E F, when connected by a suitable framework, substantially in the manner and for the purpose specified.

No. 58,534.—CHRISTIAN ZIMMERMAN, COLUMBIA, OHIO.—*Ploughs*.—October 2, 1896.

Claim.—1.—The manner of attaching the tongue to the plough by means of the perforated plates *a*, and pins *b*, *b*, arranged and operating in the manner and for the purpose described.

2.—The combination of the protecting plate *c*, enclosing the landside of the plough, with the mouldboard and landside made of one piece of metal, substantially as described for the purpose specified.

3.—The hinged draw bars *d* *d* with their adjusting nuts and screws, in combination with the adjusting frame composed of screw rods *e* and cross bar *g* with their nuts and adjustable handles, arranged and operating in the manner and for the purpose set forth.

No. 60,892.—J. C. HOFFEDITZ, MERERSBURG, PA.—*Cultivators*.—January 1, 1897.

Claim.—The arrangement shown and described, consisting of the adjustable and pivoted spring standard C, removable shares I J, and adjustable handles F.

No. 61,512.—MARTIN BRENNEMAN, EAST DONEGAL TOWNSHIP, PA., assignor to himself and SAMUEL EBV, ELIZABETHTOWN, PA.—*Cultivators*.—January 29, 1897.

Claim.—The special arrangement and construction of the frame A A' B C D, in combination with the reversible handles F, and holes 10 12 13 14 and 15, adapted for the reception and application of the axle and wheels L M, scrapers O P, all constructed and operating in the manner and for the purpose specified.

No. 62,181.—MOSES CHANDLER, CORINTH, ME., and JOHN B. NICKELS, KENNESKEAG, ME., assignors to V. S. PALMER and J. B. NICKELS.—*Horse Tools*.—February 19, 1897.

Claim.—1.—Adjustably attaching the wings or blades H, when formed as described, to the uprights G, substantially as and for the purpose set forth.

2.—The combination of teeth or cogs with the blades H and uprights G, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the pivoted rake heads K with the blades or wings H, substantially as herein shown and described, and for the purpose set forth.

4.—Securing the uprights G to the caps C and to the slotted cross bar B by means of angular bolts E and steady pins I, substantially as herein shown and described.

5.—The combination of the stay braces J with the uprights G and adjustable caps C, substantially as herein shown and described.

6.—The combination of the adjustable slotted caps C and slotted cross bars B, having bands D around their slotted ends, with each other and with the draft beam A, substantially as herein shown and described.

No. 62,898.—ALEXANDER F. and THOS. M. STANSBURY, LEWIS TOWNSHIP, ILL.—*Cultivators*.—March 12, 1897.

Claim.—The slotted shoe or bearer F, the double trees K and G, the clevis bars H, draft rods I, and pendant staples J, all substantially as and for the uses and purposes hereinbefore set forth.

No. 63,384.—GEORGE D. HART, LYCOMING COUNTY, PA.—*Cultivators*.—April 2, 1897.

Claim.—The combination of the standards A, attached to the plate C by hinge and standards A', with its tension at the upper end, as shown in Fig. 1, with the blades or cutters B, the plates C, when provided with the slots *g* and the notches *h* and the frame or support O, all constructed and arranged substantially as described and set forth.

No. 64,878.—JAMES M. HUME, COLCHESTER, ILL., assignor to himself and C. F. HOYT, same place.—*Cultivators*.—May 21, 1897.

Claim.—The adjustable beams B, arranged in combination with the frame A, levers K, links L, bar G, an I single tree M, as and for the purpose substantially as described.

No. 66,717.—JOHN KURTZ, CLINTON TOWNSHIP, PA.—*Corn Cultivator and Potato Ploughs*.—July 16, 1897.

Claim.—1.—The slotted side pieces B B, with their top and bottom bars or plates C C, and adjustable uprights E F, as arranged and combined with the reversible ploughs H H, as herein described and for the purposes set forth.

2.—The slotted side pieces B B, with their bars C C, for the purposes set forth.

No. 68,290.—CHARLES C. CREEK, LIBERTY, IND.—*Cultivators*.—August 27, 1897.

Claim.—1.—The provision, in a corn plough or cultivator of a shifter wheel D, constructed and attached substantially as shown and described.

2.—The Plough irons B B', having the element *b b'* M', arranged as shown and described.

3.—The arrangement in a corn plough or cultivator of the adjustable bar G, with its bolt and nuts F F', substantially as set forth for the purpose specified.

4.—In combination with the adjusting bar G F F', the adjusting arrangement W Y P of the tongue on the beam.

5.—The frame R, consisting of the elements S S', in combination with the racks U U and chains V V, admitting of a slight forward or retrograde movement in the ploughs B B' in respect to each other and the beam H.

No. 68,678.—MARK MADUKE WILSON, MARQUETTE, WIS.—*Corn Cultivator*.—Sept. 10, 1897.

Claim.—1.—The levers H and I used in combination with the tongue G and cross bars B B' of a cultivator frame, arranged and operating substantially as and for the purpose set forth.

2.—The combination of the standards C C C C with the frame A A B B' and braces E E, as and for the purpose set forth.

3.—The clevis *o* attached to the cross-bar B, in combination with the adjustable tongue G and levers H I, substantially as and for the purpose set forth.

No. 72,107.—C. E. STELLER, CHICAGO, ILL.—*Cultivators*.—December 10, 1897.

Claim.—1.—The hinged runners J W, substantially as and for the purpose set forth.

2.—The slotted sides A A and B B, in combination with the shanks C D E, arranged to be set at different angles, and fastened by set screws Z Z, as described.

3.—The combination of the guide bar E, arranged to be raised and lowered, with rear standards H H and sides A A B B, as described.

4.—The combination of standards G G, hinged runners J W, and sides A A B B, as set forth.

5.—The shanks U of shovel T, arranged to fit in a socket V, and bar S, in combination with standards G G and cross bar I, as and for the purpose set forth.

6.—The double evener L, arranged substantially as set forth.

7.—The double evener L, in combination with braces O O and P P, with or without braces V, substantially as set forth.

No. 72,622.—J. T. FRANKENBERGER, HENSLY, ILL.—*Cultivators*.—December 24, 1897.

Claim.—1.—The combination of the beams G G, when hinged at their front ends to the bar A, substantially in the manner set forth.

2.—The beams G G, when combined with the standards H, the handles K, and bars F and A, the whole constructed and operating substantially as herein described.

No. 83,111.—J. J. THOMPSON and V. F. COLLIER, RHINEBORN, OHIO.—*Cultivators*.—October 13, 1898.

Claim.—The combination in a quadruple plough or cultivator of the inner movable beams B B, staples *b b*, rod F, plates D D, outer stationary beams B' B', tongue A, plate I, and handles L L, all applied in the manner and for the purpose set forth.

No. 84,165.—HORACE C. BRIGGS, WEST AUBURN, ME.—*Hoing Machine*.—November 17, 1898.

Claim.—1.—The combination of the cross bars A and B, longitudinal bars C, runners D, curved parts or pieces G, and ploughs or hoes I with each other, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the inwardly projecting adjustable hoes J with the rear ends of the runners D, substantially as herein shown and described, and for the purpose set forth.

3.—The draught irons H, constructed as described, in combination with the curved parts G of the runners D, substan-

with the wings shown and described, and for the purpose set forth.

1.—The combination of the adjustable bar or slide E, with the hinged tongue K, and front cross-bar A, substantially as herein shown and described, and for the purpose set forth.

No. 85,387.—J. W. JESSOP, HAVANA, ILL., OREGON.—*Cl. in P.*—*Pl. mch.* 23, 1868.

Claim.—The provision in a cultivator of the adjustable bar E, with the hinged ploughs, cross beams B and C, and standard D, also provided with ploughs, which the several parts, herein named, are constructed, combined, and arranged as herein set forth, for the purpose specified.

No. 85,968.—SAMUEL B. SHANK, MAYOR, TOWN OF PA.—*Cl. in Cultiv. m.*—*January* 10, 1869.

Claim.—The combination and arrangement of the protectors B, B', cross pieces C, C', and pieces E, E', to which the beams A, A' are connected by pivots *e*, when constructed and applied substantially in the manner and for the purpose specified.

No. 85,082.—DAVID WYANT, West Leota, OHIO.—*Cl. in P.*—*Cl. in Cultiv. mch.*—*January* 10, 1869.

Claim.—The arrangement consisting of the beams A, A', cross-pieces B, B', handles C, C', stand-stand D, D', and pieces E, E', all constructed and applied in the manner and for the purpose herein set forth.

2.—The arrangement of the front standards D, D', pivot-handles C, C', beams A, A', all constructed and applied and operating as herein described and shown.

No. 85,400.—JOHN POWELL, SULLIVAN, ILL.—*Cl. in P.*—*Cl. in Cultiv. m.*—*March* 30, 1869.

Claim.—The beam B, in combination with the chains F and E, adjustable bolt C, links D, and frame A, as herein fully described, for the purpose specified.

2.—In combination with the above, the handles G, G', the bar H, and rollers I, each herein described, for the purpose specified.

No. 102,718.—RODRIQUEZ GRAFFI, LA PORT, IND.—*Cl. in P.*—*Cl. in Cultiv. m.*—*July* 22, 1870.

Claim.—The side-bar A, cross-pieces B, B', C, tongue D, bars E, E', E', rods *e*, braces *e*, *e*, *e*, line G, and adjuster, respectively constructed and arranged, as herein shown and described.

No. 94,359.—W. HARRIET B. SIMS, BOZEMAN, TEX.—*Cl. in P.*—*Cl. in Cultiv. m.*—*August* 31, 1870.

Claim.—The curved flange *a*, in combination with the ploughs F, all constructed and operated as described.

2.—The flange I, positioned in combination with the curved flanges *a*, *a*, and for the purpose set forth.

3.—The ploughs F, in combination with the curved flange *a*, and protector *d*, as and for the purpose set forth.

4.—The plough tooth I, in combination with the ploughs F, all constructed and operated in the manner and for the purpose set forth.

No. 5,513.—W. HARRIET B. SIMS, BOZEMAN, TEX.—*Cl. in P.*—*Cl. in Cultiv. m.*—*March* 31, 1870; *July* 26, 1871; filed *April* 20, 1871.

Claim.—The curved flange *a*, in combination with the ploughs G, all substantially as described.

2.—The iron web *b*, in combination with the flange *a*, and protector *c*, in combination with the ploughs G, all substantially as described.

3.—The plough tooth I, in combination with the ploughs G, all constructed and operated substantially as described.

4.—The flange I, protector *k*, in combination with the curved flange *a*, *a*, and for the purpose specified.

5.—The ploughs G, *e*, in combination with the curved flange *a*, *a*, and protector *k*, operating as set forth.

No. 94,499.—E. EAVIS, JR., HIRSH, WASHINGTON, DIST. C.—*Cl. in P.*—*Cl. in Cultiv. m.*—*September* 7, 1869.

Claim.—The head block H, as and for the purpose set forth.

2.—The combination of the head block H, the sub-beams I, I', and the posts C, C', with the shafts F, F', the cross-bar E, E', and guard G, G', in the manner and for the purpose herein specified.

3.—The combination of the post C, C', sub-beams D, D', and handles B, B', substantially as set forth.

95,343.—JOHN J. RAY and JAMES K. YOUNG, NEW ORLEANS, LA.—*Cultivating Hoes.*—*September* 21, 1869.

Claim.—The blades A, connected and supported by posts, braces and transverse beams, in the angular arrangement described, and provided with weed cutters and wheels, all substantially as specified.

104,318.—BENJAMIN JOHNSTON, NEW IBERIA, LA.—*For-hing Cultivators.*—*April* 5, 1870.

Claim.—An improved hushing cultivator, constructed, arranged and operating substantially as herein shown and described, and for the purpose set forth.

No. 101,695.—RUBEN WOTTRING, PROSPECT, OHIO.—*Cultivators.*—*April* 5, 1870.

Claim.—The side pieces A, A, in combination with cross-bars B and C and intersecting rods *e*, *e*, when constructed and arranged as and for the purpose set forth.

2.—The side pieces A, A, cross-bars B and C, rods *e*, *e*, hinged rods *m*, *n*, link *l*, teeth *i*, *i*, and shovels *e*, *e*, all combined and arranged as and for the purpose described.

No. 105,329.—L. THERM M. GANONG, FRIAR'S POINT, MISS.—*Cotton Cultivators.*—*July* 12, 1870.

Claim.—The bar D, as constructed, in combination with scrapers A, A', and ploughs G, G', arranged in the manner and for the purpose set forth.

2.—A cultivator, consisting of slotted beam A, handles B, B', stand of C, C', D, D', scrapers E, E', ploughs G, G', and third set *w*, *w*, all constructed and arranged as shown and described.

No. 108,384.—CICERO P. NORTON, PRAIRIE CITY, IOWA.—*Cultivators.*—*October* 18, 1870.

Claim.—The arrangement of the runners E, ploughs F, H, K, rods M, blocks L, wedges O, tongue B, and jointed double-tree frame A, C, D, as shown and described, for the purpose set forth.

No. 5,557.—CICERO P. NORTON, PRAIRIE CITY, IOWA, assignor to THAMAR P. PILLSBURY, MONMOUTH, ILL.—*Cultivators.*—*October* 18, 1870. Rev. ed. *August* 29, 1873. Filed *July* 22, 1873.

Claim.—The main frame A, B and runners F, arranged, relatively to each other, so that either side of the main frame together with its runners, may be advanced, and either plow-beam vertically or laterally oscillate without disturbing the parallelism of the runners with each other or with the line of progression, substantially as described, and for the purpose set forth.

No. 108,518.—MOSES REED, LITTLE ROCK, ARKANSAS.—*Cl. in P.*—*Cl. in Cultiv. m.*—*October* 18, 1870.

Claim.—The combination of the axis and staples G, when arranged in a cotton cultivator, substantially as and for the purpose set forth.

2.—The combination of the harrow A, segment E, set screw *p*, and handle H, when constructed substantially as described, and for the purpose mentioned.

No. 109,812.—ABRAHAM ESTHELMAN, MARLINSVILLE, PA.—*Cultivators.*—*December* 6, 1870.

Claim.—The arrangements of two sets of shovels S, adjustable bolt *p*, beams B, and cross-beams A, A, when constructed and operating as herein described, and for the purpose set forth.

No. 113,109.—MICHAEL STOLZ, CONSUMERS TOWNSHIP, PA., assignor to himself and JACOB G. PETERS, same place.—*Cultivators.*—*March* 28, 1871.

Claim.—The construction and arrangement of the three curved adjustable shovels *a*, *a*, *a*, on each side of the pole A, so shortened from the centre that the two central parts will be in the desired position for the scraper H, bolted to each part, in combination with an advance shovel on the outer side of each, all combined and operating in the manner shown and for the purpose specified.

No. 113,223.—JACOB S. THOMAS, MILLTOWN, PA.—*Cultivators.*—*March* 28, 1871.

Claim.—The cross-bar *d*, provided with a series of grooves or notches to receive the spring shanks *b*, *b* of the shovels *e*, *e*, and with the transverse slot *c* for the clamp bolt *f*, *f*, all arranged as shown and described, in connection with the beam *a*, whereby the shovels may be laterally adjusted lengthwise by moving the cross-bar and shanks of the beam, as set forth.

No. 116,776.—JAMES J. THOMPSON, COLUMBUS, OHIO.—*Cultivators*.—*July 4, 1874.*

Claim.—The boxes *g*, composed of cells *p* and flanges *p' p' p' p'*, in combination with shovel-standards, beams, and the coupling bolts *s*, substantially as described.

2.—The combination of the draft pole *A*, side beam *B*, joints *t*, central arch *C*, joints *r*, standards *D*, *D*, and loosely connected brace *E*, all constructed, arranged, and operating substantially in the manner and for the purpose described.

3.—The combination of the removable diagonal braces *P* *P*, brace *E*, hinged arch *C*, beam *A*, and swinging side beams *B*, *B*, substantially as and for the purpose described.

No. 117,608.—SIMON A. CUMMINS, WINNA, N. J.—*Pat. 33*.—*August 1, 1874.*

Claim.—The arrangements of the slotted frame *B*, adjustable ploughs *A*, adjustable colters *D*, *D*, bars *e' e'*, guards *M*, *M*, and bars *e*, *e*, substantially as and for the purpose set forth.

2.—The adjustable bars *e*, *e* and curved guards *M*, *M*, in combination with the slotted main frame *B* and ploughs *A*, combined and operating substantially as set forth.

3.—The tongue *E*, cross bar *F*, and till iron *J*, in combination with the ploughs *A*, frame *B*, and adjusting bars *K*, *K*, substantially as and for the purpose set forth.

4.—The tongue *E*, cross bar *F*, coupling *J*, and braces *h*, *h*, in combination with the ploughs *A*, main frame *B*, and adjustable bars *K*, *K*, substantially as and for the purpose specified.

No. 118,000.—THOMAS J. ELLIS, DECATUR, ILL.—*Cultivators*.—*August 15, 1874.*

Claim.—The shaft *F*, knee *H*, handles *h*, *h*, standards *I*, *I*, rods *k*, *k*, *k*, *k*, braces *D*, *D*, *E*, *E*, and hinges *h*, *h*, *h*, *h*, in combination with the standards *C*, *C*, *C*, *C*, and forked pole *A*, substantially as and for the purpose heretofore set set forth.

No. 118,549.—GEORGE W. OWENS, FAIRFIELD, IOWA.—*Cultivators*.—*August 27, 1874.*

Claim.—The arrangement of the cultivators *A*, A, coupling device *E*, *E*, self adjusting clod fenders *B*, *B*, *C*, *C*, and spring *D*, as set forth and described.

No. 119,904.—HENRY WELLS, BLACK WALNUT, ILL.—*Cultivators*.—*October 10, 1874.*

Claim.—The combination of the double tree *C*, single tree *D*, the lever *e*, the $\frac{1}{2}$ shaped adjusting plates *g*, and the ploughs *E*, all mounted upon the beams *A* and arranged to operate as set forth.

No. 124,241.—WILLIAM W. ANDREW, LA PORTE, IND.—*Antelated February 22, 1872*.—*Cultivators*.—*Mar. 4, 1872.*

Claim.—In combination with the central beam *A*, the draft attachment consisting of the bars *O*, *O*, having central enlargement *a*, brace *T*, and the vertical adjustable pieces *P*, substantially as and for the purpose set forth.

No. 128,497.—ROBERT E. MASON, NORWAY, ILL.—*Cultivators*.—*July 2, 1872.*

Claim.—The combination of the shovel and gopher share *D*, made of one piece of metal, substantially as described.

No. 134,824.—AUGUSTUS C. TOWER, MENDOTA, ILL.—*Cultivators*.—*January 14, 1873.*

Claim.—The series of knives *a* set at an angle, as described, and adapted to work upon each side of the hill, substantially as described.

2.—The combination, in a cultivating machine, of the following element—*i. e.*: A pair of beams adapted to operate upon each side of a row of corn, having a series of curved inclined knives set at an angle, as described, a pair of following smoothing beams and suitable means for connecting the two substantially as described.

3.—The combination, in a cultivating machine, of the following element—*i. e.*: A pair of beams having knives *a*, *a*, substantially as described, a pair of following smoothing beams, means for connecting said beams, and teeth adapted to pass the hill on each side and remove the clods, substantially as described.

4.—In a machine of substantially the described construction, an adjustable rod, *D*, carrying adjustable harrow teeth arranged one in advance of the other, substantially as described.

No. 135,065.—ZACHARIAH B. SIMS, BONHAM, TEX.—*Cultivators*.—*January 21, 1873.*

Claim.—The combination of the angular shaped iron braces *C* provided with the perforations *e*, the perforated beam *A*, the perforated cross head *B*, and reversible shovel *F*, substantially as and for the purpose specified.

No. 136,590.—LEATHER M. GANONG, FREAK'S POINT, MISS.—*Cultivators*.—*March 4, 1873.*

Claim.—The combination of the plate *F* provided with grooves *e* and in the frames *C* provided with the heads *d*, *d*, *d*, *d*, as and for the purpose described.

No. 137,009.—CARUS M. HALL, VANCE CITY, ILL.—*Adjusted. Brass Cultivator*.—*April 8, 1873. Filed March 8, 1873.*

Claim.—The combination of the brace rods *A* bent, as described, to form the bails *a*, and outwardly curved ends *b*, *b*, the loose tongue *B*, and the bolt or swivel joints *C*, *C*, to form an adjustable brace coupling, as herein set forth.

No. 141,145.—OLIVER KUGLER, KARLIS, assignor to himself, JAMES D. McCAULEY, and JACOB VAN FLEET, CLINTON, and JOHN A. THOMPSON, REDDINGTON, N. J.—*Cultivators*.—*July 22, 1873. Filed September 14, 1872.*

Concave scrapers are attached to runners, which converge in the rear. These are followed by shorter scrapers or shares which throw the clean soil toward the row of plants.

Claim.—The combination, with the gatherer *L*, *L*, of arms *M*, *M*, arranged as and for the purpose specified.

2.—The hook chain *K* on projecting end of bar *I*, ring *H*, rods *J*, *J*, and chains *k*, *k*, combined and arranged with a cultivator frame, as described, to form a flexible draft.

No. 141,146.—OLIVER KUGLER, THREE BRIDGES, assignor to himself, JAMES D. McCAULEY and JACOB VAN FLEET, CLINTON, and JOHN A. THOMPSON, REDDINGTON, N. J.—*Cultivators*.—*July 22, 1873. Filed Jan. 24, 1873.*

Claim.—The combination of the runners *A*, *A*, front and rear standards *B*, *B*, cross bars *C*, *C*, center shaft beam *D*, and handles *E*, *E* to constitute the cultivator frame, substantially as herein set forth.

2.—The combination of the up and down adjustable bar *H*, with the keys and screw rods, with laterally adjustable bar *I*, plow shanks *J*, *J*, pivoted plows *K*, *K*, slotted as described, and held by pins or screws *l*, *l*, as and for the purposes herein set forth.

No. 145,862.—JOHN LINDBSEY GRAHAM, CARHOL, ILL.—*Ploughs*.—*December 23, 1873. Filed January 27, 1873.*

Claim.—The teeth *R*, *R*, *R*, constructed in the form shown, and attached to the frame by bolts *S*, *S*, arranged as and for the purpose specified.

2.—The beam *E*, provided with the teeth *L*, *L*, and the frame *O*, provided with the teeth *R*, *R*, *R*, all constructed and arranged for operation as and for the purpose set forth.

No. 152,778.—A. C. TOWER, MENDOTA, ILL.—*Cultivators*.—*July 7, 1874. Filed February 20, 1874.*

Claim.—The combination of the adjustable clamping irons, the draft rods, and the beams *A*.

2.—The knife beam *A*, knives *a*, chains *i*, clamping irons, the draft rods, and tongue, combined and arranged substantially as described.

No. 159,842.—J. H. RICE, KEITHSBURG, ILL.—*Cultivators*.—*February 16, 1875. Filed Dec. 29, 1875.*

Claim.—The angular frames *A*, *B*, *C*, carrying handles *D*, in combination with the arched rod *d*, having two bearings, *h*, upon each frame, and the pivoted bars *E* and draft device, all constructed as and for the purpose herein specified.

No. 161,882.—J. T. HENDERSON, WOODBURY, TENN.—*Cultivators*.—*April 13, 1875. Filed March 19, 1865.*

Claim.—The combination, in a cultivator composed of two flexible connected sections, of a series of pulverizing teeth *F*, a pair of scrapers, *G*, and a pair of hilling plows or cultivator shovels, *M*, substantially as and for the purpose set forth.

2.—The pivoted or adjustable scrapers *G*, hinged to the standards *J*, in combination with the adjusting screw *K*, hinged to the arm *L*, substantially as and for the purpose described.

No. 168,074.—HENRY WINFIELD and WM. P.

FLYNN, PANTAGO, N. C.—*Cultivators*.—September 21, 1875. Filed Jan 5, 1875.

Claim.—In a cotton cultivator, the slotted bars C C', laterally adjustable on the beam A, in combination with the standards D G, with shovels F adjustable in the slots of the bars C C', substantially as and for the purpose set forth.

No. 168,236.—J. A. THOMPSON, READINGTON, N. J.—*Cultivators*.—September 28, 1875. Filed August 20, 1875.

Claim.—1.—The combination with the runner frame A B C, having the slotted wings H, of the adjustable plough beams G G, provided with the spring straps a a and the bolts b b, all substantially as and for the purposes herein set forth.

2.—In combination with a plow, I, having a round shank, h, the slotted beam G, slotted plate m, with parallel flanges n n, set screw f, and break pan r, all constructed substantially as and for the purpose herein set forth.

No. 166,677.—GEORGE CROLL, TONAWANDA, OHIO.—*Combined Cultivator and Hoe*.—November 9, 1875. Filed August 28, 1875.

Claim.—The combination of the beams A, the slotted uprights F and G, the pivoted draft bars H, and the braces K, with each other, in substantially the manner herein shown and described.

No. 173,778.—TIMOTHY M. SHAW, LEBANON, TENN.—*Gang Plow*.—December 7, 1875. Filed September 10, 1875.

Claim.—The combination of the handles B B and bars C, pivoted couplings c', coupling blocks E, and vertical movable bars D D with the plough beams A, having the several bolt holes specified, whereby the beams and handles may be adjusted to place the ploughs opposite to or in advance of one another, in the manner set forth.

No. 175,985.—THOMAS J. HOOVER and JAMES T. HENDERSON, WOODBURY, TENN.—*Plough*.—April 11, 1876. Filed January 14, 1876.

Claim.—In combination, with the beam A, handles B, and longitudinal bar D, the bent arms C C, brace C', shovels F, and ploughs G, substantially as herein set forth.

No. 183,354.—OLIVER KUGLER, FLEMINGTON, N. J., assignor of part of his right to J. D. McCULLY and MATHIAS VAN FLEET.—*Cultivators*.—July 25, 1876. Filed Jan 7, 1876.

Claim.—1.—The combination, with the beams G G and standard H, of the clevis H, secured to the standard, and having extended ends a a, forming springs, which are connected to the beams G G, substantially as and for the purposes here in set forth.

2.—The combination of the standards B B' the beams G G, connected to the springs a a of the clevis, and the cross bar I, provided with curved slots x x, and the adjusting bolts and nuts b b, all substantially as and for the purpose herein set forth.

No. 181,654.—J. R. DUNLAP, SHERMAN, ILL.—*Combined Cultivator and Hoe*.—August 20, 1876. Filed March 9, 1876.

Claim.—1.—The combination of the crank x D and the rotary cutters E with the bar C and the V harrow A B, substantially as herein shown and described.

2.—The combination of the cross-bar F and the lever G with the crank axle D, the rotary cutters E, the cross bar C, and the harrow A B, substantially as herein shown and described.

3.—The combination of the lever K and pivoted bar I, with the bar C, the V harrow A B, and the ploughs I J, substantially as herein shown and described.

4.—The combination of the pivoted bars M with the cross bar C, the V harrow A, the lever K, and the pivoted bar I, substantially as herein shown and described.

5.—The combination of the cross bar N, having its midpoint raised, and an offset at P, end of said raised middle part in combination with the V harrow A B and the levers G G, substantially as herein shown and described.

No. 182,053.—JOHN PALCKER, ET DOMINA, IOWA.—*Cultivator*.—October 3, 1876. Filed September 14, 1876.

Claim.—The combination, with the front and rear transverse A B, central bars C between the same, the shaft E, pivot arms x y, and the bars z, and the

dent eye rod K, having collars, as described, of the independent adjustable plough beams F and G, having the plates or ears I, provided with a series of elongated openings, J, substantially as shown and described, for the object specified.

No. 191,613.—MALACHIAH ROBY, KOSCIUSKO, MISS.—*Combined Cotton Scrapers and Cultivators*.—June 5, 1877. Filed April 30, 1877.

Claim.—The combination of the cross bars B D, the side beams C and their ploughs and standards, the bows and yokes E, the scrapers F G, and the bands H with each other and with the central beam A, substantially as herein shown and described.

No. 222,087.—BYRON B. SMALL, NORTH LEBEC, ME.—*Combined Horse Hoos and Cultivators*.—November 25, 1879. Filed July 8, 1879.

Claim.—The tongue A and end slotted cross bars B C D, in combination with standard F, ploughs G, standards H, and hoes I, all constructed and arranged to operate as described.

No. 228,853.—RICHARD G. S. AUSTIN, PINE BLUFF, ARK.—*Cotton Cultivators*.—June 15, 1880. Filed May 4, 1880.

Claim.—1.—In a straddle row cultivator, the combination with the two semi-circular wings C and the tongue arches A, of the pivoted arms or frames D, adapted to slide upon the curved flanges of said wings C, and be held adjustably thereon by the plates e, and set screws d, connecting the frames D to said wings substantially as and for the purpose set forth.

2.—In a straddle row cultivator, the combination, with the tongue arches A A, having inwardly projecting portions a of the semi-circular wings C, carrying the pivoted standard arms or frames D, substantially as and for the purpose set forth.

No. 236,970.—RICHARD G. S. AUSTIN, PINE BLUFF, ARK.—*Cotton Cultivators*.—Filed August 17, 1880.

Claim.—The combination, with the frame A, composed of semicircular wings B and arches C, made in one piece, of the beam D, handles E E', and the short beams H, carrying standards F, having teeth G, and adjustably secured to said frame by the clips a, substantially as described.

No. 237,523.—EZRA S. McEWEEN, LISBON, and OLIVER R. ADAMS, MARSHFIELD, ILL.—*Cultivators*.—Filed June 24, 1880.

Claim.—1.—The plough standards G, adjustably attached to the main frame by the bent rods I, in combination with plough beams and suitable mechanism for attaching them to the main frame, which permits them to be adjusted laterally substantially as and for the purpose described.

2.—The plough standards G, adjustably attached to the main frame by the bent rods I, in combination with the plough beams F, adjustably attached to the main frame by couplings f, substantially as and for the purpose described.

3.—In a cultivator, a blade, in combination with a fixed coupling block having a concave seat at its outer end, and a shoe arched to correspond with the concavity of the coupling block, and adjustably attached thereto by means of a bolt and a slot following the curvature of the arch, and also adjustable on the blade by means of a pivotal bolt at one end and slot at the other, substantially as and for the purpose described.

4.—The blade J and the convex shoe K, provided with the pivot bolt L and slots M and N, in combination with the coupling block M, having the concave seat m', and with the standard G, substantially as and for the purposes described.

5.—The couplings D D', shaped as described, and provided with the slots d and perforations d', for the purpose of making the plough handles laterally and vertically adjustable independently of each other.

No. 242,508.—CHARLES H. CARTER, STRANGER, TEX.—*Ploughs*.—June 7, 1881. Filed April 4, 1881.

Claim.—In a plough, the combination of the two beams A, provided with the two ploughs B, which have their mould boards turned in opposite directions, the two outside beams, G, having the shovels secured to them, and which are made to turn deeper and in the rear of the ploughs and to throw the dirt inward toward the plants, the two beams A being adjustable between the two outer beams, substantially as shown and described.

CULTIVATORS—TEETH

<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>	
Aiken, G. C.	513 150	Grauberry, A. R. and El-		Moody, J. B.	523 152
Aiken, G. C.	515 150	liott, J.	535 155	Morrison, W.	514 150
Alvord, C.	521 151	Green, W. W.	512 150	Odell, R. P., Jr.	535 155
Bannigan, J. C.	538 155	Hamilton, T. F.	530 153	Owen, J. H.	541 150
Beckwith, W. G.	524 152	Hammou, T. W.	515 150	Owen, D. C.	545 157
Beckwith, S.	525 153	Hammou, H. B.	513 150	Parmele, E. and Curken-	
Bertrand, F. T.	543 157	Harding, T.	526 153	dall, G.	532 154
Billings, R. F.	538 155	Harris, J.	522 152	Peck, S.	541 156
Birdsell, J.	507 149	" "	(R.) 522 152	Perry, G.	526 153
Birmingham, G. B.	530 155	" "	(R.) 523 152	Pickering, I. P.	537 155
Brown, W. P.	546 157	Harris, J.	537 155	Pierpont, J.	525 152
Buckingham, C. P.	539 156	Hartgrove, W.	534 154	Pierpont, J. and Tuttle,	
Bucklin, M.	511 149	Hewett, C. P.	537 155	S. S.	528 153
Burnett, R. A.	547 158	Hewett, C. P.	535 155	Ready, W. B.	520 151
Bushnell, S. S.	533 154	Hisert, B. F.	518 151	Rogers, D. B.	508 149
Cameron, J. F.	512 150	Hoffelitz, J. C.	517 151	" "	(R.) 508 149
Carnagy, A. P.	534 154	Honey, J. S.	505 149	" "	(R.) 508 149
Carson, H.	543 156	Hooker, H. T.	515 150	Rogers, D. B., S. and L.	511 149
Children, E.	536 155	Houston, T. J.	535 155	Rogers, D. B.	513 150
Clark, P.	507 149	Hurlbert, W. M.	522 152	Rogers, L.	519 151
Colt, J. R.	510 156	Hyers, B. S.	523 152	Rowell, J. S. and I.	516 150
Cramer, J. P.	510 149	Ingraham, H.	516 150	" " " (R.)	517 150
Custer, G.	514 150	Johnson, M.	541 150	Rowell, G. D.	536 155
Daley, L.	529 153	Kelly, W. H.	515 150	Rowell, G. D.	540 156
Dean, D.	520 151	Kendall, F. B.	544 157	Rowell, J. S.	545 157
De Turk, J. D.	519 151	Knouton, W. A.	543 157	Sanders, H.	512 150
Dickey, W. H.	544 157	Lafferty, J. W. and Brown,		Sayre, C. H.	510 149
Dickey, W. H.	54 157	G. B.	544 157	Sayre, C. H. and Klinek, G.	509 149
Dickey, W. H.	543 157	Lamborn, L.	509 149	" " " (R.)	509 149
Dryden, W. A. and Tumb-		Lawbaugh, G. W.	525 152	Sayre, C. H.	513 150
bull, J. M.	524 152	Leonard, E.	536 155	Seward, E.	518 151
Dryden, W. A.	528 153	Little, J. R.	527 153	Smith, G. H.	531 154
Eastman, J. S.	507 149	Little, J. R.	527 153	Snider, S.	530 154
Eddelman, D.	529 153	Lowth, M. F. and Howe,		Speer, W. W.	547 158
Elliswood, R. L.	540 156	T. J.	519 151	Stevens, C. M.	546 157
Esterly, G. W. and Van De		Lowth, M. F. and Howe,		Stockdale, J.	509 149
Water, J.	533 154	T. J.	521 151	Stover, D. C.	520 151
Evans, D. Z.	531 154	Lowth, M. F. and Porter,		Stroud, W. D.	529 153
Everest, D. O.	546 158	O. H.	529 153	Stroud, G. F.	533 154
Flynn, J.	537 155	Luppen, L.	527 153	Thomas, J. H. and J. W.	534 154
Ford, W. P. and T. H.	511 149	Luppen, L.	527 153	Tolley, F. W.	533 154
Ford, S. H.	542 156	Lynch, E. P. and Wright,		Town, E.	541 150
Forsythe, F. R.	510 149	E. A.	538 155	Turner, J. and Smith, T. P.	514 150
Fountain, J. L.	516 150	" " (R.)	539 155	Van Bracklin, B.	524 152
Fowler, J. and Bacon, F.		Lynch, E. P. and Wright,		Van Brunt, G. W.	521 152
M.	516 150	E. A.	540 156	Van Brunt, W. A. and	
Francisco, H.	515 150	McCall, E. R.	545 157	Davis, S. E.	542 156
Francisco, H.	514 150	McClun, J. J.	547 158	Watson, C. H.	532 154
Freeman, E. L.	510 149	McColleston, B. F.	521 151	West, R. and Paul, H. F.	519 151
Freeman, E. L.	523 152	McSherry, D. E.	531 154	Wheat, M. K.	538 155
French, H. F.	524 152	Mallon, J. and Von Phul,		White, M. F.	534 154
Friberg, A.	518 151	H., Jr.	530 154	Wilkinson, J. E.	539 156
Friberg, A.	532 154	Mattesou, D. C. and Wil-		Wood, J.	534 154
Gardner, C. O.	542 156	liamson, T. P.	517 151	Wood, E. S.	545 157
Gaston, H. A.	520 151	" " " (R.)	518 151	Workman, W. and Hitch-	
Garnett, J. M. (A. L.)	507 149	Maynard, G.	511 150	cock, J.	528 153
Gerber, J.	528 153	Miller, H.	525 152	" " " (R.)	547 153
Gerber, J.	526 153	Mimer, J. G.	526 153	Zeigler, G. W.	517 151
Gotham, M. L.	532 154	Mitchell, J.	530 156	Zeigler, G. W.	522 152

PEPPER CLARK, AURORA, N. Y.—*Cultivator Teeth*.—*August 20, 1855.*

Claim.—The peculiar formation of the tooth without a flange, the mode of fastening it and giving it a forward direction suited to the graduated width of the harrow and the method of graduating the same.

J. S. EASTMAN, BALTIMORE, MD.—*Cultivator Teeth*.—*June 30, 1856.*

Claim.—1.—The construction of the leg or shank and the manner of fastening it to the wood or frame.

2.—The manner of attaching the share to the leg by means of the straight groove and bolt as shown.

No. 14.—I. M. GARNETT, ESSEX, VA.—*Cultivator Teeth*.—*October 14, 1858.*—(A. I.) to patent of *February 3, 1856.*

Claim.—The removable point on the double mould board plough of iron and the mode of attaching the two together.

No. 3,819.—J. BRIDSELL, HAMMONTON, PA.—*Cultivator Teeth*.—*November 9, 1844.*

Claim.—The self sharpening convex cutter constructed, substantially as herein set forth in combination with the cultivator tooth in the manner and for the purposes described.

No. 4,245.—D. B. ROGERS, STAFFORD, N. Y.—*Cultivator Teeth*.—*November 1, 1845.*

Claim.—The shank of the tooth so formed of thin metal as to receive a wedge in its recess in the manner described for the purpose of firmly connecting it with the beam in all directions as set forth.

No. 815.—D. B. ROGERS, STAFFORD, N. Y.—*Cultivator Teeth*.—*November 1, 1845.* Reissued *September 20, 1859.*

Claim.—Making the shank or upper part of cultivator teeth of thin plate steel, U shaped, or curved round in front, substantially as hereinbefore described, for the purpose of securing the necessary strength to permit the tooth to be made, entire hank and blade of a single piece of metal, and also of enabling the tooth to be secured in its place in the beam by means of a wedge driven into the cavity of the shank, substantially as hereinbefore described.

No. 1,274.—DAVID B. ROGERS, ALLEGANY, PA.—*Cultivator Teeth*.—*November 1, 1845.* Reissued *September 20, 1859.* extended; again reissued *February 11, 1862.*

Claim.—1.—Making cultivator teeth entire of thin plate steel, the shank or upper part being bent or curved round in front, substantially as described and for the purposes set forth, irrespective of the mode of attaching the tooth to the beam.

2.—Attaching cultivator teeth to the cultivator frame by inserting the upper end of the shank (curved round in front for that purpose) into a suitable hole in the beam, and driving a key or wedge into the cavity of the tooth, thereby pressing the shank against the sides and front of the hole in the beam, and thus securing it in its place.

No. 6,336.—J. S. HONEY, HARTFORD, CONN.—*Cultivator Teeth*.—*April 17, 1849.*

Claim.—The self sharpening four pointed plate for a cultivator, with its iron bed, each of the four to be used successively, but when two have been used the plate is to be turned over, bottom side up, (that is, the rear made front,) in order to use the other two.

No. 7,220.—I. LAMBORN, KENNETT SQUARE, PA.—*Cultivator Teeth*.—*March 26, 1850.*

Claim.—The manner of constructing the cultivator tooth, substantially as described, by which a separate steel cutter is cut rased between the two halves of the tooth, removable at pleasure, and by which wedges can be applied against the shoulders of the tooth and the under side of the beam, for the purpose of changing the angle of inclination of the share, in order to increase or diminish the depth of culture, the tooth turning on the bolt passing through the head of the same, and the beam, whilst inserting the wedges, the wings of the tooth being secured to the four sided changeable share, by means of screws and nuts or other equivalent means.

No. 12,332.—J. STOCKDALE, YPSILANTI, MICH.—*Cultivator Teeth*.—*January 30, 1855.*

Claim.—The reversible cast iron plate, marked fig. 2, with the groove on the under side, marked K, round cast iron top pin on the upper side G. Also the application of the top of the cultivator tooth in the groove aforesaid. Also

the application of the wrought iron bolt or shank passing through the said plate as described.

No. 14,254.—C. H. SAYRE and G. KLINCK, UTICA, N. Y.—*Cultivator Teeth*.—*February 12, 1856.*

Claim.—So constructing a cultivator tooth that, when made of thin or sheet metal, a part thereof shall form a tubular shank B, whereby said tooth may be drawn up and securely attached to the frame substantially as described.

No. 3,477.—CHARLES H. SAYRE, for himself, and THE KENNINGTON AGRICULTURAL WORKS, UTICA, N. Y., assignees, by mesne assignments of CHARLES H. SAYRE and GEORGE KLINCK.—*Cultivator Teeth*.—*14,254.*—*February 12, 1856.* Reissued *June, 1869.*

Claim.—1.—So constructing a cultivator tooth, that when made of thin or sheet metal, a part thereof will form a tubular shank B, whereby said tooth may be drawn up and securely attached to the frame, substantially as described.

2.—Forming shoulders or braces G from sheet metal, by bending or swaging it, substantially as and for the purposes set forth.

3.—A cultivator tooth made from sheet metal in such a manner as to form braces G and tubular shank B, substantially as described.

4.—A cultivator tooth made of sheet metal, so as to form a tubular shank B, and brace G, in combination with the nut F screw thread A, and plate A, substantially as and for the purpose described.

No. 16,364.—J. B. CRAMER assignor to H. CRAMER, SCHUYLERVILLE, N. Y.—*Cultivator Teeth*.—*January 9, 1857.*

Claim.—As a new manufacture my improved cultivator tooth composed of a properly shaped sheet metal blade and shank B, with an iron head A cast upon the shank and embracing its outer and inner surfaces in such manner that the said blade shank and head of the tooth will form but a single piece substantially as set forth.

No. 17,925.—F. R. FORSYTHE, CAPE VINCENT, N. Y.—*Cultivator Teeth*.—*August 4, 1857.*

Claim.—The new manufacture of cultivator teeth, consisting of a sheet steel blade, bent to the required form with a cast iron boss B cast thereon, substantially as specified.

No. 18,174.—E. L. FREEMAN, assignor to himself, I, and G. LORD & CO., WATERTOWN, N. Y.—*Cultivator Teeth*.—*September 8, 1857.*

Claim.—1.—A lopped headed cultivator tooth A, (Fig. 2) made in the manner substantially as herein described.

2.—A brace, washer and stay pin (Fig. 3) in one piece underneath the head as described for the purposes set forth.

No. 18,471.—C. H. SAYRE, UTICA, N. Y.—*Cultivator Teeth*.—*October 20, 1857.*

Claim.—The method described of securing cultivator teeth formed of sheet metal to the frame, by means of a head or cap piece, constructed in the manner substantially as described.

No. 19,234.—M. BUCKLIN, GAITHER, N. H.—*Cultivator Teeth*.—*February 2, 1858.*

Claim.—A cultivator tooth having two shares, which rise with a curve so as to form semi-mould boards with their front edges terminating in a single perpendicular plane or cutter, and in combination of said plane or cutter, extending forward with a straight cutting edge rising from the points of the shares at an angle of about 32° and terminating at the top in a flange on each side connected with the tops of the semi mould boards, for the purpose of fastening the tooth to the frame of the cultivator.

No. 19,584.—D. B. S. and I. ROGERS, PITTSBURG, PA.—*Cultivator Teeth*.—*March 9, 1858.*

Claim.—The combination of teeth, braces, standards, spring clamp and gauge irons with the frame of a cultivator, the whole being constructed and arranged in the manner and for the purposes set forth.

No. 22,046.—WILLIAM P. FORD and THEODORE H. FORD, CONCORD, N. H.—*Cultivator Teeth*.—*February 15, 1859.*

This invention consists in so forming the front edge of a cultivator tooth that it shall tend to run into the ground to the required depth, and yet shall not be liable to be clogged,

also, in bringing the top of the wings together at point so low down on the body of the tooth that the surface soil may close back over the path of the tooth and not leave a furrow.

Claim.—The described cultivator teeth, formed substantially as specified.

No. 24,508.—GARDINER MAYNARD, ILLINOIS, N. Y.—*Cultivator Teeth*.—June 28, 1859.

Claim.—The arrangement of the tooth A, stay C, and wrought iron stem and brace B, when the stem is welded between the wings of the tooth and made to form a lance, substantially as set forth, the whole being constructed and used in the manner specified.

No. 26,297.—HENRY SANDERS, UTAH, N. V.—*Cultivator Teeth*.—November 29, 1859.

Claim.—The flanches *a a*, and semi-circular projection B on the tooth, and the flanches *c c* and pin *e* on the chain, and arranged in relation to each other in the manner substantially as described and for the purpose set forth.

No. 27,092.—GEORGE C. AIKEN, NASHUA, N. H.—*Cultivator Teeth*.—February 14, 1860.

Claim.—The combination and arrangement of the fixed plate B, vertical coupler A, flanges or mould boards C C, and cutters D D, substantially as set forth.

No. 27,347.—JOSHUA F. CAMERON, LIVINGSTON, MO.—*Shovel Ploughs*.—March 6, 1860.

Claim.—The arrangement of the beam A, standard A, shovel C, hinge screw D, rods E F, and set-screws or pivots F F, as described, for the purposes set forth.

No. 27,393.—W. W. GREEN, CHESEA, ILL.—*Cultivator Teeth*.—March 6, 1860.

Claim.—1.—Having the wheels *i i* of the implement attached to vertical perforated bars *g g*, which pass loosely through the back part of the frame A, in connection with the adjustable draught pole B, the whole being arranged as and for the purpose set forth.

2.—Attaching the shares D to their standards *h*, by means of the sockets *l*, plates *g*, and bolts *n*, the sockets and plates being attached respectively to the shares and standards, and the bolts passing through the sockets, plates and standards, the bolts passing through transverse slots *m*, in the sockets and projections *i*, on the plates, the whole being arranged as and for the purpose set forth.

No. 27,797.—HEMAN B. HAMMON, BRISTOLVILLE, OHIO.—*Cultivator Teeth*.—April 10, 1860.

Claim.—The employment of the grooved plate C in combination with a frame A and reversible arm B, having a projection *a*, as and for the purpose shown and described.

No. 27,956.—GEORGE C. AIKEN, NASHUA, N. H.—*Cultivator Teeth*.—April 24, 1860.

Claim.—The combination and arrangement of the socket E, shoulder B, and journal B, with the plate B, vertical coupler A, flanges or mould-boards C C, and cutters D D, substantially as set forth.

No. 28,168.—DAVID B. ROGERS, PLEASANTON, PA.—*Cultivator Teeth*.—May 8, 1860.

Claim.—Attaching the bolt by which the tooth is secured to the beam to the shank of the tooth, by wrapping the shank around it, and passing a portion of the shank, together with the bolt, into the beam, in combination with the shoulder and stay point, formed out of the upper end of the shank, substantially in the manner described, for the purpose of attaching the tooth to the beam of a cultivator.

No. 28,783.—CHARLES H. SAYRE, UTAH, N. Y.—*Cultivator Teeth*.—June 19, 1860.

Claim.—The shank A, as constructed, in combination with the loose top plate D, for the purposes set forth.

No. 28,945.—JOSHUA TURNER and THOMAS P. SMITH, SENADEL, N. H., assignors to themselves and EDMUND BURKE, NEWPORT, N. H.—*Cultivator Teeth*.—Jan. 26, 1860.

Claim.—1.—The coupler A, with the indentation or recess E, constructed substantially as described.

2.—The coupler A, in combination with the concave wing C, with the curved point G, constructed and operated substantially as described.

No. 32,077.—WILLIAM MORRISON, CHANDLER'S FORD, PA.—*Cultivator Teeth*.—April 16, 1861.

Claim.—A cultivator tooth, having a sharp front edge, flaring sides, and a diamond or arrow-shaped opening at its

top, to receive a similarly shaped shaft, by which it is united to the cultivator frame, substantially as described.

No. 33,041.—HENRY FRANCISCO, WHITE WATER, W. V.—*Spring Teeth for Cultivators*.—November 5, 1861.

Claim.—1.—A spring cultivator tooth constructed and operating substantially in the manner and for the purpose described, in combination with a check brace, substantially as described.

2.—So constructing the shoulder of a cultivator tooth that, when the working point of the tooth is arrested by any sudden obstruction, the strain upon the tooth will be relieved by the action of the shoulder, substantially as described.

No. 37,071.—GEORGE CUSTER, MONROE, MICH., assignor to himself, E. B. ROOT, and J. J. STEVENS, of the same place.—*Cultivator Teeth*.—December 2, 1862.

Claim.—As an improved article of manufacture, a cultivator tooth provided with wings, and all constructed of a piece of rolled steel, in the manner herein set forth.

No. 40,414.—WILLIAM H. KELLY, LANSFORD, N. Y.—*Cultivator Teeth*.—October 27, 1863.

Claim.—The tooth, or, as it is sometimes called, the point, of the form and shape and constructed essentially as described.

No. 40,935.—HENRY T. HOOKER, SKANSFELLES, N. Y.—*Cultivator Teeth*.—December 15, 1863.

Claim.—The standard A, provided with the reversible shaft C, detachable mould boards, B B', and pulverizer D, the whole constructed, arranged, and operating in manner and for the purpose herein set forth.

No. 45,071.—THOMAS W. HAMMON, assignor to himself and J. H. LINCOLN, MONROE, WIS.—*Cultivator Teeth*.—December 27, 1864.

Claim.—The employment of use in cultivators and grain drills of two parallel shafts B B, connected by toothed segments C C, or their equivalents and having the arms or standards D of the teeth E attached to them, to operate in the manner substantially as and for the purpose herein set forth.

No. 46,634.—HENRY FRANCISCO, LAKE MILLS, WIS.—*Teeth for Cultivators*.—March 7, 1865.

Claim.—1.—The eccentric standard to a cultivator tooth, constructed and operated substantially as described.

2.—The slotted slide and set screw, arranged and operated in the manner and for the purpose described.

3.—The combination of the set and set retaining device with the eccentrically hinged shank of a cultivator tooth, substantially as and for the purpose described.

No. 47,008.—JOSEPH FOWLER and F. M. BACON, WATERLOO, WIS.—*Hanging Cultivator Teeth*.—March 28, 1865.

Claim.—Retaining the cultivator tooth by friction against a quadrant bearing substantially as specified, so that the said tooth can be in a vertical or in an inclined position and will yield to obstacles without injury to the tooth, as specified.

No. 51,055.—HANFORD INGRAHAM, NAPLES, N. Y.—*Cultivator Teeth*.—November 21, 1865.

Claim.—The shank A, with circular or curved plate *a*, having a series of notches or cuts *a'* and slot *a''*, whereby the same may be adjusted either laterally, angularly, or otherwise, by means of stationary pins *d* or movable pin, or their equivalent, either with or without a slot in the plate *a*, as may be desired, substantially in the manner and for the purpose herein set forth.

No. 54,522.—J. L. FOUNTAIN, NEW MILFORD, ILL.—*Cultivator Blades*.—May 8, 1866.

Claim.—The offset B, slot D, and screw bolt E, in combination with the standard C and blade A, arranged in the manner and for the purposes substantially as set forth.

No. 56,102.—JOHN S. and IRA ROWELL, BEAVER DAM, WIS.—*Cultivator Teeth*.—July 3, 1866.

Claim.—The combination of the slotted beam A, shank B, brace bar C, and bolt D, when the parts are constructed and arranged to operate as and for the purposes herein specified.

No. 2,009.—JOHN S. ROWELL and IRA ROWELL, BEAVER DAM, WIS.—*Cultivator Teeth*.—56,102. July 3, 1866. Reissued March 31, 1868.

Claim.—The combination of the slotted beam A, shank B, brace bar C, and bolt D, when the parts are constructed and arranged to operate, as and for the purpose herein specified.

No. 58,533.—GEORGE W. ZIEGLER, TOLLENS, OHIO.—*Cultivator Teeth*.—*Oct 2, 1897*.

Claim.—Securing a shovel or cultivator tooth to its frame by means of a universal joint, in such manner that the shovel can be inclined either laterally or longitudinally with respect to its frame substantially as described.

2.—The concavo-convex shank *a* formed on or secured to a shovel or tooth, substantially as and for the purpose described.

3.—The combination of the shank *a*, concave plate *D*, convex bolt *E*, and iron *F*, shovel *C*, or its equivalent, substantially as described.

No. 60,813.—J. C. HOFFEDT, MERCERSBURG, PA.—*Cultivator Teeth*.—*January 1, 1897*.

Claim.—The arrangement of the cultivator standard *C*, hanger *B*, and wooden pin *A*, as described and represented.

No. 63,647.—DON C. MATTESON and T. P. WILLIAMSON, STOCKTON, CAL.—*Cultivator Teeth*.—*April 9, 1897*.

Claim.—The double pointed adjustable bit *A*, and the beveled foot of the curved standard *C*, resting on the soil but in combination with the double mould board or shovel *B*, the same fitting over the standard and bit, substantially as described for the purpose specified.

2.—The oblong blade or share *D*, in combination with the manner of fastening the teeth together by bolts passing through the mould board bit or share, substantially as described.

No. 60,977.—DON CARLOS MATTESON and TRUMAN FANE WILLIAMSON, STOCKTON, CAL.—*Cultivator Teeth*.—*April 9, 1897*. Reissued *Aug 25, 1898*.

Claim.—The double pointed adjustable bit *A*, attached to the beveled foot of the curved standard *C* substantially as and for the purpose specified.

2.—The oblong blade or share *D*, in combination with the bit *A*, substantially as described, for the purpose specified.

No. 64,657.—ANDREW FRIBERG, MOLINE, ILL.—*Cultivator Teeth*.—*May 14, 1897*.

Claim.—Securing the share to the stock by means of the block *C* and stirrup *E*, when said parts are constructed and arranged substantially as herein shown and described.

No. 67,457.—ELIAS SEWARD, HAMILTON, OHIO.—*Plow Teeth*.—*Dec 6, 1897*.

Claim.—The self-adjusting plough *B*, made with the convex shoe *C*, having the angular horizontal faced *d e e*, and curved reeling shank *h*, as a new article of manufacture, constructed and operating in the manner and for the purpose substantially as described.

No. 68,140.—BENJAMIN F. HISERT, NORTH HAVEN, N. Y., assignor to himself and GEORGE W. KING, SOUTH HAVEN, N. Y.—*Cultivator Teeth*.—*Sept 8, 1897*.

Claim.—A cultivator tooth or plow attached by a vertical joint to the beam so as to swing longitudinally, as and for the purpose set forth.

No. 69,731.—R. WEST and H. F. PAUL, COVINGTON, N. H.—*Cultivator Teeth*.—*Oct 8, 1897*.

Claim.—Extending the flaring parts of the wings of a cultivator or harrow tooth back, beyond the rear edge of the body of the tooth, and having the space between the said wings open on top, so that all of the surface soil to fall over the edges of the wings into the furrow made by the tooth, substantially as herein shown and described.

2.—Having the wings *B B* of the cultivator or harrow tooth removable from the body *A* of the tooth, substantially as and for the purpose herein shown and described.

No. 74,001.—LUMAN ROGERS, PITTSBURG, PA.—*Cultivator Teeth*.—*February 4, 1898*, antedated *January 23, 1895*.

Claim.—The rib *b* on the back of cultivator teeth or of blades for shovel ploughs, for the purpose of a bling strength to the blade, or for forming a means of attaching it to its standard or frame.

2.—Attaching cultivator teeth or blades of shovel ploughs by means of a bolt inserted into a rib or projection on the back of the tooth, which fits into a recess or groove in the standard or frame, substantially as and for the purposes described.

No. 75,136.—M. F. LOWMEYER and T. J. HOWE, OWASSONA, MINN.—*Cultivator Teeth*.—*March 10, 1898*.

Claim.—The combination of the beam *A*, having the mortises *m m*, as described, with the link *a*, wedge *ac*, and hinged tooth *T*, having the brace *B*, substantially as and for the purposes set forth.

No. 75,016.—J. D. DE FURK, EXETER, PA.—*Cultivator Teeth*.—*March 17, 1898*.

Claim.—The cap, represented in figs. 1, 2, 3, and 4, intended to be fastened to the cultivator beam, into which the tooth is to be inserted, and fastened by the iron hinge bolt *a*, figs. 1, 2, and 3, and the wooden pin or key at letter *c*, figs. 2 and 3, by the use of which the breaking of the tooth can be avoided.

No. 70,847.—D. C. STOVER, DAYTON, OHIO.—*Cultivator Shovels*.—*April 14, 1898*.

Claim.—The bearing *C*, fitted between the shovel *B* and standard *A*, in combination with a slip joint fastening, substantially as and for the purposes described.

2.—The staple *a*, fastened to the shovel *B*, and the hooked bolt fastening *b b*, in combination with the rounded bearing portion *C*, interposed between the shovel *B*, and recessed standard *A*, substantially as described.

3.—So attaching the shovel *B* to its standard *A*, that the shovel can be adjusted and set at different angles with respect to the line of draught without changing the axis of movement of said shovel out of its true line, substantially as described.

No. 78,986.—HENRY A. GASTON, STOCKTON, CAL.—*Cultivator Teeth*.—*May 19, 1898*.

Claim.—In combination with an inclined reversible bit for a cultivator, the method of securing such bit to its standard, substantially as set forth.

2.—The combination of the series of bits (so applied to their vertical standard) with the cultivator frame or carriage, substantially as described.

No. 79,451.—DANIEL DEAN, BRIGHAM, MICH.—*Cultivator Teeth*.—*June 30, 1898*.

Claim.—The reversible cultivator tooth *A*, when constructed substantially as shown and for the purposes described.

No. 83,503.—WILLIAM B. READY, SACRAMENTO, CAL.—*Cultivator Teeth*.—*July 28, 1898*.

Claim.—The groove *c* in tooth *a*, as a seat for an adjustable joint for a cultivator tooth.

2.—The movable tongue *d*, pierced with holes or slots *i i i i*, forming an adjustable point of a cultivator tooth.

3.—The combination of the grooved stock or support *a* with the adjustable tongue *d*, for the purposes of a cultivator tooth, substantially as above described.

No. 81,188.—B. F. McCOLLISTER, CALIFORNIA, MO.—*Shovel Plow Teeth*.—*Aug 18, 1898*.

Claim.—The combination of the double pointed shovel plough *B* with the standard *A*, plate *C*, having lugs *e e*, bolt *D*, bolt *E E*, and screw nuts *f f*, substantially as and for the purpose above set forth.

No. 82,422.—M. F. LOWMEYER and T. J. HOWE, OWASSONA, MINN.—*Cultivator Teeth*.—*September 22, 1898*.

Claim.—In combination with the mortise beam *A* and the tooth *B*, having the shank *b b*, and pivoted on the bolt *c*, a strap-shaped clamp *D*, having an oblong or semi-circular opening *D*, the side *a* of which, that bears against shank *b b*, being straight, and said clamp being confined to the beam *A*, and tightened or loosened by means of a screw shank *e*, passing through a hole in the side of the beam, and a screw nut *f* fitting upon it outside of the beam and screwing against the side of the beam, or against a washer, substantially as described.

No. 82,235.—CLARK ALVORD, COURTLAND, WIS.—*Drag Bar for Cultivators*.—*October 20, 1898*.

Claim.—The companion drag bar, as above described and shown.

2.—The construction of the cultivator tooth and fastening it to the drag bar by passing the bolt through the angle as above described and shown.

3.—The movable clamp in combination with the drag bar as above described and shown, and for the purposes above set forth.

No. 86,261.—GEORGE W. VAN BRUNT, HOBOKEN, WIS.—*Cultivator*.—*January 26, 1869.*

Claim.—1.—The notched and curved arm B', of a pivoted cultivator tooth, in combination with the locking bolt I, substantially as and for the purposes set forth.

2.—The arrangement of the wedge I, rubber or other spring *a*, and parts *m m'* of the bolt I, when the said parts are employed, substantially as and for the purposes set forth.

3.—The clamping plate C, in combination with the two bolts *b b'* and the pivoted cultivator tooth, substantially as and for the purposes set forth.

4.—The stop *e'* arranged upon the curved arm B', and operating in connection with the clamping plate C and bolt *b'*, substantially as and for the purpose shown and described.

No. 83,366.—WILLIAM M. HURLBERT, WISCONSIN, MINN.—*Cultivator Teeth*.—*January 23, 1869.*

Claim.—The combination of the slotted bar B and tooth A with the plates C and bolt D, when said parts are constructed and arranged as shown and described.

No. 86,704.—GEORGE W. ZIGLER, MAUMEE CITY, OHIO.—*Cultivator Teeth*.—*February 9, 1869.*

Claim.—1.—In a single beam cultivator, so adjusting the shovels, by making the front and rear bearings or offsets of different lengths, that the tendency to lateral deviation of the rear end of the beam A, by the resistance of the earth upon the front shovel, substantially as described.

2.—A hollow thimble bearing, B, constructed with notches *c c'* in its end, adapted for receiving a shovel standard I, and admitting of the adjustment of such standard in different planes, substantially as described.

3.—The construction of the hollow thimble bearing, with a flange *a*, on one end, and notches *c* in the opposite end, substantially as and for the purposes described.

4.—The notched thimble bearing B, in combination with an eye bolt C, and shovel standard D, constructed substantially as described.

5.—A single beam cultivator, having its shovel standards connected to notched or grooved thimbles or offsets, of different lengths, by means of eye bolts, which also confine the said thimbles or offsets to their beams, substantially as and for the purposes described.

No. 87,101.—JAMES HARRIS, JANESVILLE, WIS.—*Cultivator*.—*February 23, 1869.*

Claim.—1.—The detached or independent circle iron C.

2.—The arrangement of the detached circle iron C, with the tooth B, whereby both have a common bearing on the pivot pin *a*, substantially as described.

3.—The combination of the tooth B, circle iron C, and coupling device *b*, substantially as described.

4.—The arrangement of the tooth B, independent circle iron C, setting device E, and drag bar A, substantially as and for the purpose described.

5.—The combination and arrangement of the tooth B, and independent circle iron C, when joined by the coupling device *b*, and having a common bearing, *a*, with the drag bar A and setting device E, or in *b*, substantially as described.

6.—Joining the drag bars to the draught rod by means of the elongated metallic box D, whereby a broad, firm bearing is secured and washers between the bars dispensed with, substantially as described.

No. 4,812.—JAMES HARRIS, JANESVILLE, WIS.—*Cultivator*.—*March 19, 1872.*

Claim.—1.—A wooden drag bar, provided with a metallic bearing box, secured by means substantially as described, for the purpose set forth.

2.—A drag bar, provided with an orifice at one end, and elongated bearing box, and a securing bolt, for the purpose specified.

3.—A drag bar, provided with an orifice and slot at one end, an elongated bearing box and securing bolt, for the purpose specified.

4.—The combination of the drag bar A, having an orifice and slot, as described, with box D having the flange, as and for the purpose set forth.

No. 4,813.—JAMES HARRIS, JANESVILLE, WIS.—*Cultivator*.—*March 19, 1872.*

Claim.—1.—The detached or independent circle iron C.

2.—The arrangement of the detached circle iron C with the tooth B, whereby both have common bearing on the pivot pin *a*, substantially as described.

3.—The combination of the tooth B, circle iron C, and coupling device *b*, substantially as described.

4.—The arrangement of the tooth B, independent circle iron C, setting device E, and drag bar A, substantially as and for the purpose described.

No. 89,137.—E. L. FREEMAN, WILLIAMSTOWN, N. Y.—*Cultivator Teeth*.—*April 20, 1869.*

Claim.—The harrow or cultivator tooth herein described, when constructed as set forth.

No. 81,469.—BENJAMIN S. HYERS, PERKIN, ILL.—*Cultivator*.—*April 27, 1869.*

Claim.—1.—The loop B, when rigidly secured to the blade A, in combination with the hook C, substantially as and for the purposes herein shown and described.

2.—The plates F and G, in combination with the loop B and hook C, as herein shown and described, and for the purposes set forth.

3.—The loop B, hook C, and plates F and G, in combination with the blade A, and leg D, when constructed and arranged substantially as herein shown and described.

No. 79,422.—JOSEPH B. MOODY, PEMBROKE, KY.—*Cultivator*.—*April 27, 1869.*

Claim.—The cultivator teeth or plowths G, constructed and attached to the frame A, substantially in the manner herein shown and described, and for the purpose set forth.

No. 92,010.—BENJAMIN VAN BRAK KLIN, LE ROY, N. Y.—*Cultivator Teeth*.—*July 29, 1869.*

Claim.—A tooth, having its shank A, provided with one or more spurs, for the purpose of securing it in position, substantially as described.

No. 93, 95.—HENRY F. FRENCH, BOSTON, MASS.—*Cultivator Teeth*.—*August 17, 1869.*

Claim.—The cultivator tooth formed from a square bar, and pointed and curved at the point diagonally, as shown and described.

No. 94,725.—WILLIAM A. DRYDEN and J. M. TURNBULL, MOSCOW, ILL.—*Cultivator Teeth*.—*September 14, 1869.*

Claim.—1.—The combination and arrangement of the shovel B, plate C, and cut *e*, E, substantially as described and for the purpose set forth.

2.—The combination of the shovel B, and the cutter E, in its rear, as and for the purpose described.

No. 99,383.—W. G. BECKWITH, LOWMEADOWBOURNE, ALA.—*For Cultivator Shovels to Plough Socks*.—*November 2, 1869.*

Claim.—1.—The rectangular socket B, when constructed as and for the purpose set forth.

2.—The socket B, when furnished with projection C, knob *g*, and wedge *d*, in combination with plough share H, the whole being constructed in the manner described.

No. 97,213.—HENRY MILLER, ROANOK, VA., assignor to himself, S. P. MILLER, J. G. H. MILLER, H. H. MILLER and J. H. KITE.—*Shovel Plates*.—*November 23, 1869.*

Claim.—1.—The mold A, having a face convex lengthwise, and plane crosswise, and having seats at its ends, substantially as and for the purposes set forth.

2.—The combination of the mold A, having seats at its ends, with the removable reversible points A', substantially in manner and for the purpose described.

No. 96,722.—J. ESTUVA PIERPONT, LA HARPE, ILL., assignor to himself and SIDNEY S. TUTTLE, same place.—*Double Shovel, Shovel and Plough Socks to Standard*.—*February 8, 1870.*

Claim.—The iron or metal ring D, with sharp thread and nut, or their equivalent, in connection and combination with the iron or metal thimble E, constructed and operated as and for the purpose herein described.

No. 100,298.—G. W. LEAVERUGH, GENESEO, ILL.—*Double Shovel*.—*March 1, 1870.* Antedated February 26, 1870.

Claim.—The within described plough-toe, consisting of the side beam A and F, feet C and C, handles H and H, and braces I, K, and L, all constructed and arranged substantially as and for the purpose shown.

2.—The devices employed for rendering the shovels adjustable, consisting of the block E, bolts e' and F, and the wedge G, substantially as shown and specified.

3.—The combination of the beam A and braces I and L, substantially as and for the purpose shown.

4.—The fender N, when connected to the plow by means of the flat adjustable spring support M, as shown, and for the purpose specified.

No. 109,713.—SANFORD BECKWITH, OSKOSH, WIS.—*Cultivator Teeth*.—*March 16, 1870.*

Claim.—1.—The cultivator tooth B, with a bracing dual head h , arranged relatively to the washer d , bolt c , and cultivator bar A, for the purposes set forth.

2.—The washers d , provided with groove d' , when used in combination with tooth B, bar A, and bolt c .

No. 102,150.—GEORGE PERRY, GRANVILLE, ILL.—*Double Shovel Ploughs*.—*April 19, 1870.*

Claim.—A cultivator tooth or shovel, consisting of the standard B, constructed with flanged arm B' , and shovel A attached to said arm substantially as and for the purpose set forth.

No. 104,754.—JAMES G. MINER, NASHVILLE, TENN.—*Cultivator Ploughs*.—*June 28, 1870.*

Claim.—A cultivator plough formed in one piece, with wings widening from front to rear to form an acute angle, and having a steel share, formed of a turned up ledge, converging toward the center and lying flat up on the ground, whereby a very small frictional resistance is attained, the share is made a self-sharpener and the entire space between the rows cut out at a single passage.

No. 105,570.—THOMAS HARDING, LA FAYETTE, IND.—*Shovel Teeth for Cultivators*.—*July 19, 1870.*

Claim.—A drill or shovel tooth for cultivators, &c., provided with a clamping strap, C, rigidly attached to said tooth, and clamp bolt E, outside of and behind the standard A, substantially as set forth.

No. 103,478.—JULIUS GERBER, ROCKFORD, ILL.—*Cultivator*.—*August 10, 1870.*

Claim.—The device described, consisting of the clevis d , with bar d' , and notched face d'' angle iron e with bolt e' an I-set screw e , when combined and arranged as described, and employed in connection with a cultivator beam and shovel standard, as described.

No. 107,009.—JAMES R. LITTLE, GALESBURG, ILL.—*Cultivator*.—*September 6, 1870.*

Claim.—1.—The plate B, constructed substantially as described, arranged with the shovels and standards of cultivator ploughs, for securing and adjusting the same, substantially in the manner set forth.

2.—The construction and arrangement of plates B and C, bolts b' and E, head D, pivot bolt J, and plug S, substantially as and for the purpose specified.

No. 108,037.—JAMES R. LITTLE, GALESBURG, ILL.—*Cultivators*.—*October 4, 1870.*

Claim.—Securing the standards B to the beams A by means of the eye bolt C and adjustable double socket G, H, substantially as described, and for the purpose set forth.

No. 108,272.—LUPPE LUPPEN, PEKIN, ILL.—*Shovel Ploughs*.—*October 11, 1870.*

Claim.—The clamp herein described for attaching shovels to the standard of a plough, composed of two brackets secured to the back of the shovel, and having recesses in their opposing faces, for the reception of the standard, which is clamped between them by means of a bolt and nut, substantially in the manner set forth.

No. 108,275.—LUPPE LUPPEN, PEKIN, ILL.—*Shovel Plow*.—*October 11, 1870.*

Claim.—1.—A shovel fastener, consisting of the block A, cap B, bolt C, and tight-ning nuts C' , substantially as shown and described.

2.—In combination with the elements in the preceding claim, the fillets D, substantially as and for the purpose set forth.

No. 108,471.—JULIUS GERBER, ROCKFORD, ILL.—*Cultivators*.—*October 18, 1870.*

Claim.—A ring for holding standards, when used in connection with a bolt and bearing block, and so constructed as to be capable of a turning movement in the bolt, as described, for the purpose set forth.

No. 108,512.—JOSHUA PIERPONT and SIDNEY S. TUTTLE, LA HARPE, ILL.—*Fastenings for Shovel Cultivators and Plows*.—*October 18, 1870.*

Claim.—The combination of the eye bolt D and the wooden pin E with the standard A and the shovel holder C, made and constructed substantially as and for the purposes hereinbefore set forth.

No. 110,103.—WILLIAM WORKMAN, and JASON HITCHCOCK, RIPON, WIS.—*Friction Block for attaching Cultivator and other Teeth*.—*December 13, 1870.*

Claim.—The friction block B, formed with the wings b' and the intermediate socket a , and shoulders g and h , in combination with a tooth h , C, substantially as described.

No. 9,638.—WILLIAM WORKMAN, WEST DE PERE, and JASON HITCHCOCK, RIPON, WIS.; said HITCHCOCK assignor to said WORKMAN.—*Friction Block for attaching Cultivator and other Teeth*.—*110,103, December 13, 1870.* Reissued *April 5, 1881.* Filed *November 22, 1880.*

Claim.—1.—As an improvement in connecting cultivator and other slip teeth to drag-bars, the block attached to the drag-bar and confined in its adjusted position by friction, said block being provided with means for supporting the tooth shank, substantially as described.

2.—The combination with the drag bar, of the block carrying the tooth shank and confined in its adjusted position on the drag bar by friction, substantially as described.

3.—In combination with a drag bar, the block attached to the drag-bar and provided with means for supporting a tooth shank constructed separately from the block and arranged at one side thereof, substantially as described.

4.—A friction block attached to a drag-bar and adapted to be adjusted at different angles, in combination with a tooth shank connected with the friction block and adapted to have a movement independent of the friction block substantially as described.

5.—The friction block provided with the intermediate socket, a , and shoulders g , h , in combination with a tooth or shovel having a shank fitted in said socket, substantially as described.

No. 110,836.—WILLIAM A. DRYDEN, MOXMOOUTH, ILL., assignor to himself and JOHN M. TURNBULL, same place.—*Cultivators*.—*January 10, 1871.*

Claim.—The cultivator shovel A, when constructed substantially as described, with a diagonal twist or curved across its lower part, for the purpose of offering a counter resistance to the side pressure of the ordinary twisted shovels, substantially as described and for the purpose specified.

No. 112,862.—WILLIAM D. STROUD, OSKOSH, WIS.—*Cultivators*.—*March 21, 1871.*

Claim.—The wing e and screw bolt e' , in their relation to the tooth a , friction brace d , and lag bar h , as hereinbefore set forth.

No. 117,092.—MICHAEL F. LOWTH and ORLEAN H. PORTER, WARSAW, MINN.—*Attaching Cultivator Teeth to Beams*.—*July 18, 1871.*

Claim.—The base d of the cultivator tooth, provided with a series of holes for reception of a pin on which rests the free end of the plate spring f , whereby the inclination of the tooth to the beam may be varied without changing the tension of the spring as herein shown and described.

No. 117,524.—DANIEL EDELMAN, MADISON, IND.—*Cultivators*.—*August 1, 1871.*

Claim.—The interchangeable side hoers a , provided with teeth or projections, as described, for adjusting the angle of their position, and with reverse blades or shears, when arranged in combination with the harrow teeth a' a'' , in the manner and for the purpose herein set forth.

No. 128,208.—LEWIS DALEY, NASHVILLE, N. V.—*Cultivator Teeth*.—*August 22, 1871.*

Claim.—The steel bottom facings A and overlapping wrought iron stock C, constructed and applied to the standard B, as and for the purpose specified.

No. 118,302.—THOMAS F. HAMILTON, GENESEE, ILL.—*Cultivators and Shovel Ploughs*.—*August 22, 1871.*

Claim.—1.—In a cultivator or shovel plough, an adjustable shovel block, or attachment, when provided with a ball

and socket bearing and combined with the standard and shovel, substantially as and for the purpose specified.

2.—The plate B provided with the semi-circular socket, and the block E provided with the curved slots *e* and boss E', in combination with each other, the standard A, the shovel D, and the bolts F, substantially as and for the purpose shown and described.

No. 120,789.—SAMUEL SNIDER, TAYLORSVILLE, KY., assignor to himself, A. P. HARCOURT and G. H. STONE, same place.—*Cultivators*.—November 7, 1871.

Claim.—The shovel G, having a central ridge, *d*, the slides being sloped and furnished with wings H H, while the upper portion of the shovel is rounded in cross section, and is gradually widened out above the point at which the wings diverge, as shown and described.

No. 121,794.—JAMES MALLEN and HENRY VON HUEL, JR., HOLLY WOOD, LA.—*Cultivator*.—December 12, 1871.

Claim.—The combination of the slotted plates H O, clutch *p*, flange K, and standard of shovel G, as set forth.

No. 122,249.—DAVID L. EVANS, TOWN POINT, MO.—*Cultivator*.—December 26, 1871.

Claim.—A cultivator tooth consisting of a shank, A, and detachable blade B, secured together and to the frame of a cultivator by a single bolt F, substantially as herein described.

2.—A cultivator tooth consisting of a shank A, and an adjustable blade B, secured to the shank, so as to be adjustable thereon by a set screw *m*, or its equivalent.

No. 122,729.—DANIEL T. McSHERRY, DAVENPORT, IOWA.—*Cultivator*.—January 10, 1872.

Claim.—The combination of the reversible hoe or tooth C with shank A, provided with flanges *d*, for the purpose of holding it in position, substantially as herein described.

2.—The shank A, provided with the flanges *d* and slot *e*, in combination with the hoe or shovel *c*, for the purpose of adjusting the latter, as described.

No. 125,394.—GEORGE HOPKINS SMITH, DES MOINES, IOWA.—*Shovel*.—April 9, 1872.

Claim.—The shovel plough share A, having central rib B and side ribs C C arranged thereon, as and for the purpose described.

No. 125,872.—JACK WOOD, WIDOWET, ALA.—*Cultivator*.—April 10, 1872.

Claim.—The foot *b*, in contact with the perforations on the upper side to give the lateral adjustment, and the washer *c*, with the perforations on the back, to give the circular adjustment, connected to the arms or standards *a* and *e*, and operating substantially as recited.

No. 127,757.—ANDREW FRIBERG, MOBILE, ILL.—*Cultivator*.—June 11, 1872.

Claim.—A shank for cultivators, composed of a plate of wrought metal doubled or folded in the line of its length, so that its cross section shall be of U shape, whereby it is adapted to clamp around the front of the cultivator beam, and to have a shovel attached thereto and adjusted thereon substantially as described.

2.—In combination with the above described shank, I claim the shovel C, arranged to be adjusted up or down thereon, substantially as described.

3.—I also claim the above described shank B, pivoted to the beam A, and locked in position by a break pin *m*, with a shovel C, attached thereto, all as instructed and arranged to operate substantially as described.

No. 128,686.—CHARLES H. WATSON, WASHINGTON, D. C.—*Cultivator*.—July 2, 1872.

Claim.—A reversible cultivator or plough standard, having a plough or a cultivator, or harrow to fit upon one end, and a suitable runner or device for running upon the ground upon the other end, substantially as and for the purpose set forth.

2.—The standard B, provided with the head *a* and flange *z*, as and for the purpose specified.

3.—The standard B, having a suitable head, *a*, flange *z*, and in combination with the beam A, the standard being pivoted to the beam and held in place by a pin *c*, substantially as and for the purpose described.

4.—The reversible standard B, when constructed substantially as specified, and for the purpose set forth.

No. 122,859.—EDWIN PARMELE, DAVENPORT, IOWA, and GEORGE CURKENPALL, MOBILE, ILL., assignors to DEERE & CO., MOBILE, ILL.—*Cultivators*.—July 23, 1872.

Claim.—1.—An attachment to cultivators, we claim a stirring device, E, having three or more prongs, arranged in the manner and for the purpose substantially as set forth.

2.—The stirring device E, having three or more prongs, arranged as described, in combination with and adjustable up and down upon a curved beam or plough standard substantially as and for the purpose specified.

3.—The stirring device E, constructed as described, in combination with the plough beam A and standard B, having metal pivot C, and wooden pin D, substantially as and for the purpose specified.

No. 130,868.—MARQUIS L. GORHAM, ROCKFORD, ILL.—*Cultivator*.—October 1, 1872.

Claim.—The single traction plate B, constructed as described, in combination with standard D, clamp-bolt F, and beam K, as and for the purpose set forth.

No. 131,864.—GEORGE W. ESTERLY and JOSEPH VAN DE WATER, WHITEWATER, WIS.—*Cultivator*.—October 4, 1872.

Claim.—1.—The fitting bar B, having the rods F attached, said rods passing up through slot *a* or their equivalents in the drag bars A, and connected by chains or cords to the rock shaft C, who by the drag bars can be all raised together and each be free to rise and fall independently, and the fitting bar be held in its place, substantially as described.

2.—The mould-board hollow block G, provided with the curved slot and the hangers or projections O, in combination and with the heel H, bolt Z, and drag bar A, all constructed, arranged to operate as shown and described.

No. 134,446.—FREDERICK W. TOLLEY, CONYERSVILLE, N. Y., assignor to himself and A. V. D. COLLIER, same place.—*Shovel*.—June 11, 1872.

Claim.—The standard B D, having slots *b* *d'* shaped to receive a bolt *c*, as constructed, as set forth.

No. 134,778.—SEAMON S. BUSHNELL, HICKORY, WIS.—*Cultivator*.—June 14, 1872.

Claim.—A shank A, with the end *a* and *c*, in combination with set screw G, and partially as described.

No. 141,565.—GEORGE F. STEPHENSON, OSKOSH, WIS., assignor to WILLIAM F. STEPHENSON, same place.—*Cultivator*.—July 29, 1873. Filed *Jan.* 3, 1873.

Claim.—The hand F, provided with the handle D and pin *c*, and the standard and reel plate G, provided with projections F', in combination with the drag bar K, and spring J, substantially as and for the purpose set forth and described.

No. 152,073.—ALEXANDER F. CARNAGY, SUMMIT HILL, PA.—*Cultivator*.—June 10, 1874. Filed *February* 14, 1874.

Claim.—The combination, in a cultivator, of tooth S, U shaped in cross section, with the independent socket T, the wedge bolt, and the nut, as described, whereby the tooth is drawn firmly into the socket, and both secured to the beam, in the manner specified.

No. 152,770.—JOHN H. THOMAS and JOSEPH W. THOMAS, SPRINGFIELD, OHIO.—*Cultivator*.—June 30, 1874. Filed *April* 8, 1874.

Claim.—In combination with the drag bar A, bifurcated at A', the curved-hollow standard C, bent as shown, and pivoted by a bolt at D, and clamped by bolt E, substantially as shown and described.

No. 153,705.—WM. HARTGROVE, OXFORD, ILL.—*Cultivator*.—July 28, 1874. Filed *December* 9, 1871.

Claim.—The combination with the shovel B, having rigidly secured to its rear portion the concave convex plate C, of the slotted metallic shoe D, consisting of the spoon-shaped plate *b*, bent to correspond to the concavity of the plate C, and its upper part bent to form flanges *d*, between which the lower end of the plough is anchored by means of the transverse pin *a*' and wooden anchor pin *a*, substantially as and for the purpose described.

No. 153,020.—MOSES E. WHITT, DOUGLASSVILLE, TEX., assignor to one-fourth by right to A. L. BLANKEN-

SHIP, same place.—*Ploughs*—July 28, 1874. Filed March 31, 1874.

Claim.—The combination of the foot B of the standard with the bar D and the plate or share C, the same being secured by bolts *a*, arranged as shown and described, for the purpose specified.

No. 151,071.—A. R. GRANBERRY, and JOSEPH FLEHOF, HAZLEHURST, MISS.—*Cultivator Teeth or Hoers*—September 4, 1874. Filed July 29, 1874.

Claim.—The blade A, provided with the lip or tongue C and rib D, and the removable point B, attached to said tongue by means of bolts *a*, all as and for the purposes herein set forth.

No. 158,681.—CORYDON I. HEWETT, KINGSTON, WIS., assignor to himself and HENRY VOLKMAN, same place.—*Winged Teeth for Soles and Cultivators*—December 22, 1874. Filed August 7, 1874.

Claim.—1.—The combination with the pivoted share or tooth B C D, and hinged rod or toggle I J K L M, of the conical or serrated plate E and F, bolts G and P, and the spring N, adapted to bear on a projection, O, from rod J, substantially as set forth.

2.—The combination with the pivoted share or tooth B C D, toggle I J K L M, and plate E, F, of the spring N, having its free end bearing on an adjustable projection, O, for regulating the tension of the spring, substantially as specified.

No. 158,375.—THOMAS J. HOUSTON, MADISON COUNTY, OHIO.—*Cultivator Shovel*—January 5, 1875. Filed October 7, 1874.

Claim.—The cultivator shovel shown and described, with the upright A and foot part C made in a single piece, so as to form the cavity *a* beneath, having the angular sides *a*, as hereinbefore set forth.

No. 158,512.—RODNEY P. ODELL, JR., PLYMOUTH CENTER, assignor of himself, his rights to S. CODELL, NORTH GAITHER, N. Y.—*Cultivator Teeth*—January 5, 1875. Filed December 3, 1874.

Claim.—A cultivator tooth, consisting of the wing A and land side B, formed in a single piece, the wing being made in the form of an equilateral triangle, with the square corner and the land side provided with the upright curved point J standing back from the rear of the tooth, as herein shown and described, and for the purpose specified.

No. 158,906.—EDWIN CHILDREN, DE SOTO, ILL.—*Cultivator Teeth*—January 19, 1875. Filed October 6, 1874.

Claim.—The coupling joint herein described, consisting of the spring C, made with the concave cavity D, the casting E, made with the convex projection F, the eye bolt G, passing through the nut G, and through or thwart pin H, passing through the eye of said bolt and resting on the nuts *a*, *b*, attached and connecting and in combination with the standard A and shaft B, substantially as depicted.

No. 160,414.—EZRA LEONARD, AKRON, OHIO.—*Cultivator Teeth*—March 2, 1875. Filed February 18, 1874.

Claim.—As a new article of manufacture, the above described cultivator tooth, consisting essentially of the shank C, the counter B, and the two winged share H, having the sharp cutting edge D, curved to run nearly parallel with the surface of the ground, substantially as set forth.

No. 100,547.—G. D. ROWELL, APPLETON, WIS., assignor to ROWELL and MORRIS, same place.—*Slip Teeth for Soles*—March 9, 1875. Filed January 16, 1875.

Claim.—1.—The combination of slip tooth B, having brace C, with necked *a*, in P, substantially as set forth.

2.—The beam A, with B, having brace C, and cam D, having in front of figure E, all in combination substantially as set forth.

No. 101,745.—G. P. BRIMMINGHAM, TOWNSON, TENN.—*Perforated Standard for Teeth*—April 6, 1875. Filed January 23, 1875.

Claim.—In a standard fastening for ploughs or cultivators a plate A, having a perforated tapered boss formed on it, in combination with the plate B, having a socket portion, C, formed on it to receive said boss, substantially in the manner and for the purposes set forth.

No. 160,070.—JOHN FLYNN, MONROE, WIS.—*Cultivator Teeth*—August 24, 1875. Filed May 15, 1875.

Claim.—The combination of spring D, P and wheel G with the riveted tooth B, having the concavity *b*, lug *b*, and set screw H, as shown and described, to operate as specified.

No. 168,181.—ISAAC P. PHOENIX, TAYLOR GROVE, ILL.—*Combination of Cultivators and Harrows*—September 28, 1875. Filed August 14, 1875.

Claim.—The combination of the head B, made in two parts or halves bolted together, and provided with V grooves and recesses in their inner surfaces, and the reversible square teeth C, made pointed at one end, and provided with shovels *c* at their other ends, with each other, substantially as herein shown and described.

No. 170,027.—JOHN HARRIS, MARQUETTE, WIS.—*Self-Loading Cultivator Teeth*—November 30, 1875. Filed July 10, 1875.

Claim.—The combination of the catch spring C, the reinforcing spring D, the bent lever E, and the bar or bars F, with the beam A and the pivoted cultivator tooth B, substantially as herein shown and described.

No. 171,506.—CORYDON P. HEWETT, KINGSTON, WIS.—*Winged Teeth for Soles and Cultivators*—December 28, 1875. Filed June 20, 1875.

Claim.—1.—The spring arm E and toggle arm F, having a sliding pivoted connection, and adapted to be pivoted, respectively, to the beam plate and standard, substantially as specified.

2.—The combination, with the foregoing sliding pivoted arms E, F, of the screw bolt *e* and double nuts, one above and the other below the arm E, as and for the purpose set forth.

No. 172,373.—J. C. BANNIGAN, DUNELLEN, ILL.—*Cultivator Teeth*—January 18, 1876. Filed August 30, 1875.

Claim.—The combination of the standard B and its ball C with the socket D, constructed in two part *d*, clamped together and secured upon the ball of the standard, the lower part of the socket carrying the shovel or plough share E substantially as described.

No. 173,873.—M. K. WHEAT, PARIS, KY.—*Spring Locks for Ploughs*—February 22, 1876. Filed January 22, 1875.

Claim.—The spring lock bars B, provided with the shoulders *b* at their upper ends, pivoted to the plough beam A or the plough standard, and having the plough plate C attached to their lower ends, substantially as herein shown and described.

No. 175,649.—RUFUS F. BILLINGS, KINGSTON, WIS.—*Slider and Cultivator Teeth*—April 4, 1876. Filed January 15, 1876.

Claim.—1.—The lever C, pivoted at its center in the slot of beam A, and having its opposite ends engaged by the spring D and the standard B, as shown and described.

2.—The combination of the pivoted bar C, the rollers E, the spring D, and the pivoted tooth B, substantially as herein shown and described.

No. 175,721.—EDWARD P. LYNN and EDGAR A. WRIGHT, DAVENPORT, IOWA.—*Cultivators*—April 4, 1876. Filed February 19, 1876.

Claim.—The sleeve D, having the slots *a*, *b*, in combination with the block B, attached to the shovel, and provided with the irregular shaped slot *a*, and the bolt G, having a square neck *c*, fitting the slot *a* in the sleeve, substantially as described, and for the purpose set forth.

No. 72,250.—EDWARD P. LYNN and E. A. WRIGHT, DAVENPORT, IOWA.—*Cultivators*—175,721—April 4, 1876.—Reissued August 4, 1875. Filed June 26, 1876.

Claim.—1.—The shank D, having a slot *b*, formed therein opposite the front of the beam, substantially as and for the purpose set forth.

2.—The shank D, provided with the slot *a*, in combination with the shovel A, having the block B, provided with the transverse slot *a* and the threaded bolt C, all constructed to operate substantially as described.

3.—The block B, secured to the shovel A, and provided with the slot *a*, of a width corresponding to the square shank of the threaded bolt C, and having an enlargement at one

end, in which said bolt can be turned, substantially as and for the purpose set forth.

4.—In combination with the block B, having the slot *a*, the bolt C, provided with T shaped head *o* and the square shank *e*, said parts being constructed to operate substantially as set forth.

No. 178,180.—J. MITCHELL, ELMA, N. Y.—*Cultivator Teeth*.—March 30, 1876. Filed February 25, 1876.

Claim.—A cultivator tooth, with a wing or wings, *a*, *a*, formed or cast thereon at right angles thereto, as and for the purpose specified.

No. 183,121.—C. P. BUCKINGHAM, CHICAGO, ILL.—*Cultivators*.—October 10, 1876. Filed August 17, 1876.

Claim.—The wrought metal sleeve or shank B, formed from a blank bent or folded into the shape described and shown, and provided with a lateral concavity *b'*, in its front side, at the lower end thereof, adapted to receive the convex surface of the wrought metal shovel block C, substantially as and for the purpose set forth.

No. 185,152.—JAS. E. WILKINSON, LISBON, ILL.—*Ploughs*.—December 5, 1876. Filed September 16, 1876.

Claim.—A slant plait for the shovels of corn ploughs or scrapers, consisting of an oblique elongated body portion D, having the advanced transversely slotted end bearings *c*, and extending from its middle portion upward the horizontally slotted cylindrical face bearing G, substantially as specified.

No. 188,001.—J. R. COLT, LYNDSEVILLE, N. Y.—*Cultivator Teeth*.—March 6, 1877. Filed October 17, 1876.

Claim.—A cultivator tooth having its blade A made in the form of an equilateral triangle, broadest at its point and tapering back to the shank, and constructed with a convex cutting edge, as shown and described, and for the purpose specified.

No. 186,550.—R. L. FLEWOOD, SACAMON, ILL.—*Attaching Cultivator Shovels*.—April 17, 1877. Filed January 24, 1877.

Claim.—1.—The block A, having its back extended around the standard, and fitting against the standard, where the pressure is applied, and provided with the end holes *b* and suitable rivet holes, substantially as specified.

2.—The combination of the block A, constructed as described, with the clamp B and screw D, arranged to clamp the standard against the back of the block and support it under the set screw, substantially as set forth.

No. 191,451.—EDWARD P. LYNCH and EDGAR A. WRIGHT, DAVENPORT, IOWA.—*Cultivators*.—May 29, 1877. Filed November 8, 1876.

Claim.—The curved block B, having the transverse slot *a* extended around to one side to permit the bolt C to be shoved forward to bring its round portion in the slot and allow it to be turned therein or shoved out forward, substantially as shown and described.

No. 192,300.—GULFORD D. ROWELL, APPLETON, WIS., assignor to APPLETON MANUFACTURING CO., same place.—*Cultivator Teeth*.—June 20, 1877. Filed May 21, 1877.

Claim.—The friction plate *c* having a socket in its lower edge through the entire thickness of the plate, which socket is largest at its upper end, to receive the enlarged head of the tooth *b*, whereby the tooth and plate can only be separated by a sidewise movement, substantially as herein.

No. 193,735.—BYRON TOWN FORD DU LAC, WIS.—*Devices for Braising Cultivator Teeth*.—July 31, 1877. Filed July 2, 1877.

Claim.—1.—The combination, with the beam A and pivoted cultivator tooth B, of the double brace D D', bolt and nut F, and washers G G, arranged upon opposite sides of the beam A and outside of the braces, substantially as and for the purposes specified.

2.—The combination of the beam A, having the encircling grooves E E', washers G G, having lugs or pins *c*, bolt and nut F, double brace D D', and pivoted cultivator tooth B, the several parts constructed and relatively arranged substantially as herein shown and described.

No. 194,310.—SANFORD PECK, WALDRON, ILL.—*Safety Clamps and Hooks for Cultivators*.—August 21, 1877. Filed July 17, 1877.

Claim.—The combination of the hook D and the spring clamp A, having the adjusting screw *a*, and attached to the

beam B and the standard, in the manner and for the purpose set forth.

No. 194,331.—JOHN H. OWENS, HOUSTON, ILL.—*Cultivator Teeth*.—August 28, 1877. Filed August 8, 1876.

Claim.—The herein-described cultivator blade, consisting of the mold board A and diamond shaped blade B, cast in one piece, curved gradually the whole width from the point of blade to the extreme top of mold board, and also curved gradually transversely across the mold board, thereby facilitating the throwing of the soil to one side, equalizing the draft of cutting surface, and strengthening the blade as specified.

No. 197,638.—MOSES JOHNSON, THREE RIVERS, MICH., assignor to the UNION MANUFACTURING COMPANY, same place.—*Cultivator Teeth*.—November 27, 1877. Filed October 26, 1877.

Claim.—The cultivator tooth herein described, composed of the wing or mold board A and hand-side B, having the flange or sole *a*, made of a single piece of metal, in combination with the point C, provided with the beveled shoulder *c* and rounded seat *b*, as and for the purpose set forth.

No. 198,372.—C. O. GARDNER, SPRINGFIELD, OHIO, assignor to P. P. MAST and CO., same place.—*Cultivator and Setting Machines*.—December 18, 1877. Filed September 6, 1877.

Claim.—1.—The friction block A, provided with the side flanges and the stud *b*, in combination with the bolt G and the standard, perforated to fit upon the stud and bolt, as shown.

2.—The pivot block A, having the side flanges, in combination with the standard sustained therein, in the manner shown, without the assistance of the flanges.

3.—The shovel block B, cast in one piece with the shoulder *g*, and the key-seat D, substantially as shown.

4.—In combination with the notched standard F, the reversible shovel block B, having the shoulders *g* and the key *a* inserted, as shown.

5.—In combination with a notched standard F, a hollow reversible shovel block adapted to fit upon the end of the standard, and a transverse tapering key *a*, passed through the block and seated in the notch of the standard, substantially as shown.

6.—In combination with a notched standard, a hollow shovel block adapted to fit thereon, and provided with a shoulder to abut against the end thereof, and a tapering transverse key bearing in the block and standard, and screw to hold the block firmly against the front and end of the standard, substantially as shown.

No. 199,634.—SHYANUS H. FORD, BEAVER DAM, WIS.—*Cultivator*.—January 29, 1878. Filed August 17, 1877.

Claim.—1.—The combination with the beam or drag bar A and standard E, of the rocking clamp plates C and C', substantially as and for the purpose specified.

2.—The combination, with the rocking clamp plates C and C', of the lever G and notched bracket F, substantially as and for the purpose specified.

No. 201,304.—WILLARD A. VAN BRUNT and SPENCER E. DAVIS, HERRICK, WIS.—*Cultivator Teeth*.—March 12, 1878. Filed April 4, 1877.

Claim.—A cultivator tooth diamond-shaped in outline, the surface of its lower or penetrating portion made laterally convex or rounded, and formed with sharp cleaving edges, and its upper or scouring surface made transversely flat, substantially as and for the purpose described.

No. 203,417.—HUGH CARSON, PITTSBURG, PA., assignor to ALEXANDER SPEER & SONS, same place.—*Cultivator Teeth*.—May 7, 1878. Filed April 8, 1878.

Claim.—1.—A cultivator tooth whose shank is provided with a key or cross-bar having threaded transverse ends, which project through its sides and are adapted to engage with a nut or similar fastening device, substantially as set forth.

2.—The combination, with a cultivator frame, of a cultivator tooth, the two secured together by the engagement of a nut or similar fastening device with a key or bar, which latter has threaded transverse ends projecting through the sides of the tooth's shank, substantially as set forth.

No. 205,828.—FRANK T. BERFRAND, ROCKFORD, ILL.—*Cultivator*.—July 9, 1878. Filed *Mar* 20, 1878.

Claim.—The combination, with a bed plate having a raised bearing on one end for the adjustable attachment of the arm of the standard-holder, and a projecting annular flange, on its opposite end of a standard holder with an annular flange which fits within the annular flange on the bed plate while the forward end of the holder is connected with the bed plate by a break pin, substantially as set forth.

2.—The combination, with a bed plate having a raised bearing on one end for the reception of a break pin, of a standard holder provided with a series of holes in its forward end, whereby the standard may be adjustably secured to the bed plate by means of a break-pin, substantially as set forth.

3.—The combination, with a bed plate provided with a raised bearing on its opposite end, of a standard holder provided with a series of holes in its forward end and an annular flange on its rear end, substantially as set forth.

No. 208,576.—WILLIAM H. DICKKEY, JACKSON, MISS.—*Cultivator*.—Oct. 16, 1878. Filed *Aug* 2, 1878.

Claim.—The reversible block B, having the longitudinal recess D, and attached to the standard at two or more points, in the same vertical line, and the double point of blade C, secured to the block by two or more bolts in the same vertical line, in combination with the standard A, having the recess *a* to receive the block B, and supporting the upper point of the blade, arranged and operating as specified.

No. 211,068.—WILLIAM A. KOWALEX, ROCKFORD, ILL.—*Cultivator*.—January 7, 1879. Filed *Jan* 1, 1878.

Claim.—The combination, with a bracket plate, provided with flanges to embrace the drag bar, and a depending flange having an arc-shaped slot formed therein for adjusting the standard of a stud groove to receive the shovel standard, and provided with a depending arm, which latter is provided with an open slot and an adjusting bolt that extends through the arc-shaped slot in the depending flange of the bracket, substantially as set forth.

2.—The combination, with the curved shovel back, of a clamping block constructed to rest against the convex back and embrace one edge of the standard of a second clamping block, constructed to overlap the opposite edge of the standard, and a lifting and fastening bolt, substantially as set forth.

No. 214,373.—WILLIAM H. DICKKEY, JACKSON, MISS.—*Cultivator*.—Apr. 15, 1879. Filed *Jan* 15, 1879.

Claim.—As a device for securing a cultivator blade or hoe to the standard, the hereinafter described part E, E', E", in combination with the bolt ¹ and nut ².

No. 214,825.—I. B. KENDALL, MORRIS, ILL.—*Cultivator*.—April 29, 1879. Filed *Aug* 12, 1878.

Claim.—The combination, with the shovel A, of the end-plate C, having the upwardly-projecting sides, with the round front edge *c'*, and the bottom face *c''*, bent at right angles to the side *c'*, embracing the lower face of the shovel, and provided with the open slots *d*, and the bolt B, provided with nuts, the whole constructed and arranged to operate in the manner and for the purpose set forth.

No. 215,106.—WILLIAM H. DICKKEY, JACKSON, MISS.—*Cultivator*.—Mar. 5, 1879. Filed *Dec* 16, 1878.

Claim.—The standard A, with its lower section, *a*, in line forward and provided with a circular face, in combination with the rotating block C, and reversible shovel B, whereby the shovel may be rotated upon the standard and its upper point remain in close proximity to the upper section of the standard, substantially as shown and described.

No. 220,157.—JACOB W. LAFFERTY and GEORGE F. BROWN, MILWAUKEE, WIS.—Improvements in one half of their right to JOHN C. BAKER, some place.—*U. S. P. Off.*—8 *months* 30, 1879. Filed *Mar* 16, 1879.

Claim.—In combination with a standard having a shovel-shank, pivoted thereto, a spring clasp separable and detachable from the shank and standard, provided with a locking projection adapted to engage with the shank

and standard and lock them together, substantially as described.

2.—In combination with the standard A and pivoted shank B, the spring bow C, adapted to straddle the shank, and provided with projections which pass through the shank and engage with the standard, substantially as described and shown.

3.—In combination with the standard and the pivoted shovel shank, the spring clasp provided with adjustable stud or pins passing laterally through the shank into the standard.

4.—The combination of a standard, a shank or shovel block pivoted thereto, and a locking pin inserted through the shank into the standard by spring pressure.

No. 223,752.—DAVEI C. OWEN, LA PRairie, ILL.—*Cultivator*.—*Jan* 23, 1880. Filed *Oct* 17, 1879.

Claim.—The improved coupling for ploughs, consisting of the cup-shaped cavity C and the hollow projection E, in combination with the hemi-spherical washer F and bolt G, all constructed and arranged substantially as herein shown and described.

No. 222,531.—EDWIN R. McMILL, ROCKFORD, N. Y.—*Cultivator*.—*Feb* 13, 1880. Filed *Oct* 2, 1879.

Claim.—A cultivator tooth having the couler A, by means of which the tooth is secured to the plough-standard, and obliquely projecting cutter-blade B, with curved prongs *a*, *a*, substantially as shown, and for the purpose described.

No. 232,870.—JOHN S. ROWELL, BAYVER DAM, WIS.—*Cultivator*.—*Feb* 5, 1880. Filed *Jan* 15, 1880.

Claim.—The shored beam A, the pivoted slipping-plate B, slotted to receive the binding bolt *b*, and provided with the clamping bolt C, and shoulder outside of the beam, combined with the adjustable or reversible tooth S, rigidly but removably secured thereto, substantially as described.

2.—The slipping plate B, adapted to be pivoted at its front end by bolt *b*, provided with slot *c*, curved about the axis of bolt *b*, whereby the clamping bolt *b* may pass through said plate, combined with a hooking shoulder, P, and hook-headed clamp-bolt C, whereby the shank S may be firmly held, but may be adjusted longitudinally as to said shank.

3.—A slipping plate, B, adapted to be located in a cleft in the beam A, provided with a hooking shoulder, P, offset laterally from said plate, and the clamp-bolt C, whereby the hand, S will be held in line with said plate, but capable of adjustment up and down the beam, as shown in Fig. 4.

4.—The slipping plate B, constructed with laterally projecting flanges along its rear edge, whereby the mused tooth is engaged while the machine is in operation.

5.—The slipping plate B, pivoted and clamped within a cleft in the beam A by separate bolts, combined with a hooking shoulder, P, and clamp bolt C for the shank S, outside of the beam, as set forth.

No. 233,058.—LEVI S. WOOD, MARION, IOWA.—*Cultivator*.—*Feb* 5, 1880. Filed *Mar* 17, 1880.

Claim.—A cultivator tooth constructed substantially as shown and described, consisting of the central standard, A, having sharp-edged forward edge, and the annular cutter B, having its wings slightly twisted and formed upon the end of the standard A, as set forth.

No. 236,377.—CHARLES M. STEVENS, BAYVER DAM, WIS.—*Wagon*.—*U. S. P. Off.*—*Jan* 4, 1881. Filed *Oct* 23, 1880.

Claim.—In a ship-tooth for cultivators, the combination, with the beam A, bracket arm C, and brace E, of the pivot bolt D, catch ¹ and ², and pawl K, secured in the recess ³ of the bracket arm, and held in place by the spring L, constructed and operating substantially as and for the purpose set forth.

No. 238,816.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Plough*.—*Mar* 15, 1881. Filed *Sept* 3, 1880.

Claim.—In a plough in which the plate B, having upper wing, F, and lower wing, F', provided with curved

G, and located upon opposite sides of a socket C, having set screw *d*, in combination with the pointed shovel A, bolt *a*, nuts *b*, and the rounded plough standard D, constructed and operating substantially as and for the purposes set forth.

No. 230,947.—DAVID O. EAFREST, KAMAZOO, MICH.—*Cultivators*.—April 12, 1881. Filed *Oct. 17*, 1879.

Claim.—1.—In combination with a supporting frame F, a spring having its two free ends adapted to admit of an attachment thereto of a ploughing or cultivating tooth or blade substantially as and for the purpose shown.

2.—In combination with the frame of a harrow, plough, or cultivator, a spring attached between the free ends of said frame, the free ends of said spring adapted for the attachment thereto of a plough-blade or cultivating tooth, substantially as and for the purpose shown.

3.—The curved spring E, attached at a point between its ends to a suitable frame in combination with the link D, or its equivalent, and a plough blade or cultivating tooth, substantially as and for the purpose shown.

No. 240,150.—JOHN J. McCLEN, ROYALTON, ILL., assignor of one half to ALEXANDER KREIG and JOHN PHIMSTER, same place.—*Cultivat. Teeth*.—April 12, 1881. Filed *December 13*, 1880.

Claim.—1.—A cultivator tooth in which a bull tongue or plate, A, forms one side thereof, and from which a wing, C,

having an arm, C', extends laterally and rearwardly, substantially as and for the purpose specified.

2.—In combination with the bull tongue or plate A, the wing C, having an arm, C', and adjustably secured to the plate A by the wedge-shaped block G and bolts *d* and *e*, substantially as and for the purpose specified.

No. 242,206.—ROBERT A. BURNETT, WASHINGTON COURT HOUSE, OHIO, assignor of two-thirds to AMOS THORNTON and JOSEPH D. OGLE, same place.—*Plow, &c.*.—May 31, 1881. Filed *March 30*, 1881.

Claim.—The draught beam A, with projection for stop lug and pivot, and stay G, in combination with shovel beam B, arm C, lever D, and spring F, substantially as and for the purpose set forth.

No. 242,300.—WILLIAM W. STEER, PETERSBURG VA.—*Cult. or P. &c.*.—May 31, 1881. Filed *April 7*, 1881.

Claim.—The combination, with a cultivator tooth, having a tubular shank and an angular-shaped bearing and a fastening bolt extending through said tubular or hollow shank, of two serrated disks located on the tubular shank between the upper end of the cultivator tooth and frame, one of said disks provided with a lug which extends into the frame, and the other with an angular-shaped opening which fits the angular-shaped bearing on the lower portion of the tubular shank, substantially as set forth.

	<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>
Adams, H. A.	750	218	Bartond, T. F. and Sames,		
Adams, J.	751	218	P.	650	100
Adams, J. A.	840	235	Bartond, T. F. and Sames, P.	672	103
Addison, W. F.	851	245	" " " " " " "	(R) 672	103
Albrecht, W.	827	235	" " " " " " "	(R) 672	104
Alexander, I. T. D.	500	173	Becker, E. P.	828	235
Alky, J. A.	703	193	Billings, D. S.	582	100
Allison, A. H.	974	104	Bird, J. C.	682	107
" " "	(R) 905	104	Bird, C.	747	217
Allison, A. H.	602	207	Birdsall, F. M.	601	100
Allison, A. H.	712	209	Birch, A. M.	600	175
Alvord, C.	710	208	Black, A. M.	652	100
Alvord, C.	740	217	Blanser, N. G.	762	218
Ament, W. D.	952	182	Blanser, N. G.	791	227
Ament, W. D.	613	185	Bloodgett, W. W. and Suits,		
Anderson, A. P. and Ed-			J. H.	867	248
wards, B.	602	101	Bloedel, H.	864	240
Anderson, A.	667	102	Blood, A. R. Hathaway, A.		
Anthony, I.	874	240	and Beach, V. R.	796	204
Anyan, B.	705	204	Blood, A. R. Hathaway, A.		
Anyan, B.	720	211	and Beach, V. R.		
Archer, D., Jr.	840	230	" " " " " " "	(R) 707	204
Argerbright, D.	852	243	Bohan, J.	730	214
Armstrong, J., Jr.	720	211	Booker, J. W.	615	177
Armstrong, J., Jr.	640	187	Boughton, E.	583	169
" " "	(R) 670	187	Bowers, H.	663	174
Armstrong, J., Jr.	670	195	Boyd, J. C.	690	202
Arnold, O. E.	677	190	" " "	(R) 700	203
Arvin, J. N.	603	104	Boys, H.	682	107
Arthur, J.	625	180	Bradley, C. D.	840	242
Avery, I.	603	101	Bradley, B. C.	870	240
Bachman, J. L.	780	253	Bradley, G.	775	223
Bailey, S.	155	244	Bradley, G.	792	227
Bailey, J. H.	874	250	Bradley, G.	825	235
Baker, J. M.	737	213	Brannan, P.	868	240
Baker, W. F.	742	215	Bate, B. F.	786	226
Baker, A. S. and Landon,			Baessler, G. W.	727	210
W. H.	703	220	Brewer, J.	640	184
Baltimore, J. T.	640	209	Brewer, J.	644	185
Banison, W.	630	183	Brewster, N. T. and Neher,		
Bannigan, J. C.	820	235	A. D.	835	238
Bannigan, J. C.	830	230	Biggs, H. C.	720	210
Barber, I.	605	201	Bunser, A. C.	736	213
Barber, I. Jr.	631	181	Binton, J. H.	710	208
Barber, I.	842	240	" " "	(R) 720	200
Barclay, G.	821	234	Bristol, H. C.	670	166
Barclay, J. A.	945	180	Brittain, P. F.	686	168
Barclay, A.	797	228	Bronson, G. W.	760	220
Barley, J. H.	665	101	Brooks, J. E.	606	201
Barley, J. H.	990	190	Brotton, R.	604	174
Barnes, W. G.	848	242	Browers, G. S., G. W. and		
Barnes, W. G.	830	230	F. A.	806	231
Barnett, M. and Wood, E.	604	201	Browne, R. T.	842	240
Barney, F.	628	180	Brown, G. W.	507	172
Bar, O. and Cox, F. F.	660	160	Brown, F. E.	666	175
Borsalow, H.	973	104	Brown, G. D.	765	221
Barton, L. B.	630	184	Brown, J. M.	861	240
Barton, L. B.	947	186	Brown, W. P.	813	240
Bashaw, J. N.	809	231	Brown, W. P.	770	224
Bateheller, A. F.	812	232	Brown, W. P.	802	246
Batten, J. P.	793	228	Brunner, M., Jr.	747	217
Bates, W. E.	940	184	Bryan, J.	731	212
Baumann, J. N.	607	175	Buchanan, S. A.	824	235
Baum, C. C.	650	187	Buckley, R. C.	782	225
Beam, H. and Tyson, J. D.	693	200	Bucknall, M. H.	665	191
Beam, F. C. and Welden,			Buckner, C. J.	624	170
F. N.	742	215	Bullington, M. C.	690	190
Bebel, J.	784	225	Bittington, M. C.	740	217
Bebel, J.	807	231	Burdge, H. R.	868	240
Belmont, H.	758	210	Burnham, J. and Lathrop,		
Bell, S. and Binson, G.			W. C.	666	192
W.	730	211	Bunham, J.	702	203
Bennett, A.	600	202	Butler, N.	735	213
Benson, J. S. and W.	67	198	Butner, H.	821	234
Bentley, C. A.	828	230	Byely, J. E.	661	190
Bergen, J.	664	191	Byers, H. F.	773	223
Bergon, J.	680	196	Calkins, Geo.	645	185
			Canaday, H. H.	852	243
			Canfield, J.	628	181
			Canfield, A.	687	168
			Canfield, J. and Hess, C.	656	180
			Canfield, A.	801	240
			" " " " " " "	(R) 802	230
			Canfield, A.	820	236
			Canfield, A.	854	244
			Capp, T. F.	764	221
			Carey, A.	591	171
			Cargo, H.	797	220
			Carlow, J. H.	750	229
			Carlson, A. F.	772	223
			Carlson, A. F., Shipp, C.		
			and Camron, W.	800	229
			Carrington, S. E. and C. H.	588	170
			Carr, D. E.	731	212
			Carr, H.	746	216
			Carr, H.	746	217
			Carr, H.	746	217
			Carter, C. L.	810	231
			Carter, C. L.	826	235
			Carter, C. D.	867	248
			Case, J.	621	179
			Case, J.	658	190
			Case, J.	761	220
			Cass, A. B.	607	175
			Cass, A. B.	631	182
			Castor, L. H.	627	180
			Caywood, M. & J.	725	210
			Chamberlain, H. W.	884	254
			Chapman, J.	640	186
			Chappell, I. H. and Mont-		
			gomery, J.	718	208
			Chappell, I. H.	774	223
			Children, E.	667	192
			Children, E.	676	195
			Children, F.	805	230
			Child, A. L.	745	216
			Churchill, D. and Brewer,		
			S. C.	648	186
			Churchill, D.	697	202
			Clapp, H. W.	743	215
			Clark, M. M.	620	178
			Clark, W. F.	675	195
			Clements, W.	809	231
			Clover, C. C.	856	244
			Cochran, B. C., T. W. and		
			J. M.	683	197
			Collins, D. W.	679	190
			Cole, J. H.	828	236
			Coleman, J. H.	723	209
			Cole, H.	868	249
			Collins, J.	605	174
			Colver, A. B. and Priest, J.	783	225
			Colver, A. B.	810	232
			Cone, T. S. and Potter,		
			H. S.	602	174
			Conley, J. H.	764	221
			Conely, I. W.	677	196
			Conely, J. W.	691	199
			Conner, I. W. and R. G.	762	221
			Conner, L. H.	884	254
			Conover, S. B.	670	196
			Cook, A. M.	623	170
			Cook, G. W.	708	205
			Coomod, F.	615	177
			Coomod, F.	666	201
			Coppage, W.	864	247
			Cornick, T. R.	507	172
			Cornick, T. R.	616	177
			Cory, I.	793	228
			Cotton, W. M.	798	229
			Cotton, W. M.	813	232
			Conlter, W. F., Trabuc, G.		
			F. and Lowrey, W. A.	717	208
			Conlter, W. F., G. and		
			Laney, J. A.	726	210
			Cowan, S.	617	178

	<i>Pub. Chron.</i>	<i>Pub. Chron.</i>	<i>Pub. Chron.</i>
Holladay, I. M.	701 230	Knowlton, W. A. and Rutledge, A.	854 243
Hollingsworth, J.	630 184	Knovs, J. M.	787 226
Holman, C.	957 189	Koehn, J.	683 167
Holt, P. F.	742 245	Koing, G. W.	722 209
Holly, S. B. and Jones, J.	858 241	Kynott, H. E.	978 109
Holt, B. and Finoch, W.	942 184	Kynott, H. P.	766 224
Hoover, H.	66 162	Kynott, H. P.	838 239
Homing, S. G.	641 184	Lacey, F.	624 179
Howard, R. C.	668 192	Lacey, J.	943 185
Howe, H.	641 184	Lacey, J.	958 186
Howe, H.	978 199	Lama, W. B.	797 224
Howe, H.	905 201	Lapham, S.	883 199
Howe, H.	759 219	Lampton, F. J.	878 252
Howell, W. H.	951 187	Lamphere, P. F.	897 241
Hubbard, W. P.	827 235	Lane, W. B. and Colter, W.	677 195
Hubbard, W. P. and Robinson, I. W.	834 238	Lange, G.	621 179
Hudon, J. W.	872 250	Larrabee, J. T. W.	773 223
Huff, J.	723 209	Lawrence, L. L. and Thomas, G. S.	807 231
Huffman, O.	829 236	Leach, P. E.	806 231
Hullinger, M. H.	622 179	Leber, L.	596 172
Hullinger, M. H.	955 189	Leepel, R. A. and Kidder, Z. B.	601 173
Hunt, H. C.	671 193	Leffler, F. C.	601 173
Hunt, A.	738 214	Leffler, F. C.	846 241
Hunt, A.	703 221	Leidy, J. C.	817 233
Hunt, A.	829 239	Leigh, A.	614 177
Hutchinson, G. L.	951 187	Lewis, J.	751 218
Hyers, B. S.	739 219	Lindly, J. J.	734 212
Idle, N.	581 199	Lindon, C.	634 183
Imel, J.	583 199	Little, J. R.	727 210
Ingle, J. W., and Wright, E. W.	637 183	Long, L.	587 179
Ives, E.	795 228	Long, J. M.	834 238
Jay, J. B.	728 211	Looker, W.	729 210
Jenkins, P. R.	708 222	Louth, M. F. and Howe, T. J.	686 196
Jenne, C. M.	629 181	Low, I.	756 219
Jenne, C. M.	943 185	Lucas, J. B.	794 228
Jenne, C. M.	692 200	Luffin, C. M.	808 231
Jewell, F. C.	778 219	Lund, G. H.	780 221
Joke, T.	676 195	Luney, S.	796 228
Johansen, J.	881 253	Lux, J.	799 229
Johnson, J. P.	664 204	Lynch, E. P. and Raff, H. K.	737 213
Johnson, N. S.	792 203	Lynch, E. P.	738 214
Johnson, M.	704 221	McIntuck, L. D.	721 209
Johnson, M.	852 243	McCorkell, R.	647 186
John on, J. H.	859 245	McCorkell, R.	710 205
Johnston, J. S. and Johnson, C. A.	843 249	McCommick, W.	660 166
Johnston, D. M.	890 246	McCreight, A.	712 209
Jones, I. B.	6 18	McDermott, A. S.	772 223
Jones, S.	803 239	McDermott, A. S.	839 238
Jones, T. J.	827 235	McDill, T. W.	590 172
Jones, J. H.	830 236	McDill, T. W.	599 172
Jones, J.	835 238	McDonald, J. R.	787 229
Jones, W.	858 245	McEwin, E.	644 185
Jones, J. H.	874 250	McGee, J. D. W. and W. J.	797 229
Jordan, W. H.	668 175	McGrew, P.	622 179
Jordan, H. P.	766 220	McGraw, J.	739 211
Jordan, H. P.	774 223	McKay, N.	739 213
Keck, A.	933 182	McNabb, D.	641 182
Keller, J. H. B.	744 207	McNorton, J. T.	877 252
Kerschner, D., Monger, T. S. and F. M.	854 242	McQuiston, F.	591 171
Kessler, B. F.	651 187	McQuiston, F.	591 171
Kessler, J.	674 194	Macy, I. and Watkins, J. C.	841 239
Kidlow, W.	669 192	Malton, I. B.	975 195
King, W. H. L.	647 186	Malton, I. B.	686 169
King, O. I.	871 249	Malton, I. B.	759 220
Kinyon, A.	630 181	Maner, P.	795 221
" " (R.)	630 181	Mallon, J.	715 207
Kirkman, J.	631 181	Mangas, J.	875 251
Kissell, E. M. and M. I.	801 229	Manny, A. J.	649 186
Kissell, E. M. and M. I.	822 234		
" " " (K)	822 234		
Kissell, E. M. and M. I.	835 238		
Knight, G.	669 192		
Knight, E. H.	680 199		
Manny, A. M.	779 222		
Manny, A. M.	779 222		
Manny, J. P.	788 226		
Markel, J.	662 174		
Markham, D., A. I. and P. J.	589 170		
Markham, A. S.	609 177		
Markham, A. S.	653 188		
Markham, A. S.	693 201		
Marks, G. M.	871 249		
Marsh, I.	699 199		
Marsh, W. W. and McIntyre, H.	777 224		
Martin, A.	685 198		
Martin, S.	781 225		
Martin, T. J.	724 209		
Matchet, I. F. and Smith, P. W.	792 227		
Mead, C. F. and Stevenson, G. E.	616 177		
Meeks, G.	796 228		
Megnum, C. F.	689 196		
Mehary, A.	810 233		
Meille, T.	857 244		
Mendenhall, C.	881 253		
Mettler, W.	626 186		
Mettler, W.	840 239		
Miller, G. D.	629 181		
Miller, W. D.	795 228		
Mills, J.	640 184		
Mills, J.	785 229		
Mills, J. R.	621 179		
Mills, S. G.	652 187		
Mimer, T. H. and Heavenridge, S.	655 189		
Mitchell, S. H.	639 183		
Mitchell, S. H.	619 178		
Mitchell, S. H.	759 218		
Mitchell, J. M.	858 244		
Moody, W. A.	687 198		
Moon, W. S.	847 242		
Moon, W. S.	805 247		
Moore, I. B.	695 191		
Moore, G.	687 198		
Moore, G.	779 223		
Moore, G.	859 245		
Morgan, B. S.	587 179		
Morse, J. M.	692 200		
Mumford, J. and Wilson, J. W.	662 174		
Munger, W. P.	804 239		
Murray, W. H.	775 223		
Musscater, I. S.	883 253		
Mustard, J. E.	859 242		
Myers, A. H.	769 221		
Nash, C.	851 243		
Needham, F. M.	832 237		
Nett, J. H.	594 172		
Nesler, O. L.	772 223		
Nelson, E.	686 198		
Niedtner, C.	878 252		
Noble, D. J.	656 189		
" " " (R.)	656 189		
Nolde, D. J.	660 192		
Nolling, A. and C. A.	863 216		
Norman, D.	777 224		
Norton, C. P.	674 194		
Oakill, A. T.	581 199		
Ogden, H. and Taylor, G.	586 170		
Ogden, H.	595 172		
Oiler, W. H.	621 179		
Olson, O.	801 245		
Oulands, J.	811 232		
Oshon, J. D.	639 181		
Ostom, H. W.	759 218		
Packard, L.	569 171		
" " (R.)	569 171		
Packer, H.	816 233		

<i>Plate Claim</i>		<i>Plate Claim</i>		<i>Plate Claim</i>	
Padon, J. S.	668 175	Keynerson, J. H.	795 264	Schofield, S. C.	740 214
Page, J. G.	645 185	Reynolds, E. D. and O. B.	790 268	Schröder, A.	813 232
Paine, C. J.	715 207	Rhanny, J. H.	872 250	Schroeder, J.	691 200
Palmer, E. A.	630 183	" " (R.)	873 250	" " (R.)	691 200
Palmer, E. A.	688 199	Rhinehart, W. C. and Gas-		Seabrook, C. J. and	
Palmer, E. A.	722 209	ton, R.	718 268	Hine H.	815 233
Paln, J. H.	840 239	Rhodes, W. and Porter, M.	639 184	Schwing, T. C.	771 222
Pangborn, C. S. and Beers,		Rice, F. H.	654 188	Scely, W.	591 171
G. W.	657 189	Rich, C. and Nesler, O. L.	700 203	Segr, E. S. and Omis-	
Parker, H.	843 240	Richardson, G. R. and Be-		ton, J. C.	670 193
Parks, R. B. and J. R.	673 194	hel, J.	788 226	Seiben, G. and J.	713 207
Parks, R. B. and J. R.	732 212	Richardson, J.	834 238	Sexton, J. B.	700 203
Parlin, W. H.	688 198	Rickard, J. C.	703 203	Sexton, J. B.	728 211
Parmele, E. and Patterson,		Riddle, W. N.	824 235	Sexton, J. B.	757 219
R. N.	660 190	Rider, J. J.	629 181	Seymour, W. H. and L.	697 172
Pattee, D.	845 241	Robbins, R. B.	725 210	Shaw, J.	585 169
Patterson, J.	581 199	Robbins, R. B.	743 215	Shaw, A.	732 212
Patterson, E. C.	934 182	Robbins, R. B.	702 220	Sherrill, J.	782 225
Patterson, L. M.	650 189	Robbins, R. B.	700 227	Sherrill, J.	836 238
Paul, D. H.	733 212	" " (R.)	700 227	Sherwood, L.	632 182
Paul, J. T.	879 251	Robbins, R. B.	833 237	Sherwood, T. N.	652 188
Peabody, S. G.	607 202	Robbins, R. B.	800 245	Sherwood, A. T.	780 224
Peabody, S. G.	717 208	Robbins, R. B.	882 253	Short, T.	634 183
Pearl, J. C.	740 214	Roberts, A. A. and Da-		Shupe, E.	811 232
Perce, J. H.	879 249	vis, B.	586 170	Simons, A. D.	808 231
Pelton, L. D. and Barrow,		Roberts, C.	609 175	Simpson, M. P. and Ella-	
J.	683 197	Roberts, C.	610 170	cott, J. P.	780 227
Pendley, W.	805 248	Roberts, C.	610 170	Sintz, C.	754 218
Pendley, W. and Moss, A.	870 249	Roberts, C.	933 182	Sisson, W. A.	686 198
Pendley, W. and Moss, A.	877 252	Roberts, C.	933 182	Sisson, J. E.	792 227
Perkins, H. H.	787 227	Roberts, C.	942 185	Skaggs, N. J. and Truc,	
Perkins, H. H.	826 234	Roberts, C. S.	679 193	L. W.	708 229
Perry, G.	658 180	Robertson, H. H. and Carr,		Skelly, J. H.	799 205
Phifer, E.	641 184	C. G.	597 172	Skuf, M. H.	619 178
Phifer, E.	681 166	Robertson, W. J. and		Skinner, J. B.	652 188
Phifer, E.	707 205	Knight, P.	835 238	Skinner, S. T.	603 202
Philler, W. W.	670 193	Robertson, W. J.	826 235	Skinner, J. B.	744 216
Pierce, W.	834 238	Robinson, L.	585 119	Skinner, J. B.	747 217
Pierpont, J.	806 248	Robinson, J.	731 212	Skinner, J. B.	778 224
Pigg, H. L.	770 223	Robinson, J. H.	738 214	Sloan, S.	625 180
Pillard, J. L.	768 229	Robinson, W. R.	779 224	Slocumb, S. W. and Phil-	
Ponery, S. G.	807 248	Rockafellow, S.	617 178	lips, E.	625 180
Pond, O. M.	763 221	Rogers, D. B.	582 169	Slosson, E. and E. C.	808 248
Pond, O. M.	786 226	Rohrer, A. P., C. F. and		Smalley, J.	589 171
Poole, J. F.	832 237	Dlose, J. H.	771 223	Smith, Geo.	593 171
Porter, H. S.	604 191	Romann, A. and Peterka,		Smith, J. R.	594 172
Potts, T. J. and Vost, P. C.	638 184	J.	683 168	" " (R.)	594 172
Powell, E. R.	757 219	Roof, F. P.	582 160	Smith, N. E.	617 178
Powell, E. R.	874 250	Root, J.	753 218	Smith, H. B.	648 178
Preston, H.	709 205	Root, B. M.	800 248	" " (R.)	648 178
Price, J.	666 192	Rose, J. J.	736 213	Smith, J. D.	625 180
Price, G. W.	974 194	Rose, H. M.	790 220	Smith, H. B.	661 190
Prosser, T. T., Darling,		Rowland, J. E.	681 197	Smith, P. W.	688 198
M. C. and K. A.	632 182	Rue, J.	775 223	Smith, J. A.	741 215
Prout, H. N.	814 232	Ruffner, S.	804 229	Smith, P. E.	759 220
Pugh, G. W. and Beard,		Russell, E. W. and J. N.	823 234	Smithson, F. L.	584 169
W. H.	654 188	Russell, P. S.	856 244	Snook, W.	733 212
Purdy, S.	822 234	Rutledge, A.	816 233	Spun, J.	814 232
Pusey, F. W.	848 242	Sabin, S. A.	739 214	Spangler, J. W.	795 221
Rabb, J. W.	795 228	St. John, G. B.	944 185	Spangler, J. W.	774 223
Rand, N. A.	708 205	St. John, G. B.	719 208	Sparks, A. J.	620 179
Rankin, J. H.	694 201	St. John, G. B.	748 217	Sparks, A. E.	718 208
Raper, W. B.	745 216	St. John, W. W.	648 189	Spagnue, G.	686 196
" " (R.)	745 216	St. John, W. W.	674 193	Spague, P.	739 211
Rate, E. F.	714 207	Sandelin, N. F.	773 223	Springstead, R. H.	619 178
Ryck, S. G.	743 215	Sandelin, N. F.	773 223	Stallord, D. S.	600 173
Rydmond, D. R.	841 241	Sandlers, A.	857 244	" " (R.)	600 173
Redlinger, M.	684 197	Sandford, R.	718 208	Stafford, D. S.	612 179
Reed, J. J.	671 193	Sattley, M.	761 220	Stafford, D. S.	689 199
Reed, S. I.	709 205	Savage, W. G.	941 184	Stafford, J.	805 230
Reed, T. M.	755 219	Savill, J.	654 188	Stalcup, W. P.	824 235
Reese, E.	766 221	Sawyer, A. and Barnes H.	605 175	Stanton, S. R.	849 242
Reichan, J.	711 206	Sawyers, E. H.	613 177	Stanton, S. R.	874 250
Reid, C. E.	748 217	Sawyers, E. H.	633 182	Stark, A.	667 162
Renny, E. W.	684 197	Schael, G. H.	618 178	Stauffer, A.	869 249
Renny, E. W. and N. T.	814 232	Schaelen, J. and Heitz-		Staver, G. W.	847 241
Renny, N. T.	855 244	mu, J.	719 208	Staver, G. W.	853 243
Reynerson, J. H.	678 196	Schenck, G. W.	813 232		

	<i>Pat. Claim</i>		<i>Pat. Claim</i>		<i>Pat. Claim</i>
Stearns, C. C.	016 177	Totton, P. R.	715 207	Wen, W. S., Jr.	635 183
Stevens, T. O.	658 162	Townsend, J.	649 186	" " "	(R) 635 183
Stewart, W. E.	722 209	Travis, D. W.	721 209	Welch, S. G.	623 179
Stummell, J.	853 243	Travis, D. W.	719 214	Wells, W. L.	732 212
Stockton, G. W.	682 197	Travis, V. B.	862 249	Weldon, F. N.	702 220
Stoll, M.	770 224	Trott, J. H.	795 228	Wellman, D. L.	847 241
Stone, O.	769 204	Lowbridge, J. F.	793 221	Wells, C. C.	653 188
Strom, G.	837 238	True, T. W.	809 231	Wells, C.	724 209
Stout, I. and S.	049 178	Tucker, A. G.	627 180	Wells, P. F.	789 227
Stover, A. J.	655 188	Umley, M.	585 169	Welty, L.	799 205
Stover, D. C.	693 191	Tunney, J. B.	601 173	Wettenberger, L.	823 235
Stover, D. C.	755 219	Tunney, J. B.	604 174	Wettenberger, L. and	
Stover, D. C.	826 235	Tuttle, S. D. and Gans,		Amis, G. W.	837 239
Stowe, J. G.	779 223	J. H.	602 200	Werts, N.	749 218
Stowe, J. G.	782 225	Tyson, J. W.	977 199	West, P. L.	679 196
Strickland, L.	653 188	Uhl, C. A.	677 175	Whedden, E. P.	658 189
Strong, W. H.	793 228	Unthank, D.	864 247	White, E. J.	666 175
Stroud, L. C.	713 207	" " "	(R) 864 247	Whitney, J. M.	589 179
Studer, P.	831 237	Unthank, D.	883 254	Whitehall, N.	584 169
Sturges, J. S.	653 188	Uter, M. L.	841 239	Whitehall, N.	586 170
Sturkey, W. B.	829 230	Uter, I.	862 246	Whitehall, N.	599 171
Sweet, M.	686 169	Van Buren, J.	877 252	Whitehall, N.	707 222
Swickard, J. W.	785 226	Van Camp, W. A.	818 233	Wiard, E.	815 232
Swickard, J. W.	876 251	Vandegrift, T. F. and W.	812 232	Widman, J.	699 202
Tabor, B. D.	794 228	Vandegrift, T. F. and W.	863 230	Wilcox, E.	629 179
Talifero, C. W.	609 170	Van Meter, H.	739 211	Wiles, T. and McGinnis, J.	632 182
Talifero, C. W.	662 191	Verharen, F. T.	853 243	Wilkinson, L. H.	734 211
Tanner, D. C.	821 235	Viars, J. A.	768 222	Wilkinson, G.	813 232
Teller, D. C.	654 188	Vowles, J.	592 171	Willard, C.	676 195
Theide, C.	787 226	Vowles, J.	602 174	Willerton, W.	786 226
Thomas, J. H. and Mast,		Vowles, J.	719 208	Williams, A.	626 180
P. P.	638 184	Wadsworth, H.	734 212	Willard, W.	588 170
Thomas, J. H., Mast, P. P.		Waggoner, G.	783 225	Wilson, W. L.	599 171
and Harding, T.	649 187	Wagner, D. S.	845 241	Wilson, J. C.	595 172
Thomas, J. H. and Mast,		Wagner, J. Jr.	859 245	Wilson, J.	684 197
P. P.	651 187	Walker, L. B.	646 186	Wilson, N.	733 212
Thomson, P. W.	623 179	Walker, E. and Weed, A.		Wilson, J. A.	745 216
Thompson, W. L.	780 224	M.	693 201	Wilson, W. C.	769 222
Thompson, A.	777 224	Walker, E. and Platt, J. J.	737 213	Wing, I.	683 197
Thompson, L. P.	819 233	Walker, E. and Platt, J. J.	741 215	Wolfe, A. K.	832 237
Thornton, S. C.	716 207	Walker, L.	794 221	Wolf, I.	766 204
Thornton, S. C.	754 218	Wallis, T. R.	827 235	Woodward, J. A., S. S.	
Throp, J. A. and Cox, J.	613 177	Ward, P. J.	845 241	and Mason, T.	712 206
Tilden, H.	778 224	Warren, G. W.	693 191	" " "	(R) 712 206
Tinkham, B.	598 172	Waterman, L. B.	606 175	Woodward, J. A., S. S.,	
" " "	(R) 598 172	Waterman, L. B.	610 176	and Mason, T.	733 212
" " "	(R) 599 173	Waterman, L. B.	627 180	Wright, E. A.	805 247
Tipton, L. K.	779 224	Watles, H. J.	728 211	Wright, E. A.	882 253
Tipton, L. K.	886 253	Watles, H. J.	735 213	Wood, J. A.	848 242
Tobias, J. C. and Bates,		Watles, H. J.	744 219	Young, W. B.	688 199
W. N.	724 209	Way, S.	717 208	Young, B. F.	660 190
Tomlinson, J. H.	769 222	Webster, H. H.	645 185	Young, J.	847 241
Tompkins, A.	767 222	Weems, T. P. S.	846 241	Young, B. F.	756 219
Tostevin, J. P.	617 178	Weir, W. S., Jr.	603 174	Young, B. F.	725 210
Tostevin, J. P.	646 186	Weir, W. S., Jr.	611 176	Young, S. L.	785 226
		" " "	(R) 612 176	Zeller, J. P.	734 212

No. 4,459.—NATHAN IDE, SHELBY, N. Y.—*Wheel Cultivators*.—April 18, 1846.

Claim.—The arrangement of the teeth in two rows, in combination with a pair of wheels, the leads of which are in a line mid-way between the points of the two rows of teeth, substantially as described.

No. 5,075.—J. PATTERSON, MEDINA, N. Y.—*Wheel Cultivators*.—April 17, 1847.

Claim.—The arrangement of the cultivator teeth as herein set forth, when such arrangement is combined with a wheel cultivator, in which the position of the wheels with reference to the teeth is such as herein set forth.

No. 5,195.—A. T. ODELL, ROYALTON, N. Y.—*Wheel Cultivators*.—July 17, 1847.

Claim.—1.—The combination of two double-jointed hinges, and wheel *a*, wing frames *I, J*, containing the side cultivators *K*, with the central frame *a, b, c*, containing the third wheel *z*, and central cultivator *R*, constructed, arranged and operated in such manner that undulatory land may be cultivated in uniform depths of furrow, without straining or breaking the frames, the cultivators being made to accommodate themselves to the hills and hollows, and other inequalities of the land, by means of the flexible central joints or hinges *m, n*, attached to the aforesaid central frame *a, b, c*.

2.—Combining a third wheel *z*, with two side wheels *z*, *z*, in a jointed flexible or folding cultivator frame, made in the manner above described or otherwise made substantially the same.

No. 5,257.—E. H. HARRIS and J. CLEGGHORN, CASS CO., GA.—*Wheel Cultivators*.—August 21, 1847.

Claim.—The combination of the handles with the axle and hoe frame as described, the handles and hoe frame being independently attached to the axle which forms the fulcrum, and the relative position of the handles and hoe frame being adjustable, the handles are converted into adjustable levers for elevating and depressing the hoes.

No. 5,429.—D. S. BILLINGS, CONNEAUT, PA.—*Wheel Cultivators*.—February 1, 1848.

Claim.—The elliptic curve on the outside of wheels and the use of a tooth or teeth on each curve opposite the hubs in the combination with the cultivator frame as described.

No. 6,037.—DAVID B. ROGERS, SENECA FALLS, N. Y.—*Wheel Cultivators*.—January 16, 1849.

Claim.—1.—The mode of raising and lowering the frame *a*, containing the cultivator teeth *m*, for the purpose of gauging the machine for deep or shallow ploughing, or for moving it from place to place, without causing the teeth to touch the surface of the earth, by means of the before-described combination and arrangement of the crank axle-tree *D*, cogged wheel *F*, cogged segment *H*, short axle *G*, lever *I*, and perforated holding plate *L*, employed in combination with the frame *A*, of cultivator teeth *M*, and sustaining wheels *W, W*.

2.—The combination and arrangement of the lifting and sustaining plates *N*, made as described, in combination with the transverse beams as described, to which said plates are secured.

No. 8,348.—G. W. C. GILLESPIE, BERTINGTON, IOWA.—*Wheel Cultivators*.—Sept. 6, 1851.

Claim.—Hanging one or both of the axles of the wheels to the carriages of cultivator, gangs of ploughs, seed drills, &c., to the frame of the carriage, so as to vibrate the axle or axles, or suffer them to vibrate and keep them at right angles to the motion of the ploughs when moving in a direct line, and when turning the ploughs, to keep the axle or axles in the direction of the radius of the circle, or nearly parallel with the radius of the circle, formed by the track of the wheel turning upon said axle, when the ploughs constituting the gang are placed diagonally one behind the other in succession, and the wheels to the carriage of the same are also placed diagonally, one behind the other.

No. 9,003.—F. P. ROOT, SWEDEEN, N. Y.—*Wheel Cultivators*.—June 8, 1852.

I am fully aware that there are other modes of raising and lowering the frame containing the teeth of cultivators in use, particularly that patented to D. B. Rogers, Jan. 10, 1849, which consists mainly of a combination of a crank

axle-tree extending across the centre of the frame, on the ends or cranks whereof are mounted the sustaining wheels. While I acknowledge the similarity of the lifting action of the cranks of the axle-tree to that of the pivoted segment levers used by me, and which I disclaim, yet I am not aware that Mr. Rogers is entitled to claim all means for effecting the same result, and I conceive that my improvements differ in material points from his, and which form the subject of my claim, mounting the carrying wheels upon axles *F*, only when said axles are made to project from pivoted segment-shape levers at each side of the frame, in the manner and for the purpose specified.

No. 10,107.—SENECA LEPIAM, SALEM, OHIO.—*Wheel Cultivators*.—November 1, 1853.

Claim.—The combination and arrangements of the parts, consisting of the lever *M*, and its attachment to the brace *K*, and the connection of the tongue *a*, to the lever by the staple *N*; and this in its application to the purpose of changing the direction of this and other machines.

No. 10,407.—E. BOUGHTON, EAST BLOOMFIELD, N. Y.—*Wheel Cultivators*.—January 31, 1854.

I do not claim any part of the raising and depressing devices; nor do I claim the knife or the wheels separately.

Claim.—The combination of the knife with the wheels for the purpose of cutting up the ground and destroying thistles or any other weeds, plants or grass.

No. 12,163.—JOHN IMEL, LIBERTY, IND.—*Wheel Cultivators*.—January 2, 1855.

Claim.—The curved and adjustable guard or fender, hinged as described, to a tongue supported upon running gear.

No. 12,653.—F. L. SMITHSON, ME KLENSBURG, VA.—*Wheel Cultivators*.—April 3, 1855.

Claim.—The combination of the harrow teeth and cylinder substantially in the manner and for the purpose set forth.

No. 13,191.—N. WHITEHALL, ROB ROY, IND.—*Wheel Cultivators*.—July 3, 1855.

Disclaiming all the devices separately considered.

Claim.—The arrangement and connection of the handles *O, O*, arms *M, M*, plough-beams *C, C*, and seat *W*, for the purpose of operating ploughs, in the manner and for the purpose set forth.

No. 14,715.—GEORGE ESTERLY, HEART PRAIRIE, WIS.—*Wheel Cultivators*.—April 22, 1856.

Claim.—The hanging of two or more ploughs to a supporting beam or axle *H*, by swivelling joints at each of the ends of their drag bars *G, G*, so that said ploughs may be moved either way laterally without affecting the axle, and still maintain their parallelism, and this I claim whether the stock to which the ploughs are connected be adjustable in the drag bars or the ploughs be adjustable in the stock or otherwise.

No. 1,605.—H. D. GANSE, FREEHOLD, N. J.—*Wheel Cultivators*.—Aug. 26, 1856.

Claim.—So constructing and arranging my cultivator by means of the clevis *x*, in the leams *M*, and brace *n*, substantially as described, that in combination with the seat *w* the ploughs may be guided by the driver's feet, in the manner set forth.

No. 15,810.—L. ROBINSON, WEST CAMBRIDGE, MASS.—*Wheel Cultivators*.—Sept. 30, 1856.

Claim.—The arrangement consisting of the vertical cutters *G, G*, *J, K, K*, horizontal cutter *H*, mould-boards *L, L*, and seed droppers *D*, said parts being placed in the relation to each other shown, substantially as and for the purpose herein set forth.

No. 16,216.—M. TURLEY, GALESBURG, ILL.—*Wheel Cultivators*.—Dec. 9, 1856.

Claim.—The arrangement of the standard, mould board and side cutter *K*, with regard to each other, and to the other parts of the plough as that they will operate as herein set forth and explained.

No. 16,401.—J. SHAW, RICHLAND, GA.—*Wheel Cultivators*.—Jan. 13, 1857.

Claim.—In combination with the hoes *F, E*, having both a vertical and lateral adjustment, the shoes *H, H*, above them, and so adjustable on or with said hoes as to serve to

throw the earth towards or from the plants, as may be required, the whole being for the purposes set forth.

No. 17,301.—A. A. ROBERTS and E. DAVIS, LA GRANGE, GA.—*Wheel Cultivator*,—May 20, 1857.

Claim.—In combination with the frame A, and brake e, as described, the movable frame B, B', armed with hoes a, and harrow c, c, the teeth of said harrow being so arranged as to cultivate between the bunches of cotton, and at the same time clear the standing cotton-plants from clods in the manner set forth.

No. 17,001.—H. OGBORN and G. TAYLOR, RICHMOND, INDIANASSIGNORS to H. Ogborn.—*Wheel Cultivator*,—July 28, 1857.

We do not claim the combination of a crank axle-tree extending across the centre of the frame, on the ends or cranks whereof are mounted the sustaining wheels, the same being for the purpose of raising and lowering the frame of the cultivator as shown and described in D. B. Rogers, patent January 1840.

Claim.—The combination of the plough beams G, G', with the eccentric axles F, in the manner and for the purposes set forth.

No. 18,533.—N. WHITEHALL, ROY ROY, IND., assignor to self and A. L. Whitehall, same place.—*Wheel Cultivator*,—Oct. 27, 1857.

Claim.—Providing a double cultivator, the middle of which is elevated to pass over the corn, with a compound lever suspended upon three points, and arranged as described for the purpose set forth.

No. 18,587.—DAVID E. HALL, ABERDEEN, ILL.—*Wheel Cultivator*,—Nov. 10, 1857.

Claim.—1.—The attachment of the shares P, P', to the bars I, I', which have their back ends pivoted in the pendants H, H', and their front ends fitted in the pendant slotted bars J, J', which are attached to the sliding bar K; the bar K being operated by the treadles M, to give the lateral movement to the shares, and the bars I, I', used vertically by the treadles N to give them their vertical movement as described.

2.—The cutters O, pivoted to the bars o, and over the plates K, and connected to the rods I, the whole being arranged as shown for the purpose specified.

No. 18,840.—DAVID P. DAGGETT, PALMYRA, N. Y.—*Wheel Cultivator*,—December 15, 1857.

Claim.—The peculiar construction and arrangement of of parts whereby the frame of the cultivators may be elevated or depressed in relation to the surface of the soil, either parallel to the plane of the surface or inclined thereto forward or back at any desired angle by means of the lever beam D, swivel wheel I, swivel clevis H, and adjustable wheels C, combined, arranged and operating in the manner and for the purposes specified.

No. 21,128.—N. W. FRASER and A. J. McLELLAN, LAVERGIE, IND.—*Wheel Cultivator*,—August 10, 1858.

Claim.—The arrangement of the fender D, attached to the shovel standard P, the shovels E, and the wheels A, on the vertical shaft a, the whole being arranged for joint operation as described and set forth.

No. 21,128.—ISRAEL LOONE, FERRE HAVRE, IND.—*Wheel Cultivator*,—Sept. 16, 1858.

Claim.—The employment of two frames A, A', which are furnished with harrow teeth a, at their forward ends, and cultivator teeth B, at their rear ends and connected by arch braces D, D', in combination with the propelling wheels E, arranged on short crank axles the tongue G, arranged on top of the arch braces, and with the adjusting arrangements, substantially as and for the purposes set forth.

No. 21,000.—B. S. MORGAN, DEETH, IOWA.—*Wheel Cultivator*,—Oct. 15, 1858.

Claim.—1.—The arrangement of the bars E, with share stocks F, attached; the levers I, with links J, fitted in the triangular shaped openings K, in said levers, and attached to the counter bars K, which are connected to the levers N, substantially as and for the purposes set forth.

2.—In combination with the above, the brace-rods H, attached to the share stocks F, by means of springs a, and fitted in the recesses b, in the stocks, and arranged substantially as and for the purposes set forth.

No. 21,130.—S. E. and C. H. CARRINGTON, WEXMOUTH, OHIO.—*Wheel Cultivator*,—October 12, 1858.

Claim.—1.—The arrangement and combination of the side wings E, E', and bars H, H', with each other and in relation to the frame A, substantially in the manner and for the purpose specified.

2.—Also the mode of actuating and adjusting the hoes K, by means of the wheels D, D', struts b, h, bar L, lever M, and plate N, arranged in combination, and acting upon the handles J, of the hoes substantially set forth.

No. 22,215.—W. WILMONT, WILMINGTON, DEL.—*Wheel Cultivator*,—November 30, 1858.

Claim.—The arrangement and combination of the bars G, G', G', bars H, H', adjustable weights I, chains J, bars L, and handles B, as and for the purposes herein shown and described.

No. 22,630.—JESSE CUNNINGHAM, MARSHALL, MO.—*Cultivator*,—January 18, 1859.

I do not claim the reversible bar J, with a marker or wheel attached, for such device has been previously used.

Claim.—Attaching the furrow shares H to a swinging frame formed of the shaft E, bar F, and arm b, placed in a mounted frame A, in combination with the batons C, C', provided with step-like projections d for regulating or adjusting the height or inclination of said share-frame, and consequently the depth of the furrows, substantially as described.

No. 22,850.—JAMES DUNDAS, LITTLE ROCK, ILL.—*Cultivator*,—February 8, 1859.

Claim.—The arrangement of the half-shovels n, n', in connection with the bars h, h' and z, to be moved to the right or left at pleasure of the operator.

No. 23,800.—JAMES DUNDAS, NIWAHA COUNTY, NEBRASKA.—*Cultivator*,—February 8, 1859.—Re-issued October 10, 1860.

Claim.—1.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the two wheels, frame, and a series of ploughs arranged in two gangs with a central space between the gangs, so as to till the soil simultaneously at both sides of a single row of plants which the machine straddles; all of these operating in the combination substantially as set forth.

2.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the two wheels, frame, the series of ploughs arranged in two gangs as aforesaid, and seat for the driver, all of these operating in the combination substantially as set forth.

3.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the two wheels, frame, the series of ploughs arranged in two gangs as aforesaid, and movable stocks, all operating in the combination so that while the wheels limit the penetration of the ploughs, the inner ploughs of the two gangs may be moved laterally to avoid the plants that are out of line in the row, substantially as set forth.

4.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the two wheels, frame, the series of ploughs arranged in two gangs as aforesaid, movable stocks, as aforesaid, and driver's seat; all operating in the combination substantially as set forth.

5.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the two wheels, frame, the series of ploughs arranged in two gangs as aforesaid, driver's seat and a connection between the movable ploughs, all operating in the combination substantially as set forth.

6.—The combination in a straddle-row cultivator of the following instrumentalities, viz: the wheels, frame, series of ploughs arranged in two gangs as aforesaid, and mechanism to permit the ploughs to be raised relatively to the treads of the wheels, all constructed and operating in the combination substantially as set forth.

No. 23,135.—JOHN M. WHITNEY, BELTON, MASS.—*Cultivator*,—March 1, 1859.

Claim.—The arrangement of the teeth a, adjustable mould-boards, D, frames A, A', and cross-beam B, with the branched swivel bar L, and frame H, the whole being constructed as and for the purpose described.

No. 23,182.—DANIEL MARKHAM, A. S. MARK-

HALL, and DAVID FREDERICK, MOSSBORO, ILL.—*Cultivators*.—*March 8, 1850.*

Claim.—The frame A, formed of two parts *a a*, connected by the traverse bars *b*, and provided with the sliding or adjustable frames C, C, with the bars E, and ploughs F, attached, substantially as and for the purpose set forth.

No. 23,402.—JOHN SMALLEY, BOSTON BROOK, N. J.—*Cultivators*.—*May 20, 1850.*

I do not claim, broadly, hanging the main wheels of a cultivator to cranked axles for the purpose of deciding the depth to which the teeth shall penetrate the ground, as such a device has been heretofore used in cultivators.

Nor do I claim a central lever for operating the cranked axle or the plough formed teeth, or any other part of the machine, separately.

Claim.—The frame, its adjustable pole, its teeth *m m*, and detaching teeth *p p*, the cranked shaft C, its central lever E, and driver's seat G, when the said seat is so situated as regards the handle that the driver can operate the latter without moving from the seat, and when all the parts are arranged in respect to each other, substantially as set forth.

No. 24,071.—NICHOLAS WHITEHALL, NEWTON, IND.—*Cultivators*.—*May 17, 1850.*

Claim.—The combination of the struts *a a*, with the notched handles X X, eye bolts D, and hooks F F, by which I am enabled to raise and secure the plough at any desired height, substantially as set forth.

No. 24,471.—W. L. WILSON, FRANKLIN, IND.—*Cultivators*.—*May 24, 1850.*

Claim.—The arrangement of axles A and E, wheel's B, levers C, C, shanks D D, ploughs *a a*, cross piece I, guides F F, and arms *d d*, for operating conjointly in a manner and for the purpose set forth.

No. 25,037.—LEONARD PACKARD, GALESBURG, ILL.—*Cultivators*.—*August 9, 1850.*

Claim.—The arrangement of the beams P, the irons Z Z, and the projection X, on the ends of the beams, the adjustable arms S, braces W, blades T, lifting rods I, adjusting bar 3, levers 5, fulcrum 6, and hinged pole 1, as described, for the purpose set forth.

No. 4,474.—LEONARD PACKARD, GALESBURG, ILL.—*Cultivators*.—*25,037.*—*August 9, 1850.*—*Reissued July 18, 1851.*

Claim.—1.—The plates *a* and longitudinally slotted plates *b*, secured to the forward ends of the beams D, and pivoted by rods F to the kn E so as to permit of the ploughs being moved in a vertical or lateral direction by lever G, as and for the purposes set forth.

2.—The interchangeable standards M, adjustably secured to the beams D, and braces X, for the purposes set forth.

3.—The combination of the pivoted beams D and adjustable standards M with plates *a b*, and rods F, bar E and lever G, substantially as and for the purpose set forth.

No. 25,764.—WILLIAM SEELY, CHILLICOTHE, ILL.—*Cultivators*.—*October 11, 1850.*

Claim.—The arrangement of the post D, arms E, cross bar F, lever H, wheels W, shovels B and C, chains R and Q, arms U, cross bar K, vertical lever V and V', rods Z, whiffletree X, and draft hook A', the whole being constructed and combined in the manner and for the purpose described.

No. 25,843.—THOMAS McQUISTON, MORNING SUN, OHIO.—*Cultivators*.—*October 18, 1850.*

Claim.—The described arrangement of the elevated axle D, beams A A', brackets C C', and rods B, B', the whole being constructed in the manner and for the purposes set forth.

No. 4,383.—THOMAS McQUISTON, MORNING SUN, OHIO.—*Cultivators*.—*October 18, 1850.*—*Reissued May 16, 1851.*

Claim.—1.—The combination, in a walking straddle row cultivator, of the following instrumentalities, viz: Two wheels E, tongue D, axle B, and two plough-beams A A, each beam carrying a handle and one or more shovels or ploughs, and independently connected or hinged by brackets C to the axle, so as to permit of their being raised or lowered independently or moved laterally by the handle, as set forth.

2.—The combination in a walking straddle row cultivator, of the following instrumentalities, viz: Two wheels E, tongue D, axle B, two plough beams, hinged as aforesaid,

and rear connecting-shackles or links F, all operating on combination, substantially as and for the purpose set forth.

3.—The plates H, interposed between the shovels G, and standards *a'* for the purpose set forth.

No. 27,100.—ARNER CAREY, ROME, GA.—*Cultivators*.—*February 14, 1850.*

Claim.—The described arrangement of the ploughs H, beams G, and perforated rails D, the whole being combined and constructed in the manner and for the purposes set forth.

No. 27,174.—JOSEPH VOWELS, NEW HUDSON, MICH.—*Cultivators*.—*February 14, 1850.*

Claim.—1.—In combination with the series of hoes or ploughs I, L, the pair of front hoes or ploughs N X, constructed, arranged, and made adjustable in the manner and for the purposes herein described and represented.

2.—The peculiar construction, combination, and arrangement of the frame, the pulleys, and the locking of the standards to the frame, substantially as described and for the purposes set forth.

No. 27,627.—CYRUS M. HALL, and DAVID E. HALL, UNIONTOWNS, ILL.—*Cultivators*.—*March 27, 1850.*

Claim.—The general arrangement and combination of the revolving coupler with knife-edged arms, the shovels A made with flakes or burrs, the beams B B, the cross bar X, straps S, rollers *r r*, treadles P P, and the pin or pivot on which the beam B hangs, all connected as described and for the purpose set forth.

No. 5,904.—CYRUS M. HALL, and DAVID E. HALL, UNIONTOWNS, ILL.; said DAVID E. HALL, assignor to said CYRUS M. HALL.—*Cultivators*.—*27,627.*—*March 27, 1850.*—*Reissued October 14, 1853.*—*Application filed January 5, 1852.*

Claim.—1.—In combination with the barbed share A, the revolving cutting-wheel or shield C, the periphery and arms of which have sharp cutting-edges, constructed and arranged substantially as shown and described, for the purpose set forth.

2.—The combination of the hitch-bolt K, the bars *m* and *n*, the bolt *e*, and the axle-tree Y, and a suitable device for holding and operating the same as co-acting devices for rendering the point ends of the beam adjustable, both laterally and vertically independent of the motion of their rear ends and independent of each other, and for equalizing the draft of the machine, each constructed and all arranged substantially in the manner described and set forth.

3.—The combination of the sliding bar *x*, provided with supports upon the rear face of the axle-tree Y and the pendulous posts I, L, as a device for communicating lateral motion to the ends of the plough beams, and of allowing and guiding vertical motion thereof, independent of any motion of the front ends of the same, constructed and arranged substantially in the manner and for the purpose set forth.

4.—The combination of the front sliding bar *r*, the front cross-piece P', the bars *m* and *n*, hitch-bolt K, bolt *e*, the levers *a a* mounted and pivoted to the front ends of the beams, as shown by the link *z*, as co-acting devices for moving the front ends of the beams laterally, and of giving them vertical motion either together or independently of each other, and independently of the motion of the aft ends of the beams, each constructed and all arranged substantially in the manner and for the purpose described and set forth.

No. 27,932.—SAMUEL HOAKE, FREDERICK, MD.—*Cultivators*.—*March 27, 1850.*—*Antedated March 6, 1850.*

Claim.—1.—The combination of the jointed shovel shaft B, slatted shovels T T', drag bars D and *d*, shafts S, straps *h*, spring detent *e*, and guides *g*, substantially as described.

2.—In combination with the foregoing I claim the adjustment of wheels W on axle A by bolt *a* and pins *i*, as specified.

No. 27,954.—GEORGE SMITH, BALTIMORE, OHIO.—*Cultivators*.—*March 27, 1850.*

Claim.—The arrangement of the hinged teeth F, shanks G, ropes or chains I, roller J, and lever K; the whole being arranged for joint operation as described, for the purposes set forth.

No. 27,703.—W. D. DORSEY, DECATUR, ILL.—*Cultivators*.—*April 3, 1850.*

Claim.—1.—So combining the hinged beams C D of a

cultivator with the handles H I, as that the driver on his seat may raise either of the two central cultivator hoes F, separately, or all the hoes simultaneously, when constructed and arranged substantially in the manner and for the purposes described.

2.—In combination with the pairs of hoes so hung and operated, the shields L L, for protecting the young plants from the soles, earth, or soil tinned up by the hoes, substantially as set forth.

No. 27,975.—JOSEPH F. EYLAR, SCOTT, OHIO.—*Cultivators*.—April 24, 1860.

Claim.—The described arrangement of the ploughs E F, frames G, links H, chains I, standards K, levers L, chains or cords M, pulleys M N, and crank shaft O P, constructed and operating in the manner and for the purposes set forth.

No. 28,016.—IRULUS R. SMITH, ELGIN, ILL.—*Cultivators*.—April 24, 1860.

Claim.—The combination of the long standards A A', the check or guard pieces E, the movable handles N, the saddle P for the beam B to roll upon, the truss G, consisting of the pieces of iron S, the standards G G', the rod Y, the stretcher V, the iron brace K, and the joint H, attached to the two wheeled carriage O, as described, and for the purpose specified.

No. 3,332.—IRULUS R. SMITH, ELGIN, ILL., assignor to J. GERBER, ROCKFORD, ILL.—*Cultivators*.—28,046, April 24, 1860.—Reissued April 29, 1870.

Claim.—1.—An auxiliary frame carrying two or more shovel-standards upon each side, as shown, when said frame is hinged to the pole between the evener and neck-yoke, as described for the purpose set forth.

2.—The combination of the main frame, consisting of the tongue, axle and beam O with the auxiliary frame, consisting of the beam B, standards A, with its lifting devices, when the frames are made separate and distinct from each other, and are connected only by the joint M, as described, for the purpose set forth.

No. 28,101.—JOHN NEFF, JR., MOUNTAIN, VT.—*Cultivators*.—May 8, 1860.

Claim.—The arrangement of the crank shaft H, the handles I, couplings K, springs J, supports L, cross piece M, and screws P, constructed and operating as described, for the purpose set forth.

No. 28,843.—O. F. FITCH, MORRISDOWN, IND.—*Cultivators*.—June 26, 1860.

Claim.—The described combination and arrangement of braces and frames, arranged in the relations set forth, and made to serve the purposes described.

No. 29,027.—J. C. WILSON, CEDAR HILL, TEXAS.—*Gang Ploughs*.—July 3, 1860.

Claim.—The arrangement of the plough frame upon the wagon frame, as and for the purpose described.

No. 29,094.—HARRISON OGDORN, GREENFORK, IND.—*Cultivators*.—July 13, 1860.

Claim.—The arrangement of the spring bolts K K, the piece H, staple B, and movable seat M, in combination with the ploughs U U an I V W, the whole being arranged, constructed, and operated substantially as set forth.

No. 29,583.—SCHUYLER GOLDSMITH, WATAGA, ILL.—*Cultivators*.—August 14, 1860.

Claim.—The combinat on and arrangement of the seat G, draft pole I, racks J K, and axle E, applied to the frame A, substantially as and for the purposes set forth.

No. 29,592.—LYMAN E. HAWKINS, SANGAMON, ILL.—*Cultivators*.—August 14, 1860.

Claim.—The arrangement of the oblique stocks P, ploughs J, vertically inclined stocks B, ploughs I, rods a b, frame A, axle-tree B, wheels C C, pole D, lever E, and seat G, as and for the purpose shown and described.

No. 29,704.—LEWIS WEBER, SPRINGFIELD, ILL.—*Cultivators*.—August 21, 1860.

Claim.—1.—The arrangement of the ploughs K L and the cultivator frame, substantially as and for the purposes set forth.

2.—The combination with a cultivator of the swingletree U, the cross-bar W, at the top of an elevated draught pole, two vertical levers V V, and an arched yoke Y, substantially as and for the purposes set forth.

No. 29,707.—T. W. McDILL, OQUAWKA, ILL.—*Cultivators*.—August 21, 1860.

Claim.—The arrangement of the axle A, and bars b b k k, and cross-piece c, with the loose connection of the draught pole P, to the machine, substantially as and for the purposes set forth.

No. 6,137.—THOMAS W. McDILL, BATAVIA, assignor of one-half his right to J. C. McDILL, MONROE, IOWA.—*Cultivators*.—29,707, August 21, 1860.—Reissued Nov. 17, 1874.—Extended seven years [Filed Oct. 2, 1874].

Claim.—1.—The axle A of a walking straddle-row cultivator, constructed substantially as described, with an elevated central portion a, horizontal portions a', for attachment of the forward ends of the beams, and with spindles a'' for the wheels substantially as set forth.

2.—The combination of the axle A with the beams C C', the latter attached to the horizontal portions a of the axle, substantially as and for the purposes specified.

3.—The beams C C' pivoted to the axle A and cross-bar D by spindles i, substantially as and for the purposes specified.

4.—The combination of the beams C C and C' C', axle A, and bar D with the tongue H and bent arm K, substantially as and for the purposes specified.

No. 29,762.—GEORGE W. BROWN, GALESBURGH, ILL.—*Cultivators*.—August 28, 1860.

Claim.—1.—So combining the frame, wheels, and ploughs with the levers L M, as that the driver or operator, from his seat, may turn or clamp said frame, wheels, and ploughs, on the tongue, to cause the ploughs to follow the crooks in the rows of plants, substantially as described.

2.—So combining the seat and tongue with the frame, and with an axle set in advance of its supports in the wheels, as that the driver or operator in his seat, by shifting his weight, may raise, hold up, and lower the ploughs devices, as described.

3.—In combination with the ploughs, the convex cutters or shields N X, when constructed, arranged, and operating as set forth.

No. 30,000.—WILLIAM H. SEYMOUR and LOTHROP SEYMOUR, SEYMOUR, OHIO.—*Cultivators*.—September 11, 1860.

Claim.—The special arrangement of the swinging or adjustable frames Q in combination with the hinged arms M N and adjustable teeth, when constructed and operating as described.

No. 30,589.—HENRY H. ROBERTSON and CYRUS G. CARR, KINGSTON, MO.—*Cultivators*.—November 6, 1860.

Claim.—The arrangement for united operation, in a cultivator, of two or more ploughs G, or scrapers N, a series of cross-bars L J, a series of adjustable buttons J, perforated loops E, and stop pins I, substantially in the manner and for the purposes described.

No. 30,723.—TULLY R. CORNICK, CAP AU GRIS, MO.—*Ploughs*.—November 27, 1860.

Claim.—The combination and arrangement of the cross piece w, tongue m, axle z, wheels a, pieces c, cross-piece 70, pieces b, cross-pieces h, helves u and P, chains S, ploughs O Q Z V, rod v, levers c c f, and seat i, substantially as described, for the purposes set forth.

No. 30,727.—SAMUEL FISHER, WEST WINDSOR, N. J.—*Ploughs*.—November 27, 1860.

Claim.—The combination of the pivoted beams G with the pivoted ploughs supported by a pin, when arranged to operate in the manner and for the purpose set forth; and this I claim whether the ploughs be made adjustable, and be raised or lowered, or held by the devices described, or by others accomplishing a similar object by substantially the same means.

No. 30,807.—BENJAMIN TINKHAM, CAMERON, ILL.—*Cultivators*.—December 11, 1860.

Claim.—1.—The combination with the axle B and plates c d of the beams E, plates a b, and pins or bolts f, substantially as and for the purposes set forth.

2.—In combination with the above I claim the pins or supports h, with the bounds D, as and for the purpose described.

No. 4,231.—BENJAMIN TINKHAM, CAMERON, as-

assignor to HATGOOD & CO., CHICAGO, ILL.—*Cultivators*, 30,807, *December 11, 1860*. Reissued *January 10, 1874*.

Claim.—1.—The beams E, hinged or pivoted to the axle by a joint, substantially such as described, when by the beams, with their shovels, have a free vertical and lateral movement, and still be held in an upright position, as here-in set forth.

2.—The rearwardly projecting bars D, or their equivalents, for supporting the hinged beams above the ground, substantially as described.

3.—The combination of the axle B, rigid tongue C, braces or bars D, and the hinged beams E, all arranged to operate substantially as and for the purpose herein set forth.

No. 4,600.—BENJAMIN TINKHAM, CAMBRON, assignor to HATGOOD & CO., CHICAGO, ILL.—*Cultivators*, 30,807, *December 11, 1860*.—Reissue No. 4,321, *January 10, 1874*.—Reissued *October 17, 1871*.

Claim.—In a straddle row cultivator, the tongue C rigidly secured to axle B, in combination with bars D D rigidly secured to the axle, serving as braces to the tongue, and having their rear ends or two equivalent bars extended to the rear to support the plough-beams E E with their gangs of ploughs above the ground when required, substantially as set forth.

No. 30,996.—JOSEPH GUM and ST. CLAIR GUM, MARSHFIELD, ILL.—*Cultivators*, *December 18, 1860*.

Claim.—The lever E, in combination with the levers L L, the open slot standards S S, and the slots on the lower side of the cross-piece H, by which to control the central movement of the ploughs, when arranged as set forth, as is substantially described.

2.—The driver's seat D, in combination with the several elements of the preceding claim, when arranged as set forth and substantially as described.

No. 31,101.—J. T. D. ALEXANDER, MARYENNA, TEXAS.—*Cultivators*, *January 15, 1861*.

Claim.—The arrangement of the beams A A, the bars B B and H H, as constructed, the shafts F F, the wheels D D, and the slotted crank axles E E, the whole being arranged and connected in the manner and for the purpose specified.

No. 31,112.—W. A. DRYDEN, MORGENTHAU, ILL.—*Cultivators*, *January 15, 1861*.

Claim.—1.—The arrangement of the lever G with the dog f, in combination with the top g, on the upper surface of the beam A, and with the plate e, at the under surface of the draught pole, constructed and operating as and for the purpose specified.

2.—The arrangement of the pin j, projecting from the beam A, in combination with a hole k, in the lever G, substantially as and for the purpose specified.

No. 31,133.—DANIEL S. STAFFORD, DECATUR, ILL.—*Cultivators*, *January 15, 1861*.

Claim.—1.—In combination with the driver's seat and a tongue pivoted to the main frame, the arc d, with its projections or braces e e, so that the driver may, from his seat, crank the main frame on the tongue, to cause it to follow the crooks in the row of plants, substantially as described.

2.—In combination with the seat and main frame, the construction and arrangement of the bent axle, for the purpose of allowing the driver to use the axle itself as a lever to raise or lower the frame upon itself, substantially as described.

3.—The long bent share blades or cutters H, for the purpose of cutting under and throwing the loosened soil towards the plants, when combined and arranged with a frame such as described and represented.

No. 5,827.—ELIZA S. CONKLIN, EXECUTRIX, MACON COUNTY, and JOSEPH STAFFORD, KNOX COUNTY, ILL., assignees of DANIEL S. STAFFORD, deceased.—*Cultivators*, 31,133, *January 15, 1861*.—Reissued *April 7, 1874*.—[Filed *September 20, 1870*.]

Claim.—1.—The combination, in a straddle-row cultivator, of frame A, wheels B, series of ploughs G, arranged in two gangs, with a central space between the gangs, and elevated or bent axle C, constructed substantially as described, to permit the corn to pass under it, and to raise or lower the plough frame, as set forth.

2.—The elevated pole D, segmental slides e and d, and stirrups e, in combination with frame a a, as and for the purpose set forth.

3.—With the foregoing devices of second claim, the axle C and driver's seat E, in combination, for the purposes set forth.

4.—The combination, in a straddle-row cultivator, of the two wheels B, axle C, frame A, series of ploughs G, and supplementary wheels J, all operating in combination, for the purposes set forth.

5.—In a straddle-row cultivator, the share-blades H, constructed as described, in combination with frame A, bent axle C, and wheels B, substantially as and for the purpose set forth.

No. 31,382.—SILAS M. GOFF, EAST ADDISON, VT.—*Cultivators*, *February 12, 1861*.

Claim.—The arrangement of the adjustable shares I, bar M, and frame K, with the frame N, segment bar O, roller N', frame D, share E, toothed shaft F, and hooks J, in the manner and for the purpose shown and described.

No. 31,393.—R. A. LEEPER and Z. B. KIDDER, SAN JOSE, ILL.—*Cultivators*, *February 12, 1861*.

Claim.—1.—The employment of the laterally swinging bars I I and shares J in combination with the uprights P, beams L L, crank shafts M, rods t k, and lever N, in the manner shown and described.

2.—The arrangement with the above-named parts of the arms a a, bars b b, and slotted plates D, and frame A, seat E, lever F, beams m m, uprights j, and standards G, in the manner and for the purposes shown and described.

No. 1,996.—R. A. LEEPER and Z. B. KIDDER, SAN JOSE, ILL., assignors to DILLIS, KERN & CO., ATLANTA, ILL.—*Cultivators*, *February 12, 1861*.—Reissued *June 13, 1865*.

Claim.—1.—Suspending the share standards I I upon pivots or bolts at their upper ends, substantially as and for the purposes shown and described.

2.—The combination and arrangement of the share standards I I, slotted supports j j, and beams L L, jointed at their front ends, as and for the purposes specified.

3.—The employment of the crank shaft M, provided with the arms s and v, arranged and operating substantially as and for the purposes specified and described.

4.—The combination of the oscillating standards I I, beams L L, crank shafts M M, provided with the arms s s and rods t, arranged and operating as specified and described.

5.—In combination with said standards I, beams L, connecting bar K, crank shaft M s s, and rod t, the rod O and lever N, arranged and operating as and for the purposes specified and shown.

6.—The combination and arrangement of the oscillating standards I I, supports j j, cross-bar k, rods l l, and beams m m, substantially as and for the purposes specified.

7.—In combination with said oscillating standards I I, uprights j j, cross-bars k, rods l l, and beams m m, the employment of the fulcrum b upon the cross-bar g, lever F, and rods i i, all arranged and operating substantially as and for the purposes set forth.

8.—The arrangement of the spindles a a, bars b b, and slotted plates D D, with the frame A and seat E, all arranged as and for the purposes shown and specified.

No. 31,682.—J. B. TURNER, JACKSONVILLE, ILL.—*Cultivators*, *March 12, 1861*.

Claim.—1.—The arrangement of the frame A, with the draught pole B, triangular frame D, and bar C, substantially as shown, to admit of the independent lateral movement of the frame A, as set forth.

2.—The arrangement in the described connection with a cultivator of the double-tree E and stirrups G G, connected by chains F, the stirrups being fitted loosely on the rod H, at the front part of the frame A, to prevent the draught mechanism interfering in the least with the adjusting movement of frame A, and to render the line of draught perfectly adjustable.

3.—The combination of the hinged guard-frame K, chain p, and seat I, constructed, arranged, and operating in the manner and for the purposes set forth.

4.—The combination of the curved bars O and n, and

sliding collar P, constructed and operating as described to adjust the height of the ploughs K K'.

5.—The employment or use of the adjustable cutters or scrapers L L', applied to the frame A and in front of the rollers M M', for the purpose set forth.

6.—The arrangement of the driver's seat I, with the cultivator frames J J' and guard-frame K attached, in connection with the adjustable bar g, as and for the purpose specified.

No. 31,702.—JOHN COX and J. A. THROP, THREE RIVERS, MICH.—*Cultivators*.—*March 19, 1801.*

Claim.—1.—The combination with the oblique side bars A A' and swinging shovel-stocks of feet F' F' of a V-shaped frame of three sided metallic blocks G G', the blocks being constructed with their inner face to be parallel with the line of draught and in contact with the upper ends of the shovel-stocks, and their outer face parallel with the oblique bars, each block being let in the sides of the bars and confined by a single bolt H, substantially as and for the purposes set forth.

2.—The combination with the oblique side bars A A' of metallic ears I I, wooden pins L L', swiveling connecting links K K', shovel-stocks F' F', and pivoted screw-bolts H H, substantially as and for the purposes set forth.

3.—The arrangement of the V-shaped frame A A B, crank-axle C, supporting wheels C' C', arch-shaped bar E, adjusting lever F f, three-sided blocks G G', shovel-stocks F' F', screw-bolts H H, metallic ears I I, swiveling connecting links K K', and wooden pins L L', substantially as and for the purposes set forth.

No. 31,725.—JOHN MARKEL, MONTICELLI, ILL.—*Cultivators*.—*March 19, 1801.*

Claim.—1.—The combination of devices G h H h', for permanently or temporarily adjusting the working width of the cultivator shovels, constructed, operated, and operating in the manner substantially as set forth.

2.—In combination with the above, the reversible dished wheels C, as fully described for the purpose set forth.

No. 32,391.—JOSEPH VOWLES, NEW HUDSON, MICH.—*Cultivators*.—*May 21, 1801.*

Claim.—The arrangement of the inclined braces C C' F E, standards D D G G', handles H H, and frame A, as shown and described, whereby the several parts are made to brace and support each other, and a very firm and desirable implement obtained.

No. 32,413.—T. SCOTT CONE and H. S. POTTER, ONTARIO, ILL.—*Cultivators*.—*May 28, 1801.*

Claim.—The pivoted frame C C', lever D, pole B', beams E E' and F F', pivoted to a rod u, as described, in combination with adjustable pivoted brackets J J', and pivoted shovel stocks G G' G' G', all arranged as shown and described.

No. 32,431.—JOSIAH MUMFORD and J. W. WILSON, CLARKSBURG, OHIO.—*Cultivators*.—*May 28, 1801.*

Claim.—So hanging the pairs of ploughs that run on each side of the rows of plants to the frame and to each other so that they may have both a vertical and horizontal adjustment, as well as a rocking movement, on their shaft H, but when so rocked, one plough of the pair shall not be thrown into or out of the ground more than its fellow, as described and represented.

No. 32,442.—WILLIAM S. WEIR, JR., MONMOUTH, ILL.—*Cultivators*.—*May 28, 1801.*

Claim.—1.—The combination of a spring catch P and catch-plate Q, with the plough-frame I and seat frame, substantially as and for the purposes set forth.

2.—The combination with the seat-frame and plough-frame of catch-plate Q, spring-catch P, and adjusting blocks d d, constructed and arranged to operate in relation to each other as and for the purposes set forth.

3.—Pivoting or hinging the plough-frame I to the front of the seat-frame, and in front of the seat-frame and in front of the axle of the main supporting-wheels, in combination with and providing said frame I with two sets of ploughs J J' K K', arranged to operate in relation to each other as and for the purposes set forth.

No. 32,500.—JOSEPH GUM, and ST. CLAIR GUM, MARYSELLES, ILL.—*Cultivators*.—*June 18, 1801.*

Claim.—The combination of the lever l, the levers l' l'',

to control the vertical and lateral movements of the cultivators while in use, with the upright hooked metallic rod r, by use of which to adjust the cultivators from the ground, for removing the machine from place to place when the machine is not used in cultivation, substantially as described.

No. 33,120.—HENRY BOWERS, NEW HUDSON, MICH.—*Cultivators*.—*August 27, 1801.*

Claim.—The bolster D, the king bolt E, axle A, near C, beams F' F' M, hinges H H', standards or arms K, braces N, ploughs or hoes L L', and handles P, the whole being constructed, combined, arranged, and operating as and for the purposes described.

No. 33,176.—WAIDE H. HAWORTH, TONAWANDA, ILL.—*Cultivators*.—*August 27, 1801.*

Claim.—1.—The connecting rod E, and crank-shaft D d, employed in the manner explained, to turn the wheels C, on a vertical axis by the deflection of the tongue, as and for the purpose set forth.

2.—The combination of the beams K K', levers L M and n, rods N n' and O, and suspending chains Z, arranged and operating substantially as and for the purposes explained, in connection with a four wheeled cultivator.

No. 33,235.—RILEY BROTTON, OSKALOUSA, IOWA.—*Cultivators*.—*September 10, 1801.*

Claim.—The expanding toothed frames G G', constructed substantially as shown, connected to the mouthed bar A through the medium of the levers K K', and attached to the elevating levers J J' by means of rods e e' f f', all combined and arranged for joint operation, as and for the purpose set forth.

No. 33,834.—WH. KENSON FURNAS, OSOSWA, IOWA.—*Ploughs*.—*December 3, 1801.*

Claim.—The arrangement of the pulley bars N N, pulleys M o, treadles P, levers J J', coils e e', bars F F', and racks K K', with the swinging and rising plough standards G G', and the driver's seat Q, all as shown and described.

No. 33,890.—I. B. TURNER, JACKSONVILLE, ILL.—*Cultivators*.—*February 3, 1801.*

Claim 1.—In combination with a main frame, supported on and carried by a drum B, on one side serving as a roller and a wheel C, on the opposite side a hinged plough frame D, controlled by said main frame substantially as described.

2.—The combination of the pivoted levers E E', with a horizontally hinged tongue O, so that the driver, from his seat, may change the line of draft and the direction of the machine, substantially as set forth.

3.—The angularly shaped brace u, for holding the mould-board or the brace at its upper portion, when it also admits of having the mould-board to slip between the mould board and the brace, as at b, for the purpose as described.

4.—Fastening the mould-boards to the plough frame by means of the cross braces v, brace n, and staple m, with its key, in the manner and for the purpose described.

5.—The removable extension piece z, in combination with the mould-board, for the purpose described.

No. 34,302.—N. S. HARKYMAN, FRANKFORT, IND.—*Cultivators*.—*February 11, 1802.*

Claim.—The combination of the several parts, constructed and operating as described, to wit: The bar G pivoted to the top of the rear standard, the frame F and standards E E', with the draught frame, all substantially as shown.

No. 34,400.—JAMES COLLINS, FARMINGTON, ILL.—*Cultivators*.—*February 18, 1802.*

Claim 1.—The combination of the perpendicular draught rods f f' depending from the transverse bar a a' and braces b b', extending back from the lower part of the said draught rods to the axle-tree, all constructed and arranged as described and for the purposes stated.

2.—The combination of the clevis g and draught rods f f', when constructed and operating as and for the purposes set forth.

3.—The crank levers k k' and adjusting nuts x, constructed and arranged in connection with a corn plough on wheels in the manner and for the purposes set forth.

4.—The combination of the cross-bar a a', draught-rod f f', braces b b', clevis g, adjusting levers k k' and p p', curved axle tree e e', and seat m, all substantially as and for the purposes set forth.

No. 34,528.—ANDREW SAWYER and HENRY BARNES, BURLINGTON, WIS.—*Cultivators*.—*February 25, 1862.*

Claim.—The arrangement of the pendulous suspended frame C, attached draught pole F, shares E, rods D, and chains D' D', with the segments K K, rock shaft I, and lever J, in the manner shown and described.

No. 34,630.—I. A. GREEN, HENRY, ILL.—*Cultivators*.—*March 11, 1862.*

Claim.—These four features combined in one machine in the manner described: the first feature consisting in the main frame, the bowed and cranked axle, and driver's seat, arranged in respect to each other as described; the second, consisting in the arrangement of the tongue G, the lever H, and the driver's seat J, in relation to each other, as set forth; the third, consisting in making the main frame in two parts, an arming and elevating the driver's seat J and the frame E E I, I, and N thereon, and the bow of the axle therein, as set forth; the fourth feature consists of the bars O O, the frame E E I, I, and N, the sward I, and the main frame, arranged in relation to each other as set forth.

No. 34,732.—E. B. BROWN, HIGHTSTOWN, N. J.—*Cultivators*.—*March 25, 1862.*

Claim.—1.—The combination of the adjustable slides F, plates G, slotted pendants E, and connecting rod H, with each other and with the standard I, in the manner shown and described.

2.—The arrangement of the pendants-slotted bars E J, slides F, K, plates G L, rods H M, standards I N, and arms I O, with each other and with the arms g, links j, arms v, shafts k, and lever O, as and for the purpose shown and described.

No. 34,828.—JOHN GROSS, MANLVA, IND.—*Cultivators*.—*April 1, 1862.*

Claim.—The lever frame B, with levers C and adjustable points D, when operated in connection with the frame A, with the guide bar F, and rollers I I, by means of the standards E, the whole being arranged and operated as set forth.

No. 35,272.—E. J. WHITE, LOCKY, N. Y.—*Ploughs*.—*May 13, 1862.*

Claim.—The ploughs M Q, when attached to vertical sliding standards L R, which pass loosely through the mounted frame or platform A, and are connected to adjusting levers K S, in combination with the vertically adjustable coulters P T and gauge wheel X, all arranged for joint operation, as and for the purpose set forth.

No. 35,282.—L. B. WATERMAN, CHICAGO, ILL., assignor to himself and JAMES S. BANGS, of the same place.—*Cultivators*.—*May 13, 1862.*

Claim.—The arrangement of the adjustable seat D, in combination with the double-tree G, draught-rods K K, and graduating bar I, when operated and attached to the framework for the uses and purposes described, as substantially set forth.

No. 35,608.—A. B. CASS, MUSCATINE, IOWA.—*Cultivators*.—*June 24, 1862.*

Claim.—The pivoted share standards a^b a^b and sliding share standards g g, connected to the jointed adjustable lever E, in combination with the seat H and lever F, connected to a lever E' and the seat support I, all arranged as and for the purpose specified.

No. 35,673.—R. D. DODGE, ADEL, IOWA.—*Cultivators*.—*June 24, 1862.*

Claim.—The arrangement of the struts h, connecting the front ends of the beams G G', in combination with the treadles e, hand levers k, and guide-bars m, all constructed and operated in the manner and for the purpose shown and described.

No. 35,718.—C. A. UHL, MILLERSBURGH, OHIO.—*Cultivators*.—*June 24, 1862.*

Claim.—1.—The arrangement of the lever I, rods m, beam l, and ploughs E, as described, for the purpose of lifting the ploughs from the earth as described.

2.—The guides F, for regulating the depth of the furrows, in combination with the pins inserted in the holes f, in the said guide bands F, substantially as described and shown.

No. 35,685.—J. N. BAUMANN, MUSCATINE, IOWA.—*Cultivators*.—*July 26, 1862.*

Claim.—1.—The attaching of the double tree L, to the cross-bar J of the standards G G when used in combination with the chains M M passing under adjustable pulleys N N, and a whiffletree P connected to each chain, substantially as and for the purpose set forth.

2.—The guard or clod crusher, consisting of the adjustable bars K K provided with parallel rods e, and attached to the bar Q, which is also adjustable and secured to the cross-bar K, as set forth.

No. 36,010.—J. S. PADON, SUMMERFIELD, ILL.—*Cultivators*.—*July 26, 1862.*

Claim.—The arrangement of the adjustable frames C, and I beams F and G, in respect to each and under the main frame B, when constructed and operated in the manner described and shown.

No. 36,158.—I. B. JONES, Xenia, Ohio.—*Cultivators*.—*August 12, 1862.*

Claim.—1.—The laterally moving or adjustable plough frame D, when operated as shown, to wit: by means of the tooth segments E E on the rock shaft F, gearing into the racks d d on the frame D, and the latter fitted in the mounted frame A, as and for the purpose set forth.

2.—The manner of attaching the plough standards H to the frame D, to wit: by placing the standards in guides Z, attached to pendants I secured to the frame D, and securing the standards at any desired height by means of the catches J, as and for the purpose specified.

No. 36,609.—R. R. GASKILL, WYANET, ILL.—*Cultivators*.—*October 7, 1862.*

Claim.—1.—The plough bars F F, secured to the front cross-bar h of the frame A by means of the double hinges or universal joints a^b a^b , in combination with the rods G G, fitted in the bearings H connected to the bars F F, and arranged with the adjustable bearings J', as shown to operate as and for the purpose specified.

2.—The adjustable or movable seat C, when arranged as shown, and used in combination with the bars F F, rods G G, and levers J or K, as and for the purpose set forth.

3.—The swinging or adjustable draught pole D, arranged as shown with the holding lever E, in combination with the brakes formed of the levers O, rods Q, and cranks R, with the shoes S attached, all arranged to operate as and for the purpose set forth.

No. 36,785.—W. H. JORDAN, ROSEVILLE, IND.—*Cultivators*.—*October 28, 1862.*

Claim.—The ploughs J', when arranged so as to be simultaneously raised and lowered by the turning of the bars I G, connected by a rod or bar J, as shown, in connection with the laterally adjustable frame A, connected with the axle E, and all arranged as and for the purpose set forth.

No. 36,850.—CYRUS ROBERTS, THREE RIVERS, MICH.—*Cultivators*.—*November 4, 1862.*

Claim.—1.—Mounting the front feet in a frame having both a lateral and a vertical movement when arranged and operating substantially in the manner and for the purpose described.

2.—The combination of the front and rear lifting frames, to which the respective rows of teeth are attached, with a hand lever, substantially in the manner described for the purpose set forth.

3.—The combination of the stay chains with the frame and feet, when arranged in relation to the joints of the lifting frames, in the manner and for the purpose specified.

4.—The combination of the tongue, driver's seat, and front and rear lifting frames, when arranged in relation to the wheels, substantially as herein described, for the purpose of balancing the machine, as set forth.

No. 36,889.—A. M. BLACK, AUBURN, ILL.—*Cultivators*.—*November 11, 1862.*

Claim.—The rock-shaft D, with the plough bars or beams E E attached to it, as shown, and connected at their back ends by the cross-bar F, in combination with the arm G and the lever J, the latter being provided with the arm J' fitted between cleats or projections d d on bar F, all arranged substantially as and for the purpose herein set forth.

No. 36,922.—C. W. TALLAFERRO, KEITHSBURG, ILL.—*Cultivators*,—*November 11, 1862.*

Claim.—1.—The plough beams G, connected at their front ends by universal joints I to pendant supports L at the front part of the frame A, and provided at their back ends with journals z, which are fitted in pendant guides H at the back ends of the frame A, in combination with the uprights h, j, bar I, and rock-shaft M, with treadle or foot-piece X attached, all arranged as and for the purpose set forth.

2.—The rotary shield or guard formed of the two wheels Q Q, provided with radial teeth or rods m, and attached to the bar P, which is connected to the draught pole B by the links I, substantially as and for the purpose set forth.

No. 36,945.—J. L. ELLIS, CONCORD, ILL.—*Cultivators*,—*November 18, 1862.*

Claim.—The rock shafts C C, uprights D D, connected at their upper ends by the bar E and the lever I, said parts being applied to the main frame A, provided with curved transverse bars B B', in combination with the supplemental frame composed of the parallel bars L L and curved transverse bars K K, with the driver's seat J attached, the supplemental frame being mounted on wheels connected to the main frame, and all arranged to operate as and for the purpose set forth.

No. 36,948.—B and C. FURNAS, OSONA, IOWA.—*Cultivators*,—*November 18, 1862.*

Claim.—1.—The bars H H', connected at their front ends to the pendants F F, and provided at their back ends with the driver's seat I, in combination with the bars M M connected at their back ends with the cross-piece N, and attached to the plough-beams G G by the cords or chains k k, all arranged substantially as and for the purpose herein set forth.

2.—The treadles K K, when attached to the plough-beams G G, and connected to the cords or bar L by the cords or chains z, as and for the purpose herein set forth.

3.—The uprights O O attached to the plough-beams G G fitted in the guides m m, of the bar L, and connected by the bar P, substantially as and for the purpose specified.

No. 37,009.—CYRUS ROBERTS, THREE RIVERS, MICH.—*Cultivators*,—*November 25, 1862.*

Claim.—1.—The combination of a foot lever, hand lever and crank axle with a driver's seat, when arranged for joint operation, substantially in the manner described for the purpose set forth.

2.—The combination of the hind feet K with the removable projecting arms K', when arranged and operating substantially as and for the purposes described.

No. 37,010.—CYRUS ROBERTS, THREE RIVERS, MICH.—*Cultivators*,—*November 25, 1862.*

Claim.—1.—Mounting the feet in a frame having a lateral sliding movement, substantially as described, in combination with sty chains attached at one end to the feet and at the other to a fixed point on the main frame, as set forth for the purpose of keeping the feet always in the same plane relative to the frame, or to the path of the machine, notwithstanding said lateral movements.

2.—The combination of the rod G, sliding frame g, and lever g', when arranged and operating substantially as and for the purpose described.

No. 37,010.—L. B. WATERMAN, CHICAGO, ILL.—*Cultivators*,—*November 25, 1862.*

Claim.—1.—The peculiar arrangement of the beams J K M and the bar L, in combination with the upper frameworks, when operating substantially as described and for the purposes specified.

2.—The arrangement of the lever I, the chain h, and the pulley H, when the same are used in connection or combination with the grooved axle attachment E and the slide F, the whole being arranged and operating as and for the purposes set forth.

3.—The adjustable bow G, when arranged with the bar J, as and for the purposes set forth and delineated.

No. 37,106.—H. L. HEATON, PEORIA, ILL.—*Cultivators*,—*December 16, 1862.*

Claim.—The arrangement of the sliding bars C C', draught-pole D, bar E, and lever F, in connection with the frames J J, having the ploughs P attached, all arranged as and for the purpose herein set forth.

No. 7,044.—HENRY I. HEATON, SIDNEY, IOWA, assignor to WM. A. KNOWLTON.—*Cultivators*,—37,166.—*December 16, 1862.*—Reissued *November 13, 1877.* [Filed *June 25, 1877.*]

Claim.—1.—The arrangement of the sliding bars C C', draught-pole D, bar E, and lever F, in connection with the frames J J, having the ploughs P attached, all arranged as and for the purpose hereinbefore set forth.

2.—The combination, with a double-tree pivoted in rear of the supporting-axle of the cultivator, of pendants located in advance of said axle, and rigid draught rods directly connecting the outer ends of the double-tree with the lower ends of said pendants, substantially as described.

No. 37,251.—WILLIAM S. WEIR, JR., MONMOUTH, ILL.—*Cultivators*,—*December 23, 1862.*

Claim.—1.—The combination and arrangement of the frame B, tongue A, and wheels C C', substantially as set forth.

2.—The combination with the posts B' B' and plough-beams of the loops a and draught-adjusting devices b b, substantially set forth.

No. 4,610.—WILLIAM S. WEIR, JR., MONMOUTH, ILL.—*Cultivators*,—37,251.—*December 23, 1862.*—Reissued *October 24, 1871.*

Claim.—1.—The combination, in a walking straddle-row cultivator, of the following instrumentalities, viz: Two wheels C C, tongue A, axle B, and two plough-beams F F, independently hinged to the axle by means of joint-pieces K K, so constructed as that the plough-beams, with their gangs of ploughs, may be moved independently an I free in a lateral or vertical direction, and be retained, during the operation of the ploughs, in an upright position, without the aid of other connection or support, substantially as and for the purpose set forth.

2.—The combination, in a walking straddle-row cultivator, of the following instrumentalities, viz: Two wheels C C, tongue A, axle B, and two plough-beams F F, hinged as aforesaid, with a bar D, or equivalent device, projected in rear of the axle, by means of which the plough-beams, with their gangs of ploughs, can be suspended clear above the ground, when not in use, substantially as set forth.

3.—The joint-pieces K K, constructed as described, with perforated plates b b, and bolts c and c', in combination with the plough-beams F and uprights B' of the axle, for the purposes set forth.

No. 37,309.—DANIEL S. STAFFORD, DECATUR, MISSOURI, ILL.—*Cultivators*,—*January 6, 1863.*

Claim.—1.—The suspended and dually connected arrangement of single ploughs in combination with each other and with a wheeled carriage so as to operate substantially as described.

2.—In combination with the suspended and connected arrangement of ploughs in pairs, so constructing and arranging the carrying frame thereof that it may be inclined by the driver so as to operate substantially as specified.

No. 37,474.—CHARLES W. S. HEATON, BELLEVILLE, ST. CLAIR CO., ILL., assignor to JABEZ I. PIGGOTT and H. RENTCHLER, of same place.—*Cultivators*,—*January 20, 1863.*

Claim.—1.—A cultivator frame, folding and expanding vertically on the plan of a parallel rule, substantially as and for the purposes described.

2.—The combination of the slotted beams B B, slotted links O O, and vertically folding and expanding parallel rule frame, substantially as and for the purposes described.

3.—The combination of the elevated cultivator frame A A' A', clutch pulley H, or its equivalent, propelling wheels E, cross-shaft F, and pendant cultivator beams Q', substantially as and for the purposes set forth.

4.—The combination of the ratchet wheel, lever pawl and brake with the pendant cultivator beams, substantially as and for the purposes set forth.

5.—The combination of the lever M, with the pawl, brake, ratchet wheel, and pendant cultivator beams, substantially as and for the purpose set forth.

6.—The combination of the swinging lever P and pen-

slant cultivator beams in a machine operated substantially as herein described.

7.—Guards or poles G, in combination with a back yoke S, as set forth, or the equivalent thereof.

8.—The poles G, when applied and used for the purpose set forth.

9.—The back yoke S, when applied and used as and for the purpose set forth.

10.—In a cultivator for cultivating growing crops, and which employs pendant beams Q', and a vertically expanding and folding parallel rule frame, the combination therewith of the adjustable standard J and adjustable brace 4, made in two pieces and with a loose joint, substantially in the manner and for the purpose described.

11.—The arrangement together on the same machine of the ratchet wheel K, the brake N, and foot and hand levers M L I, and P all combined as shown and described.

No. 37,532.—JOHN A. THROP and JOHN COX, THREE RIVERS, ST. JOSEPH CO., MICH.—*Cultivators*.—*January 27, 1863*.

Claim.—The arrangement of the shovel legs on pivots, in combination with a laterally adjustable frame, or its equivalent, swivelling connecting or stay rods and yielding connections or wooden pins, substantially in the manner and for the purposes described.

2.—The flexible or jointed frame H, or its equivalent, in combination with the swivelling stay rods k, legs I I, cross-bars A' A' A', and the cultivator A; all constructed substantially in the manner and for the purpose described.

3.—Adapting the cultivator to the double use of "seaming" and "hilling" by the combination of a stiff frame, a jointed, pivoted frame H, and adjustable steps or pins a, substantially as set forth.

4.—The jointed frame H, in combination with a rigid frame, when the frame H is pivoted at its front ends and supported by a guide at its rear end, substantially as described.

5.—The arrangement of the stay rods k and the legs I I, in combination with a frame H, which turns on a different fulcrum from those on which the stay rods turn, substantially as set forth.

No. 37,775.—E. H. SAWYERS, WEST GROVE, DAVIS CO., IOWA.—*Cultivators*.—*February 24, 1863*.

Claim.—The main frame C, guide rod G, metallic support J, levers H I, rods a a, plough frame F, and spindle j, the whole combined and arranged to operate in the manner and for the purpose specified.

No. 38,171.—ALFRED LEIGH, CLINTON STATION, HENDERSON CO., N. J.—*Cultivators*.—*April 14, 1863*.

Claim.—The arrangement of the frame A with wheels B B', adjusting levers C, furrowing shares F, hinged cultivator teeth F, and swivel bar G, with marker H, all constructed and operating in the manner and for the purpose herein shown and described.

No. 38,261.—CHARLES W. S. HEATON, BELLEVILLE, ST. CLAIR CO., ILL., assignor to JABEZ J. PIG-GOTT and HENRY KENTCHLER, of same place.—*Cultivators*.—*April 21, 1863*.

Claim.—1.—The truss-frame A, constructed in the manner described, in combination with short axes and vertical outside hangers i i, as and for the purpose set forth.

2.—The guard-brace E, arranged and operating substantially as described.

3.—The combination of the long tongues or poles K' K', neck yoke M, reach L, and brace N, substantially as and for the purpose set forth.

4.—The combination of the adjustable seat O, reach L, long tongues K' K', neck yoke M, and brace N, substantially in the manner described.

5.—A shovel beam formed of two parts B B', which make an angle, in combination with a slotted standard z, which is adjustable, substantially as and for the purposes set forth.

6.—The combination of the jury-brace z, which is adjustable, with the double beam B B', and slotted standard z, substantially as and for the purpose set forth.

7.—The arrangement of the foot levers a, curved bars

j j, notched cross piece g, roller m, and cords or chains o, substantially as and for the purpose set forth.

8.—The arrangement of the slotted adjusting pieces c, pendant share beams, and draught device I, with single swingle trees and frame A, and outside hangers i i, in the manner and for the purpose described.

9.—The combination of the slotted pieces C, brace rod E, frame A, and pendant share-beams, substantially as and for the purpose set forth.

No. 38,205.—WILLIAM D. DORSEY, DECATUR, MACON CO., ILL.—*Cultivators*.—*April 28, 1863*.

Claim.—The arrangement, in the manner herein shown and described, of the two adjustable share frames I I and the operating foot levers L L, with each other and with the bars E E, the pole A, and the driver's seat C, all as set forth.

No. 38,651.—J. W. BOOKER, FAIRMOUNT, VERMILION CO., ILL.—*Cultivators*.—*May 26, 1863*.

Claim.—The plough-beams E E connected to the main frame A, as shown, in combination with the uprights F I, provided with the stirrups K K, the handles G G attached to the plough-beams, and the curved rods L L, all arranged for joint operation as and for the purpose herein set forth.

No. 38,884.—PHILIP COONROD, KEITHSBURG, MERCER CO., ILL.—*Cultivators*.—*June 16, 1863*. Antedated *June 2, 1863*.

Claim.—1.—The combination of the stationary frame D, and the rising and falling frame E, when the latter is provided with the laterally-adjustable ploughs F and guards M, arranged with the bars or levers j j, operated through the medium of the foot lever J or hand lever I, as herein set forth.

2.—The lever u, connected with the frame E through the medium of the shaft l, crank v, and link s, but this only when used in connection with the laterally-adjustable ploughs F, and the means employed for operating as herein described.

No. 39,276.—TULLY K. CORMICK, CAP-AU-GRIS, LINCOLN CO., MO.—*Cultivators*.—*July 21, 1863*.

Claim.—1.—The combination of the plough shanks and handles G G, draught chains L L, universal joints M, connecting rod H, and adjusting nuts k, constructed, arranged, and operating substantially as and for the purposes set forth.

2.—The combination of the elevating levers I I, draught chains J J, and hinged plough-shanks F F, constructed, arranged, and operating substantially as and for the purposes specified.

No. 39,412.—A. S. MARKHAM, MONMOUTH, WARREN COUNTY, ILL.—*Cultivators*.—*August 4, 1863*.

Claim.—1.—The frame A, having a draught-pole B attached to it, in connection with the rollers C, fitted in the lower part of said frame A, and the plough beams D attached to the frame A, and connected at their back parts by the bar G, substantially as and for the purpose specified.

2.—The particular manner of connecting the plough beams D to the frame A, to wit: by having the front ends of the beams slotted longitudinally with pins or bolts g passing through the slots into bars I, which are fitted loosely on shafts c, substantially as and for the purpose set forth.

3.—The draught bars J, attached to the front ends of the plough beams D by bolts j, and connected at their upper ends to the frame A by chains l, and having hooks k secured to them, all arranged as shown, whereby the draught may be regulated, and the beams D adjusted longitudinally as may be required.

No. 39,428.—C. C. STEARNS, HOMER, CHAMPAIGN COUNTY, ILL.—*Cultivators*.—*August 4, 1863*.

Claim.—The rising and falling bars F, having ploughs H attached to them, in connection with the guides G, provided with the catches L, the above parts being arranged as shown, with the bars D D attached to the axle A and cross-bar E, as and for the purpose set forth.

No. 39,450.—C. E. MEADE and G. E. STEVENSON, DENMARK, LEE COUNTY, IOWA., assignor to C. E. MEADE, aforesaid.—*Cultivators*.—*August 4, 1863*.

Claim.—The slide bar G attached to the axle A, substantially as shown, and provided with the pendants H H,

in combination with the lever I, plough-frames J J, shield or guard L, and treadles K K, all arranged to operate as and for the purpose herein set forth.

No. 39,553.—SAMUEL COWAN, BLOOMFIELD, DAVIS COUNTY, IOWA.—*Cultivators*.—August 18, 1863.

Claim.—1.—In combination with the adjustable and hinged cultivator stocks, herein described, the levers K, rod N O, and treadles M, substantially in the manner and for the purpose set forth.

2.—In combination with the adjustable and hinged cultivator stocks, herein described, the lever H and slide-bar G, for the purpose of shifting said cultivators transversely, substantially in the manner and for the purposes set forth.

No. 39,597.—JAMES P. TOSTEVIN, RACINE, WIS.—*Cultivators*.—August 18, 1863.

Claim.—The combination and arrangement of braces H, hooks I, nuts J, and staples L, operating substantially in the manner and for the purposes set forth.

No. 39,686.—N. E. SMITH, SPRINGDALE, CEDAR COUNTY, IOWA.—*Cultivators*.—August 25, 1863.

Claim.—The draught pole B, pivoted to the front bar A of the machine as shown at *a*, with its back end resting on the back bar A', and having the driver's seat D attached to it, substantially as and for the purpose herein set forth.

No. 39,793.—SAMUEL ROCKAFELLOW, MUSCATINE, IOWA, assignor to Hims-elf and JOSHUA W. HOOFS, of same place.—*Cultivators*.—August 25, 1863.

Claim.—1.—The combination of the cords *c*, with the draught pole E, pivoted at its rear end to the cross-bar A', and the foot levers F I, arranged, constructed and operating as and for the purposes herein delineated and set forth.

2.—The combination of the levers F and the rods H with the curved handle G, when constructed, arranged and operating as herein set forth and described.

3.—The combination and arrangement of the beams D D, adjustable at their front ends, with the rods H, the levers F, and curved handle G, as and for the purposes herein set forth and shown.

No. 39,769.—H. B. SMITH, EUREKA, WOODFORD COUNTY, ILL.—*Cultivators*.—September 1, 1863.

Claim.—1.—The pivoting of the plough handles N N, to rods M, fitted vertically and loosely in shafts L, which are allowed to turn in their bearings in pendants *g'*, attached to a shaft *f*, which is also allowed to turn in its bearings, all being arranged as shown to admit of the adjustment of the ploughs O, as and for the purpose set forth.

2.—The ploughs J, and rake-share E, attached to separate or independent shafts H H C, which are fitted loosely between pendants *d*, connected to a shaft B, that turns loosely in its bearings in the frame A of the machine, as and for the purpose set forth.

3.—In combination with the ploughs O O J J and rake-share E, arranged as shown, the adjusting chains F G K and A' P, applied in the manner as and for the purpose specified.

No. 7,377.—HOEL B. SMITH, BECK HAVEN, GA., assignor to STEPHEN A. GOODWIN and DAVID J. POWERS, CHICAGO, and ALPHI EMEKSON and WM. A. TALCOTT, ROCKFORD, ILL.—*Cultivators*.—39,796, September 1, 1863.—Reissued October 31, 1876. Filed June 6, 1876.

Claim.—1.—The combination, substantially as herein, before set forth, of the wheels, the open skeleton draft frame, and the ploughs capable of lateral oscillation with respect to the path of the wheels while the machine is operating.

2.—The combination, substantially as hereinbefore set forth, of the wheels, the open skeleton draft-frame, the ploughs capable of lateral oscillation with respect to the path of the wheels while the machine is operating, and a seat in rear of the open space, whereby the operator has an opportunity to observe and readily adapt the ploughs to the irregularities of the plants in the rows.

3.—The combination, substantially as hereinbefore set forth, of the wheels, the open skeleton-frame, and the laterally-adjustable ploughs suspended therefrom.

No. 39,837.—G. H. SCHANCK, LIBERTYVILLE, LAKE COUNTY, ILL.—*Cultivators*.—September 8, 1863.

Claim.—Extending the hinged frame *z* back, and locating the driver's seat *s* thereon, in relation to the foot-board

f, handle *m*, and spring *n*, as described; whereby the driver can drop the cultivator ploughs with his hands, and at the same time press them into the ground, or regulate their dip with his weight.

No. 40,095.—BENJAMIN F. FIELD, SHEBOYGAN FALLS, WIS.—*Cultivators*.—September 29, 1863.

Claim.—1.—The arm or drag-bar G, when constructed as described.

2.—The combination of the arm G, the cultivator E F, the independent rolling shield K, and the arm L.

3.—The combination of the crank R, the pulleys *t* and *s*, the shaft P, and the cords or chains *r* and *p*, for the purpose of elevating the cultivators and shields.

4.—Making the wheels of a cultivator adjustable on their shaft or axle by means of the collars *n n* and set screws *o*, substantially as set forth.

No. 40,307.—RICHARD H. SPRINGSTEAD, CONSTANTINE, ST. JOSEPH COUNTY, MICH.—*Cultivators*.—October 20, 1863.

Claim.—1.—The arrangement of the lever C, sliding bar F, its attached teeth H, and their hinged bar E, with the hinged bar I, its attached teeth, lever *h* *i*, and standard J, all in the manner herein shown and described.

2.—The arrangement with the hinged bars E I, axle C, and wheels B, of the gears *b c*, all operating together in the manner herein shown and described.

No. 40,700.—SAMUEL H. MITCHELL, EL PASO, WOODFORD COUNTY, ILL.—*Cultivators*.—December 1, 1863.

Claim.—The arrangement and combination of transversely adjustable swivel bars *a*, hinged plough beams D, notched bars H H, doubletree I, and bar J, and connecting rods *k*, and axle A, provided with a number of holes *b b*, intended to receive the swivel bars *a*, to which the beams D D are attached by means of pivots *d*, the swivel bars *a a*, adjustable in the holes in the axle so that the beams can be brought closer together or further apart, according to the width of the furrows; all constructed and operating in the manner and for the purpose shown and described.

No. 40,776.—ISAAC and STEPHEN STOUT, TREMONT, TAZEWELL COUNTY, ILL.—*Cultivators*.—December 1, 1863.

Claim.—1.—The combination and arrangement of a front and rear frame in a cultivator, when constructed in the manner and for the purpose described.

2.—The combination and arrangement in the rear frame of the cultivator of a driver's seat made adjustable, and a standing support for the driver, a lever catch bar, studs for the supporting wheels, and a projecting connection *f*, all operating substantially in the manner and for the purpose described.

3.—The combination and arrangement in the main or front frame of the cultivator, of the hinged lever, the central support for the middle plough handles and their braces, a lever-catch to regulate the depth of ploughing, and an adjusting device to change the line of draught, all operating substantially in the manner and for the purposes set forth.

No. 40,850.—MILES H. SKIFF, CORNWALL BRIDGE, LITCHFIELD COUNTY, CONN.—*Cultivators*.—December 8, 1863.

Claim.—The combination of the carriage F, that carries the cultivator teeth or ploughs, with the axle A, and with the main frame C carried on said axle, so that the driver from his seat may, at pleasure, move said carriage laterally or tip it up or let it down, and fasten it down, substantially in the manner and for the purpose herein described and represented.

No. 40,009.—MARCUS M. CLARK, INDIAN, MC DONOUGH COUNTY, ILL.—*Cultivators*.—December 15, 1863.

Claim.—The vertically-adjustable stirrups *f* and hinged plough beams F, in combination with the frame A, running on wheels B, which can be turned in either direction by a hand lever D; all constructed and operating in the manner and for the purpose herein shown and described.

No. 40,915.—JOHN R. DAVIS, BLOOMFIELD, DAVIS COUNTY, IOWA.—*Cultivators*.—December 15, 1863.

Claim.—In combination with the pivoted cultivator

frames I J J' K L, also the hooked foot levers X X' a', rods P, and staples Q, all constructed, arranged, and operating as specified, so that either or both the frames may be readily raised by the feet of the driver, and retained, by hooking the treadles into the staple Q, as explained.

No. 40,950.—A. J. SPARKS, WYOMI, BERKAM Co., Ill.—*Cultivators*.—*Dec. mch 15, 1863.*

Claim.—1.—The two levers G G', connected together by a joint formed of the slotted plate g, and segment rod k, and attached to the plough beams H H, substantially as shown, to admit of a ready lateral movement of the same as well as the ready elevating of the ploughs above the surface of the earth, as set forth.

2.—The suspending of the plough beams H H from the frame A by means of the upright bars J J, and incline bars p p, provided with rollers v, at their upper ends, which work on suitable ways or guides, substantially as set forth.

3.—The hooks M on the plough beams H, in connection with the pendent hook projections N on the frame A, when said parts are used in combination with laterally moving plough beams, for the purpose specified.

No. 40,973.—ERASTUS WILCOX, DEPTHD, DELAWARE Co., IOWA.—*Cultivators*.—*Dec. mch 15, 1863.*

Claim.—The combination and arrangement of the frame A A B B, bars D D, and adjustable standards F F, wheels H H, inclined bars I I and J J, stands N N and T T, bars L and M, handles P P', shovel-stocks Q and V, with cultivating shovels S and X, the whole constructed as described.

No. 41,086.—JAMES R. MILLS, BLOOMFIELD, IOWA.—*Cultivators*.—*January 5, 1864.*

Claim.—1.—In combination with the pivoted frame K K M R and drag beams H H', constructed and arranged as specified, the post N and lever P, constructed and applied in the manner described to adapt the cultivator frames to be moved laterally, or either or both of them raised by means of a single lever, as explained.

2.—The movable bar O, when employed in combination with the post N, reversible lever P, and reversible beams H H', in the manner described, for the purpose of adapting the machine for furrowing the ground so as to prevent the settling of water around the roots of plants in wet weather.

No. 41,159.—GEORGE LARGE, ROSEMONT, ILL.—*Cultivators*.—*January 5, 1864.*

Claim.—The foot levers F, in combination with the tie G, the bars H, the bars P, the cross-pieces J and L, and the metal plates m, the whole constructed and arranged in the manner and for the purpose set forth.

No. 41,380.—WILLIAM H. OLDER, PACKWORTH, Wis.—*Cultivators*.—*January 26, 1864.* Antedated *January 26, 1864.*

Claim.—The arrangement of the standards F F, the treadles K K' M, as shown and described, to wit: the standards being fitted in the bar E, with the bolts d, passing through longitudinal oblong slots e, therein, and the treadles connected to the standards by means of the cords, belts or chains f f' f'', all arranged to operate as set forth.

No. 41,423.—JAKVIS CASÉ, LAFAYETTE, IND.—*Cultivators*.—*February 2, 1864.*

Claim.—1.—The combination of the pivoted stocks D D' with the arms O and pivotal bar N, operated by the stirrups K and lever M, or by either of the same, substantially as set forth.

2.—Placing the treadle P Q and stocks D D' forward of the driver's seat, the same being arranged and operated substantially in the manner all for the purposes specified.

3.—The hinged stock holder H, for holding the stocks E, and allowing the latter to rise in relation to the frame, substantially as described.

No. 41,435.—MARTIN H. HUIJLINGER, GRANVILLE, ILL.—*Cultivators*.—*February 2, 1864.*

Claim.—1.—The peculiar arrangement of the shanks G, united by the double-jointed brace M, and provided with rollers T working in the slot a, substantially in the manner and for the purposes set forth.

2.—The double-jointed brace M for connecting the shanks G, thereby enabling the driver to keep the ploughs in place when the shanks G are five feet or more in length, substantially as set forth.

3.—The combination of the rollers T and windlass D, the

former operated by the driver's feet and the latter by his hands, substantially in the manner and for the purposes set forth.

4.—The arms L and shaft S, for making the driver's seat adjustable, as specified.

No. 41,523.—PATRICK MCGLEW, DES MOINES, IOWA.—*Cultivators*.—*February 9, 1864.*

Claim.—1.—The two plough-standards H H fitted in the metal plates G and connected to the front part of the frame A by bars K, in connection with the handle I attached to the bars N J, which are fitted to the standards H, as shown, to operate as described.

2.—The plough standards J L, connected to the front part of the frame A by the bars X, and fitted between the guides v and secured between them by the plates a and bars a' t, in connection with bar o attached to the bars N by the rods n, and connected to the levers by the rod R, all arranged to operate as set forth.

No. 41,550.—P. W. THOMSON, TRURO, ILL.—*Cultivators*.—*February 9, 1864.*

Claim.—The combination and arrangement of the plough beams E E, pivoted at e, the standards N N, the cross bar F, provided with the bands a a, and the lever L, all constructed and operating substantially as and in the manner set forth.

No. 41,555.—SAMUEL G. WELCH, ATHENS, ILL.—*Cultivators*.—*February 9, 1864.*

Claim.—The bar F, having the draught pole G attached, supported by the castor wheels I I, and connected to the frame A by levers D D, the back ends of which are connected to the bar E, having a lever H secured to it, and all arranged so as to admit of the raising and lowering of the ploughs and the lateral adjustment of the draught pole relatively with the body or main portion of the machine as set forth.

No. 41,569.—ARTON M. CLARK, assignor to himself, ARTEMAS B. VANT, and HORACE COOK, CHICAGO, Ill.—*Cultivators*.—*February 9, 1864.*

Claim.—1.—The combination and arrangement of the evener B, the bent levers a a, and the draught rods c c, with draught pole A and axle H, all arranged and operating substantially as and for the purposes herein delineated and set forth.

2.—The combination and arrangement of the U-shaped strap d, the anti-friction roller f, and the staple e, with the adjustable bars F and the levers I, constructed with a curved end, substantially as and for the purposes herein shown and specified.

No. 41,614.—WILKENSON FURNAS, OSONWA, IOWA.—*Cultivators*.—*February 16, 1864.*

Claim.—The arrangement of the treadles I I, frame b, beams D, and guards G, with the frame A, levers H, and serrated bars m, all constructed and operating together in the manner herein shown and described.

No. 41,677.—C. J. BUCKNER, PAXTON, ILL.—*Cultivators*.—*February 23, 1864.*

Claim.—The combination of the horizontal connecting plate a, peculiar slotted plates b b and f f, beams e e, rods i i, hinged foot bars G G, and transverse bars K K, all as herein shown and described.

No. 41,700.—JOHN LACEY, CHICAGO, Ill.—*Cultivators*.—*February 23, 1864.*

Claim.—1.—The arrangement of the pivoted bolts or pins c and d, and the holes a and b, the movable beams A', and G, stirrup I, and bars H, for regulating and adjusting the draught of the ploughs.

2.—The combination of the lever R, the rest or stop e, connecting bar S, bow T, pivotal bolts c and d, with the movable beams A' and G.

3.—The combination of the bars H, stirrup I, and chain M, with the movable beams A' and G.

4.—Hinging the rear ends of the movable beams A' between the front and rear ploughs by the pin c, so as to move such front and rear ploughs in opposite directions, all being constructed and operating substantially as set forth and specified.

No. 41,743.—JOHN LACEY, assignor to himself, CON-

RAD FURST, and DAVID BRADLEY, CHICAGO, ILL.—*Cultivators*.—February 23, 1864.

Claim.—The combination and arrangement of the movable adjustable frame B, pivoted lever D, segment pinion C, and rack *h*, with pulleys *a*, rod *b*, and foot levers *k* & *l*, the whole constructed and operating in the manner and for the purposes herein set forth.

No. 41,790.—JACOB HAEGE, SHILOH, ILL.—*Cultivators*.—March 1, 1864.

Claim.—The plough beams I I, fitted in the stays K, and upon the rods J, in combination with the springs L', and curved plates M, all arranged and for the purpose specified.

No. 41,809.—JOHN AUSTIN, ROCKFORD, ILL.—*Cultivators*.—March 15, 1864.

Claim.—1.—The combination of the shifting driver's seat D' with the main frame A and laterally shifting ploughs K, in the manner described, for the purpose of enabling the driver to balance the machine and control both the vertical and the lateral movements of the ploughs as set forth.

2.—The combination of the main frame A and compound lever frame F G with the ploughs E K, when the several parts are arranged and operate as described, for the purposes set forth.

3.—The combination of the adjustable driver's seat, the foot levers N, and the laterally adjustable ploughs K, when severally arranged (relatively to the main frame A) and operating in the manner and for the purpose described.

No. 42,532.—SEYMOUR SLOAN, KEWANEE, ILL.—*Cultivators*.—April 5, 1864.

Claim.—The combination of the beams B B C C, connecting bars D D' E F G, levers *e*, treadles H, and bent levers H', all constructed, arranged, and operating in the manner and for the purposes herein specified.

No. 42,513.—S. W. SLOCUMB and E. PHILLIPS, FULTON CITY, ILL.—*Cultivators*.—April 26, 1864.

Claim.—1.—The stirrups *h* & *k*, arranged as herein described, and employed to enable the operator to move the inner ploughs laterally and independently by the direct application of his feet, as specified.

2.—In combination with the loosely shackled standards F F' F'', constructed and arranged as herein described, the chains *a*' *a'* *a'* *b* *b'*, eye-bolts H H' H'' H'', and thumb-nuts *a*', as and for the purpose set forth.

No. 42,514.—J. D. SMITH, FLORIDA, ILL.—*Cultivators*.—April 26, 1864.

Claim.—1.—The combination of the carriage swinging frame *h* *h*, driver's seat A, hinged shovel carrying frame *d*, vibrating shovel standards *g* & *g'* (connected to rock-shafts,) stop-pins *p* *p*, adjusting chain *n* when the frame *d* with the shovels is entirely forward of the axle of the frame *h* *h*, and the standards of the shovels are connected together at their upper extended ends by an adjustable bar *h*, and operated by the single pivoted handle C from the driver's seat; all in the manner and for the purpose herein described.

2.—The arrangement of the rear wheeled frame *h* *h*, front cultivator frame *d*, seat A, shovels *g*, rock-shafts *g'* *g'*, bar *h*, lever C, stop-pins *p* *p*, chain *n*, tongue B, and oblique laterally adjustable guards D D, all for united use in a machine adapted for cultivating growing crops, as set forth.

3.—The arrangement of the chain connection *n*, stop-pins *p* *p*, in combination with the hinged forward shovel frame and the rear wheeled frame, when the said frames are constructed and operated in the manner herein described, and all adapted for the purpose set forth.

No. 42,640.—E. M. DEVER, and IRA C. PRATT, FLORIDA, ILL.—*Cultivators*.—May 10, 1864.

Claim.—1.—The rotary guards *a* *a* mounted upon the stock P and employed in combination with inner cultivators *k* & *l*, in the manner and for the purposes described.

2.—The foot lever V fulcrumed upon the axle and extending forward beneath the bar *m* and backward into convenient proximity with the seat F, as and for the object specified.

No. 42,932.—A. P. DURANT, ATLANTA, ILL.—*Cultivators*.—May 31, 1864.

Claim.—The two share frames E E', when constructed, combined, and arranged in respect to each other, and the

axletree A, as described, and when raised and lowered by the forward and backward motion of the draught power applied to the doubletree R, substantially as shown and described.

No. 43,123.—WILLIAM METTIER, FRANKFORD, ILL.—*Cultivators*.—June 14, 1864.

Claim.—1.—The teeth G G, laterally movable bodily with out angular change, in combination with fixed teeth F F, situated further behind and outward than the said movable teeth, arranged and operating substantially as and for the purpose herein specified.

2.—The combination of the guide posts *n*, with the adjusting screws P P, as herein set forth.

3.—The combination of the hinged or jointed controlling braces R R with the guide posts *n* *n*, and elevating devices L M M, substantially as and for the purpose herein specified.

No. 43,249.—ALMON WILLIAMS, BEEBE, OHIO.—*Cultivators*.—June 21, 1864.

Claim.—The adjustable reach F, the slotted hinged frames G H, and M N, in combination with the teeth or cultivators and slotted hinges J, in the manner and for the purpose set forth.

No. 43,268.—I. B. WATERMAN, assignor to himself, E. W. SIMONDS, and P. A. FISCHER, CHICAGO, ILL.—*Cultivators*.—June 21, 1864.

Claim.—1.—The braces T T and jointed bars T' T', in combination with the pendent shovels N, when arranged and operating as set forth.

2.—The auxiliary wheeled supports R at the rear of pendent shovel frames M, in combination with the main supporting wheels C C, substantially as and for the purpose set forth.

3.—The combination of the half rolling beams *f* with the pendent frames M and auxiliary supporting wheels R, substantially as and for the purpose set forth.

4.—The combination of the jointed brace T T' T', pendent shovel frames M, half rolling beams *f*, and foot lever *i* and hand levers O P, substantially as and for the purpose set forth.

No. 43,288.—L. H. CASTOR, EDINGTON, ILL.—*Corn-Ploughs*.—June 28, 1864.

Claim.—1.—Moving the standards *i* *i* of the ploughs I laterally by means of the bail-shaped bar J, bent levers K K, and treadles L L, all arranged substantially as herein set forth.

2.—The combination of the bars C C, frame D, driver's seat E, rock shaft F, links *d* *d*, and levers G *g*, all constructed, arranged, and employed, substantially as described, for raising the ploughs when required.

No. 43,395.—JOHN DAVIS, ALLEGHENY CITY, PENN.—*Cultivators*.—July 5, 1864.

Claim.—The arrangement of the pieces *e* and *e'*, uprights *f* and *f'*, and bars *g*, with teeth *h*, the whole being constructed, arranged, and operating substantially in the manner herein described and for the purpose set forth.

No. 43,421.—ALFRED G. TUCKER, RICHVIEW, ILL.—*Cultivators*.—July 5, 1864.

Claim.—1.—The beams E E', suspended by means of links *m* *m'* and arms *n* *n'* from rock shafts O O', in combination with the vertically adjustable reversible ploughs G G', and hand lever H, constructed and operating in the manner and for the purpose substantially as herein set forth.

2.—The sockets *i* *i'* and set screws *j* *j*, in combination with the standards F F' and ploughs G G', constructed and operating in the manner and for the purposes substantially as set forth.

3.—The screw rods *g*, and nuts *g'*, in combination with the separate laterally adjustable section of the frame A, constructed and operating as and for the purpose specified.

4.—The screw-rods *k* *k'*, with suitable nuts, in combination with the laterally adjustable plough-beams E E', constructed and operating as and for the purpose specified.

No. 43,470.—FRANK BARNEY, BLOOMINGTON, ILL.—*Cultivators*.—July 12, 1864.

Claim.—The hand lever H, with its swivel fulcrum K, in

connection with the crank shaft G, hinged rear standard E, and swivel front standards E', all constructed and operating in the manner and for the purpose substantially as herein specified.

No. 43,935.—JAMES CANFIELD, SARCIA, IOWA.—*Cultivators*.—July 26, 1864.

Claim.—The combination and arrangement of the axle E E', the bow D, plough beam H E', cross-pieces K, and bow L, the removable bar J, draught pole A, bar B, standards C, pivot a, and seat O, all constructed, arranged, and operating substantially as and for the purposes specified.

No. 43,836.—JOHN COX and JOHN A. THROP, THREE RIVERS, MICH.—*Cultivators*.—August 16, 1864.

Claim.—1.—So constructing the axle C that it constitutes a rocking lever support for the frame A and driver's seat G', and a means by which said frame can be raised or depressed, substantially as herein described.

2.—The combination of the lever D, or its equivalent, with an axle, the points of support of which for the driver's seat and shovel frame are arranged on opposite sides of the fulcrum, or axis of motion of said axle, substantially as described.

3.—Arranging the driver's seat and frame of the machine upon a supporting axle in such manner that the weight of one can be made to counterbalance the weight of the other whether the point of rest of the driver's seat be on the opposite side of the fulcrum from that upon which the frame rests, or directly over the fulcrum, or at any point between the fulcrum and the frame, substantially in the manner set forth.

4.—The connecting or stay rod F, or its equivalent, in combination with the driver's seat, sustained substantially as described.

5.—The combination of a pivoted lever H, loop j, slide J, guide rod J', shovel standards a' a', pivoted stay rods a' a', and wooden pins a n, all constructed and arranged substantially as described.

No. 43,901.—D. M. DAVIS, assignor to himself and W. L. F. JONES, ASHURY, ILL.—*Cultivators*.—August 23, 1864.

Claim.—The combination and arrangement of the lever L, the rod r, the vibrating lever C, the rod r', and the plough beam E, when constructed and operating substantially as herein delineated and described.

No. 44,729.—C. M. JENNE, YOUNG AMERICA, ILL.—*Cultivators*.—October 18, 1864.

Claim.—The securing of the plough I to the device by having its standards H attached to a bar G, which is connected to the inner beams of each pair by pivots d substantially as and for the purpose specified.

No. 45,066.—GEORGE D. MILLER, LOVINGTON, ILL.—*Cultivators*.—November 15, 1864.

Claim.—1.—The swivel frame D D' D' D', in combination with the segmental pulley E, bar or lever E', foot piece e e, cords H, and pulley I, the whole being arranged to operate substantially as and for the purposes herein set forth.

2.—The manner herein described of employing the roller R, so that it may be adjusted simultaneously with the ploughs, by means of the lever O.

No. 45,177.—J. RIDEK, WILTON JUNCTION, IOWA.—*Cultivators*.—November 22, 1864.

Claim.—1.—The treadle levers M M, the adjustable roller K, and the chains or cords J L, when so combined with each other and with the frame of a cultivator plough as to sustain the weight of the plough and plough beams, and enable them to be quickly and readily elevated from the ground by the driver, substantially in the manner and for the purposes herein set forth.

2.—The cord p, pulleys o o o o, angular lever W, spring bolt i, arc-shaped cross-beam S, and sockets m m, when combined with each other and with the frame of a cultivator plough, for the purpose of enabling the driver to adjust the direction of the draught, substantially in the manner herein set forth.

No. 45,231.—JOHN DOAK, KEITHBURG, ILL.—*Cultivator Ploughs*.—November 29, 1864.

Claim.—Connecting together the beams G M b means

of flexible connection or hinges G', for the purpose of allowing the beams M to receive a lateral movement from the straps independently of the beams G, while both the beams G M may be moved vertically simultaneously by means of the arm S, substantially as set forth.

No. 45,204.—JAMES D. OSBORN, GOSHEN, IND.—*Cultivators*.—November 20, 1864.

Claim.—1.—The two-part axle E E', as employed in combination with the levers G G', racks F F', and wheels D D', the whole being constructed and arranged in the manner and for the purpose specified.

2.—The tongue K, in combination with the beam B, roller I', arm I, rod H, lever G, and castor wheel L, all arranged and operating in the manner described, to convert the implement from a stiff to a loose-tongued machine.

3.—In combination with a cultivator, constructed as herein described, the slide Q, arranged and employed substantially as and for the purpose specified.

No. 45,503.—A. KINYON, AMBOY, ILL.—*Corn Cultivators*.—December 20, 1864.

Claim.—1.—The tubular shaft G, having the plough beam H attached to it by straps T, in connection with the roller R fitted loosely in said shaft, and connected by penlants H with the beams I I, and connected by a strap or cord q with a pulley V, all arranged substantially as shown, to admit of the adjustment of the ploughs, as set forth.

2.—The attaching of the front ends of the plough beams I I to the parts b b of the draught pole through the medium of the swinging bent bars O O, connected by a draught equalizer composed of the rods Q Q, chains j j, rod l, and pulley or pins k, all arranged substantially as and for the purpose set forth.

3.—The securing of the standards J to the beams I by means of the eyes n, screw rods e, and nuts f, to admit of the adjusting of the ploughs I, as set forth.

4.—Constructing the draught pole of two parts b b arranged in Y-form and attached to the axle A, as shown, when said pole, thus constructed, is used in connection with the plough beams I I, arranged with the mechanism described for adjusting them vertically or laterally, as specified.

No. 44,875.—ALONZO KINYON, AMBOY, ILL.—*Corn Cultivators*.—45,503, *December 20, 1864*.—Reissued July 25, 1871.

Claim.—1.—The rounded standard J, having a shovel, L, attached thereto, and secured to the frame or beam of a cultivator by means of an eye bolt, substantially as described, whereby the shovel may be adjusted, as set forth.

2.—In combination with the foregoing, the brace-rod K, arranged to operate as set forth.

3.—The tubular shaft G, provided with the lever U, and connected by the straps T, to the beams J, whereby the shovels may be elevated at will, as set forth.

4.—The sliding-rod R, provided with the rigid arms p and H, the latter being connected loosely to the beams J, and the former by straps q, to a pulley, V, having a foot-lever, l', attached, all arranged to operate as set forth, whereby the beams, with their standards and shovels, may be moved laterally at will, as set forth.

No. 45,615.—JOHN KIRKMAN, PEORIA, ILL.—*Cultivators*.—December 27, 1864.

Claim.—1.—The spring E E S, and thumb-screw o, employed in combination with the levers B B, to retain the ploughs in either a working or an elevated position, and secure the same against liability to injury by contact with invaluable bodies, as set forth.

2.—A machine constructed in the manner herein described, supporting the neck yoke y and the end of the tongue by means of bows C, or their equivalents fitting upon or over the top or upper part of the horse's neck, substantially as and for the purpose set forth.

No. 45,687.—IRA BARBER, JR., LA PORTE, IND.—*Cultivators*.—January 3, 1865.

Claim.—1.—The pivots c, pivoted with the pronged or forked ends, and arranged as shown in relation to the beam e and frame O', in combination with plough beams L, operating as and for the purposes herein shown and set forth.

2.—Suspending the rear ends of the plough beams L by the chains d, in combination with the pivoted front end of

said beams, for the purpose of enabling the operator to give the shovels the lateral motion, substantially as and for the purposes herein specified.

No. 45,700.—A. B. CASS, CHICAGO, ILL.—*Cultivators*.—*January 3, 1865.*

Claim.—1.—The combination of the adjustable lever A, bar *a*, levers *b*, and ploughs M, arranged and operating substantially as and for the purposes set forth and shown.

2.—Attaching the scrapers J to the axle, by one or more arms K, substantially as and for the purposes shown and set forth.

3.—The combination of the adjustable lever A with the rod L, provided with the arms / or their equivalent, and the chains *h* operating as and for the purposes shown and specified.

4.—The employment of one or more rollers H to facilitate the lateral motion of the lever A, operating substantially as shown and described.

5.—The employment of the roller I in combination with the lever A, and operating substantially as and for the purposes herein shown and specified.

No. 45,730.—DANIEL McNAB, MOSCOW, MICH.—*Cultivator*.—*January 3, 1865.*

Claim.—Constructing a cultivator or drill tooth with an upper curved portion, which curved part shall have a bearing against some rigid portion of the machine when it is in motion, so that the form of such curved portion of the tooth, and the position of the tooth, shall determine the amount of resistance which it may overcome without its being raised from the ground.

No. 45,750.—T. T. PROSSER and M. C. DARLING, CHICAGO, ILL., and K. A. DARLING, FOND DU LAC, WIS.—*Cultivator for Gang Ploughs*.—*January 3, 1865.*

Claim.—1.—Guiding and regulating the movement of the tongue D by means of the pulley H, chain F, eye bolts G, attached to the side frame A and levers H, substantially as described.

2.—Connecting the pair of draught arms B B, without regard to the number of pairs used, to the forward main cross-bar of the frame A by means of the double nutted screw bolt L, L, and which forms, with the plates M M, a hinge or other joint, so that while the said bars shall have a free vertical motion, they may be adjusted laterally without being detached or removed from the said cross-bar.

3.—Constructing a cultivator or gang plough so that the interval between the shank N N, which supports the ploughshares, may be increased or diminished, without removing the shaft bars B B, or their connections from the main cross-bar of the frame A, when each pair of shaft bars are capable of lateral adjustment, independent of the other pair or pairs.

4.—The combination of lever T, rods and poles U U, operating the ratchet wheel S upon the roller O, for elevating simultaneously the several ploughs of the gang or gangs, substantially as set forth.

No. 45,758.—LYMAN SHERWOOD, MARINE, ILL.—*Cultivators*.—*January 3, 1865.*

Claim.—1.—The arrangement of the frame A A' A', with its teeth or ploughs *c*, in combination with the rollers B B, all being constructed and arranged to operate substantially as and for the purposes set forth.

2.—The arrangement of the pole E with reference to the frame A and standard *f*, substantially as and for the purposes set forth.

No. 45,782.—THOMAS WILES and JAMES MCGINNIS, MUSCATINE, IOWA.—*Cultivators*.—*January 3, 1865.*

Claim.—The combination of the rising and falling or vertically-adjustable ploughs O, with the rising and falling and laterally adjustable ploughs I, when the latter are pivoted to shafts D D, and connected to the shaft P, so as to rise simultaneously with the ploughs V, on the turning of the shaft P, as and for the purpose herein set forth.

No. 45,807.—W. D. AMENF, MUSCATINE, IOWA.—*Cultivators*.—*January 10, 1865.*

Claim.—In combination with the standards D D, adapted to be operated by treadles so as to move the ploughs vertically and laterally, I claim the adjustable blocks G, resting upon the plates E, and employed to vary or regu-

late the depth to which the ploughs penetrate the ground, in the manner herein explained.

No. 45,833.—ADAM KECK, MONTGOMERY, ILL.—*Cultivators*.—*January 10, 1865.*

Claim.—1.—The attaching of the axle C of the wheels B to plates D, secured to castings E at the under side of the framing A by means of bolts *a* passing through oblong slots *c* in the castings, substantially as shown and described, to admit of the wheels B being adjusted further forward or backward, to keep the machine in a proper equipped state, as set forth.

2.—The plough beams G G, provided at their front ends with upright bars *g* connected by joints *h* to the castings E, and provided at their back ends with upright bars H, having each a notch *i* to receive a catch I, all arranged substantially as and for the purpose set forth.

3.—The springs K on the back part of the framing A, in combination with the upright bars H of the plough beams G G, as and for the purpose specified.

4.—The attaching of the plough beams L L, by means of the upright M and joints *n* to the pivoted plate N arranged on the framing A, substantially as shown, to admit of the working or moving of the ploughs Q, as set forth.

No. 45,860.—CYRUS ROBERTS, THREE RIVERS, MICH.—*Cultivator*.—*January 10, 1865.*

Claim.—1.—The combination of the main frame, the shifting plough frame, the lifting lever, and the shifting machine arm O P, with the driver's seat, when arranged for joint operation as described.

2.—The shifting foot lever R, constructed and arranged to operate as and for the purposes described.

3.—The combination of the shifting frame, the ploughs, and the con guard with the main frame when constructed and arranged in operating as described for the purposes set forth.

No. 45,801.—CYRUS ROBERTS, THREE RIVERS, MICH.—*Cultivator*.—*January 10, 1865.*

Claim.—1.—The combination of the double ended shovels with their stocks, by means of the reversible swiveling brackets *i*, and bolts *i*, in the manner described, for the purpose of reversing the shovels when worn or injured, and of turning them sidewise to throw the earth more or less towards or from the plants as desired.

2.—The combination of the shovel stocks and shifting frame by means of the brackets J, bolts *j*, and clips *j*, as described, for purposes set forth.

3.—The combination of the shovels, the auxiliary or shifting frame, and the main frame, when constructed and arranged as described, for the purposes set forth.

4.—The combination of the plough stocks and shifting frame by means of the brackets J, slots *j'*, and set screw *j*, as and for the purposes described.

No. 45,866.—E. H. SAWYERS, ORFANS, IOWA.—*Cultivators*.—*January 10, 1865.*

Claim.—1.—In combination with the levers L' and shaft L, the oblong slot *i*, formed and employed in the manner and for the purpose specified.

2.—The described arrangement of the adjustable cultivator frame I I' P' P', the brace rods *h*, angular shaft M and draught rod N, the whole being employed in the manner and for the purposes set forth.

No. 45,934.—ELIAS C. PATTERSON, CHICAGO, ILL.—*Cultivators*.—*January 17, 1865.*

Claim.—1.—The curved levers A, B, C, D, constructed and operating substantially as described.

2.—The combination of the curved and straight levers, constructed and operating substantially as described.

3.—The combination of the curved and straight levers with the ploughs, constructed and operating substantially as described.

6.—The peculiar form and arrangement of the middle rear ploughs, in connection and combination with the two outside rear ploughs, all constructed and operating substantially as described.

No. 45,987.—J. W. FAWKES, DECATUR, ILL.—*Cultivators*.—*January 24, 1865.*

Claim.—1.—The frame E applied to the draught pole C, as shown, in connection with the foot-levers H G, arranged

with the frame, to admit of the latter being operated as and for the purpose specified.

2.—The pivoted plough standards J connected to segments M by bars L and links J, in connection with the wooden pins I in the segments, all arranged substantially as and for the purpose set forth.

3.—Providing the segments M with handles N in connection with straps O on the frame E, as and for the purpose set forth.

No. 46,116.—CHRISTOPHER LIDREN, ATRORA, ILL.—*Cultivators*.—January 31, 1865.

Claim.—The rising and falling bar E, operated by the levers L, E', and having the plough standards I I permanently attached to it, as shown, in combination with the adjustable plough-standards F F, attached to said bar as described, and operated by the crank shafts K, all arranged substantially as and for the purpose set forth.

No. 46,274.—THOMAS SHOOT, FAIRMOUNT, ILL.—*Cultivators and Harrows*.—February 7, 1865.

Claim.—The frames D D, provided with shovels E, and teeth F, the cleaves a d, and screws or bolts a', in combination with the adjusting frame G H, the latter permitting the cultivator frames to be operated simultaneously or independently, and adapting said frames when used as a harrow to be brought together at their rear ends, as herein specified.

2.—The combination of the treadles I, loops J, and connecting rods or wires i, for adjusting the frames D D, substantially as explained.

No. 46,285.—WILLIAM S. WEIR, JR., MONMOUTH, ILL.—*Corn Ploughs*.—February 7, 1865.

Claim.—The curved rods M attached to the back end of the bars d d, and bent in the form of hooks k, at their lower ends, in connection with the lever a attached to the back end of the draught pole C, all being arranged and applied substantially as and for the purposes specified.

No. 44,800.—WILLIAM S. WEIR, JR., MONMOUTH, ILL.—*Cultivators*.—46,385, February 7, 1865.—Reissued July 25, 1871.

Claim.—The cross-bar E, when pivoted to the draught pole of a walking straddle-row cultivator in rear of the axle or truck-frame, and connected with the draught in manner substantially as and for the purpose set forth.

2.—The plates h b secured to the forward ends of the plough-beams, and blocks g g, and journals i, constructed and operating substantially as described, for the purpose of hinging or pivoting the plough-beams to the axle by brackets I, or their equivalent, as set forth.

3.—The pivoted rods M having the hooked ends k, in combination with the bars d d, levers O, and draught pole C, substantially as and for the purpose set forth.

No. 46,349.—SAMUEL GULICK, KLINE'S GROVE, PENN.—*Cultivators*.—February 14, 1865.

Claim.—The frame D fitted on the axle A, and connected by chains or cords E E to fast pulleys F F, on a shaft G, which has its bearings on uprights C C, attached to the axle, and which serves as guides for frame D', all being arranged as shown with a lever and notched bar, or their equivalents, whereby said frame may be raised and lowered bodily and secured at any desired height for the purpose specified.

2.—The pivoted bars Q Q when applied to and used in combination with the adjustable frame D, substantially as and for the purpose set forth.

No. 46,355.—SAMUEL HENRY, CHENOA, ILL.—*Cultivators*.—February 14, 1865.

Claim.—The arrangement of the levers J J, connected by straps h to the pivoted frame F G, and by pendants K K to the plough beams L L, which are hinged to the axle, the said frame F G being further capable of lateral deflection by pressure of the foot of the driver, substantially as and for the purposes described.

No. 46,378.—SAMUEL H. MITCHELL, EL PASO, ILL.—*Gang Ploughs and Cultivators*.—February 14, 1865.

Claim.—The split and expanded draught-pole C, in connection with the axle A and bar E and O and rods k, all arranged as and for the purpose herein set forth.

No. 46,383.—IRA A. PALMER, MONMOUTH, ILL.—*Cultivators*.—February 14, 1865.

Claim.—The draught equalizer composed of the rods D D, provided with arms d d' at their upper and lower ends, and placed at right angles to each other, with the lower arms projecting at right angles from the machine, with the upper arms d connected by a rod E, and the whiffletrees attached to the lower arms d', substantially as and for the purpose set forth.

2.—Connecting the plough beams F to the bars c, of the main frame A, through the medium of the bars k, which work on adjustable pins or rods l, in plates m, attached to the bars c, and the pins j, which pass through plates i, attached to the plough beams and through the bars k, all being arranged substantially as and for the purpose specified.

3.—The particular manner of constructing the main frame A, to wit, of the side bars a a arranged in V-form, connected at their upper ends by cross-bars b b, and mounted on wheels B, substantially as herein set forth.

No. 46,537.—WM. BANKSON, MOUNT PLEASANT, IOWA.—*Cultivators*.—February 28, 1865.

Claim.—The frame F F, the lever L, the suspension of the ploughs 3 and 4 on bar X and the moving of them with the lever N, when constructed substantially as described and for the purpose set forth.

No. 46,657.—J. H. GIVEN, H. HUTSONPILLER and CHAS. GILBERT, DES MOINES, IOWA.—*Cultivators*.—March 7, 1865.

Claim.—The frame D pivoted or attached to the draught pole A, as shown in connection with the jointed set bar O, angle plates p, and the plates r, all arranged to admit of the ready elevation of the ploughs, as set forth.

2.—The uprights H H, connected at their upper parts to the lever J, and connected at their lower parts to the plough standards F F, and pivoted to the frame d, substantially as shown and described, to admit of the lateral movement of the ploughs G, as described.

No. 46,666.—LORENZO D. HAUGHEV, ATLANTA, GA.—*Cultivators*.—March 7, 1865.

Claim.—The pivoting of the axle A to the draught-pole D to admit of the lateral movement or adjustment of the ploughs, as set forth.

2.—The semicircular frame C attached to the front side of the axle, in connection with the friction-roller F and bolt or rod G, attached to the draught-pole D, substantially as and for the purpose specified.

No. 46,675.—JOHN W. INGLE and R. W. WRIGHT, LIVINGSTON, ILL.—*Cultivators*.—March 7, 1865.

Claim.—The frame D, attached to the axle A by a pivoted bolt a, and provided with pivoted plough-standards H, connected by rods k, the segment bars J K, and levers L L, in combination with the levers G G, attached to the frame D, and draught-pole C, all arranged to operate substantially as and for the purpose set forth.

No. 46,752.—T. W. HAMMON, assignor to himself, JOSEPH H. LINCOLN, S. LINCOLN, and A. P. HAMMON, MONTFORD, WIS.—*Corn Ploughs*.—March 7, 1865.

Claim.—The two semicircular frames B C, applied to the draught-pole D, in the manner substantially as shown to form the main frame of the machine.

2.—The axle A, connected to the draught-pole D, by the pivot bolt a', in the manner as shown, or in any equivalent way, to operate as herein described.

3.—The toothed segments C C, arranged as shown in combination with the shaft F, and bar H, for the purpose of moving or adjusting the axle A, as set forth.

4.—The attaching of the ploughs T to the standards S, by means of the stems h, fitted in bearings i, the former being provided with nuts j, and all arranged substantially as described.

5.—The method of adjusting and holding the frame k, by means of the toothed segment N, segment bar M, and lever Q, all arranged substantially as set forth.

No. 47,016.—JOHN HARPER, SALEM, IOWA.—*Corn Cultivators*.—March 28, 1865.

Claim.—The frame F F, adjustable on the segmental guide rods C C, as specified.

2.—The manner in which the front shovels are attached to the bar B, turning them to or from the corn as may be required, in combination with the lever L, substantially as and for the purposes set forth.

No. 47,017.—JOHN HARPER, HILLSBOROUGH, IOWA.—*Cultivators*.—*March* 28, 1865.

Claim.—The slotted shovel standards P, in combination with the lever L, rope O S, and strap V, the several parts being constructed, arranged, and operating as and for the purpose set forth.

No. 47,055.—I. H. THOMAS and P. P. MAST, SPRINGFIELD, OHIO.—*Cultivators*.—*March* 28, 1865.

Claim.—Swinging the suspenders I I from the top of the standards G G, for the purpose set forth.

2.—The combination of plates H H, suspenders I I, and standards G G, as described and for the purposes set forth.

3.—So pivoting the rock-shaft O, from which the beams E are suspended as that, when the handle *a* is turned up and thrown forward, it shall remain in that position, and thus keep the plough suspended without the use of any catch or other device, substantially as set forth.

4.—The adjustable stop *b*, in combination with the adjustable stretcher K and suspenders I I, substantially as set forth.

5.—The shaft and journals *j*, in combination with the braces *f* and drag bars F F, whereby the supplemental tooth may be readily attached, maintained in position, and allowed to swing backward when the wooden pin *i* is broken, substantially as described and set forth.

No. 48,332.—T. J. POTTS and P. C. YOST, HAMILTON, ILL.—*Cultivators*.—*April* 18, 1865.

Claim.—The lever L, fitted in the slotted bar M, and connected at its rear to a cross-bar J attached to the standards *i*, at the rear of each beam, the front end of said lever being fitted between the prongs *h h* of a foot lever N, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 47,880.—I. B. BARTON, MEMPHIS, ILL.—*Cultivators*.—*April* 25, 1865.

Claim.—The hinged or jointed frame E placed within the main frame A, as shown, in combination with the laterally swinging shovel or plough standards *g g*, levers J J, with straps K K attached, and the curved or bow shaped bar M, all arranged to operate substantially as and for the purpose herein set forth.

No. 47,508.—WILLIAM RHODES and M. PORTER, LOVINGTON, ILL.—*Cultivators*.—*May* 2, 1865.

Claim.—The roller F mounted upon the tongue E and adapted to move simultaneously therewith, so as to change the line of draught, in the manner and for the purpose herein set forth.

2.—The slot *i*, whereby the draught may be shifted at will from the tongue E to the roller F, in the manner and for the purpose described.

No. 47,044.—JAMES HOLLINGSWORTH, CHICAGO, ILL.—*Cultivators*.—*May* 9, 1865.

Claim.—The use of a spring shovel beam, which will admit of a lateral swinging movement of the shovels, substantially as described.

2.—Constructing cultivator shovel beams of wood and metal, substantially as described.

3.—The rock shaft E provided with loose arms *d* and lever F, for enabling the attendant to elevate the shovel beams singly or together, at pleasure, substantially as described.

No. 47,635.—JOSEPH MILLS, READING, ILL.—*Cultivators*.—*May* 9, 1865.

Claim.—The vertically adjustable and jointed posts D D, and the vertically adjustable, jointed and swinging posts E E, in combination with the rods K, for the purpose of guiding and adjusting the shovels, substantially as described.

2.—The rotating axle B in combination with the jointed posts D D E E, substantially as described.

3.—The double screw rod F and swinging nuts G in combination with the swinging posts E E, substantially as described.

4.—The standard M in combination with the posts D D E E and the axle upon which they are mounted, substantially as described and for the purpose set forth.

No. 47,093.—WILLIAM E. BATES, ELMORE, ILL.—*Cultivators*.—*May* 16, 1865.

Claim.—The swinging levers Q Q connected substantially as described, with the forward and rear shovel standards, which are pivoted in such relation to the frame and laterally-moving mechanism that the two shovels thus connected are caused, by the action of the treadle, to approach to or recede from the corn in concert, as described and represented.

No. 47,600.—JAMES BREWER, ALBANY, N. Y.—*Cultivators*.—*May* 16, 1865.

Claim.—Securing the central pair of cultivator standards to the plough beams by means of swivel hinges for the purpose of admitting them to be moved in a vertical as well as in a lateral direction, substantially as and for the purpose specified.

2.—In combination with the laterally movable standards O, adjustable straps *r*, substantially as and for the purpose specified.

3.—In combination with the laterally movable standards O, the extension piece *p* and knee straps *s*, for the purpose of enabling the ploughman to operate the ploughs by hand or foot, substantially as and for the purpose specified.

No. 47,004.—EDWARD PHIFER, TRENTON, N. J., assignor to himself and JAMES M. GROVER, LAWRENCEVILLE, N. J.—*Cultivators*.—*May* 23, 1865.

Claim.—The combination in a cultivator of longitudinal frame pieces, adjustable at both ends to cultivate any width of row, with an axle on wheels adjustable to any width of furrow, substantially as and for the purpose described.

2.—The combination of an adjustable frame, with one adjustment for the tooth, with a separate adjustment for the shank, when both are flexible when changing the position of the cultivator tooth, and rigid when the tooth is at work, substantially as and for the purpose described.

3.—The combination in the cultivator of one or more rigidly held teeth or ploughs, with an adjustable mechanism, substantially as described, whereby the driver can control at pleasure the operation of the teeth, singly or in series, as set forth.

No. 48,006.—SAMUEL G. HORNING, MOUNT CARROLL, ILL.—*Cultivators*.—*June* 6, 1865.

Claim.—The combination of axle B, the bar E, the beams *s s*, chains *t*, the beams C C, and braces O and I, the whole constructed and arranged as and for the purpose substantially as herein set forth.

No. 48,008.—HENRY HOWE, DARLINGTON, WIS.—*Cultivators*.—*June* 6, 1865.

Claim.—The oblique bars E E, connected to the draught pole D, and to the short parts *a a* of the axle A, in connection with the bars F F, and driver's seat L, substantially as and for the purpose set forth.

2.—The plough frames F F, connected to the bars E E I I, and shaft K, substantially as shown, and to admit of being operated as described.

No. 48,102.—WILLIAM G. SAVAGE, CLIXTON, ILL.—*Cultivators*.—*June* 6, 1865.

Claim.—The arrangement of the plough standards G G, shafts F F, and levers H H, placed within the frame C, which is pivoted within the mounted frame A, substantially as and for the purpose herein set forth.

2.—The connecting of the frame C to treadles I I, in the manner substantially as and for the purpose described.

3.—The combination of the two frames A C with the plough standards, treadles, and levers, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 48,271.—EDWARD S. GILLES, ALBANY, WIS.—*Cultivators*.—*June* 20, 1865.

Claim.—The attaching of harrows and ploughs, either or both, to the frame of a cultivator by means of pendant rods E provided with springs F, and connecting the heads of the harrows and ploughs to springs I attached to shafts J at the front part of frame A, in the manner substantially as and for the purpose set forth.

No. 48,281.—B. HOLTZ and WILLIAM ENOCH, SPRINGFIELD, OHIO.—*Cultivators*.—*June* 20, 1865.

Claim.—Connecting the drag bars E E to a single

point on the main frame by the draught rods G G, substantially as described.

2.—In combination with the draught rods G G, the traveller rod *a*, substantially as described.

3.—Imparting a lateral motion to the rear end of the plough beams by means of the two single levers or rods O and K, arranged and operating as described.

4.—Pivoting the lever K upon the self-adjusting pivot L in the manner shown, for the purpose of permitting said lever to be moved both vertically and laterally, and thus performing the operation of moving the ploughs without the use of more than one lever, K, and with but a single pivot for said lever.

5.—Connecting the drag bars in front by the stretcher F, provided with pivot screws and set screws, as described.

6.—The combination and arrangement of rods G, the drag bars F, posts H, foot rests J, levers K and O, and joint L M, as shown and described.

No. 48,445.—CURUS ROBERTS, THREE RIVERS, MINN.—*Cultivators*.—*June 27, 1865.*

Claim.—1.—The combination of the plough beams with the flaps and stay rods, substantially as described, for the purpose set forth.

2.—The combination of the frame, the movable driver's seat, and the ploughs, substantially as and for the purpose described.

3.—The combination of the adjustable driver's seat and hand lever with the adjustable link rod *a*, as and for the purpose described.

4.—The combination of the frame, the driver's seat, and the ploughs with the rear flap and stay rods, substantially as described, whereby the driver can exert his whole weight in raising the ploughs, as set forth.

5.—The combination of the frame and driver's seat with the shifting ploughs and elbow levers, when arranged and operating as described.

6.—The combination of the plough beam and stay rod with the hinged socket and wooden pin, when arranged and operating as described, for the purpose set forth.

No. 48,627.—JOHN LACEY, assignor to CONRAD FURST and DAVID BRADLEY, CHICAGO, ILL.—*Cultivators*.—*July 4, 1865.*

Claim.—1.—Connecting the movable parts of a mounted cultivator with the wheels and axle by the horizontal swinging bars or rods I, substantially as shown and described.

2.—Pivoting the seat lever K to the axle by means of the post M, or its equivalent, and to the movable parts of a cultivator, so as to adjust the weight of such movable parts and cause the reaction of the force applied to move them to operate in the same direction as the direct force, all being substantially arranged and constructed as and for the purposes set forth and specified.

No. 48,817.—C. M. JENNE, ILL. YOUNG AMERICA.—*Cultivators*.—*July 18, 1865.*

Claim.—1.—The axle A arranged or applied to the draught pole C, substantially as shown, to admit of a forward and backward play thereon, for the purpose set forth.

2.—In combination with the above, the rods D D attached to the draught pole C, and passing through the axle A, with springs *a* on their rear ends, to operate substantially as and for the purpose herein set forth.

3.—The stirrup H applied to the draught pole C, in combination with the bars I I, rods *f*, links *g*, and axle A, all arranged substantially as and for the purpose specified.

4.—The rods M M attached to the plough beams J J and connected by links N N with the adjustable plates O O on the draught pole C, substantially as and for the purpose set forth.

5.—The bar E connected by a hinge or joint *b* with the rear of the draught pole C, in combination with the rod F and adjustable plate G, for the purpose specified.

No. 48,884.—W. D. AMENT, MUSCATINE, IOWA.—*Cultivators*.—*July 25, 1865.*

Claim.—The adjustable metallic plate G formed or cast in one piece, with the bearings I, substantially as described.

No. 48,950.—FREDERICK C. LEFFLER, HIGHLAND TOWNSHIP, IOWA.—*Cultivators*.—*July 25, 1865.*

Claim.—The draught bars L, attached to the rear bar E by pivot *c* and uprights *f*, and secured to the upright bars A

by a rod G, substantially as and for the purpose set forth. No. 49,008.—GARIAND R. ST. JOHN, KIAMAZOO, MICH.—*Cultivators*.—*July 25, 1865.*

Claim.—The two plough beams A A connected together as shown, in connection with the handles G G pivoted to the beams, and having the wheels I attached to them, and the segment racks J and catches K, all arranged substantially as and for the purpose herein set forth.

No. 49,075.—JAMES BREWER, AUBURN, ILL.—*Cultivators*.—*August 1, 1865.*

Claim.—1.—The combination of the corn guards R, the stirrups and the swivelling standards S, with the frame, when arranged and operating as described.

2.—The combination of the swivelling front ploughs and the frame, with the adjustable sliding collars, the drag chains, the lifting chains, the tension screws and the tilting lever when constructed, arranged, and operating as described.

3.—The combination of the plough standards and frame with the adjustable bracket O, and swivelling or crank hinge P, when constructed, arranged, and operating as described, for the purpose of varying the angle of the plough to the furrow, while allowing the ploughs both vertical and lateral play, as set forth.

4.—The combination of the triangular frame, the adjustable driver's seat, the lifting lever, the outer ploughs, the adjustable inner ploughs, the shields, the stirrups, and the lifting chains, when arranged and operating substantially in the manner and for the purpose described.

No. 49,512.—G. EKSTRAND and A. P. CASSEL, WAUWATONIA, ILL.—*Cultivators*.—*August 22, 1865.*

Claim.—The adjustable bar G having the plough beams I I I I connected to it by the bars P R and the bars K, connected at their upper ends by a bar S, all being arranged and applied to a mounted framing, to operate in the manner substantially as and for the purpose set forth.

No. 49,540.—EZRA McEWEN, NEW LISBON, ILL.—*Cultivators*.—*August 22, 1865.*

Claim.—1.—The combination and arrangement of the draught pole E, the plough beams *a a*, the cross-bar *b*, provided with the slots *b b*, cross-bar *c*, beams *d d*, shares *m n*, and handles, as and for the purposes specified.

2.—The combination and arrangement of the plough beams *a a*, cross-bar *b*, slotted as shown, handles *h*, connecting strips *c c*, and shares *m n*, as shown in Fig. 3, substantially as shown and set forth.

No. 49,547.—JOHN G. PAGE, ROCKFORD, ILL.—*Cultivators*.—*August 22, 1865.*

Claim.—1.—In combination with a cultivating machine for cultivating two rows, the employment of the two shaft poles D D, arranged and operating substantially as and for the purposes herein specified and shown.

2.—In combination with a cultivator, arranged so as to cultivate two rows at once, the arrangement of two semi-circles M M, the connecting bar N, or its equivalent, and the front share standards J', operating substantially as and for the purposes specified.

3.—The arrangement of the latch R with the rod *m* and arc E, as and for the purposes shown and set forth.

4.—The arrangement of the lever *l* with the latch R and rod *m'*, operating to release the forward ploughs when they are raised from the ground, substantially as shown.

5.—The arrangement of the long neck yoke D' with the two poles D, as and for the purposes specified.

No. 49,667.—H. H. WEBSTER, CLAREMONT, N. H.—*Cultivators*.—*August 29, 1865.*

Claim.—1.—The shafts A, chains C and D, and cultivator B, combined and arranged substantially as described and for the purposes specified.

2.—The spring *m*, lever *n*, and slotted standard L, when used for the purpose herein set forth, substantially as described.

No. 49,715.—GEORGE CALKINS, EL PASO, ILL.—*Cultivators*.—*September 5, 1865.*

Claim.—1.—The combination and arrangement of the plough beams D, levers F, supports K, levers E, provided with the rods L, the cross-piece H, and frame O, when constructed and operating substantially as and for the purposes set forth.

2.—The combination and arrangement of the plough-

beam levers E and F, provided with their fulcrums as described; cross-piece H, frame O, and the levers M and N, when constructed substantially as and for the purposes described.

No. 49,845.—J. A. BARDEL, FREEPORT, ILL.—*Cultivators*.—*September 12, 1895*.

Claim.—1.—The plough beams F F, attached to the front part of the frame C by universal joints a, in combination with the laterally-winging extension bar D and levers H H, all arranged to operate substantially as and for the purpose set forth.

2.—The treadles I I, in combination with the plough beams and extension bar D, as and for the purpose specified.

No. 49,856.—JASPER CHAPMAN, LINN CO., IOWA.—*Corn Cultivators*.—*September 12, 1895*.

Claim.—1.—The double bars d, constructed and operating as and for the purpose set forth.

2.—The combination of the lever L, the plate k, and the beams h h, in the manner and for the purpose herein specified.

No. 49,938.—IONIDUS B. WALKER, CHICAGO, ILL.—*Cultivators*.—*September 12, 1895*.

Claim.—1.—The combination and arrangement of the vibrating bars C C with the bars D D, which draw the cultivating teeth.

2.—In combination with the vibrating bars c c, the levers W W and links Z Z, arranged to operate them, substantially as described for the purpose set forth.

3.—Making the foot levers W W with three arms, and hanging them so that the driver, by applying his foot to either of the upper arms, can work the levers and vibrate the bars C C in either direction.

4.—Making the axle or pivots of the wheels hollow, in combination with the rock shaft and levers working through them, to raise the cultivating teeth.

No. 50,018.—ABRAHAM J. MANNY, FREEPORT, ILL.—*Cultivators*.—*September 19, 1895*.

Claim.—1.—The employment of the lever E, the bar b, and the yoke F, or its equivalent, for the purpose of giving direction to the machine from the seat, as is herein fully set forth.

2.—Attaching the plough beams to the hounds or side-pieces A A in such a manner that said beams can be brought closer together or separated by moving them forward or backward, as is herein represented.

3.—The combination of the triangular frame with the devices for changing the direction of the machine, as and for the purpose specified.

4.—The combination of the levers G and H H with the plough beams, as and for the purpose herein specified.

No. 50,052.—J. P. TOSTEVIN, RAVINE, WIS.—*Cultivators*.—*September 19, 1895*.

Claim.—1.—The combination and arrangement of the tongue A, when extending back and joined to the cross-piece C, substantially as shown, the bolts J, J, the set screw K, and frame B, when constructed and operating substantially as and for the purposes set forth.

2.—The combination and arrangement of the cross-piece C, provided with the slot a, the T-bolt H, plough standard E, provided with the slot b, base F, and rod D, when operating substantially as described.

3.—The combination and arrangement of the cogged sectors N and O with the wheel and frame of the cultivator, when operating substantially as herein specified.

4.—The combination and arrangement of the lever L, slide rod U, notched standard R, shaft X, and sector N, when constructed and operating substantially as and for the purposes herein set forth.

No. 50,141.—W. H. L. KING, PRINCETON, IOWA.—*Cultivators*.—*September 26, 1895*.

Claim.—1.—The plough beams E E attached to the frame A, by means of the universal joints F, in combination with the uprights G G, and slide H, and foot levers J J, all arranged to operate in the manner substantially as and for the purpose set forth.

2.—The pivoted frame Q connected to the shaft M, substantially as shown, when used in connection with the

plough beams E E connected to the shaft M, and all arranged substantially as and for the purpose specified.

No. 50,229.—ISAAC DUNHAM, LANESFIELD, KANSAS.—*Cultivators*.—*October 3, 1895*.

Claim.—The arrangement and combination of the several parts, substantially as described, in their relation to the frame and running gear, whereby the machine is adapted to the different kinds of work, as explained.

No. 50,257.—ROBERT McCORKLE, PHILADELPHIA, PENN.—*Cultivators*.—*October 3, 1895*.

Claim.—1.—The metal pieces F, provided with the horizontal flange a, recessed to receive and hold the bolt c, and having the lugs or projections b, for the purpose of attaching the drag bars D to the slotted bar A, and adjusting the same therein, as set forth.

2.—The plates G and H, constructed and arranged to operate in combination with the drag bars D, as and for the purposes set forth.

3.—The plate I, in combination with the elbow levers L, and plates G, for the purpose of moving the ploughs I I, as herein described.

4.—The rubber disk, or its equivalent, in combination with the standard u, and head K, of the drag bar, when constructed and arranged to operate as and for the purpose set forth.

No. 50,439.—L. B. BARTON, MEMPHIS, ILL.—*Cultivators*.—*October 17, 1895*.

Claim.—1.—The combination and arrangement of the lever h, beam D, and double-tree P, as shown in Fig. 4.

2.—The lever h, in combination with the double-tree P, rod L, and beam D, the latter having its front end pivoted to the main frame, and all the parts arranged to operate as and for the purpose herein set forth.

3.—The harrows b, in combination with the central swinging ploughs, as shown and described.

4.—The combination and arrangement of the standard L, lever O, and cross bar B, as and for the purpose set forth.

No. 50,453.—DANIEL CHURCHILL, and S. C. BREWER, IOWA, ILL.—*Cultivators*.—*October 17, 1895*.

Claim.—1.—The combination and arrangement of the draught rods G, the bar F, clevis a, and slotted pendant H, as and for the purpose set forth.

2.—The combination of the plough beam E, clevis a, and slotted pendant H, when arranged to operate as shown and described.

No. 51,031.—JOHN FERNALD, FRANKFORT, IND.—*Cultivators*.—*November 21, 1895*.

Claim.—1.—The movable seat M, connected to the levers K K, in the manner and for the purpose described.

2.—The double-plated perforated rolling shields V V, when used in the manner and for the purpose described.

No. 51,090.—W. W. ST. JOHN, ST. LOUIS, MO.—*Cultivators*.—*November 21, 1895*.

Claim.—1.—Mounting the beam A on the wheel stand B', the two parts being connected together by means of the bolt a, or its equivalent, so as to form a swivel joint, for the purpose of allowing the wheel B to be turned to either side to assist in the guidance of the ploughs F.

2.—The combination of the wheel stands B', and frame A A', and frame C D D', with the swinging frame E E' and plough beams F, as and for the purpose set forth.

No. 51,306.—B. A. GRANT, MOUNT PLEASANT, IOWA.—*Cultivators*.—*December 5, 1895*.

Claim.—1.—The combination and arrangement of the plough beams J, the arms K, the cross-bar L, vertical-rods M, and loops n, operating as and for the purposes specified.

2.—The combination of the plough beam I J, clasps a, arms K, cross-bar L, uprights M, loops n, uprights P, rod X, arms u, all arranged and operating as and for the purposes specified.

No. 51,365.—JAMES TOWNSEND, HEAD OF SASSAFRAS, MD.—*Cultivators*.—*December 5, 1895*.

Claim.—1.—The arrangement and combination of the lifting bar G, lever K, with the beams F, made adjustable up and down, and also capable of being run laterally by the stirrups, substantially in the manner and for the purposes set forth.

2.—The use of the hinged bar *O*, carrying the shanks *P* and markers *K*, the bar being provided with adjusting screws *V*, and operated by the lever *S*, substantially as described.
No. 51,904.—J. H. THOMAS, P. P. MAST and THOS. HARDING, SPRINGFIELD, OHIO.—*Cultivators*.—*Decem-ber* 12, 1865.

Claim.—1.—The independent short axle *E*, provided with the projection *F*, and secured to the main axle *B*, in the manner shown and described.

2.—The combination of axles *E*, rods *r*, and levers *L*, as shown and described.

3.—The lever *G*, in combination with the lever *L*, rods *r*, and axles *E*, arranged and operating as set forth.

No. 51,680.—JAMES ARMSTRONG, JR., ELMIRA, ILL.—*Cultivators*.—*December* 26, 1705.

Claim.—1.—The shovel-carrying frame *D D*, with the driver's seat *D'*, secured to its rear end, said frame being pivoted by its forward ends to two levers, which are secured rigidly to the carriage axle *B*, and are provided with foot straps *m m*, substantially in the manner and for the purpose described.

2.—The movable-stepped block *e*, applied to the axle *B* of a cultivator carriage, for adjusting the shovel frame of the cultivator, substantially in the manner and for the purpose herein described.

3.—The longitudinal laterally rocking rods *e e*, in combination with the pivoted cap *d*, applied in a cultivator, substantially in the manner and for the purpose herein described.

4.—The compound pivot-joint *e i*, for connecting the shovel standards *G G* to their supporting frame, and allowing the lateral vibration of the standards, as well as permitting the desired adjustment of the same, either to the right or left, substantially in the manner described.

5.—Constructing the shovels *S*, with an embracing extension *t*, which is pivoted to the standard in the manner described and represented, for the purpose set forth.

6.—The combination of the shovel frame *D D C'* with the levers *C C*, vibrating standards *G G*, curved levers *I I*, and treadle *H H*, substantially as described.

No. 5,348.—JAMES ARMSTRONG, JR., ELMIRA, ILL.—*Cultivators*.—51,680.—*December* 26, 1865.—Reissued March 30, 1866.

Claim.—1.—Two longitudinal beams or levers *C C*, extending both in front and in rear of the axle *B* of a cultivator, and secured rigidly upon said axle, at any required distance on each side of its centre, said beams or levers being pivoted or hinged, at their forward ends, to the shovel-carrying frame *D D*, substantially as described.

2.—The beams or levers *C C*, applied to the axle of a cultivator, and extending both in front and in rear of said axle, so that when their ends are depressed, the shovel-carrying frame is raised, substantially as described.

3.—Rigidly securing the draught-pole *E* to the transverse brace *C'* and front brace *b*, of a shovel-carrying frame of a carriage cultivator, when such frame is hinged at its front end, and its *t*, together with the rear end of the draught pole, and with said braces, rises bodily, as the cultivator teeth are elevated, substantially as described.

4.—Pivoting the inner shovel standards *G G* to a transverse brace *C'* of a shovel-carrying frame, which is hinged at its front end, and has the draught pole attached to it, substantially as described.

5.—A carriage-cultivator, combining in its organization two pairs of longitudinal beams, hinged or pivoted together at their front ends, or levers *D D*, *C C*, and a driver's seat, located on extensions which are above the axle in rear of the axle of the transporting-wheels, and in rear of the ploughs or shovels, substantially as described.

6.—The shovel-carrying frame *D D*, with the driver's seat *D'* secured to its rear end, said frame being pivoted by its forward end to two levers, which are secured rigidly to the carriage-axle *B*, and are provided with foot-straps *m m*, substantially in the manner and for the purpose described.

7.—The movable stepped-block *e*, applied to the axle *B* of a cultivator carriage, for adjusting the shovel frame of the cultivator, substantially in the manner herein described.

8.—The longitudinally laterally rocking rods *e e*, in com-

bination with the pivoted cap *d*, applied in a cultivator, substantially in the manner and for the purpose herein described.

9.—The compound pivot-joint *e i*, for connecting the shovel-standards *G G* to their supporting frame, and allowing the lateral vibration of the standards, as well as permitting the desired adjustment of the same, either to the right or left, substantially in the manner described.

10.—Constructing the shovels *s* with an embracing-extension *t*, which is pivoted to the standard, in the manner described and represented, for the purpose set forth.

11.—The combination of the shovel-frame *D D C'* with the levers *C C*, vibrating standards *G G*, curved levers *I I*, and treadle *H H*, substantially as described.

No. 51,682.—C. C. BAUM, OXFORD, IOWA.—*Cultivator Ploughs*.—*December* 26, 1865.

Claim.—The combination of the bars *C*, vertical shafts *D*, cranks *b b*, connecting rod *E*, lever *F*, heads *I*, and axles *K*, as and for the purposes set forth.

No. 51,721.—WILLIAM H. HOWELL, EWINGVILLE, N. J.—*Cultivators*.—*December* 26, 1865.

Claim.—1.—The frame, consisting of the diagonal slotted bars *A A*, tongue *B*, and axle *D*, arranged as shown and described.

2.—The elbow lever *b*, connected to the plough by the rod *e*, or its equivalent, in combination with the handle *a*, and bar *f*, provided with the hook *e'*, when arranged to operate as and for the purpose set forth.

3.—The combination and arrangement of slotted bars *A*, pendents *E*, drag bars *F*, and bar *C*, as shown and described.

No. 52,49.—G. L. HUTCHINSON, WHITE ROCK, ILL.—*Cultivators*.—*January* 16, 1866.

Claim.—1.—The rock shaft *b'*, arms *b*, and standards *b'*, in combination with the axle trees *B* and adjustable braces *b r*, when arranged as and for the purpose set forth.

2.—The arrangement of the lever *P* and adjustable tongue *D* in combination with the frame *A* and axletrees *B*, when hinged together, as and for the purpose described.

No. 52,953.—BENJAMIN F. KESSELER, WILMINGTON, ILL.—*Cultivators*.—*January* 16, 1866.

Claim.—Elevating and sustaining the beams *E* by means of the chains *m*, drums *I*, roller *K*, wheel *J*, coil *h*, and slide *m*, when all arranged and operated substantially as described.

No. 52,993.—J. H. THOMAS and P. P. MAST, SPRINGFIELD, OHIO.—*Cultivators*.—*January* 16, 1866.

Claim.—1.—Pivoting and bracing the shield bars *C* to the beams *B*, in such a manner that the shields will retain their relative position to the shovels when they are being moved laterally, and at the same time be permitted to play up and down independently of each other, and of the shovels, as and for the purpose set forth.

2.—The metal pieces *O*, constructed as shown, and arranged to operate in connection with the bars *C*, as herein set forth.

3.—The metal stirrup *O*, constructed as shown, and arranged to operate in connection with the swinging bar *b*, and beam *B*, as set forth.

4.—The pulleys *e*, secured to the standards *E*, in combination with the rock shaft *I*, chains *S*, and beams *B*, arranged as shown and described.

5.—The angle irons *L*, constructed as shown, and arranged to operate in connection with the axle *G*, standards *E*, and rock shaft *I*, as and for the purpose herein set forth.

No. 52,159.—JAMES S. GILMORE, MILLERSBURG, ILL.—*Cultivator Ploughs*.—*January* 23, 1866.

Claim.—1.—The arrangement of the plough shanks *F F*, square shafts *D H*, adjustable clevises or arms *E H'*, chains *P L*, cog wheels *K L*, and lever *L Z*, as and for the purpose described.

2.—The arrangement of the shaft *O*, curved bar *P*, stirrups *Q Q*, vertical arm *R*, bar *S*, uprights *S' S'*, curved bars *V V*, and pins *t t*, as and for the purpose specified.

3.—The reversible lever *W*, in combination with the shaft *O*, and set screws *z*, as described.

No. 52,184.—STEPHEN G. MILLS, DES MOINES, IOWA.—*Cultivators*.—*January* 23, 1866.

Claim.—The arrangement of the double-shovel plough beams *F*, standards *I*, girdles *J*, pair of chains *E*, wheels *L*,

bridge M, bar O, lever N, and shifting seat R, substantially as described and represented.

No. 52,213.—THOMAS N. SHERWOOD, DUNN AVENUE, IND.—*Cultivators*.—January 23, 1866.

Claim.—1.—The lever N, placed on the rear part of the draught pole L, and connected by a rod O to a lever E' at the rear of the bar E, in combination with a staple M attached to bar E, passing through the draught pole to receive the front end of lever M, and the connecting of the rear end of the draught pole to the bar E by a hook c, substantially as and for the purpose herein set forth.

2.—The rollers K K, when applied to the device in front of the ploughs, substantially as and for the purpose set forth.

3.—The combination of the adjustable plough beams B B C C, rollers K K, wheels P P, and draught pole L, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 52,217.—JAMES B. SKINNER, ROCKFORD, ILL.—*Cultivators*.—January 23, 1866.

Claim.—1.—The frame of a cultivator so constructed of two longitudinal pieces as to have its front constitute the tongue, while its rear extends behind the axle to support the driver's seat and ploughs, substantially as set forth.

2.—Uniting the frame to the axle by levers arranged as described, in combination with the mechanism, substantially as described, for rendering the frame rigid when raised to its greatest height, for the purpose set forth.

3.—The combination of the standards with the frame, the bent levers, and the foot levers, when arranged and operating substantially as and for the purpose set forth.

4.—The combination of the standards with the frame so that they shall be raised and lowered with it, and be capable of a sidewise and pivotal movement, and these with the mechanism, substantially as described, for locking the standards rigidly when adjusted for the purpose set forth.

5.—In combination with the standards 3 and 4, the cross-bar I, ratchet bar M, and the catch plate Z, and the catch bolts 13 and 14, arranged and operating as and for the purpose set forth.

6.—The combination of the adjustable mould boards R, with the standards and ploughs, substantially in the manner and for the purpose set forth.

7.—The combination of the doubletree X with the main frame and with the levers P and P', arranged and operating substantially as described, for the purpose set forth.

No. 52,222.—LAFAYETTE STRICKLAND, TALLEY-RAND, IOWA.—*Cultivator Ploughs*.—January 23, 1866.

Claim.—1.—The upright bars H' attached to the plough frames E E and connected at their upper ends to handles K, the front ends of which, as well as the front ends of the plough frames, are connected to the framing D by staple joints, substantially as and for the purpose specified.

2.—The adjustable plates N, secured to the inner surfaces of the bars H' in connection with the eyes or guides f, arranged as shown, to regulate the depth of the penetration of the ploughs in the earth, as set forth.

3.—The shoulders t, attached to the rear sides of the bars H', in connection with the spring catches j on the framing D, for the purpose of holding, when required, the ploughs above the surface of the earth, substantially as set forth.

No. 52,348.—CHARLES C. WELLS, LYONS, IOWA.—*Cultivators*.—January 30, 1866.

Claim.—1.—So constructing and arranging the hounds C C, front cross-beam z, and rear beam z', in combination with the axle A, that the same may be adjusted by the movable bolts and holes, substantially in the manner and for the purpose herein set forth.

2.—Constructing and arranging the standards D' D', in connection with the hounds, so that the may be shifted from the straight bolts f f to the elbow ones c c, substantially in the manner and for the purpose herein set forth.

3.—The application of the stirrups F F to the rear of the standards D' D', substantially in the manner and for the purpose herein set forth.

4.—The combination of the lever E with the stirrups F F and standards D' D', for raising the latter in conjunction with the feet, substantially in the manner and for the purpose as herein set forth.

5.—The arrangement of the rear cross-beam z', in combination with the stirrups and standards, so that the latter may be moved in a lateral direction independent of each other, substantially in the manner and for the purpose herein set forth.

No. 52,429.—A. S. MARKHAM, BUSHNELL, ILL.—*Cultivators*.—February 6, 1866.

Claim.—The securing of the pendants J on the rod K by means of bolts j passing through any of a series of holes in plates N N attached to the draught pole, substantially as shown and described.

No. 52,462.—JOSEPH S. STUCKER, SUGAR GROVE, OHIO.—*Corn Cultivators*.—February 6, 1866.

Claim.—The combination and arrangement of the ploughs or cultivators, cross-bar, axle, and frame, when made adjustable, as and for the purposes set forth.

No. 52,606.—I. HARRISON RICE, SPRINGFIELD, OHIO.—*Cultivators*.—February 13, 1866.

Claim.—1.—The combination of the three-sided double frame a a a', and a' a', with the removable seat g, and adjustable axle bearings, in the manner described, for the purpose specified.

2.—The combination of the main frame with the vertical frame d, windlass e, chains f, and joints c c, arranged and operating conjointly, in the manner substantially as described, for the purpose specified.

No. 52,743.—GEORGE W. PRUGH and WILLIAM H. BEARD, ARMINGTON, ILL.—*Cultivators*.—February 26, 1866.

Claim.—1.—Combining and uniting in one machine the shaft J, fitted with a lever and pulley, and connected to the cultivator beams N N and S S for the purpose of raising and lowering them, and the bell cranks P P and stirrups t t, connected to the top of the two inside cultivator shafts V V, for the purpose of moving them laterally, substantially as described.

2.—Connecting and arranging the cultivator beams N S and N S', in relation to each other, substantially as set forth.

3.—The adjustable connection between the front ends of the cultivator beams N N' and the hangers E E, when said hangers and beams are arranged in respect to each other and to the cross-tree Z and the main frame A B C, substantially as set forth.

No. 52,754.—JOHN SAVILL, MONMOUTH, ILL.—*Cultivators*.—February 26, 1866.

Claim.—1.—The bent axle A, provided with arms a a, in combination with the brackets C C, containing the wheels D and fitted on the arms a, substantially as and for the purpose set forth.

2.—Connecting the front ends of the plough beams E E, to the upper ends of the brackets C C, by pivot-bolt b, arranged with circle-plates c, substantially as and for the purpose specified.

3.—The evener, or draught-regulator composed of the splinter bars I I K, connected by the rods J, and arranged substantially as described.

No. 52,770.—D. C. TELLER, TERRE HAUTE, IND.—*Cultivators*.—February 20, 1866.

Claim.—The arrangement of the vibrating beams R, in combination with the spring sliding draw bars F and crooked arms m with the stop O, substantially as specified for the purpose set forth.

No. 52,905.—ANDREW J. STOVER, SANDYVILLE, IOWA.—*Cultivators*.—February 27, 1866.

Claim.—The oblique bars D D, connected to the draught pole C, and having standards I and shares J attached as shown, in combination with the plough beams G G connected to the bars D D, and arranged to admit of being turned to give a lateral movement to the shares L, substantially as and for the purpose set forth.

No. 52,998.—ISAIAH HENTON, SHELBYVILLE, ILL.—*Cultivators*.—March 6, 1866.

Claim.—The combination and arrangement of the carriage frame A, the vibrating frame B, pivoted to A, the beams b, hangers i, standards n, and the hand lever o, with the sheaves q, and cords or chains r, substantially as herein specified and for the purpose described.

No. 53,303.—M. H. HULLINGER, GRANTVILLE, ILL.—*Cultivators*.—*March* 20, 1866.

Claim.—1.—The combination and arrangement of the curved bar O and the rollers T T, operating substantially as and for the purposes specified.

2.—The combination and arrangement of the beams H and I, the posts M, the standards L, curved bar O, and rollers T T, substantially as specified and shown.

3.—In combination with the above the employment of the bent levers P, the chains *r*, and stirrups Q, as and for the purposes shown and described.

No. 53,322.—THOMAS H. MINER and SAMUEL HEAVENRIDGE, GREENFIELD IND.—*Cultivator Ploughs*.—*March* 20, 1866.

Claim.—1.—The sliding plates D D, with the plough standards F passing through them, and the plates connected to the crank I of a shaft J, by rods *r*, said shaft having a cross bar K at its rear end provided with stirrups L, and all arranged to operate in the manner substantially as shown, to give a lateral movement to the ploughs.

2.—The connecting of the plough standards F to cranks *g*, on the plates D D, by rods *r*, the cranks having levers N attached, and all arranged substantially as shown, to admit of the raising of the ploughs.

No. 53,326.—D. J. NOBLE, NEW BOSTON, ILL.—*Cultivators*.—*March* 20, 1866.

Claim.—The springs F, applied to the pivoted plough standards *h*, substantially as and for the purpose set forth.

No. 2,683.—D. J. NOBLE, NEW BOSTON, ILL.—*Cultivators*.—*March* 20, 1866. Reissued July 16, 1867.

Claim.—1.—The combination of the adjustable plough beams E with a stationary frame A and a device whereby said beams may be locked rigidly at any desired height, substantially as and for the purposes specified.

2.—The levers H H, pivoted to the frame A and arranged relatively with the plough frame E, as herein specified, in combination with the notched plates I I, when all are constructed and operate substantially as and for the purposes set forth.

No. 53,328.—LEWIS M. PATTERSON, JORDAN'S GROVE, ILL.—*Gang Ploughs*.—*March* 20, 1866.

Claim.—1.—The combination of the two frames F H, one, F, being attached by a pivot bolt or screw to the pivoted bolster C, and the other, H, attached to the front end of F by a hinge or joint, and having a lever, J, connected to it, substantially as shown, for the purpose of keeping the frame H, and consequently the ploughs, in an elevated or working position, substantially as set forth.

2.—The bolster C pivoted to the axle A, in combination with the frames F H and the lever N, or its equivalent, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 53,408.—JAMES CANFIELD, WASHINGTON, IOWA, and CHARLES HESS, LYONS, IOWA.—*Cultivators*.—*March* 27, 1866.

Claim.—1.—The combination and arrangement of the inner beams F F, the slotted hangers H H, pivoted to the cross-bar C, and the regulating bar I, operating as and for the purposes described.

2.—The combination and arrangement of the plough beams E F, the hangers G H, the levers L L, cross-bar C, chains *a h*, arranged and operating as and for the purposes described.

No. 53,445.—PAUL HILDRETH, BELoit, WIS.—*Cultivators*.—*March* 27, 1866.

Claim.—The adjustable cultivator bars F F, the bed pieces H H, the adjustable brackets W W, the movable gauges *c c*, and the scrapers *q q*, when constructed substantially as herein set forth and described, for the purpose specified.

No. 53,446.—CHARLES HOLMAN, CAMBRON, ILL.—*Cultivators*.—*March* 27, 1866.

Claim.—The buttons H' H', secured to the upper ends of the rods G G, in combination with the bar J, provided with the recesses *h h*, and the springs *g*, on the rods G, all arranged substantially as and for the purpose specified.

No. 53,525.—CHARLES DENTON, PERIN, ILL., assigned to himself, SAMUEL E. BARBER, and SAMUEL F. HAWLEY, DECATUR, ILL.—*Cultivators and Seeding Machines*.—*March* 27, 1866.

Claim.—1.—The plough framing, consisting of the two oblique bars *c c*, connected together as shown, and connected to the bars D D of the main frame by means of the joints *h*, for the purpose of raising the ploughs out of the ground when desired.

2.—The pivoted draught pole O in combination with the pivoted plough standards K K, arranged substantially as and for the purpose specified.

3.—The main frame, consisting of the bar C, with slide bars D D attached, when used in combination with the plough frame composed of the oblique bars *c c*, and all arranged substantially as described.

No. 53,663.—C. S. PANGBORN and GEORGE W. BEERS, ONAGO, ILL.—*Cultivators*.—*April* 3, 1866.

Claim.—The combination of the treadles L L, plough beams G G, swivel sockets H H, arms J J, treadles O O, and frame D, constructed and arranged to operate in the manner as and for the purpose herein specified.

No. 53,837.—JOHN LACEY, CHICAGO, ILL.—*Cultivators*.—*April* 10, 1866.

Claim.—1.—Attaching the shovels to beams having an independent vertical movement, and so connected to the movable frame I, H, that by moving the latter sidewise all the ploughs are moved with it, said movable frame being pivoted at *h*, substantially as and for the purpose set forth.

2.—Interposing the conical rollers *a* between the fixed and movable frames, to enable the latter to be more easily operated, as shown and described.

No. 53,867.—GEORGE PERRY, MUSCATINE, IOWA.—*Cultivators*.—*April* 10, 1866.

Claim.—1.—The adjustable beams C C, in combination with the slotted cross bar A, and the slotted braces and notched latches M M, substantially as and for the purposes set forth.

2.—The foot levers G G, in combination with the supplementary frame, substantially as and for the purposes set forth.

3.—The buttons O O, attached to the frame D D, and rigidly securing the supplementary frame either up or down when desired, substantially as and for the purposes set forth.

4.—The levers H H, and the parallel bar I, in combination with the hinged standards of the interior shovels and oscillating beams C C, the latter being also adjustably attached, substantially in the manner and for the purpose set forth.

5.—The mode of attaching the standards of the interior ploughs by the jaws I, L to the beams C C, substantially as and for the purposes set forth.

6.—A hinged shovel attached to the standard by a wooden pin, substantially in the manner and for the purpose set forth.

No. 53,911.—EDWARD P. WHEELER, NEBRASKA CITY, NEB.—*Cultivators*.—*April* 10, 1866.

Claim.—1.—The arrangement of the levers F, pivoted standards L, and plough beams D, as described.

2.—Pivoting the levers F and standards L to the plough beams, by means of the longitudinally arranged pins or rods *p*, as and for the purposes shown and set forth.

3.—Providing said levers, when arranged with the standards L, as set forth, with the knee rests *h*, as and for the purposes specified.

4.—The combination of the hinged beams D, standards L, levers F, and hook *d*, arranged as described and shown.

5.—In combination with the beams D and standards L, the arrangement of the adjustable standard P and cross-bars Q R, as described.

6.—The combination of the cross-marking bar T, provided with shovels V, with the drags J, for the purposes set forth.

7.—The combination and arrangement of the standards L P, the levers F, beams D, cross-bar H, and brace I when arranged so as to render said standards L rigid, for the purpose of ploughing in grain, as shown and specified.

No. 53,947.—JARVIS CASE, SPRINGFIELD, OHIO.—*Cultivators*.—April 17, 1866.

Claim.—1.—Suspending the plough beams from the rock shaft F, mounted on the posts H, substantially as shown and described.

2.—The lock bar or brace *c*, arranged to operate in connection with the shaft F, as and for the purpose set forth.

3.—The standards I, connected by the chain L, and provided with the foot rests *s*, as shown and described.

4.—Attaching the shields O by means of the bent arms *n* and staples *z*, as set forth.

No. 54,000.—THEOPHILUS F. BERTRAND and PETER SAMEN, ROCKFORD, ILL.—*Cultivators*.—April 24, 1866.

Claim.—1.—The combination of the ploughs, draught rods, and elbow levers O, with the frame and driver's seat, when constructed, arranged, and operated as described.

2.—The combination of the standard, braces, eye-bolt, and grooved block, when constructed and arranged as described, to vary the angle of the plough to the crop, as set forth.

3.—The combination of the standard eye-bolt *j*, hoop *m*, and draught rod M, constructed and arranged as described, to secure centre draught when ploughing at an angle to the crop.

No. 54,139.—J. L. FOUNTAIN, NEW MILFORD, ILL.—*Combined Seiders and Cultivators*.—April 24, 1866.

Claim.—1.—The arrangement of hanging the cultivator to the hounds C at Q, and by links *p* the levers S *r*, in combination with the hounds, axle, and cultivator frame, as and for the purposes set forth.

2.—The adjustable arms D, cross-brace F, and pieces E E, for extending and contracting the frame, in combination with the seeding apparatus, lever I, and seat O, arranged as and for the purpose described.

No. 54,160.—SAMUEL HOFFHEINS, HAMILTON TOWNSHIP, PENN.—*Cultivators*.—April 24, 1866.

Claim.—The combination of the devices for raising the shovels from the ground, and consisting of the levers G G, foot boards H H, and rocking seat I, operating substantially as described and represented.

No. 54,317.—WILLIAM D. FISHER, FREEDPORT, ILL.—*Cultivators*.—May 1, 1866.

Claim.—The arrangement and combination of the drops C, equalizer E, a justable frame A, regulating lever G, and fenders J, when arranged as herein described, and for the purposes set forth.

No. 54,937.—BENJAMIN F. YOUNG, TOULON, ILL.—*Cultivators*.—May 8, 1866.

Claim.—1.—The in-side frame B and the mode of connecting it with the frame A, constructed and operated substantially as described.

2.—The iron lever F hung upon a pivot by which the front shovels are swung to the right or left.

3.—The adjustable wooden wedges I, together with the crooked iron necks D, by which the front shovels are adjusted so as to throw the dirt to or from the corn.

4.—The side or gauge P, by which is adjusted the depth the shovels enter the ground.

No. 54,659.—ORLANDO BARR and FRANKLIN F. COX, BLOOM, WIS.—*Cultivators*.—May 15, 1866.

Claim.—The rod B' B', as shown in Fig. 1, the head blocks B B, sliding upon the said rod B' B', connected with the gear *b b*, and lost lever and section pinion D, the sliding rods A A attached to the beams A' A', and the device and arrangement of the draught rods *g g*, and chains *c c*, when constructed substantially as and for the purpose herein set forth and described.

No. 54,751.—WILLIAM M. CORMICK, MASCATINE, IOWA.—*Cultivators*.—May 15, 1866.

Claim.—1.—The cast iron standards Z, provided at their upper ends with lips *z*, to fit over the upper and lower edges of the plough beams I, in order to avoid the use of the braces to retain the standards in position, substantially as set forth.

2.—The arrangement of the plough beams I, as shown, to wit: the front ends being provided with rods J, to fit into staples or guides K, at the lower parts of uprights G, at the rear of the frame A, and their front ends connected by

chains R to uprights G, which are attached by universal joints *g* to the front part of the frame A, the uprights G passing down between rollers M, and the front bent parts *a'* of one of the clevises L of each beam, substantially as and for the purpose specified.

3.—The attaching of the doubletree Q to the front ends of the beams I, when said beams are connected to the bar P^h, through the medium of the uprights O, in the manner substantially as set forth.

4.—The arrangement of the treadles T T, with the beams I I, and levers W, substantially as and for the purpose specified.

No. 54,763.—EDWIN PARMELE and R. N. PATTERSON, DAVENPORT, IOWA.—*Cultivators*.—May 15, 1866.

Claim.—1.—Applying shovel standards to a carriage in such manner that that they are allowed to rise or fall bodily or independently of each other, and also of being moved laterally together by the feet of the attendant, substantially as described.

2.—The slotted shovel standards D D, in combination with the treadles *r r*, and the driver's seat, substantially as described.

3.—Connecting the standards D D to the roller *e*, in such manner that their lower ends can be swung forward and upward in combination with contrivances for allowing said shovel standards to be adjusted laterally, and also moved up and down in a direction with their length, substantially as described.

4.—So constructing the two treadles *r r*, that each one serves as a lever, and also as a means by which both standards can be moved simultaneously either to the right or to the left, substantially as described.

No. 54,812.—FRANCIS M. BIRDSALL, MARTINSVILLE, OHIO.—*Furrowing Machines*.—May 22, 1866. Antedated May 16, 1866.

Claim.—The plough frames *e*, longitudinal strips *e'*, and levers *d*, in combination with ploughs *g*, frame A, and sliding straps *h*, constructed as above described and for the purposes set forth.

No. 54,854.—H. F. BYERLY, CLINTON, ILL., assignor to ISRAEL CAMPBELL.—*Cultivators*.—May 22, 1866.

Claim.—1.—The sliding bolts *k k*, slots *i i*, and pendants *b b*, combined and operated substantially as and for the purpose specified.

2.—The roller L, lever *f*, and chain M and *h*, combined and operated substantially as and for the purpose set forth.

No. 55,093.—WILLIAM HAMMOND, MARSHALL, MICH.—*Wheel-Cultivators and Gang Ploughs*.—May 29, 1866.

Claim.—The employment, independently, or in connection with each other, of the bent axle, bearing levers L, in combination with the fulcrum pins F, and adjustable stop-gauge plates G, connected and arranged relatively to and with the frame and wheels of a cultivator, or gang plough, substantially as and for the purpose herein specified.

No. 55,381.—H. B. SMITH, EUKEKA, ILL.—*Cultivators*.—June 5, 1866.

Claim.—1.—The construction of the frame A in the manner substantially as herein shown and described, to admit of said frame being expanded and contracted laterally to adjust the ploughs nearer together or further apart, as may be required, and admit of a direct application of the draught of each animal to the device, as set forth.

2.—In combination with the frame A thus constructed, the pivoted beams C C, arranged or applied substantially as and for the purpose set forth.

3.—The connecting of the plough beams G G to the beams C C, by means of the universal joints H^h, constructed substantially as shown and described, to admit of the vertical, lateral, and rolling motion of the ploughs, as set forth.

4.—The combination of the adjustable frame A, pivoted beams C C, plough beams G G, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 55,093.—A. M. BLACK, AUBURN, ILL.—*Cultivators*.—July 3, 1866.

Claim.—1.—The pole *a* having a cross-bar A rigidly

secured thereto, and a framework composed of the plough beams B B, with cross-pieces *h h'* pivoted to the ends of said cross-bar A, substantially in the manner and for the purpose specified.

2.—The cross-bar A, plough beams and frame B B *h h'*, the adjustable prop C, and lever H, all arranged and operating in the manner and for the purpose set forth.

3.—The hook and eye-bolts, which project from the inside of the plough beams B B, and fasten the standards *m m*, to beams B B, the connecting rod *g*, eye and rod fastening in cross-piece *h*.

No. 50,022.—THOMAS E. ELLETT, MOSMOUTH ILL.—*Cultivators*.—July 3, 1866.

Claim.—1.—The combination of wheel A, bar P, and axles G G, with the ends at right angles, for the purpose and substantially as described.

2.—The attachment of tongue with side movement, substantially as described.

3.—The bars H H for supporting axle-boxes F and clevis O, substantially as and for the purpose described.

4.—The rod 2, for the purpose described.

5.—The combination of the axle G, bars H H, wheel A and tongue, in a manner to produce side movement, for the purpose and substantially as described.

No. 50,122.—C. W. TALIAFERRO, KEITHSBURG, ILL.—*Corn Cultivators*.—July 3, 1866.

Claim.—1.—The particular manner of constructing the frame of the machine, to wit, of two parallel bars A, connected by semi-circular metallic bars B, with the axles E fitted between or having their bearings in said bars, substantially as shown and for the purpose set forth.

2.—The connecting of the plough beams F F to the axles E, by having the latter formed with slots *a*, to receive clevises *a'* at the front ends of the beams, with pins *b* passing through the axles and clevises, substantially as and for the purpose specified.

No. 50,157.—ANDREW P. ANDERSON and BYRON EDWARDS, PRINCEDON, ILL.—*Cultivators*.—July 10, 1866.

Claim.—The beams D D, in combination with the plough standards H H, and the plough standards F E, substantially as and for the purpose set forth.

No. 50,280.—D. C. STOVER, LANARK, ILL.—*Cultivators*.—July 10, 1866.

Claim.—The arrangement of the uprights *c* and bar *d* with the pendant bars J I and plough beams D D I L.

No. 50,295.—G. W. WARREN, MACOMB, ILL.—*Cultivators*.—July 10, 1866.

Claim.—1.—The inner frame, pivoted at its rear end to the main frame, having the two rear ploughs attached permanently thereto, and having the pivoted bars T secured to it in the manner shown.

2.—The long standards I, having the front shovels attached thereto secured to the pivoted bars T underneath the axle and frame, and arranged as set forth.

3.—The screws *r*, arranged to adjust the depth of the ploughs, in the manner shown and described.

No. 50,341.—ISAAC AVERY, OLLAWA, ILL.—*Cultivators*.—July 17, 1866.

Claim.—1.—The attaching of the plough beams A³ to pendants *a'*, of the cross-bar C, by means of universal joints D D', substantially as and for the purpose specified.

2.—The combination of the plough beams A³, universal joints D D', doubletree or evener C, trace chains F, and pulleys *e'*, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 50,511.—JOHN N. ARVIN, VALPARAISO, IND.—*Cultivators*.—July 24, 1866.

Claim.—The arrangement of the joints *h*, universal joints H, links O, arms P, and chains J in combination with the curved plough beams G M and shaft E, operating in the manner and for the purpose herein specified.

No. 57,484.—CHARLES DANIEL, LAMONTE, MO.—*Cultivators*.—August 28, 1866.

Claim.—1.—The joint-I handled and vibrating cultivators *h h* in combination with the plough beams *c*, the axle B, and hounds *a a*, constructed and operated substantially as and for the purposes herein described.

2.—The suspended plough beams *c*, in combination

with the hounds *a a*, and the stirrups *d d*, constructed and operated substantially as and for the purposes set forth.

3.—The arrangement of the oblique hanging hounds *a a*, in connection with the centre beam A, the plough-beams *c*, the side braces *e e*, and the axle B, constructed and applied substantially as and for the purposes herein specified.

4.—The arrangement of the swinging seat C on the centre beam A, in combination with the vibrating cultivators *h h*, and their jointed handles *m m*, applied in connection therewith, substantially as and for the purposes herein described.

No. 57,563.—H. S. POTTER, FAIRFIELD, IOWA.—*Corn Cultivators*.—August 28, 1866.

Claim.—1.—The frame A, with the driver's seat B, placed on its rear end, and connected at its front end to the hounds D of the draught pole in front of the axle E, substantially as and for the purpose set forth.

2.—The frame J, in combination with the plough beams I L, connected by swivel joints to the rod K, above the axle E, arranged in connection with the frame A, to operate substantially as and for the purpose specified.

3.—The lever Q, attached to the front part of the frame A, and applied to or arranged in connection with the frame J, and the loop L, with roller *m*, substantially as and for the purpose set forth.

4.—The connecting of the plough standards G M to the frame A and beams I, by means of the pivoted bars *h g*, provided with wheels *e h*, substantially as and for the purpose specified.

No. 57,619.—JACOB BERGEN, PLAIN TOWNSHIP, OHIO, assignor to himself and PETER KAUFMAN.—*Cultivators*.—August 28, 1866.

Claim.—1.—The peculiar arrangement of the bent axle H G F G H, in connection with the frame A and the wheels G, substantially in the manner and for the purpose specified.

2.—The peculiar arrangement of the back braces E and frame A, in the manner and for the purpose specified.

No. 57,600.—J. H. BARLEY, LONGWOOD, MO.—*Cultivators*.—September 4, 1866.

Claim.—1.—The iron bars D D attached to the plough beams A A, to support the cross-piece E a suitable distance above the plough beams, in connection with the plough standards F F pivoted to the cross-piece, substantially as and for the purpose set forth.

2.—The curved handles K K, pivoted to the adjustable bar I, and connected to the bars F, which are pivoted in the bar H and secured to the plough standards F F, substantially as and for the purpose set forth.

No. 57,700.—GEORGE T. GIFFORD, MOSMOUTH, ILL.—*Cultivators*.—September 4, 1866.

Claim.—1.—The arrangement of the frames B and A, and movable pivot L L, for balancing, substantially as described.

2.—The combination of the lever F, cross-bars E and C, and ploughs G G, with the inside frame, for the purposes set forth, and substantially as described.

3.—The arrangement of frames B B and A A, by which the weight of driver-supports or tends to lift ploughs, substantially as described.

4.—The slide S, operating in the axles as described, and for the purpose set forth.

No. 57,752.—L. B. MOORE, JANSVILLE, WIS.—*Corn Cultivators*.—September 4, 1866.

Claim.—The construction of a corn cultivator by the combination and arrangement of the various parts, substantially as they are described in the foregoing specification, or their mechanical equivalents, when used to produce the said automatic reciprocating motion of the said levers *j j* and shovels X X, as specified.

No. 57,856.—M. H. BUCKNALL, DARIEN, WIS.—*Cultivators*.—September 11, 1866.

Claim.—1.—The lever frames B B, attached at their front ends by joints *a a* to the front end of the frame A, in combination with the segment guides C C and the stop pins *d*, or their equivalents, substantially as and for the purpose herein set forth.

2.—The combination of the teeth J, standards I, rivets *e*,

shoulder *k*, screw nut *l*, braces *m*, and frame *A*, substantially as described for the purpose specified.

No. 57,858.—JOHN BURNHAM and WILLIAM C. LATHROP, LA SALLE, ILL.—*Cultivators*.—September 11, 1866.

Claim.—1.—The attaching of the plough frames *G* to an upright mounted frame *A* by means of joints *d* and bars *F*, arranged as shown to form a universal joint connection to admit of the vertical and lateral movement of the ploughs, substantially as described.

2.—The connecting of the two plough frames *G* by means of a yoke *H*¹, having its ends pivoted to bars *I*¹ *I*² which are secured horizontally on the frames *G* by pivots *c*, to admit of the frames *G* rising and falling independently of each other, as set forth.

3.—The duplex double tree arrangement, composed of the two double trees *D* *E*, attached to the draught pole *C* and connected by the rods *a*, substantially as described.

No. 57,906.—HENRY HOOVER, HEMLO, ILL.—*Cultivators*.—September 11, 1866.

Claim.—1.—The arrangement and combination of the central beam *O*, shovel standards *D'*, shovel *Q'*, with the central roller *F* and shaft *5*, when constructed substantially as and for the purpose specified.

2.—The segment guides *J*, having the grooves *S*, in combination with the inner beams *G*, rollers and shovel standards *D'*, shovels *Q'*, cams *L* and shaft *5*, substantially as described and set forth.

No. 58,082.—SAMUEL P. ETTER, SCOTLAND, PENN.—*Cultivators*.—September 18, 1866.

Claim.—1.—The compound levers *R* and *Q*, connected to the plough beams by the braces or rods *U* *U*, when constructed and operated for the purposes and substantially as described.

2.—The compound levers *R* and *Q*, rods *U* *U*, and plough beams *H*, in combination with the pendants *G* *G*, and pendant guides *J* *J*, substantially as and for the purposes shown and described.

No. 58,125.—D. J. NOBLE, NEW BOSTON, ILL.—*Corn Cultivators*.—September 18, 1866.

Claim.—The adjustable foot pieces *L* *L* connected to the plough standards *I* *I*, and arranged with brace *K*, in combination with the mode of attaching said standards to the frames *C* and *F*, substantially as and for the purpose herein specified.

No. 58,147.—ANDREW STARK, TOPEKA, KANSAS.—*Cultivators*.—September 18, 1866.

Claim.—The pivoted bars *I* *I*, having the driver's seat *N* attached to them, in combination with the plough beams *H* *H*, connected at their front ends to the front part of the frame of the machine, and the plough beams and bars connected by chains *h*, or their equivalents, substantially as and for the purpose specified.

No. 58,188.—ALEXANDER ANDERSON, LONDON, CANADA WEST.—*Cultivators*.—September 18, 1866.

Claim.—1.—The mode of suspending the cultivator frame beneath the axle by means of the chains *G* *G*, rods *R* *R*, and levers *J* *K* *K*, so arranged, as described, to give it the necessary lateral and vertical play.

2.—The slotted extension axles *F'* *F'*, counteract central portion *F*, and bolts *S* *S*, constructed and operating as described and represented.

No. 58,380.—EDWIN CHILDREN, LIBERTY, WIS.—*Cultivators*.—October 2, 1866.

Claim.—The pivoted draught pole *D*, in combination with the pivoted bars *H* *H*, lever *G*, and the plough beams *I* *I*, connected to the bar *I*, which is pivoted to the bars *H* *H*, all arranged substantially as and for the purpose set forth.

No. 58,389.—GEORGE W. DOOLITTLE, LINCOLN, ILL.—*Cultivators*.—October 2, 1866.

Claim.—1.—The form of the plough mould as herein described, for the purposes specified.

2.—The arrangement and combination of the guiding mechanism herein described.

3.—The iron axle *S*, and the supporting brace *N*, constructed and operating as herein described.

4.—The combination of all the parts, operating substantially in the manner herein described.

No. 58,693.—L. O. STEVENS, PEKIN, ILL.—*Corn Cultivators*.—October 9, 1866.

Claim.—1.—The frame *D*, arms *N* *N*, and beams *A* *A*, combined and operating substantially as described for the purpose specified.

2.—The curved or arched bars *M* *M*, in connection with the frames *K* *K* for supporting the shaft *L*, substantially as and for the purpose specified.

No. 59,012.—J. B. HEKMAN, MOUNT VERNON, IOWA.—*Cultivators*.—October 23, 1866.

Claim.—1.—The arms *K*, applied to the machine, substantially as shown, in combination with the hinged bar *J*, chains *Q*, and plough beams *L*, all arranged substantially as and for the purpose specified.

2.—The curving of the rear parts of the plough beams *L*, in combination with the inner laterally-adjustable plough beams *L*, substantially as and for the purpose set forth.

No. 59,022.—R. C. HOWARD, LENA, ILL.—*Corn Ploughs*.—October 23, 1866.

Claim.—The guide rods *O*, in combination with the lever *a'*, and beams *F*, substantially as described, for the purpose specified.

No. 59,215.—JOEL A. HALL, COLUMBUS, OHIO.—*Cotton Cultivators*.—October 30, 1866.

Claim.—1.—The combination of the curved blades or scrapers with the ploughs *B'*, substantially in the manner herein shown and described, so as to plough the furrow, cut the weeds, and throw the earth upon the roots of the plants, all as set forth.

2.—The combination of the toggle levers *I* with the plough beams, substantially as herein shown and described.

3.—The combination of the guide, with the toggle levers *I*, substantially as herein shown and described.

4.—The combination of the walking beam and trestles, with the toggle levers, substantially as shown and described.

No. 59,231.—WILLIAM KIDDON, KEITHSBURG, ILL.—*Cultivators*.—October 30, 1866.

Claim.—1.—The plough beam *F*, in combination with the lever *G*, or equivalent means, for raising and lowering the plough beam without changing its horizontality.

2.—The combination of the plough beam *F*, lever *G*, cord *E*, and link *L*, substantially as and for the purpose set forth.

3.—The combination of the plough beam *F* and draught bar *K*, substantially as and for the purpose set forth.

4.—The combination of the plough beam *F*, draught rod *K*, and guide rod *S*, for the purpose of retaining the said beam in proper horizontal position.

5.—The adjustable suspended frame *N*, provided with the lever *P* and link *Q*, or their equivalents, for the purpose set forth.

6.—The shield *U*, suspended by the rods *V*, so that the ploughs may be raised or lowered without affecting the height of the shields.

7.—The levers *G* and *P*, and their attachments, substantially as described, so as to enable the attendant to adjust the ploughs vertically or horizontally without leaving his seat.

No. 59,232.—GEORGE KNIGHT, BOONE, IOWA.—*Sulky Ploughs*.—October 30, 1866.

Claim.—1.—The attaching of the front end of the plough beam *H* to the pendant bar *E*, through the medium of an adjustable plate *F*, substantially as and for the purpose set forth.

2.—The suspending of the plough beam *H*, from the axle *C*, by means of the cords or chains *c* *c*, and the retaining or holding of the plough beam so as to prevent it from moving laterally by means of a chain or cord *d*, substantially as set forth.

No. 59,262.—JACKSON PRICE, GREENFIELD, IND.—*Ploughs*.—October 30, 1866.

Claim.—1.—The arrangement of the plough frame *K*, and springs *Q* *R*, for regulating its motions, substantially as described.

2.—The pivoted tongue *D* and latches *G* *H*, operating substantially as described.

3.—The foot levers *I* *J*, in combination with the tongue

D and latches G H, operating substantially as described. No. 50,270.—E. S. SEGGER and J. C. ORMISTON, KENT, ILL.—*Cultivators*, October 30, 1866.

Claim.—The application to a corn plough or cultivator of the crutch beams, and strap, revolving hinge, and pinion rod, iron cranks, ratchet circle, and spring catch lever, attached to the beams by the pinion rod and hinge, to raise and lower the beams and shovels, and the blade hinges to attach the inside shovel standards to the beams; the brace foot stirrup D, guide the inside shovels, and the crutch-bearing seat, as herein described, reference being had to the drawings herewith submitted.

No. 50,381.—JAMES C. FRENCH, MONMOUTH, ILL.—*Cultivators*, November 6, 1866.

Claim.—1.—The combination of the frame piece A A', swivels E E, and drag bars F F, said parts being respectively constructed and the whole arranged for use substantially as set forth.

2.—The combination and arrangement of the tongue B, frame A A', plate C', rods C'', and bars C'', substantially as described.

No. 50,454.—C. S. ROBERTS, LYONS, IOWA.—*Cultivators*, November 6, 1866.

Claim.—1.—The drag bars G and G', arch E and brace L, when respectively constructed and arranged for use, substantially as set forth.

2.—The combination of the drag bars G, stirrups F, axle B, lever I, and rods P' substantially as and for the purpose set forth.

3.—The curved braces D, when adjustably attached to the framework of a cultivator, substantially in the manner and for the purpose set forth.

4.—The combination of the shovel ploughs H, and mouldboard ploughs H', when the inner shovel ploughs are made adjustable and arranged substantially as set forth.

No. 50,643.—W. W. PHILLER, PORT BYRON, ILL.—*Cultivators*, November 13, 1866.

Claim.—1.—The pivoted draught pole C, provided at its rear end with a curved or segment bar D, having friction rollers or wheels C' inserted within it, and working or resting upon a semi-circular way or track E on the frame A, substantially as and for the purpose set forth.

2.—The bar or lever Q attached to the rear end of the draught pole C, substantially in the manner as and for the purpose set forth.

No. 50,654.—JOHN J. REED, PORTO, ILL.—*Sulky Ploughs*, November 13, 1866.

Claim.—1.—The walking beam G pivoted to the rear end of the tongue or pole P, in combination with the stirrups e, yoke J, and plough standards K K, substantially as herein shown and described, and for the purpose set forth.

2.—The pivoted pendent bars e' e', and bars R R, in combination with the frame C, substantially as shown and described and for the purposes set forth.

3.—The projecting bars D D in combination with the frame, substantially as herein shown and described.

No. 50,720.—H. C. HUNT, AMOY, ILL., assignor to himself and C. D. VAUGHAN, same place.—*Cultivators*, November 13, 1866.

Claim.—1.—The combination of the circular frame A and rectangular frame C, when constructed and arranged substantially as and for the purposes specified.

2.—Constructing the two beams of a single piece of wrought iron or wood, bent in the form of the letter U, or any equivalent form, provided with the draw loops, as and for the purposes shown.

3.—The employment of the cams P, arranged with respect to the plough beams and frame of a cultivator, substantially as and for the purposes specified.

4.—The employment of the rollers b b, when arranged with the cams P and beams D, and operating as and for the purposes described.

5.—The crank shaft Q, arranged and operating with the cams D, substantially as specified and shown.

6.—The employment of a transomed spindle, constructed and operating as herein shown and set forth.

7.—In combination with said transomed spindles, the ar-

rangement of the arms J extending parallel with each other forward, so that the connecting bar K will not obstruct the view of the operator, as and for the purposes described.

8.—The employment of the hooks e' or their equivalent, for the purposes specified, in the manner described.

No. 60,580.—WILLIAM W. ST. JOHN, ST. LOUIS, MO.—*Combined Gang Ploughs and Cultivators*, December 18, 1866; antedated December 2, 1866.

Claim.—1.—The combination of the frame A C C' D D', with the beams M' and F, the draught-ropes M, and either the cultivator or ploughs F', and their attachments, or the gang ploughs M', and their attachments, substantially as described.

2.—The combination of the wheel stands B', with the frame A C C' D D', in such a manner as to admit of lateral regulat'y movement, substantially as and for the purpose set forth.

3.—The combination and arrangement of the levers M', with the beams M' and chord or chain m', substantially as set forth.

4.—The employment of the guiding bars M', when constructed and used as and for the purpose set forth.

5.—The attachment of the draught rod M for the plough beams M' to the pole P, substantially as described.

No. 60,722.—A. P. HAMMON, J. H. LINCOLN, S. LINCOLN, and T. W. HAMMON, MONMOUTH, WIS.—*Cultivators*, January 1, 1867.

Claim.—1.—The pivoting of the draught pole D to the frame A, and the connecting of the rear end of the former to treadles I I, substantially as and for the purpose set forth.

2.—The connecting of the plough standards of the two beams J J, in the manner shown, or in any equivalent way, so that when the ploughs of one beam are moved or shoved backward, those of the opposite beam will be moved forward, and *vice versa*, for the purpose specified.

No. 60,916.—THEOPHILUS F. BERTRAND and PETER SAMES, ROCKFORD, ILL.—*Cultivators*, January 1, 1867.

Claim.—1.—The combination, substantially as described, of the tongue with the axle, arranged as set forth for the purpose specified.

2.—The combination with the tongue of the single cross-piece E, so arranged as that it shall serve as a brace for the segment and a fulcrum for the levers that control the auxiliary frame.

3.—The combination of two spring bolts with two supporting levers and two ratchets and with the axle arranged and operating substantially as and for the purpose set forth.

4.—The combination of the rigid frame with the auxiliary frame, when the former is hinged to the latter, substantially in the manner and for the purpose described.

5.—The combination of the auxiliary frame with the tongue when the former is hinged to the latter, substantially as and for the purpose set forth.

6.—The combination of an adjustable support for the driver's feet with the auxiliary frame, substantially as and for the purpose set forth.

7.—The swivelled eye bolt or double block, constructed, arranged and operating substantially as and for the purpose set forth.

8.—The combination of the eye-bolt and standard with the beam of the auxiliary frame, substantially as and for the purpose set forth.

No. 4,369.—THEOPHILUS BERTRAND and PETER SAMES, ROCKFORD, ILL.—*Cultivators*,—60,916, January 1, 1867.—*Reissued* March 28, 1871.

Claim.—1.—The combination, substantially as described, of the tongue D with the axle C, arranged in the manner and for the purpose described.

2.—The cross-piece E, attached to the tongue D, substantially in the manner and for the purpose described and shown.

3.—The standards e and e', having pulleys r and r', when arranged upon and attached to the axle C, in combination with chains and rods 7 and 8, and the hinged inclined auxiliary frame H and H', arranged to operate substantially as shown and described.

4.—The curved notched bars d d', secured at their upper ends to the standards e and e' by rods 5 and 6, and to the

cross-piece E by rods 3 and 4, in the manner and for the purpose set forth.

5.—The combination of two supporting levers F and F', with the spring-bolts and curved notched bars d and d', with the hinged inclined auxiliary frame H H', when constructed and arranged to operate in the manner shown.

6.—The adjustable foot-rest M, notched standards L, and holding-wedge o, when constructed and arranged to operate together in the manner and for the purpose described.

7.—Adjusting the auxiliary frame H H' with the plough standards, to different widths by means of the arched coupling bar K, and screw staple-clamps h, as described and shown.

8.—The screw-eye-bolt P and socket-plate or block Q, in combination with bed-plate R, constructed and arranged to operate as shown.

9.—The standard O, screw-eye bolt P, socket-plate or block Q, and bed-plate R, in combination with beams H and H', substantially as shown and described.

10.—The safety-pin i, in combination with the standards O, screw-eye-bolt P, rings l, brace-rod k, and auxiliary frame H and H', in the manner and for the purpose described.

11.—The combination of the rigid frame, consisting of the tongue D and axle C, the hinged auxiliary frame H and H', carrying the ploughs, and their means of adjusting the same laterally, consisting of the arched bar k and screw-staples h, with the foot-supports M M' and the lifting and holding devices supported upon the tongue and axle, in the manner and for the purpose shown and described.

No. 4,581.—THEOPHILUS F. BERTRAND and PETER SAMES, ROCKFORD, ILL.—*Cultivators*.—60,010, January 1, 1867.—Reissue 4,309, March 28, 1871.—Reissued October 10, 1871.

Claim.—1.—The cross-piece E, attached to tongue D and bracket a, substantially in the manner and for the purpose described and shown.

2.—The standards c and c', having pulleys r and r', when arranged upon and attached to the axle C, in combination with the chains and rods 7 and 8, and the hinged inclined auxiliary frame H and H', arranged to operate substantially as shown and described.

3.—The curved notched bars d d', secured at their upper ends to the standards c and c' by rods 5 and 6, and to the cross-piece E by rods 3 and 4, in the manner and for the purpose set forth.

4.—The combination of two supporting levers F and F', with their spring bolts and curved notched bars d and d', with the hinged inclined auxiliary frame H and H', when constructed and arranged to operate in the manner shown.

5.—The adjustable foot-rest M, notched standards L, and holding-wedge o, when constructed and arranged to operate together in the manner and for the purpose described.

6.—Adjusting the auxiliary frame H and H', with the plough standards, to different widths, by means of the arched coupling bar K and screw staple-clamps h, as described and shown.

7.—The chain- or rods 7 and 8, when their pendant ends are connected to bearings or supports that project outside of and are not affected by the adjustment of the beams H and H', as described and shown.

8.—The screw-eye-bolts P, and socket-plate or block Q, in combination with bed-plate R, constructed and arranged to operate as shown.

9.—The standard O, screw-eye-bolt P, socket-plate or block Q, and bed-plate R, in combination with beams H and H', substantially as shown and described.

10.—The safety-pin i, in combination with the standards O, screw-eye-bolt P, rings l, brace-rod k, and auxiliary frame H and H', in the manner and for the purpose described.

11.—The combination of the rigid frame, consisting of the tongue D and axle C, the hinged auxiliary frame H and H' carrying the ploughs, and their means of adjusting the same laterally, consisting of the arched bar K and screw-staples h, with the foot-supporters M and M', and the lifting and holding devices supported upon the tongue and axle, in the manner and for the purpose shown and described.

No. 61,040.—HENRY BARSALOW, SAINT ANNE, ILL.—*Cultivators*.—January 8, 1867.

Claim.—1.—The beams G attached to the front of the frame A by an adjustable universal joint connection, and suspended by chains near their rear ends to travelling rollers i on the raised cross-bar h of frame A, substantially as and for the purpose set forth.

2.—The combination of the mounted frame A, plough or shear beams G G, and detachable seat E, stirrups and foot-piece E', all arranged substantially as and for the purpose specified.

No. 61,091.—R. B. PARKS and J. R. PARKS, NEPONT, ILL.—*Cultivators*.—January 8, 1867.

Claim.—1.—The angular bars H pivoted to bar I, and connected with the treadles J by links c, in combination with the beams D, and operating substantially as described, for the purpose specified.

2.—The pivoted bars L, in combination with the ploughs K, and standards E E', and set screw g, substantially as described for the purpose specified.

No. 61,105.—JOHN HINDMARSH, HENRY, ILL.—*Corn Ploughs*.—January 15, 1867.

Claim.—1.—The lever N, in combination with the standard O, for sustaining the plough in an elevated position when required.

2.—The rods O O, plough beams G G, cross-bar P, and screw Q, combined and operating as described.

3.—The combination of the plough beams G G, standards L L, lever N, and brace rods j, all arranged and applied to a mounted frame A, to operate in the manner substantially as and for the purpose specified.

No. 61,450.—C. P. NORTON, ROSVILLE, ILL.—*Cultivators*.—January 22, 1867.

Claim.—1.—The pole B, arch C, and supporting wheels D D, constructed and arranged substantially as and for the purpose herein set forth.

2.—The pole B b, fig. 1, sliding box f, loop F, and set screw k, in connection with the plough beam A, all arranged and operated as and for the purpose described.

No. 61,500.—GEORGE W. PRICE, BLOOMINGTON, ILL.—*Gate Ploughs and Cultivators*.—January 29, 1867.

Claim.—The combination of the vibrating beams G G and the braces I I, connecting them with the draught pole E, the outside ploughs K K, connected by the sheaths b b and the rods d d with the beams G G, and the inside ploughs I I, connected by the swivel couplings e e to the standards s s, and the rods c c to the braces I I, arranged and operating substantially as and for the purposes herein described.

2.—Forming the shovels or shares K K L L, in such a manner that if a line were drawn in its oblique section, as shown in fig. 3 of the drawings, the same would stand at an angle of about 22° between the standards b b c c, to which the shovels or shares are attached, and said ploughs having such a level that the point of the cutting edge when throwing inwardly shall be upon the inside of a line continued in the direction of the length of the standards b b c c, and said point when throwing outwardly shall be upon the outside of said line for the purpose of preventing any lateral pressure, substantially as herein set forth.

No. 61,622.—JACOB KESSLER, YORK COUNTY, PA.—*Cultivators*.—January 29, 1867.

Claim.—The arrangement of the teeth G G, as constructed with the bars E E, rods D and a, and the frame of the machine, as and for the purposes specified.

No. 61,619.—A. H. ALLISON, CHARLOTTESVILLE, IND.—*Cultivators*.—January 29, 1867.

Claim.—1.—The plough beams D D, suspended to the curved guide-rolls f f, and connected with the stirrups or levers g g, for obtaining lateral movement in combination therewith and with the vertically sliding cross-heads F F, the levers H H, and the springs m m, constructed, arranged, and operating substantially as and for the purposes herein described.

2.—The arrangement of the rotary perforated clod guards n n, combined with the ploughs b b and beams D D, constructed and operating as herein set forth.

No. 60,885.—ASA H. ALLISON, MILLVILLE, IND.—Assignor to Eagle Manufacturing Company.—*Cultivators*.—

61,640.—*January 28, 1867.*—Reissued *February 17, 1880* [Filed *August 28, 1879.*]

The weight of the cultivator-beams is wholly or partially sustained by springs.

Claim.—1.—The plough beams D D, suspended from the curved guide rods *r*, and connected with the struts or levers *z*, for obtaining lateral movement, in combination with the vertically-sliding cross heads F F, levers H H, and springs *m*, substantially as and for the purposes described.

2.—The combination of a wheeled frame and vertically swinging drag bars jointed at their forward ends to the frame at a fixed height, and springs interposed between and having connection with both the frame and the beams, and exerting an upward strain upon the latter when the machine is in action.

3.—A cultivator wherein the attendant is mechanically assisted in raising the shovels from the ground, the same embracing the combination of a wheeled frame, vertically swinging beams, and lifting springs adapted and arranged to lift the free ends of the beams without assistance above their operative position, substantially as described.

4.—The combination in a straddle row cultivator, of a wheeled frame, two independent vertically and laterally swinging beams, and spindles adjusted and arranged to exert an upward strain on the beams and permit them to move both vertically and laterally while subject to the spring-action, substantially as described.

5.—In a wheeled cultivator, drag-bars capable of a vertical movement at the rear ends only, in combination with springs exerting a lifting strain on said ends, whereby the springs are caused to govern or assist in governing the position of the beams and shovels, substantially as described.

6.—In a wheeled cultivator, the combination of vertically-moving beams, springs acting upward thereon, and means, substantially as described, for holding the beams down, so that the springs will automatically lift the beams and shovels out of action when released, as set forth.

7.—In a cultivator, the combination of a wheeled frame, vertically swinging beams jointed thereto, and springs arranged to receive the weight of and sustain the beams when the latter are elevated out of action, substantially as described.

8.—In a wheeled cultivator, the combination of beams adapted to swing vertically at the rear ends, springs exerting an upward strain on said beams, and handles under the direct control of the attendant, of raising upon and enabling him to control the beams, substantially as described.

No. 61,674.—ISAAC B. MAHON, DUSKIRK, OHIO.—*Cultivators.*—*January 29, 1867.*

Claim.—1.—The sliding frame G fitted on the rod F at the rear of the axle A, in combination with the plough beams I I, connected at their front ends by universal joints *d d* to arms *e*, secured to the lower ends of the bar J, and provided with curved standards H, which work in guides *r*, attached to frame G, substantially as and for the purpose specified.

2.—The plough-beams N N, connected by pivoted bolts to the lower ends of the bar J, and provided with curved standards *r*, which work in guides *s*, formed at one end of the bolts *a*, which secure the arms B to the axle A.

3.—The shaft O, provided with the segments P to which the plough-beams I I N N are connected by chains Q, and also provided with a segment P, to which a hand-lever R is connected by a chain S, all arranged for the purpose of raising and lowering the ploughs, substantially as set forth.

4.—The whiffletree bars V V, having their lower ends pivoted to the lower ends of the bar J, and their upper ends connected with the doubltree U, substantially as and for the purpose specified.

5.—The securing of the ploughs M to the beams I I by means of the socket *t* at the rear sides of the ploughs, the loose sockets *a* and the screw bolts *r* which pass through the oblong slots *v* in the beams I I, substantially as and for the purposes set forth.

No. 61,805.—W. F. CLARK, HOGANMAN'S MILLS, N. V.—*Cultivators.*—*February 5, 1867.*

Claim.—1.—The plank A, grooved at its under side to receive the bars B B', which have the teeth standards C C' attached, as shown, in combination with the levers F F', having the wheels I I attached to the plank A, pivoted be-

tween their front ends, and the driver's seat H, secured to a cross-bar G attached to the rear ends of the levers, all arranged substantially as and for the purposes herein set forth.

2.—The perforated segments J K, attached respectively to the levers F F' and plank A, substantially as and for the purpose specified.

No. 61,836.—THOMAS JOBE, CHARKSVILLE, OHIO.—*Cultivators.*—*February 5, 1867.*

Claim.—The arrangement of the plough-beams G and levers H, applied to the frame of the device, in combination with the adjustable bar *a*, at the rear of the axle B, all arranged to operate substantially in the manner as and for the purpose set forth.

No. 61,000.—CHARLES WILLARD, NEWTON, PA.—*Cultivators.*—*February 5, 1867.*

Claim.—1.—The combination of the adjustable arched couplings N and O, with the frames A and B, and rigid ploughs and rigid tongue, all constructed, arranged, and operating substantially as and for the purpose set forth.

2.—The combination of the plate K, carrying cultivator-teeth or ploughs with the frames and with the rod U, when arranged to operate substantially in the manner and for the purpose set forth.

No. 62,001.—E. CHILDREN, LANCASTER, WIS.—*Cultivators.*—*February 12, 1867.*

Claim.—1.—The friction roller *f*, inserted in the pivoted draft-pole K, in combination with the bar H attached to the pivoted arms *l*, all arranged to operate in the manner as for the purpose herein set forth.

2.—The links I and T-shaped levers J applied to the plough beams and frame A, to operate in the manner substantially as and for the purpose set forth.

3.—The securing of the ploughs K to the standards L by means of the staples M, bars *r* and the keys *t*, all arranged substantially as and for the purpose herein set forth.

No. 62,100.—JAMES ARMSTRONG, JR., ELMIRA, N. Y.—*Cultivators.*—*February 19, 1867.*—Improvement on his patent *December 20, 1865.*

Claim.—1.—Pivoting a shovel-carrying frame D, which is pivoted to levers C, so as to operate substantially as described, with an auxiliary adjusting lever G, or its equivalent, whereby the driver can regulate the depth of the shovels at pleasure, whether the machine be in motion or at rest, substantially as set forth.

2.—Pivoting a lever G, which has an eccentric bearing *g* upon one end, to the draft-tongue of frame D, and providing such lever with a locking device for holding it in any desired position, substantially as described.

3.—Supporting an adjustable shovel-carrying frame D upon the axle A, by means of the levers C and an adjusting device G *g*, substantially as described.

4.—The use in a cultivator of an eccentric lever *g*, for the purpose described.

No. 62,185.—J. W. CONNELLY, CHARLESTON, ILL.—*Cultivators.*—*February 19, 1867.*

Claim.—1.—The machine, in combination with a cultivator of the several parts as arranged and described.

2.—The arms O O, made either of wood or iron, and manner and place of attachment to bar or doubltree on forward end of bounds of frame, as described and shown.

3.—The flexible connecting beams F F, with arms O O, either by bolts, pins, or clevis, as shown and described.

4.—The bar B, arms O O, beams F F, and stocks T T, as constructed and shown and described.

No. 62,344.—W. B. LANE and W. COLTTON, ORGAN SPRING, IND.—*Cultivators.*—*February 26, 1867.*

Claim.—1.—Combining with a two wheel carriage, a shovel carrying frame which is adapted for carrying five shovels *a a b b' and c*, and which is composed of vertically vibrating beams H H I I, connected together by transverse braces J, so as to be laterally adjustable, substantially as described.

2.—Arranging a vertically and laterally adjustable shovel frame, which is constructed as described, upon a two wheel carriage, in such manner that the shovels will be located beneath, and in a vertical line, or nearly so, with the axle A, substantially as described.

No. 62,387.—OMAR J. ARNOLD, MOUNT HIA, WIS.—*Cultivators*.—February 26, 1867.

Claim.—1.—The axle C, inclined downward from its centre outward in both directions, in connection with the extended draught pole A and brace rods *b b*, substantially as and for the purpose set forth.

2.—The beams D' D', extending in front of the joints *d* and connected by a cross bar F, substantially as and for the purpose set forth.

3.—The lever G, provided with the pin or rod *f*, in combination with the beams D' D' and cross bar F, all arranged substantially as and for the purpose specified.

No. 62,511.—J. W. TYSON, LOWER PROVIDENCE, PA.—*Cultivators*.—February 26, 1867.

Claim.—In combination with the adjustable cultivator frame, the use of the chains *a* and *b* when arranged to operate as and for the purpose set forth.

No. 62,868.—C. F. MEGUIER, EUREKA, ILL.—*Cultivators*.—March 12, 1867.

Claim.—The plough standards F F, pivoted at their upper ends in metal straps *i*, which encompass loosely the shaft G in the frame A, so that said standards and the ploughs A attached may be moved vertically and laterally in combination with the plough standards H, pivoted to the outer sides of the frame A, the levers *k k*, to which the plough standards are connected, and the rods X attached to the plough standards, all being arranged to operate in the manner substantially as and for the purpose set forth.

No. 63,050.—HENRY HOWE, OWATONA, N. V., assignor to himself and E. K. FORD, same place.—*Cultivators*.—March 19, 1867.

Claim.—1.—The pendants D and the manner of securing them to the plough beams and frames, substantially as and for the purpose shown and described.

2.—The bars E, in combination with the plough beams E and pendants D, substantially as and for the purpose herein shown and described.

3.—The combination with the tongue F and driver's seat G of the plough beams E, swivel braces *e*, and dougletree H, substantially as and for the purpose herein shown and described.

4.—The slotted tongue F, made substantially as and for the purpose herein shown and described.

5.—The levers *l* and chains *b*, for the purpose of raising the ploughs out of the ground and retaining them in that position, substantially as herein shown and described.

6.—The upright side frames B, as arranged and connected with the horizontal cross-bars C and C', substantially as and for the purpose herein shown and described.

No. 63,200.—H. B. KYNETT, LISIUS, IOWA.—*Grain Ploughs*.—March 26, 1867.

Claim.—The combination of the slotted cross piece E, side pieces S, bolts *f*, pendants *i*, adjustable clevises *d*, and beams F, substantially as described, for the purpose specified.

No. 63,426.—JAMES H. REYNERSON, PLEASANT PLAIN, IOWA.—*Cultivators*.—April 2, 1867.

Claim.—1.—The manner of shifting the ploughs and beams either in or out by means of the slotted rods, and curved slotted bars of iron at D D D D, and the upright *h* with holes, together with the movable cross timber and slide at E, also the manner of fastening the shovels to the beams by means of blocks of wood at H H H H.

2.—As an improvement the general construction and combination of the machine aside from the wheels, axle, and tongue.

No. 63,447.—P. L. WEST, BAHN, ILL.—*Cultivators*.—April 2, 1867. Antedated March 19, 1867.

Claim.—1.—The construction and arrangement herein shown and described of the ploughs D D, their attachment links *d*, and their draught rods *d*.

2.—The device C, *d* C' C' and *d'*, for giving the ploughs D the requisite lateral motion.

3.—The combination and construction of the posts D' and props *d*, substantially as described and set forth.

4.—The construction and arrangement of the ploughs D', and the curved bars D', also the device *d*, *d* *d'* for raising the said ploughs up out of the ground, substantially as described and set forth.

No. 63,473.—DANIEL W. COLBURN, LOAMI, ILL.—*Sulky Ploughs*.—April 2, 1867.

Claim.—The combination and arrangement of the beams E, chains D, roller C, arm K, notched bar J, and standard I, substantially as described, for the purpose specified.

No. 63,476.—S. B. CONOVER, NEW YORK, N. Y.—*Combined Cultivators and Planters*.—April 2, 1867.

Claim.—1.—The combination with the main frame A, supplemental frame D, and fixed ratchet bar F of the operating lever E, bell crank levers *b*, horizontal connecting rods *c*, and upright connecting rods *d*, substantially as herein set forth, for the purpose specified.

2.—The sliding rods or braces *i*, attached to the supplemental frame D, passing up through suitable holes or slots, either vertically or on an incline, in combination with the main frame A and operating parts above recited, substantially as herein set forth, for the purpose specified.

No. 63,608.—H. C. BRISTOL, RAVENNA, OHIO.—*Cultivators*.—April 9, 1867.

Claim.—1.—The movable frames C, provided with the adjustable standard G and shares H, as arranged and connected in combination with the levers D, draft chains P, and carriage, for the purpose and in the manner set forth.

2.—The jointed standard I, provided with the shovel J and guide stay K, in combination with the standards G, shares H, and carriage, as and for the purpose described.

No. 64,004.—JACOB BERGEN, CANTON, OHIO.—*Cultivators*.—April 23, 1867.

Claim.—The arrangement of the crank axles D D with the levers H, spring *d*, and guides I and J, substantially as and for the purpose specified.

No. 64,119.—MICHAEL F. LOWTH and THOMAS J. HOWE, OWATONA, MINN.—*Cultivators*.—April 23, 1867.

Claim.—1.—The combination with the quadrant J of the adjustable segment M, for the purpose of changing the position of the lever N, substantially as and for the object specified.

2.—The combination of the quadrants J J', segments M, shaft K, and lever N, with the chains or flexible connections L, connecting bar H and shovel beams D, all arranged and operating in the manner and for the purpose specified.

No. 64,370.—GEORGE SPRAGUE, SPRING HILL, KANSAS.—*Corn Cultivators*.—April 30, 1867.

Claim.—The combination of the root cutters F F, the shovels *d d*, and the plough beams E E, arranged and connected for adjustment and operation, substantially as and for the purposes herein described.

No. 64,542.—EDMOND H. KNIGHT, USABELLA, MICH.—*Cultivators*.—May 7, 1867.

Claim.—1.—The beams G, having plough and shovel standards H, pivoted to them in combination with the frames F F, the beams and frames being secured to the axle A, and used in connection with hand levers K, foot levers S S, and catches R V, all arranged to operate substantially in the manner and for the purpose set forth.

2.—The springs H' connected with the beams G, and attached to the frames F, substantially as and for the purpose specified.

No. 64,563.—EDWARD PHIFER, TRENTON, N. J.—*Cultivators*.—May 7, 1867.

Claim.—1.—A cultivator frame composed of a series of timbers shorter than the diameter of the wheels and arranged parallel to the tongue, substantially as described.

2.—The combination substantially in the manner described of a tongue laterally adjustable on the axle with a series of frame timbers of a length less than the diameter of the wheels, arranged parallel to the tongue and adjustable laterally on the main axle.

3.—The combination, substantially as described, of the tongue and short parallel frame timbers with a series of slotted adjusting plates attached to the front of the frame timbers and secured to the tongue.

4.—The combination, substantially in the manner described, of the parallel frame pieces arranged for adjustment in pairs with the slotted down hangers, front lifting rods and drag bars, for the purpose of adjusting the front ends of the drag bars.

5.—The combination of the frame pieces, down hangers,

drag bars, lifting rods, hand levers, and sector rack, when arranged, substantially as described, for the purpose of enabling the driver to control each pair of ploughs by a single lever.

6.—The arrangement of the sector rack, hand lever, and spring detent as described, whereby the catch acts both as a detent for the lever and as a guide to keep it parallel with the sector rack.

No. 64,576.—JOHN E. ROWLAND, HAGERSTOWN, MD.—*Cultivators*.—*May 7, 1867*.

Claim.—The above-described cultivator, the beams C, levers N, and stirrup lever M, being all arranged and combined substantially in the manner and for the purposes set forth.

No. 64,608.—A. J. HEFLIN, MONMOUTH, ILL.—*Cultivators*.—*May 7, 1867*.

Claim.—1.—Forming the shovels I with wings, the outer wing of each shovel being curved or turned up, substantially as herein shown and described and for the purpose set forth.

2.—The combination of the pivoted bar D with the beam G and vertical bar *a'* of the frame A, substantially in the manner shown and described and for the purpose set forth.

No. 64,721.—G. W. STOUTON, OGDEN, ILL.—*Cultivators*.—*May 14, 1867*.

Claim.—The swivel rods G, in combination with the joint or pivoted clevises *h*, the draught-evening device K, and bent bars L, arranged and operating substantially as described and for the purpose specified.

No. 65,158.—HIRAM BOYSS, RICHMOND, IND.—*Cultivators*.—*May 28, 1867*.

Claim.—1.—The frame A, as constructed with adjustable tail piece *a*, arms *b*, with swivels for connecting the shovel beams and rollers E, with chains for attaching the shovel bars, when combined, arranged and operating in the manner and for the purposes herein specified.

2.—The beams D D, shovel bars *f f'*, and shields *c c*, connected by the adjustable bars *m m*, in the manner and for the purposes set forth.

No. 65,719.—JOSEPH C. BIRD, RISING SUN, MD.—*Cultivators*.—*June 11, 1867*.

Claim.—1.—The arrangement of the share frame E, supported from the lever II' and pivoted frame I *f*, in such a manner as to lift vertically or independently, as described.

2.—The trapezoid-shaped cultivator frame, consisting of the portions *a a b b c c*, arranged substantially as described.

3.—The share *c*, formed double without a weld, punched in at the centre to embrace the standard F, and with flaring ends, in combination with the stirrup brace, substantially as represented in fig. 4.

No. 65,875.—E. C., T. W., and J. M. COCHRAN, PANA, ILL.—*Cultivators*.—*June 18, 1867*.

Claim.—1.—The metallic frame D, with seat E, plates *a a*, plough frames G G, and ploughs *f f*, all constructed, arranged, and operating in the manner and for the purposes herein specified.

2.—The shovel frames G G, arranged with rods II' and *m*, for shifting the loops *b b* and levers F F', for elevating the shovels in the manner as set forth.

No. 65,918.—JOSEPH KOEHN, CANTON, OHIO.—*Cultivators*.—*June 18, 1867*.

Claim.—1.—The frame A, with diagonal bars A' A', for connecting the shovels D D, when constructed in the manner and used for the purpose set forth.

2.—The arrangement of the lever *c*, spring *t*, pin *z*, in combination with the axle *b*, rack *s*, for the purposes specified.

No. 65,938.—LORENZO D. PELTON and JOSEPH BARRON, W. HARRISON, OHIO, assignors to themselves and ALEXIS GREEN, same place.—*Cultivators*.—*June 18, 1867*.

Claim.—1.—A mode of construction whereby the wheels and secondary beam B may be detached, and by means of auxiliary bolt holes, in the handles C, and in the sheaths at *c'*, the handles lowered to a convenient height to be managed by an operator on foot.

2.—In combination with the elements of the claim immediately preceding, the provision of the described mechanism for lifting the ploughs from the ground, either temporarily to pass an obstacle J', or more permanently to allow of moving the implement on a road or otherwise F' F' H' *h* and I, and the position of the seat, which enables the driver to control these levers and manage the plough handle.

No. 66,200.—ISRAEL WING, EARLVILLE, IOWA.—*Sulky Ploughs*.—*June 25, 1867*.

Claim.—1.—The combination of the inclined tongues C with each other, with the double tree D and axle B, substantially in the manner herein shown and described and for the purpose set forth.

2.—The combination of the plough standards G and H, bars I and chains K with each other and with the tongues C, substantially in the manner herein shown and described and for the purpose set forth.

No. 66,253.—MATTHIAS REIDINGER, FREDEPORT, ILL.—*Corn Ploughs*.—*July 2, 1867*.

Claim.—The arrangement of the lever A with its roller E, connected to the beams G and the treadle C, as arranged with the ploughs B, when combined with the beams G, as herein described, and for the purpose set forth.

No. 66,301.—MARSHALL HASKINS and D. B. HART, MANTON, OHIO.—*Cultivators*.—*July 9, 1867*.

Claim.—1.—The use and employment, specially, of cultivator shovels or ploughs M, provided with perforations or open interstices made transversely across the blade, or in any direction that will serve the purpose contemplated, as herein set forth.

2.—The use and employment of the blinds X X, provided with slots and with jogs O O, in combination with the above described perforated shovels or ploughs M, and operating substantially as and for the purpose specified.

3.—The use and employment of said described perforated shovels M, with and without the said described blinds X X, in combination with the slotted right-angled beam H, cross-tie I, rods G G, grooved clevis E, beam F, plough standards P', slotted braces Q, brace Q', slotted bands P' and P'', and bolts P'', all arranged, combined, and operating as and for the purpose described.

4.—The graduated standards J, plough handles K, rod R, and joints in beam F, combined and operating as and for the purpose described.

No. 66,627.—B. W. REMY, BROOKVILLE, IND.—*Combined Sowers and Cultivators*.—*July 9, 1867*.

Claim.—1.—The main frame, composed of the vertical arched iron bars C D, and the horizontal frame F, also made of iron bars, and the whole combined with the short axes B B, by which it is supported in the carrying wheels, substantially as and for the purpose described.

2.—In combination with the main frame composed of iron bars or straps and supported as described, the pivoted bars II I, to which a cultivator or seeding mechanism, substantially such as described, may be attached, as and for the purpose set forth.

No. 67,093.—JACOB WILSON, SOMERFORD, OHIO.—*Cultivators*.—*July 23, 1867*.

Claim.—1.—The combination and arrangement of the doubletree D, rods *c*, levers E, and whiffletrees H, with the frame A, mounted on wheels, substantially in the manner and for the purpose set forth.

2.—The two ploughs I J, connected together by the cross arms *h*, and connected at their front ends by bolts to the pendants G G, with the pendant guides O, passing through loops *g*, at the outer sides of the beams I, substantially as and for the purpose specified.

3.—The attaching of the plough standards M M to the cross arms *h* of the plough beams I J, by means of the swivel bolts *i*, in connection with the straps P passing over the fixed pulleys Q, and the stirrups *r*, all arranged to operate in the manner as and for the purpose specified.

4.—The raising and lowering of the plough beams I J, through the medium of the levers *a*, semi-circular bars *z*, and straps *m*, arranged substantially as shown and described.

No. 67,173.—W. A. and C. E. BRVDEN, MONMOUTH, ILL.—*Cultivators*.—*July 30, 1867*.

Claim.—1.—The frame *a*, in connection with the ex-

tended braces *b b*, substantially as described and for the purpose set forth.

2.—The slotted axle, in combination with frame *a a*, and seat pieces *h h*, for the purpose set forth and substantially as described.

3.—The sliding seat piece *k*, in combination with pieces *h h*, for the purpose set forth.

4.—The vertical adjustment of seat as described.

5.—The arrangement of pieces, *r r* *o o* and *v*, for giving circular motion, substantially as described.

6.—The slotted fulcrum, in combination with the frame *a a*, for the purpose set forth and substantially as described. No. 4,252.—WILLIAM A. DRYDEN and CYRUS E. DRYDEN, assignor to AUGUSTUS ADAMS, SASTON, ILL.—*Cultivators*.—67,473, July 30, 1867.—*Reissued February 7, 1871*.

Claim.—1.—The frame of a wheeled cultivator, adjustable longitudinally upon its axle or other support, for the purpose specified.

2.—In a wheeled cultivator, a driver-seat adapted to be thrown into position to form a riding cultivator, and to be turned up or moved out of the way of the driver when walking, for the purpose specified.

3.—The adjustable seat bar *J*, in combination with the pivoted side bars *I*, for the purpose specified.

4.—The driver's seat of a cultivator, adapted for vertical adjustment, with relation to the frame, by the means substantially as described, for the purpose specified.

5.—The combination of the cultivator-frame with the bifurcated tongue or extended braces, for the purpose specified.

No. 67,295.—A. M. GRISWOLD, MOMENA, ILL.—*Cultivators*.—July 30, 1867.

Claim.—1.—The adjustable rods *a a* and the adjustable brace rods *f f*, for the purposes specified.

2.—The joints *i i*, when combined with the rods *a a* and *f f* and plough bearing beams *E E*, substantially as and for the purposes set forth.

3.—The cans *m m*, when combined with the braces *u u*, the rods *v v*, and bar *r*, and operating in the manner and for the purposes described.

No. 67,441.—ALBERTUS MARTIN, OSAWKA, ILL., assignor to himself and J. R. MARTIN.—*Corn Cultivators*.—August 6, 1867. Antedated July 27, 1867.

Claim.—1.—The plough frame *C*, when supported by the rollers *m* and *n*, and the arrangement with reference to the frame *A*, axle *B*, and the plough beams *D* and *E*, in the manner substantially as described and for the purpose specified.

2.—The semi-circular cog wheel *I*, shaft *Y*, lever *K*, crank *L*, and bar *P*, in combination with the cog bar *H* attached to the frame *C*, substantially as described, and for the purpose specified.

3.—The connecting piece *t*, in combination with the straps attached to the post *F* and the beam *D*, substantially as and for the purpose set forth.

No. 67,930.—P. F. BRITTAIN, GENESIO, ILL.—*Corn Cultivators*.—August 20, 1867.

Claim.—The marking device, consisting of the bars *h h*, beam *G*, and standards *H*, in combination with the frame *A* of a corn plough substantially as set forth.

No. 68,104.—EDWARD NEWTON, MONMOUTH, ILL.—*Cultivators*.—August 27, 1867.

Claim.—The vertical adjustment of beams *p r*, in combination with the frame, constructed as described and for the purpose set forth, in connection with the mole of attaching the draught.

No. 68,114.—ANTON ROMANN and JOHN PECKER, WILSON, IOWA.—*Combined Ploughs and Cultivators*.—August 27, 1867.

Claim.—The form and construction of the cultivator and harrow combined, when arranged, adjusted, and operated with the bolt *F*, beam *C*, and axle *M*, as attached to the frame or bars *G*, with the regulating wheels *L*, as herein described and for the purposes set forth.

No. 68,124.—W. A. SISSON, SHEFFIELD, ILL.—*Wheel Cultivators*.—August 27, 1867.

Claim.—1.—A wheel cultivator, constructed so that the draught power shall be applied direct to the shovel frame,

and the driver's seat mounted upon the carriage frame, which is attached to the shovel frame at its forward end by a loose connection, which permits said carriage frame to rise and fall with the undulations of the ground in any direction without affecting the operation of the shovel frame.

2.—The friction rollers *v v* at the forward end of the carriage frame, in combination with the loops *H H*, substantially as and for the purpose set forth.

3.—The perforated plates *P P*, in combination with the legs *k k* of the driver's seat, fitted so as to be inserted into said perforations for the purpose of adjustment, as set forth.

4.—The handles *O O* at the sides of the shovel frame to enable the driver to raise said frame and free the shovels from the ground.

No. 68,105.—ANDREW CANFIELD, LYONS CITY, IOWA.—*Corn Cultivators*.—August 27, 1867.

Claim.—1.—The adjustable extension guard to regulate the amount of earth applied to young corn.

2.—The raising levers *G G*, in combination with the double strips *a a*, for the purpose above set forth.

3.—The principle of raising and lowering a seat, by means of a joint, in the support of the seat when used substantially as and for the purposes above set forth.

No. 68,525.—W. A. MOODY, MONTICUMA, IOWA.—*Cultivators*.—September 3, 1867.

Claim.—The fitting of the front ends of the plough beams *G G* on pendulous rods *F*, and connecting the beams by chains *M* to eccentrics *L* on a shaft *K*, the beams being connected by a bow-shaped rod or bar *H*, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 68,540.—JOSEPH BENSON, SAMUEL BENSON, and WILLIAM BENSON, LEBANON, VA.—*Cultivators*.—September 3, 1867.

Claim.—1.—The use of the blocks *g g*, more or less in number, and the blocks *z z*, more or less in number, arranged upon the rods *t*, and so combined with the standards *f s* to allow the arrangement of either standards or blocks on either side of the bars *s s* when desired, and for the purposes specified.

2.—The guides *h h*, when arranged, combined and used substantially in the manner described and for the purposes set forth.

No. 68,643.—GILPIN MOORE, MOLINE, ILL., assignor to JOHN DEERE, C. H. DEERE, S. H. VEIJE, and G. W. VINFOX, same place.—*Cultivators*.—September 10, 1867.

Claim.—1.—The axles *B*, constructed substantially as herein shown and described, for the attachment of the ploughs and wheels of a cultivator, as set forth.

2.—The double-acting device or device for attaching the ploughs to the axle, said device consisting of the plates *u c* and *w*, an bolt *a*, all constructed and arranged to operate substantially as described.

3.—The plate *h* when constructed and used in connection with the standard *G* and brace *d*, substantially as described.

4.—The cultivator, having its several parts constructed and arranged for joint operation, substantially in the manner and for the purpose herein set forth.

No. 68,648.—WM. H. PARLIN, CANTON, ILL.—*Corn Cultivators*.—September 10, 1867.

Claim.—1.—The strong, durable and economical frame of attachment between the tongue and axle or wheels, as secured by the simple bars *A*, in manner and form as shown, or in any similar form, upon the same principle.

2.—The extension hooks *k k* in the beam bulker *C*, substantially as above described, and as in drawing shown, or any similar hook in similar connections, and for the uses herein described.

No. 68,662.—PERRY W. SMITH, ABINGDON, ILL.—*Cultivators*.—September 10, 1867.

Claim.—1.—The combination of frame pieces *A A*, bars *D D D*, knuckles *E*, and adjusting bars *O O*, substantially as described and for the purpose set forth.

2.—The vertical adjustment devices, bars *O O*, and

kneekles F F F E, substantially as described and for the purpose set forth.

3.—The metallic uprights D D D D, arranged as described and for the purpose set forth.

No. 68,570.—WM. B. YOUNG, CHICAGO, ILL.—*Cultivators*.—*September 10, 1867*.

Claim.—1.—The combination in a straddle-row cultivator of the main frame, split tongue, jointed plough beams, and wheels.

2.—The combination of wheels and jointed plough beams in a straddle-row cultivator, the beam on each side having its joint or point of attachment out of the line of motion of its set of ploughs.

3.—The combination in a straddle-row cultivator of wheels, doubletrees, whiffletrees, jointed plough beams, and frame when the plough beams are jointed forward of the whiffletrees.

No. 68,784.—IRA A. PALMER, MONMOUTH, ILL.—*Cultivators*.—*September 10, 1867*.

Claim.—1.—The construction of the frame A D C B, substantially as described and for the purpose set forth.

2.—The adjustable hook *a*, as arranged and for the purpose specified.

3.—The jaws P P, knuckle *o' o' o'*, adjustable pin *o' o' o'*, and plates T, constructed and arranged as described and for the purpose set forth.

No. 68,893.—MORDECAI SWEET, RICHMOND, IND.—*Cultivators*.—*September 10, 1867*.

Claim.—The arrangement of the shafts K with the shaft F with its arms, handle and connecting rods, and with the levers M M, substantially as and for the purpose set forth.

No. 68,848.—ELLIOTT DAVIES, JR., CARBONATE, ILL.—*Cultivators*.—*September 17, 1867*.

Claim.—1.—The lever S, in combination with the sliding cross head M, mounted on side pieces C C', and bearing pieces O O', connected by stay rods P P' to main axle A, and bearing the two inside ploughs R R', all substantially as specified.

2.—The stationary back ploughs F F', connected to the cross piece D, in combination with the side pieces C C', the sliding cross head M, with its ploughs R R', the wheels B B', seat K, and the tongue H, hinged to ends of pieces C C', all substantially as specified.

No. 68,910.—ELIZA STAFFORD, DEATH, ILL., administratrix of the estate of D. S. STAFFORD, deceased; assignor as administratrix to herself, SULLIVAN BERGESS and JOSEPH STAFFORD.—*Cultivators*.—*September 17, 1867*. Antedated *January 20, 1867*.

Claim.—The pivoted curved plough standards H, connected by the chains J, substantially as and for the purpose specified.

No. 69,003.—ISAAC B. MAHON, DENKIRK, OHIO.—*Cultivators*.—*September 17, 1867*.

Claim.—1.—Constructing the metallic frame of the machine in two parts C C', connected together and braced, in the manner substantially as shown and described.

2.—Suspending the frame to the axle A, by clips D, arranged in connection with the braces E and the pendants *f*, to which the outer plough beams are attached, all being arranged substantially as and for the purpose specified.

3.—The doubletree U, pivoted to the draft pole T, in connection with the whiffletrees V V, pivoted to the frame of the machine and connected to the ends of the doubletree by links *r*, all arranged substantially as set forth.

4.—The attaching of the inner plough beams J J to the front of the frame by means of universal joints *r*, substantially as described.

5.—The fender bars L L, connected with the inner plough beams J J, and universal joints *r*, and arranged in the manner shown so that the fenders M may be set at any desired height and at a greater or less distance from the ploughs and have an independent up and down motion and at the same time retain their relative position with the ploughs, substantially as shown and described.

6.—The open or skeleton fenders M, when applied to the fender bars L L, so as to admit of being adjusted further forward or backward on said bars, substantially as and for the purpose specified.

7.—The pulleys or segments *s*, on the shaft I, connected by chains *u* to the plough beams J J K K, in combination with the lever S, connected by a chain *n*, with a pulley *v*, on shaft I, all being arranged substantially as and for the purpose specified.

8.—The guides G G, on the shaft P, in connection with the uprights N, passing through said guides and the stirrups O, attached to said uprights, all arranged to operate substantially as described.

9.—The fixed guides K, attached to the frame of the machine, with the uprights O, of the outer beams K, passing through the same, substantially as and for the purpose set forth.

No. 69,071.—M. C. BUFFINGTON, LA HARPE, ILL.—*Corn Ploughs*.—*September 24, 1867*.

Claim.—1.—The bent axle A, with the wheel arms C and draught pole B attached, as shown, in connection with the pulleys *d d e* and draught chain or cord E, all combined and arranged to operate in the manner substantially as and for the purpose set forth.

2.—The attaching of the plough beams F to the axle A, by means of the tubes *h g*, the latter being fitted on rods *f* attached to the parts *e* of the axle, and the former secured by pins *j* between plates *i i*, at the front ends of the plough beams.

3.—The brace rods or bars *k*, connected with the ends of the rods *f* and rear end of the draught pole B, substantially as and for the purpose specified.

4.—The combination of the axle A, draught pole B, brace rods or bars *k*, and the universal joints which connect the plough beams with the axle, all being arranged substantially as and for the purpose specified.

No. 69,081.—E. F. D'HAST, SWAN CREEK, ILL.—*Cultivators*.—*September 24, 1867*.

Claim.—1.—The frame A B G F, beams D D D D, cross piece M, rods *o o o o*, connecting bar *o' o'*, and levers *o' o' o'*, constructed as described and for the purpose set forth.

2.—The levers *o' o' o'*, in combination with the main frame and beams D, substantially as described and for the purpose set forth.

3.—The cross piece M, in combination with the rods *o o o o* and beams D, substantially as described and for the purpose set forth.

No. 69,109.—JOHN MARSH, SEVENA, ILL.—*Corn Ploughs*.—*September 24, 1867*.

Claim.—1.—The slotted timbers F F, with their holes I I I I, and their trunnions G G, substantially as and for the purpose described in the foregoing specification.

2.—The iron straps or loops H H, at the ends of the plough beams E E, in combination with the frame A, substantially as and for the purpose described.

3.—The shovels K K K K, with their upwardly projecting tail ends, substantially as and for the purpose described in the foregoing specification.

No. 69,192.—J. H. BARLEY, SEDATA, MO.—*Cultivators*.—*September 24, 1867*.

Claim.—1.—The combination and arrangement of the loop or bent hook J, bent lever I, connecting rod or chain K, and lever pawl L, with each other, and with the frames D and E, of the cultivator, substantially as herein shown and described and for the purpose set forth.

2.—The combination of the rack M with the standard of the frame E, and with the lever pawl L, to operate in connection with the loop or bent hook J and bent lever I, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the pivoted seat bars X, and adjustable holders O, with the side bars of the cultivator frame C, substantially as herein shown and described and for the purpose set forth.

4.—The shield F constructed with flange *f*¹ and wings *f*², and connected to the frames E and D by the bar G and chains H, substantially as herein shown and described and for the purpose set forth.

No. 69,186.—J. W. CONNELLY, CHARLESTON, ILL.—*Cultivators*.—*September 24, 1867*.

Claim.—1.—The slotted adjustable crank spindles B in combination with the axle A and wheels C, substantially

as herein shown and described and for the purpose set forth.

2.—Pivoting the forward ends of the beams K to the longitudinal bars D by means of bent or elbow bolts S, substantially as herein shown and described.

3.—Pivoting the forward ends of the beams K to the tongue G by means of the bent or elbow bolts U, substantially as herein shown and described.

4.—Pivoting the forward ends of the beams K to the front cross-bar E by means of elbow or bent swinging bolts T, substantially as herein shown and described.

5.—Pivoting the forward ends of the beams K to the front cross-bar E, by means of the strap or band X passing around the said cross-bar E, and secured to the ends of the said beams K, substantially as herein shown and described.

No. 69,255.—JOHN SCHROEDER, KICKAPOO, ILL.—*Cultivators*.—September 24, 1897.

Claim.—1.—The manner herein shown and described of securing the plough beams to the frame A, by means of pendants G and a movable cross-bar F, the latter being pivoted to the tongue D, substantially as set forth.

2.—The above in combination with the swinging draught bars N, made as described.

No. 7,496.—I. SCHROEDER, KICKAPOO, assignor to H. H. PATTEE, MONMOUTH, ILL.—*Cultivators*.—69,255—September 24, 1897.—Reissued February 6, 1877. [Filed January 16, 1877.]

Claim.—1.—Two plough beams B B, connected together by an elevated beam-yoke A, so that either may operate in advance of the other, while both are drawn forward in the line of progression by draught-animals attached to each side of the machine, so that each animal draws in a manner its adjacent plough, the attachment of the plough beams to said yoke being by joints, which permit of moving the beams freely and independently in a lateral direction, combined and operating substantially as described, and for the purpose specified.

2.—Two plough beams, B B, connected together by an elevated beam-yoke A, so that either may operate in advance of the other, while both are drawn forward in the line of progression by draught-animals attached to each side of the machine, so that each animal draws in a manner its adjacent plough, the attachment of the plough beams to said yoke being by joints which sustain the ploughs in an upright working position without rear connections or other support, and permit of their being moved or oscillated freely in a lateral direction, combined and operating substantially as described, and for the purpose specified.

3.—The two plough beams, B B, connected together by an elevated beam-yoke, A, so that either may operate in advance of the other, while both are drawn forward in the line of progression by draught animals attached to each side of the machine, so that each animal draws in a manner its adjacent plough, the attachment of the plough beams to said yoke being by joints, which sustain the ploughs in an upright working position without rear connections or other support, and permit of their being moved or oscillated freely in a lateral or vertical direction, combined and operating substantially as described, and for the purpose specified.

4.—The draught-bars f f, connected to the upper and lower portions of the arched beam yoke A, and arranged to operate with said beam yoke and with the two plough beams B B, connected thereto, substantially as described, and for the purpose specified.

5.—The draught-bars f f, hinged to the beam yoke A, and combined to operate with said beam yoke and plough beams B B, substantially as described, and for the purpose specified.

No. 7,497.—I. SCHROEDER, KICKAPOO, assignor to H. H. PATTEE, MONMOUTH, ILL.—*Cultivators*.—69,255.—September 24, 1897.—Reissued February 6, 1877. [Filed January 16, 1877.]

Claim.—1.—The frame H, supported on wheels I I, and combined to operate with the pivoted beam yoke A and beams B B as a support, substantially as described, and for the purpose specified.

2.—The guide-pole J, frame H, and wheels I I, arranged

to operate with the beam yoke A, pivoted to the frame H, and having plough beams B B hinged thereto, substantially as described, and for the purpose specified.

No. 69,442.—C. M. JENNE, YOUNG AMERICA, ILL.—*Cultivators*.—October 1, 1897.

Claim.—1.—The arrangement with reference to the seat n of the beam *i*, working upon universal joints, and provided with suitable shares and handles, substantially as and for the purpose specified.

2.—The share stocks n pivoted to the beams *i*, and furnished with stems *l*, extending through the slotted guides *c*, substantially as and for the purpose specified.

3.—The wedges *g* in combination with the inclined bars *f*, rods *h*, and beams *i*, whereby the said beams with the shares attached thereto may be raised or lowered, substantially as herein set forth.

4.—The wedges *g* in combination with the oblique bars *c* in such manner that the position of the said bars may be changed to adjust the position of the beams, substantially as herein set forth.

No. 69,468.—J. MADISON MORSE, SANDWICH, ILL.—*Cultivators*.—October 1, 1897.

Claim.—The combination of the cart and frame B C D E F G H, constructed and arranged substantially as described, with an ordinary corn cultivator, as and for the purpose herein set forth.

No. 69,725.—S. D. TUTTLE and J. H. GANS, EATON, OHIO.—*Cultivators*.—October 8, 1897.

Claim.—1.—The sliding or adjustable doubletree K applied to the draft pole G, substantially as shown and described, and connected to the plough beams E, on the axle C, all being arranged to operate substantially in the manner as and for the purpose set forth.

2.—The pivoting of the draft pole G to the main frame A, in connection with the pivoted socket H and the foot-piece J, all arranged to operate substantially as and for the purpose specified.

3.—The arm or lever N provided with the foot piece O, and the toothed segment bar P, on the front cross-piece of the frame A, the arm or lever N being attached to a plough beam E, and all arranged substantially as and for the purpose set forth.

4.—The rake S connected to the arms V, fitted on the axle C, and having the springs W N attached to them, substantially as shown and described.

5.—The application and arrangement of the rope Y, as shown and described, for the purpose of raising the rake when required.

6.—The combination of the sliding doubletree K, plough beams E on the axle C, and the pivoted or laterally adjustable draft pole G, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 69,743.—A. H. ALLISON, CHARLOTTESVILLE, IND.—*Cultivators*.—October 15, 1897.

Claim.—1.—The axles *d*, in combination with ties C C, when constructed and arranged as and for the purpose herein set forth.

2.—The beams D D, the blocks H H, the rod *m*, the rods *e*, *g*, and the disks *h*, the whole constructed and operating substantially as herein specified.

No. 69,750.—H. BEAN, SCHUYKILL, PA., and J. D. TYSON, LOWER PROVIDENCE, PA.—*Cultivators*.—October 15, 1897.

Claim.—1.—The combination with the main frame A of the levers D and brace rod *d*, arranged to operate as shown and described.

2.—The sliding bar I, provided with the cord F and chains *l*, or their equivalents, when arranged to operate as and for the purposes set forth.

No. 70,328.—C. A. EWICK, RUSHVILLE, IND.—*Cultivators*.—October 20, 1897.

Claim.—1.—The arrangement of the frames A A', connected together as specified and provided with the cranks *e*, *g*, *g*, in the manner and for the purpose set forth.

2.—The shovel beams D D' D D' connected to the cranks *e* and *g* and secured in position by the springs G G' and chains *r* *r* to the frame A, as specified.

No. 70,345.—A. S. MARKHAM, BRISBANE, ILL.—*Compound Cultivators and Sulkys*.—October 20, 1867.

Claim.—In connection with the frame of a wheeled cultivator the pendants E, E', beams F, with the plough slanks J, J', chains or cords L, and levers P, with the bar S, rods *a a*, and whiffletrees *b b*, arranged and used as for the purpose specified.

No. 70,381.—ELISHA WALKER and A. M. WEED, LA PORTE, IND.—*Cultivators*.—October 29, 1867.

Claim.—1.—The mode of counterbalancing the weight of the tongue *l* by that of the driver *l'* by the means of the seat K, resting up on the bars K', adjustably secured to the tongue and supported upon the axle, substantially as set forth.

2.—The combination of the tongue D, doubletree F, with solet's F' and beams G, respectively constructed and arranged substantially as set forth.

No. 70,530.—HUGH J. GRAHAM, MOSSMOUTH, ILL.—*Cultivators*.—November 5, 1867.

Claim.—1.—The slotted bar O, in combination with the handles F F' and upright bars P P', substantially as described and for the purpose set forth.

2.—The curved iron F, in combination with the notched bar N, clutch W, brace Q, and sliding seat D, arranged as set forth and for the purpose claimed.

3.—The movable bar X, in combination with the handles for the purpose described and substantially as arranged.

4.—The clutch or slide W and notched bar V, substantially as described and combined for the purpose set forth.

5.—The hinge C in combination with the curve T for the purpose of giving vertical and lateral movement and for vertical adjustment.

No. 70,615.—JOHN H. RANKIN, VERSAILLES, MO.—*Sulky Ploughs*.—November 5, 1867.

Claim.—1.—The cultivators C, constructed as above described and for the purpose set forth.

2.—The cultivators C, screw L, nut L', cords *c*, drums *f*, on axle *g* and handle *h*, in combination with the frame A, all arranged as above described, and for the purpose set forth.

3.—The ploughs D, constructed as above described and for the purpose specified.

4.—The cultivators C, ploughs D, adjusting bars *h*, rail *d*, screws L, nuts L', cords *c*, drums *f*, on axle *g*, and handle *h*, in combination with the frame A, as above described and for the purpose set forth.

No. 70,770.—MORGAN BARNETT and ELI WOOD, HARKINSBURG, IND.—*Cultivators*.—November 12, 1867.

Claim.—1.—The plough frames formed by the combination of the beams G, standards E, and adjustable brace bars I, with each other, substantially in the manner herein shown and described and for the purpose set forth.

2.—Pivoting the beams G upon the forward side of the axle C, by means of the rods or bolts J, and clips K, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the locking keys P with the forward ends of the beams G, and with the rods or bolts J, substantially as herein shown and described and for the purpose set forth.

4.—The combination of the guide frames M with the beams G, and rods or bolts J, and N, substantially as herein shown and described and for the purpose set forth.

5.—The combination of the levers I, with the beams G and guide frames M, substantially as herein shown and described and for the purpose set forth.

6.—The combination of the graduated stop-lever O with the beams G and guide frames M, substantially as herein shown and described and for the purpose set forth.

No. 71,023.—J. P. JOHNSON, MAWSON, ILL.—*Cultivators*.—December 3, 1867.

Claim.—1.—The attachment of the forked plough beams F F' to pendants *h h* by means of loose joints *c c*, and the employment, in combination therewith, of the standards G G' and diagonal brace G' G', steps *g g*, and driver's seat D, arranged and operating substantially as described.

2.—In combination with plough beams F, which are attached by loose connections at their forward ends, and sustained in position by diagonal braces G' G' and standards G G', the employment of suspending chains and stirrups for

enabling the driver to raise and lower the ploughs, substantially as described.

No. 71,831.—IRA BARBER, LA PORTE, IND.—*Cultivators*.—December 3, 1867.

Claim.—The beams E B, the chain C, and the pivoted fat bar D, the double-tree shovel F and the slotted bar I, as substantially arranged, connected, and set forth in the annexed and foregoing specification.

No. 72,037.—JOHN CROSS and JOHN C. TUNISON, DECATUR, ILL.—*Cultivators*.—December 10, 1867.

Claim.—1.—The arrangement and combined action of the two frames, so that when any permanent obstruction comes against any of the ploughs, the frames will disconnect, and the back frame ride or move up on the front one, and thus avoid breakage, substantially as described.

2.—A frictional spring hook upon the tongue or tongue frame, for catching and holding upon a cross bar of the "rear frame," so that the two frames will not disconnect until the pressure upon the plough or ploughs exceeds that for which the hook has been adjusted, substantially as described.

No. 72,207.—HENRY HOWE, ONEONTA, N. Y.—*Cultivators*.—December 17, 1867.

Claim.—1.—To receive the rear end of the central beam C' back, to extend and support the rear or central plough standard D, substantially as herein shown and described.

2.—The gauge wheel frame J, constructed substantially as herein shown and described, and pivoted to the central beam C, or to some other support at the central part of the cultivator frame, as and for the purpose herein set forth.

3.—The combination of the lever latch N with the beam C and gauge wheel frame J, substantially as herein shown and described and for the purpose set forth.

4.—Pivoting or hinging the standards D and F to the cultivator frame by means of the brace ears *d'* and *f'*, substantially in the manner herein shown and described and for the purpose set forth.

No. 72,456.—PHILIP COONROD, KEITHSBURG, ILL.—*Double Cultivator Ploughs*.—December 24, 1867.

Claim.—The cultivator, consisting of two separate gangs of ploughs G G', each gang constructed of curved iron bars *g g*, as described, and adjusted by means of clevis H and box C, both constructed and operating substantially as herein set forth, in combination with a lettree A, constructed as described, boxes D D, and draught rod E, substantially as set forth.

No. 72,508.—JOSEPH E. BROOKS, GOODEN'S GROVE, ILL.—*Cultivators*.—December 24, 1867. Antedated December 19, 1867.

Claim.—1.—The arrangement of rods U with the frame of the machine and the plough beams E E, substantially in the manner and for the purposes set forth.

2.—The arrangement of the draught rod *h*, sheaves *a a*, and pivoted hangers C C', so as to operate substantially as and for the purposes described.

3.—The combination and arrangement of the plough beams E, rods *d e*, lever L, cord K, rod J, and lever I, substantially as and for the purposes specified.

4.—The combination of the suspended plough beams E, rods U, and levers W, arranged and operating as and for the purpose shown and set forth.

5.—The peculiar arrangement of and mode of attaching the bow V to the rear part of the plough beams, herein shown and specified.

No. 72,780.—J. T. BALTIMORE, MARBLE ROCK, IOWA.—*Cultivators*.—December 31, 1867.

Claim.—1.—The combination of the beams G, pivoted at their front ends to the arms E of the frame C, and passing through the slotted arms F, with the beams H pivoted to their inner sides, substantially as described.

2.—The combination of the elbow levers L, cross bars M and K, with the standards I, connected to the beams, arranged for operating the shovels, substantially as described.

No. 72,835.—K. GARTER, GRAND RAPIDS, MICH.—*Cultivators*.—December 31, 1867.

Claim.—1.—The arrangement of the wheels E E, hung on the inside of the frame beams A A, with an adjustable cast-iron slide *h* working in uprights *c c*, having serrated or toothed faces for fastening it at any height, with correspond-

ing secured to bars β and on the bolt α , by the crank nut, substantially as and for the purpose herein described.

2.—The sliding adjustable wipers k in combination with the wheels F , F' , connected and operating as and for the purpose herein described.

3.—The cast iron beam n and clevis n' , combined with the draught pole L , connected and applied substantially as set forth.

No. 72,888.—S. G. PEABODY, CHAMPAIGN, ILL.—*Cultivator*.—*Pat. m's*.—**31, 4767**.

Claim.—1.—The sled bolt P , applied to the draught pole B , and arranged in relation with the cross bar C , to operate in the manner substantially as and for the purpose set forth.

2.—The attachment of the front bar D with the standard E of the castor wheel G , and the arms g of the cross bar C , substantially as and for the purpose set forth.

3.—The cross bar C , provided with the pendant arms G , in combination with the plough beams H , H' , and adjustable frame I , all arranged substantially as and for the purpose specified.

4.—The standard bars h , in combination with the bars C and the standard E of the castor wheel G , all arranged substantially in the manner as and for the purpose set forth.

5.—The latching of the handles J , J' by means of the bar K , substantially as set forth.

6.—The pivoting of the shaft bolt L at the rear of the draught pole, substantially as and for the purpose specified.

No. 72,975.—DANIEL CHURCHILL, FERRIS, ILL.—*Cultivator*.—*January 7, 1868*.

Claim.—1.—The plow F , and F' , in combination and arranged to operate as and for the purpose set forth.

2.—The plow F , provided with the ricks g , for securing and holding the beam to the main frame, and having also the sled bar h passing thereon, as set forth.

3.—The combination of the front rods F and cross rod H , pivoted to the main frame, and arranged to operate as described.

No. 73,081.—WILLIAM H. DAMRON, ROBERT H. MASTON, and J. DEAN COLE, WHITEMAN, MISSOURI.—*Cultivator*.—*Pat. m's*.—**31, 4868**.

Claim.—1.—The combination of the wheels w with the vertical shaft s , secured crosswise in a , as and for the purpose specified.

2.—The combination of the plough beam e with the sliding cut bar b , the cross beam c , the chain n , and slotted cross beam d , substantially as set forth.

3.—The combination of the plough beam e with the counter f , provided with the bolt r and pins h , as and for the purpose specified.

No. 73,094.—A. O. HARGRAVE, RUSSELL, WIS.—*Cultivator*.—*Pat. m's*.—**31, 4869**.

Claim.—1.—The beam H , connected to the frame C by the link H' , so that the dull end of the beam elevated by the driver will raise the rear end.

2.—The sled A , arranged to be held by L , in which an oblique of the beam L , F , is provided with their shovels e , e' , whose lower ends are secured with the rod H , from d , d' , using the lever g , g' , h , h' , i , i' , and j , and operating the bar k upon the beam F , by the hinge H' , the wheel o , and o' , in the manner substantially as specified.

No. 73,106.—S. H. COOK and E. W. H. PENNELL, MATTOON, ILL.—*Pat. m's*.—**31, 4870**.

Claim.—1.—The arrangement of the front plough beams A to the frame C , by means of the clevis L , connected to the sled K , and the long adjustable bolt J , substantially as herein shown and described and for the purpose set forth.

2.—The combination of the lever C and tooth h and P on the shaft N , grooved segment M , chains L , and beams H , in connection with the clevises K and long bolts J , for raising the plough vertically from the ground, substantially as herein shown and described.

3.—The combination of a lever n at the end of the plough A ,

having cutters n' attached to them, and turning the dirt from the hills, ploughs W running at a lower level than the ploughs V , and turning the dirt toward the hills, standards R and T and beams D with each other, substantially as herein shown and described, and for the purpose set forth.

No. 73,172.—EDWIN DOOLITTLE, PAWNAE, ILL.—*Cultivator*.—*January 7, 1868*.

Claim.—1.—The hinged sleds M , friction wheels N , and bent bar L , with each other and the plough beams I , and with the beams or bars D , substantially as herein shown and described, and for the purpose set forth.

2.—In combination with the above, the lances or bars O , cross bar P , and lever R , all arranged and operating in the manner and for the purpose set forth.

3.—The combination of the adjustable connecting and bent bars W , uprights V , and plough beams I , when arranged to operate in the manner herein described and represented.

No. 73,217.—JOSEPH WIDMAN, PANOLA, ILL.—*Cultivator*.—*January 7, 1868*.

Claim.—1.—The detachable seat bars E , E' , secured to the main frame A of the machine, substantially in the manner as and for the purpose set forth.

2.—The attaching of the front ends of the plough beams G , G' to the pendants T , T' by means of universal joints H , when the attachment is used in connection with the pivoted arms O , O' , connecting bar P , and lever Q , for giving a lateral motion to the ploughs, substantially as described.

No. 73,224.—A. BENNETT, ROCKFORD, ILL.—*Cultivator*.—*January 14, 1869*.—*Ante dated January 4, 1868*.

Claim.—1.—The latching arm a in combination with the plough beams C , C' , and the front cross beam D , arranged and operating substantially as and for the purposes herein described.

2.—The chain b , with the stirrup m , at one end, connected with the plough beams C , C' , at the other end, and passing over the rear cross beam E , to raise the beams and shovels, as described.

3.—The upright hand levers e , e' , hinged or pivoted to the plough beams C , C' , and passing through the staples f , on the cross beam F , to which they are secured by pins h , h' , arranged and operated as and for the purpose described.

4.—The movable foot piece or step k , on the levers e , e' , held in place by knobs l in the sides of the levers as and for the purpose specified.

5.—The adjustable braces p , p' and slotted bolts r , r' , arranged in relation with the beams C and standard d , to regulate the pitch of the shovels, as herein shown and described.

No. 73,264.—STEPHEN T. SKINNER, JACKSONVILLE, MISSOURI.—*Pat. m's*.—**31, 4868**.

Claim.—1.— M , forward upright frame F , with wing bar G , and the chain H , for the use and purpose as specified and herein set forth.

2.—The attaching of my pole to the center, or near the left side of my machine, for the use and purpose as specified and herein set forth.

3.—My triple shaft tree, with the triple link a , as represented by H , for the use and purpose as specified and herein set forth.

4.—My crank axle, as made, attached and operated on my machine, for the use and purpose as specified and herein set forth.

5.—My "compound regulating shaft" N , with the revolving sockets e , e' , spring lever K , and circle L , for the use and purpose as specified and herein fully set forth.

6.—The combination of my crank axle, compound regulating shaft N , and spring lever, for the use and purpose as specified and herein set forth.

7.—My double crank shaft M , with lever N and sling V , for the use and purpose as specified and herein set forth.

No. 73,291.—JESSE C. BOYD, MILROY, IND., assignor to himself, C. P. WILSON, and L. L. ROULET.—*Cultivator*.—*January 14, 1868*.

Claim.—The arrangement of the beams D with their attachment directly to the axle A, by means of slitting-clavises, with handle H, bar I, and bars F and G, the several parts being constructed and operating substantially as and for the purpose specified.

No. 8,400.—JESSE C. BOYD, MERRICK, IND., assignor to himself, C. P. WILSON, and L. L. BOHLEFF. *Cultivators*.—73,201.—January 14, 1868.—Reissued September 10, 1878. [Filed April 10, 1875.]

Claim.—In a cultivator, the combination of the handle M, the cross-bar K, and the rest *d'* with the ploughs, beams, and standards, for the purpose of holding them up from their ordinary positions, substantially as herein shown and specified.

2.—In a cultivator, the combination of the pole C, axle B, plough beams F F, adjustable attachments G G, standards I I, cross-bars K I, and handle M, substantially as herein shown and described, and for the purposes specified.

No. 73,392.—JAMES B. SEXTON, PEHA, IOWA, assignor to himself and JOHN L. ANDREW, same place.—*Cultivators*.—January 14, 1868.

Claim.—The adjustable iron bars G, constructed substantially as herein shown and described, and adjustably attached to the end bars *a'* of the frame A, as and for the purposes set forth.

2.—The beams H, constructed substantially as herein shown and described: that is to say, curved outward at their forward ends and strengthened at their rear ends by the cross-bars J, as and for the purposes set forth.

3.—The curved adjustable bar or yoke L, curved edgewise, and adjustably bolted to the cross-bars J, substantially as herein shown and described, and for the purpose set forth.

No. 73,547.—CHARLES RICH and OSCAR L. NEISLER, DOUGHERTIE, N. Y.—*Combined Cultivators and Harrows*.—January 21, 1868.

Claim.—The adjustable bars K' K', when arranged on the sides of the hill, and when provided with handles *j j*, connected at their upper ends so that the teeth can be accommodated to irregularities in the hill, or can be connected for broadest harrowing or tilling, substantially as herein shown and described.

2.—The device for connecting the harrow frame C' with the axle A and driver's seat I, consisting of the bars F and F on the axle, of the links G, levers H and J, and connecting rods *h* and *i*, all made and operating substantially as and for the purpose herein shown and described.

3.—The above, in combination with the notched bar M, when made as and for the purpose described.

4.—Securing the draught bars N to the rear of the harrow holders K, substantially as and for the purpose herein shown and described.

5.—The hollow cultivator tooth P, when arranged so that it can be fitted to and easily removed from a harrow tooth L, substantially as and for the purpose herein shown and described.

No. 73,699.—THADDEUS DONELY and J. B. CRESSLER, SOUTHAMPTON, PA.—*Adjustable Shovel Ploughs*.—January 28, 1868.

Claim.—The combination of lever J, with subordinate levers *l l*, and their attachments, pawls and springs, when operating upon the sleeves S S, substantially as described.

2.—The combination of lever I, with sleeves S S and shifts *d'*, to move laterally, substantially as described.

3.—The arrangement of levers T' T', and *t*, in connection with the tongue, substantially as described.

4.—The use of a central plough, F, detachably arranged, in connection with the side ploughs, substantially as described.

5.—The combination of lever I, and its attachments, forming a combined lever, with vertical and horizontal motions, coincident when necessary and convenient, together with the adjustable devices T' T', and *t*, all operating together, substantially as and for the purpose specified.

No. 73,805.—JOHN T. HEKNDON, BASCROFT, MO.—*Cultivators*.—January 28, 1868.

Claim.—The combination and arrangement of the beams E J, connected by chains U to pulleys V, on the shaft W, substantially as and for the purpose set forth.

2.—The connecting of the inner beams J J by the bar *h*, and the attaching of the uprights *g g* on said beams to the arms Q, by the bars N, arms O, and shafts P, for the purpose of giving a lateral movement to the shares or shovels L, substantially as and for the purpose specified.

No. 73,891.—CHRISTOPHER HEFFET, TAZEWELL COUNTY, VA.—*Cultivators*.—January 28, 1868.

Claim.—The combination and arrangement of the diagonal frame A and cross bar C, pivoted to the main frame, and having the standards *h* and *u* attached thereto, as shown, with the levers *v*, all as shown and described.

2.—In combination with the above, the detachable handle F and lever H, arranged to operate as and for the purposes set forth.

No. 73,970.—NATHAN S. JOHNSON, MAQUOKETA, IOWA.—*Comb. Cultivators*.—February 4, 1868; antedated February 1, 1868.

Claim.—The combination of the two axle bars B B and the four upright standards A A A, and cross beam S and bolts E.

2.—The combination of the seat board and seat lever I with the levers L L, shovel beams D D, and the movable pivot or standard C, substantially as and for the purpose herein specified.

No. 74,044.—JOHN BURNHAM LA SALLE, III., assignor to himself and DAVID L. HUGH, same place.—*Cultivators*.—February 4, 1868.

Claim.—In combination with the elevated axle-tree A, hounds B, pivoted draught pole C, and lever C', having a movable fulcrum, the pivoted beam D having the plough beams secured to its extremities, or to pendents applied thereto, said beam being connected by means of a chain to the draught pole, substantially as described.

2.—In combination with a pivoted beam D, arranged and operated as described, and provided with pendents upon its ends, the plates *d' d'* having the plough beams attached to them, substantially as described.

3.—The flexible draught connection *h*, secured to swinging pendents G G at its ends, and passed around the axle-tree A' longitudinally, substantially as described.

4.—The removable driver's seat H, applied to the carriage, and supported thereon, substantially as described, in combination with levers P, suspension chains *j*, beams E, and pivoted cross beam D, substantially as described.

5.—The attachment of the plough blades or shovels J to their standards, by means of loops M and clamping eyes or hooked bolts *n*, substantially as described.

No. 74,138.—JOHN C. RICKERD, LEWISVILLE, IND.—*Cultivators*.—February 4, 1868.

Claim.—The double hinge, consisting of the screw bolt *f*, bases *g*, flanges *h h*, lips *i j*, and pins *m*, to hinge the cultivator beams to the main frame, all constructed and arranged substantially as described.

2.—The langed seat I, supported by means of curved rods, and provided with foot rests *p*, substantially as and for the purposes set forth.

3.—The combination of the frame A, hooks *u*, rods *a'*, and foot rests *p*, substantially as and for the purposes set forth.

No. 74,267.—J. A. ALLEY, CHIEFY, IND.—*Combined Ploughs and Rollers*.—February 11, 1868.

Claim.—The combination and arrangement of the short rollers C, frame A, rigid plough standards I, and pivoted plough standards J, with each other, substantially as herein shown and described and for the purpose set forth.

2.—Operating the pivoted plough standards J to guide the ploughs, by means of a lever O, pivoted to the upper end of one of the said standards, and to a support P, attached to the frame A, substantially as herein shown and described.

No. 74,678.—JOHN FRANK, WEBSTER CITY, IOWA.—*Cultivators*.—February 18, 1868.

Claim.—The adjustable blocks C, constructed and operating substantially as described.

2.—The cultivator as it stands, with its various parts and

devices combined, arranged, and operating substantially as and for the purposes herein specified.

No. 74,754.—ELIAS S. EASTERDAY, NOKOMIS, ILL.—*Sulky Cultivators*.—February 25, 1868.

Claim.—1.—Extending the plough beams D forward to form the tongue of the machine, substantially as herein shown and described and for the purpose set forth.

2.—The iron frames O, adjustably secured to each other, and sliding laterally upon a rod or equivalent slide attached to the axle B, in combination with the plough beams D, substantially as herein shown and described and for the purposes set forth.

3.—The combination of the foot levers Q with the plough beams D, and with the slotted irons or frames O, substantially as herein shown and described and for the purpose set forth.

4.—Adjustably securing the ploughs M to the standards K by means of sockets N, substantially in the manner herein shown and described and for the purpose set forth.

5.—The combination of the pivoted levers E, chain F, and pulley G, with the plough beams D and with the bars C, connecting the forward ends of the bars C, substantially as herein shown and described and for the purpose set forth.

No. 75,127.—JOHN CROWTHER, OXFORD MICH.—*Cultivators*.—March 3, 1868.

Claim.—Raising and lowering the frame A by means of levers D and H, and bars C, F, and I, and shaft J, substantially as herein specified.

No. 75,647.—J. H. REYNERSON, PLEASANT PLAINS, IOWA.—*Cultivators*.—March 17, 1868.

Claim.—1.—The horizontal bar I, vertical bars H, rock shaft K, having arms *f*, arm *h*, lever L, and chain *m*, in combination with the plough beams F G, all arranged and operating as described, whereby the depression of the lever L raises the outer beams G, through the medium of the arms *h f* and chain *g*, and the inner beams F, through the medium of the vertical bars H and horizontal bar I, as and for the purpose herein set forth.

2.—The vertical bars H and horizontal bar I, in combination with the plough beams F G and lever L, as herein described, for the purpose specified.

3.—The horizontal bars H, attached to the inner beams F, when the lower ends of said bars are provided with the projecting foot rests *d*, arranged and operating as described, for the purpose specified.

No. 75,826.—BENJAMIN ANYAN, FITCHVILLE, OHIO.—*Cultivators*.—March 24, 1868.

Claim.—1.—The supplemental hounds *b b*, with the draught pole G attached, and both said parts attached to the hounds proper D D, as shown, when said parts are applied to or used in connection with the front running gear of an ordinary farm wagon, for the purpose specified.

2.—The attaching of the standards I I of the front shovels H to the supplemental hounds *b b*, and the attaching of the standards K of the rear shovels J J' to the bars L L, connected to the hounds proper D D, substantially as and for the purpose set forth.

No. 75,911.—CHRISTOPHER HOAGLAND, DELAWARE, ILL.—*Cultivators*.—March 24, 1868.

Claim.—1.—The combination of the jointed plough standards C' C', plates *d*, links K, scrapers *r*, and connecting links *l k*, as herein described, for the purpose specified.

2.—The links *l k*, or other equivalent device, for connecting the front and rear standards, for the purpose of operating the latter simultaneously with the former, substantially as shown and described.

3.—The plates *d*, with their bolts *f*, or other equivalent device, for forming a hinge between the standards C' C' and ploughs P P', substantially as shown and described.

4.—The spring catch O, or its equivalent, for holding the standards forward, substantially as and for the purpose shown and described.

5.—The rod L, for vibrating the standards C laterally, substantially as shown and described.

6.—The arms N, for operating the rod L, substantially as shown and described.

7.—The rod L, with its bend J, or other equivalent device, substantially as and for the purposes shown and described.

8.—The laterally vibrating standards C, in combination with the rod L and bend J, substantially as and for the purposes shown and described.

9.—The plough-cleaner *r*, or other equivalent device, attached and working substantially as shown and described.

No. 76,411.—ELIJAH W. DENNIS, PEORIA, ILL.—*Cultivators*.—April 7, 1868. Antelated March 25, 1868.

Claim.—1.—The arrangement of the levers I I and cord *c* with spring *h* on the pole M, substantially as and for the purpose specified.

2.—The arrangement of the levers, handles II H with the cord *a* and the pole M, substantially as and for the purpose specified.

3.—The arrangement of the plates *s* and *t*, as constructed, with the shovel *r* and bolt *z*, for securing the shovel to the beam, substantially as and for the purpose set forth.

No. 76,964.—JOSEPH WOLF, YOUNG AMERICA, ILL.—*Corn Ploughs*.—April 21, 1868.

Claim.—1.—Connecting the forward ends of the beams C C to the axle A, by means of metallic loops, so that the said ends can be shifted, while the rear ends can be adjusted, substantially as and for the purpose set forth.

2.—The arrangement of the axle A with the beams C C, which are loose at their rear ends, and with the tongue F, as and for the purpose set forth.

3.—The arrangement of the draught bars II H with the axle A and tongue F, as and for the purpose set forth.

No. 78,243.—OKRIN STONE, DONIA, MICH.—*Cultivators*.—May 26, 1868.

Claim.—The combination of the fixed and the yielding frames, when united together by flexible connections, and the under or yielding one is made capable of being raised and carried by the fixed one, in the manner and for the purpose herein described and represented.

No. 79,116.—JUSTIN H. HILL, CLINTON, ILL.—*Cultivators*.—June 23, 1868.

Claim.—1.—The frames A and C, and the lever F, combined and operating substantially as set forth.

2.—The shovel handles G, arms H, and connecting bar I, arranged substantially as described, in combination with the frame C and its adjuncts, substantially as and for the purpose set forth.

No. 79,304.—A. K. BLOOD, A. HATHAWAY, and V. R. BEACH, INDEPENDENCE, IOWA.—*Cultivators*.—June 30, 1868.

Claim.—1.—The levers J J, strips *a a*, bar L, and pivoted frame I, when all are arranged and operating substantially in the manner and for the purpose set forth.

2.—The set screw H, seed slide *b'*, levers J J, strips *a a*, bar I, H, pivoted frame I, all combined and arranged as and for the purpose described.

No. 3,045.—A. K. BLOOD, ALEXANDER HATHAWAY, and V. R. BEACH, INDEPENDENCE, IOWA.—*Cultivators*.—79,304, June 30, 1868.—Reissued May 3, 1870.

Claim.—1.—The levers J J, strips *a a*, bar L, and pivoted frame I, when all are arranged and operating substantially in the manner and for the purposes set forth.

2.—The set-screw H, seed-slide *b'*, levers J J, strips *a a*, bar L, and pivoted frame I, all combined and arranged as and for the purpose described.

3.—The arrangement within the slotted bar F of the shank K, provided with tooth G, when constructed as described, and the upper end of the shank, provided with two or more holes *g g*, and held by a wooden pin passing through either of said holes, and both ends of said pin resting upon the top of the bar F, substantially as and for the purposes herein set forth.

4.—The combination and arrangement of the frame A, seed-box E, with rod *f*, and mechanism for operating the same, seed-slide *b'*, set-screw H, levers J J, strips *a a*, bar L, frame I, cultivator-bars F F, shanks K K, and teeth G G, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

No. 79,344.—MAJOR E. HANOVER and DAVID D.

BAILEY, LAMOLLE, ILL.—*Cultivators*.—*June 30, 1868.*
 Claim.—1.—The frame C, constructed and arranged substantially as herein shown and described, in combination with the axle B, as and for the purpose set forth.

2.—The combination and arrangement of the pivoted oblique beams F, connecting bars U, levers V, and connecting rods W, with each other, and with the frame C and hounds D, substantially as herein shown and described, and for the purpose set forth.

3.—The combination and arrangement of the hounds D, frame C, lever hooks or catches E, coiled or equivalent spring F, and operating rod G, with each other, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the angular or bent brace bars T with the pivoted plough beams F, axle B, and frame C, substantially as herein shown and described, and for the purpose set forth.

5.—The bent levers A', pivoted at their angle points to the axle B, in combination with the connecting rod B' in rear of the axle B, draught rods C', horizontal bar E', hounds D, and slotted vertical arms D', all operating as described for the purpose specified.

No. 79,387.—EDWARD PHIFER, TRENTON, N. J.—*Cultivators*.—*June 30, 1868.*

Claim.—1.—The skeleton frame E G, constructed as described.

2.—The combination, substantially as described, with a tongue pivoted by a king bolt to the axle of a rock shaft, arranged parallel with the axle, to which it is connected by sectors.

3.—The combination, substantially as described, with the tongue pivoted to the main axle by a king bolt, of a transversely-slotted plate bolted to the skeleton frame, whereby the tongue can turn laterally without moving the frame.

4.—The combination, substantially as described, with a tongue pivoted to the main axle, of the rock shaft or skeleton frame, the treadles J, and the driver's seat, for the purpose of steering the machine, as set forth.

5.—The combination, substantially as described, of the tongue and driver's seat with the detent lever C' and the slotted plate e, whereby the driver can release the tongue or hold it rigidly as required.

6.—The crank arms G, constructed and arranged for joint operation, as described.

7.—The combination, with the crank arms of the drag bars and removable sleeves h h', for the purpose set forth.

8.—The combination, with the crank arms and sleeves, of the adjustable coupling arms G', for the purpose set forth.

9.—The combination, with the sleeves h h', of the looped drag bars H, and adjusting clamps I, for the purpose set forth.

10.—The combination, with the skeleton frame E G and adjustable drag bars H, of the adjustable link bars J, and slotted cross bars M on the lifting levers, for the purpose set forth.

11.—The combination, with the tongue of the whiffletrees, connected directly with the cranks G, as and for the purposes set forth.

12.—The combination, with the tongue pivoted to the axle by a king bolt, of a skeleton frame carrying ploughs adjustable in pairs, with the wheels also adjustable on the axle, substantially as described.

No. 79,450.—JOHN H. DAVEY, ROCKFORD, ILL.—*Cultivators*.—*June 30, 1868.*

Claim.—The frames B and C, the standards D D, pins E, the chains F F, the lever K, the chain K', all constructed, combined, and operating substantially in the manner and for the purposes set forth.

No. 79,570.—WILLIAM HARVEY, VOLGA CITY, IOWA.—*Sulky Cultivators*.—*July 7, 1868.*

Claim.—1.—The combined arrangement of the shovels F F', supporting chains I I', perforated straps J J', and wooden pins j, the rock bar K h h', elevating chains L L', and treadle M m', and the dodging chains O, and treadles

N, all as represented and described, for the purpose set forth.

2.—The hooks P P' employed, in combination with the inner shovels F F', to adjust said shovels relatively to the row, substantially as and for the purpose specified.

No. 79,568.—N. A. RAND, WINSTON, ILL.—*Cultivators*.—*July 7, 1868.*

Claim.—The arrangement of the pivoted bars C C' (that connect with the cultivator beams D D) and the movable seat bar K, between the axle and the frame piece I, whereby the operator can shift the shovels by the action of his feet, the several parts being constructed to operate substantially as set forth.

No. 79,950.—GEORGE W. COOK, MACON, ILL.—*Cultivators*.—*July 14, 1868.*

An arrangement whereby the attendant may ride or walk while operating the shovels and managing the team.

Claim.—The connecting of the standards F F' of the plough beams E E' by cross-bars e e', as shown, in combination with the crank shafts I I, chains d, pulleys f, and treadles H H, all arranged and applied to mounted frame A, substantially as and for the purpose set forth.

No. 80,094.—J. H. SKELLY, AROMA, ILL., assignor to himself and J. C. DANFORTH, same place.—*Cultivators*.—*July 21, 1868.*

Claim.—1.—The beam C, in combination with the pivot rod E, brace F, and arm D, the latter being arranged to swing with the beam C, and to travel on the track N by means of the roller M, substantially as shown and set forth.

2.—The combination of the beam C, chain e, arm D, and the elbow lever H I, the latter being pivoted to the arm, and having a projecting rib for locking against its top, substantially as and for the purpose set forth.

No. 80,102.—ISAAC WELTY, ONEY, ILL.—*Sulky Cultivators*.—*July 21, 1868.*

Claim.—1.—In combination with the outer shovels or ploughs H J, the lateral braces H', rendered adjustable by means of the slots h' and bolts h', in the manner shown and described, for the purpose set forth.

2.—The combined arrangement, with the inner shovels G I S, of the perforations e e', for the reception of their attaching eye bolts e, the pulleys n n', for the reception of their elevating ropes or chains K, and the perforated bars T U, as and for the purpose specified.

No. 80,221.—SAMUEL J. REED, CAMDEN, OHIO.—*Sulky Ploughs*.—*July 21, 1868.*

Claim.—1.—The beam A, pole A', caster wheels B B, arms h h, cross bar h', lever C, and foot piece K, the whole being combined and arranged substantially as described.

2.—The plough beams E E, constructed and arranged as described, in combination with lever F, crank f, and guides f', as and for the purpose set forth.

No. 80,502.—HIRAM PRESTON, OXFORDVILLE, WIS.—*Cultivators*.—*July 28, 1868.*

Claim.—1.—The adjustable V-shaped parts C, in combination with the rocking shaft B, when constructed and operated substantially as described and set forth.

2.—The lever h, provided with the springs i, and the arm E, in conjunction with the parts C, and ratchet k, for the purpose of controlling the parts C, substantially as described.

No. 80,556.—ROBERT McCORKELL, PHILADELPHIA, PA.—*Cultivators*.—*August 4, 1868.* Antedated *July 15, 1868.*

Claim.—1.—The lever H, rack L, and connecting rod N, in combination with the plates E, for the purpose set forth.

2.—The lever e, in combination with the drag bars C, standard n, and rubber spring r.

3.—The mode of attaching and securing the head b of the drag bar C, for the purpose of adjusting the angle of the ploughs.

4.—The mode of attaching and securing the standard x to the bar y, as and for the purpose set forth.

No. 80,795.—HENRY COWING, NEW ORLEANS, LA.—*Agricultural Machines*.—*August 4, 1868.*

Claim.—1.—The application and combination of the

double block system of equalizing draught, as above set forth.

2.—The application and combination of the single block system, in combination with the double block system.

3.—The quadruple whiffletree.

4.—The application and combination of the cross bar H' with the tongue, for the purposes specified.

5.—The slotted slide-bar O for the whiffletrees to slide upon, as set forth.

6.—The joint in the tongue, as and for the purpose set forth.

7.—The rotary grooved cylinder, as and for the purposes specified.

8.—The adjustable thumb screw L, in combination with a slide valve for regulating the quantity of grain sown.

9.—The application of a steering apparatus to agricultural machines, composed of the wheels L, cross-bar K, sheaves *i i'*, standards *V*, rope or chain J, stirrups *f f*, cross-bar *l*, and the levers L and L'.

10.—The standards *V* and the adjustable cross-beam K.

11.—The standards *D*¹ *D*² of the canopy, the cross-bars provided with screws *d d*, for the purposes set forth.

12.—The curved standards *c*² and box straps *c*¹, for the purposes specified.

13.—The semi-circular rack-lever E, and handle and stop-lever spring *f*, for the purposes herein set forth.

14.—The tripping lever *p* and cord or chain *p'*, for the purpose herein set forth.

15.—The application of horse or other power that may be employed to draw the machine, for the ploughs and instruments out of, and from the ground, as set forth.

16.—The application and combination of a scraper and presser to a gang of ploughs, for the purposes herein set forth.

17.—The cross-bars *A*³ *A*⁴, for the purpose herein specified.

18.—The construction of an axle, so that the wheels can be moved further apart or nearer together, to suit the widths of rows, as above specified.

19.—In combination with a gang of ploughs, the digging wheel K.

20.—The digging wheel, in combination with the arrangement for raising and lowering it, as set forth.

21.—The three-toothed harrow G, or its equivalent, as and for the purpose set forth.

22.—Making the shares and conter in one piece, as and for the purposes above specified.

23.—The application and combination of a canopy to a gang of ploughs or harvesting machines, for the purposes above specified.

24.—The manner of making canopies with an expansive cord, as and for the purpose above specified.

25.—The tube on which the main wheels revolve, for the purposes herein specified.

26.—The curved plough standards and the springs, for the purpose above specified.

27.—The constructing of a plough so that in raking a root or stone it will be thrown out and forced immediately back, as above specified.

28.—The nest of cups in the cylinder, for the purpose herein set forth.

29.—The combination, as seen in Figs. 1 and 2, for the purpose of planting or sowing, as above specified.

30.—The application and combination of the cross-bar H' with the tongue H, Fig. 3, for the purposes herein set forth.

31.—The combination, as seen in Figs. 4 and 5, and the particular shape of the third plough with the incline for raising up the soil before turning over, as above set forth.

32.—The mole plough, in combination with the beams seen in Fig. 15, wheel-raising apparatus, quadruple trees and their arrangement, for the purpose herein specified.

33.—The opening of the mould at different depths, and

taking off the front moulds and using their standards only, and using them all at once or separately, as above set forth.

34.—The application and combination, as seen in Fig. 8, with its modifications, for the purposes herein set forth.

35.—The application and combination, as seen in Figs. 10 and 11, of the gangs of ploughs, and the lines in the centre, or before or behind the ploughs, as above set forth.

36.—The stubble lowerer Q, and the arrangement herein set forth, for opening a deep furrow and turning the stubble into it, and the arrangement and combination of the ploughs, as seen in Fig. 12, or their equivalent, as set forth.

37.—The arrangement and combination, as seen in Fig. 13, for covering the caves, as set forth.

38.—The single-hinged arm, for the purpose herein set forth.

39.—The arrangement for ditching, as set forth, and under-planting by the mould plough, as set forth.

No. 81,108.—JACOB REICHHARD, FAVETTEVILLE, PA.—*Cultivators*.—August 18, 1868.

Claim.—An improved cultivator, arranged, constructed, and operating substantially in the manner as shown and described, and for the purpose set forth.

No. 81,660.—ALEXANDER MCCREIGHT, TRANQUILITY, OHIO.—*Corn Ploughs*.—September 1, 1868.

Claim.—1.—The drag bars B B', arranged as described, when operated by means of a fixed and movable attachment, substantially in the manner set forth.

2.—Operating drag bars by means of levers having movable fulcrum, substantially as described.

3.—The drag bars B B', as described, as in combination with levers D and cross bar C, substantially as and for the purpose set forth.

No. 82,060.—A. H. ALLISON, CHARLOTTESVILLE, IND.—*Cultivators*.—September 15, 1868.

Claim.—1.—The yoke C, secured to the under side of the tongue, and provided with the adjusting blocks *g g*, in combination with the beams G G, uprights *f f*, provided with adjusting holes, double tree *e*, arms *e' e'*, and braces, connecting the ends of the yoke with the main frame, all constructed, arranged, and operated in the manner and for the purpose set forth.

2.—The beams G G, hinged to the adjusting blocks *g g*, and provided with the shanks *i i* and braces *h h*, in combination with the bails J J and foot pieces Z Z, all constructed, arranged, and operated as set forth.

No. 82,191.—J. A. WOODWARD, S. S. WOODWARD, and THOMAS MASON, SANDWICH, ILL.—*Cultivators*.—September 15, 1868.

Claim.—1.—The reversible axle joints H H, pivoted to the frame A B, and arranged to balance the same, substantially as set forth.

2.—The combination of the above-described axle joints with the frame A B and folding seat L, as and for the purpose herein described.

3.—The handles D D, pivoted to the standards E E, and made adjustable to or from each other by means of the slotted plates F F and set screws I I, as described and shown.

No. 3,541.—J. A. WOODWARD, S. S. WOODWARD, and THOMAS MASON, SANDWICH, ILL.—*Cultivators*.—September 15, 1868.—82,191.—Reissued July 6, 1869.

Claim.—1.—Broadly, the reversible arms K, hinged to the frame A B, and arranged to balance the same, substantially as set forth.

2.—The combination of the above-described reversible arms K, with the frame A B and folding seat L, as and for the purpose herein described.

3.—The handles D D, pivoted to the standards E E, and made adjustable to or from each other, by means of the slotted plates F F and set screws I I, as described and shown.

No. 82,406.—ARCHIBALD T. HEFLIN, MONMOUTH, ILL.—*Cultivators*.—September 22, 1868.

Claim.—1.—A two-wheeled elevated draft frame, with a draft pole, C, secured upon the cross beam B' of said frame A, swivelling double tree C', applied to the draft pole, and connected to links *b b*, in combination with levers *c* and scraper-carrying beams D D, all combined, arranged, and operating substantially as described.

2.—The attaching hooks J J, applied to links *b*, which are connected to the double-trees C' and to levers *c*, said

parts being employed in a machine constructed and operated substantially as described.

No. 82,522.—J. C. SIKKOL, DUBLIN, IRELAND, D. A. C.—*Cl. in inv.*—*See note*, p. 26, 1888.

Claim.—1.—A device for connecting the plough *L*, *L'*, *G* with each other, by means of the longitudinal bar *B*, *B'*, *C*, which said beams are both, *B*, *B'*, substantially as herein shown and described and for the purposes set forth.

2.—By using the plough beams *G* to the *L*, *L'*, *G* frame *D*, by an arrangement pivoting rod *K*, and the pivoting coupling rod *F*, substantially as herein shown and described and for the purposes set forth.

3.—The combination of the hand lever *O*, connecting rod *L*, *L'*, *G*, and lever arm *R*, with each other and with the rod *K* and *F*, by which the plough beams *G* are pivoted to the frame *D*, all substantially as herein shown and described and for the purposes set forth.

No. 82,545.—J. O. KILSEBERRY and JOHN S. O'BRIEN, NEW YORK, N. Y.—*Cl. in inv.*—*See note*, p. 26, 1888.

Claim.—1.—The combination of the frame, the wheels, and the independent axles, *F*, *F'*, with the levers, *G*, *G'*, and the pivot *C*, *G'*, and pawl *H*, substantially as and for the purposes set forth.

2.—The combination of the driver's seat *K*, braces *L*, and motion levers *C*, *C'*, so arranged that the latter may be moved laterally by the action of the driver, substantially in the manner set forth.

3.—The combination of the parts last mentioned with the lever *C*, *C'*, *M*, and connecting rods *N*, substantially as set forth.

4.—The combination of the frame *B*, the oscillating beams *C*, *C'*, and the roller *O*, arranged to operate substantially as described.

5.—The combination of the connecting rod *N*, *N'*, the oscillating beam *C*, *C'*, and the eye bolts *S*, *S'*, for regulating the relative position of the ploughs substantially as described.

6.—The arrangement of the tongue *A*, *A'*, lever rod *M*, and the screw *A*, *A'*, substantially as and for the purposes set forth.

No. 82,938.—R. F. GUY and J. V. GUY, MARYLAND.—*Cl. in inv.*—*See note*, p. 26, 1888.

Claim.—1.—In combination with plough, the hinge in a frame, the spring *L*, and connecting chains or rods, *A*, and for the purposes set forth.

2.—In combination with the ploughs, their lifing rods, and spring bars, the shoes, *A*, substantially as and for the purposes described.

3.—In combination with spring bars and ploughs of described cultivator, the rods *L* with their ends *L'*, *L''*, and for the purposes described.

4.—The cultivator plough, when constructed of the several parts all arranged to operate substantially as and for the purposes set forth.

No. 83,693.—EDWARD F. RATH, CROOK COUNTY, IOWA.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—The levers *A* and *B*, roller *F*, and regulating bars *D*, when connected and arranged substantially as and for the purposes herein specified.

No. 83,487.—A. M. GRISSWOLD, MONTANA, ILL.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The truck *B*, the shaft *F*, one of both when arranged with relation to the rod *D* and beam *L*, and to pivot *A*, as and for the purposes set forth.

2.—The extra shaft *A*, when arranged upon the beams *F*, substantially as described and set forth.

No. 83,506.—JACOB H. B. KELLER, CHAMBERSBURG, PA.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The pivot standards *G*, arranged in combination with the rods *L*, in flexible spring *L'*, and beams *E*, all arranged in the manner substantially as and for the purposes set forth.

2.—The lever *K*, attached to the beam *F*, and arranged in relation with the driver's seat *D*, and the pivot *P*, *P'*, and for the purposes specified.

No. 83,519.—JAMES MATHON, FOURCROIX, ILL.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The handles *E*, *E'*, *C*, in combination with the bar *P* pivoted to the under side of the frame, *A*, and

connected to braces *B*, rods *L*, and levers *G*, for giving a lateral motion to the lower, as set forth.

2.—The levers *C*, *C'*, in combination with bars *F*, *F'*, rods *L*, *L'*, and trumps *T* substantially as set forth.

3.—The combination of the draught rod *L*, *L'*, spools *T*, levers *F*, *F'*, rods *L*, and lever *N*, substantially as set forth.

4.—The hull protector *K*, pivoted to the beam *G*, and arranged to operate, as set forth.

No. 83,537.—E. J. FAINE, YONKERS, NEW YORK, U. S. A.—*Cl. in inv.* and HENRY CRISWELL, WARREN, OHIO.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The curved draught bar *B*, running from the middle of the centre of the wheel forward and inward, substantially as and for the purposes herein set forth.

2.—The arrangement of the curved plough beams *F*, *F'*, coupled to the curved draught bar *B*, as and for the purposes set forth.

3.—The bar *F*, running from the outside of the centre of the wheel and across the top, as and for the purposes herein set forth.

4.—The combination of the forked ends *a*, *a'* of the plough beam *F*, and the pin *B*, *B'*, and the plates *C*, *C'*, forming a link coupling, substantially as and for the purposes herein set forth.

No. 83,539.—P. R. TOSHEN, ADAMS, ILL.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The bow shaped lever *K*, in connection with the rod *P*, *P'*, combined and arranged substantially as and for the purposes specified.

2.—The connecting of the beam *G*, *G'* of the inner ploughs *H* by means of staples passing through oblong slots, to admit of the lateral movement of said ploughs, substantially as set forth.

No. 83,675.—STERLING C. THORNTON, MARYLAND, U. S. A.—*Cl. in inv.*—*See note*, p. 27, 1888.

Claim.—1.—The combination and arrangement of the fixed frame *T*, movable frame *F*, parallel link joints *A*, *A'*, *A''*, *A'''*, lever *G*, rod *L*, *L'*, *L''*, and spring catch lever *G'*, the whole being constructed to operate in the manner and for the purposes set forth.

2.—The joint plate *A*, *A'*, when constructed in the triangular shape described and shown, and provided with notches *a*, *a'* in their inner edge, and used in connection with the parallel and semi-circular holes *a'*, *a''*, *a'''* in the fixed frame, for the purposes of adjusting the depth to which the ploughs, &c., can work.

3.—The pivot *a*, in combination with the lugs *a'*, *a''*, and bolts *b*, and *c*, passing through the rear end of the draught pole, the whole being constructed to operate in the manner and for the purposes specified.

4.—The use of the standards *L*, *L'*, in combination with the plungers *J* and middle beams *J'*, for the purpose and operating in the manner described.

5.—The tooling frame *M*, when pivoted to the draught or arms *R*, *R'*, is described, and provided with the lever and adjusting bar *S*, by which the whole frame can be raised or depressed at pleasure, in combination with the clamping device *U*, *U'*, when made to operate substantially as described.

6.—The described method of attaching the tooth or plough *K* to the frame of the machine, namely, the employment of a bitting standard, so constructed as to brace the tooth laterally, and, it needs any, provided also with braces to brace it longitudinally with the machine, substantially as shown and specified.

No. 83,838.—SAMUEL DAY, DELAVAN, ILL.—*Cl. in inv.*—*See note*, p. 28, 1888.

Claim.—In a corn cultivator, the mode of guiding the machine and shovel, by means of the crank *D* and connection with the lever *A*, *A'*, and for the purposes above described.

No. 83,944.—WM. H. EDWARDS, MONTANA, ILL.—*Cl. in inv.* and *Cl. in inv.*—*See note*, p. 28, 1888.

Claim.—1.—The joint and coupling for cultivators, consisting of the side plates *G*, the clamping plates *a*, and verti-

cal rod H, all constructed and arranged substantially as herein described, and for the purpose set forth.

2.—The method of connecting the vertical rod H to the frame of the cultivator, by means of the eye bolt I and plate J, or their equivalents, substantially as herein described, for vertically and laterally adjusting the shovel beams, as set forth.

No. 84,020.—JOSEPH VOWELS, MILFORD, MICH.—*Cultivators*.—*November 10, 1868.*

Claim.—1.—The mould-board L, constructed substantially as shown and described.

2.—The combination of the mould-board L with a cultivator.

3.—The construction of the wedge N, and its arrangement with reference to the tongue of a cultivator, or for any equivalent purpose, substantially as shown and described.

4.—The arrangement of the hangers H H with their teeth M M, with reference to the wheels of the machine, substantially as shown and described.

5.—The arrangement of the sub-tongue F, frame E, sector D, lever C, hangers H and K, and braces I, substantially as shown and described.

No. 84,184.—ABRAM A. HARMON, ONEY, ILL.—*Cultivators*.—*November 17, 1868.*

Claim.—1.—The ploughs H H, attached by clevises to the front bar of the diagonally braced open frame A B D E F, and connected by a cross-bar I, which admits the adjustment as to relative distance, and causes them to swing by a parallel motion as they are deflected laterally, substantially as described.

2.—In combination with the said ploughs, thus attached and connected, the sliding foot bar K, arranged as described, and adapted to hold them in elevated position, for the purposes described.

No. 84,413.—WM. F. CULTEER, G. F. TRABUE, and W. A. LOWERY, HARRISBURG, IND.—*Cultivators*.—*November 24, 1868.*

Claim.—1.—The V-shaped brace pendants S S, adjustable beams G G, stiff pendants H H, and staple guides f f, arranged together in a cultivator, substantially as herein described.

2.—The hooked spring goose necks F, applied to axle B, and adapted to serve for holding up the shovel-arriving beams out of action, substantially as described.

No. 84,440.—SETH WAY, LA PORTE, IND.—*Cultivators*.—*November 24, 1868.*

Claim.—1.—The swivelling joint 28, secured to the tongue of the carriage, substantially as and for the purpose described.

2.—The construction of the lever 1, and its combination with the plough beams, substantially as shown and described.

3.—The arrangement of the stirrups 4, with reference to the two diverging portions of the plough beams, substantially as and for the purpose described.

4.—The socket 3, and its combination with the axle 7 and tongue A, substantially as shown and described.

No. 84,575.—S. G. PEARBODY, CHAMPAIGN, ILL.—*Cultivators*.—*December 1, 1868.*

Claim.—1.—An arrangement of mechanism by means of which the direction of the wheels F may be changed by the lateral movement of the plough beams H, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the bushes or tubes C, swivelled shaft or axle E, gear wheels or segments of gear wheels J K, and swivelled shaft G, with each other, and with the wheel F, cross-bar R, and plough beams H, substantially as herein shown and described, and for the purpose set forth.

No. 84,588.—A. B. SPIES, STERLING, ILL., assignor to JOHN K. JOURNEY, same place.—*Cultivators*.—*December 1, 1868.*

Claim.—1.—Connecting the frame E to the axle A by means of the roller I, link H, yoke J, and clevis c, all arranged as and for the purpose set forth.

2.—The lever K, applied to the frame E and axle A,

in the manner substantially as and for the purpose set forth.

3.—The curved bar L, attached to the axle A, swivel pulley M, clevis c, rope or chain N, and bar O, all combined and arranged to operate in the manner substantially as and for the purpose set forth.

No. 84,611.—ISAAC H. CHAPPELL and JAMES MONTGOMERY, DECATUR, ILL.—*Cultivators*.—*December 1, 1868.*

Claim.—1.—A cultivator, the draught pole and plough frame of which are pivoted on the seat bar, substantially as and for the purpose set forth.

2.—The attachment of the draught pole to the seat bar by means of the pin a pivoted in slot c and nut d, substantially as and for the purposes set forth.

No. 84,640.—ROGER SANDFORD, JOLIET, ILL.—*Cultivators*.—*December 1, 1868.*

Claim.—1.—The segmental oscillating coupling-clevis, shown in Figs. 1 and 2, consisting of the parts a d n, and the part o, shown in Fig. 3, when applied to a cultivator in the manner and for the purposes set forth.

2.—The metal cross piece A, in combination with the post or frame c and supporting arms B B, constructed and arranged in the manner described.

No. 84,763.—W. C. RHINEHART and ROBERT GASTON, OSKALOUSA, IOWA.—*Corn Ploughs*.—*December 8, 1868.*

Claim.—The inclined fenders b b, for protecting the reins of the driver from the action of the wheels, in combination with the inclined frame B, substantially as set forth.

No. 84,776.—GARLAND B. ST. JOHN, BROOKLYN, MICH.—*Cultivators*.—*December 8, 1868.*

Claim.—The securing of the standard G between the two beams C C, by means of the bolt m, arms n n, and braces H H, all arranged substantially as and for the purpose set forth.

No. 84,910.—JOHN SCHEIBELIN and JOHN HELTZMAN, PHILADELPHIA, PA.—*Hand-Cultivators*.—*December 15, 1868.*

Claim.—1.—The coulters c, ploughs f, and transverse plate E, when combined and arranged as shown and described.

2.—The frame A, stilt B, transverse plate C, standards D D, pin i, wheels C, cleaners F, coulters c, and the ploughs f, when combined and arranged as shown and described.

No. 84,931.—CLARK ALVORD, WESTFORD, WIS.—*Cultivators*.—*December 15, 1868.*

Claim.—1.—Clamping the teeth to the side of the drag bars by means of the independent plate o, and the two screw bolts, when the several parts are constructed and arranged to operate in the manner described.

2.—The arrangement of the slotted cross bar J, drag bars I I, headed bolts b, fixed to the drag bars and extending through the slots of the beam J, and springs i i, substantially as shown and described.

3.—The employment of cleaning bars r r, arranged in relation to the teeth, substantially as described, and operating to clean the teeth, when the latter are raised o when the bars are depressed, as herein set forth.

4.—The combination of the cleaning bars r r, beam N, spring s, and hinge u, when employed on a cultivator, for the purpose specified.

5.—The combination of the frame C, rocking with the axle, as described, with the draught pole E, pivoted to the front beam of the frame, the plough beams I I, the cleaning bars r r, and the springs s, substantially as and for the purposes herein described.

6.—In combination with the rocking beams F and N, cleaning bars r r, and drag beams I I, the hasp b and staple b', arranged, as described, on the two o beams, and operating in the manner and for the purposes herein described.

No. 84,935.—JOSEPH H. BRINTON, THORNBERG TOWNSHIP, PA.—*Cultivators*.—*December 15, 1868.*

Claim.—1.—A transverse adjusting bar moving in inclined slots, or their equivalents, for the purpose shown.

2.—A yielding pressure applied to the arms or levers a, together with a transverse bar moving in inclines, whereby

to regulate the depth the ploughs enter the soil, and to accommodate them to any unevenness of the ground.

No. 4,930.—JOSEPH H. BRINTON, FLORENZA, PA.—*Cultivators*,—*Dec. 15, 1868*.
Reissued *Jan. 11, 1872*.

Claim.—1.—A transverse adjusting bar, moving in inclined slots, or their equivalents, for the purpose shown.

2.—A yielding pressure applied to the arms or levers *a*, together with a transverse bar, moving in inlines, whereby to regulate the depth the ploughs enter the soil, and to accommodate them to any unevenness of the ground.

3.—The hollow or U-shaped shank *v*, provided with suitable apertures for pivot and break-pin, for the purpose set forth.

4.—The hollow or U-shaped shank *v*, pivoted to the plough beams *z*, substantially as described.

5.—The hollow or U-shaped shank *v*, provided with the break pin *z*, as shown and described.

6.—The hollow or U-shaped shank *v*, pivoted to the plough-beam *z*, and provided with the break pin *z*, as shown and described.

7.—The plough *x*, consisting of the share *u* and hollow or U-shaped shank *v*, provided with the break pin *z*, and pivoted to the plough-beam *z*, substantially as shown and described.

No. 85,000.—GEORGE M. DWIGHT, OREGON, ILL.—*Cultivators*,—*Dec. 15, 1868*.

Claim.—1.—The combination of the body platform *C*, with the draft bar *D*, the tongue *E*, and the guiding lever *F*, in such a manner that, when the said body platform is combined with the bent axle *A*, the said draft bar will be in the proper relative position for the combination there with of the parallel beams *G*, and the notched arch plates *k* & *l*, all substantially in the manner and for the purpose herein set forth.

2.—When the parallel beams *G* & *G* are combined with the draft bar *D*, substantially in the manner herein set forth, the combination therewith of the cultivating points *i* & *i*, the notched arch plates *k* & *l*, and the spring catches *h*, substantially in the manner herein set forth.

No. 85,005.—JAMES HINDS and JAMES GEE, COVINGTON, ILL.—*Cultivators*,—*Dec. 22, 1868*.

Claim.—1.—The arrangement of the belts *D* & *D'*, pulleys *F* & *F'*, and lever *G*, substantially as and for the purpose specified.

2.—The combination, with plough-supporting arms *L*, pivoted to the beams *A*, of the adjustable supporting arms *N*, substantially as and for the purpose described.

No. 85,186.—DUDLEY W. TRAVIS, ENFIELD, N. Y.—*Comb Cultivators*,—*Dec. 22, 1868*.

Claim.—The herein described mode of adjusting the ploughs and hoes, in combination with the posts or standards *H* and *I*, bars *F* & *G*, and frames *D*, when the whole is constructed and arranged substantially in the manner shown and described, and for the purpose set forth.

No. 85,233.—L. D. McCLINTOCK, GREENWOOD, IOWA.—*Cultivators*,—*Dec. 22, 1868*.

Claim.—The combination of the double plow *a*, handles *d* & *d*, shovels *c*, frame *A*, wheels *C*, front axles *B*, bars *D* & *D*, lever *g*, chains *e*, bars *m*, and seat *F*, all constructed and used substantially as herein specified.

No. 85,471.—IRA A. PALMER, MONMOUTH, ILL.—*Cultivators*,—*Dec. 22, 1868*.

Claim.—1.—The shovel *d*, constructed as described, and for the purpose set forth.

2.—The slatted beam plates *L* and *M*, one of them being hooked, and bolt *P* and spindle *T*, arranged substantially as described and for the purpose set forth.

3.—The arrangement of double-throw *C*, bar *W*, with holes *e* & *e'*, and hook *V*, combine with the frame *A*, *E*, *F*, and tongue *B*, substantially as described and for the purpose set forth.

No. 85,488.—WILLIAM L. STEWART, RUSHVILLE, IND.—*Cultivators*,—*Dec. 22, 1868*.

Claim.—1.—The construction and arrangement of the axle *B*, by which means the front ends of the plough or shovel beams are raised or lowered for the purpose of controlling the depth to which the shovels shall enter the earth.

2.—The within described construction of the coulters *H* & *H*, for the purpose set forth.

3.—The arrangement of the coulters with reference to the shovels of the cultivator, that is to say, with vertical and longitudinal adjustment with reference thereto, substantially as shown and described.

No. 85,002.—R. H. HENRY, MONMOUTH, ILL.—*Cultivators*,—*January 5, 1869*.

Claim.—The adjustable plates *P*, beam plate *W*, and guard *X*, constructed and arranged substantially as described, and combined with the frame *A*, *B*, *C*, *D*, axles *T* & *W*, arms *F*, rods *H*, and lever *J* & *L*, substantially as and for the purpose described.

No. 85,075.—GEORGE W. KRING, FAIRBURY, ILL.—*Cultivators*,—*January 5, 1869*.

Claim.—A cultivator, having lifting lever *P*, elbow levers *c*, and rods *z* and *o*, when constructed and operating substantially as herein specified.

No. 85,730.—ISMAH B. GILBERT, LEWISVILLE, IND.—*Cultivators*,—*January 12, 1869*.

Claim.—1.—The iron-rod shaft *I* and rod *L*, in combination with the arm *K* and levers *O*, for raising the shovel carriers separately or collectively, substantially as described.

2.—The combination of the beams *L* & *L*, plates *M*, pivots *m* & *m'*, lugs *m'*, shaft *I*, arm *K*, rod *L*, levers *O*, pivoted tongue *P*, and lever *Q*, substantially as described, for the purpose specified.

No. 85,812.—JOHN G. B. GILL, CHESTER COURT HOUSE, S. C.—*Cultivators*,—*January 12, 1869*.

Claim.—1.—The combination of the steel guard-plate *F* and the wooden friction blocks *G*, with the bar *E*, swing bar *C*, frame *A*, and beams *B*, substantially as described, for the purpose specified.

No. 86,003.—J. H. COLEMAN, COLUMBIA, MO.—*Cultivators*,—*January 19, 1869*.

Claim.—1.—The arrangement of the curved coulters *H* upon the standards *F* and the front side of the shares *G*, as herein shown and described.

2.—The described arrangement of the hinged plough extending above the axle, the beams *E*, the treadle *I*, cords *h*, and standard *x*, whereby the ploughs are held down by the pressure of the driver's feet upon the extended beams, and raised simultaneously above the ground by the same pressure applied to the treadle *ix*, as herein shown and described.

No. 86,160.—JACOB HUFF, YOUNG AMERICA, ILL.—*Cultivators*,—*January 26, 1869*.

Claim.—The combination of the axle *A* with support *B* the slide *S*, braces *C*, and tongue *E*, substantially as described, and for the purpose set forth.

No. 86,170.—THOMAS JACKSON MARTIN, WILLOW HILL, ILL.—*Cultivators*,—*January 26, 1869*.

Claim.—1.—The arrangement of the plough *F* and crank bar *H*, treadle *O*, armed rock-bar *J*, arms *I* & *L*, and treadle *K*, in the manner as set forth.

2.—In combination with the rock bar *J* and arms *I* & *L*, the perforated bar *M* and arm *X*, substantially as described and represented.

3.—The arrangement of the beam *F*, rock-bar *J*, and plough-standard *E*, substantially as described.

No. 86,262.—CARMEL WELLS, SANDWICH, ILL.—*Cultivators*,—*January 26, 1869*.

Claim.—1.—The combination of the clevises *D* & *D*, T lever *C*, axle-beam *A*, shovel-beams *G* & *G*, standards *M*, and shovels *K*, as and for the purpose herein specified.

2.—The combination of the clevises *D* & *D*, T-lever *C*, rod *U*, chains *V* & *V*, shelve-locks *T*, bars *E'* & *E'*, and stirrups *S*, as herein set forth.

3.—The combination of the beams *G* & *G*, standards *M*, levers *P* & *P*, loop *m*, axle-beam *A*, and rod *O*, arranged to adjust the shovels *K* in the ground, substantially as set forth.

4.—The combination of the plates *J*, bearings *L*, and shovels *K*, the latter arranged to turn on the pivots *a'*, as set forth.

No. 86,320.—JOHN C. TOBIAS and WILLIAM N. BATES, ET AL., JOHN, ILL.—*Cultivators*,—*January 26, 1869*.

Claim.—1.—The slotted bars *A* and *C*, constructed as

described, and with the axle D fastened to one, and the wheel B attached to the other, for the purpose of raising or lowering the axle, and with it the plow-beams, substantially as and for the purposes herein set forth.

2.—The arrangement of the axle D, tongue F, whiffletree I, and bars K K, in combination with the rods *c*, and slotted blocks E E, for the purpose of having the draught direct on the plow beams, substantially as herein set forth and described.

No. 86,005.—MARTIN CAYWOOD and JOHN CAYWOOD, POKIA CO., ILL.—*Cultivators*.—February 16, 1869.

Claim.—1.—Beams *n n*, slotted bars *h h h h*, brace posts *p p*, gauge blocks *l l*, slotted guides *m m*, foot levers *o o*, and swivel clevises *c*, all constructed and operated substantially in the manner and for the purpose as herein set forth.

2.—Beam gauge block's *h h*, gibs *d d*, brace posts *j j*, and beams *i i*, in combination with the cranks *b b*, and crank boxes *f f*, cross bar *a*, lever *e*, and hook *k*, all when constructed, and arranged, and operated in the manner and for the purpose as herein set forth.

3.—Providing the shovel with a draught gauge *g*, and combining therewith a shifting block *u*, for adjusting the shovel, substantially as set forth.

No. 87,014.—R. F. YOUNG, TOLON, ILL.—*Cultivators*.—February 16, 1869.

Claim.—1.—Connecting the inner plough standards K to the rear cross-bar G of the pivoted frame E F G, by the adjustable slotted plates *h h*, and pivot plates or pivots *h'*, substantially as herein shown and described, and for the purpose set forth.

2.—The adjustable jointed and slotted shoes U, to which the ploughs are attached, in combination with the plough standards, substantially as herein shown and described, and for the purpose set forth.

No. 87,151.—WILLIAM DAV, MORRISTOWN, N. J.—*Cultivators*.—February 23, 1869.

Claim.—The cross heads F F, for holding the cultivating tools, when arranged adjustably on and removable from the longitudinal bars B B, substantially as and for the purpose herein shown and described.

No. 87,209.—RICHARD B. ROBBINS, ADRIAN, MI.—*Corn Cultivators*.—February 23, 1869.

Claim.—1.—The frames H E I K L, and H' E' I' K' L', in combination with the respective links *a* and *b*, and *a'* and *b'*, for the purposes of raising and lowering the teeth, substantially as set forth and described.

2.—The combination of the rods *r* and *r'* with the frames H E I K L, and H' E' I' K' L', or their equivalents, substantially as set forth and described.

3.—The levers R and R', in combination with their respective frames H E I K L, and H' E' I' K' L', substantially as described.

4.—The chains C C', or their equivalents, for the uses and purposes herein described.

No. 87,192.—GEORGE J. HAYES, IOWA, MO.—*Cultivators*.—March 2, 1869.

Claim.—1.—The combination of the tongue, axle frame, and cultivator frame when united to each other and the cultivator frame is capable of being raised upward, and swung slightly backward, by a lever and its appliances, operating as herein described and represented.

2.—In combination with a cultivator frame, that is moved backward as it is raised upward, as herein described, a drag, or harrow, attached thereto, and moving therewith, but capable of being raised or lowered independently of the cultivator, substantially as and for the purpose described.

No. 87,627.—HORACE C. BRIGGS, WEST AUBURN, ME.—*Harrow Machines*.—March 9, 1869.

Claim.—1.—The combination of the axle O and wheels E' with the frame A B C D E F of the cultivator, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the arms and supports Q, levers R R', and chains S, with the axle O and runners D, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the foot lever Z, pivoted toothed plate Y, toothed bar T, arms V, standards W, and ploughs, or hoes X, with each other, and with the forward cross-bar A of the cultivator frame, substantially as herein shown and described, and for the purpose set forth.

4.—Forming the standards W with two separate and distinct seats, for the ploughs, or hoes, substantially as herein shown and described, and for the purpose set forth.

5.—The draught bar X, constructed in three parts, and operating in connection with the tongue K and draught irons H, substantially as herein shown and described, and for the purpose set forth.

6.—The combination of the roller D' and detachable arms A' with the rear cross bars B and runners D of the cultivator frame, substantially as herein shown and described, and for the purpose set forth.

7.—The combination of the adjustable wedge block L with the forward cross-bar A and inclined rear end of the tongue, substantially as herein shown and described, and for the purpose set forth.

No. 87,600.—WILLIAM LOOKER, GRAHAM, MO.—*Cultivator Ploughs*.—March 9, 1869.

Claim.—The combination of the axles A, frame C, arms H J, vertical shafts I, plough beams F, and E, chains N, arms or levers M, short shafts K, and levers L, with each other, as herein shown and described, and for the purpose set forth.

No. 87,824.—WILLIAM F. COULTER, GIDEON COULTER, and JOHN A. LANERY, HARDINSBURG, IND.—*Wheel-Cultivators*.—March 16, 1869.

Claim.—The spring bar a attached to the rear end of the draught bar, in combination with the notch b in the upper side of the axle, as and for the purpose described.

No. 87,923.—JAMES C. FRENCH, MOUNDSVILLE, ILL.—*Cultivators*.—March 16, 1869.

Claim.—1.—The construction of the joint piece *a*, as and for the purpose described.

2.—In combination with said joint piece, the plough beam D and the upright standard C, substantially as shown and described.

3.—The standard C, substantially as shown and described.

4.—The combination and arrangement of the standard C, cross beams G, and axles B B.

5.—The arrangement of the plough-beams D D, with reference to the joint-piece *a*, by which said beams may be carried nearer to or further from the wheels of the machine.

No. 88,311.—JAMES R. LITTLE, GALESBURG, ILL.—*Cultivators*.—March 30, 1869.

Claim.—1.—The journal-spindle C, upright *m*, wheel-spindle B, flange L, braces F, D, and E, arranged substantially as described, and combined with the axle A, bounds K, and draw-tilt-rod H, in the manner and for the purpose set forth.

2.—The upper plate O, when provided with the elevations K *g*, and recess S, and operating in combination with the lower plate P, beam N, and bolts Q Q and Y, and clamping plates W W, in the manner set forth, so as to secure the adjustments described.

No. 88,313.—GEORGE W. BRESSLER, LAWAYETTE, IOWA.—*Combined Harrows and Cultivators*.—March 30, 1869.

Claim.—1.—The standards F K, hung to the cross-bar E, by means of the V-shaped rods H N, substantially as and for the purpose herein shown and described.

2.—The slotted plates M, hung to the axle, and connected with the standards K, by means of the pin or screw *c*, in the manner described.

3.—The slotted bars L, hung to the rear of the axle, to operate in the manner and for the purpose herein set forth and shown.

4.—The harrow O, suspended from the pole C by the rod P, and raised and lowered by the lever Q and rod B, in combination with the adjustable standards F K, all operating as described, for the purpose specified.

No. 88,638.—J. B. JAY, ARLINGTON, ILL.—*Cultivators*.—*April 6, 1869.*

Claim.—1.—The arrangement of the inner beams E, by means of the enlarged eyes e , and pin a , in front, and the strap d , connecting the outer beams, so that they are capable of vertical adjustment, and of being locked laterally, as set forth.

2.—The combination, with the outer beams D and inner beams E, of the strap b , hinged straps d , upright bar z , and adjustable link z' , arranged as described, for the purpose specified.

No. 88,758.—H. J. WATTLES, ROCKFORD, ILL.—*Cultivators*.—*April 6, 1869.*

Claim.—The construction, arrangement, and combination of the frame B B B', I' D' D'', swinging plough-supports C C', ploughs $a a'$, driver's seat F, foot-rests F I, levers H H, and draught devices J K L a' of the whole constructed and operating substantially as and for the purpose specified.

No. 88,868.—JOHN R. HAND, BELLINGVILLE, IND.—*Cultivators*.—*April 13, 1869.*

Claim.—1.—The provision, in a cultivator, of the slotted side beams C C', c' , adjustable pivots c' , swinging arms S S', support T, and seat U, for the object explained.

2.—The combination, as herein described, of the cross-beam E, hangers F F', coupling devices I I' & k', beams K K', standards L L', handles N N', bar O, and spring R, for permitting the elevation of the shires l' , for the purpose set forth.

3.—The general combination and arrangement of the slotted cross-beam E c' , hangers F F', screw-threaded tie-rods G G', g' , slotted plates H H', h' , I V, shiftable braces J J', beams K K', k' , standards L L', shares l' , rods M, handles N N', perforated bars, O O', o' , and set screws P P', for the purpose of producing an improved adjustable cultivator.

No. 88,915.—JAMES B. SEXTON, PELLA, IOWA, assignor to himself and J. L. ANDREWS, same place.—*Cultivators*.—*April 13, 1869.*

Claim.—1.—The slotted draught-bars M, constructed and operating in connection with the frame D E, plough-beams I, and draught device N O P Q, substantially as herein shown and described, and for the purpose set forth.

2.—The bars N, having one or more holes formed in them, hooks Q, and loops O, in combination with the draught-bars M, and double-tree P, substantially as herein shown and described, and for the purpose set forth.

No. 88,940.—JAMES ARMSTRONG, JR., EUMIRA, ILL.—*Guard-Attachment for Cultivators*.—*April 13, 1869.*

Claim.—1.—The vertically-movable standard J of the plant-fender, attached to the cross-beam C' by means of a sliding joint formed by the slot u , pivot-pin v , and adjustable bearing pin z , substantially as described.

2.—The vertically self-adjustable fender-standard J, pivoted to the shovel-carrying frame of a cultivator, and connected to laterally-vibrating shovel-standards, I L, substantially as described.

3.—The slotted extension k on the rear end of a plant-fender, K, which is connected by rod K' to the shovel-carrying frame, in combination with the lower extension k' of the standard J, passed loosely through said extension k , and adapted for allowing the fender to rise and descend, but keeping it in place centrally between the laterally-movable shovel-standards I L, substantially as described.

4.—The laterally vibrating and laterally adjustable standards I L, in combination with the centrally arranged fender carrying standard J, the extensible beam P P', and the adjustable connecting rod K, substantially as and for the purpose described.

5.—A plant-fender K, attached to a cultivator frame by means of a front laterally and vertically vibrating suspension rod K', and a rear laterally and vertically vibrating connection, in such manner that while the fender will swing laterally with the shovels I L, it at the same time allowed to rise freely over obstructions in its path, substantially as described.

No. 89,413.—BENJAMIN ANYAN, FITCHVILLE, OHIO.—*Combined Cultivators and Planters*.—*April 20, 1869.*

Claim.—1.—The combination of the stationary cross-bar Q, foot levers S, and cords or chains R, with the central beam K and movable side beams O of the cultivator, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the pivoted lock lever U with the central beam K and movable side beams O of a cultivator, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the cross bar I' lever M', cross bar N', and gnarls P', with the spouts V', ploughs J', slide H', hopper G', beam or frame F' and beams K, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the cross bar V, chains W, cross bar X, lever Y, rack bar A', and seat board B, with the beams K and forward part of the running gear of a wagon, substantially as herein shown and described, and for the purpose set forth.

5.—The combination of the brace bars E' with the forward part of the tongue G, substantially as and for the purpose herein set forth and described.

No. 87,720.—SOLYMAN BELL and GEORGE W. BRONSON, LA SALLE Co., ILL.—*Corn-Cultivators*.—*May 4, 1869.*

Claim.—1.—The method by which the half-cylinder shield is attached to the tongue and standards, by spring rod and chains, as above described.

2.—The adjustable collar elevis, by which the beams are attached to the frame.

3.—The manner of attaching the handles of the machine to the standards and to the frame, by means of the loose staples and bolt and socket.

4.—The whole machine, as a combination of gopher and cultivator, operating as hereinbefore more particularly described.

No. 89,801.—PHILANDER SPRAGUE, PEABODIA, ILL.—*Cultivators*.—*May 4, 1869.*

Claim.—1.—The arrangement of the forked tongue A, axles B, wheels C C', semi-circular braces D and E, seat E, and bent rod or bar g , with its hooks h h , substantially as herein set forth.

2.—The arrangement of the forked tongue A, plough beams F F, handles P P, and adjustable brace T, all constructed and operating substantially as and for the purposes herein set forth.

3.—The arrangement of the plough beams F F, stationary shins I I, pivoted shins K K, and adjustable cross-bar M, to which a centre shin N is secured, substantially as herein set forth.

No. 90,112.—J. McILVAIN, HANCOCK, ILL.—*Cultivators*.—*May 18, 1869.*

Claim.—1.—The standard and brace I, when attached at front and rear as described, for the purpose set forth.

2.—The screw hooks K, when arranged as described, for the purpose set forth.

No. 90,208.—HIRAM VAN METER, MACOMB, ILL.—*Cultivators*.—*May 18, 1869.*

Claim.—1.—The combination of the plough beams I I with a cultivator frame, constructed as shown and described, with the plough beams attached to the frame, as set forth.

2.—The sockets ex , arranged as described, upon the cross-bar A, whereby the elastic bars D of the seat are adapted to be held upon the frame, with their centres resting upon the boxes e of the axles, as herein set forth and shown.

No. 90,905.—L. H. WILKINSON, MICHIGAN CITY, IND.—*Cultivators*.—*June 1, 1869.*

Claim.—1.—The rod G, in combination with the lever V, sheave block and pulleys H, beams B B, shovels L, standard X, and catch K, the whole being constructed and arranged substantially as and for the purpose set forth.

2.—The combination of the loop bolts C, beams B B, shovels L, and cross pieces D E, the latter having a series of holes through them, for adjusting the beams, substantially as herein described.

3.—The combination of the frame A A, cross pieces D E, loop bolts C, beams B B, shovels L, and axletree arms F, said arms being adjustable on the frame, and constructed as and for the purpose described.

No. 90,921.—JOHN BRYAN, LEBANON, ILL.—*Machines for Ploughing and Breaking Up Ground*.—June 8, 1869.

Claim.—1.—The pivoted frame or hounds A A, in combination with the plough beams and main frame J J, as constructed and arranged.

2.—The lever and link *i i'*, in combination with the hounds A A, and main frame J, as shown.

No. 91,084.—DAVID F. CARR, EAST UNION TOWNSHIP, OHIO.—*Cultivators*.—June 8, 1869.

Claim.—1.—The combination, with the axle B, of the beams C, loops E, braces G, and shovels F, when adjusted and arranged substantially as and for the purpose specified.

2.—The lever M and link M', in combination with the axle B, and parts above claimed, as and for the purpose set forth.

No. 91,516.—JOHN ROBINSON, PLAINFIELD, assignor to AARON SNELL and ARTHUR T. D. AUSTIN, WILL CO., ILL.—*Sulky Cultivators*.—June 22, 1869.

Claim.—1.—The combination of the slotted metal seat *s*, post *r*, and swivel brace *t*, with the shovel beam *d*, arranged, operating, and constructed as and for the purposes set forth.

2.—The general combination of all the parts described and shown, as and for the purposes set forth.

No. 91,601.—R. B. PARKS and J. R. PARKS, NEPESSET, ILL.—*Cultivators*.—June 22, 1869.

Claim.—1.—The suspended beams I I, with plough or share standards J attached, in combination with the levers K, connected by the rack N and lever O, all arranged and combined to operate in the manner substantially as and for the purpose set forth.

2.—Securing the frame A to the axle bar B, by means of the clamps C, constructed and arranged as shown, so as to admit of the ready adjustment of the frame A, in a more forward or backward direction, as may be required.

3.—The sector rack N and lever O, in combination with a cultivator, substantially as and for the purposes described.

No. 91,721.—WILLIAM H. CUMMINGS and HORACE L. CHILDS, BARNSBOROUGH, IOWA.—*Ploughs*.—June 22, 1869.

Claim.—1.—The arrangement of the bar F, braces E E, rods C C, beams D D, and rods L L, all substantially as set forth.

2.—The shields or guards G, when used to protect the plough beams, substantially as set forth and described.

3.—The combination of the plough beams D, rods C and L, shields G, braces E, and plate I, when all are used in the manner and for the purpose set forth.

No. 91,802.—W. J. WELLS, SINDRY, assignor to himself and H. W. NEAL, TOLLDO, OHIO.—*Cultivators*.—June 22, 1869.

Claim.—1.—The construction of the shovels or blades R R', substantially as and for the purposes set forth.

2.—The arrangement of the shovels E and E' and R and R', substantially in the manner and for the purpose set forth.

3.—The combination of the ploughs R R' and E E', levers I I and L, and ratchet bar *g'*, all arranged substantially in the manner set forth.

No. 91,876.—ALEXANDER SHAW, MONMOUTH, ILL.—*Cultivators*.—June 29, 1869.

Claim.—1.—The construction, arrangement, and combination of the frame piece B, spindle H, pivot V, pivot joint M, and brace W, as shown and for the purpose described.

2.—In combination with the above devices, the braces C D, tongue A, plates L L, and ploughs K K, arranged as shown and for the purpose described.

No. 91,894.—J. A. WOODWARD, S. S. WOODWARD, and THOMAS MASON, SANDWICH, ILL.—*Cultivators*.—June 29, 1869.

Claim.—1.—The combination of the clamps Z Z, pins V, frame S T U, and beams J, as and for the purpose set forth.

2.—The combination of the sockets *f f*, handles *d*, plates *p*, and beams J, said plates being arranged to clamp the handles to the beams, as set forth.

3.—The inclined standards D, in combination with segments F, ratchets E, levers and springs G H, beams J, chains *t*, clamps Z, and frame S T U, as shown and specified.

No. 91,981.—WILLIAM SNOOK, PLEASANT PLAIN, IOWA.—*Cultivators*.—June 29, 1869.

Claim.—The combination of the bent yoke K, bent lever O, curved plates L, and the adjustable connecting bars M N of the cultivator beams, arranged, in their relation to the ploughs, as herein set forth.

No. 92,135.—NATHANIEL WILSON, ST. LOUIS, MISS.—*Sulky Cultivators*.—June 29, 1869.

Claim.—1.—The bars B, secured to the frame A, as described, and operated by the trawles J, ropes or chains *m*, and pulley *w'*, substantially as set forth.

2.—The rock shaft G, arms *h*, ropes or chains *z*, pulleys K, lever H, and quadrant I, in combination with the longitudinal bars *a* and B, provided with standards C, and cultivator teeth *g*, operating as and for the purposes described.

3.—The arrangement of the parts A, B, C, D, E, F, G, H, I, J, K, L, *a, b, c, d, e, f, g, h, i, k, m, n*, and *o*, or their equivalents, when combined and operating substantially as and for the purposes herein set forth.

No. 92,350.—D. H. PAUL, DE WITT, IOWA.—*Cultivators*.—July 6, 1869.

Claim.—The application of reciprocating saws to a cultivator, in the manner substantially as shown and described, for the purpose of cutting or severing weeds or trash, which may adhere to the plough or share standards, and stripping it from the latter, as set forth.

No. 92,529.—ISAIAH HENTON, SHELIYVILLE, ILL.—*Cultivators*.—July 13, 1869.

Claim.—The combination of the pivoted levers P, pivoted cross-bar R, and chains Q, with each other and with the pivoted bars I and plough beams E, substantially as herein shown and described, and for the purpose set forth.

No. 92,680.—JOHN P. ZELLER, SOUTH BEND, IND.—*Cultivators*.—July 13, 1869.

Claim.—1.—The arrangement of the bar A, stationary buttons B B, and movable buttons C C, substantially as and for the purposes set forth.

2.—The arrangement of the bar A, vertical pins *a a*, and beams D D, the latter having the plough beams E E, ploughs F F, and braces G G, all substantially as shown and described.

3.—The arrangement of the beams D D, brackets *b b*, bars H H, and chain I, all substantially as shown and described.

4.—The arrangement of the brackets *c c*, bar J, handle K, arms L, and chains *d d*, all substantially as shown and described.

5.—The combination of the bar A, buttons B C, beams D D, ploughs F F, connecting bars H, brackets *c c*, bar J, handle K, arms L, and chains *d d*, all constructed and arranged as described, on an adjustable carriage, so that said carriage may be used with any other agricultural implement, if properly constructed, substantially as herein set forth.

No. 93,348.—JOHN J. LINDLY, LEBANON, ILL.—*Gunz Ploughs*.—August 3, 1869.

Claim.—1.—The arrangement of the bars G G', with the plough bars H, and relative to the frame A C, and the draught attachment N, substantially as and for the purposes set forth.

2.—The crank bar I, its lever *l'*, and straps M, arranged to raise the plough bars H, substantially as set forth.

No. 93,374.—HENRY WADSWORTH, DUXBURY, MASS.—*Cultivators*.—August 3, 1869.

Claim.—The cultivator G H, connected to the axle A

by the single universally turning eye K and vertical sliding belt C, adjustable by means of the nut C' or its equivalent, and provided with the handles I, or their equivalents, whereby it may be manipulated, all substantially in the manner and for the purpose herein set forth.

No. 93,412.—NATHAN BUTTLER, OLLERVILLE, Mo., assignor to himself and D. S. BUTTLER, same place.—*Cultivators*.—August 10, 1866.

Claim.—1.—The bolster E, hinged to the axle B, and beveled upon its rear lower edge, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the rearwardly projecting arms J, sliding seat L, and foot rest or platform M, with the hinged bolster E and axle B, substantially as herein shown and described, and for the purpose set forth.

3.—The notched plough standards G, adjustably secured to the hinged bolster E by means of the detachable loops H, in combination with the said hinged bolster E and axle B, substantially as herein shown and described, and for the purpose set forth.

4.—An improved cultivator, formed by the combination of the wheel A, axle E, tongue C, hinged bolster E, arms J, sliding seat L, foot rest or platform M, and plough standards G, with each other substantially as herein shown and described, and for the purposes set forth.

No. 93,505.—WILLIAM EMMONS and DAVID A. WELLS, SANDWICH, Ill.—*Corn Cultivators*.—August 10, 1866.

Claim.—1.—The combination of the frame A, axle C, and pivoted bars D D, all substantially as set forth.

2.—The lever L, in combination with the cams, or their equivalents, when used to elevate both beams at once, substantially as specified.

3.—Securing the handles to the beams, by means of a thumb-screw, so that they can be regulated at will, substantially as set forth.

4.—The levers J, M, and N, rod O, pawl P, and ratchet H, when arranged to operate substantially as set forth.

5.—In combination with the above, the beam I, bars E, chains K, frame A, metal plates D, and shoes H, when all are combined, as set forth.

No. 93,611.—DANIEL D. FRANKLIN, FLORA, Ill., assignor to himself and J. S. UNDERWOOD, same place.—*Cultivators*.—August 10, 1866.

Claim.—1.—The combination and arrangement of the draught-bar A', bent-rods C' fastened to the lower ends of the standards E, so as to vibrate freely, and permit the driver on his seat to rock the machine and raise the cultivator teeth, substantially as described.

2.—Hinging the cultivator beams H and N, and the pivots of the rods C', in the standards E, so near the axles of the carrying-wheels that the machine can vibrate freely on the pivots of the carrying-wheels, while in motion, substantially as described.

3.—In combination with the stock and removable share, the lip on the stock, for covering and holding the point of the share, substantially as described.

No. 93,651.—HIRAM J. WATTLES, ROCKFORD, Ill.—*Cultivators*.—August 10, 1866.

Claim.—1.—The frame C, when constructed substantially as described, for the purpose set forth.

2.—The arms F F, when provided with the pulleys f f, and used in connection with the lifting levers E E, as and for the purpose described.

3.—The slotted wedge B', when used in combination with the bars b, as described, for the purpose set forth.

4.—The evener K, having the cleaves k k, when combined with the draught bars B' B', in the manner and for the purpose set forth.

5.—The cultivator described, consisting substantially of the frame C, lifting devices E E, beams H, standards I, and draught devices K k, when combined and used as and for the purpose described.

No. 93,730.—NEAL McKAY, COLUMBIA, Mo.—*Cultivator-Ploughs*.—August 17, 1866.

Claim.—The combination and arrangement of the rear

ploughs D, fastened to the main frame, the inner and front ploughs C, adjustably secured upon the rock shaft B, the hand-lever G, pivot c, and chains F F to the inner ploughs, and the hand-lever H, with its four armed rock shaft, and chains h h h h for lifting the four ploughs, secured by the catch I, with the adjustable seat K.

No. 92,749.—JOHN J. ROSE, ERMWOOD, Ill.—*Cultivators*.—August 17, 1866.

Claim.—1.—The right-angle hinges I, L, in combination with the beams E, ploughs N N, shovels M M, and chains I' I', of a riding cultivator, all substantially as and for the purpose shown and described.

2.—The spring U, chains I', when combined with the cross beam or axle-beam G of a cultivator, and the plough beams E, all substantially as shown and described, and for the purpose set forth.

No. 94,097.—A. C. BRINSER, MIDDLETOWN, PA.—*Cultivators*.—August 24, 1866.

Claim.—1.—The combination of the platform F and G and seat H, substantially as shown and described.

2.—The axle A' in combination with the curved arms C and E, when constructed substantially as shown and described.

No. 94,106.—RICHARD HANEY and JAMES S. ESTES, PEORIE, Ill.—*Cultivators*.—August 24, 1866.

Claim.—1.—The axle I, with flanges l' and e', substantially as shown and described.

2.—In combination with a plough beam, the plates c c, with flanges bolt d, box b b, and journals a a, substantially as shown, and for the purposes specified.

3.—In combination with an axle I, and flange e', the box b b, journals a a, plates c c, and bolt d, as shown, and for the purposes specified.

4.—In combination with an axle I, having flange l', and cap p, having flange e' encircling and covering the tapering ends of the hub, the wheel L, as shown and described.

5.—In combination with the bars M M, and adjustable connecting rods m' m', the cross beam A, standards B B B B, pole D, with braces E E and braces c c c', substantially as shown, and for the purposes specified.

No. 94,456.—ELISHA WALKER and JOSIAH J. PLATT, LA PORTE, Ind.—*Cultivators*.—August 31, 1866.

Claim.—1.—The mode of elevating and lowering the ploughs by the self-acting double eccentric M, substantially as set forth.

2.—The mode of turning the shovels A in or out by the double adjusters N N and single adjusters O O, substantially as set forth.

3.—The combination of the tongue D, posts I L, braces a a, knuckle joints J J, hinges E E, bars b b, self-acting double eccentric M, double adjusters N N, and single adjusters O O' respectively, constructed and arranged substantially as set forth.

No. 94,542.—JOB McNAMEE BAKER, FAYETTEVILLE, TEXAS.—*Cultivators*.—September 7, 1866.

Claim.—1.—The blades or ploughs E, F, and G, arranged and operated substantially as and for the purposes herein shown and described.

2.—A combined cultivating, ridging, planting, and rolling machine, arranged and operating substantially as described.

3.—In combination with a cultivator, the stalk-cutter S, substantially as described.

4.—The method of adjusting the beams H, with the blades substantially as described.

5.—The method of operating the slide of the planter, in combination with the rollers R, substantially as described.

No. 94,623.—EDWARD P. LYNCH and HENRY R. RAFF, DAVENPORT, IOWA.—*Walking-Cultivators*.—September 7, 1866.

Claim.—1.—The curved frame A and the adjustable axles B, constructed and arranged as herein described.

2.—The curved cast-iron frame A, with the forked or Y-shaped tongue H secured thereto, by means of the flanges or lugs thereon, substantially as described.

3.—The pieces C, formed with the grooves in their sides, and the series of holes for receiving, holding, and permitting the adjustment of the beams D, substantially as described.

4.—The combination of the piece C, boxes *a* and *c*, and clip-bolt *b*, with the axle B, all arranged as described.

5.—The shoulder-piece or block I, secured to the axle B, substantially as described.

6.—The shovels F, provided with the grooves and recessed block H, and secured to the beam by the T-headed bolts *u* and strap *v*, as set forth.

7.—The piece *n*, in combination with the grooved block *h*, for the purpose of adjusting the inclination of the shovels, substantially as described.

8.—The piece C, cast with its arms *u* at the front, said arms having holes therein to receive and hold the journals of the boxes *a* and *c*, as herein described.

No. 94,903.—EDWARD P. LYNCH, DAVENPORT, IOWA.—*Cultivators*.—September 14, 1869.

Claim.—1.—A walking cultivator, having the central or fifth shovel applied thereto, substantially as described.

2.—The combination of the bars C and the beam D, the latter being curved, as shown, and secured to the former by the bolt *a* and pin *c*, as set forth.

3.—Securing the beam D to the bar B, by means of the bolt *a* and clip *u*, as described.

4.—Constructing the beams of cultivators of wrought-iron bars, made thicker on their lower edges, as herein shown and described.

No. 95,142.—JAMES H. ROBINSON, SELMA, ALA.—*Corn and Cotton Cultivators*.—September 21, 1869.

Claim.—1.—Attaching draught-pole by means of two pivots, substantially for the purposes described.

2.—The construction and combination of draught-pole K, rock shaft B, and hand-operating lever J, so as to form a joint, through which a universal leverage may be conducted, by means of a single hand-operating lever, for the purposes substantially as described.

3.—Mode of arranging the ploughs in front and rear of rods D and *c*, and having plates of different length, and projecting to the front and rear, the rods passing through them for the purposes described.

4.—Rock-shaft B, arms C, rods D and *c*, arranged to contract each other under pressure, and to move the ploughs up and down at a uniform angle, for the purposes described.

5.—The treads H, and their application to rod *c*, for the purposes described.

6.—The combination of the rock-shaft B, arms C, rod D, plates E E', standards F F', rod *c*, treadle H, and hand-lever J, substantially as and for the purpose described.

7.—So arranging the ploughs as that they will operate in the ground parallel with or nearly opposite to the axis of the draught-pole and hand hand operating lever, for the purpose described.

8.—Mode of securing standards by means of hooks and cross chains, for the purposes described.

No. 95,338.—THOMAS J. HALL, BRYAN TEXAS.—*Cultivators*.—September 28, 1869.

Claim.—1.—The cultivator-beams A, arranged either singly or in pairs, and suspended, by the adjustable rods B, from the levers C, vibrating laterally, and arranged to be operated by the feet, substantially as specified.

2.—The combination of the levers C, transverse beam I, and springs H, when arranged substantially as specified.

No. 95,352.—ALMON HUNT, MACOMB, ILL.—*Cultivators*.—September 28, 1869.

Claim.—The cultivator herein described, having frames C, bars D, equalizing-bars K, clamps P, and plates *a*, arranged, with reference to the beams O, as described, constructed and arranged substantially as set forth.

No. 95,453.—SAMUEL FISHER, HIGHTSTOWN, N. J.—*Wheeled Cultivators and Ploughs*.—October 5, 1869.

Claim.—In combination with a main axle, a pair of carrying wheels, and a main frame that can be widened or narrowed, and adjustable beams and ploughs thereon, the hub, pulley, lever, and chain, and their appliances, for raising or lowering, or holding the ploughs or cultivators on the main frame of axle, substantially as described.

No. 95,520.—SIDNEY A. SABIN, PLEASANTON, ILL.—*Cultivators*.—October 5, 1869.

Claim.—1.—The sliding attachment described, by means

of which, the lifting chains and the shovel beams are united consisting essentially of the clevises *j* and irons K, or their equivalents, as or for the purpose described.

2.—The shield P, having the arms *f* *h*, in combination with the bar *g*, as and for the purpose described.

3.—The machine described, consisting essentially of the frame B C D, lifting devices *h* *h'* *h''* *h'''* I, clevis *j*, irons K, beams L, bar M, standards N, and shields P, the whole being combined and arranged as described.

No. 95,762.—JEREMIAH BOHAN, NEW HARTFORD, IOWA.—*Cultivators*.—October 12, 1869.

Claim.—1.—The eyebar E, pivoted upright B, metallic straps *c*, and sweep F, when constructed and arranged substantially as herein described, and for the purpose set forth.

2.—The braces *h*, having their lower ends connected to the shovel beams H, by means of eye-nuts *v*, for adjusting the beams laterally, and their upper ends hooked or journaled to the frame to allow them to swing, substantially as and for the purpose set forth.

3.—The bent arms *g*, in combination with the block N, lever K, and sweep F, when constructed and arranged substantially as herein described, for the purpose of spreading the shovels, as set forth.

4.—The lever K, in combination with the sweep F, cross piece O, shovel beams G and H, and cord *k*, when constructed and arranged to operate substantially as and for the purpose set forth.

5.—The treadle-hook L, and spring *h*, in combination with the lever K, cross piece O, and sweep F, when constructed and arranged substantially as herein described, and for the purpose set forth.

6.—In combination with the sweep F, and the devices for operating the shovels, the block I, having friction-rollers therein, when constructed and arranged substantially as and for the purpose set forth.

7.—The shield M, and slotted braces P, when constructed and arranged substantially as and for the purpose set forth.

No. 95,790.—OSCAR L. GAYLORD, PLAINFIELD, ILL.—*Sulky-Cultivators*.—October 12, 1869.

Claim.—The combination of the main frame *a*, diagonal axles *c* *c'*, cross bar *h*, double tree 1, straps 2', pulleys 3', and suspended arms 4', arranged to operate as and for the purposes set forth.

No. 95,831.—JOHN C. BEARL, MENDOTA, ILL.—*Cultivators*.—October 12, 1869.

Claim.—1.—The standards D, with sleeves D', when constructed and arranged substantially as shown and described, for the purpose set forth.

2.—The axles C, when constructed and arranged substantially as shown and described.

3.—The clevises F, when constructed as shown and described, in combination with the plates F', both arranged to operate as and for the purpose set forth.

4.—The combination, with the whiffle-tree, of the flimble whereby the former may be raised or lowered, as set forth.

No. 96,167.—DUDLEY W. TRAVIS, ENFIELD, N. Y.—*Corn Cultivators*.—October 20, 1869.—Antedated October 12, 1869.

Claim.—1.—The combination of the adjustable ploughs G and H frame D F F', and rods C, substantially as described.

2.—The arrangement of the lever I, in combination with the ploughs, frame rods, and carriage as set forth.

3.—The construction of the spring K, in combination with a carriage plough frame, as set forth.

4.—The combination of the whole, made by the two-wheeled carriage A, cross-bar B, rods C, longitudinal pieces D, posts E, adjustable ploughs G and H, seat I, spring K, and lever L, arranged and operating together, substantially as set forth.

No. 96,271.—SILAS C. SCHOFIELD, CHICAGO, ILL.—*Combined Cultivators and Scalers*.—October 26, 1869.—Antedated October 16, 1869.

Claim.—1.—The combination of the main beams F and

angle beams H, when constructed and operated substantially as and for the purpose specified.

2.—The elbow plates I, when constructed substantially as described, and used for the purpose of adjusting the angle of the beams B and H, substantially as specified.

3.—The swivel-plate J, when constructed and operated substantially as and for the purpose described.

4.—The metallic stall P, when constructed and operated substantially as and for the purposes specified.

5.—The combination of the treadle T, chain K, and metallic stall P, when arranged and operated substantially as set forth.

No. 96,279.—J. A. SMITH, LAYON, Ill.—*Cultivators*.—*October 29, 1869.*

Claim.—1.—The frames D D, when provided with plates *g g*, and adjusting holes at the top and bottom, substantially as and for the purpose described.

2.—The combination of the beams B B with the vertical cylindrical bars *h h*, when said bars are provided with the plates G and F, the plates being pivoted together substantially as and for the purpose specified.

3.—The double-tree H, provided with pendants *m m*, in combination with rods I I, or their equivalent, the said rods being connected with a pulley *t*, on double-tree H, in the manner and for the purpose set forth.

No. 96,299.—ELISHA WALKER and JOSEPH J. PLATT, LA PORTE, IND.—*Cultivators*.—*October 26, 1869.*

Claim.—The double-tree A, provided with the stirrup-shaped iron frames E E, with the pivoted regulating bars F F and the chains K K, when combined and operated upon a cultivator, substantially as described and shown.

No. 96,322.—DAVID E. HOLT, WILKINSON COUNTY, MISS.—*Combined Cultivator and Seed Ploughs*.—*November 2, 1869.*

Claim.—1.—The curved bars I, in combination with the plows F F', and a frame connecting the parts A A', that are connected together by bolts *t* and *z*, when all the parts are constructed, arranged, and operate substantially as herein described, for the purpose set forth.

2.—The above combination, in combination with a trench opening plough, H, that is provided with an adjusting-bar, J, and with a hopper, M, that is provided with adjustable supplemental sides N, a cylinder that will plant cotton-seed or corn, and an agitating-cylinder above the same, which are driven by a shaft O, and suitable gearing connected therewith, and with the wheel E, when all the parts are constructed and arranged with respect to each other, and operate substantially as described, for the purpose set forth.

No. 96,379.—WM. T. BAKER, LANCASTER, TEXAS.—*Cultivators*.—*November 2, 1869.*

Claim.—1.—The cases C, in combination with the frame E, for supporting and guiding the beams and stock of the plough, arranged substantially as described.

2.—The combination of the springs K, rod J, and levers G, arranged as described.

3.—The foot piece J and springs K, by which the ploughs may be simultaneously thrown from the ground.

No. 4.—The cleaves O, arranged substantially as shown and described, in combination with the stock *m*, of the plough, for regulating the depth of the plough, substantially as described.

5.—The combination of the rods F, having, at either end, adjustable screw bolts and nuts, as shown, with the levers G and beams D, all arranged, as described, to regulate the depth and angle of inclination of the several ploughs, in the manner set forth.

6.—In combination with a cultivator, the double-tree A, constructed and arranged substantially as and for the purposes herein shown and described.

No. 96,382.—E. CHARLES BEAN and FRANCIS N. WELLEN, ROCKFORD, ILL.—*Cultivators*.—*November 2, 1869.*

Claim.—1.—The combination of the bent metal bars, the axle, the pole, and the braces, to form the main frame of the machine, substantially as described.

2.—The combination of adjustable foot rest R with eye *r*, having the slot *r'* and recess *r''*, with the standard

S, having the projection *s*, as and for the purpose described.

3.—The combination of the flanged bearing block with the recessed bearing plate, as described, for the purpose set forth.

4.—The combination of the flanged bearing block, recessed bearing plate, and lock bolt, with the shovel beam and standard, as described, for the purpose set forth.

5.—The band O, provided with the staple-shaped projection *o'*, as and for the purpose described.

6.—The employment of wings or arms, or their equivalents, substantially as described, for the purpose set forth.

No. 96,579.—H. W. CLAPP, NORTHAMPTON, MASS.—*Hoing Machines*.—*November 9, 1869.*

Claim.—1.—The combination, on a truck, of two or more hoes or spades, E E, arranged for operation by motion derived from the wheels of the truck, as herein shown and described.

2.—The combination, with a pair of spades or hoes, operating as described, of a guard or shield Q, moving and adjustable vertically, as described.

3.—The combination, with the spades or hoes, arranged for operation as described, of the vibrating cultivators V V, as specified.

4.—The combination, with the spades or hoes, of the cultivators V V and V' V', as specified.

5.—The combination, with the spades or hoes E E, of the chains M, rollers N, levers O, and spring catches P, as specified.

6.—The combination of the spades or hoes, cultivators V V, V' V', and H, all as specified.

No. 96,733.—RICHARD B. ROBBINS, ADRIAN, MICH.—*Sulky-Cultivators*.—*November 9, 1869.*

Claim.—1.—The arrangement, herein shown and described, of the puts R and R', I, N N', J, and D, and the bolts *r'*, as and for the purposes specified.

2.—The shifting device *r*, used in connection with the chains *r* and *r'*, rollers *t* and *t'*, slides *p* and *p'*, for the purposes set forth and described.

3.—The foot rest *o* and *o'*, in connection with the slides *p* and *p'*, in the manner set forth and described.

4.—The strips *a* and *a'*, in connection with the guiding rods *h* and *h'*, chains *i* and *i'*, rollers *r* and *r'*, constructed in the manner set forth and described.

5.—The arrangement, herein shown and described, of the rocking double-tree K, chains *d* and *d'*, rollers *v* and *v'*, snappers P and P', and the ways *z*, as and for the purposes specified.

No. 96,801.—A. J. GRUSH, SPRINGFIELD, ILL.—*Corn-Cultivators*.—*November 16, 1869.*

Claim.—1.—The tongue or beam A, made in two parts, connected by a detachable joint, A', and provided with the axles B D, substantially as specified.

2.—The combination, with the plough beams H' and the tongue or beam A, of the bar M and lever O.

No. 96,838.—S. G. RAYL, AGENCY CITY, IOWA.—*Combined Double-Shovel and Two-Horse Cultivator*.—*November 16, 1869.*

Claim.—1.—Connecting the inner shovels B to the plough beams A, by a curved standard, C, in such a way that the top of said shovels may be unobstructed, substantially as herein shown and described, and for the purpose set forth.

2.—The shield F, constructed and connected with the plough beams A, substantially in the manner herein shown and described, and for the purpose set forth.

3.—Connecting the handles N and P, either or both, to the plough beams A, by a system of detachable braces, substantially as herein shown and described, and for the purposes set forth.

4.—The pivoting rods Z, perforated swinging plates B', cleaves C', and bars D', with each other and with the plough beams A and carriage T U V, substantially as herein shown and described, and for the purpose set forth.

5.—The carriage T U V X Y, constructed substantially as herein shown and described, that is to say, in such a way

that the forward ends of the plough beams A may project in front of the cross-beam C and knees V, as and for the purpose set forth.

No. 97,577.—JAMES FERGUSON, HUNLEY GROW, II.,—*Cultivator*,—*Nov. 16, 1869*.

Claim.—1.—The beams D', when provided with joints d^1 , in front and rear, as described, for the purpose set forth.

2.—The standard H, bar I, and spring h' , when constructed substantially as described, for the purpose set forth.

3.—The standard H, bar I, and spring h' , when combined with the beams D', substantially as and for the purpose set forth.

4.—The machine described, consisting of the frame A a a' , wheels B B, pole C, beams D D', shovels L, rock shaft E, hand lever F, standard H, bar I, spring h' , the whole being combined and arranged as described.

No. 97,573.—HIRAM J. WATLIES, ROCKFORD, ILL.,—*Cultivator*,—*Dec. 7, 1869*.

Claim.—1.—The frame described, consisting of the longitudinal beams A A, transverse beams B' b, and braces C C, the whole being combined and arranged as described, for the purpose set forth.

2.—The brace M, constructed as described, with the half circle m m' , and hinge n , for the purpose described.

3.—The machine described, having the frame A B b C, lifting devices E, G H, beams J, standards K, the whole combined and arranged as described, for the purpose set forth.

No. 98,112.—JAMES B. SKINNER, ROCKFORD, ILL.,—*Cultivator*,—*December 21, 1869*.

Claim.—1.—The combination of castor wheels with a rigid frame, having vertical movement, substantially as described.

2.—The combination of a cultivator frame having vertical movement, with a lever, where said frame is adjusted vertically by said lever, substantially as and for the purpose described.

3.—The combination of a cultivator frame resting upon wheels attached by swinging bars, with levers, when said levers operate to raise or depress the frame, substantially as described.

4.—The cultivator frame described, consisting of the cross beams B B, shovel beams C C, and cross bars α , when arranged for adjustment, substantially as described, for the purpose set forth.

5.—The adjustable standard λ , in combination with the levers F and wheels A, as and for the purpose described.

6.—The levers F, with spring stop devices described, in combination with a standard λ and yoke standard a' , substantially as described.

7.—The washer G, when constructed as described and used in connection with the levers F and the frame, as and for the purpose described.

8.—The machine described, consisting essentially of the wheels A a a' , frame B B C C', lifting devices F, H h , standards M, and shovels m , the whole being combined and arranged as described, for the purpose set forth.

No. 98,326.—JESSE A. WILSON, HAMBURG, IOWA.,—*Cultivator*,—*December 28, 1869*.

Claim.—1.—The castings E and I, constructed and secured to the ends of the beam C, substantially as herein shown and described and for the purposes set forth.

2.—The bows F G and K L, constructed and arranged substantially as herein shown and described, in combination with the castings E I and tongue H, as and for the purpose set forth.

3.—The slide-bar P O and adjustable bows M, in combination with the tongue H and beams C, substantially as herein shown and described and for the purpose set forth.

No. 98,500.—A. L. CHUBB, GRAND RAPIDS, MICH.,—*Cultivator*,—*January 4, 1870*.

Claim.—The side bars B B, when cast with recesses on their inner sides, to receive the cross bars or beams A A, substantially in the manner specified.

No. 98,708.—WILLIAM B. RAPER, CARHAGE, ILL.,—*Corn Plough*,—*January 11, 1870*.

Claim.—In a corn plough, the combination and arrangement of the several parts, viz: the ratcheted joints B C C', by which the two sets of wheels and ploughs are adjusted toward or from each other; the downward pointing arms E E', with their double hinging parts G G', having their series of holes $e' e' e'$, &c.; the ratcheted manner of adjusting the plough standards b H H' H' up and down on the plough beams F F'; and the doubletree, having dependent parts I, L', to bear the singletrees M M' and draught rods N N', reaching back to the wheel frame B' all substantially as set forth.

No. 98,018.—WILLIAM B. RAPER, CARHAGE, ILL., assigned to JOHN JAC KSON,—*Cultivator*,—*98,708*,—*January 11, 1870*.—Revised *July 30, 1872*.

Claim.—1.—In a wheel-cultivator the axle beam B, made extensible in the manner described, in combination with pivot arms E E, plough beams F F, and adjustable connection J I, substantially as shown and described.

2.—The axle made in three parts, and provided with the serrated surfaces, and held by any suitable devices, substantially as shown and described.

3.—In a straddle row cultivator having a raised or arched axle, I claim the slots and bolts, in combination with the serrated surfaces, for the purpose of making the wheels extensible, substantially as set forth.

No. 98,070.—BENJAMIN S. HYERS, PERIN, ILL.,—*Cultivator*,—*January 18, 1870*.

Claim.—1.—The two straight axles B B', independent of each other, in combination with the straps C C, substantially as herein shown and described, and for the purposes set forth.

2.—The two adjustable, laterally-inclined braces S S, in combination with the straps or clamps C C', and tongue F, substantially as shown and described, and for the purposes set forth.

3.—The sliding lug J, with the cock-eye M, provided with one or more notches, so as to allow it to pass by the clevis H, substantially as herein shown and described.

4.—The cock-eye M, in combination with the sliding lug J, and rod or link, W, substantially as and for the purposes set forth.

5.—The combination and arrangement of the clevis H and sliding lug J, provided with holes for pins or bolts, so as to make the plough rigid to the line of draught substantially as herein shown and described.

No. 100,409.—HORACE CARR, WOOSTER, OHIO.,—*Cultivator*,—*March 8, 1870*.

Claim.—1.—The constructing and arranging the two middle beams and shovels of a cross row, or series of beams and shovels of a wheel cultivator, in combination with a suitable operating handle or lever, that the points of said middle shovels may be turned outward from or inward toward each other simultaneously, as described, by a single direct movement of said operating handle or lever, for the purpose set forth.

2.—The combination of the oscillating beams F' F', toggles H' H', arm H', either single or jointed, and operating handle K, substantially as specified.

3.—The combination and arrangement of the oscillating beams F' F', toggles H' H', arm H', either single or jointed, links H' H', handle K, and arms G' G', with and without the braces G, substantially as and for the purpose specified.

4.—In combination with a turning beam holder, B, forming the arm H', in two jointed parts, as and for the purpose set forth.

5.—In combination with the turning axle or beam holder B, frame H, and lever M, the foot plate C, rod A', and arm A, substantially as described.

6.—The plates R R, and pins R' R', as and for the purpose set forth.

7.—Connecting the middle beams F' F', when arranged to swing simultaneously in contrary directions on horizontal

axes or bearings, by toggles H' , as and for the purpose set forth.

No. 100,500.—HORACE CARR, WOOSTER, OHIO.—*Cultivator*.—*March 8, 1870.*

Claim.—1.—The combination in a wheel cultivator of the shovel beam $F'' F'''$ arranged to work on perpendicular axles, toggles $H' H''$, lever L , and connecting link or links $I' I'' I'''$, when so arranged that the said beams may be turned simultaneously in contrary directions without raising the shovels from the ground, substantially as specified.

2.—Connecting the shovel beams $F'' F'''$ oscillating on perpendicular axes or pivots by toggles $H' H''$, so as to give said beams simultaneous movement in contrary directions without raising the attached shovels from the ground.

3.—The combination in a wheel-cultivator of a turning axle B , rigid shovel beams F'' , movable shovel beams F''' , arranged to turn simultaneously on vertical axes in contrary directions, frame H , and lever M , substantially as and for the purpose set forth.

4.—The hollow clips L , or their equivalents, in combination with the loops P' and movable beams F'' , as and for the purpose set forth.

5.—The employment of the loops P' as pivots for the beams F'' , in the manner set forth.

6.—The spring K' in combination with the lever L and beams F'' , as and for the purpose set forth.

No. 100,501.—HORACE CARR, WOOSTER, OHIO.—*Cultivator*.—*March 8, 1870.*

Claim.—1.—In a wheel-cultivator having an axle or equivalent cross bar or bars sustaining the shovel beams with their shovels, an axle or cross bar may be so tuned on its bearings as to raise or lower the shovels from the ground, as set forth, so arranging or articulating the shovel beams on separate bearings that they may be raised or lowered either singly or in sets of two or more, independently of the movement of said axle or cross bar.

2.—The combination and arrangement of the bars L , levers $F' F''$, bars F''' , and shovel beams E''' , substantially as and for the purpose set forth.

3.—The combination and arrangement of the device G' , lever F'' , connecting rod G , and link F , with a single beam E''' , so that said beam may with its shovel be raised or lowered independently of the rest, substantially as set forth.

4.—In combination with the articulated beams E''' , the hangers E , constructed and arranged substantially as and for the purpose set forth.

5.—In combination with the independently articulated beams E''' , and axle B , the lever D , link I' , and arm I'' , substantially as and for the purpose specified.

6.—The lock bars K , in combination with the arms I and beams E''' , for the purpose set forth.

7.—The springs II , when arranged as and for the purpose described, in combination with the locking device G' , and beams E''' .

No. 100,720.—MARTIN BRUNER, JR., FREMONT, OHIO.—*Cultivator*.—*March 16, 1870.*

Claim.—The rod Q , bent as shown, and pivoted at its ends to the horns E , and the bars P pivoted thereto and to the beams H , whereby the forward movement of said rod will elevate, and the reverse movement lower the ploughs, as set forth.

No. 100,812.—JAMES B. SKINNER, ROCKFORD, ILL.—*Cultivator*.—*March 15, 1870.*

Claim.—1.—The combination of the main frame, the laterally reciprocating shovel frame, always moving parallel to itself, the traversing roller beneath the tongue, and the supporting rollers upon the axle, all these parts being constructed to operate as set forth.

2.—The combination of the tongue, the guide bracket, and the traversing roller on the shovel frame, all these parts being constructed to operate as set forth.

3.—The combination of the shovel frame, the guide bracket, the guide rails on the axle, the supporting rollers, and the lifting levers, all these parts being constructed to operate as set forth.

No. 101,210.—CHARLES BIRD, ACKLEY, IOWA.—*Cultivator*.—*March 20, 1870.*

Claim.—1.—The combination of the ploughs D , bars E , and screw spindles F , cross head G' , all arranged to operate substantially as and for the purpose set forth.

2.—The combination of the plows F , swinging beams G , cross head G' , nuts G'' , and screw spindles F , all arranged to operate substantially as and for the purpose set forth.

No. 101,240.—SOLIMAN H. DWIGHT and WILLIAM B. CHAMBERS, DECATUR, ILL.—*Cultivator*.—*March 29, 1870.*

Claim.—In combination with an elevated truck frame constructed and arranged as described, and supported and carried upon a pair of wheels as herein stated, the pivoted beams B and the cultivator teeth or ploughs, and independently pivoted and suspended guards E connected therewith, and arranged to be drawn by or carried on said elevated frame, as described.

No. 101,380.—C. L. REED, LOUISVILLE, KY.—*Cultivator*.—*March 29, 1870.*

Claim.—1.—The bedder E , constructed substantially as shown and described.

2.—The combination of the frame C with the hanger C' and bedder E , substantially as set forth.

3.—The arrangement of the hangers C' and C'' , bedder E , and cultivators F , when combined with the frame C , so that the machine may be converted from a cultivator into a bedder, or vice versa, as set forth.

No. 101,530.—GARLAND B. ST. JOHN, KAMAMAZOO, MICH.—*Cultivator*.—*April 5, 1870.* Antedated April 1, 1870.

Claim.—1.—The combination of beams $C C' C'' C'''$, together with beams $A A$ and $B B$, arranged substantially in the manner and for the purposes set forth.

2.—I do not claim a separate drag bar with drag teeth inserted to form a combination of harrow and cultivator, but what I do claim is the construction and arrangement of ploughs or shovels $E E$, substantially as hereinbefore specified.

3.—The combination of beams $B B$, bolts $b b$ and $c c$, together with plates $G G$, all arranged substantially in the manner and for the purposes set forth.

No. 101,706.—M. C. BUFFINGTON, LA HARPE, ILL.—*Corn Plough*.—*April 12, 1870.*

Claim.—1.—The doubletette I , when pivoted at the ends to bars q , which slide in traps r , and which carry the single-trees on perforated pendants t , substantially as and for the purpose herein shown and described.

2.—Making and arranging the universal hinged joints on the ends of the plough beams, with the several parts and functions as specified and described.

No. 101,720.—FRANK FARNSWORTH, FRANKFORD, ILL.—*Cultivator*.—*April 12, 1870.*

Claim.—1.—The combination of the shovel posts a , axle d , boxes e , chains n , pivoted cross bar t , and lever m , arranged, operating and constructed as and for the purposes set forth.

2.—The main frame C , in combination with the roller b , segment n , lever t , and chains n , arranged, operating, and constructed as and for the purposes set forth.

No. 102,201.—CLARK ALYDOR, COURTLAND, WIS.—*Cultivator*.—*April 20, 1870.*

Claim.—1.—The axle I combined with the props G , when the latter project upward and forward from the axle, for the purpose of enabling the drag bars, whose ends they support, to be lifted from the ground by turning the axle upon which they rest, as and for the purpose described.

2.—The axle I , combined with the upwardly and forwardly projecting props G , tongue B , and drag bars C , when the two latter are each pivoted between the props, as and for the purpose set forth.

3.—The combination and arrangement of stay bars D and lever E with such axle.

4.—The application of plate L , to the drag bar and cultivator teeth, as above shown and described.

5.—The stay bar D , combined with the tongue B and standard K , in the manner and for the purpose herein shown and described.

6.—The tongue B and drag bar C, when pivoted upon one and the same rod.

No. 102,631.—NICHOLAS WERTS, MAGNOLIA, ILL. *Cultivators*.—May 3, 1870.

Claim.—1.—The brackets G, vertical rods D, with crank levers N, pivoted arms O, angular connections K, and braces H' H, as constructed and arranged with beams J, C and F, substantially in the manner and for the purpose as herein shown and described.

2.—In combination with the above, the hinged extension a of the arm E, substantially as shown and described.

No. 103,537.—HENRY A. ADAMS, SANDWICH, ILL. *Cultivators*.—May 31, 1870.

Claim.—1.—The combination of the extensions E with the bent axle arms D and elevated axle-tree A, for the purpose specified.

2.—The combination of the thimbles I and the draught bolts F with the upper axle-tree and the lower axle extensions, for the purpose specified.

3.—The adjustable yoke H, in combination with the thimble I, for the purpose specified.

4.—The combination of the plates J J and the adjustable yoke for attaching the plough beams to the draught bolts, with a flexible connection capable of vertical adjustment, for the purpose specified.

5.—The combination with the axle extensions E and draught bolts F, of the eye bolts or draught rods M, for the purpose specified.

6.—A tie rod, having its forward end attached to the cross-tree or tongue of the cultivator, and its rear end laterally adjustable, in combination with a laterally adjustable draught bolt, for the purpose specified.

No. 103,048.—HENRY W. OSTROM, GRAND RAPIDS, MICH.—*Cultivators*.—June 7, 1870.

Claim.—1.—The independent cross beam C, arranged adjustably on the standards O, substantially as and for the purposes set forth.

2.—The combination of the sections of plough beams B B', levers F F', chains J', catches G on tongue K, standards O, cross beam C, and chains I, all arranged in frame A, to operate as herein described and shown.

No. 104,334.—SAMUEL H. MITCHELL, EL PASO, ILL.—*Cultivators*.—June 14, 1870.

Claim.—1.—In combination with the bent axes D D, herein described, the adjustable scalloped plates P P' and eye bolts z z, whereby the plough beams are attached in such a manner as to have a double vertical adjustment, as specified.

2.—In combination with the clamp a and connecting rods r r, the eye bolts z' and the excavated slotted thimbles t t, provided with the spikes or points i i, whereby they are prevented from turning on the wood of the plough beam, as specified.

No. 104,390.—JOSEPH ADAMS, MANFENO, ILL.—*Cultivators*.—June 21, 1870. Antedated June 11, 1870.

Claim.—1.—The crank screws G and nuts F, to which the forward ends of the plough beams are jointed, in combination with the frame work of a cultivator, substantially as herein shown and described, and for the purpose set forth.

2.—The right and left screw C, provided with a lever or handle, D, in combination with the adjacent ends of the axles B, substantially as herein shown and described, and for the purpose set forth.

3.—An improved cultivator, formed by the combination of the wheels A, axles B, right and left screw C, provided with a handle or lever, D, plough beams E, jointed to the nuts F, and swiveled crank screws G, with each other, and with the branched tongue M, substantially as herein shown and described.

No. 105,225.—JONATHAN LEWIS, WASHINGTON, D. C.—*Cultivators*.—July 12, 1870.

Claim.—The construction and arrangement of the plough standards H H, beams G G', levers I, coupling rods L', and cross bars M, with the hangers F F', rod J, and adjusting pins a a, all as and for the purpose specified.

No. 105,630.—NOAH G. BLAUSER, ETNA, OHIO.—*Sulky-Cultivators*.—July 26, 1870.

Claim.—The improved cultivator, consisting of the tongue C, handles D, axle B, wheels A, triangle F, plough beams E, pivoted adjustable ploughs G, rollers Q, levers S, chain R, foot levers O, rods N, bar K, standard M, bar J, uprights H, adjustable bars I, and scraper Y, removably attached to the tongue C, all constructed and relatively arranged as shown and described.

No. 106,039.—JEFFERSON ESHLEMAN, CANAAN CENTER, OHIO, assignor to himself and LEVI E. MILLER, same place.—*Wheel-Cultivators*.—August 2, 1870.

Claim.—The spring metal link F, constructed of a bow shape, and used in combination with the pivoted tooth arm H and bent lever N K, on the cultivator axle A, said link serving as a means both of raising the tooth J from the ground and of holding it down to its work under a spring pressure, substantially as herein set forth.

No. 106,161.—SETH B. HOISINGTON, GALESBURG, ILL.—*Cultivators*.—August 9, 1870.

Claim.—1.—The combination and arrangement of the plate N, with its cross head N', with beam U, plates F, bolts G and H, and rod C, substantially as and for the purpose specified.

2.—The arrangement of bearings F, eye bolt D, axle A, and rod C, substantially as and for the purpose specified.

3.—The combination and arrangement of beam U, hook W, and nut W', socket V, bolt Y, and nut V', with shank X, substantially as and for the purpose specified.

No. 106,351.—JOHN L. GRAHAM, BENTLEY STATION, ILL.—*Cultivators*.—August 16, 1870.

Claim.—The combination and arrangement of the pivoted part E, rod H, crank I, its vertical shaft and lower crank arm K, and connecting rod to back end of frame L, substantially as and for the purpose specified.

No. 106,579.—EDWIN D. HATCH, OCONOMOWOC, WIS.—*Wheel-Cultivators*.—August 23, 1870.

Claim.—The arrangement of the axle C with the adjustable screws A, frame D, and lever B, substantially as set forth, and for the purpose specified.

No. 106,728.—JOHN ROOT, HARTLAND, N. Y.—*Cultivators*.—August 23, 1870.

Claim.—The combination of the adjustable frame C C' d d', draught pole E, jointed brace rods a, axle A, guide stirrup J, and operating lever L, all arranged and operating substantially as hereinbefore set forth.

2.—The combination of the laterally adjustable plough beams D, vertically adjustable frame C C' d d', connecting bar G, and lever F, arranged and operating as herein shown and described.

No. 106,743.—STERLING C. THORNTON, MACOMB, TEXAS.—*Combined Gang Ploughs and Cultivators*.—August 23, 1870.

Claim.—1.—The frame A, axle B, radial arms b, curved arms c, lever h, and fulcrum post i, said lever and fulcrum post being located on the central line of the frame, and operating to raise both sides of the latter equally at the same time, and all the parts specified being arranged with reference to each other, as described.

2.—The braces m', standard i, cross bar n, and frame A, the said cross bar being placed upon the said frame, and all the parts specified being arranged with reference to each other, as described.

3.—The frame A, standards i, rigidly attached to the frame, doubletree H, bars w, and rods a, the latter connecting the doubletree directly to the standard i, and all the parts specified being arranged with reference to each other, as described.

No. 107,110.—CLARK STINTZ, CLARK COUNTY, OHIO.—*Corn Ploughs and Planters*.—September 6, 1870.

Claim.—1.—The combination of draught bar E with stay plate P, doubletree M, tongue T, bolt F, and frame A, when used in a corn plough and planter, substantially as and for the purpose hereinbefore set forth.

2.—The arrangement of the angular foot levers g g, stirrups j j, suspending bars g' g', and connecting rods r r, in connection with frame A, tongue T, and bolt F, substantially as and for the purpose hereinbefore set forth.

No. 107,357.—WILLIAM GHMAN, OTTAWA, ILL.—*Corn-Cultivators*.—*Sept. 20*, 1870.

Claim.—The arrangement of the cross bar A, gangs B, flanges D, axle E, brace I, and tongue C, when constructed and operating together as described.

No. 108,200.—VFNENDO P. HARRIS, GREENSBORO, ILL.—*Cultivators*.—*Oct. 14*, 1870.

Claim 1.—The combination of the pole A, cross bar C, and axle B, secured together as described, with the equalizer bar E, chains *d d* and *z*, and pulley *r*, all constructed and arranged substantially as set forth.

2.—The combination of the rod G, with arms V V, having flanges *r r*, lever W, cords or chains *c c*, windlass X, and rods *t t*, with the axle B, and cultivator beams H H, all constructed and arranged substantially as shown and described, and for the purposes herein set forth.

3.—The combination of the plough beams H J, adjustable double stocks S S, and double braces T T, and the shovels U, with flanges *p*, all substantially as set forth.

4.—The arrangement, upon the rear end of the draught pole A of a cultivator, of the double hinge *z c*, for adjusting and holding the seat K, substantially as herein set forth.

5.—The combination, with the beams H H, the arms A V, with flanges *r r*, and connected to the rod G, all as shown and described.

6.—The combination of the beams J J, uprights M M, cross piece N, double T-shaped bars I, L, on the bar I, and swivels K K, all substantially as and for the purposes herein set forth.

No. 108,302.—THOMAS M. REED, GERMANTOWN, OHIO.—*Cultivators*.—*October 18*, 1870.

Claim.—The arrangement of ploughs *e e* with roller J, and their operating mechanism, in combination with the suspended harrow H, substantially as and for the purpose specified.

No. 108,045.—DANIEL C. STOVER, LEXARK, ILL.—*Cultivators*.—*November 11*, 1870.

Claim 1.—The combination of the short sliding eye-bearing J, long tubular bearing I, and retaining screw H, substantially as described.

2.—The short axle extensions P, tubes *t*, braces *c c*, *d d*, and forked tongue, combined substantially as and for the purpose described.

3.—The tubular eye bearing J, with perforated ears, in combination with the short axle extensions P, tube *t*, plates G G, and beam D, substantially as described.

No. 108,116.—DAVID FULLER FILLERSBERG, ILL.—*Attachment of Cultivator Frames to Wagon Axle-trees*.—*November 8*, 1870.

Claim.—The arrangement in a cultivator of the beams F F, pivoted levers K, foot board K', adjustable seat L, connecting rods *h h*, and clivises *j j*, constructed substantially in the manner and for the purpose hereinbefore set forth.

No. 109,124.—HENRY HOWE, OSHTONIA, N. Y.—*Cultivators*.—*Nov. 18*, 1870. Antedated *October 20*, 1870.

Claim.—The plough beams E, hung to the main frame of the machine by rearwardly swinging pendants G G, in combination with the lever *a* and chains *c*, so arranged and operating as to cause the ploughs to rise from the earth on coming in contact with an obstacle, substantially as shown and described.

No. 109,229.—ISAAC LOW, EAST FAIRFIELD, OHIO, assignor to him-elf and EPHRAIM PHILLIPS, Cross City, Pa.—*Cultivators*.—*November 15*, 1870.

Claim 1.—The combination of the levers N and pivoted levers or connecting rods P with the cross beam D and cultivator frames H, substantially as herein shown and described, and for the purpose set forth.

2.—The arrangement of the wheels A, axle B, standards C, tongue E, cross beams D G, braces F, double plough frames H, standards K, braces J L, rods M, levers N, and rods P, constructed as and for the purpose described.

No. 109,363.—BENJAMIN F. YOUNG, TOLON, ILL.—*Cultivators*.—*November 15*, 1870.

Claim.—The arrangement of the plate R, lever X, driving shaft P, arms Q Q, link *w*, shield V, braces *p* and W, parallel motion bars X X, straps L L, plough standards K K and I I, with braces J J, all as shown and set forth.

No. 109,493.—WILLIAM FRENCH and JAMES CRAWFORD FRENCH, KOKUK, IOWA, assignors to WILLIAM FRENCH, same place.—*Corn-Ploughs*.—*November 22*, 1870.

Claim.—In a corn plough, the arrangement of the axle tree A B, shafts F F, yoke H H', vibrating-bars R, evener P, draft rod V, and brace-rod W', as specified.

No. 109,554.—JAMES E. SEXTON, PEORIA, IOWA.—*Cultivators*.—*November 22*, 1870.

Claim 1.—In a cultivator, the diamond-shaped couplings *c c*, when constructed and arranged substantially as and for the purpose specified.

2.—In a cultivator, the adjustable and corrugated axle-plate H, when constructed and arranged as and for the purpose set forth.

3.—In a cultivator, the plate Z, pins *u u*, and cap *v*, with the screw-nuts, as described, when the several parts are constructed and arranged substantially as and for the purpose specified.

No. 109,754.—EDWIN R. POWELL, JEFFERSONVILLE, VA.—*Wheel-Harrows*.—*November 20*, 1870.

Claim 1.—The combination, with the sulky-frame A B C D and harrow proper G, of the truck E, F, hinge-joints J K, and chains I L M, constructed and arranged substantially as described and represented, for the purpose set forth.

2.—The tooth *g*, composed of the cast point 1 4 6, steel mould board 2, and bolt 3 5, constructed and arranged as represented and described, for the purposes set forth.

3.—The axle-tree A, wheels B B, tongue C *c*, seat D, pulley-bracket P N O, and hand-lever I, *h*, the whole constituting an improved sulky-frame, as constructed, combined, and arranged in the manner shown and described, for the purposes set forth.

No. 110,049.—FREEMAN C. JEWELL, RAILWAY, N. J.—*Cultivators*.—*December 13*, 1870.

Claim 1.—A cultivator-frame, formed of the bars B and upwardly curved cross-bars A, the arms C D E, and rods F, when constructed and adjusted together as described.

2.—The beams G, slotted bars H, and the plough-standards, combined with a vibratory frame A B C D E F, to adjust the pitch of the ploughs, as described.

3.—The slotted and bent plough beams, having their rear slotted parts thickened or flanged, in combination with the rods F, slotted bars H, and the standards of the ploughs I, substantially as herein shown and described, and for the purpose set forth.

4.—The upper ends of the standards of the ploughs I, constructed substantially as herein shown and described, to adapt them for attachment to the slotted beams G, substantially as herein shown and described, and for the purpose set forth.

5.—The arms D E F, crank-arms J, bowed axle K, lever L, bar M, and catch N *n*, *n'*, when all are combined and adjusted together, as and for the purpose described.

No. 110,109.—HENRY BELMONT, ROWFORD, ENGLAND.—*Machines for Tilling or Cultivating*.—*December 13*, 1870.

Claim 1.—An improved cultivating or digging-machine, constructed substantially as described, having a number of strong forks, *i i i*, fixed in a frame, *d*, which is suspended within another frame, *c*, upon the arms of crank-axes *h h* of carriage wheels *a a*, arranged so that at each turn of the wheels with the machine moving forward the forks *i i* are, by means of the crank-axes, forced into and brought out of the ground to break up the soil.

2.—The digging forks *i i*, in combination with the suspended frame *d* and the crank-axes *h h*, arranged and operating as and for the purpose described.

3.—The cultivating-machine, so constructed as to allow the use of interchangeable parts, as described.

No. 110,133.—JAMES M. HARPER, EL PASO, TEX.—*Harrows*.—December 13, 1870.

Claim.—In a wheeled straddle-row cultivator, the harrow attachment herein described, when constructed with a front shovel-plough, B, and side metal bars or plates *a, a*, substantially as and for the purpose specified.

No. 110,250.—ISAAC B. MAHON, DENKIRK, OHIO.—*Cultivators*.—December 20, 1870.

Claim.—The arrangement, in a cultivator, of a bi-branch pivoted beam *C' C'* and detachable guides *D'*, as set forth, for the purpose of enabling the fifth plough *A'* to be readily removed or lifted up simultaneously with the other ploughs.

No. 110,257.—ISAAC B. MAHON, DENKIRK, OHIO.—*Cultivators*.—December 20, 1870.—Antedated *Dec. 15, 1870*.

Claim.—1.—The combination of clip *E* and washers *G F* with braces *D D* and wheels *B B*, as and for the purpose described.

2.—The curved connecting-bar *F*, perforated as set forth, combined with a pair of pivoted cultivator beams *I J*, for the purpose of rendering the latter susceptible of adjustment with respect to each other in a vertical direction.

No. 110,302.—PETER E. SMITH, ST. LOUIS AND NEW, N. C.—*Cultivators*.—December 20, 1870.

Claim.—1.—The lifting arms *M*, sliding upon an independent shaft *L*, combined with the adjustable axle *B C*, to enable the distance between the cultivators to be graduated without detaching any of the parts.

2.—The perforated spring-bar *K*, applied, as described, to an independent rock-shaft *L*, the arms *M*, for the purpose of enabling said arms and shaft to be secured at any desired point of adjustment.

No. 110,548.—JOSEPH H. CARLOW, KIDDER, MO.—*Cultivators*.—December 27, 1870.

Claim.—1.—The combination and arrangement of the beams *J K*, adjustable bars *I F*, pin *l*, strap *L*, and pin *l'*, allowing the easy adjustment or removal of the beams, substantially as described.

2.—The combination of the beams *J K*, upright *X*, rod *O*, chain or cord *P*, and treadle *R*, as and for the purpose described.

No. 110,853.—HUGH P. JORDAN, VICTORIA, TEXAS.—*Sulky-Cultivators*.—January 10, 1871.

Claim.—1.—The frame-work of the cultivator, consisting of the bent axle tree *B*, bars *C*, rear cross-bar *X*, tongue *E*, and brace-rods *F O*, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

2.—The plough-standards *K*, draft-bars *O*, plough-standards *R*, and draft rods or chains *V*, constructed and arranged in connection with the bars *X C* and axle-tree *B*, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the shaft or roller *X*, levers *W*, and connecting-rods *V*, with the plough-standards *K R* and bars *C* of the frame-work of the cultivator, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the levers *Z* and connecting-rods *Y* with the plough-standards *K*, and with the cross-bars *A'* attached to the braces *F* of the frame-work of the cultivator, substantially as herein shown and described, and for the purpose set forth.

No. 111,037.—GEORGE WALTER BRONSON, OF TAWA, ILL.—*Cultivators*.—January 17, 1871.

Claim.—1.—The slide-bars *H H*, in combination with the boxes *I I*, the stems *J J*, the chains *P P*, and the plough-beams *K K*, substantially as and for the purpose described.

2.—The sliding braces *R R*, in combination with the plough-handles *L L* and the plough-beams *K K*, substantially as described.

No. 111,056.—THOMAS HARDING, LA FAYETTE, IND.—*Ploughs*.—January 17, 1871.

Claim.—1.—The axle *b*, constructed with the cast-iron end pieces *b b*, when said end pieces are provided with sockets *d d* and flanges *c c*, for the purposes described, and the wooden cross-bar, as set forth.

2.—In a straddle-row cultivator, the draft-pole *A* and a double crank axle *B*, when joined together substantially as

described, so that said draft-pole and axle can be adjusted in height, for the purpose set forth.

3.—The combination of the double crank-axle *B*, tongue *A*, jointed thereto by means of the strap *D*, and the braces *F*, for the purpose of adjustment, as set forth.

No. 111,250.—H. MURKIN ROSE, CHICAGO, ILL.—*Cultivators*.—January 24, 1871.

Claim.—1.—The combination of the seat and its adjustable arms *C'* with the bifurcated end of the tongue *C*, substantially as described, for the purpose specified.

2.—The combination of the slotted block *D'* with the driver's seat *B'* and the seat-arms *C'*, for the purpose specified.

3.—The ploughs and beams of a wheel-cultivator suspended beneath the axle from the upright frame *E*, mounted thereon by means of the bent adjustable bars *H*, and adjustable frame *I*, substantially as herein shown and described.

4.—In combination with the adjustable pendent bars *H* and plough beams, the adjustable frames *I*, slotted bar *J*, and adjustable loops *K*, substantially as described, for the purpose specified.

5.—In combination with the adjustable frames *I*, and slotted bar *J*, the wedges *l*, substantially as described, for the purpose specified.

6.—The leveled crossed blocks *X* and eye-bolts *V*, constructed as described, and applied to the beams and standards in the manner herein set forth and shown, for the purpose specified.

7.—The foot-horns *F*, constructed as described, and adapted for adjustment upon the plough-beams in the manner set forth, for the purpose specified.

8.—The jointed adjustable levers *K'*, constructed as described, and provided with the friction rollers *m'*, in combination with the guide frames *I* and plough-beams, substantially as and for the purpose specified.

9.—The plough-beams, when connected at their forward ends to the draft pole by means of the pivoted plates *g* and pivoted block *D*, substantially as described, for the purpose specified.

No. 111,432.—JARVIS CASE, LA FAYETTE, IND.—*Cultivators*.—January 31, 1871.

Claim.—1.—A cultivator having the axle *A* attached rigidly to the tongue, and provided with the arms *A'* having wheels attached, in combination with the beams hinged to the body *A* of the axle, and extending backward far enough to cause the line of draft extending from their hinged point to the shafts to fall in rear of the longitudinal plane of the arms *A'*, substantially as and for the purpose set forth.

2.—The loops *E*, hinged or clasped to the axle *A*, in combination with the beams having the laterally projecting arm at its front end, whereby the beams can be attached rigidly or loosely to the loops and still be at liberty to move vertically, substantially as described.

No. 111,781.—MARSHALL SATTLEY, TAYLORVILLE, ILL.—*Cultivators*.—February 14, 1871.

Claim.—The axles *B B*, each extending out about one-third the distance between the hubs of the wheels, combined as described, with a right-angled bar, *C C*, and obtuse-angled bar, *D D*, the former fastened to said axles at the outer part and the latter at the inner part, near the hub, all as and for the purpose set forth.

No. 112,490.—RICHARD B. ROBBINS, ADRIAN, MICH.—*Sulky-Cultivators*.—March 7, 1871.

Claim.—The spring *b*, connected with the shank of the side rail of the frame *D*, and the pendent arm of the cross-bar, and in combination therewith, substantially as specified.

No. 112,904.—FRANCIS N. WELDEN, ROCKFORD, ILL.—*Cultivators*.—March 21, 1871.

Claim.—1.—The iron *b*, bent as described, in combination with the beams *E*, when attached to the tongue at or near the center as described.

2.—The spring bolt *h*, constructed specifically as described, that is, with its covering plate extending over and about the lever, for the double purpose of preventing the lever from moving laterally, and for protecting the internal bolt mechanism, as described.

3.—The combination of the standard *F*, rack bar *I*, lever *H*, and brace *o H*, the parts being arranged as de-

scribed, that is, the rack bar being secured above to the standard, and held below from vertical and lateral movement by the brace rod, without other support, the lever also being hinged to the standard and secured to the rack bar as described.

No. 113,010.—LEWIS CONNER and RICHARD G. CONNER, TROY, IOWA. *Cultivators*.—*May 28, 1871.*

Claim.—1.—The axle A, constructed as described, and combined with the beam D and eye bolt *d*, substantially as described, and for the purpose specified.

2.—The arrangement of axle A and tongue B, double tree C' and rods *c*, with beams D, D', shanks E and F, forks G, G', and braces H and P, substantially as and for the purpose specified.

No. 113,511.—JULIUS GERBER and HORACE BROWN, ROCKFORD, ILL. *Cultivators*.—*April 11, 1871.*

Claim.—1.—The seat *b'*, constructed specifically as described, in combination with the curving serrated support *b*, as set forth.

2.—The combination of the auxiliary frame with the main frame when the former is hinged to the latter forward of the neck yoke, as described.

3.—The adjustable foot rest P, when constructed as described, and combined with the supporting beam, as set forth.

4.—The jointed shovel beam M, provided with means of adjusting and securing the relative position of the parts M, N without interfering with the free movement of the auxiliary frame relatively to the main frame, as described.

5.—The combination of the seat *b'*, adjustable as described, with the adjustable seat arms attached to the main frame, as set forth.

6.—The bar C provided with pulleys *c*, and pendants C' with pulleys *c'* and stay rod *d*, in combination with the rod *e* and chain *f*, as described.

No. 113,520.—ALMON HUNT, MCMOMB, ILL. *Cultivators*.—*April 11, 1870.*

Claim.—1.—A wheel cultivator composed of frame A, axles E, bolts G, thimbles H having studs *h*, beams D, plates I, and bolts J, pole B, and equalizer K, L, N, the whole constructed and operating substantially as and for the purposes set forth.

2.—The thimbles H, constructed as described, and arranged to operate with axles E and beams D, as and for the purpose set forth.

No. 114,232.—JAMES T. TROWBRIDGE, AKRON, OHIO. *Seeds and Cultivators*.—*April 25, 1871.*

Claim.—1.—The metallic end piece A, when cast with a flange *a*, and lug *c* on the top to receive the axle D, and with a socket for the end of the front cross bar B, all constructed and arranged substantially as and for the purpose set forth.

2.—The socket *b*, on the arm *a*, for securing the tooth *h*, as described.

No. 114,472.—ORLANDO M. POND, INDEPENDENCE, IOWA. *Combined Ploughs and Markers*.—*May 2, 1871.*

Claim.—1.—The iron *f*, constructed as described, and attached, by means of the staple *e* or other suitable means, for the purpose of holding and adjusting the plough arm I, substantially as herein set forth.

2.—The arrangement of the axle A, wheels C, C', tongue D, clevises *a*, arms E, E' and F, F', handles G, G', bars *d*, d', ploughs H, H', plough arms I, I', irons *f*, *f*', and clamps *e*, *e'*, all constructed and arranged substantially as and for the purposes herein set forth.

No. 114,707.—JOHN H. CONLEY, MORGANA, IOWA. *Cultivators*.—*May 10, 1871.*

Claim.—The two transverse iron arches D, D', fastened together at each end in a common pair of sockets, C, C', and diverging upwardly toward the top, coned, as described, with the axles, as and for the purpose specified.

No. 115,138.—LEANDER WALKER, VICTORIA, TEXAS. *Cultivators*.—*May 23, 1871.*

Claim.—The combination of the pivoted side beams E, to which the forward ploughs H, I are attached, chains J, pulleys K, and pivoted handles L, with each other and

with the beam D, substantially as herein shown and described, and for the purpose set forth.

No. 115,150.—THEOPHILUS F. CAMP, BROOMING-

TON, ILL. *Cultivators*.—*May 23, 1871.*

Claim.—The arrangement of the cross pieces D, D', the draught pole E, the straps C, C', the axles B, and the wheels A, when each of said parts is constructed substantially as described and shown, as and for the purposes set forth.

No. 115,213.—MOSES JOHNSON, THREE RIVERS, MO., assignor of one-half his right to JOHN G. OTT, same place.—*Cultivators and Working Machines*.—*May 23, 1871.*

Claim.—The implement herein described, consisting of the cross head A, beam B, shanks C, nuts *d*, blades D, and handles E, when the same are constructed and arranged to operate as and for the purpose set forth.

No. 115,427.—GUSTAVUS D. BROWN, LEBANON, ILL. *Cultivators*.—*May 30, 1871.*

Claim.—In a cultivator, the arrangement of standard guides F, F' having slots *f*, ploughs E, standards E' having holes *e*, hand levers G, ratchet standard G', plough frame A having holes *f*, tongue B, hand bar C, segmental bar C', seat bar D', and seat D made adjustable, when all said parts are constructed to operate as described.

No. 115,450.—CONRAD FURST, CHICAGO, ILL. *Cultivators*.—*May 30, 1871.*

Claim.—1.—The frame A, constructed as described, and extending back of the axles, when so combined with the short axles C that the ends of the plough beams may be raised and lowered, substantially as and for the purposes specified.

2.—The adjustable bars J, when combined with the frame and plough beams so as to move with the beams E, substantially as described.

No. 115,875.—PHILIP MAIER, MAPLETON, WIS. *Cultivator*.—*June 13, 1871.*

Claim.—The arrangement of the frame A, axle C, standards B having the self-locking pins *c*, the standards *h*, lever D, hinged strap *f*, and hook *h*, as herein shown and described, for the purpose specified.

No. 117,215.—JACOB W. SPANGLER, JACKSON TOWNSHIP, PA. *Cultivators*.—*July 18, 1871.*

Claim.—The arms J, I having their lower extremities constructed with a double curve, as shown, in combination with the plough shanks *i*, *i'* constructed with slots and slotted elbows, as described, substantially as and for the purpose specified.

No. 117,279.—NEWTON J. HARRIS, MEREDOSIA, ILL. *Cultivators*.—*July 25, 1871.*

Claim.—The frame D, constructed as described and having plough beams O attached thereto, in combination with lever E and perforated bar H, as and for the purpose specified.

No. 117,547.—HENRY P. KYNETT, LISBON, IOWA. *Cultivators*.—*August 1, 1871.*

Claim.—1.—In a cultivator, the devices for attaching the front of the beams T, the frame, consisting of plates A, with hinges B, screw bolt *c*, and support swivel-standard B, substantially as described.

2.—The devices for raising and lowering the cultivators and allowing them to have the required lateral movements, consisting of the bar D, lever F, *e*, and catch *h*, all constructed and arranged substantially as described.

No. 117,803.—ANTHONY H. MYERS, HERMON, ILL. *Cultivators*.—*August 8, 1871.*

Claim.—The plates I, chain N, and pulley P, when arranged to operate with the doubletree K and draught pole A, as and for the purpose specified.

No. 118,053.—EDWIN KEESE, EUFAY, ALA., assignor to C. M. REESE, same place.—*Cultivators*.—*August 15, 1871.*

Claim.—The arrangement of the shovel frame *a*, bar or bow *c*, lever *f*, rock shaft E, chains *g*, *g*', and whiffletree *h* with the frame A and tongue F, as shown and described, to operate as specified.

No. 118,371.—MIREYBEAU B. LAMAR, ATLANTA, GA. *Cotton Cultivators*.—*August 22, 1871.* Antedated *August 11, 1871.*

Claim.—1.—The shifting wing 16, arms 17, and cranked

levers 56, constructed and arranged as described, in combination with ploughs 15 and angular frame 14, for the purpose set forth.

2.—Cuff 22, rod 21, angled knee 20, curved lever 19, angular frame 14, and curved rack 6, all constructed as described, and arranged relatively one to the other, as set forth.

3.—Wheel 2 provided with an annular row of teeth 44, pulleys 20 and 27, shaft and pinion 25, carrying also wheel 51, arranged relatively one to the other, as and for the purpose specified.

4.—Curved rack 6, pinion 8, pawl 16, ratchet 6, handle wheel 11, and slider 7, arranged relatively to each other and to lever 12 and pinion 8, as and for the purposes set forth.

No. 118,502.—ARNOLD TOMPKINS, PARIS, ILL.—*Cultivators*.—August 20, 1871.

Claim.—The combination of the axle G, guide pieces S, plates F, and side pieces, when operating together as described.

No. 118,507.—NICHOLAS WHITEHALL, NEW-TOWN, IND.—*Sulky Cultivators*.—August 20, 1871.

Claim.—The improved machine formed by the arrangement of the tooth bars G G and L L, and foot supports or levers, centre beam E, beams J J and N N, cross pieces H and M, bent axle C, cross piece D, bar E, and bearing bars B B, as shown and described, operating as specified.

No. 119,205.—JOHN A. VIARS, SHERMAN, TEXAS.—*Wheel Cultivators*.—September 10, 1871.

Claim.—The double frame A, composed of the frames D D, the interior frames H H raised and lowered on the cranks K, the caster wheels C C, and main wheels B B, all constructed, arranged, and combined substantially as and for the purposes described.

No. 119,750.—DAVID B. EBERLY, PINE VILLAGE, IND.—*Cultivators*.—October 10, 1871.

Claim.—1.—The device formed by the shovel O provided with the spring cap P, the standard K having a vertical and horizontal portion with an open slot, L, at its front end, pivoted at M and clamped at N, in combination with the beam H, constructed to operate as heretofore described.

2.—The slotted angular arms D D, loop F, with nuts and screws A, slotted braces G G, perpendicular journals E E, and plough frames H H, arranged relatively one to the other, as and for the purpose heretofore set forth.

3.—In combination with the double-pivoted shovel O, the spring-cap P secured thereto by the rivets *xx*, and screw-bolt *y*, for the uses and purposes heretofore set forth.

No. 120,073.—PHILIP R. JENKINS, COLTONVILLE, IOWA.—*Cultivators*.—October 17, 1871.

Claim.—The arrangement of the frame D E at an elevation above the axle in the rear, and at a depression below the same in front, while rigidly supported on the axle at about one-third the distance from the front of said frame, as and for the purpose specified.

No. 120,435.—PHILIP HFWITT, FAIRMOUND, IND.—*Sulky Cultivators*.—October 31, 1871.

Claim.—1.—Fenders, formed of spiral-wire coils R, and attached to plates Q, on the inside of the cultivator-ploughs, as and for the purpose specified.

2.—The combination of frame S provided with levers V V and having slots thereon, the beams T T provided with levers U U passing through said slots, and the frame D having seat F on the rear thereof, all constructed and arranged as and for the purpose specified.

No. 120,684.—JEROME H. FOULINSON, MOUNT CARROLL, ILL.—*Cultivators*.—November 7, 1871.

Claim.—A wheel cultivator having the undriven beams E E of the ploughs attached by the described connecting mechanism to the pivoted axles of wheels C C, as described, so that as the plowman moves the handles of his ploughs laterally both ploughs and wheels will correspondingly adapt themselves to the sinuosities of the rows and avoid cutting up the plants.

No. 120,692.—WILLIAM C. WILSON, BRUNSWICK, ILL.—*Cultivators*.—November 7, 1871.

Claim.—1.—The shovel *h*, having the pins or bolts *k k*

cylind loosely to a strap on the back thereof, in combination with the shoe I provided with the oval slots or holes *m m* and ears with holes *l l* for receiving the bolts or pins, substantially as described.

2.—In a wheel-cultivator, the construction and arrangement of the axle B with its braces *e e* and *d d*, holes *e e e e*, tongue C, horns *g g*, and hooks *u u*, wheels, A A, and the beams F F with extensions E E and shovel-wheels G H, all as shown and described.

No. 120,732.—JOHN FANING and FRIEDRICH LEGLER, BURLINGTON, IOWA.—*Cultivators*.—November 7, 1871.

Claim.—1.—The semicircular contrivance J, with its appendages *n n* and *z*, constructed and operating as described.

2.—The combination and arrangement of the axle B C with its perforations, pins, or bolts *e e*, tubular devices *r r*, beams P P, wheels A A, and parts *b b*, all constructed, arranged, and operating substantially in the manner and for the purposes herein described.

3.—The combination of the inner and outer perforated arms of the axle B C, bolts or pins *e e*, and the grooved parts *b b* of the wheels, for adjusting the height of the axle and at the same time maintaining the proper relation of the beams and shovels to the ground, as herein set forth.

No. 121,114.—ABRAM M. MANNY, IOWA, ILL.—*Cultivators*.—November 21, 1871.

Claim.—1.—The combination of the beams E, having bent rods E' pivoted on the under side of the tongues *e* to bolt *d*, vibrating lever D having hook *d''* at its rear end, segmental supporting bar D', and chains *b b*, constructed and arranged to operate in the manner described.

2.—The arched adjusting-rod G, having auxiliary rod *g'* attached thereto, in combination with the hook *g* on tongue *e*, in the manner and for the purpose described.

3.—The combination of the inclined handles H, beams *e*, chains *b*, and vibrating lever D having hook *d''*, constructed in the manner and for the purpose of raising and holding the beams at any point vertically, as described.

No. 121,115.—ABRAM M. MANNY, IOWA, ILL.—*Cultivators*.—November 21, 1871.

Claim.—The rigid frame of the cultivator, composed of the bent pieces C C, cross-guts *e e*, and curved metal part C' bolted at its forward ends to pieces C, and clamped to the upright part of the arched axle B by clamps *u*, in the manner described.

No. 121,013.—MARCUS L. GORHAM, ROCKFORD, ILL.—*Cultivators*.—December 5, 1871.

Claim.—1.—The combination of the beams C and cross-brace D with the plate *a* and hammer-strap *b*, constructed in the manner and for the purposes as shown and described.

2.—The combination of the slotted adjusting-plate *a* and stud F having a recess to receive the plough-standard with the standard O, constructed as shown and described.

3.—The combination of the angular beams T bearing upon axle B with the adjusting screw-bolt *y* and beam C, constructed and arranged in the manner and for the purpose shown.

4.—The hangers E with sockets *e* connected to vertical sockets F by stud *d*, arms I, and links *e*, in combination with the lifting levers J and L, and fulcrum-bracket K, all arranged to operate in the manner described.

5.—The sway bar S and rollers *r*, in combination with the slotted adjustable plates R and beams or drag-bars H, constructed and arranged in the manner as described.

6.—The lever I, having lip *i* and button *k* thereon, in combination with lever J and fulcrum bracket K, as described.

7.—The shields W pivoted to the forward ends of beams H, and suspended and adjusted by cords *v* passing through the beams T, and by which cords the shields are raised at the will of the operator and independently of the beams H and of each other, as described.

No. 121,070.—THOMPSON C. SEBRING, MIFFORD, assignor to BYRON S. STOUT, WALTER D. KING and ALGERNON S. KING, PONTIAC, MICH.—*Wheel-Cultivators*.—December 5, 1871.

Claim.—The metallic shovel standard J, having a vertical groove at its rear end, flattened at the top, bent in a semicircular form, and beaced to the frame, and secured to

the circular shaft C by means of the semicircular bolt d, which is passed through an opening in the standard below the shaft and clutched, and by the nut e above the shaft, substantially as and for the purposes set forth.

No. 122,284.—ABRAHAM P. KOHRER, CHRISTIAN F. ROHRER, and JOHN H. BLORSE, CLARKE COUNTY, OHIO.—*Inventing Ploughs*,—December 20, 1874.

Claim.—1.—The arrangement of the pivoted or balanced frame C, projecting frame b, foot board b', slide x, slot x', and loop y, as shown and described, as and for the purpose set forth.

2.—Spring catch y, guide plates c' and plates c, arranged and combined with back rail a', plough beams c', and handles m, substantially as shown and described, as and for the purpose hereinbefore set forth.

No. 122,400.—OSCAR L. NEISLER, INDIANOLA, IOWA.—*Cultivators*,—January 2, 1872.

Claim.—Passing the front end of my jointed beam K through one of the open spaces in the frame D and connecting the same with the evener E, in the manner described, as a means of preventing the beam from lateral movement and at the same time allowing it free back-and-forth and up-and-down motion.

No. 123,235.—ADOLF F. CARLSON, ALBION, IND.—*Cultivators*,—January 30, 1872.

Claim.—1.—The combination on, in a corn-plough, of the longitudinally-bisected bow D, collar E, adjustable brace or stay rod G, and forked jaw H, all constructed and arranged substantially as and for the purposes herein set forth.

2.—The combination of the bent axle A, wheels B B, tongue C, boxes D D, collars E E, braces G G, jaws H H, plough beams I I, doubletree J, and singletrees L L, all constructed and arranged substantially as and for the purposes herein set forth.

No. 123,715.—A. S. McDERMOTT, OGDEN, IOWA.—*Cultivators*,—February 13, 1872.

Claim.—1.—The loose turning and sliding collars k k, in combination with the independent cranks g g, chains l l, and independent laterally adjustable cultivator beams C C, all in the manner and for the purpose described.

2.—The combination of the pivoted plough beams C C, independently adjustable and braced front guides G' G', independently adjustable rear guides G G, laterally adjustable loose collars k k, chains l l, independent cranks g g, adjusting stop levers l' l', f, and toothed segments c c, all arranged substantially in the manner and for the purpose described.

No. 124,014.—NHS. F. SANDELIN, NEW YORK, N. Y.—*Cultivators*,—February 27, 1872. Antedated February 10, 1872.

Claim.—The arrangement of the wheel L, spindle M, crank Q, lever N, toothed bar K S, and notched stud T, in connection with the frame A, as shown and described.

No. 124,320.—JOHN E. BYFERS, BUTLER, PA.—*Cultivators*,—March 5, 1872.

Claim.—The combination of the bars 20 and 22, doubletree 23, and chains 14 and 21, and plough beams 4 and 5, substantially as and for the purpose specified.

No. 124,831.—JOSEPH T. W. LARRABEE, NEWTON, IND.—*Cultivators*,—March 19, 1872.

Claim.—The balance draught pole F, composed of two pivoted or hinged sections and secured to the axle B, in combination with the adjustable or variable weight G, driver's seat G', and dog H, or its equivalent, as and for the purpose set forth.

No. 125,087.—NHS. F. SANDELIN, MOTT HAVEN, N. Y., assignor to himself, EDWARD O. JENKINS, NEW YORK, N. Y., and JOHN PAULSON, VASA, MINN.—*Cotton Cultivators*,—March 26, 1872.

Claim.—The combination of the adjusting bars K K with the gangs F F of weeters and ploughs, the bar H, the lever I, the legs or bars i i, and the stop or cross bar J, substantially as shown and described.

No. 125,093.—JACOB W. SPANGLER, YORK, PA.—*Cultivators*,—March 26, 1872.

Claim.—1.—The slotted sector plates P' provided with right angled arms P, in combination with wheels E, axle

A, pivots e, bolts f', foot treadle G, rock shaft F, and links F', substantially as described.

2.—The clips h, provided with shoulders, as described, in combination with the slotted rib H' and drag bars H, substantially as set forth.

No. 125,271.—ISAAC H. CHAPPELL, LAWRENCE, KAN.—*Cultivators*,—April 2, 1872.

Claim.—1.—The cultivator frame composed of the adjustable side beams C' C', connected at their rear ends by the cross bar C', and at their front ends by the cross bars G G, where the frame is pivoted to the longitudinal beam C, which rests on the axle A, all substantially as set forth.

2.—The bent plough beams H H' pivoted to the adjustable bars C' C', and the slotted guides I I', which are extended downward below the rear ends of the beams C', all substantially as set forth.

No. 125,661.—HUGH PAXTON JORDAN, VICTORIA, TEXAS.—*Cultivators*,—April 23, 1872.

Claim.—1.—The plough standards K R, connected by hooks L' and having side keepers, combined with pivoted bars O, pivoted bars U' having foot rests E', bars B' N' provided with keepers, and lever F', all arranged as described, and applied to the frame of a sulky cultivator, for the purpose set forth.

2.—The band and set screw C, in combination with the draught bars O of the outer plough, standards K, and with the lower horizontal parts of the axle B, substantially as herein shown and described, and for the purpose set forth.

No. 129,156.—JAMES RUE, ENGLISHTOWNS, N. J.—*Cultivators*,—April 30, 1872.

Claim.—1.—The plates A' and their holding means A', changeable in position, as shown, in combination with the inclined frame pieces A' and teeth B, and suitable securing means b b', and arranged to serve therewith, as and for the purposes herein specified.

2.—The eyes M and arms or parts M' M', connected by the movable or adjustable fastenings m', as shown, in combination with the link K and pole or tongue E, when the latter has liberty to move forward and backward to a limited extent, all arranged and operating substantially as and for the purposes herein specified.

3.—The arrangement of the wheels C, and levers D D', and notches or holding points d' serving relatively, to the teeth B, frame A, tongue E, stirrup-link G, and adjustable eye M, as and for the purposes herein set forth.

No. 129,828.—WILLIAM H. MURREY, BROOKFIELD, WIS., assignor of one half of his right to SAMUEL M. GOSLING, same place.—*Cultivators*,—May 14, 1872.

Claim.—The combination of the rods M, draft-pole C, axle B, staple m, seat L, bolt p, and bent plate y, substantially as and for the purpose specified.

No. 127,674.—GEORGE BRADLER, ROCKFORD, ILL.—*Cultivators*,—June 11, 1872.—Antedated June 5, 1872.

Claim.—The plate having corrugated concave i, plate l' having the corrugated convex surface f', and bolt p', in combination with the plough standards E' and beams of frame F, constructed and arranged as described.

No. 127,935.—JAMES G. STOWE, BIRMINGHAM, ILL., assignor to "BIRMINGHAM MANUFACTURING COMPANY," same place.—*Cultivators*,—June 11, 1872.

Claim.—The combination, with the plough-beams A A, of the L-shaped slotted blocks C C' and bolt and screw v, all constructed and used substantially as set forth.

No. 128,409.—GILPIN MOORE, MOIRNS, ILL., assignor to DEERE & CO., same place.—*Cultivators*,—July 2, 1872.

Claim.—1.—The combined frame and axle tree B, composed of the two bows b b' and spindles b' b', when constructed in one piece, in the manner and for the purpose specified.

2.—The coupling or joint-piece composed of the parts K, L, M, and N, constructed substantially as described, and arranged to operate in combination, for the purpose specified.

No. 128,652.—HOWARD L. PIGG, KNOXPOSTER, MO., assignor to WILLIAM L. PIGG, (for the use of MARY F. PIGG) same place.—*Cultivators*,—July 2, 1872.

Claim.—1.—The combination of the yoke B connecting the plough beams, connecting rods or chains C C', cranked rock shafts D D', and supporting-hooks F F', substantially as and for the purpose specified.

2.—The combination of the yoke B connecting the plough-beams, connecting rods or chains C C', cranked rock-shafts D D', hooks F F', and adjustable arms G G', substantially as and for the purpose specified.

No. 128,701.—WILLIAM P. BROWN, MALTA, OHIO.—*Cultivators*.—July 9, 1872.

Claim.—Spring-arms and chains for sustaining the weight of shovel-beams, substantially as described.

No. 128,090.—WILLIAM W. MARSH and HARRISON M. INTYRE, SVA AMOKE, ILL.—*Cultivators*.—July 10, 1872.

Claim.—The adjustable foot rests *e*, when constructed and attached to the plough-beams, substantially as and for the purposes specified.

No. 129,420.—DAVID NOKMAN, CRAWFORDSVILLE, IND.—*Cultivators*.—July 16, 1872.

Claim.—The angular levers *a*, in combination with the adjustable balancing or equalizing bar K, connecting rods L, and the downward projecting arms C, provided with the forward and upward projections C', all constructed and arranged substantially as and for the purposes set forth.

No. 129,693.—ANDREW THOMPSON, OLLAWA, ILL.—*Cultivators*.—July 23, 1872.

Claim.—1.—The general combination of the following parts with each other, to wit: the tongue A, cross piece B, the frame casting C C', the cross-heads E E, the beams H, I, and the adjustable slides D D', substantially as and for purposes described.

No. 129,730.—WILLIAM H. GRIFFITH, LOCKHART, TEXAS, assignor to himself and STOKES MIN-CENTHOMMER, same place.—*Cultivators*.—July 27, 1872.

Claim.—The combination of the three adjustable uprights K M K, cross-bar L, adjustable lever X, and standards with each other and with the plough beams G, tongue C, and axle B, substantially as herein shown and described, and for the purpose set forth.

No. 129,759.—JAMES B. SKINNER, deceased, (CHARLOTTE E. SKINNER, administratrix,) ROCKFORD, ILL.—*Cultivators*.—July 23, 1872.

Claim.—1.—The beams F, pivoted or hinged at their forward ends to horizontal and adjustable bars or brackets E, forward and above the axle A, in the manner and for the purpose substantially as described.

2.—The combination of the frame or tongue C C', braces E E', E'', and F' with the horizontal and adjustable bar or bracket E, all constructed and arranged in the manner and for the purpose described.

3.—The combination of the horizontal bar or bracket E, having adjusting holes *e* therein, with the pivot plates *f*, pivot pin or bolt *f'*, and beam F, substantially in the manner described.

4.—The plough standards H, having the irregular form shown in Figs. 2, 5, and 6, with the ploughs H' attached thereto, and secured to the beam of a cultivator by means of the nut 1, eye 5, screw bolt 3, and screw nut 4, substantially in the manner and for the purpose described.

5.—The plough standard H, shaped as above described, and wedge 6, in combination with the faced nut 1, eye 5, screw bolt 3, and screw nut 4, substantially as described and shown.

6.—The flanged nose or corrugated plates 1 and 2, handles G, screw bolt 3, and nut 4, in combination with the beams F, in the manner substantially as described.

7.—The shafts J, draw bars *j*, and bent bar *j''*, in combination with the adjustable bent and slotted bar *k*, constructed and operating in the manner substantially as shown and described.

No. 130,337.—HENRY THIBDEN, DAVENPORT, IOWA.—*Cultivators*.—August 6, 1872.

Claim.—1.—In combination with the plough standards of straddle row cultivators, a harrow attachment for each

standard, composed of two or more adjustable toothed beams, D, substantially as described, for the purpose specified.

2.—The combination of the adjustable rod J with the cultivator and harrow, substantially as described, for the purpose specified.

3.—The harrows, consisting of the parallel beams D, two or more, and the adjustable cross bars E, substantially as described, for the purpose specified.

No. 130,393.—MICHAEL STOLL, CONES-FOGA TOWNSHIP, PA.—*Cultivators*.—August 13, 1872.

Claim.—The arrangement of the two-armed lever A B, brace and supporting guide bars D, and seat E, in combination with the centre beam C' with its flanged and perforated terminus F, and hinged connection with the axle G of the wheels H, all substantially constructed and operated in the manner and for the purpose specified.

No. 130,454.—LAFAVETTE K. TIPTON, EASTON, MO.—*Cultivators*.—August 13, 1872.

Claim.—1.—The arrangement of the axles B, braces M, beam H, and frame work C D E F G to adapt the machine to receive the ploughs and afford a free passage for the plants, substantially as herein shown and described.

2.—The combination of a screw shank, S, and set screw U with the plough T and screw socket formed in the lower end of the plough standard R, substantially as herein shown and described, and for the purpose set forth.

No. 130,700.—WILLIAM H. CUMMINGS, BOONESBOROUGH, IOWA.—*Cultivators*.—August 20, 1872.

Claim.—The combination of the circumferentially grooved metal block G, with its flange *b* placed loosely upon the axle, and the twisted wrought iron brace D, with the short axle *a* and frame A B C, all substantially as set forth.

No. 130,809.—WILLIAM R. ROBINSON, MATTOON, ILL.—*Cultivators*.—August 27, 1872.

Claim.—The combination of the pivoted step Q and adjustable brace R with the handles P and beam K, substantially as herein shown and described, and for the purpose set forth.

No. 131,404.—GEORGE HENRY LUND, MACFORD, WIS.—*Cultivators*.—September 17, 1872.

Claim.—1.—The drag bars A, each being independently pivoted at the forward end, and provided with perforations near the centre, so that said bars may be used in sections, having more or less bars in each section, by means of the pin or bolt B, substantially as and for the purpose specified.

2.—The combination of the beam A, standard E, brace F, and gauge D, the several parts being constructed as described, and arranged so that the gauge may be adjusted high or low, and to or from the shovel or plough, substantially as and for the purpose set forth.

3.—The bars A, chains and links M N, in combination with K, D, S, J, *e*, and lever L, all constructed and arranged substantially as and for the purpose herein described.

No. 131,720.—WILLIAM L. THOMPSON, ROCKVILLE, IND.—*Cultivators*.—September 24, 1872.

Claim.—The combination of the bars A A, the bar B provided with the clevises R R, the bar C, seat D, axle-tree E, keyed spindles F F provided with clevises H H, and the curved braces T T, when so constructed and arranged as to be adapted to receive the parts used for marking, cultivating, and breaking, in the manner herein shown and described.

No. 131,009.—ANDREW T. SHERWOOD, AMADOR, CAL.—*Cultivators*.—October 1, 1872.

Claim.—The loosely-hinged cultivators E E, in combination with the seat I, timber *h*, and springs *m*, so arranged that the driver's weight can be applied to force the cultivators into the ground, substantially as described.

No. 132,277.—HENRY H. GIBSON, QUINCY, ILL.—*Cultivators*.—October 15, 1872.

Claim.—1.—The blocks H and I provided with the shoulders *i* and set screw *d*, for the uses and purposes shown and specified.

2.—The combination of the levers O, blocks H and I, rods D and C, plough beams X, chains *f*, crank P, lever R,

and frames B, for the uses and purposes substantially as shown and described.

No. 132,527.—REUBEN ELWOOD and RICHARD L. PITCHER, SACRAMENTO, 111. *Cultivators*, October 29, 1872.

Claim.—1.—The combination of the movable bearings p with the bars B of the tongue or frame and the plough beams C, so that the ploughs may be moved back and the machine changed to a walking-cultivator, substantially as described.

2.—The pivoted frame n in combination with the beam C, bar g , brace z , arranged to move on the foot h of such frame, substantially as and for the purpose specified.

3.—The combination of the arm z , provided at its outer end with the arm l , arm x , friction nut or clutch m , and beams C, substantially as specified.

4.—The combination of the bar z with the arms l , k , j , and beams C, substantially as specified.

5.—The combination of the arms k , j , and x , rod z , arm l , and beam C, for making the machine rigid, substantially as described.

6.—The combination and arrangement of the standard h with the arm z , opening d , and friction nut e , substantially as and for the purposes described.

No. 132,845.—SAMUEL MARTIN, KNOXVILLE, MO., *Combined Reelers and Cultivators*,—*November 5*, 1872.

Claim.—1.—The combination in one machine of a harvester, stalk chopper, cutters, pulverizer, and seed drills, substantially as and for the purpose herein specified.

2.—The axle A and wheels B in combination with the short shafts B' B' and pulverizers A', as and for the purpose set forth.

3.—The bent guide G', chopper E', and shaft F', arranged and operating substantially as and for the purpose herein described.

4.—A series of revolving cutters, C', arranged between the chopper E' and pulverizers A', and supported from a rigid frame directly beneath the axle A, as and for the purpose herein specified.

5.—The lever Q', in combination with the friction roller h , wheels R', and B, slotted washer P', and chain S', constructed and arranged as and for the purpose set forth.

6.—The combination of the chopper E', cutters C', and pulverizers A', and drills B' when arranged substantially as herein described, and for the purpose set forth.

7.—The chopper E', cutters C', pulverizers A', in combination with the drills B', and seeding mechanism, substantially as and for the purpose set forth.

8.—The side bars C', extending outside of the wheels B B and supported by the extension of the axle A, and combined with the tongue E and transverse bars D D, substantially as and for the purpose specified.

9.—The arrangement and construction of the frame, wheels, and axle, as herein described, to receive the different devices for operation in breaking the ground, planting, and harvesting, substantially as herein described.

No. 133,097.—JAMES G. STOWE, BIRMINGHAM, 111., assignor to KERSEY H. FELL, same place,—*Cultivators*,—*November 12*, 1872. Antedated *November 11*, 1872.

Claim.—1.—The combination of the cup I, having flanges h and circumferential bend e , with the jaws J J having ears f and a groove on the inner circumference corresponding with the bend on the cup, substantially as and for the purpose herein set forth.

2.—The combination of the shovel, carrying-block z , tube h , cross-slot e , bolt k with bead inside the tube, with the tubular beam L, (or tubular piece m) with open end slot y , all secured together by the nut on the exterior, substantially as set forth.

No. 134,248.—ROBERT C. BUCKLEY, FLORENCE, 111.—*Cultivators*,—*December 23*, 1872.

Claim.—1.—The frame B and journals h and e , in combination with the free axle E, hood h , both z , plates a and g , and beam F, substantially as and for the purposes herein set forth.

2.—The beam H, constructed in one piece and provided with a shovel z , and branching arms, each of which being provided with a hook for the purpose of being connected

with the axle E E, substantially as and for the purposes herein set forth.

No. 134,915.—JAMES SHERRILL, HARRISBURG, OREGON,—*Cultivators*,—*January 7*, 1873.

Claim.—1.—The forked or clutch rod V, cross-head lever B', spring-rod C', arm H', and catch L', in combination with the seed box I, gear wheel W, sliding plate G', and roller M, substantially as herein shown and described, and for the purposes set forth.

2.—The shaft-frame F, pivoted from stationary frame and axle, and having the plough-beams pivoted thereto, as and for the purpose described.

No. 134,992.—WILLIAM G. HALBURT, COLUMBUS, MISS.—*Cultivators*,—*January 7*, 1873.

Claim.—1.—In combination with the frame A B C, the sliding device C' moving in the slots r , and the curved tongue F, all constructed and arranged substantially as and for the purpose set forth.

2.—The wedges f f , in combination with the cultivator-stocks G G and screw-bolts g g , substantially as and for the purpose set forth.

No. 134,949.—GEORGE WAGGONER, NEW KINGSTON, VA.—*Cultivators*,—*January 14*, 1873.

Claim.—The combination of the tongue H, axle A, frame B E, bar J, shoulder M, and slotted plate L, all arranged as and for the purpose specified.

No. 135,294.—AMOS B. COLEMAN and JOHN PRIEST, ALFANY, OREGON.—*Cultivators*,—*January 28*, 1873.

Claim.—1.—The combination, with the cultivator, the truck, and the caster, of the housings, the lever D L, standards F K N, the connecting link O, the pins P, and the adjustable collar Q, substantially as specified.

2.—The combination of the hooks R, rods T, and lever S with the truck and cultivator, substantially as specified.

No. 135,012.—JACOB B. HINCKLEY, NANCY, OHIO, OHIO COUNTY, ILL.—*Cultivators*,—*February 18*, 1873.

Claim.—1.—The beam D, ploughs a and E, with straps h and braces z , beams F, straps z , pivots z , and links z , sliding bars z , bar K, and wheel L, for the purposes specified.

2.—Lever G, standard H, lever m , fulcrum h h , pin O, slot or groove P, and chain e , and notches z , in combination with the frame of a wagon or cart, for the purposes specified.

No. 135,064.—JACOB BEHEL, ROCKFORD, assignor to himself and GEORGE R. RICHARDSON, EARLVILLE, 111.—*Cultivators*,—*February 18*, 1873.

Claim.—1.—The combination of the axle-tree B, the converging tongue timbers C, the cross brace D, the bracing pendants E, and the brace rods d , all these members being constructed and operating as set forth.

2.—The combination of the perforated tongue, the elongated slot in the thimble e , the forked turning shank h , the transverse locking pins I, and the neck yoke H pivoted on one side of the axis of the shank, all these members being constructed and operating as set forth, to raise or lower the neck yoke and tongue.

3.—The combination of the pendants E, the sockets inclined downward and forward, the eye bolts z turning in the sockets, the drag bar, and the plough-standards, all these members being constructed and operating as set forth, to cause the shovels to traverse a greater arc than the drag bars as set forth.

4.—The combination of the drag bar J, the long shovel standard M swiveled thereto, the radius yoke P swiveled to the standard, the radius link P', and the detent lever O and rack N, all these members being constructed and operating substantially as set forth.

5.—The combination of the long standards M, their swivel yokes R, and radius links P' with the rod Q, all these members being constructed and operating substantially as set forth, to maintain the proper relation between the standards, while allowing them free adjustment in all directions.

6.—The combination of the long standards M, the drag bars I, the rigidly connected shields T, the draught chain Z, the link rods z , and the pivoted arms B' connecting the shield and drag bars, all these members being constructed and operating substantially as set forth.

7.—The combination of the socketed rings *l* on the standards with the rigid draw rods *p* inserted therein and secured by frangible pins, these members being constructed and operating as set forth, to prevent bending or yielding of the draught connections by back pressure on the standard.

No. 135,997.—JAMES MILLS, JOHNSTOWN, WIS.—*Cultivators*.—*February* 18, 1873.

Claim.—The combination of the upright levers *G G*, the lower ends working in slotted plates attached to the shovel bars *E E*, with fulcrum at the axle, and adjustable cross-bar *L*, at the top to spread and contract the shovel bars, substantially as described.

No. 136,047.—DAVID EDWARDS, MELBOURNE, VICTORIA.—*Cultivators*.—*February* 18, 1873.

Claim.—*1*.—The spindle *H*, passing down through the longitudinal slot *E* in the axle *C* and pivoted therein, and having its free end guided in the semi-circular slotted bar *F*, as and for the purpose set forth.

2.—The inclined links *K K*, flap *N*, and link *L*, in combination with the spindle *H*, slotted axle *C*, and semi-circular slotted bar *F*, all constructed and arranged as herein shown.

No. 136,108.—JOHN W. SWICKARD, GAYVA, ILL., assignor of one-half his right to JOHN HOUGH, same place.—*Cultivators*.—*February* 18, 1873.

Claim.—*1*.—The combination of plates *K*, bars *h h*, and beams *E E* with the pivoted handles *N*, substantially as and for the purpose specified.

2.—The handles *N N* and yokes *M M*, when combined and arranged to operate with the journals *h h*, plates *K K*, bars *h h*, and *E E* beams *E*, substantially as described, and for the purpose specified.

3.—The guards *P P*, when combined and arranged to operate with the vertical parts *a' a'* of the axle *A*, substantially as described, and for the purpose specified.

No. 136,207.—SINGI ELON E. YOUNG, SCOTSDALE, ILL.—*Cultivators*.—*February* 25, 1873.

Claim.—*1*.—The combination of the lever *E* having pinion *D* on the lower end, and the axle arms *B B* having racks on their inner ends, arranged on the axletrees *A* of a wheel-cultivator, as and for the purpose described.

2.—The device *B B D E*, combined with the guide *F* pivoted from the middle of the axletree, as and for the purpose set forth.

3.—The draught bars *H* and adjustable braces *I* combined with and pivoted to beam *A*, as and for the purpose specified.

No. 136,499.—BALDIS F. BRATE, NEW SCOTLAND, N. Y.—*Cultivators*.—*March* 4, 1873.

Claim.—*1*.—The pickers *m m*, arranged to revolve between the wings *H H*, substantially as and for the purpose set forth.

2.—The combination of the wheels *C C*, pole *B*, frame *A* with the suspended beams *F F* carrying the double mould-boards *G G* and heaping wings *H H*, when all are constructed and arranged substantially as and for the purpose set forth.

No. 136,477.—WILLIAM WILLERTON, JACKSONVILLE, FLA.—*Cultivators*.—*March* 4, 1873.

Claim.—The combination of rick bar *U*, branched chain *P S*, pulley *T*, laterally sliding pullers *Q Q*, and keeper *V*, all arranged as and for the purpose described.

No. 136,708.—WILLIAM P. DALE, AGRICULTURAL CULTIVATOR, PA.—*Cultivators*.—*March* 11, 1873.

Claim.—*1*.—In a cultivator, the castor wheels *B*, brackets *B'*, friction rollers *a* and fifth wheel *B'*, substantially as specified.

2.—The draw hinges *J*, as described, connecting the laterally and vertically adjustable shovel beams *I* to the transverse bars *F*, substantially as specified.

3.—The perforated flanged cross piece *F'*, in combination with the perforated longitudinally-adjustable beam braces *K* and adjustable shovel beams *I*, substantially as and for the purpose set forth.

4.—The bar *d*, arms *d' c'*, bar *c'*, lever *H*, and rack *H'*,

in combination with the frame *D* and handles *B*, substantially as specified.

No. 137,034.—ORLANDO M. POND, INDEPENDENCE, IOWA.—*Cultivators*.—*March* 25, 1873.

Claim.—*1*.—The forked hook *a* with projecting circular prong *b* to form an adjustable connection between the tongue *D* and shovel beams *E*, substantially as herein set forth.

2.—The combination of the flanged plate *H*, concave ratchet piece *I*, eyebolt *h*, and shaft *i*, with ratchet pinions *k k*, to which the clamps for holding the shovel arm are attached, substantially as and for the purposes herein set forth.

No. 137,478.—HAZEN H. PERKINS, OSCEOLA, ILL.—*Cultivators*.—*April* 1, 1873. Filed *October* 1, 1872.

Claim.—*1*.—The beams *E E*, carrying the shovels or ploughs, and adjustable by means of the slotted plates *b b*, provided with ratchets *d d*, and attached to the axle, in combination with retractile levers *F F*, arms *e f*, and brace rods *10' 10'*, substantially as set forth.

2.—The adjustable shoes *S'*, provided with screw cranks or their equivalents, in combination with the shovels *L*, having a casting, *o'*, on the back provided with a cross slot to receive the pin of the shoe, substantially as and for the purpose set forth.

3.—The clevis *a a*, having a pivotal connection with cross bar *M* attached to the beams *E E* by braces *2' 2'*, in combination with the adjustable bar *z* and cross-bar *p*, substantially as and for the purpose set forth.

No. 137,703.—JAMES R. McDONALD, NEVADA, IOWA.—*Cultivators*.—*April* 8, 1873. Filed *September* 14, 1872.

Claim.—In a cultivator, the combination, with the adjustable pole, the plough beams, and the pivoted brace rod, of the adjustable axle bent upward at *c* to connect with the pole, and relatively downward and outward at *h* to receive the wheels, substantially as specified.

No. 137,933.—JOHN M. KNOX, KENNESHAVER, IND., assignor to himself and IRA C. KELLY, same place.—*Cultivators*.—*April* 15, 1873. Filed *August* 6, 1872.

Claim.—*1*.—The combination, with the beam *G* and standard *C*, of the saddles *a' p*, hook *a*, stirrup *a'*, and links *a''*, as described, for the purpose set forth.

2.—The combination of the pivoted beam *G* with the post *I*, having the spring catch, and the end bar *J*, as shown and described, for the purpose set forth.

No. 138,351.—CHRIST THEDE, ALBEO, ILL.—*Cultivators*.—*April* 29, 1873. Filed *August* 31, 1872.

Claim.—The combination of the laterally adjustable axle sections *C* and the threaded cross piece *B* with the slotted pole braces *E*, shaft pole *A*, and plough frames *G* carrying the ploughs *P P*, as shown and described.

No. 139,471.—JOHN P. MANNY, ROCKFORD, ILL.—*Cultivators*.—*June* 3, 1873. Filed *March* 21, 1872.

Claim.—*1*.—The combination, in a cultivator, of the bifurcated tongue frame, the vertically-adjustable draw bars *E*, pivoted to the horizontally swinging pivoted brackets *E'*, and the hinged connecting rod *e*, all these members being constructed and operating substantially as set forth.

2.—The combination of the swing frame *G G*, drag bars *H*, suspension rods *K*, and radius bars *J*, substantially as set forth.

3.—The combination of the swing frame *G G*, shields *M*, suspension rods *K*, radius bars *J*, and drag bars *H*, substantially as set forth.

4.—The combination of the swing frame *G G*, radius bars *J*, drag bars *H*, suspension rod *K*, and locking treadle *L*, substantially as set forth.

5.—The combination of the drag bar *H*, cap *j*, radius bar *J*, thimble *j'*, and bolt *j''*, substantially as set forth.

6.—The combination of the drag bar *H*, the friction socket *h'*, the conical hollow plug *h''*, the eye bolt *h'''*, and the standard *i*, all these parts being constructed and operating as set forth.

7.—The combination of the drag bar *H*, the crank shaped standard *i*, the socket *i'*, and the shovel *I*, these parts being constructed as set forth.

No. 139,478.—GEORGE R. RICHARDSON, EARL-

VILLE, and JACOB BEHFL, ROCKFORD, ILL.—*Cultivators*.—June 3, 1873. Filed November 9, 1869.

Claim.—1.—The combination of the rocking bail D, pivoted on the tongue timbers C, the inner shovel-standards E swiveled on the rocking bail, outer shovel-standards E', each pivoted to its respective inner standard at top, and connected with it by a link, *b*, near the bottom, and draught rods *c* connecting each standard with the tongue timbers, these members being constructed and operating substantially as set forth.

2.—The combination of shovel standards E, swiveled on a rocking bail, D, with hand levers G pivoted to the stand-ards and suspended from the main frame by a swivel link, H, these members being constructed and operating substantially as set forth.

No. 130,085.—PHILIP F. WELLS, MILFORD, MICH., assignor to himself and D. WEBSTER WELLS, same place.—*Cultivators*.—June 17, 1873. Filed April 12, 1873.

Claim.—1.—A plough standard, G, pivoted to the upper end to bar C, and held rigidly in a vertical plane between the bifurcations of a stud, J, on the cross bar, as and for the purpose described.

2.—The front plate F upwardly flanged and constructed to receive and retain the tongue and longitudinal bars, in the manner shown and described.

No. 140,353.—REUBEN ELLWOOD and RICHARD L. PITCHER, SYCAMORE, ILL.—*Cultivators*.—July 1, 1873. Filed December 7, 1872.

Claim.—1.—The combination and arrangement of the beams G, rods N, and brackets M with the arms *a*, provided with the slot or holes *c* and rod *d*, substantially as and for the purposes specified.

2.—The combination and arrangement of the beams G, rods N, brackets M, with the arms *a*, rod *d*, and locking device *e*, *f*, substantially as described.

3.—The swing-bar K, in combination with a beam, G, and chains L, substantially as specified.

4.—The combination of the rack with the bracket *h* by spring *i* and pin *j* of the lever, constructed and operating substantially as described.

5.—The foot-rest L, when provided with projections above and below the plough-beam, in combination with the clamp *n*, so that it can be both vertically and laterally adjusted, substantially as described.

No. 140,437.—MATTHEW P. SIMPSON, PANA, and JOSEPH P. ELLACOTT, SHELVILLE, assignors to THE SHELVILLE MANUFACTURING COMPANY, SHELVILLE, ILL.—*Cultivators*.—July 1, 1873. Filed May 10, 1873.

Claim.—1.—The combination of the draw-heads *f*, grooves or recesses *f'*, bars or rods *f''*, and connecting pieces *f'''*, substantially as shown and described.

2.—In combination, the draw-head *f*, grooves or recesses *f'*, bars or rods *f''*, connecting piece *f'''*, plates *g*¹, and convex surfaces *g*², substantially as specified.

Claim.—1.—The springs *m m m m*, in combination with the swinging frames D D and pendul arms *a*, for the use and purposes described.

2.—The double cross head H, in combination with the inner rails of the swinging frames D D, for the uses and purposes described.

3.—The anchor-shaped pendul hooks *i*, in combination with the staples *j*, when used in a lateral moving cultivator, substantially as described.

4.—The metallic shanks *l* of the drag bars, passing through the eyes of the pendul arms *o*, in combination with adjusting-nuts and spiral springs, substantially as described.

No. 141,786.—JONATHAN M. GUSTIN, WILMINGTON, OHIO.—*Cultivators*.—August 12, 1873. Filed January 28, 1873.

Claim.—1.—The yielding beam-supporters, consisting of the bent plates M, swiveled to the beam E, and holding the adjustable screw-rods N and springs O, substantially as and for the purpose specified.

2.—The yielding beam-supporter, consisting of the bent plate M', hinged to a swiveled horizontal shank, and holding the adjustable screw-rod N and spring O, substantially as and for the purpose specified.

3.—The adjustable arched or bent brace H, constructed and arranged as shown and described, in combination with axle A, axle-arms C, and clutch-plates B B', substantially as and for the purpose specified.

4.—The adjustable and removable seat G G', loop G², and rack G³ combined, substantially as and for the purpose set forth.

5.—The axle A and axle-arms C, in combination with the clutch-plates B B', bolts *b*, and the combined walking and riding cultivator herein described.

No. 141,988.—NOAH G. BLAUSER, ETNA, OHIO.—*Corn-Cultivators*.—August 19, 1873. Filed May 14, 1873.

Claim.—The combination of the beams L, plates *h h*, ball *e*, braces *f f*, strap *k*, and rod *m*, for making a joint and adjustable connection for the front end of the beams, as is herein set forth.

No. 143,338.—JOHN H. FRANK, MILHEIM, PA.—*Cultivators*.—September 30, 1873. Filed August 9, 1873.

Claim.—1.—The combination of the frame-bars J J', the single and double pivoted joints, and the screw-bolts *p'* for rendering the drag-bars laterally rigid, thereby adapting the machine to be used as a field-cultivator, as described.

2.—The combination of the frame bars J J', the double and single pivoted joints, screw bolts *p'*, drag-bars H H', and shovel-standards G, as and for the purpose described.

No. 143,339.—JAMES F. MATCHET and PERRY W. SMITH, PARIS, MO.—*Wheel-Cultivators*.—October 14, 1873. Filed June 7, 1873.

Claim.—The double bow C C, tongue D, cross-bar E, and arms F, all pivoted together and moving freely upon each

Insert into claim 1, patent No. 145,331, G. BRADY, D. December 9, 1873, (page 227), the following omitted claim:

2.—The racks H H, hand levers G G, and loops *g g*, in combination with the uprights I, and slots *i* connecting bar P, arranged and operating substantially as described.

Claim.—In combination with the bent axle B and frame E, the forked slide G, screw-bolt D, lever and nut F, adjustable standards and shovels G K, and subsoilers L, as and for the purpose described.

No. 145,636.—DAVID B. EBERLY, PINE VILLAGE, IND.—*Cultivators*.—December 16, 1873. Filed May 31, 1873.

Claim.—1.—The expandible axle-tree B, consisting of the slotted links *b*, substantially as specified.

2.—The combination, with a drag-beam, D, of the shovel-plough and the adjustable weed cutting knife-blade attach-

ment standards *h h* and arched bars *j*, secured to and rising above the drag bars *e*, as specified.

No. 141,462.—RICHARD B. ROBINS, ADRIAN, MICH.—*Cultivators*.—August 5, 1873. Filed December 20, 1872.

Claim.—The anchor-shaped pendul hooks *i*, in combination with the staples *j*, when used in a lateral moving cultivator, substantially as described.

No. 5,076.—RICHARD E. ROBINS, ADRIAN, MICH.—*Cultivators*.—141,462.—August 5, 1873.—Reissued December 2, 1873. Filed October 13, 1873.

ed to the sides of said drag-beam, and extending rearwardly of the share, as shown, and for the purpose mentioned.

3.—In a cultivator, the detachable middle slotted link *b*, in combination with the arch *J*, substantially as specified.

4.—The fulcrum *p*, with its connection-pin *Z*, in combination with the slotted extension-axle *B*, substantially as specified.

No. 146,030.—WILLIAM H. STRONG, CLINTON TOWNSHIP, SENECA COUNTY, OHIO.—*Wheel-Cultivators*.—*December 30, 1873. Filed May 19, 1873.*

Claim.—In a wheel-cultivator, the lugs *A*, cranked levers *D E*, bar *F*, chain *G*, and hooks *I*, arranged and attached in the manner described, and for the purpose herebefore set forth.

No. 146,576.—ISAAC CORY, DALTON, IND.—*Cultivators*.—*January 20, 1874. Filed September 27, 1873.*

Claim.—1.—The combination, with seat-bar *D* and stirrups *G*, of the clamps *F F*, to hold both seat and foot-rest adjustably to the frame, in the manner described.

2.—The front lat *K*, bowed in the center, and the middle bar *H*, bowed on each side, combined with the side bars *C G*, to allow the ploughs to be pivoted in front, the handles to rise up, and the implements to be moved laterally or vertically, in the manner described.

No. 146,938.—JAMES P. BATTEN, UNION PRECINCT, assignor of one-half his right to THOMAS M. TURNER, FREMONT, NEBR.—*January 20, 1874. Filed November 25, 1873.*

Claim.—1.—The equalizer or curved yoke *D*, chain *d*, and pulley *e*, in combination with rods *g* and hinges *f*, as and for the purposes set forth.

2.—In combination with the hinged plough-beam and standard, the curved bar *k*, acute angled scraper *F*, and shovel *G*, constructed and operating as shown and described.

No. 146,822.—MATTHEW GREEN, WALKER STATION, MO.—*Combined Cultivators, Stalk Cutters, Harrows, and Corn Planters*.—*January 27, 1874. Filed September 6, 1873.*

Claim.—In a wheeled implement, the supporting frame *a b d*, the beams and guide rods *l m*, the arched axle *C C'*, combined and adapted, as set forth, for the attachment of a cultivator, stalk cutter, harrow, or corn planter.

No. 147,245.—LYMAN W. DICKERSON, MANICUS, N. Y.—*Quick Diggers and Cultivators*.—*February 10, 1874. Filed September 20, 1873.*

Claim.—The segments *F* and *G*, with teeth *l l*, in combination with the frame *A*, ratchets *M M'*, and ropes *s s*, substantially as and for the purpose herebefore set forth.

No. 147,609.—JAMES B. LUCAS, BELLSVILLE, ILL.—*Cultivators and Ploughs*.—*February 17, 1874. Filed July 19, 1873.*

Claim.—The combination of the braces *X*, couplings *X*, brace *Y*, and couplings *Z X'* with the tongue *C*, hounds *D*, bent axle *B*, and braces *F*, substantially as herein shown and described, and for the purpose set forth.

No. 148,261.—BYRON D. TABOR, WILSON, N. Y., assignor to himself and C. D. TABOR, same place.—*Cultivators*.—*March 3, 1874. Filed January 29, 1874.*

Claim.—1.—In a cultivator, the arm *G*, with its short axle *D*, spindle *b*, journals *d*, and stops *e*, in combination with pronged lever *H*, forming half-boxes *f f*, substantially as and for the purpose set forth.

2.—The combination in a cultivator, of the pronged lever *H*, having half-boxes *f f*, and lug *i*, with stops *e*, rack-bar *I*, and spring *a*, substantially as and for the purpose described.

No. 148,781.—JEREMIAH H. TROUT, KINGWOOD, assignor to himself and ISAAC S. CRAMER, SERGEANTSVILLE, N. J.—*Corn-Plow*.—*March 17, 1873. Filed November 15, 1873.*

Claim.—The combination of a shovel standard in two parts, *K L*, and jointed to allow an outward lateral movement to the lower part, with a spring on the outside and a lever on the inside, to enable the plow to be operated in the manner described.

No. 148,830.—WILLIAM D. MILLER, SPRINGFIELD, OHIO.—*Cultivators*.—*March 24, 1874. Filed October 20, 1873.*

Claim.—1.—In combination with the bar *A*, the bar *B*, braces *F F*, and tongue *D*, to form a trussed wheel, framed as set forth.

2.—In a straddle-row cultivator, the plow beams *I I*, constructed and combined with the wheel-frame *A B*, and clevises *H H*, receiving their draft independent of each other and of said wheel-frame, as set forth.

3.—In combination with the slotted bar *B* and the plow-beam *I*, the adjusting-clevis *H*, for the purpose substantially as set forth.

4.—In combination with the plow-beams *I I*, the adjusting-arch *M M*, with the spreader *N*, substantially as set forth.

5.—In combination with the arch *M*, the lever *P*, and saddle *R*, for the purpose set forth.

No. 149,130.—EPHRAIM IVES, PLEASANT HILL, IND.—*Sulky Cultivators*.—*March 31, 1874. Filed January 17, 1874.*

Claim.—1.—The combination, with the pivoted bars *D*, of the centrally-arranged lever *J* and connecting-chains *I*, for causing the ploughs *F G* to approach each other, and the bent or crank foot-levers *L* and chains *K*, for causing the ploughs to incline outward, and thus widen the space between them, as shown and described.

2.—The combination of the slotted bars *P*, the bolts *Q*, and the notched lock-bars *R* with the bent axle *N* and the outer U-shaped hangers *E*, substantially as herein shown and described.

No. 149,145.—JOHN W. RABB, LA GRANGE, TEX.—*Frame for Cultivators, Scrapers, &c.*—*March 31, 1874. Filed June 21, 1873.*

Claim.—The beam *C* having button *H*, bearings *B'*, and staples *C'*, the hound-frame *D* having spring *S*, and the crank-axle *B* having stop-pin *E*, all combined as described, and adapted to be used in connection with various farm implements, substantially as specified.

149,938.—SAMUEL LUNEY, DENISON, IOWA, assignor of two thirds his right to WILLIAM LUNEY and JAMES LUNEY, same place.—*Cultivators*.—*April 21, 1874. Filed March 26, 1873.*

Claim.—1.—In combination with the main frame, having the beams *G* attached thereto, the slotted hand-levers *L*, mounted on the pivots *J*, and provided with the eyebolts *x* and the transverse pins *e*, which limit the descent of the beams, but allow them to rise freely and to keep a horizontal position as set forth.

2.—In combination with the hinged beams *G*, cross-bar *h*, and elevated seat *O*, the treasles *M*, mounted upon the main axle, and connected directly to the beams by the chains *k*, as shown.

150,426.—GILMAN MEEKS, KANEVILLE, ILL.—*Cultivators*.—*May 5, 1874. Filed September 25, 1872.*

Claim.—The movable guiding-tongue *B*, arranged relatively to the split tongue *A*, and the means *D* for application of the draft, as shown in combination with the cultivator beam *C*, flexibly attached to the loose end of the movable guiding-tongue *B*, and acting in connection therewith and the standard *F*, chain *H*, pulley *G*, and lever *E*, as specified.

No. 150,616.—EDMUND D. REYNOLDS and OLIVER B. REYNOLDS, NORTH BRIDGEWATER, MASS.—*Wheel-Cultivators*.—*May 5, 1874. Filed February 14, 1874.*

Claim.—1.—In combination with the pole and axle, made relatively immovable, the plough-frame pivoted on the pole forward of the axle, and having capability of lateral swing movement, and also to be adapted to be locked forward of the axle, in a fixed position laterally with reference to the pole, by means of a locking pin or bolt, substantially as shown and described.

2.—In combination with the plough-frame made to swing vertically with reference to the pole and axle, the links *g* and lever *p*, substantially as described, for connecting the top of the plough frame to the pole and raising said frame, and for locking the frame (vertically) with reference to the pole and axle.

3.—The shovel plough or plough blade *C*, formed, as described, from a flat sheet, of the form shown at *B*.

No. 151,530.—AMOS BARKER, NEBRASKA CITY,

NEBRASKA.—*Cultivators and Markers*—June 2, 1874. Filed March 14, 1874.

Claim.—1.—The arched bar B with horizontal ends, in combination with coupling blocks F and bent axles I, adapted for the attachment of wheels H or K, as shown and described, for the purpose specified.

2.—The combination of the lever blocks J and hook blocks K with the bent axles I, wheels H, and plough beams C, substantially as herein shown and described.

No. 151,780.—JOHN MCGEE, DAVID W. MCGEE, and WILLIAM J. MCGEE, FAIRLEY, IOWA.—*Cultivators*—June 9, 1874. Filed October 25, 1873.

Claim.—In a cultivator, the combination, with hanging frames or staples F, of vertically-hinged drag-bars C D, braces G, and laterally-hinged guide plates I, as and for the purpose set forth.

No. 151,839.—HUGH CARGO, BOWLING GREEN, OHIO.—*Cultivators*—June 9, 1874. Filed February 24, 1874.

Claim.—1.—The combination, with the frames A A' and shovel-beams C C, of the frames E E, pivoted to the plates A', the arcs f, bell-cranks F, and rail G, for raising the said shovel-beams, substantially as described and shown.

2.—The herein-described adjustable cultivator, wherein the frame A A', wheel B, beams C C, clevises D D, frame plates F E, bell-cranks F F, and bail G, are constructed and combined substantially as shown and set forth.

No. 152,343.—LEVI JUDSON DAVIS, ELLSWORTH, OHIO.—*Cultivators*—June 23, 1874. Filed December 3, 1873.

Claim.—1.—In a wheel-cultivator, the combination of the hinged axle A and shovel-standards rigidly attached thereto with the arm H and evener E, connected by the draft-rod G, and the tongue B, substantially as shown and described.

No. 153,621.—N. J. SKAUGGS and L. W. TRU E, TALLADEGA, ALA.—*Combined Sully-Ploughs and Cultivators*—July 28, 1874. Filed May 29, 1874.

Claim.—1.—The combination, with axle-frames A, of frames G, hinged at one end thereto, and extending, as well as receiving, ploughs on both sides of the axle, as shown and described.

2.—The combination, with plough-frames G, hinged within axle-frame A, of draft-chains attached to a staple on and under the said plough-frames, as and for the purpose specified.

No. 153,751.—WM. M. COSTON, QUITMAN, MO.—*Sully-Cultivators*—August 4, 1874. Filed March 28, 1874.

Claim.—The carriage or frame of a sulky-cultivator, composed of the perforated side beams C C, adjustable wheels A A, front connecting bars D D, and rear metallic plates or bars R, bent at their ends around the side beams of the frame, and having rearwardly-projecting central arm S for the adjustable attachment of the driver's seat, all the parts being constructed and relatively arranged as herein shown and described.

No. 154,001.—ABNER S. BAKER and WM. H. LAN DON, KALAMAZOO, MICH.—*Gang-Cultivators*—August 11, 1874. Filed May 5, 1874.

Claim.—The combination, with the wheel I and slide J, of the slotted lever K, wheel or roller P, headed pin S, slotted and notched plate M, and standard L, all substantially as and for the purposes herein set forth.

No. 154,081.—JOHN L. POLLARD, SCOTT'S HILL, TENN.—*Cultivators*—August 11, 1874. Filed February 28, 1874.

Claim.—The plough-beams G G', pivoted at i to the rear portion of the draught pole D, and connected together at their front ends by a bolt, h, the guides g g', the rod H, and hand lever L, all constructed, arranged, and operating as described.

No. 154,404.—JOHN LUX, HOEKSTON, IOWA.—*Cultivators*—August 25, 1874. Filed March 21, 1874.

Claim.—In a wheel cultivator, the laterally and longitudinally-slotted verticle pendants H, in combination with the sliding sheaves and pulleys i, substantially as set forth.

No. 154,472.—V. K. GEORGE, GENESSE, ILL.—*Evensers for Cultivators*—August 25, 1874. Filed July 7, 1874.

Claim.—In combination with the double-trees D E, ar-

ranged on each side of the axle and connected by rods d d, the depending bars a a, braces b b, and single-trees G G, all operating together as and for the purposes set forth.

No. 154,580.—WILLIAM P. DALE, AGRICULTURAL COLLEGE, PA.—*Cultivators*—September 1, 1874. Filed February 21, 1874.

Claim.—1.—In a cultivator, the beams D D pivoted at their front ends to rods a', which pass through slots a' in arms C, in combination with laterally vibrating arms F, and staples f, which suspend the rear ends of said beams, substantially as described.

2.—The beams D, hung so as to be movable longitudinally, as described, and having single-trees connected to their front ends, in combination with the chains k n, arranged as described.

3.—The guards I I, staples f f, and plough beams D D, arranged to be movable, as described, in combination with the laterally and vertically vibrating arms F, connected by slots to said staples f f, substantially as set forth.

4.—The laterally and vertically vibrating arms F, with studs h, suspending the rear ends of plough-beams D, in combination with the pivoted treads g, and the perforated connecting rod H, substantially as shown and described.

No. 154,666.—MARQUIS L. GORHAM, ROCKFORD, ILL.—*Cultivators*—September 11, 1874. Filed May 17, 1872.

Claim.—1.—The combination of the hangers E, recessed disks F, disks a, and their necessary holes and studs, with the drag-bars I, to allow of a vertical motion to the drag bars, as described.

2.—The suspension rods d, regulating springs g, and drag-bars I, in combination with hangers E, to which they are attached, substantially as described.

3.—The bent sway-bar N, having right angled piece p, in combination with pin r and axle B, as and for the purpose described.

4.—The shields x, beams S and R, in combination with the drag-bars I, as and for the purpose described.

5.—The clamp-block K, having vertical and lateral sockets, with shovels f attached thereto, and eye screw-bolt u, in combination with the standards H, constructed and operating as described.

No. 154,835.—A. F. CARLSON, C. SHIPPS and W. CAMRON, AFTON, IND.—*Wheel Ploughs and Cultivators*—September 8, 1874. Filed March 23, 1874.

Claim.—1.—The bent and twisted bars D' attached to the double tree D, which has its ends bent downward, forming a convenient attachment, to which to couple the cultivator-ploughs G and the eveners H, substantially as herein set forth.

2.—The combination of the bent double-tree D, bent and twisted arms D', hook-couplings h, pins or bolts b', and the cultivator-ploughs G, substantially as and for the purposes herein set forth.

3.—The combination of the cultivator-plough G, bail e, rod or bar e', lever I, and the axle B, provided with a groove on its under and rear-side, all substantially as and for the purposes herein set forth.

4.—The combination of the circumferentially-grooved axle B, stirrup J, with hooks formed at its ends, the set-screws f f, adapted to carry bars j' j', pins f' f', and breaking-plow K, all substantially as and for the purposes herein set forth.

No. 154,915.—SYLVESTER RUFFNER, CARTHAGE, OHIO.—*Cultivators*—September 8, 1874. Filed June 29, 1874.

Claim.—1.—The combination of the pivoted tongue H, trigger K, and pivoted handle P, constructed and operating as and for the purpose set forth.

2.—The combination of the pendants F F', whiffletrees G, and flexible stays T T with the swinging tongue H and beam C, as shown and described.

3.—In combination with the beam C c of a cultivator and the pivoted tongue H, the draw-bolt J, trigger K, perforated bar L / N, circle plate M O O', and stops v o', as and for the objects stated.

No. 155,159.—EMANUEL M. KISSELL and MARTIN L. KISSELL, SPRINGFIELD, OHIO.—*Wheel*

Cultivators.—September 22, 1874. Filed January 12, 1874.

Claim.—1.—A square draft post, forked to receive the cross-beam in a cultivator, and secured to the latter in such manner as to allow of a vertical as well as lateral adjustment of the same by the clamping devices described, consisting of links *m m* above and below the cross-beam *B*, edge plates *n n*, provided with square grooves or guides *n'* for the reception and securing of the post in a perpendicular position, and as guides for the vertical adjustment of the same, block *u*, and set-screw *d* for fastening it at any point, all arranged in the manner described, as and for the purpose set forth.

2.—A plough standard having a lateral brace extending across the inner angle of the same, and secured to the beam-plate by the same bolt which pivots the standard to the beam-plate and beam, in the manner described.

3.—The flanged rhomboidal beam plates *O*, provided with ratchet parts *r* and gams *s'*, in combination with beam *C*, brace *b'*, and standard *s*, as shown and described, as and for the purpose set forth.

4.—Plate *D* and parts *s'* *s''* *s'''* *e e'*, in combination with beam *C*, brace *b'*, and standard *s*, arranged in the manner shown and described, for the purpose set forth.

5.—The tongue *n* and plates *P'* *P''* and *P*, in combination with the forked draft-post *E* and the clamping device, as described, by which the same is attached to the cross beam *B*, in the manner shown and described, as and for the purpose set forth.

No. 155,419.—A CANFIELD, GARNETT, KANSAS.—*Corn-Cultivators*.—September 29, 1874. Filed June 20, 1874.

Claim.—1.—The vertically adjustable arched irons *a a*, in combination with the tongue *D* and seat beam *E'*, substantially as and for the purpose set forth.

2.—The reversible foot or stirrup braces, combined with the shovel beams, substantially as described.

No. 7,513.—A. CANFIELD, DAVENPORT, IOWA.—*Corn-Cultivators*.—155,419.—September 20, 1874.—Reissued February 20, 1877. Filed January 10, 1877.

Claim.—1.—The pendant bars *F*, curved as described, and arranged to operate with the plates *C'*, carrying the bolt *f*, bar *C*, and having the holes *f'*, for the adjustment of the beams *G G'* substantially as described, and for the purpose specified.

2.—The vertically adjustable arched irons *a a*, in combination with the tongue *D* and seat beams *E'*, substantially as and for the purpose specified.

3.—The arched plates *a*, secured to the tongue, as described, and having slots *a''* combined with the bar *E'* and bolts *c'*, substantially as and for the purpose specified.

4.—The reversible foot or stirrup braces, combined with the shovel beam, substantially as and for the purpose specified.

No. 155,717.—EDWARD I. ENO, ST. LOUIS, MO.—*Cultivators*.—October 6, 1874. Filed July 14, 1874.

Claim.—1.—The combination of the bars *D* and *G*, tongue *F*, lever *I*, and lever frame *K*, all constructed and operating substantially as set forth.

2.—The combination of the double-ended lever *M*, link *N*, and hook *P* with the plough beam and axle, all substantially as and for the purpose set forth.

3.—The combination of the plough beams *O*, clip *S S T*, and round upright *U*, all substantially as set forth.

No. 155,005.—THEODORE F. VANDEGRIFT and W. VANDEGRIFT, WABASH, IND.—*Walking Ploughs*.—October 13, 1874. Filed August 25, 1874.

Claim.—1.—The tongue, composed of sections *D D'*, joined together and combined with the pivoted shaft *D'*, the hand lever *F*, and its connecting rod *h*, substantially as described.

No. 155,050.—SAMUEL JONES, LINCOLN, ILL.—*Cultivators*.—October 13, 1874. Filed August 28, 1874.

Claim.—1.—The combination of the flanged belt circle *A*, clamp *B*, axle *h*, and set screw *d*, all constructed substantially as and for the purpose herein set forth.

2.—The combination of the two short axles *h h*, each having a wheel, *C*, the sleeves *h h*, one on each side of

each wheel, the perforated flanges *i i*, connected to said sleeves, and the couplings *G*, with perforated flanges *A*, on the ends of the plough beams, all substantially as set forth.

3.—In combination with the two axles *h h*, and wheels *C C*, the sleeves *h h* on each side of each wheel, and provided with perforated flanges *i i*, the four plough beams *I I I I*, slotted cross-bars *L L*, handles *P P*, and the slotted connecting bars *K K* for lateral adjustment, all substantially as set forth.

No. 156,210.—A. J. GOODRICH, ROCK GROVE, ILL.—*Cultivators*.—October 27, 1874. Filed February 7, 1874.

Claim.—The combination of the tongue *A* and beams *C C*, with the double-tree *H*, the latter being suspended from the tongue and connected with the rear ends of the beams, in the manner and for the purpose specified.

No. 157,003.—JAMES M. HOLLADAY, TWYMAN'S STORE, VA.—*Double Cultivators*.—December 8, 1874.—Filed October 23, 1874.

Claim.—1.—The combination upon the frame *B* of the tongue *A*, spring-seated lever *C*, intermediate lever *D*, rack *b*, and catch *e*, all constructed and arranged substantially as and for the purpose described.

2.—The single pivoted traction frame *II* in combination with the crank-axle *G* and the adjustable supports *m*, substantially as and for the purpose described.

3.—The combination of the studs *n* of the cultivator with the arched pieces *J* and loops *l*, substantially as and for the purpose described.

4.—The combination of the traction-frame *II*, the folding section *M*, the handles *N*, and the cultivator *O*, substantially as and for the purpose described.

No. 157,721.—WM. P. MUNGER, BERGEN, N. Y.—*Cultivators*.—December 15, 1874. Filed June 30, 1873.

Claim.—The combination, with the cultivator-frame *A A*, of the series of angular knives *C C C*, arranged in alternate positions, and lapping each other on the inside, and graduated in depth from front to rear, as and for the purpose specified.

No. 158,709.—R. S. HIGGINS, FAIRFIELD, ILL.—*Cultivators*.—January 12, 1875. Filed August 10, 1874.

Claim.—1.—The combination of the pivoted oblique braces *12*, pendants *6*, main frame *1*, beams *7*, and single-trees *11*, substantially as and for the purposes set forth.

2.—The L-shaped bars *27*, constructed and operating as described, in combination with the plough-beams *7*, loops *31*, transverse bar *24*, and nuts *25 26*, substantially as and for the purposes set forth.

3.—The nuts *25 26* and screw protecting sleeves *28*, in combination with the L-shaped bars *27* and transverse bar *24*, for adjusting the plough beams as to their distance asunder.

4.—The combination of the hooks *18* and pivoted bails *10* with the pivoted handles *17*, beams *7*, and draft apparatus *6 13*, by means of which the plough-beams are supported while out of use, without affecting the application of the draft to the main frame.

No. 158,752.—JOSEPH STOFFORD, GALESBURG, ILL.—*Wheel-Cultivators*.—January 12, 1875. Filed August 21, 1874.

Claim.—1.—In a walking straddle-row cultivator, the combination of the pivoted pole *C*, rigid axle *A*, wheels *B*, and plough beams *D D*, so that the operator may control the direction of the machine by the plough handles, and permit of the tongue vibrating freely, substantially as and for the purpose specified.

2.—The suspending rods *E E*, secured to the forward ends of the plough beams, and projecting forward of the axle, and operating in combination with the brace rods *a' a'*, substantially as and for the purpose specified.

No. 159,500.—EDWIN CHILDRÉN, DUNLEITH, ILL.—*Cultivators*.—February 9, 1875. Filed October 9, 1874.

Claim.—The combination of the pivoted draft-pole *C* and lever *E* with the swing arms *J J*, provided at their forward ends with rollers *i i*, resting upon the front timber *a''* of the cultivator frame, the said swing arms being pivoted at the centre beam *d'* and to the plough beam, supporting

sway beam H, and connected by a link, *i*, to the draft-pole, substantially as specified.

No. 150,507.—MARKUS L. GORHAM, ROCKFORD, ILL.—*Cultivator*.—*February 9, 1875*. Filed *Sept. 19, 1874*.

Claim.—1.—The removable centre beam B, with its plough *h*, hinged to yoke C by the swivel joint formed by eyebolts *a* and *a'* and attached loosely to drag bars A by the yoke C and eyebolts *a*, combined and operating substantially as and for the purposes described.

2.—The free sway bar D, with its terminal ends *d*, in combination with the sockets *d'* and *d''*, constructed as described, and adjustable on drag bars A of a cultivator, substantially as and for the purpose described.

No. 150,500.—GEO. S. BROWER, G. W. BROWER, and E. A. BROWER, CRAWFORDSVILLE, IND.—*Wheel Cultivator*.—*February 9, 1875*. Filed *November 14, 1874*.

Claim.—1.—The slotted frame-pieces B, having curved rear sockets L, in combination with the seat-bar F, short axles A, and bolts C, as and for the purpose specified.

2.—The combination of the yokes I M with the cross-bar J and pins L L, arranged as and for the purpose specified.

3.—The combination of braces R, stay-rods T, and hang-ers U with rod Q, to support the plough-standards, as set forth.

No. 150,080.—EDWIN E. LEACH, CHICAGO RAPIDS, IOWA.—*Wheel Cultivator*.—*February 9, 1875*. Filed *October 17, 1874*.

Claim.—The combination of the elevated vertically adjustable part A of the axle-tree, standards C, and combined supporting or draught bars and braces E E E, substantially as and for the purpose specified.

No. 100,442.—JACOB BEDEL, ROCKFORD, ILL., as signor of one one half his right to RALPH EMERSON same place.—*Cultivator*.—*February 23, 1875*. Filed *January 26, 1875*.

Claim.—1.—The handle E, pivoted to the beam or drag-bar D, in combination with the rod or connection F, substantially as and for the purpose specified.

2.—The combination of the beam or drag-bar D, handle E, and rod or connection F with the ratchet-gum G and pawl or catch *h*, for changing and holding the beams in different positions, substantially as described.

No. 100,210.—L. LAWRENCE and G. S. THOMAS DEBON, IND., assignors to WAYNE AGRICULTURAL COMPANY, same place.—*Cultivator*.—*February 23, 1875*. Filed *January 2, 1875*.

Claim.—1.—The described combinon of bed plate E, turn table G, tongue H, bolt K, lever M, and catch O, for the purpose herein designated.

2.—The tongue H, rigidly secured to the circular turn-table G, in combination with the drop catch O and lever M.

3.—In a wheel-cultivator, the arched axle B, with the offsets *h* and the frame D D', in combination with the pivoted tongue H, secured to the frame by the turn-table G.

No. 100,602.—P. E. L. ANDPHERE, MASON, (MORRIS P. O.) ILL., assignor to himself and DELOSS JONES, same place.—*Cultivator*.—*March 9, 1875*. Filed *January 18, 1875*.

Claim.—1.—The combination of the two tongues G, the cross-bars F, connected by the bars *r*¹, braces *r*², and stay bolt *r*³, the two axes H connected together by the block *h*¹, bar or plate *h*², braces *h*³, and stay bolt *h*⁴, the crank-axle arms I, and the wheels J, to adapt the machine for use as a three-horse two-row cultivator, or as one or two two-horse single-row cultivators, substantially as herein shown and described.

2.—The combination of the pivoted draft-bars K, the ropes or chains L, the guide pulleys M, and the eye-rope N, with the cross-bars F and the axes H, substantially as herein shown and described.

3.—The combination of the cross-bar C, having its end parts curved or arched with the two pairs of beams A, substantially as herein shown and described.

No. 100,621.—ALBERT D. SIMONS, WINDSOR, CONN.

—*Combined Horse-Hoes and Ploughs*.—*March 9, 1875*. Filed *January 25, 1875*.

Claim.—1.—The arched beam C, having horizontal arms B, in combination with the guide clamps G, ploughs A, and hoe blades D, substantially as herein described.

2.—The arched beams C, with the ploughs and hoes attached as described, and the guide clamps G, in combination with the arched support J, rods I, braces M, and stand N, substantially as shown and described.

3.—The combination of cultivators A D, arched beam C, lever O, and spring catch P with the truck frame and tongue, substantially as set forth.

No. 101,047.—CHARLES M. LUFKIN, LANGDON, N. D.—*Machines for Draining Swamps, Sloughs, Roads, &c.*—*March 23, 1875*. Filed *February 24, 1875*.

Claim.—The combination of the hook or prong B, draw-iron D, swivel G, beam A, stay iron I, handles C C', rod J, braces F, E, and brace F, substantially as and for the purpose hereinbefore set forth.

No. 101,102.—WILLIAM P. DALE, PENNSYLVANIA STATE COLLEGE, PA.—*Wheel Cultivator*.—*March 23, 1875*. Filed *August 29, 1874*.

Claim.—1.—In combination with hinged or pivoted shovel-carrying beams D D, the vertically and laterally vibrating arms F F, connected together at their front ends by means of a hand bar G, substantially as described.

2.—Beams D D, connected by joints C C' to longitudinally vibrating arms E E, having independent bearings on the hounds C, substantially as described.

3.—The supports S' S', pivoted to the seat S, and having hooks *s* on their ends, in combination with plates T T and hounds C C', as described.

No. 101,502.—WILLIAM CLEMENTS, FISKVILLE, TEX.—*Combined Gang-Ploughs and Cultivators*.—*April 6, 1875*. Filed *December 23, 1874*.

Claim.—The cross-bar M, adapted to straddle the row, and rising up to form a foot rest, and journaled in the frame I L, in combination with the cultivator-standards N, pivoted at or near their centers to the bar M, and near their upper ends to a cross-bar O, whereby they may be lifted or laterally adjusted, substantially as and for the purposes set forth.

No. 101,855.—JOHN N. BASHAW, GENAVA LAKE, WIS.—*Cultivator*.—*April 13, 1875*. Filed *March 1, 1875*.

Claim.—1.—In a cultivator, the combination of the beams D, D', and D'', hinged as described, whereby the beams D' and D'' may be adjusted in relation to each other, and in relation to the beam D, all constructed as and for the purpose set forth.

2.—The split tongue A, hinged beams D D, each having adjustable beams D' D', in combination with the flexible brace E, chains *n n*, elbow levers H, and T-joint *o*, all as and for the purpose set forth.

No. 102,120.—LORENZO W. TRICE, TAMPADEGA, ALA.—*Sulky-Ploughs*.—*April 13, 1875*. Filed *February 27, 1875*.

Claim.—1.—In combination with the beams E, pivoted to cranks F, the draft-rods *r*, slotted arms *h*, and links *l*, the rods *e* passing through slotted standards *d'* of cast-iron wheels *d*, substantially as described.

2.—Plough standards D, having rounded ends *n*, secured to their beams by means of studied blocks *p* L, chps *r*¹, and rods *r*², substantially as described.

3.—Springs *c*, applied to the ends of plough beams E, as and for the purpose described.

4.—The levers J, having lifters J P on their lower ends, and connected to arms *m* on cranks *i*, in combination with the plough beams E, pivoted to said cranks, substantially as described.

No. 102,151.—CLEMENT L. CARTER, UNION CITY, IND.—*Ploughs*.—*April 20, 1875*. Filed *January 12, 1875*.

Claim.—1.—The combination of the wheels *e*, having long stub axles *h*, with the frame, having the vertical slotted posts *k* and guides *z*, and with the cranks *n*, rock shaft *o*, and lever *z*, as shown and described.

2.—The combination of the inner standards B, pivoted at their middle to a rigid support, having the arms J J and

the stirrups *v*, with the loops *w* and the swinging set bar *S*, substantially as shown, and for the purposes set forth.

No. 102,273.—AMOS B. COLVER, ALBANY, ORIGINATOR.—*Cultivators*.—April 20, 1875. Filed January 30, 1875.

Claim.—1.—As an improvement in cultivators, the combination of the obliquely arranged plough frame *A*, sliding on front king bolt *b*, and by rear guide frames *F* on the rear axle, with the supporting main beam *D*, and operating lever *D'* *D'*, and frame connecting rods, for raising and lowering the ploughs as required, substantially in the manner and for the purpose set forth.

2.—The combination of sliding plough frame *A* with main beam *D*, and pivoted supporting levers *H* operated by spring actuated lever *H'*, for locking plough frame in raised position, substantially as set forth.

No. 102,700.—ELI SHIPLEY, MIDDLETOWN, MICH.—*Cultivators*.—April 27, 1875. Filed March 13, 1875.

Claim.—1.—The frame *A*, having a draft-pole, *B*, and a handle, *C*, secured to it, in combination with the arms *E* and foot bar *F*, pivotally connected to said frame, and with segments *D*, *J*, spring latching arms *K*, and wheels *N*, substantially as described.

2.—In combination with the handle *C* on frame *A*, the slotted standard *G* and its pin *p* on the foot bar *F*, substantially as and for the purposes described.

No. 102,701.—JOHN ORLANDO, WEST WARREN, MASS.—*Strawberry Cultivators*.—May 4, 1875. Filed February 12, 1875.

Claim.—1.—In combination with a wheeled carriage, *A*, and frame *C*, arranged and applied together, as described, a vibratory rake, *H*, disk cutters *F*, *F'*, a series of plough teeth, *E*, and cutters *G*, all being arranged to operate as explained.

2.—In combination with the wheel-carriage *A*, the vibratory rake, and the frame *C*, arranged and applied together, as specified, the arms *H'*, *L*, and the levers *I*, *M*, pivoted to gether, and applied all as shown and described.

No. 103,372.—ELIJAH D. GORHAM, HADLEY, ILL.—*Cultivators*.—May 18, 1875. Filed April 12, 1875.

Claim.—The foot cultivating shoe described, consisting of the sole *B*, shovel *v*, brace *u*, cutter *s*, heel support *a*, and set screw *a'*, all constructed, arranged, and operating, as and for the purposes set forth.

No. 103,448.—B. C. COX, COOPER HILL, MO.—*Sulky Cultivators*.—June 8, 1875. Filed January 30, 1875.

Claim.—The half-lever *E'*, pivoted to bars *O*, *O'*, and plate *P*, combined with plough beams, substantially as and for the purpose set forth.

No. 104,000.—ALEXANDER F. BACHELLER, CLYDE FALLS, IOWA.—*Cow Cultivators*.—June 20, 1875. Filed April 24, 1875.

Claim.—1.—Longitudinally-adjustable axles *a*, in combination with laterally and vertically adjustable spindles *G* hung from the axle *B*, substantially as described.

2.—Handles *F*, adjustably pivoted to frame *D'* and connected to the spindles *G*, in combination with the suspension links *u*, rods *v*, and spring *s*, substantially as described.

3.—In combination with the revolving ploughs *h*, the rolling cleavers *p*, and the segment rack *J*, substantially as described.

No. 105,113.—THEODORE F. VANDEGRIFT and WILLIAM VANDEGRIFT, WASHINGTON, IND., assignors of one-half their right to O. WADE, same place.—*Cultivators*.—June 29, 1875. Filed May 1, 1875.

Claim.—The frame *C*, provided with bounds *a*, formed of a single piece, in combination with the box *H*, recessed and pivoted tongue *E*, spring latch *v*, and lever *d*, substantially as described, and for the purpose set forth.

No. 106,350.—GERSHOM WILKINSON, QUINCY, OHIO.—*Cultivators*.—July 27, 1875. Filed April 17, 1875.

Claim.—1.—The combination of the pivoted and jointed standards *K*, the elbow levers *N*, and the springs *O*, with the curved rear parts of the plough beams *I*, substantially as herein shown and described.

2.—The combination of the pivoted and slotted plates

I, with the standards *K* and the ploughs *M*, substantially as herein shown and described.

3.—The combination of the levers or arms *T* and the adjustable hook plates *U*, with the outer adjusting bars *R*, substantially as herein shown and described.

No. 106,417.—GEORGE W. SCHENCK, GENEVA LAKE, WIS., assignor to C. E. BRANDON, same place.—*Wheel-Cultivators*.—August 3, 1875. Filed May 15, 1875.

Claim.—In a cultivator, substantially as described, the combination of the levers, *K'* for lifting each set of shovels, both placed at one side of the frame, one being rigidly secured to a rock shaft, and the other turning independently of said rock shaft, so as to be used separately or to be simultaneously drawn back by one hand, substantially as described and shown.

No. 106,030.—ANDER SCHRAEDER, WALLA WALLA, WASH.—*Cultivators*.—August 10, 1875. Filed June 7, 1875.

Claim.—The combination, with sliding rod *D* and swiveled rods *D'*, holding front and rear wheels, of the rock shaft *E* having arm *u*, the lever *H* having oblong slot *h*, the rods *I*, *J*, and the lever *K*, all arranged in connection with frame *A*, as and for the purpose described.

107,226.—W. M. COSTON, QUITMAN, MO.—*Cultivator Frames*.—August 31, 1875. Filed April 17, 1875.

Claim.—The combination of the adjustable bearings *H* and axle *G*, provided with a bar, *I*, to receive the seat, and with supporting hooks *g'*, with the perforated side bars *A*, the cross-bars *B*, *C*, the tongue *D*, the braces *E*, and the wheels *F*, substantially as herein shown and described.

No. 108,105.—H. N. PROUT, WESTFIELD, MASS.—*Hoeing Machines*.—September 28, 1875. Filed February 13, 1875.

Claim.—1.—The combination, with spring hoes *F*, of double socketed stools *F'*, adjustable by rods *a*, *b*, *d* and slide pieces *d'*, *f*, as shown and described.

2.—The lever *E*, pivoted in front to the frame and tongue, and adjustable at the rear in slotted guides *h*, *h'*, as and for the purpose specified.

No. 108,537.—JOB SPAHN, NORTH LEWISBURG, OHIO.—*Sulky Cultivators*.—October 5, 1875. Filed July 24, 1875.

Claim.—The combination, with the connected plough beams *I*, of the rock shafts *h*, with treadles *e* and handles *N*, vertical shafts *O*, with arms *u*, *p*, and adjustable pins *s*, substantially as and for the purpose set forth.

No. 109,720.—HUGH H. GIECHRIST, SWAN CREEK, assignor of one-half his right to JOHN J. WORDEN, YOUNGSTOWN, ILL.—*Cow Cultivators*.—December 7, 1875. Filed July 24, 1875.

Claim.—The combination of the plate *A*, bar *B*, and prongs *C* with each other, substantially as herein shown and adapted to adapt the device for attachment to the ploughman's foot, as and for the purpose set forth.

No. 172,775.—BENJAMIN W. REMY and NOAH T. REMY, BROOKVILLE, IND.; said NOAH T. REMY assignor to said B. W. REMY, and said B. W. REMY assignor to REBECCA A. REMY, BENJAMIN M. REMY, NOAH T. REMY, and CATHERINE R. SHIRK.—*Wheel-Cultivators*.—January 25, 1876. Filed August 20, 1875.

Claim.—1.—In combination with the tongue *C* and axles *A*, *A'*, the blocks *E*, outer arches *D*, *D'*, inner arches *D''*, *D'''*, and loops *G*, *G'*, all substantially as and for the purposes herein set forth.

2.—The plough-beams *J*, formed as described, and curved upward at their rear ends, as and for the purposes herein set forth.

3.—The combination of the plough-beams *J*, *J'*, curved and perforated as described, the double adjustable standards *P*, pivoted to the beams, and the brake pin *s*, all substantially as and for the purposes herein set forth.

No. 173,747.—EDWARD WIARD, LOUISVILLE, KY., assignor to B. F. AVERY, same place.—*Wheel-Cultivators*.—February 22, 1876. Filed December 13, 1875.

Claim.—1.—The shovel-beam *K* and the pair of shovel-standards *L*, thereto attached, made of separate pieces of metal, in the forms shown and described, and united by

screw bolts // passing through branches of the beam, and through the bowed portion of the pair of standards, substantially as and for the purposes set forth.

2.—The curved slotted shovel-standards I, and N, having beveled or concave seats *n*, with separate bearings, in combination with the shovel beam P, having convex tongues *q*, and the yoke *g*, substantially as described.

3.—The pivot standard *h*, attached to the socket of the beam, and formed with a central channel and stops, *h'* *h''*, in combination with the fender bar I, as shown and described.

4.—The Arch A, rising from the inner ends of the axle-arms, and bowed outwardly and upwardly to support the tongue D, in combination with the arched brace C, attached to the front of the axle, and extending first forward, then upward and backward, and yoked to Arch A, and clamped to tongue D in rear of said arch, substantially as shown and described.

5.—The double-eyed yoke-clip *a*, in combination with the Arches A and C, substantially as described.

No. 174,013.—CHARLES J. SEABROOK and HENRY HEINE, TALLADEGA, ALA.—*Combined Seed-Planters and Cultivators*.—*February 22, 1876*. Filed *January 8, 1876*.

Claim.—The lifting-frame M, constructed as shown, pivoted to the frame X, and capable of being reversed, so as to arrange the ploughs connected thereto in different positions for different kinds of work, as set forth.

No. 174,503.—HARVEY PACKER, SANDWICH, ILL., assignor to the SANDWICH ENTERPRISE COMPANY, same place.—*Cultivators*.—*March 7, 1876*. Filed *August 2, 1875*.

Claim.—The combination, with the plough-beams F, of the brackets O, having outward projecting tubes O' O', cast therewith, the plough-standards M, and the bolts and nuts O' O', all constructed substantially as and for the purposes herein set forth.

No. 174,577.—ANDREW RUTLEDGE, ROCKFORD, ILL., assignor of one-half his right to WM. A. KNOWLTON, same place.—*Cultivators*.—*March 7, 1876*. Filed *June 23, 1875*.

Claim.—1.—The combination, substantially as before set forth of the main frame, the hand-lever, the flexible connection, and the shovel-beam, provided with an intermediate bearing, to which the flexible connection is applied.

2.—The combination, substantially as before set forth, of the vibrating evener, the whiffletrees, the clamp pulley-blocks, the brackets therefor, and the flexible connections between the whiffletrees and the evener.

No. 174,680.—JAMES C. LEIDY, GALESBORO, ILL.—*Cultivators*.—*March 14, 1876*. Filed *November 16, 1875*.

Claim.—1.—The axle of a straddle-row cultivator, constructed of a single bar of iron, bent so as to form a rectangular frame, with downwardly-projecting parts *a*, between which the spindles of the supporting-wheels are secured, substantially as and for the purpose specified.

2.—The pendants E, having spherical heads *e*, in combination, with the clamp-plates D and bolts *d*, substantially as and for the purpose specified.

3.—The standard-plates L, placed diagonally on the standards, and combined with the plates M, beams F, standards J, and bolts N, substantially as described, and for the purpose specified.

4.—The combination of the spindle *b*, having head *b'*, with the notched washer *b''*, axle-bars *a*, and thimble *b'*, substantially as and for the purpose specified.

5.—The evener G, pendants *e*, rods *h* H, combined with the beams F, pendants E, and axle A, and tongue C, substantially as and for the purpose specified.

No. 175,077.—OLIVER C. GREEN, DUBLIN, IND., assignor to CASPER GREEN and JOHN GREEN, same place.—*Wheel-Cultivators*.—*March 21, 1876*. Filed *February 15, 1876*.

Claim.—1.—A swinging tongue, D, having its pivot *x* above the axle-tree, and perpendicular to the axis of the ground wheels, as herein described, in combination with a main rear draught doulettree, E², hitch bars G, and singletrees F², supported in front and outside of the frame and

wheels, so as to travel around the wheels without interference when the tongue is turned in either direction.

2.—A swinging tongue, D, having its pivot above the axle-tree, and perpendicular to the axis of the ground wheels, in combination with a horizontal frame, C, affording extended supports or bearings, *x*, *x'*, beneath the tongue, in front and in rear of the pivot, as herein shown and described, and for the purpose specified.

3.—The combination of the swinging tongue D, the rear draught doulettrees E² E³, stayed at about right angles thereto, the low hitch bars G, pivoted to the ends of one of these doulettrees, and connected to the other by rods *s*, and the singletrees F² F³, attached to the hitch bars, substantially as herein shown and described.

4.—The rocking bar I, constructed with a mortise *g*, pivoted between the frame bars C, and provided with the gravitating arm *r*, in combination with the pivoted tongue D, as and for the purpose set forth.

No. 175,212.—WILL. A. VAN CAMP, MEMPHORA, IND., assignor of one-half his right to JOSEPH A. VAN CAMP, same place.—*Double Corn-Ploughs*.—*March 21, 1876*. Filed *January 22, 1876*.

Claim.—1.—In a cultivator, an arched axle, made in two sections, B B, overlapping each other in the centre and adjustably connected together by clamps C and set screws *a*, substantially as and for the purposes herein set forth.

2.—The combination of the adjustable axle sections B B, beams A connected thereto by staples *b* *b* and braces *d* *d*, with clips *e*, *e'*, the loop *m*, connecting the front ends of the beams, and the wedge I, all substantially as and for the purposes herein set forth.

No. 175,370.—ALEXANDER MEHARRY, PLEASANT HILL, IND., assignor to himself and WILLIAM BROWN, same place.—*Draught-Equalizers*.—*March 29, 1876*. Filed *July 17, 1875*.

Claim.—The combination, with bent axle A having pulleys F F, and pole B having pulley E, of the centrally-pivoted bar J and connections D G J, arranged as and for the purpose specified.

No. 175,392.—L. P. THOMPSON, PHELPS, N. V.—*Cultivators*.—*March 29, 1876*. Filed *January 26, 1876*.

Claim.—1.—In combination with the primary and secondary frames hinged together in front, the fixed pole, hinged seat bar H, and pivoted standards J, and adjusting segment or bar N, constructed and arranged to operate conjointly, substantially as and for the purposes set forth.

2.—In a combined fallow and crop cultivator, the secondary frame, provided with coupling loops *n* on the upper and lower side of the foot bar F, and otherwise constructed as shown and described, whereby it may be attached to the primary frame, as shown, for cultivating fallow ground, or attached thereto in an inverted position, so as to receive longer shanked teeth or "hillers," to adapt the same machine for cultivating growing crops.

No. 175,636.—JOHN A. ADAMS, BATTLE CREEK, MICH.—*Cultivators*.—*April 4, 1876*. Filed *December 23, 1875*.

Claim.—1.—The combination of the stationary main frame A, braces D D, tongue G, pivot bolt *i*, and movable cultivator frame H, all substantially as and for the purposes herein set forth.

2.—The notched guide plate *h* attached to the under side of the frame H, in combination with the bars L and L', as and for the purposes herein set forth.

No. 177,063.—REUBEN ELLWOOD and RICHARD L. PITCHER, SYCAMORE, ILL.; said PITCHER assignor to said ELLWOOD.—*Cultivators*.—*May 9, 1876*. Filed *November 17, 1875*.

Claim.—1.—The combination of the levers H, provided with pins *d* and the spring *b*, with the curved standards L, provided with openings *e* on their sides, substantially as and for the purposes specified.

2.—The bent bar *p*, in combination with the drag bar D, shaft G, cylinder F, bar *o*, and cross rod A, substantially as and for the purposes specified.

No. 17,500.—R. ELLWOOD and R. L. PITCHER, SYCAMORE, ILL.; said PITCHER assignor to said ELL-

WOOD.—*Cultivators*.—177,063.—May 9, 1876.—Reissued March 20, 1877. Filed February 12, 1877.

Claim.—1.—The combination of the standards I and cross rod *l* with the side pressure levers H, for keeping the standards in position without additional bolts or braces, substantially as specified.

2.—The combination of the levers H, provided with pins *d*, and the spring *b*, with the curved standards I, provided with openings *c* on their sides, substantially as and for the purposes specified.

3.—The bent bar *p*, in combination with the drag bar D, shaft G, cylinder E, bar *a*, and cross rod *l*, substantially as and for the purposes specified.

No. 177,153.—H. H. PERKINS, OSCEOLA, ILL.—*Wheel-Cultivators*.—May 9, 1879. Filed September 17, 1875.

Claim.—1.—The combination of the bent rock-shafts V, slotted adjustable plates W, stationary hangers C, inwardly extending rods B, recalles D', downwardly-extending rods Y, and links Z, with the inner and outer adjustable shovel standards, and the vertically adjustable beam frame, as and for the purpose set forth.

2.—The combination of the swinging and laterally adjustable collars Q, notched plate N, cap-plate M, pivoted catch O, and spring P, with the inner shovel standards I, transverse screw-shaft K, and the beam frame, as and for the purpose set forth.

3.—The combination of the roller M', adjustable front rod L, having perforated hooked rear portion P', with the plant-fenders J', and its front arms K', as and for the purpose set forth.

4.—The combination of the bent and forked bar K', with the adjustable supporting rod N' of the guard plates J', and the yoke E', pivoted to the plough standards I, substantially as herein shown and described.

No. 177,317.—GLAUCUS BARCAFAR, SPRINGFIELD, OHIO.—*Cultivators*.—May 10, 1876. Filed March 27, 1876.

Claim.—1.—In a wheel cultivator, the combination of the swinging posts C with the arched axle A, *a*, and with the plough beam coupling D, *c*, substantially as and for the purpose set forth.

2.—The double tree N, swinging rods *u*, with loops Z, and draft rods *v*, in combination with the swinging posts C, ball and socket joint D, *c*, and plough beams E, having a draft longitudinally independent of each other and of the axle, substantially as and for the purpose specified.

3.—The combination with the ploughs, connected to the swinging posts C by the ball-and-socket joint, consisting of the sectional boxes D and the plates *b*, with balls *g* of the cross bar I, carrying upon each end hooded sheaves K, and the chains *p*, pivoted levers L, and semicircular plate M, with stops *q*, substantially as and for the purpose set forth.

No. 177,666.—DANIEL C. TANNER, KIRKLAND, OHIO.—*Cultivators*.—May 23, 1876. Filed December 27, 1875.

Claim.—1.—The combination of the side pieces B B of the frame, constructed as described, the chains F' and P, the standards I, and the pendant vibratory arms E', the parts being constructed and arranged to operate as shown and described.

2.—The combination of this standard H, adjustable in the sleeve G, with the foot *a*, adjustable in the standard H, substantially as and for the purpose described.

3.—In a cultivator, the combination of the standards F and H and the sleeves G, for rendering the shares adjustable, substantially as and for the purpose set forth.

4.—The combination of the sway-bar C', pivoted to the rear end of the machine, the chains F' and P, and the pendant vibratory arms E', whiffletrees E'',

No. 177,685.—HARLIN BUTNER, DUNCAN'S BROTHER, MO.—*Combined Harrows and Cultivators*.—May 23, 1876. Filed March 13, 1876.

Claim.—The combination of the ploughs K L and harrows M N O, relatively arranged substantially as and for the purpose specified.

No. 177,853.—EMANUEL M. KISSELL and MARTIN KISSELL, SPRINGFIELD, OHIO.—*Wheel-Cultivators*.—May 23, 1876. Filed January 10, 1876.

Claim.—1.—In combination with draught-post *b* and rod *c* of a wheel-cultivator, with its key V, the frame-bars *h* and *h'*, clevis-plates *f*, and connecting-bolt *g*, as shown and specified, for the purpose set forth.

2.—Hook-bars *a*, in combination with draught-post *b*, links *l*, set screw *s*, and the cross bar *x* of a wheel-cultivator, as shown, as and for the purposes set forth.

3.—The suspended draught-bar *d*, provided with a T-head, *d'*, for the purpose of allowing of two separate points of attachment thereto for the draft rods *e* and *e'* for their front ends, in order to equalize the draught in the manner specified, and for the purposes set forth.

4.—The draught-bar *d*, provided with pivoted cross-head *c'*, in combination with the evener *d'* and rods *e* *e'* to form separate means of attachment to the wheel-spindle and plough-beam, as shown and described.

No. 7,833.—E. M. KISSELL and M. L. KISSELL, SPRINGFIELD, OHIO.—*Wheel-Cultivators*.—177,853.—May 23, 1876.—Reissued August 7, 1877.—Filed July 18, 1877.

Claim.—1.—The plough-beam frame composed of the bars *h* *h'*, bolted together at their forward ends, and self-braced in the rear by the bent angular portion of the bar *d'*, substantially as shown, and for the purpose set forth.

2.—In combination with the draught post E, and rod *a* of a wheel-cultivator, the frame bars *h* *h'*, clevis-plates *f*, and connecting bolt *g'*, as shown and specified.

3.—The combination, with the laterally and vertically adjustable draught posts F, of the hooked bars *c*, attached thereto, so as to be adjusted laterally with the posts, and always occupy a relative position with the plough-beam frame, substantially as set forth.

4.—The combination of the hooked bars *c*, posts E, links *c*, set-screws *d*, and the elevated axle of a wheel-cultivator, substantially in the manner and for the purpose specified.

5.—The suspended draught bar *f*, provided with a T-head for the purpose of allowing of two separate points of attachment thereto for the draught rods by their front ends, in order to equalize the draught, substantially in the manner specified.

6.—The draught-bar *f*, provided with a T-head, in combination with the double-tree *e* and the draught-rods, to form separate means of attachment to the wheel-spindle and plough-beam, as shown and described.

No. 178,666.—ELI W. RUSSELL, and JOHN N. RUSSELL, ASHTON, MO.—*Sulky Ploughs and Cultivators*.—June 20, 1876. Filed April 10, 1876.

Claim.—1.—The combination of the axle A, bent six times at right angles, (twice at one end and four times at the other,) the wheels B C, the eye-bars D, and the board E, with each other, to form the frame work of the machine substantially as herein shown and described.

2.—The combination, with the axle and the plough-beam of the casting or bearing K, provided with a hook shaped flange *k'*, and the adjustable collar or clamp N, as shown and described.

3.—The combination of the lever E, and chain M with the bent axle A, the bars D, and the board E, substantially as herein shown and described.

No. 179,133.—STEPHEN PURDY, KIWANEE, ILL.—*Cultivators*.—June 27, 1876. Filed August 30, 1875.

Claim.—1.—The combination of the boxes H and the pivot block L, formed in two parts, each having a trunnion, Z, and provided with suitable oil passages *Z'*, with the axles D, constructed to operate substantially as and for the purposes specified.

2.—The combination, with a pair of cultivator plough beams, pivoted together substantially as described, of the standards *h* *m* of the plough beams and journal boxes, and the adjustable or extensible links N N, consisting, essentially, of two metallic plates having a series of bolt holes formed therein and provided with ears or projections at their extremities, which, when bent over, clasp the two plates together, as described, all arranged and constructed

to admit of a vertical and lateral adjustment of the ploughs, substantially as and for the purposes set forth.

No. 179,378.—LEVI WERTENBERGER, LAKEFORS, IND.—*Sulky Ploughs*.—*Jan* 27, 1876. Filed *April* 1, 1876.

Claim.—In combination with the shovel carrying beams of a sulky plough, angular levers J, constructed and applied as described.

No. 180,271.—WILLIAM N. RIDDLER, CADDO GROVE, TEXAS.—*Wheel-Cultivators*.—*June* 25, 1876. Filed *April* 25, 1876.

Claim.—1.—The combination with pin I, having loop V, of the spring U, arranged to hold the ploughs down to their work, but yielding sufficiently to allow them to move, as shown and described, for the purpose specified.

2.—The combination of the bows H, the pins I, the arms J P, and the lever L, with the plough beams C, the tongue K, and the uprights M, attached to the axle B, substantially as herein shown and described.

3.—The combination of the bent lever Q with the lever L, pivoted to the uprights M, and with the pin I of the rear bow H, substantially as herein shown and described.

No. 180,310.—SAMUEL A. BUCHANAN, JEFFERSON, WIS.—*Sulky-Cultivators*.—*July* 25, 1876. Filed *April* 15, 1876.

Claim.—1.—The adjustable hinge and coupling, consisting of the tenoned post G' hub A, with arm G, and lug C, and the adjustable pivoted casting I, in combination with the drag bar H and sway bar J, as and for the purposes herein set forth.

2.—The hinge and coupling, consisting of the lug A, shaft M, with eye N, and forked pivoted arm I, in combination with the drag bar H and lever K, as and for the purposes herein set forth.

3.—The combination of the pivoted plate R, carrying the plough standard, and having its free end inclined, and the slotted plate S having inclined shoulder X and lip Y, substantially as and for the purposes herein set forth.

No. 180,438.—WILLIAM P. STATAUP, BROOKVILLE, IND., assignor to WILLIAM A. LINDSAY and J. W. REYNOLDS, same place.—*Cultivators*.—*August* 1, 1876. Filed *June* 15, 1875.

Claim.—1.—The combination of the hinged axles and rods D D with the blocks E, as described.

2.—The combination of an axle, hinged at its inner end to a fixed support, with a supporting socket at its outer end, adapted to permit vertical adjustment, substantially as described.

No. 180,987.—G. BRADLEY, ROCKFORD, ILL., assignor to C. R. CHANDLER, same place.—*Corn Cultivators*.—*August* 15, 1876. Filed *February* 14, 1876.

Claim.—1.—The rods or bars G G, yoke G', pivoted to each other and to the axle A, as described, in combination with the loop H and shovel beams, for controlling said shovel and permitting their free lateral movement, substantially as described.

2.—The concave and convex ribbed plates J, in combination with the shovel beams and standards, for adjusting the angle of the shovels, substantially as described.

No. 181,009.—ALEX. HAMILTON, HARRISBURG, ARK.—*Sulky-Ploughs*.—*August* 15, 1876. Filed *May* 22, 1876.

Claim.—1.—The combination of the rods J, the arms I, the shaft M, the levers N, and the slotted foot-board K with the upper ends of the plough-standards L, and with the bars C D of the frame, substantially as herein shown and described.

2.—The combination of the curved and slotted arms O, having notches or a series of teeth, and connected at their rear ends, by a transverse bar, with the braces P, the seat Q, the plough-frame, and the plough-raising devices, as and for the purpose set forth.

No. 181,106.—WM. J. ROBERTSON, JASPER CO., MO., assignor of one-half his right to PHILLIP KNIGHT, same place.—*Prairie-Sod Cultivators*.—*August* 15, 1876. Filed *May* 13, 1876.

Claim.—The combination of the double beam T I, constructed as described, the collar J, with shoe K and clasp L, all substantially as herein set forth.

No. 181,245.—CLEMENT L. CARTER, UNION CITY, IND.—*Cultivators*.—*August* 22, 1876. Filed *May* 11, 1876.

Claim.—The rod shaft G, with its cranks N, in combination with the connecting-links M and bars J, thus uniting the frame M with the tongue-bars I, as and for the purpose specified.

No. 181,302.—JOHN C. BANNIGAN, DUNFELT, ILL.—*Cultivators*.—*August* 22, 1876. Filed *March* 21, 1876.

Claim.—1.—The combination, with single-trees M Q, of the connected rods X P, and lever O, the latter pivoted to axle, as shown and described.

2.—The combination, with tongue and yoke, of the pin S and ring T', connected and arranged as and for the purpose set forth.

3.—The combination of the plough-beams, having front ends held by a ball and socket joint, and with each other, by adjustable bars H, as and for the purpose specified.

4.—The combination of the pivoted levers J, the swiveled arms K, and the connecting rods L L, with the axle B and the plough-beams F, substantially as herein shown and described.

No. 181,494.—DANIEL C. STOVER, FREEPORT, ILL.—*Cultivators*.—*August* 22, 1876. Filed *March* 4, 1876.

Claim.—1.—The axle or frame and beam D, in combination with the rigid bar E, pivoted at one end, and arranged to slide back and forth upon the axle at the other, for holding the beam up when not in use, and regulating the depth of the ploughs when at work, substantially as and for the purpose set forth.

2.—The combination of the axle or frame, bar E, beam D, and slotted plate I, substantially as and for the purposes specified.

No. 181,944.—THOMAS J. JONES, BLAIRSBURG, IOWA.—*Cultivators*.—*September* 5, 1876. Filed *June* 9, 1876.

Claim.—The combination of the two beams D, united at their front ends by the bow G, single-trees H, attached to the ends of the bow, lever I, shaft N, and chains or rods T, substantially as shown and described.

No. 182,138.—THOMAS R. WALLIS, EGG'S POINT, MISS.—*Wheel-Cultivators*.—*September* 12, 1876. Filed *May* 22, 1876.

Claim.—1.—The axle-frames, consisting of elliptical plates G and connecting-bolts H, combined with the short axles B and the arch-standards C, substantially as herein shown and described.

2.—The bolts H, formed on the arch-standards C, and combined with plates G, substantially as herein shown and described.

No. 182,443.—WILLIAM P. HUBBARD, FARMLAND, IND.—*Wheel-Cultivators*.—*September* 19, 1876. Filed *August* 5, 1876.

Claim.—The combination of the pivoted tongue G, having the toothed segment-plate H, the circular bed-plate F, the lever I, provided with toothed plate I' and rack-bar J, whereby the tongue is deflected, and retained at any desired angle, substantially as described and shown.

No. 182,623.—WALLES ALDRICH, DAYTON OHIO., assignor to DAYTON MACHINE COMPANY, same place.—*Wheel-Cultivators*.—*September* 26, 1876. Filed *June* 23, 1876.

Claim.—The metal arches C and D, of the shape represented, each clamping, respectively, the inner and outer ends of the stub-axes B, and braced by the tongue E and bars G, the whole united substantially as and for the purpose specified.

No. 182,988.—FREDRIC P. BEUCLER, CHARLESTON, IOWA.—*Cultivators*.—*October* 10, 1876. Filed *April* 24, 1876.

Claim.—1.—The cultivator holder having a breaking-pin connection with a pin above arranged to break, combined with a hook below, which admits of removing the plough, substantially as set forth.

2.—The combination of parts E F, having an elbow-shaped space between them, with the wheel-frame C C and wheel-axle E, substantially as set forth.

3.—The combination of the tongue, the wheels, and the tubular pipes C C', bent and connected, substantially as set forth, to form a cultivator-frame.

4.—The cultivator-plough beams formed of tubes having the joint-connection in front, and curved down to receive the cultivators, and having the curved portion enlarged, substantially as set forth.

No. 183,004.—LUDIA H. HODGES, TARRANT CO., TEXAS.—*Wheel-Cultivators*.—October 10, 1870. Filed July 20, 1875.

Claim.—1.—The clevis K, having four sides in the form of a parallelogram, and pivoted eccentrically between the vertical bars E, F, as set forth.

2.—The reversible clevis K, eccentrically pivoted on the vertical bars E and F, in combination with the plough beam and frame, whereby the front end of the plough beams are attached and provided with both lateral and vertical adjustments, as specified.

3.—The bent plate S, forming a keeper for the marker and a draught hook, in combination with the draught rod R, chain b, beam B, and bar E, as shown and described.

No. 183,251.—JACOB HENRY COLE, DANVILLE, PA.—*Combined Cultivators and Sulky-Ploughs*.—October 17, 1870. Filed September 5, 1870.

Claim.—1.—The combination of the pivoted tongue D, the sliding and rotating shaft b, connected to the tongue and to the beams, the lever I, shaft k, with arm k', and link l, substantially as and for the purposes herein set forth.

2.—In a cultivator or sulky-plough, a single shaft, b, sliding and rocking in boxes a, and connected to the plough beams, in combination with two separate and independent levers, whereby the ploughs may be raised and lowered and moved laterally, substantially as herein set forth.

No. 183,280.—CHAS. A. BENTLEY, CANTON, ILL., assignor of one-half his right to MARTIN HOFFMAN, same place.—*Cultivators*.—October 17, 1870. Filed August 29, 1870.

Claim.—1.—The frame C, carrying the ploughs G and I, and tongue D, pivoted to the frame A, and arranged to operate with the rock shaft M, cranks m, and hand lever m', substantially as and for the purpose specified.

2.—The seat support, constructed as described, of a truss frame, and adjustably seated on the bars C, substantially as and for the purpose specified.

No. 183,630.—ANDREW CANFIELD, DAVENPORT, IOWA.—*Riding and Walking Cultivators*.—October 24, 1870. Filed August 26, 1870.

Claim.—1.—In a cultivator, the seat-sustaining rods F F, in combination with the double stirrup G, having openings g g, and perforated plates H H, substantially as and for the purpose set forth.

2.—In a cultivator, the seat-sustaining rods F F, double stirrup G, having openings g g, and perforated plates H H, in combination with the laterally and vertically vibrating shovel beams L, provided with foot rests Q', substantially as and for the purpose set forth.

No. 184,042.—ALMON HUNT, MAUMONT, assignor to SMITH C. FERGUSON, KAWAUCHE, ILL.—*Cultivators*.—November 7, 1870. Filed March 8, 1870.

Claim.—1.—The sleeve G, operating as a connecting plate between the detachable pole I and the ploughs D, when the latter are suspended, as set forth.

2.—The sleeve G, having plate g H on its ends, and stops h operating, in combination with the detachable pole I, axle A, and ploughs D, having hooks L for engaging studs K, substantially as and for the purpose specified.

3.—The sleeve G, having plates g H, and stops h between the plates, operating in combination with the sections A' A' of a divided axle to hold them in place and limit their motion, substantially as and for the purpose specified.

No. 184,155.—ORLANDO HUFFMAN, FRIEND, NEBRASKA, assignor of one-half his right to BAILEY G. McKENZIE, same place.—*Wheel-Cultivators*.—November 7, 1870. Filed March 23, 1870.

Claim.—1.—In combination, the beams A A', having bifurcation i at their rear ends, the plough standards C, having reduced spindles h, and the pivoted cross bars D E, substantially as specified.

2.—In combination with the beams A A', pivotal bar D, and vibrating standards C, the rotating eyebolt F, handle G, and pivotal rods H H', substantially as specified.

No. 184,441.—WILLIAM B. STURGIS, SIBLEYVILLE, ILL.—*Cultivators*.—November 14, 1870. Filed August 21, 1870.

Claim.—The tubular or bored coupling blocks M, the short crank axles B, the curved bar C, having perforated ends, the set screws D, for securing the axles in any adjustment, the pair of front braces I J and the rear brace K, inclined as specified, and the frame F, all constructed and arranged as shown and described.

No. 185,471.—J. C. BANNIGAN, DUNFORTH, ILL.—*Cultivators*.—December 10, 1870. Filed June 17, 1870.

Claim.—1.—In a cultivator, the combination, with the vertically and horizontally vibrating shovel beams I, of the tripping levers J, the angular journal rods L, depending from and rotating axially in the rear ends of the bars C C', and affording bearings for the said levers, and the pivoted rods m, substantially as specified.

2.—The levers F, pivoted to vibrate vertically on the axle-tree, in combination with the angular rods E, the eccentric D', draught rods g, secured to the lower end of the said lever, and sustained by the vertical arm of the angular rods E, substantially as specified.

3.—In combination, the shovel point P, having metallic bridge p and set screw q, with enlarged rounding head l', and the standard h, having a concave recess in its lower end, adapted to receive the said head, substantially as described.

4.—In combination with the beams I and levers J, the rod m, connecting the same, and provided with an eye, n, upon its upper end, adapted to engage with a projecting spur t, upon the ends of bars C C', substantially as specified.

No. 185,932.—J. H. JONES, ROCKFORD, ILL., assignor to R. EMERSON and W. A. TALCOTT, same place.—*Cultivators*.—January 2, 1877. Filed October 5, 1870.

Claim.—1.—The combination of the evener, provided with double draught-hooks, the pivot pin connecting it to the machine, the elongated broad-based tubular sleeve enveloping the pivot-pin and bearing upon the upper surface of the evener, and the strap-iron or brace, these members being constructed and operating as set forth, for the purpose specified.

2.—A down-hanger for the attachment of the shovel-beam, constructed as described, adapted to be secured at its upper end to the frame of the machine, slotted at its lower end, provided with V-shaped ribs or centrally-raised projections upon the opposite sides or inner walls of its slot, and a cross-piece or pin spanning the slot at its lower end, for the purpose specified.

3.—The broad-hooked plate, adapted to be secured to the shovel-beam, constructed, as described, with a hook at its under front edge, and having its upper edge curved from the front backward, for the purpose specified.

4.—The combination substantially as hereinbefore set forth, of the slotted internally-ribbed down-hanger, its cross-pin and the broad hooked plate secured to the shovel beam, fitting in the slot in the down-hanger, between the vertical centrally-projecting ribs thereof, and resting upon the cross-pin, whereby, while allowed to swing sidewise and rock vertically, the beam is prevented from wobbling, as set forth.

5.—The combination of the shovel-beam, hinged at its front end to the machine, a lever for raising and lowering said beam, located upon the machine in rear of the point at which the shovel-beam is hinged, and the lifting connection secured at its lower end to the beam, remote from its front end, and at its opposite end attached at a point substantially in the vertical plane of the said hinged connection between the beam and frame, to a support operated by the lever, these members being constructed and operating substantially as hereinbefore set forth, whereby the beam, in swinging sidewise, moves substantially in a horizontal plane, and

the depth at which the shovels are working at the beginning of said movement sideways remains unchanged.

6.—The combination of the down hanger, the shovel beam hinged thereto, the lifting connection, the thrust bar, and the lifting lever, these members being constructed and operating substantially as hereinbefore set forth.

7.—The combination of the hinged shovel beams, the lifting levers, their supporting detent brackets, the thrust bars, the lifting connections between the thrust bars and the shovel beams, the yoke connecting said beams and the curved rods passing around the thrust bars, secured at their upper ends to the lever-supporting brackets, and at their lower ends jointed to the yoke, these members being constructed and operating substantially as hereinbefore set forth whereby the levers and the yoke are both supported by the detent brackets without interfering with the movements of the yoke, levers, or thrust bars.

8.—The combination, as hereinbefore set forth, of the shovel-beam, the bracket, yieldingly attached, by its upper portion, to said beam, and having a serrated face upon its lower pendent portion, which projects below the beam, the grooved and serrated plate, the short shovel-standard and the eyebolt and nut by which the standard is secured in the groove of said plate and the serrated face of the plate secured to the corresponding face of the pendent portion of the bracket beneath the beam, whereby a high swing beam may be employed, a saving is effected by reducing both the length and size of the standard, and the range of adjustment of the standard is increased, as set forth.

9.—The slip-casting or bracket M, constructed as described, centrally perforated for the passage of the shovel-standard eyebolt and provided with two inclined arms of corresponding length, radiating from its center and slotted at their outer ends, whereby the casting is adapted to be secured to the beam upon either side, with either arm in advance, in the manner and for the purpose described.

10.—The combination of the shovel beams, the slip-casting, their inclined slotted arms, the bolts passing through the slots and beam, their nuts, and the shovel-standards connected with the castings, these members being constructed and operating as set forth, whereby the castings are rendered reversible and interchangeable, adjustment of the inclination of the standards independently of the castings admitted, and injury to the machine avoided.

No. 186,095.—PHILIP STUDER, MECHANVILLE, IOWA.—*Cultivators*.—January 9, 1877. Filed October 14, 1876.

Claim.—The combination of the bent bar C and the braces E F with the tongue D and the axles B, substantially as herein shown and described.

No. 186,713.—S. DAHLBOM, CARPENTERSVILLE, ILL.—*Wheel Cultivators*.—January 30, 1877. Filed June 12, 1876.

Claim.—1.—In a wheeled cultivator, the draught-bars of which extend in front of the axle, the combination of the draught bars D, cross-bar F, constructed as described, and connected to both draught-bars, and evener E, attached to and supported by the cross-bar on the forward ends of the draught bars, substantially as and for the purpose set forth.

2.—In a wheeled cultivator, the draught bars D, arranged between the wheels, and extending in front of the axle, in combination with a draught-supporting bar, connecting to their forward ends, and an upper draught-frame, provided also with a draught-supporting bar arranged above the former, whereby the machine is adapted to high or low draft by changing the evener from one support to the other, substantially as described.

3.—The bent arms L, constructed as described, pivoted together, and adjustably connected together at their upper ends, in combination with the draught bars D, connected thereto by swivel-joints, substantially as and for the purpose set forth.

4.—The combination of the clamping-piece I, constructed with a projecting bearing-flange, i, eyebolt h', standard H, and draught bar D, substantially as described.

5.—The combination of the standard H, holding-clamp I,

and pivoted stop K, substantially as and for the purpose set forth.

No. 186,780.—A. K. WOLFE, PRAIRIE CITY, MO.—*Wheel-Plough Carriages*.—January 30, 1877. Filed July 1, 1876.

Claim.—The independent cranked axles A, arranged to swing freely upon the tongue B, in combination with the evener F, arms E, and draft-rod G, substantially as shown and described.

No. 186,873.—JOS. F. POOLE, MONROE, WIS., assignor of one-half his right to E. C. GILLET, same place.—*Combined Cultivators and Corn Planters*.—January 30, 1877. Filed December 21, 1876.

Claim.—1.—The cultivator-beam herein described, in combination with two parts, G G', hinged together, and provided with the adjustable flanged plate c, for regulating the depth at which the plough is to work, as set forth.

2.—The combination of the tongue C, double-tree D, with adjustable stirrups E E', jointed cultivator-beams G G', axle-tree A, and guard H, all substantially as and for the purposes herein set forth.

No. 187,043.—F. M. NEEDHAM, ROCKFORD, ILL.—*Wheel Cultivators*.—February 6, 1877. Filed November 29, 1876.

Claim.—1.—The pendants E, with upward-projecting arms fitted to enter the slots formed by the beam C, in pairs on each side, and capable of lengthwise adjustment on the beams, in combination with the drag-bars, carrying one or more shovels, for the purpose of balancing the machine in neck-draft, when used either as a riding or as a walking machine.

2.—The levers F and F', having cam-formed feet, in combination with the pendants, and caps c, for the purpose of fixing the pendants in position on the beams C, as hereinbefore set forth.

3.—The combination of the levers F and F', connecting-bar f, and sliding jaw f', fitted to engage the notched upper portion of the pendants to which the levers are pivoted, to hold the levers in pairs locked, as and for the purpose hereinbefore set forth.

4.—The combination of the pendants and wheels f'' journaled thereto, and operating as described, for the purpose of reducing the friction in sliding the pendants back and forth on the beams C, as hereinbefore set forth.

5.—The pendants, fitted with the globular enlargement g', in combination with the drag-bars H and loops g'', these parts constructed and applied as hereinbefore set forth.

6.—The brackets i, fitted with spring-bolts i', in combination with the drag-bars and suspension-braces and perforated plates h and h', to hold the drag-bars in an elevated position, as and for the purpose hereinbefore set forth.

7.—The brackets i, fitted with spring-bolts i', in combination with the drag bars, suspension-braces, and perforated sliding plates h', for the purpose of regulating the depth of cultivation, as hereinbefore set forth.

8.—The arched sway-bar P, having arms p hinged thereto, and connected to the suspension-braces I, in a laterally-adjustable manner, by means of eye or hook bolts, and held in an upright position by staple-formed loop T, these parts constructed, arranged, and operating as and for the purpose hereinbefore set forth.

No. 187,235.—R. B. ROBBINS, ADRIAN, MICH.—*Cultivators*.—February 13, 1877. Filed May 22, 1876.

Claim.—1.—The jointed rod H, in combination with the beams or swing frames G G' and levers I I, with their connections, substantially as and for the purposes herein set forth.

2.—The combination of the beam G, with projection m, and the lever I, with loop n, for locking them together, as set forth.

3.—The adjustable rod R, having its rear end bent vertically upward, and perforated, as shown, in combination with the lug r, beam G, spring w, and shield S, substantially as shown and described.

4.—The combination of the leg L and serrated wrist Z, slotted to receive the leg L, with serrated sleeve p, attached to the tooth or blade, and held in place by a nut on the lower end of the leg, substantially as shown and described,

all constructed, arranged, and operating to facilitate the ready adjustment of the tooth to any desired angle.

No. 189,266.—JOHN RICHARDSON, ANCASTER TOWNSHIP, WESTWORTH COUNTY, ONTARIO, CANADA.—*Plough-Cultivators*.—April 3, 1877. Filed August 11, 1876.

Claim.—1.—In combination with the frame D, adjustably secured to the rear of the cultivator by the rod O and pins, the rods P and nuts K, for adjusting the height of said frame, and the chain Q, and wheel M, and its pawl for elevating said frame, substantially as herein set forth.

2.—In combination with the draft-bar G, the center-bolt, and rear adjustable bar O, the bar J, for preventing the frame from drawing obliquely, substantially as set forth.

3.—The combination of the draft bar G, bolted to the tongue, the link H and hook I, attached to the frame D, and the bar J, secured to the rod O, as and for the purposes set forth.

No. 189,896.—J. M. LONG, HAMILTON, OHIO.—*Cultivators*.—April 24, 1877. Filed May 31, 1876.

Claim.—1.—The frame consisting of rigidly-connected parts A, B, in combination with flexibly-connected parts C, E, D, O and stay D, substantially as and for the purpose described.

2.—The combination of the draft-bar D' and stay D with coupling O and double-tree E, as and for the purpose specified.

3.—The hinged coupling-block F, in combination with pivoted axle arm supports C, draft bar D', stay D, double-tree E, and plough-beam H, as and for the purpose described.

4.—In combination with the upper branches of pivoted axle-supports C and shaft B, the collar I, with its set-screw for laterally adjusting the ploughs and carrying wheels, in the manner and for the purpose specified.

No. 190,247.—WM. PIERCE, STONINGHAM, MASS.—*Stonesherry and Vegetable Cultivators*.—May 1, 1877. May 5, 1879.

Claim.—1.—The stationary and vibrating blades and cam-grooved roller, in combination with the belt to pick up, and the box to contain, the vines severed from the row, substantially as described.

2.—In combination, the vibrating vine cutting blades, the cultivator, the toothed belt, and the box or receptacle to contain the vines substantially as described.

No. 190,328.—W. P. HUBBARD and J. W. ROBINSON, FARMLAND, IND.—*Cultivator Attachments*.—May 1, 1877. Filed January 9, 1877.

Claim.—1.—In combination with the extensible lever I and adjustable rack bar J, the plate D and the tongue and lever gears E, G, substantially as described, and for the purpose set forth.

2.—In a wheel-cultivator, the supporting plate D, with its extension D', made in one piece, and attached to the transverse braces of the wooden frame A, in combination with the pivoted tongue F, having gear E, and the pivoted lever I, having gear G, whereby the gears are supported by said plate, always held in engagement with each other, and shielded from obstructions from below, substantially as described, and for the purpose set forth.

No. 190,902.—E. M. KISSELL and M. I. KISSELL, SPRINGFIELD, OHIO.—*Wheel Cultivators*.—May 22, 1877. Filed November 14, 1876.

Claim.—1.—The safety break joint B, pin c, slot d, gutta-percha blocks, e, or their equivalents, shields f, screw bolts g, substantially as described and shown.

2.—Hitch bars E, arched axle C, and brace rods D, in combination with the beams and tongue of a cultivator, constructed and arranged substantially as shown and described.

No. 191,101.—NATHAN T. BREWSTER and A. D. NEHER, ROSVILLE, CAL.—*Cultivators*.—May 22, 1877. Filed April 11, 1877.

Claim.—1.—The double separable frame A, A', combined with the detachable blocks B and the cultivator teeth C, having reduced shanks passing through the said blocks and bars, to be secured above the same, and provided with braces D, substantially as and for the purpose set forth.

2.—The combination, with the double frame A, A', of the detachable blocks B, held by the shank of the cultivator tooth, and the axle of the transporting wheel, arranged in bearings in said blocks, as and for the purpose described.

No. 191,179.—WM. J. ROBERTSON and PHILIP KNIGHT, JASPER COUNTY, MO.—*Cultivators*.—May 22, 1877. Filed April 13, 1877.

Claim.—1.—A plough beam g, consisting of two parallel plates, the end of one being fastened to the inside of the mould-board, and the other to the inside of the land side, in combination with the interposed plates i and the plates e, for connecting the beam to the axle, substantially as shown.

2.—The plough beam g, consisting of two parallel plates that are separated by the interposed plates i, and which have their front ends turned outward at right angles, so as to receive the clevis h, substantially as set forth.

No. 191,347.—JOHN JONES, STONEY POINT, CAL., assignor to two-thirds his right to SHANEY B. HOLLY and WM. H. MAGOON.—*Cultivators*.—May 29, 1877. Filed January 15, 1877.

Claim.—The combination, with the plough frame A, B, having its rear end mounted upon the axle D, of the beam-extension P, provided with the rack I, spindle g, driving wheel H, and upward turned standard I, and secured to the front of the frame, and lever O, pivoted to standard I and spindle g, and connecting rod J, which passes back over the frame and under the driver's seat, and rod K secured to the rear axle, the several parts constructed and arranged to operate together in the manner herein shown and described.

No. 191,666.—AUSTIN S. McDERMOTT, PRAIRIE CREEK, (MILLERAY P. O.), IOWA.—*Cultivators*.—June 5, 1877. Filed January 29, 1877.

Claim.—The combination of the sockets C, the cranks D, the chains E, the levers G, the pivoted standards H, the keepers and catches I, J, and the pins and springs K, L, with the plough beams J and the axle B, substantially as herein shown and described.

No. 191,690.—WILLIE F. DEWEY, ELKHORN, WIS.—*Cultivators*.—June 5, 1877. Filed April 12, 1877.

Claim.—1.—The combination of the tongue or pole D, the angular or bent castings or arms H, having transverse slots e, the drag bars I, pivoting bolts b, and adjusting bolts d, all substantially as and for the purposes herein set forth.

2.—The combination of the tongue or pole D, angular slotted arms H, pivoted adjustable drag bars I, and the split or crotched tongue E, secured to the axle A, and attached above the tongue D to the same by the link a, all substantially as and for the purposes herein set forth.

3.—In combination with the tongue or pole D, carrying the drag bars, the hinged lever O, carrying the adjustable seat N, the standard P, with hook i, and the connecting chain r, all substantially as and for the purposes herein set forth.

No. 192,402.—JAMES SHERRILL, HARRISBURG, OREGON.—*Cultivators*.—June 26, 1877. Filed March 3, 1877.

Claim.—1.—The plough standard M, pivoted between and at the ends of elastic bifurcations of beam E, and having a wedge-shaped projecting end beyond the pivot, the bifurcations converging from the top downward to hold the standard end, as shown and described.

2.—The plough beams E, having their forward ends bent sidewise into U form, to receive the cross rod F of the draw frame G, H, I, substantially as herein shown and described.

3.—The draw frame formed of the cross rod F, the curved bar G, the cross bar H, and the parallel bars I, in combination with the plough beams E, the clevis J, and the adjustable supporting bars L, substantially as herein shown and described.

No. 192,541.—GARRY STORM, PORTLAND, MICH., assignor to himself and JACOB M. BENEDICT, same place.—*Cultivators*.—June 26, 1877. Filed January 22, 1875.

Claim.—The combination, with the axle beam C and

bar F, of the rock shaft H, brackets I, lever J, arms *d d'*, and curved links L, for raising and lowering the shovel beam and locking the same in either position, substantially as described.

No. 192,742.—JAMES I. CURRY, OKLAHOMA, IOWA. — *Corn Harrows and Cultivators*.—July 3, 1877. Filed January 6, 1877.

Claim.—In a wheel corn harrow or cultivator, the combination, with the arms E, depending from the beam D, of the peculiar couplers A, composed of the wings *a a'*, meeting at an acute angle, the said wings being obliquely inclined toward each other, and being slotted at *b b'*, respectively in the line of the direction of their inclination, together with the beam F and the bolts *c*, as and for the purpose specified.

No. 192,800.—L. WERTENBERGER and G. W. AMISS, LAKETON, IOWA; said AMISS assignor to said WERTENBERGER.—*Sulky-Ploughs and Cultivators*.—July 3, 1877. Filed March 31, 1877.

Claim.—1.—The combination of pivoted frame X with levers M, shafts M', pivoted beams G, and toggle connections, substantially as and for the purpose set forth.

2.—The combination of pivoted beams G with braces J and L, standards H, rock shaft M', and adjustable toggles, substantially as and for the purpose set forth.

No. 192,022.—HENRY P. KYNETT, LISBON, IOWA. — *Cultivators*.—July 10, 1877. Filed June 20, 1877.

Claim.—1.—The devices for connecting the beams to the cultivator, consisting of the combination of sockets *a*, pivoted to the front ends of the beams, the round bolts *b*, having heads at the lower ends, the single bearings *c*, having lips *s* and semicircular grooves, and fastened by the eye bolts *e'*, which eye bolts hold in place, also, the connecting bolts *b*, substantially as described.

2.—The cultivator mould K, having the upper part of the mould concave and at the upper part of the beveled point straight, substantially as and for the purposes described.

No. 192,062.—SAMUEL N. HENCH, FORESBURG, assignor of one-half his right to WALKER A. DROM-GOLD, PATTERSON, PA.—*Cultivators*.—July 10, 1877. Filed March 10, 1877.

Claim.—1.—The combination of pivoted adjusting-lever R, having diagonally-opposite lips *r r'*, with locking plate S, having notch *s* and reversed notches *s'*, whereby said lever is adapted to raise the cultivator teeth out of engagement with the ground, or to adjust them to any depth required, substantially as and for the purpose set forth.

2.—The combination of drag bars W' with pivot rod W, supplemental drag bar Y, and spring plates Z, Z', substantially as and for the purpose set forth.

No. 193,012.—WALTER G. BARNES, FRIDPORT, ILL.—*Corn-Cultivators*.—August 7, 1877. Filed June 10, 1877.

Claim.—1.—As an improvement in cultivators, the combination of the hinged beams D, having spring loops G, axle B, and tongue or frame A, having hooks *h*, substantially as and for the purpose herein shown and described.

2.—In combination with the beams D and axle B, the adjustable coupling jaw herein described, consisting of the plates *p p'*, having segmental slots *g*, projecting lips *r r'*, and diagonal front caps or braces *s s'*, constructed and combined to operate substantially as and for the purpose herein shown and described.

No. 194,140.—T. D. GUTHRIE, JR., GALVA, ILL.—*Cultivator*.—August 14, 1877. Filed June 2, 1877.

Claim.—The combination of the coupling A, rigid beam B, and beam D, with bent standard F, pivoted to the beams, piece I, and brace G, substantially as described, and for the purpose specified.

No. 194,150.—SQUIRE J. HINKLE, SARATOGA, IND.—*Riding-Cultivators*.—August 14, 1877. Filed June 4, 1877.

Claim.—1.—The combination of the arched axle B, arched and bent bars K, the cross bar L, and cast-wheels, as shown and described.

2.—The combination of the bent bars K, seat N, plough

beams U, with foot rests *v*, levers V', and chains Z, substantially as and for the purpose specified.

No. 194,300.—JAMES H. PALM, LEXINGTON, OHIO. — *Riding-Cultivators*.—August 21, 1877. Filed January 17, 1877.

Claim.—1.—The tongue E, provided with the contraction and swell, substantially as shown and described.

2.—The handle *f*, composed of the parts *i l*, in combination with the flanged quadrant *o*, the lower portion of the handle being provided with a spring *g*, arranged to project a pin *c*, beyond the end of the handle, substantially as shown and described.

3.—A cultivator handle pivoted upon its bolt and provided with a spring device to engage it rigidly with its plough beam, whereby the handle is held in working position or released and adjusted at various heights by elevating the handle itself, substantially as set forth.

4.—A cultivator handle, *f*, provided with the spring *g* and pin *c*, in combination with the flanged quadrant *o*, substantially as set forth.

5.—The lever *a*, pivoted on the centre pin *y* of the circular ratchet *r*, which forms a bearing for the lever upon one side and an engaging ratchet upon the other, and provided with the spring *z* and stud *z'*, substantially as shown and described.

No. 194,370.—DAVID ARCHER, JR., BRIER HILL, N. Y.—*Adjustable Wheel-Cultivators*.—August 28, 1877. Filed June 30, 1877.

Claim.—The combination, in a cultivator, of the tongue I and standard G, having wheel H, with the front bar F, pivoted between beams A A', and provided with lever J, as and for the purpose specified.

No. 196,818.—W. METTLER, FRANKFORT, ILL.—*Wheel-Cultivators*.—November 6, 1877. Filed June 21, 1877.

Claim.—The cross bar *e*, pivoted at its centre to the top of the adjustable main frame B, in combination with the cross rods *a* and frame *c*, for the purpose of moving laterally the frame *c*, with its two shovels attached below, having rear push braces with break pins, in the manner and for the purpose set forth.

No. 197,038.—IRWIN MACV and J. C. WATKINS, HARRISBURG, OREGON. — *Wheel-Cultivators*.—November 13, 1877. Filed July 13, 1877.

Claim.—1.—The combination of the inclined or diagonal bar J, made in two parts or sections, the draw rods I, and the braces T, with the plough-beam S and the frame-work of the machine, substantially as herein shown and described.

2.—The combination of the adjustable perforated bars L N P with the inclined or diagonal bar J, to which the plow beams are attached, and with the frame work of the machine, substantially as herein shown and described.

3.—The combination of the levers X and catch-bars Y with the arms W, the diagonal bar J, and the plough beams S, substantially as herein shown and described.

No. 197,503.—MORRIS L. UTTER, ROCKFORD, ILL.—*Cultivators*.—November 27, 1877. Filed August 14, 1877.

Claim.—1.—The combination, with the axle-tree, the converging beams C, secured thereto, and cross bar E, of the pendular bars *b*, secured to the ends of cross bar E by brackets, and the brace rods *f* and *g'*, the brace-rod *f* being secured to the pendular arm and arm of the axle, while the brace connects the lower end of the pendular arm with the cross-bars substantially as described.

2.—The joint-plates *e* and *d*, washer *e'*, and joint-bolt *e'*, these parts constructed, arranged, and operating, as herein described, to produce a double hinge-joint, reversible and interchangeable, capable of use on either side of the machine, as and for the purpose hereinbefore set forth.

3.—The combination, with the levers M, located in front of the driver's seat, of the supporting chains or linked rods, connected at their forward ends to levers M, and also to the frame at a point practically in the same vertical plane with the forward ends of the drag-bars, and at their rear ends connected to the longitudinally-adjustable plates K, substantially as described.

4.—In a standard bracket, the combination of the bed-plate H, the slotted slip-arm *h*, fitted to receive the shovel standard, screw bolt *h'*, upon which the slip-arm works, swivel-sockets *g*, and eye-bolt *g'*, whereby the shovel is allowed to turn back to pass obstructions, as hereinbefore set forth.

5.—The swivel block *z'*, in combination with the shield and chambered socket, substantially as herein described, to limit the oscillatory movement of the shield, as hereinbefore set forth.

6.—The chambered socket secured to the drag-bar, and made adjustable thereon by means of the screw eye-bolt, as herein described, in combination with the swivel block, secured to curved supporting bar to limit the downward movement of the shield, as hereinbefore set forth.

7.—The toggle-plates herein described, secured to the inner face and rearward-projecting ends of the converging beams, the inner plate made adjustable to raise or lower the stud-projecting eccentrically from its inner face, for the purpose of raising and lowering the driver's seat, as and for the purpose hereinbefore set forth.

8.—The adjustable seat plates P, in combination with the curved bars N, pivoted at their forward end to the frame, and the seat O, made longitudinally adjustable on the seat-bars, and arranged to turn the seat forward, substantially as set forth.

No. 108,090.—IRA BARBER, LA PORT, INDIANA. —*Cultivators*.—December 11, 1877. Filed March 12, 1877.

Claim.—1.—The combination of the axle and the plate I with pivot post H and cross-bar G, all being constructed, arranged, and combined substantially as shown and described.

2.—The rigid bar I, attached to the upper frame work by a pivot joint, and provided at its lower end with notch *g'* and several pin-holes and a pin, such lower end passing through a slot in the cross-plate *m*, secured in the plough-beams, in combination with said frame work and the plough-beams, substantially as described, whereby the plough may be latched up when not in use, and may also be adjusted at different positions, so as to regulate the depth of its cut.

No. 108,563.—ROBERT T. BOWNE, FEELSON, MD. —*Cultivators*.—December 25, 1877. Filed November 20, 1877.

Claim.—1.—In a straddle row cultivator, two gangs or groups of drag bars, each provided with a cultivator tooth, coupled together by a link rigidly secured to one group and movably attached to the other, and operated by a hand-lever, so that the driver may at will cause said groups to recede from or approach each other, as set forth.

2.—The gangs or groups of drag bars, each provided with a cultivator tooth, connected together by a link rigidly attached to one group and movably attached to the other, combined with the slotted bell-crank M, connecting rod O, and hand-lever N, whereby the driver can shift the relative positions of said groups at will.

3.—The main frame, provided with a seat and separate gangs of cultivator drag bars and their teeth, and a main axle C, pivoted to said frame, combined with the toothed segment F and pinion G, geared thereto, and a double foot lever, H, attached at its centre to the pinion-spindle, so that the driver, while sitting upon his seat, can rest his feet upon said lever, and thereby control and guide the apparatus.

No. 108,616.—JAMES HIGGINS, WESTFIELD, N. J. —*Cultivators*.—December 25, 1877. Filed April 2, 1877.

Claim.—The axle of a wheel cultivator, provided with rigid arms I, to which are pivoted the forked drag bars E, the pivot-rod H, stay-rod G, and pivoted link J, in combination with the rock-shaft K, having rigid arms J, lever L, and pawl and ratchet *m*, n, substantially as described.

No. 108,624.—JOHN S. JOHNSTON and C. A. JOHNSTON, ROCKFORD, ILL.—*Cultivators*.—December 25, 1877. Filed October 22, 1877.

Claim.—The combination of the adjustable eye or socket plates F, the connecting bars G, the bars H, and the bar or

block N, with the plough beams A and the axle I, whereby the plough beams are allowed to oscillate laterally and are raised by the driver's weight, substantially as herein shown and described.

No. 108,752.—HUGH PARKER, OPAWA, ILL.—*Gopher or Riding Attachments for Cultivators*.—January 1, 1878. Filed August 14, 1877.

Claim.—1.—The herein-described gopher or riding attachment for cultivators, consisting of the adjustable blades C, bars D, D, pivoted brace-bars E, H, I, and adjustable bars G, substantially as and for the purpose specified.

2.—The combination, with the blades C, of the bars D, provided with the vertical slots *a*, and the slotted brace-bars E, H, I, substantially as and for the purpose specified.

3.—The combination of the bars D, provided with the slots *a* and slotted brace-bars, and the horizontal bars G, provided with the slots *g*, substantially as and for the purpose specified.

No. 109,025.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Cultivator-Tongues*.—January 8, 1878. Filed April 23, 1877.

Claim.—1.—An adjustable device located upon a cultivator tongue, and extending rigidly across the same, so as to separate the team without being turned from a horizontal plane, substantially as described.

2.—A separating wheel or disk, combined with the tongue of a cultivator, and arranged to rotate substantially as and for the purpose set forth.

3.—The separating-wheel B, arranged to rotate, and mounted upon a standard fixed to the tongue of the cultivator, as and for the purpose described.

4.—The handles F, having hooks *g'* in combination with the cultivator-tongue, the bar E, and crank-shaft C, substantially as and for the purpose described.

No. 109,080.—LOUIS ANTHOINE, EPPWORTH, IOWA. —*Cultivators*.—January 29, 1878. Filed October 30, 1877.

Claim.—The combination, with cross-bar B, of a plough-beam N, connected therewith by the U-bar K, lug-pivot L, and off-setted bar M, substantially as and for the purpose specified.

No. 109,701.—MUCKERSIE G. GRAHAM, MONMOUTH, ILL.—*Cultivators*.—January 29, 1878. Filed October 15, 1877.

Claim.—1.—In a cultivator, the side frames to which the ploughs are hinged or journaled, combined with one of more bars B, having guides, by which they are connected with the side frames, and whereby the said side frames may be slid or reciprocated upon the bar or bars B, to advance or recede either of the side frames while they are held at uniform distances apart, and the bar or bars B remain at right angles to the line of progression of the machine and in a horizontal position, substantially as specified.

2.—The guide pole or tongue E, bolted to the bar B, and arranged to operate with the sliding frames A, ploughs J, J, and wheels F, without interfering with the sliding or parallel motion of the frames, substantially as and for the purpose specified.

3.—The extensible and contractile yoke C, D, arranged to operate with the standards A', to which the cultivator-ploughs J are attached, substantially as and for the purpose specified.

4.—In combination with an extensible yoke C, D, and bar B, to which the tongue E is bolted, frames A, having ploughs J and wheels F attached thereto, and arranged to operate substantially as described, and for the purpose specified.

5.—The bar or bars B, combined with the bars *a''*, on which they slide, and with the standards A', ploughs J, and wheels F, substantially as described, and for the purpose specified.

6.—The bars B, B', having adjustable loops *b* on their ends, combined with the frames A, ploughs J, and wheels F, substantially as and for the purpose specified.

7.—The drag-plates H, rigidly attached to the standards A', and having extended rear ends *h'*, to which the ploughs J are connected, combined with the sliding frames A, wheels F, bars B, and tongue E, substantially as described, and for the purpose specified.

No. 200688.—DANIEL R. RAYMOND, CALIFORNIA, IOWA.—*Cultivators*.—*March 23*, 1878. Filed *Dec. 23*, 1877.

Claim.—In a cultivator, the combination of the arched axle A, with perforated castings α and legs β , the inclined frames C, forming horizontal perforated bars G, the laterally-adjustable pivoted bars H, and the vertically adjustable cultivator beams I, forming J-shaped clips α' at their forward ends, all constructed substantially as and for the purposes herein set forth.

No. 200687.—PAULICK J. WARD, St. Mary's, Ind.—*Cultivators*.—*March 23*, 1878. Filed *Dec. 27*, 1877.

Claim.—The combination of the journal B, provided with the upright arm α and the horizontal arm β , the levers C, provided with the leg γ , the curved arms δ , and the curved arm δ' , with the wheel A, the spindle E, the arched bar or axle F, and the plough-beam D, substantially as herein shown and described.

2.—The combination of the bent levers I, the weights N, the bent and slotted levers O, the rods, wires, or chains P, and the hinged arms Q, with the plough-beam D, and the arched bar or axle F, substantially as herein shown and described.

3.—The combination of the lock block L and spring latch JK, with the arm formed upon the pivoted end of the weighted lever I, N, the plough-beam D, and the plough standard H, as and for the purpose specified.

No. 200690.—SABER GELSEY, BROOK, WIS.—*Cultivators*.—*March 23*, 1878. Filed *April 10*, 1877.

Claim.—The standard S, having the slotted foot bar β on its lower end and the grooved block C on top of its upper end, and provided with the post K, pivoted to the foot bar β , and sliding in the grooved arm α , substantially as shown and described.

2.—The combination of the standard S, the socket plate E, the brace rods α , plough beams H, hinged slotted arms α' , bent levers I, and ratchet plates R, all arranged substantially as shown and described, and for the purpose set forth.

3.—The combination of the standard S, the socket plate E, the brace rods α , plough beams H, hinged slotted arms α' , bent levers I, and ratchet plates R, all arranged substantially as shown and described, and for the purpose set forth.

No. 200636.—DAVID S. WAGNER, CARLEST, PA.—*Cultivators*.—*March 12*, 1878. Filed *January 30*, 1878.

Claim.—In a cultivator, the combination of the double standards m , double pointed shovel g , catches α , rods u , and spring h , substantially as shown.

2.—In a cultivator, a double pointed shovel g , provided with the rods u , in combination with the spring catches α and double standards m , the parts being combined to operate in such a manner that the point of the shovel remains in the earth until it strikes an obstruction, when it automatically revolves half way around, and at once enters the earth with its other point, substantially as described.

3.—The combination of the connecting rod β , pivoted spindles α , loops γ , levers h , rods u , and connecting device v for uniting the beams β to the handles, substantially as set forth.

4.—The combination of the revolving shovel, catches to hold it in position, connecting rods, and spring, substantially as shown.

5.—The adjustable stop p , in combination with the standards and the turned up end σ of the beam, substantially as described.

No. 200627.—DAVIS PATTEE, Des Moines, Iowa.—*Cultivators*.—*March 20*, 1878. Filed *Nov. 9*, 1877.

Claim.—The swinging strap form couplings γ , in combination with a cultivator carriage and plough beam, substantially as and for the purposes set forth.

2.—In a wheel-cultivator, the combination of the carriage frame a , the axle bearers b , the sub-axle γ , the hinged cranks δ , the segmental racks ϵ , and the strap form beam couplings ζ , substantially as and for the purposes shown and described.

No. 200676.—THADDEUS F. S. WELLS, Youngers, Mo.—*Cultivators*.—*Dec. 2*, 1878. Filed *Dec. 23*, 1878.

Claim.—The combination of the bound D D and the perforated plate F, forming a socket, with the longitudinally adjustable tongue G, carrying a draught β , β' , and the seat H, the pins α , and axle C, substantially as shown and described.

2.—The segmental adjustable perforated clevis H, provided with the loop α in combination with the adjustable tongue G, and double tree G', for the purposes herein set forth.

3.—The combination, with the tongue, of the adjustable clevis H, pins α , loops m , α' , and seat supporting bars H', substantially as and for the purposes herein set forth.

4.—The combination of the plough beams O and R and the curved slotted iron V, substantially as and for the purposes herein set forth.

5.—The combination of the main clevis X, clevis β , and adjustable arm A, carrying the revolving fender B, substantially as and for the purposes set forth.

No. 202412.—FRIDERIC K. C. FEEFELER, AINSWORTH, IOWA.—*Cultivators*.—*April 9*, 1878. Filed *December 4*, 1877.

Claim.—The combination, with lever E, working in rear α and engaging with the intermediate bar D, of the forward vibratory bar F, which connects with the draught apparatus, said lever and vibratory bar being pivoted to the fixed bar I, and adapted with reference to the rock shafts B so that the vibratory bar may have free sliding bearing upon the fixed bar, substantially as set forth.

2.—The combination, with the cultivator beams and draught frames rigidly secured to each other, of the hook bolts, by which the said beams are adapted to be laterally adjustable, the draught frames having their outer side pieces secured to the respective uprights of the main frame, while their inner side pieces are connected by braces to the rigid cross bar of said frame, substantially as described.

3.—The combination, with the draught frames N, made as shown, of the draught lats H, pivoted to the outwardly projecting extremities of the curved side pieces γ , substantially as set forth.

No. 202383.—GEO. W. STAVER, MONROE, WIS.—*Rolling Cultivators*.—*April 10*, 1878. Filed *June 15*, 1877.

Claim.—The hand and foot levers, connected by a chain passing over a pulley direct to each, and so arranged that the foot lever carries the drag bar.

2.—The lever E, provided with the spring γ upon one side of the standard D, and the projection α upon the opposite side, in combination with wheel F, chain H, and foot lever, substantially as and for the purpose set forth.

No. 203394.—DAVID L. WELLMAN, FRAZEE CITY, MISS.—*Cultivators*.—*May 7*, 1878. Filed *January 10*, 1878.

Claim.—In a wheel cultivator, the axle A, having its wheels laterally adjustable thereon, and carrying a series of drag bars, G H, arranged on both sides of said wheels, in combination with the tongue and frame C D E, the elevated cross-bar F, the lifting frame N, levers M, guides β , and hooks β' , substantially as shown and described.

No. 204412.—JOSEPH YOUNG, CLAYTON, MO. H.—*Cultivators*.—*May 28*, 1878. Filed *January 17*, 1878.

Claim.—A cultivator frame to which the ploughs are attached, said frame being pivoted at its rear end to side beams, or to a frame pivoted or hinged to the axle, and at its front end to pivoted levers, whereby the frame may have an oblique forward falling motion, and a correspondingly oblique backward rising motion, substantially as and for the purpose set forth.

2.—The combination, with the cultivator frame C and side beams B, constructed to operate as specified, of the seat or seat board, connected to said frame and beams by pivoted standards J and straps γ , substantially as and for the purpose set forth.

3.—The frame consisting of the parallel bars C, con-

ned at its rear end to the pivoted cross piece D and at its front end to cross piece F, the latter having its bearings in parallel struts *e*, in combination with the levers A, struts *e*, and beams B, substantially as and for the purpose described.

No. 205,880.—WILLIAM S. MOON, PLEASANT GROVE, GA.—*Cultivators*.—July 9, 1878. Filed April 15, 1878.

Claim.—In combination with the side beam I, provided with the bend *a*, the plough foot L, formed of a metal bar, bent double in the center, with one arm on each side of the side beam, and provided with rearwardly and downwardly curved tops, and connected to the beam at two points, as shown at *h* *i*, as and for the purposes set forth.

No. 200,040.—FRANCIS W. PUSEY, CARHART, IND.—*Wheel Cultivators*.—July 10, 1878. Filed June 4, 1878.

Claim.—1.—In a wheel plough, the vertical shaft K, having a crank, K¹ above, and a crank, K² below, and a crank axle of hinge, K³, at the rear end of the crank K¹, combined with the plough beam K, in the manner and for the purpose set forth and described.

2.—In a wheel-plough, the arms *m* *m*, having clamps O O and vertical sleeves T T, combined with the arched axle B and crank shafts K K, in the manner and for the purpose set forth and described.

3.—In a wheel-plough, the tongue E, with lever E and connecting rods *e* *e*, combined with the cranks K¹ K² and plough beams K, in the manner and for the purpose set forth and described.

4.—The rods K, with cranks K¹ and K², combined with the rear end of the tongue E, in the manner and for the purpose substantially as set forth and described.

5.—The plough beams K, combined with the crank bar K¹ K² and rear end of the tongue E, in the manner and for the purpose substantially as shown and described.

No. 208,400.—JAMES A. WOOD, GAYNSBOROUGH, IND.—*Horse Attachments for Wheel-Ploughs*.—July 30, 1878. Filed May 27, 1878.

Claim.—The herein described hawthorn, constructed as shown, and having its beams provided with transverse elongated slots C C, and fastening devices passing through said slots and adapted to be applied to different shaped beams of double or other ploughs, substantially as specified.

No. 200,703.—WALTER G. BARNES, FREDDRI, ILL.—*Riding Cultivators*.—August 9, 1878. Filed February 28, 1878.

Claim.—1.—As an improvement in riding-cultivators, the combination of the tongue A, having adjustable rose-plates E E' E', connecting arms D D, and pivoted converging seat bars C C, carrying the seat C', whereby the throw and elevation of the seat may both be regulated, substantially as and for the purpose herein shown and described.

2.—The combination, with the flanged rose-plates F E, of the arms D D, having perforations *r*, bolts *s* *s*, rose plates E' E', having recesses *h* *h* and thumb nuts *t*, substantially as and for the purpose herein shown and set forth.

3.—The combination of the adjustable arms D D, flanged wedge plates *a* *d*, bolts *r* *r*, and pivoted converging seat bars C C, substantially as and for the purpose herein before set forth.

4.—The combination of the pivoted cultivator beams K K, having keepers P P, lined or swiv bars N N, perforated cross bar O, and adjusting bolts *m* *n*, substantially as and for the purpose herein shown and described.

5.—The combination of the slotted plate K, adjustable cut pieces F, having heads S, and jam nuts *z*, substantially as and for the purpose herein shown and described.

No. 205,093.—SPENCER R. STANON, OXFORD, MO.—*Cultivator*.—August 13, 1878. Filed November 9, 1877.

Claim.—1.—In a cultivator, the combination of the main frame A, the movable cross bar K, held in guides attached to the main frame, the plough feet or standards J,

rigidly attached to the cross bar, and the lever L, attached to the bar K and pivoted on the main frame, whereby the bar K, with the plough standards, can be moved laterally in either direction across the frame, for the purposes herein set forth.

2.—The combination of the frame A, crank axle D, with arm D', rod *a*, and lever G, the laterally-sliding bar K, with plough feet J J, and lever L, all constructed and arranged to operate substantially as and for the purposes herein set forth.

No. 208,025.—CARLOS D. BRADLEY, MACFEDONIA, IOWA, assignor of one-half his right to THEODORE E. BRYANT, same place.—*Cultivators*.—August 13, 1878. Filed April 5, 1878.

Claim.—1.—The combination, with the laterally adjustable plough or shovel beam O, of the shaft P, provided with arm Q', having a slotted plate or lateral extension, R, and threaded and nutted rod *r*, connecting by swivel joint the said beam to the lateral-slotted extension K of the shaft arm Q', substantially as shown and described, for the purpose set forth.

2.—The combination, with the laterally and vertically adjustable handle I, of the extensible yoke consisting of the rods *k* *k* and the collars *l* *l*, provided with adjusting or holding screws *m* *m*, and correspondingly adjustable or movable shovel beams K K, to which the yoke *k* *k* is swiveled, substantially as shown and described, for the purpose specified.

3.—The combination, with the shovel-beam-securing castings I', fabricated at their forward ends, and having their fastening bolts provided with rollers or pulleys *e* *e*, of the draft-equalizer, consisting of the levers D D, rods F F, and F' F', the rods F F' connected together by cross tree *c*, chains *d* *d*, and whiffle-trees G G, substantially as shown and described, for the purpose specified.

No. 200,004.—JAMES E. MUSTARD, GLEN HALL, ILL.—*Wheel Cultivators*.—August 13, 1878. Filed March 4, 1878.

Claim.—The combination of the arched draw-bar E and fifth-wheel C D with the arched axle B, the plough-beams G, and the independent draft-connection I J K L, substantially as shown and described.

No. 207,308.—FREDERIC W. DEGEN, NEW ATHENS, ILL.—*Sulky-Cultivators*.—August 27, 1878. Filed February 1, 1878.

Claim.—1.—The block J, swiveled upon the hanger I, and having two bearing-faces, in combination with the two plough-beams K K, and with the arm C, having a vertical notched cross-head, and the angular plate or keeper Y, whereby two separate plough beams are attached to one hanger, and allowed independent movement or vertical adjustment with respect to each other, as shown and described.

2.—The combination of the swinging curved arms J' J', the connecting-bar L, the pivot bolts L', and the slotted plates H' with the pairs of laterally-movable plough-beams having guide-plates K', and the supporting frame, as and for the purpose set forth.

No. 208,073.—FRANCIS M. CROPP, PLATER COUNTY, MO.—*Cultivators*.—September 17, 1878. Filed February 10, 1878.

Claim.—The coupling consisting of the sleeve *h*, having the perforated rib *a*, the forked arm *z*, U-shaped yoke *m*, and bolt *l*, combined and arranged substantially as specified.

No. 208,320.—DANIEL KERSHNER, THIOS, S. MONGER, and FRANCIS M. MONGER, CONSERVILLE, IND.—*Ploughs*.—September 24, 1878. Filed March 11, 1878.

Claim.—1.—The arched axle B and its pins *c*, combined with the clamping plates *e* *e*, having recesses *t* *t*, and pivoted to the adjustable beam C of the ploughs, and arranged to form an intervening space for the passage of the pins *c*, all substantially as set forth.

2.—The combination, with the parallel beams C C, of the plate D, ears *r* *r*, and bar L, bolted to the plate between the ears, and extended backward and forward to form the standards *s* *s*, substantially as set forth.

3.—The combination of the plate D, ears *r*, and pivoted arms *d*, having enlargements *d'* and bolted to the beams C C, as set forth.

No. 208,377.—THEODORE E. DANIELS, MORRISON, ILL.—*Comb. Cultivators and Corn-Plows*.—*Septem-ber 24, 1878. Filed July 9, 1878.*

Claim.—1.—The plough-beam coupling consisting of the bolt or rod *b* extending through the ears of the beams, and the clip around said bolt, crimped in front of the same and extending forward, in combination with the axle-plate *a* and its bolt, substantially as specified.

2.—A cultivator having an arched axle, side-beam sections, and detachable centre beam, connected to the arch of said axle by means of a transverse bar, the perforated guide-bar *A'*, extending transversely across the rear ends of the beams, and the vertical hanger rods *c'*, extending through the perforations of said bar into the beam ends, substantially as specified.

3.—A cultivator having a squared and centrally-attached axle and a section of several beams, connected to each end of said axle by a single clip engaging a lateral pivot on the axle and a vertical pivot on said clip, a horizontal rod passing through the ears of said clip and connecting the forward ends of said beams, in combination with the cross-bar *A'*, screw-bolts *c'*, and handle *f'*, substantially as specified.

No. 208,921.—CHESTER NASH, DAVIS JUNCTION, ILL.—*Cultivators*.—*October 15, 1878. Filed August 17, 1878.*

Claim.—1.—The combination, with the main frame of a cultivator and slide-ways arranged to project above and below the main frame in front of the axle, of drag-bars, each having a slide secured to its forward end, said slides provided with bearings or sleeves, which surround the slide-ways at points above and below the cultivator-frame, substantially as set forth.

2.—The combination, with stationary slide-ways attached to the main frame of a cultivator, and arranged to project above and below the main frame, of drag-bars, each having a slide secured to its forward end, said slides provided with bearings or sleeves, which surround the upper and lower portions of the slide-ways, and are adapted to be vertically adjusted thereon, and hand-levers attached to the upper ends of the slides and arranged to raise and lower the same, substantially as set forth.

3.—The combination, with the main frame of a cultivator, provided with slide-ways located in advance of the axle and arranged to project above and below the main frame, of flexible connections having their opposite ends respectively attached to the slides and drag-bars, substantially as set forth.

4.—The combination, with the drag-bars of a cultivator, of shovel-frames pivoted to the rear ends thereof, and connected by a pivotal sway-bar, whereby the shovel-frames are adapted to have independent vertical movement and a lateral movement in unison with each other, substantially as set forth.

5.—The combination, with the drag-bars and shovel-frames pivoted thereto, of a sway-bar, to the opposite ends of which the shovel-frames are adapted to be pivoted in a laterally-adjustable manner, substantially as set forth.

6.—The combination, with the drag-bars and shovel-frames pivoted thereto, of a sway-bar composed of two transverse bars, between the opposite ends of which are pivoted the upper ends of the shovel-frames, substantially as set forth.

No. 209,118.—ALBERT GEPPERT, SPRING PRAIRIE, WIS.—*Wheel-Cultivators*.—*October 22, 1878. Filed March 23, 1878.*

Claim.—The combination, with the tongue C and beam D, of the casting F, with jaws *d*, the casting J, with hubs *h*, the swiveled pin G, having a flattened eye at its upper end, and the pivoting-bolt *e*, all constructed substantially as and for the purposes herein set forth.

No. 209,210.—DANIEL ARGEBRIGHT, TROY, OHIO.—*Wheel-Cultivators*.—*October 22, 1878. Filed March 16, 1878.*

Claim.—The box *m*, secured on the axle to cover the inner end of the wheel-hub, and provided with drag K and arm L, substantially as set forth.

No. 209,224.—HUGH H. CANADAY, FAIRFIELD, IOWA.—*Revolving-Cultivators*.—*October 22, 1878. Filed December 1, 1877.*

Claim.—In a wheel plough, the frame A, having the horizontal side bars, *a*, extending from end to end, the front bar, B, bent downward at each side at *a'*, and horizontally at *c*, to receive the clevises *d*, thence upward at the middle to form an arch, *b*, for the tongue, the adjustable wheel-clamps *h* on said bars, the rear bar, C, having the seat G and the foot rests J, connecting the rear ends of the plough-beams and depending therefrom in rear of the shovels, substantially as specified.

No. 209,491.—MOSES JOHNSON, LOCKPORT, N. Y., assignor of one-half his right to MOSES C. RICHARDSON, same place.—*Cultivators*.—*October 29, 1878. Filed July 19, 1878.*

Claim.—The cultivator tooth F, made of one sheet of metal, bent nearly at right angles, forming a vertical section *h*, corresponding to the land side of a plough, which inclines rearwardly from the point to the top, and is provided with a rear extension, curved inward toward the furrow, and having a horizontal or share section, *h'*, with a cutting-edge running backward obliquely from the point, substantially as shown and described.

No. 209,431.—JOHN STIMMEL, COLUMBUS, OHIO.—*Wheat-Cultivators*.—*October 29, 1878. Filed August 23, 1878.*

Claim.—In a wheat cultivator, the combination of the pivoted cross-bar D, having hinged cultivator beams F F, provided with the shanks I J, having points U, notched cross-piece H, standards K, having pins *h*, and pivoted handles M, provided with loops N, constructed and operating substantially as and for the purposes set forth.

No. 209,527.—FRANK T. VERHAREN, VINTON, IOWA.—*Corn-Cultivators*.—*October 29, 1878. Filed August 4, 1877.*

Claim.—1.—A means for connecting the axle arm C with and giving to the same a certain degree of motion upon the frame bar B, the sleeve *c'*, provided with the slot *c''*, the brace bar E, and the screw F, said parts being combined to operate in the manner and for the purpose specified.

2.—In combination with the axle arm C and plough-beam I, the sleeve G, provided with the plate *g'*, having vertical openings *g''*, the ears *g*, provided with horizontal openings *g'''*, and the bolts H and K, substantially as and for the purpose set forth.

3.—As an improvement in wheel-cultivators, the pole A, frame bar B, axle-arm C, sleeves *c*, having the slots *c'*, ground-wheels D, brace-bars E, screws F, sleeves G, having the ears *g*, plates *g'*, and openings *g''* and *g'''*, plough-beam I, draw bar L, bolts H and K, and hooked bar N *n*, all constructed and combined to operate in the manner and for the purpose substantially as specified.

No. 209,780.—GEORGE W. STAVER, MONROE, WIS.—*Cultivators*.—*November 12, 1878. Filed January 9, 1878.*

Claim.—The plates J I and sway-bar F, said plates clamping the sway-bar and inclosing the balls H, in combination with plates G, post E, and the beams C, substantially as set forth.

No. 210,073.—WILLIAM T. ADDISON, NEWCASTLE, IND.—*Cultivators*.—*November 19, 1878. Filed September 23, 1878.*

Claim.—1.—In a cultivator, the combination, with its axle or beam, of the cranked arms or bars C, having set or adjusting screws *d*, substantially as and for the purpose specified.

2.—The combination, with the beam or axle of a cultivator, of the cranked bar C, set-screw *d*, and adjustable rods or braces E, substantially as and for the purpose specified.

No. 210,861.—WILLIAM A. KNOWLTON and ANDREW RUTLEDGE, ROCKFORD, ILL.—*Cultivators*.—*December 17, 1878. Filed April 30, 1878.*

Claim.—1.—A pendant provided with bracing arms adapted to be secured to the side of the tongue beam and to the under side of the cross bar connecting the tongue beams the lower end of said pendant provided with a socket, in combination with a joint bar having a journal, *b'*, which turns within the socket on the pendant, the lower end of the joint bar provided with a stud, *b''*, and the plate of the

drag bar jointed on said stud and secured by a bolt, substantially as set forth.

2.—The evener having end hooks rigidly secured thereto for the attachment of the whiffletrees, in combination with removable vertical eveners pivoted to the straps of the end hooks, the lower ends of said vertical eveners provided with hooks to receive the whiffletrees, and draught links secured at their rear ends to the axle-tree, while their forward ends are attached to the vertical eveners, substantially as set forth.

3.—The combination, with the herein described three-part shovel-standard, of grooved blocks adapted to receive the forward and rear edges of the side plates of the standard and adapted to receive a shovel on the front side of the forward block, held in place thereon and made vertically adjustable on the standard by a screw bolt or bolts passed from the front through the parts between the side plates of the standard.

4.—The combination, with the three-part shovel standard herein described, of grooved blocks adapted to receive the forward and rear edges of the side plates of the standard, the front face of the forward block adapted to receive the convex surface of the shovel block secured to the shovel, and held in place and made adjustable on the standard by means of the screw bolt in the slot of the shovel block passing through the grooved blocks, and between the side plates of the shovel standard, substantially as and for the purpose hereinbefore set forth.

No. 210,903.—ANDREW CANFIELD, DAVENPORT, IOWA.—*Cultivators*.—December 17, 1878. Filed October 26, 1878.

Claim.—The combination of the tubular axle-tree A, the tubular couplings *t*, passed over the ends of said tree and secured thereto, and the horizontally and vertically bent tubular arms B, the horizontal end screwed into said *t*-couplings, and the vertical end having the vibrating collars *c*, adapted to receive the plough beams E, substantially as specified.

No. 211,646.—STEPHEN BAILEY, LEANON, ILL.—*Cultivators*.—January 28, 1879. Filed November 16, 1878.

Claim.—1.—The combination of the frame B, hanger D, bearings *d*, beams C C', lever I, link J, and arm K, substantially as described.

2.—The combination of the beams C C', arm K, joint *k*, eye *k'*, link J, and lever I, substantially as described.

3.—The combination of the axle *a*, arm G, standard *a'*, beams C C', and eyes *e' e'*, substantially as described.

4.—The arm G, having the forks *g' g'*, jointed together at *g'*, and provided with the nut *g'*, in combination with the beams C C' and eyes *e' e'*, substantially as described.

5.—The combination of the axle *a*, bearings *a' a'*, pivoted levers H H, clips *h h*, and forked arm G, substantially as described.

6.—The combination of the axle *a*, standard *a'*, forked arm G, levers H H, clips *h h*, beams C C', eyes *e' e'*, and bearings *a' a'*, substantially as described.

No. 211,781.—NOMI T. KEMY, BROOKVILLE, IND.—*Wheeler-Cultivators*.—January 28, 1879. Filed May 31, 1878.

Claim.—1.—The extensible crank axle B, having ring grooves *b'*, in combination with the cylinder C, attached to tongue D, and the set screws *c'*, as and for the purpose described.

2.—The combination of the sectional axle B, cylinder C, tongue D, evener E, hangers F, links H, and brace rods J, substantially as shown and described.

No. 211,792.—PRIOR S. RUSSELL, RIVERSIDE, CAL.—*Cultivators*.—January 28, 1879. Filed November 9, 1878.

Claim.—The improvement in cultivators or soil dressers consisting of the non-adjustable central beam, A, mounted upon the stationary and turning pairs of wheels, C D, and provided with the hinged adjustable diverging wings G, with their operating levers, as shown, said wings being provided with the chisels or teeth H and the diagonally

arranged cutters K, substantially as and for the purpose herein described.

No. 212,103.—CHESTER C. CLOVER, OSWEGO, KAN.—*Sulky-Ploughs*.—February 11, 1879. Filed March 16, 1878.

Claim.—The plough beam J, suspended near its front end by means of the perforated bar L, and suspended at its rear end by the holder O, in combination with an elbow lever, M, the forward end of which works in a slot, *e*, in the rear end of the plough beam, and the locking dog P and foot lever R, substantially as shown and described.

No. 212,546.—THEODORE M. FLENNIKEN, and ASA HALL, ROCKFORD, ILL., assignors to N. C. THOMPSON, same place.—*Cultivators*.—February 25, 1879. Filed April 18, 1878.

Claim.—1.—The combination, with the drag bar and hanger, of the flaring topped sheath *b* and the sleeve or holder *b'*, the sheath enclosing the sleeve and being supported by trunnions on the latter, and both encircling the hanger, and held thereon by a suitable device, substantially as set forth.

2.—The combination, with the shield, of a hound holder piece provided with means for supporting the shield in any horizontal plane, and held to the bar or other supporting part of the frame by a device which permits the holder to be turned for the insertion or removal or adjustment of the shield.

3.—The shield holder having a longitudinal opening to receive the projecting pin upon the shield and a U-loop at one side of said opening, said loop serving to sustain the shield and to retain the pin in the opening, substantially as set forth.

No. 213,675.—THOMAS MEIKLE, LOUISVILLE, KY.—*Covrage-Cultivators*.—March 25, 1879. Filed October 25, 1878.

Claim.—The universal fulcrum K, constructed substantially as described, in combination with the foot lever H and the cultivator beam L, constructed, connected, and operating together as and for the purposes substantially as described.

No. 213,943.—ALEXANDER SANDERS, EL DORADO, ILL.—*Wheel Cultivators*.—April 1, 1879. Filed February 8, 1879.

Claim.—1.—The double gangs of ploughs A *a* *a'*, connected by the saddle D, wheels B' and guy chains E', combined with a sulky tongue, E, as and for the purpose set forth.

2.—The arched saddle D, main beams A, and double gang of ploughs, in combination with the axle G and wheels, tongue E, and semicircular bearing H, substantially as and for the purposes set forth.

No. 214,113.—LEVI DAVIS, JR., BIG ROCK, ILL.—*Cultivators*.—April 8, 1879. Filed November 22, 1878.

Claim.—1.—In a cultivator, the combination, with the shovel-beams and the shields, of an angular biting lipped casting, *b c c'*, the pivot-screw *a*, and the nut *a'*, whereby the shank of the shield is clamped upon said lipped-plate casting by the nut in such manner as to be adjusted by the force of the driver's foot, and preserved in its adjustment.

2.—The shield-shank friction-joint, formed by the casting *b c f*, pivot-screw, and clamp-nut.

3.—The cultivator shield B *d*, provided with the toe projection *x*, in combination with the friction or biting lipped casting, the pivot-screw, and the clamp-nut, as and for the purpose set forth.

No. 214,138.—SIDNEY B. HOLLY and JOHN JONES, STONY POINT, CAL.—*Cultivators*.—April 8, 1879. Filed February 20, 1878.

Claim.—The wheel-hub W, provided with an irregular bore and recess, X, at each end, and having the box Y, made to fit in the irregular bore, in combination with the square journal Z, with its sleeve G, and the caps N' N', all combined and arranged substantially as and for the purpose described.

No. 215,385.—JAMES M. MITCHELL, POINT PETER, ARK.—*Cultivators*.—May 13, 1879. Filed August 27, 1878.

Claim.—The combination, in a cultivator, of the V-shaped bar G, slotted axle B, bar O, provided with a

number of holes, the rod H, the branched bars I, and the eye straps X, whereby the bars I are held in position on the rod H, substantially as and for the purpose specified.

No. 215,031.—WILLIAM JONES, MHI POINT, N. Y.—*Cultivators*.—May 27, 1879. Filed March 27, 1879.

Claim.—The combination, with the axle H, having crank at each end, provided with wheels C C', of the link D, having two or more holes at the free end, the brace E, the adjustable lever F, the lever G, having hook on long arm, the standard I, and the chain H, all arranged as shown and described.

No. 217,282.—ROBERT S. HARRIS, DUBUQUE, IOWA.—*Cultivators*.—July 8, 1879. Filed June 6, 1878.

Claim.—1.—In a sulky-cultivator, the shafts or divided tongue C C', having independent adjustment upon the axle B, and the front connecting arch, D, in combination with the plough beams E' E'', pivoted at their forward ends to the shafts, and provided with handles G G', adjustably connected together, all constructed and operating substantially as shown and described.

2.—In a sulky corn-cultivator, the combination, with the laterally-adjustable shafts C C', of the plough beam E' E'', pivoted at their forward ends to such shafts, and provided with handles G G', adjustably connected together by the screw rod G', constructed and arranged substantially as described and shown.

3.—The equally diverging point and land side *c*, *d*, having outwardly bent lower edge *c'*, in combination with the mould board *d'*, situated on a level above the point and land side, and provided with outwardly curved edge *d''*, substantially as described and shown.

4.—The downwardly projecting arms carrying foot rests and seat, situated at the rear of the cultivator and on each side of the row, substantially as and for the purpose set forth.

5.—In a corn-cultivator, the combination of the arms H H', placed substantially as shown, with the foot rests and seat adjustable upon such arms, for the purposes set forth.

No. 217,811.—GILPIN MOORE, MOULINE, ILL., assignor to DEERE & CO., same place.—*Cultivators*.—July 22, 1879. Filed February 4, 1879.

Claim.—1.—In a wheel-cultivator, the combination of the axle, one or more ploughs hinged to the axle, and one or more springs, connected at their rear ends to the forward ends of the plough beams, and at their forward ends to the wheel-frame in front of the axle, substantially as set forth.

2.—In a cultivator-coupling, the slotted sleeve E, in combination with boxes G H, adjustably secured to the sleeve by bolts and nuts, substantially as described, and for the purpose specified.

3.—In combination with the sleeve E and adjustable boxing G H, the slotted sleeve I, spindle J, and plough-beams having brackets K, substantially as and for the purpose specified.

4.—The vertically adjustable slotted sleeve I, in combination with brackets K, plough-beams D, spindle J, with stud J', and boxes G H, which sustain the sleeve I and spindle J, substantially as and for the purpose specified.

5.—In combination with the wheel-frame and ploughs, the spindle J, or elongated journal for the plough-beam, and the spring M, connecting the elongated journal or spindle J and the wheel-frame, substantially as and for the purpose specified.

6.—In combination with a cultivator wheel-frame and plough, a spring connected at one end to the wheel-frame and at its other end to the journal bolt on which the plough-beam has lateral motion, so that the plough-sustaining force of the spring will not have a tendency to draw the plough to one side whenever it is deflected for any purpose, substantially as and for the purpose specified.

No. 217,614.—JACOB WAGNER, JR., CHICAGO, ILL.—*Wheel-Cultivators*.—July 29, 1879. Filed January 23, 1879.

Claim.—1.—The circular coupling plates C and E, sleeves *g*, *g*, and collar G, in combination with the beam A

and axle *h*, substantially as described, and for the purpose specified.

2.—The coupling-plates C and E, sleeves *g*, *g*, collar G, and axle *h*, in combination with the beam A, parallel rods *k*, *k*, and vibrating yoke frame *a*, substantially as and for the purpose herein described.

No. 218,274.—JAMES H. JOHNSON, EDWARDSVILLE, ILL.—*Cultivators*.—August 5, 1879. Filed June 21, 1879.

Claim.—1.—The combination, with the axle A, having bail C, and the clamp-plate *b*, resting on the ends of said bail, of the uprights G, extending through the axle and plate, affording bearings to the beam-shaft, and having shoulders *c* and the clamp-nuts *d*, substantially as specified.

2.—The combination, with the axle A, bail C, tongue D, and the open slotted uprights G on the axle, of the rock-shaft H, journaled in said uprights, the beams I, spacing-blocks *c'*, the rod K, spacing blocks *f*, the lever E, pivoted to the beam, the link *l*, vibrating on shaft K and adjustably secured to said lever, and the rack bar H, erected on the bail, substantially as specified.

No. 218,454.—RICHARD B. ROBBINS, ADRIAN, MICH.—*Cultivators*.—August 12, 1879. Filed November 18, 1878.

Claim.—1.—The pendant 30, consisting of the parts 31 and 32, the parts 32 having extension 35, provided with graduating holes, the whole held together by rod 33 and jam nut 34, substantially as and for the purpose set forth.

2.—The combination of casting 34 and arm 41, the latter bent over the casting, as shown and described, and secured by a wooded safety pin, substantially as shown.

3.—The combination of the perforated angle iron 67, cross-bar 66, cross head 64, and rails 37 and 63, as set forth.

4.—The foot lever 55, consisting of one part 56, having an extension, 58, and another part, 57, hinged and adapted to operate in connection with part 59, substantially as and for the purpose set forth.

5.—The combination of the irons 72 and 73, serrated and flanged, as described, with the shield 71, the shield 71, having a free up-and-down motion between the flanges independent of the serrated irons, substantially as set forth.

6.—The combination of the seat bars 75, angle irons 76, serrated and slotted, as described, clasp 77, and bolt 78, all constructed and adapted to operate substantially as set forth.

No. 218,526.—CAGER HADGRAVE, CLARKSVILLE, ARK.—*Cultivators*.—August 12, 1879. Filed June 2, 1879.

Claim.—The combination of the upright rods C, the collars and set-screws H H', and the clevises G and I with the short axle B, the cross bar D, to which the tongue E is attached, the plough beams F, and the draw chains J, substantially as herein shown and described.

No. 218,527.—CAGER HADGRAVE, CLARKSVILLE, ARK.—*Cultivators*.—August 12, 1879. Filed December 20, 1878.

Claim.—The combination, in a cultivator, of the bent axle *c*, the rods *c*, the sliding bars *f*, and the screws *i*, provided with the nuts *k*, *l*, with the cross-bar *d* and the plough beams *m*, substantially as and for the purpose described.

No. 218,561.—OLOF OLSON, RED OAK JUNCTION, IOWA, assignor of one half his right to LOUIS W. JOSEPH, same place.—*Cultivators*.—August 12, 1879. Filed June 21, 1879.

Claim.—1.—In a cultivator, the two-way sliding blocks F, provided with the set-screws *f*, in combination with the portion of the cultivator-axle F' and the shaft E, as and for the purposes substantially as set forth.

2.—In a cultivator, the two-way thimble G G', provided with the set-screws *g*, in combination with shafts G' G', the collars K, provided with set-screws *k*, the double-tree L, and the link *l*, ring hooks *l*, and shafts E, as and for the purposes substantially as set forth.

3.—In a cultivator, the lever M, in combination with the

bars *B*, provided with a series of adjusting holes and the shackles *J*, and the sliding two-way blocks *F*, as and for the purposes substantially as set forth.

No. 210,005.—JOSEPH M. BROWN, FLORENCE, TEX.—*Combined Planters and Cultivators*.—September 2, 1879. Filed March 2, 1878.

Claim.—The combination of the frame *C*, having slots *d* in its front and rear rails *c c'*, and a slot *l'* in its side rail *l*, tongue *B*, extending across the frame, and driver's seat *E*, both tongue and seat being laterally adjustable together on the frame and axle *A*, with the laterally-adjustable draft-irons *C'*, draft-bars *D*, rods *f*, elongated staple *a*, arranged on the right hand rail of the frame, plate *h*, block *k*, and adjustable brace *G*, whereby the implement is convertible and adapted to operate either as a cultivator, a gang-plough, or a seed planter, substantially as described.

No. 210,326.—ISAAC UTTER, ROCKFORD, ILL.—*Cultivators*.—September 2, 1879. Filed February 8, 1879.

Claim.—The combination, with the main frame, the divided crank axle journalled thereto, and capable of independent back-and-forth swinging movement, and the plough beams, of the limiting slotted brackets *b*, the branching cross-bars, and vertical excenter bars, pivoted at their upper ends to the main frame, and at their lower ends connected with the forward ends of the branching draught rods, substantially as set forth.

No. 210,882.—ANDREW B. TRAVIS, BRANDON, MICH.—*Cultivators*.—September 23, 1879. Filed April 29, 1879.

Claim.—1.—In combination with the frame *F G*, flexibly connected at its forward end, the frame *J*, rock shaft *A*, handles *L*, and slotted arm *K*, substantially as and for the purposes herein set forth.

2.—In combination with the frame *F G*, the track clevis *a' a'*, chains *t*, with rollers *y*, and a mechanism for raising and lowering said chains, for the purposes herein set forth.

3.—The drag guards *V*, pivoted to an arm, *T*, attached to and projecting in front of the tooth *K*, for the purposes set forth.

4.—The adjustable tooth *K*, formed with the flanges *l'*, and provided with the removable point *S* and pivoted drag guards *V*, substantially as and for the purposes herein set forth.

No. 220,463.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Cultivator*.—October 14, 1879. Filed April 12, 1879.

Claim.—1.—In a riding and walking-cultivator, the lever *F*, provided with the spring pawl *F'* and arm *F''*, in combination with the segment ratchet *E*, the lever *K*, connecting rod *L*, toggles *H H'*, and draught bolt *D*, as and for the purposes set forth.

2.—The lever *K*, provided with the lug *h* and hole *h'*, engaged with the lever *F'* by the hook-and-eye joint *h*, in combination with hook bolt *K'*, cultivator beam *E*, and the connecting rod *L*, substantially as and for the purposes set forth.

3.—In a riding and walking-cultivator, the bracket *C*, attached to the tongue *B* and to the axle *A* by the brace *C'*, and provided with slots *C''*, in combination with the draught bolt *D*, the sleeve *D'*, and the adjustable clevis *E*, provided with the set screw *D''*, substantially as and for the purposes set forth.

4.—In a riding and walking-cultivator, the combination of the lever *F*, the connecting rod *N*, the lever *N'*, provided with the segment gear *N''*, the stirrup *M*, provided with the rack *M'*, and the draught bar *D*, connected and operating substantially as and for the purposes set forth.

5.—In a riding and walking-cultivator, the combination of the lever *F*, provided with the spring pawl *F'* and the arm *F''*, with the segment rack *F'*, lever *K*, connecting rod *L*, toggles *H H'*, and draught rod *D*, and the connecting rod *N'*, lever *N*, provided with the segment gear *N''*, rack *M'*, and stirrup *M*, substantially as and for the purposes set forth.

No. 220,985.—AUGUST NORLING and CHARLES

A. NORLING, STANFON, IOWA.—*Cultivators*.—October 28, 1879. Filed April 5, 1879.

Claim.—1.—The combination of the divided adjustable axle *C C'* with the perforated connecting-bars *B B*, the vertically-adjustable arms *m m* on each end of the axle, the four-armed block *I*, and the cultivator beam having arms *p p'*, all constructed as described, whereby the cultivators can be adjusted out and in and up and down, and can be manipulated in any direction without twisting, substantially as and for the purposes herein set forth.

2.—The double eccentric *G*, having on each side the points *h h'*, at different distances from the pivot, and a certain portion on each side, from *r* to *v*, on a true circle, in combination with the chains, rods, and double-tree, substantially as and for the purposes herein set forth.

3.—The combination of the jointed beam *II H'*, link *L*, spring jaws or snap *O O*, and the rod *P*, with cone *7*, whereby when the joint of the brace is broken the two parts do not separate, but remain together, substantially as and for the purposes herein set forth.

4.—The combination of the beam, the shovel *R*, pins *π*, stationary plate *S*, and adjustable plate *V*, as and for the purposes set forth.

No. 221,058.—GEORGE HAMMANS, GOSPORT, IOWA.—*Cultivators*.—October 28, 1879. Filed June 16, 1879.

Claim.—1.—The combination, in a three-horse cultivator, of the double-tree made in two parts, *F F*, pivoted on the poles *G G*, and their inner ends connected by the link *h*, the arms or rods *II I*, and single-trees *J J*, all substantially as and for the purposes herein set forth.

2.—The combination, in a cultivator, of the plough-beams *A A'*, rods *i*, and triple crank shaft *k*, and the plough-beams *A' A'* and *A' A'*, and the divided rods *J J*, with separate handles *L*, having sockets *p p'* for adjusting the divided rods, whereby the centre beam *A*, and outside beams *A' A'*, may be raised and lowered independently of the beams *A' A'* and *A' A'*, and vice versa, substantially as herein set forth.

No. 221,280.—JONAS DIERDORFF, GOSHEN, IND.—*Cultivators*.—November 4, 1879. Filed July 8, 1879.

Claim.—The combination, in a cultivator with an arched axle and tongue, of the draught block *B*, the bars *A A*, hinged thereto in front, and provided with the side loops or clips *a'*, at the other end, and the screw *C*, having nuts *c'*, as shown and described, whereby the bars *A* and block *B* may be elevated or depressed, to suit the height of the growing crop, without affecting the depth or position of the ploughs.

No. 222,301.—JAMES M. ELDER, INDIANAPOLIS, IND.—*Cultivators*.—December 9, 1879. Filed August 30, 1879.

Claim.—1.—The adjustable bracket *O*, combined with the universal joint *L L'*, spring *K*, cup *J*, rod *I*, and coupling *F*, as and for the purpose specified.

2.—In combination with the arched axle of a cultivator, the bracket *O*, with arms *g g*, the universal joint *L L'*, the spring *K*, the cup *J*, the rod *I*, the rod *H*, the serrated lugs *G G'*, the coupling *F*, and plough beams *W W*, as and for the purpose specified.

3.—In combination with the coupling *F* of a shovel beam, the jointed rod *II I*, spring *K*, universal joint *L L'*, and bracket *O*, as and for the purpose specified.

No. 222,443.—HENRY BLOEDEL, FOND DU LAC, WIS.—*Cultivators*.—December 9, 1879. Filed August 15, 1879.

Claim.—1.—The combination, in a cultivator, of the axle mounted on wheels and provided with a rigid tongue, with the V-shaped frame having the series of beams *D* independently hinged thereto, said frame, with its hinged beams, being rigidly suspended underneath the axle, and all being arranged to operate substantially as shown and described.

2.—In combination with the series of independently-hinged bars *D*, arranged in V form, as shown, the rotating shaft *E*, provided at its centre with the arms *a* for raising the central beams equally with the remaining beams which are connected direct to said shaft, as set forth.

3.—In combination with the pendants *m*, having the bars *D* hinged thereto, as described, the connecting bars

or braces *c*, arranged in the manner shown and described.

No. 222,550.—DANIEL UNTHANK, SWEDLAND, IND.—*Cultivators*.—December 6, 1879. Filed Jan. 25, 1879.

Claim.—1.—The combination of the set of three parallel bars, H, provided with double jointed couplings G I at the ends of each bar, with the frame J, to which the plough standards K are attached, and with the bars F E and crank D, by which they are connected with the axle B, substantially as herein shown and described.

2.—The combination of the notched plates d^1 e^1 and f^1 g^1 with the connecting bar F, the crank arm D, attached to the axle B, and the bar F, with which the forward ends of the parallel bars H are connected, substantially as herein shown and described.

3.—The combination of the double notched plate M M' and the notched plates f^1 and g^1 and their bolts m^1 m^2 with the handle N and the frame J, to which the plough standards K are attached, and with which the rear ends of the parallel bars H are connected, substantially as herein shown and described.

No. 0,607.—DANIEL UNTHANK, SWEDLAND, assignor of one-half his right to FRANCIS A. COFFIN, RICHMOND, IND.—*Cultivators*.—222,550, December 9, 1879.—Retrieved March 15, 1881. Filed November 17, 1880.

Claim.—1.—The combination of the set of three parallel bars, H, provided with double jointed couplings G I at the ends of each bar, with the frame J, to which the plough standards K are attached, and with the bars F E and crank D, by which they are connected with the axle B, substantially as herein shown and described.

2.—The combination of the notched plates d^1 e^1 and f^1 g^1 and their bolts f^2 g^2 with the connecting bar F, the crank arm D, attached to the axle B, and the bar F, with which the forward ends of the parallel bars H are connected, substantially as herein shown and described.

3.—The combination of the double-notched plate M M' and the notched plates f^1 and g^1 and their bolts m^1 m^2 with the handle N and the frame J, to which the plough standards K are attached, and with which the rear ends of the parallel bars H are connected, substantially as herein shown and described.

4.—The parallel rods H H', having pivotal bearings at each end, and pivoted to the coupling blocks G G' G' I I I', combined with the plough frame J and bar F, with side projecting studs f^3 f^4 f^5 f^6 f^7 f^8 , as and for the purpose specified.

5.—The combination, in a cultivator, of the ploughs L, a laterally and vertically adjustable frame I, to which the ploughs are attached, the upright F, and the parallel rods having double-jointed couplings at each end and connecting said frame J and upright F, as and for the purpose specified.

6.—In a cultivator, the frame J, in combination with the parallel rods having double-jointed couplings at each end, and attached thereto, whereby the frame may be adjusted vertically and laterally without changing its vertical position to that of an inclined one, substantially as shown and described.

7.—In a cultivator, the frame J, with stud pins f^9 f^{10} projecting from one side at the top and bottom of said frame, and also having a stud pin f^{11} , projecting from its opposite side midway between the other two studs, combined with the coupling blocks I I I', the parallel rods H H H', the coupling blocks G G G', and corresponding stud pins f^2 f^3 f^4 on the upright F, as and for the purpose specified.

8.—In a cultivator, the combination of the upright F, having parallel rods H secured thereto by double hinge joints operating at right angles to each other, the notched plate f^1 , and the crank connection E, with notched plate *a*, substantially as shown and described.

9.—The compound crank arm composed of the crank D, with notched side plate, d^2 , and the connecting rod E, with notched side plates at each end, as at e^1 e^2 , combined with the bar F and axle B, as and for the purpose specified.

No. 222,570.—WILLIAM COPTAGE, VIGO COUNTY, IND.—*Ploughs*.—December 16, 1879. Filed September 29, 1879.

Claim.—A sectional plough beam or drag bar consisting of the forward part, A, having a handle rigidly attached thereto, and the rear curved section, B, hinged to allow free lateral movements of the plough, substantially as shown and described.

No. 222,719.—WILLIAM S. MOON, PIKASAWT GROVE, ILL.—*Cultivators*.—December 16, 1879. Filed September 29, 1879.

Claim.—1.—In a cultivator, the sulky composed of the arched axle A, wheels B B', tongue C', bent bars D, L-shaped arms F, and braces D', D'', and F', all constructed substantially as and for the purposes herein set forth.

2.—In a cultivator, a plough beam constructed substantially as described, and reversible, end for end, connected to the sulky and operated by means of a lever, and held rigidly in place by a pawl, substantially as set forth.

3.—The combination of the reversible plough beam G, with V-shaped foot H and plough I connected thereto, the links *d*, lever J, with gravitating dog *h*, and the rack K, with two sets of notches, v^1 v^2 , at varying angles, substantially as and for the purposes herein set forth.

No. 222,767.—EDGAR A. WRIGHT, DAVENPORT, IOWA.—*Wheel-Cultivators*.—December 16, 1879. Filed November 12, 1879.

Claim.—1.—In combination with a vertically-swinging beam or drag bar, a spring, substantially as described and shown, arranged to urge the beam downward when in action and urge it upward when it is lifted above the operative position.

2.—In combination with a vertically-swinging beam or drag bar, a double acting automatic spring, substantially as described, serving the double purpose of holding the beam down to its work and of assisting to lift it when it is thrown out of action.

3.—In combination with a vertically-swinging beam or drag bar, a spring, substantially as shown, adapted to exert an automatic spring action upward or downward upon the beam, according to the position of the latter.

4.—In a cultivator, the combination of a frame, a vertically-swinging beam or drag bar attached thereto, and an automatic spring, substantially as described, connected with one of said members, and arranged to urge the beam downward while the latter is in an operative position, but not when it is raised above said position.

5.—In a cultivator, the combination of a frame, a vertically-swinging beam or drag bar connected thereto, the pulley or equivalent bearing connected to one of said members, and the spring arm connected to the other member and provided with the portion *d*, bent as shown, and adapted to act against the pulley and hold the beam down in an operative position.

6.—In a cultivator, the combination of a main frame, a vertically-moving beam or drag bar connected therewith, and a spring, substantially as described, interposed between said parts and acting vertically upon the beam, said spring being constructed and arranged to pass a centre or dead point as the beam moves vertically, and in passing said point cease or change the direction of its action on the beam.

7.—The combination of the frame, the vertically-moving beam, and the vibrating spring having the portion *a* as shown and described, adapted to urge the beam upward after the latter has risen above its operative position, but not urge it upward when it is in said operative position.

8.—The combination of the frame, the vertically-moving beam or drag bar, the roller or equivalent bearing connected to one of said members, and a vibrating spring, constructed substantially as described, adjustably secured to the other of said members, as shown, whereby the operative position of the beam and the action of the spring may be varied.

9.—The combination of the frame, the vertically-moving

the tooth-beam F, arranged on the outside of the draught-beam and overlapping therefrom as it extends forward, the tooth-beam J, arranged diagonally across the rear end of the draught-beam in a direction opposite to that of the beam F, and the teeth I, K, attached to the beams F, J, and arranged thereon substantially as described and shown.

No. 225,304.—ANTHONY STAUFACHER, JR., WIS.—*Cultivator*.—*March* 6, 1886. Filed *October* 24, 1876.

Claim.—The ratchet *r*, having an extension *s* on its rear end to receive the pulley or roller *z*, substantially as described.

No. 225,305.—WILLIAM PENNINGTON, N. Y.—*Cultivator*.—*March* 6, 1886. Filed *October* 24, 1876. (Page 248.)

1.—The combination, with levers *O*, pivoted to the front of the plough frame, and supported on axle *S*, of the levers *M*, fulcrumed on the axle, pivoted at the rear to langers of the frame, and connected at the front with the levers *O*, as set forth.

2.—The combination, with frame *B*, standard *F*, and share *H*, of an adjustable brace *G*, having rivet head and shoulder, by which the share is held to the standard, as shown and described.

No. 224,772.—JAMES FORBES, MOORE, N. Y.—*Cultivator*.—*February* 17, 1886. Filed *September* 3, 1879.

Claim.—1.—The shaft *i*, journaled in bearings in front of the driver's seat, the movable shaft *m*, separated from and connected with the shaft *i* at its center by the shank of lever *n* and *t* each end quadrants *l*, the lever *u*, and hook *z*, in combination with the connecting rods *l*, and plough beams *l*, substantially as set forth.

2.—The shaft *i*, journaled in bearings in front of the driver's seat in combination with the movable shaft *m*, separated from *l* and connected with the shaft *i* at its center by the shank of lever *n* and *t* at each end by the quadrants *l* the lever *u*, hook *z*, rods *l*, plough-beams *l*, and suspended frame *N*, substantially as specified.

No. 224,773.—JAMES FORBES, MOORE, N. Y.—*Cultivator*.—*February* 24, 1886. Filed *December* 29, 1879.

Claim.—The triangular cultivator frame *G G G*, carrying the ploughs *I J K* and gauge cutters *N*, and provided with the sliding transverse bar *E*, in combination with the slotted bars *D* and rotating transverse bar *F*, attached to the frame *A*, and having hand lever *h* and curved arms or rods *c*, substantially as and for the purpose specified.

No. 9,530.—JAMES FORBES, MOORE, N. Y.—*Cultivator*.—*January* 24, 1886.—Revised *January* 11, 1881. Filed *July* 13, 1886.

Claim.—1.—In combination with the slotted metallic plates *c c*, rotating transverse bar *F*, rods *c*, hand lever *h*, and sliding transverse bar *E*, the triangular cultivator frame *G G G*, carrying the ploughs *I J K* and gauge cutters *N*, the said frame being arranged, as shown and described, so that its wide end travels in advance of its narrow end, as and for the purpose set forth.

2.—The triangular cultivator frame *G G G*, carrying the ploughs *I J K* and gauge cutters *N*, and provided with the sliding transverse bar *E*, in combination with the slotted bars *D* and rotating transverse bar *F*, attached to the frame *A*, and hand lever *h*, and curved arms or rods *c*, substantially as and for the purpose specified.

No. 224,774.—JAMES FORBES, MOORE, N. Y.—*Cultivator*.—*February* 17, 1886. Filed *September* 3, 1879.

Claim.—1.—In a corn plough, the draught bar or frame *C*, loosely pivoted to the side frames *B*, by the horizontal pivots *r*, to a point to the rear of the wheel spindles, and having the point of power attachment in front thereof, while the ploughs are attached to said bar or frame at an intermediate point, all substantially as shown and described, and for the purpose specified.

2.—In a corn plough, the wheels *A*, frames *B*, arch *D*, horns *E*, tongue *F*, loosely pivoted bars or frames *C*, and ploughs *G*, all arranged and operating in combination with each other, substantially as shown and specified.

3.—In combination with the side frames of a corn-plough loosely pivoted on the arch, and having the draught bars or frames loosely pivoted thereto, a tongue pivoted in the manner shown, said several parts being thus constructed to allow each of them to occupy varying relations to the others, all substantially as shown and set forth.

No. 227,543.—ORLANDO J. KING, CHARLTON, IOWA.—*Cultivator*.—*May* 11, 1886. Filed *March* 20, 1886.

Claim.—1.—The combination of the straddling beam *A* in a cultivator with the standard *B*, coupling plate *K*, and the long and short shovel beams, arranged as herein described, the said long beams being rigidly secured to the coupling plates, and the short beams being pivoted and connected with levers, substantially as herein shown and set forth.

2.—The combination of the straddling bar *A* in a cultivator with a series of fixed and adjustable beams, arranged to be raised or lowered by hand levers *c* and segment levers *a*, the coupling plates *K*, holding the forward ends of the beams and pivoted between the standards *B*, and shaft *d*, substantially as herein shown and set forth.

No. 228,050.—GEORGE M. MARKS, FOWLER, PA.—*Sulky Plow*.—*Jan.* 8, 1886. Filed *December* 8, 1880.

Claim.—In a wheel cultivator, the combination of the axle *C* and the two pairs of guide hangers *h h* with the wheel spindles *H H*, the sliding bars *I I*, having notches

the tooth beam F, arranged on the outside of the draught-beam and increasing in width as it extends forward, the tooth beam J, arranged diagonally across the rear end of the draught-beam in a direction opposite to that of the beam F, and the teeth I, K, attached to the beams F, J, and arranged thereon substantially as described and shown.

No. 224,430.—HENRY R. BURDGE, CARI GERARDI-FAT, MO., assignor to himself and CHARLES F. FURTH, same place.—*Subst. Patent*.—*January 13, 1880*. Filed *August 22, 1879*.

Claim.—1.—The combination, with the axle B and hall-keepers F, of the bars F, pivoted to the axle and adapted to contact with the single trees and the draw bars of the ploughs, as shown and described.

2.—The branch of draught-bar K, pivoted to the beams above the plough and connected by a slot with the clevis pin X, in combination with the cultivator beams L and the clevis plate M, as and for the purpose specified.

3.—In a cultivator, the combination with the draw bars K of the plough beams and the axle B of the sully, of the pivoted draught bars E, substantially as herein shown and described, to keep the ploughs at a uniform depth when working upon uneven ground, as set forth.

No. 224,300.—H. COLF, ROYALTON, OHIO.—*Revised*.—*At issue in U. S. Circuit Court—February 10, 1880*. Filed *December 9, 1879*.

Claim.—1.—The combination of the bars A, provided with the U-holes B, the cross-bars C, and the cross bars D, the cast-iron wheels E, F, and the adjustable cross-bar G, that carries the driver's seat H, substantially as herein shown and described, to adapt the device to be attached to a cultivator as set forth.

2.—The combination, with the bars A, the cross-heads C, and the cross bars D, of the connecting bar K, substantially as herein shown and described, so that the device may be used with a cultivator provided with a split tongue, as set forth.

No. 224,030.—PATRICK BRANNON, FREDERICK, ILL.—*Continued*.—*February 17, 1880*. Filed *September 3, 1879*.

Claim.—1.—The shaft *a*, journaled in bearings in front of the driver's seat, the movable shaft *w*, separated from and connected with the shaft *t*, at its center by the shank of lever *u* and *v* at each end, quadrant *z*, the lever *u*, and hook *x*, in combination with the connecting rods E, and plough beams F, substantially as set forth.

2.—The shaft *t*, journaled in bearings in front of the driver's seat in combination with the movable shaft *w*, separated from and connected with the shaft *t* at its center by the shank of lever *u* and *v* at each end by the quadrant *z* the lever *u*, hook *x*, rods E, plough-beams F, and suspended frame N, substantially as specified.

No. 224,773.—JAMES FORBES, MOORE'S, N. Y.—*Cultivator*.—*February 24, 1880*. Filed *December 26, 1879*.

Claim.—The triangular cultivator frame G G G, carrying the ploughs I J K and gauge cutters N, and provided with the sliding transverse bar E, in combination with the slotted bars D and rotating transverse bar F, attached to the frame A, and having hand lever *h* and curved arms or rods *c*, substantially as and for the purpose specified.

No. 9,530.—JAMES FORBES, MOORE'S, N. Y.—*Cultivator*.—*224,773*. Filed *January 24, 1880*. Reissued *January 11, 1881*. Filed *July 15, 1880*.

Claim.—1.—In a cultivator with the slotted metallic plates *c*, rotating transverse bar F, rods *a*, hand lever *h*, and sliding transverse bar E, the triangular cultivator frame G G G, carrying the ploughs I J K and gauge cutters N, the said frame being arranged, as shown and described, so that its wide end travels in advance of its narrow end, as and for the purpose set forth.

2.—The triangular cultivator frame G G G, carrying the ploughs I J K and gauge cutters N, and provided with the sliding transverse bar E, in combination with the slotted bars D and rotating transverse bar F, attached to the frame A, and hand lever *h*, and curved arms or rod *c*, substantially as and for the purpose specified.

No. 225,304.—ANTONI STAUFFACHER, JUDA, Wis.—*Revised*.—*March 9, 1880*. Filed *October 24, 1879*.

Claim.—The roller *r*, having an extension *s*, on its rear end to receive the pulley or roller *t*, substantially as described.

No. 226,321.—DAVID M. JOHNSON, RED BELL, CO.—*Cultivator*.—*April 9, 1880*. Filed *November 21, 1879*.

Claim.—The cultivator A, composed of metal bars or sections *a*, having their forward ends *c*, bent downward and forward to receive the blades *b*, and their rear ends bent into elbows, as shown, and secured to each other by bolts *d* and tie pieces *e*, whereby there is formed a rigid frame, the teeth of which are thrown out of line, as set forth.

No. 226,074.—WILLIAM FLENDLEY and ANDERSON MOSS, TALKING ROCK, GA., assignors of one-third of their right to J. E. SULLIVANS, same place.—*Wheel, Plow, and Cultivator*.—*April 20, 1880*. Filed *February 14, 1880*.

Claim.—The combination of the frame *f* with the standards *g*, U-shaped frame *u*, hangers *z*, lever *o*, and rack *r*, substantially as described.

No. 226,533.—BYRON C. BRADLEY, CHICAGO, ILL.—*Cultivator*.—*April 27, 1880*. Filed *August 4, 1879*.

Claim.—1.—The combination of the spring C, attached to the axle, as described, with the locking head *g*, cham D, and beam B, whereby the attachment and operation of the spring is made independent of the frame or parts mounted on the elevated portion of the axle, substantially as specified.

2.—The combination of the bent rod or bar *k k'*, brace *z*, arms *g g'*, and locking head *g*, with the hooked rod *u*, plate *m*, and spring *o*, constructed and operating substantially as described.

No. 227,353.—JAMES H. PEIRCE, BROOKSVILLE, IND., assignor of one-half of his right to JONATHAN ROSS, same place.—*Cultivator*.—*May 11, 1880*. Filed *February 19, 1880*.

Claim.—1.—In a coin plough, the draught bar or frame C, loosely pivoted to the side frames B, by the horizontal pivots *z*, to a point to the rear of the wheel spindles, and having the point of power attachment in front thereof, while the ploughs are attached to said bar or frame at an intermediate point, all substantially as shown and described, and for the purpose specified.

2.—In a coin plough, the wheels A, frames B, arch D, bounds E, tongue F, loosely pivoted bars or frames C, and plough G, all arranged and operating in combination with each other, substantially as shown and specified.

3.—In combination with the side frames of a coin-plough loosely pivoted on the arch and having the draught bars or frames loosely pivoted thereto, a tongue pivoted in the manner shown, said several parts being thus constructed to allow each of them to occupy varying relations to the others, all substantially as shown and set forth.

No. 227,543.—ORLANDO J. KING, CHAKLON, IOWA.—*Cultivator*.—*May 11, 1880*. Filed *March 20, 1880*.

Claim.—1.—The combination of the straddling beam A in a cultivator with the standard B, coupling plate K, and the long and short shovel beams, arranged as herein described, the said long beams being rigidly secured to the coupling plates, and the short beams being pivoted and connected with levers, substantially as herein shown and set forth.

2.—The combination of the straddling bar A in a cultivator with a series of fixed and adjustable beams, arranged to be raised or lowered by hand levers *c* and segment levers *a*, the coupling plates K, holding the forward ends of the beams and pivoted between the standards B, and shaft *d*, substantially as herein shown and set forth.

No. 228,050.—GEORGE M. MARKS, FOWLER, PA.—*Sully Plough*.—*June 8, 1880*. Filed *December 8, 1880*.

Claim.—In a wheel-cultivator, the combination of the axle C and the two pairs of guide hangers *h h'* with the wheel spindles H H, the sliding bars I I, having notches

7. the levers K K, passing through the bars L, the pawls *l l*, and the frame A B, substantially as shown and described.

No. 229,534.—JOHN W. HUDSON, WASHINGTON, Ill.—*Wheel-Cultivator*.—July 6, 1880. Filed March 19, 1880.

Claim.—1.—The sleeve D, cut away for the passage of spring G, the latter attached to bar *d* and coiled around and secured to axle A and arm F, constructed and arranged as shown and described.

2.—The combination of the yoke J, pronged and serrated plate L, adjustable plough beams K, rod *l*, and collar M, substantially as and for the purposes herein set forth.

3.—In combination with two sets of plough beams, the shares K and connecting spring S, as and for the purposes herein set forth.

No. 230,057.—JOHN H. RHAMY, ANTIOSH, IND.—*Wheel-Cultivator*.—July 13, 1880. Filed March 9, 1880.

Claim.—1.—In a wheel-cultivator, the central arch, A, and half arches B, in combination with the wheels D, connected to the half arches B by hinge arms C, and the curved plough beams connected to the arch A by hinge boxes E and half hinge joints F, substantially as and for the purposes set forth.

2.—In a wheel-cultivator, the plough beams hinged to the arch A, as shown and described, in combination with the chains N, arch M, and weight P thereon, substantially as and for the purposes set forth.

3.—In a wheel-cultivator, the plough beams hinged to the central arch, A, by boxes E and joints F, as described, in combination with the chains N, weight P, and lever T, substantially as and for the purposes set forth.

4.—In a wheel-cultivator, the double tongue Q Q, pivoted or hinged to the arch A, as shown, in combination with the hinged adjustable neck yokes R R and the front arch, S, substantially as and for the purposes set forth.

No. 9,511.—JOHN H. RHAMY, ANTIOSH, IND.—*Wheel-Cultivator*.—230,057, July 13, 1880.—Reissued December 21, 1880. Filed August 6, 1880.

Claim.—1.—In a wheel-cultivator, the central arch, A, and half arches B, in combination with the wheels D, connected to the half arches B by hinge arms C, and the curved plough beams connected to the arch A by hinge boxes E and half hinge joints F, substantially as and for the purposes set forth.

2.—In a wheel-cultivator, the plough beams hinged to the arch A, as shown and described, in combination with the chains N, arch M, and weight P thereon, substantially as and for the purposes set forth.

3.—In a wheel-cultivator, the plough beams hinged to the central arch, A, by boxes E and joints F, as described, in combination with the chains N, weight P, and lever T, substantially as and for the purposes set forth.

4.—In a wheel-cultivator, the double tongue Q Q, pivoted or hinged to the arch A, as shown, in combination with the hinged adjustable neck yokes R R, ring Y, and the front arch, S, substantially as and for the purposes set forth.

5.—In a wheel-cultivator, the plough beams hinged to the central arch, A, in combination with chains F, weights P, and pulleys G.

6.—In a wheel-cultivator, the combination of chain H with pulleys I, connected to devices N, pulleys J, secured to head blocks W, pulleys K, secured to top end of half arches B, and pulleys L, at the top of central arch, A.

7.—In a wheel-cultivator, the combination of hinged plough beams, the half arches for supporting the wheel arms, and the drag-rod attachment clevises, with a washer between the clevis and the head blocks, whereby the height of the beam may be varied.

No. 230,414.—JAMES B. GRACEY, RICHMOND, VA.—*Agricultural Implements*.—July 27, 1880. Filed December 31, 1879.

Claim.—1.—The slotted bars B B, with plates *a*, in combination with bar T, connected to both front and rear of beams Q by toggle-joints C, and operated by lever V,

whereby both of said beams, throughout their length, can be moved to and from opposite lateral directions, for the purpose set forth.

2.—The combination of beams Q, toggle joints or arms C, perforated sliding bar T, bar W, lever V, and pin Y, all as described.

3.—The mould-board, share, and landside, made in one piece, and combined with standard O, provided with arm P, which extends along the landside to strengthen the same, and projects beyond the share, so that a socketed joint H, may be fitted thereto, substantially as set forth.

4.—The longitudinal bar T, provided with slotted plate *f*, in combination with beams Q, provided with plate *d*, perforated arm C, and pins *z*, substantially as and for the purposes set forth.

5.—The perforated arms C, and pins *z*, in combination with longitudinal bar T and plate *f*, substantially as set forth.

No. 231,546.—EZEKIEL D. POWELL, YATES TOWNSHIP, MICHIGAN COUNTY, Ill.—*Cultivator*.—August 31, 1880. Filed May 21, 1880.

Claim.—1.—In a wheel or straddle-row cultivator, the combination of the two sections of pivoted plough-beams D D, of different lengths, the shortest beams having angular shares facing outward or in opposite directions, and the intermediate and longest beams having angular shares facing inward or toward each other, all constructed and relatively arranged to operate substantially as and for the purpose herein shown and described.

2.—In a corn plough or cultivator, the combination, with pivoted plough beams and their handles, of the adjustable connecting brace G, having pulley H, and the guide and stay chain I, passing over said pulley and connected to the beams, substantially as and for the purpose herein shown and described.

No. 232,874.—JOHN H. BAILEY, St. LOUIS, MO., assignor to DEERE, MANSON & CO., same place.—*Cultivator*.—October 5, 1880. Filed June 28, 1880.

Claim.—The combination of the curved scraper A, having the shape shown and described, with the block B, attached so as to swivel on the boss *e*, and having the straight slot *g* and curved slot *f*, receiving, respectively, the screw bolts *z* and *z'*, which control and fix the relative positions of the scraper and block, all substantially as and for the purpose specified.

No. 233,379.—SPENCER R. STANTON, OXFORD, MICH.—*Cultivator*.—October 19, 1880. Filed December 4, 1879.

Claim.—1.—The combination, with the front frame bar, A, and the standards of a cultivator, of the brace rods *b*, clips *d*, having two or more holes for adjusting said rods, the side braces *f*, and movable clips *e*, substantially as and for the purposes herein set forth.

2.—The flanged casting K, having slot *z*, laterally adjustable, as described, in combination with the vertically adjustable handle P, as and for the purposes set forth.

No. 233,934.—JAMES H. JONES, ROCKFORD, ILL.—*Combined Cultivator and Seeder*.—August 2, 1880. Filed April 15, 1880.

Claim.—1.—The combination, with a main frame and a drag bar, of a bracing pendant pivoted to said main frame, to have lateral adjustment in a horizontal plane, said pendant maintaining a constant angle relative to the main frame during said adjustment, substantially as set forth.

2.—The combination, with a drag bar, of a bracing pendant secured to a bracket, which latter has one portion vertically pivoted to the main frame and another portion adapted to be connected to different horizontal points of said frame, substantially as set forth.

3.—The combination, with a drag bar, of a bracing pendant secured to a bracket, having its rear portion pivoted to the main frame, and its forward portion provided with a curve slot, in which latter fits a bolt adjustably connecting the bracket to said main frame, substantially as set forth.

4.—The combination, with a shovel standard, a slip bracket, and a bolt fastening the latter to the outer side of a drag bar, of a handle fitted between the inner side of

the drag bar and a clamp, the latter being secured to the drag bar by the same bolt which passes through an arm of the slip bracket, substantially as set forth.

5.—The combination, with a shovel standard, a slip bracket having two arms, and bolts fastening the latter to a drag bar, of a handle fitted between the drag bar and a clamp, said clamp being secured to the drag bar by the same bolt which passes through one of said slip arms, the bolt of the other slip arm passing through the handle itself, substantially as set forth.

6.—The herein described slip brackets to support the shovel standards, having their slip arms provided with a recess to receive a pivot washer, substantially as hereinbefore set forth.

7.—The combination, with a shovel standard and a slip bracket, of a pivotal washer fitted to the recessed slip arm, substantially as set forth.

8.—The combination, with an oblong socket secured to a drag bar and having its sides provided with arched grooves, of a bracing pendant having lateral projections which fit in said arched grooves, substantially as set forth.

9.—The combination, with a transverse roller extending between the two side drag bars, of a slip bracket centrally secured to said roller, and a shovel standard secured in vertical adjustment to the bracket, substantially as set forth.

10.—The combination, with the slip bracket carrying a shovel standard, with shovel thereto attached and fixed to the transverse roller, of a lever handle pivoted to the slip bracket and held in position thereto by a safety slip bolt connection, substantially as and for the purpose hereinbefore set forth.

11.—The herein described centre shovel, consisting of a slip bracket fixed to a transverse roller, a shovel standard, with a shovel fixed thereto, supported in the bracket and made vertically adjustable thereon, and a lever handle pivoted to the slip bracket and held in position thereto by a safety slip bolt connection, substantially as and for the purpose hereinbefore set forth.

12.—The combination, with the drag bars, of the herein described centre shovel having the journal ends of its transverse roller supported in journal-bearing bracket fixed to the drag bars, substantially as and for the purpose hereinbefore set forth.

13.—The lifting and supporting levers, in combination with their forked fulcrum supports, the levers hinged thereto by a free-staple joint connection, substantially as and for the purpose hereinbefore set forth.

14.—The combination, with a lever fulcrumed on the main frame and a hook depending therefrom and adapted to embrace a tongue beam, of a drag bar and intermediate connection of the latter with the hook, said drag bar being restricted in its lateral swinging movement when raised by said hook engaging with the tongue beam, substantially as set forth.

15.—The combination, with a lever fulcrumed on the main frame, a hook adapted to embrace a tongue beam, and intermediate connection between the hook and drag bar, of an upright secured to the tongue beam and provided with a longitudinal series of lateral notches, which provide engagement for the forward extremity of the lever, substantially as set forth.

16.—The combination, with levers fulcrumed on the main frame, hooks which embrace the tongue beams, and connections between the hooks and drag bars, of upright rack bars secured to the tongue beams and engaged by the forward arms of the levers, and a spring which connects the rear arms of the levers, substantially as set forth.

17.—The combination, with a seat beam and a vertical arm having a fluted body provided with a lateral stud, of a bolt which secures the arm in vertical adjustment to the drag bar without passing through the seat beam, said arm having its upper extremity provided with a horizontal flange which provides constant bearing for the edge of the beam, the lateral stud fitting in the side body of said beam, substantially as set forth.

18.—The combination, with a seed hopper having its

opposite extremities respectively provided with discharge openings, of two independent spouts extending from said openings laterally outward in opposite inclination, substantially as set forth.

19.—The herein described conic scatterers, in combination with the seed conducting spout, made laterally adjustable thereon, substantially as and for the purpose hereinbefore set forth.

No. 234,040.—JAMES MANGAS, LINCOLN, ILL.—*Sully Ploughs*.—November 2, 1880. Filed August 20, 1880.

Claim.—In combination with the sulky frame A, the cast-metal sections K, adjustably secured to the hangers B, the hinged connecting-plates H, secured to the said adjustable sections and perforated to allow lateral adjustment of the plough-beams, the said beams and cross-bar G being slotted, as shown, to permit adjustability of the side beams and secure said side beams to the central bifurcated beam, all constructed and adapted to operate substantially as and for the purposes specified.

No. 234,073.—LEONARD G. FATH, HILLSBOROUGH, ILL.—*Cultivators*.—November 30, 1880. Filed September 6, 1880.

Claim.—In combination with the uprights of the frame of the cultivator, the sliding blocks mounted thereon and provided with spindles for the wheels, and the levers pivoted thereto, provided with friction-rollers working under segments secured to the sides of the frame, substantially as specified.

2.—In combination with the frame of a cultivator, the bail for supporting the plough-beam, the said bail being loosely secured in swivel-blocks journaled in bearings in the uprights of the frame, and the lever for operating the said bail, whereby a longitudinal as well as oscillating movement may be given to the bail, substantially as and for the purposes specified.

No. 235,042.—JNO. T. PAYNE, WHITE STONE, VA.—*Wheel Cultivators*.—November 30, 1880. Filed October 11, 1880.

Claim.—The combination of a frame A, supported upon wheels, the beams I, united together by means of perforated plates and secured to the frame by means of the notched bar which extends along under the front edge of the frame, and provided with a suitable elevating device, whereby the beams can be raised above and lowered to the ground, substantially as shown.

2.—The combination of the frame A, the notched bars H U, beams I, secured together by the plates L, and provided with the clevises J and supporting devices V, an elevating mechanism for raising and lowering the ploughs, and a mechanism for moving them back and forth on the frame, substantially as described.

No. 235,303.—JOHN W. SWICKARD, GALVA, ILL., assignor to THOMAS BROWNLEE, same place.—*Cultivators*.—December 14, 1880. Filed February 25, 1880.

Claim.—In a cultivator, an axle or frame having a central part hinged to side parts, so that the side parts may be oscillated without including the central part forward or backward, in combination with wheels which support the axle or frame, and to which its side parts are journaled, so that they may be oscillated, and plough gangs attached at their front ends to the side parts of the axle or frame, so that the weight of its central part counter-balances the weight of the plough-beams and assists in raising their rear ends while permitting the plough-gangs to have free lateral movement, substantially as and for the purpose specified.

2.—The combination, with a cultivator axle or frame having a central part hinged to side parts, so that the side parts may be oscillated without including the central part forward or backward, of wheels which support the axle-frame, and to which its side parts are journaled, so as to permit of oscillating them, and of plough-gangs hinged at their front ends to said side parts of the axle, so as to permit of lateral movement of the plough-gangs, and otherwise attached thereto so that the central part of the axle will act as a counter-balance to the plough gangs, and assist in raising them from the ground, substantially as and for the purpose specified.

3.—In combination with a hinged axle having oscillating

side parts, substantially as described, journaled to the supporting-wheels, and adapted to raise the rear ends of the plough gang, which are hinged or connected therewith, substantially as described, the tongue H, secured to the central part of the axle and adapted to hold it in upright position, substantially as and for the purpose specified.

4.—The combination, with the axle having oscillating side part, journaled to the supporting-wheels, and a central part which acts as a counterpoise to the weight of the plough-gangs, of draft-plates attached to said oscillating side parts of the axle, having series of vertical holes, whereby the draft of the team may be utilized in forcing the ploughs into the soil, substantially as and for the purpose described.

No. 235,452.—WILLIAM PENDLEY and ANDERSON MOSS, LEVATHIE, GA.—*Wheel-Cultivators*.—December 14, 1880. Filed September 13, 1880.

Claim.—1.—The combination of the beams P, having their ends turned vertically upward, with the blocks H I, and operating lever whereby the blocks are turned upon the axle, substantially as described.

2.—The combination of the block H, placed upon the axle, and having operating levers attached to them, with the blocks L, passed over the ends of the blocks H and made laterally adjustable, substantially as set forth.

No. 235,503.—JOHN VAN BUREN, HOXBOWE, N. Y.—*Wheel-Cultivators*.—December 14, 1880. Filed August 18, 1880.

Claim.—In a wheel-cultivator, the combination, with the oblique side bar, C, of the obliquely-grooved side iron, D, engaging the outer edge of said side bar, and having the broad cheek flange *f* extending parallel with the wheel, spindle *m*, and supporting flange *l*, extending under said side bar and bolted thereto, substantially as specified.

No. 235,902.—JOHN T. MCNORTON, FLORENCE, TEXAS.—*Plough-Carriages*.—December 21, 1880. Filed May 31, 1880.

Claim.—1.—The combination, in a plough-carriage, of the bifurcated arms B, adjustably secured at their upper ends to the under side of the cross beams A, with capability of movement therealong, by screw bolts, their lower ends being secured to the wheel axles, as described, and the adjustable braces *a*, substantially as set forth.

2.—The combination, in a plough-carriage, of the keepers D, having outwardly turned upper ends, and means for securing the vertical, transverse, and longitudinal adjustment of said keepers, consisting of screw eye-bolts *t* and nuts *z*, securing said keepers to the under side of the cross beams, uprights *r*, bolts *3*, securing said keepers and uprights together, screw threaded rods *e*, bracing the keepers and secured to the rear cross beam, and yokes *f*, substantially as set forth.

No. 236,243.—CHARLES NIEDERAUER, LA GRANGE, TEXAS, assignor to himself and HENRY STUEDEMANN, same place.—*Cultivators*.—January 4, 1881. Filed June 26, 1880.

Claim.—1.—The combination, with the hinged plough *a b c*, of the adjustable frame *d*, the adjustable segments *f*, the blocks *g*, having slots *i*, the forced lever *h*, the rod *h*, having bearings in the frame, the levers *h*, connecting, by rods *m*, with said blocks, and the handle *n*, having pawl and ratchet, substantially as shown and described.

2.—The combination, with a plough standard hinged to frame *d*, of the slotted pivoted block *e*, and the segment *f*, adjustably connected therewith, as and for the purpose specified.

No. 236,341.—FLAVIUS J. LAMPTON, HARMONVILLE, KY.—*Wheel-Cultivator*.—January 4, 1881. Filed October 28, 1880.

Claim.—1.—The combination of the frame A, having the holes H, with the U-shaped adjustable frame I and wheel D, having a shank which projects up through the frames A I, substantially as shown.

2.—In a wheeled cultivator, the combination of the frame A, having the holes H, the vertically-adjustable U-shaped frame I, and wheel D, having a shank which passes up through both frames, with the loxes F, provided with the levers O, connecting rod P, levers R, cords

or chains Q, and the plough beams, substantially as described.

No. 237,170.—CHRISTOPHER GRATTAN, STOCKTON, CAL.—*Ploughs*.—February 1, 1881. Filed November 8, 1880.

Claim.—1.—A gang plough consisting of the diverging plough frames or beams A, with the opposing series of right and left ploughs secured to the two beams, respectively, said frame being jointed or hinged at D, in combination with the three pairs of wheels F, P, and S, whereby the front, centre, and rear of the machine are supported independently, substantially as herein described.

2.—The diverging-jointed plough frame *a b*, with its oppositely-placed ploughs and the three pairs of wheels F P S, in combination with the levers J R T, with their returning racks, whereby the front, centre, and rear of the plough frame may be elevated or depressed, substantially as herein described.

3.—The V-shaped plough frame *a b*, jointed at D, and having its forward portion supported upon the two pairs of wheels F P, and the rear portion provided with the wheels S, in combination with the lever T and rack K, whereby the rear portion of the frame *b*, with its wheels S, may be elevated from the ground, substantially as and for the purpose herein described.

No. 237,730.—CHARLES O. GARDINER, SPRINGFIELD, OHIO, assignor to P. P. MAST & Co., same place.—*Cultivators*.—February 15, 1881. Filed July 7, 1880.

Claim.—1.—In combination with the wheeled frame and the vertically-swinging beam or drag-bar jointed thereto, the upright arm connected rigidly with the beam, the lever jointed at its lower end to the arm and bearing at its upper end loosely against a fixed roll or bearing on the frame, and a spring-connection, substantially as shown, uniting the arm and the lever with each other and tending to throw the beam upward.

2.—In combination with the wheeled-frame and the swinging beam jointed thereto, a rigid arm connected with the beam, a lever pivoted at one end to said arm and resting at its free end against a bearing on the frame, and a spring-connection, substantially as shown, uniting the arm and the lever, and adjustable to and from their point of connection, substantially as described.

3.—The combination of the frame, the beam having the arm connected rigidly therewith, the lever jointed to the arm and having the shoulder or incline near one end, the spring connecting the arm and lever, and the roller or bearing on the frame.

4.—In combination with the lever G, as described and shown, the arm F, provided with the series of notches, the spring, and the adjustable spring-bearing.

5.—In combination with a wheeled frame and a beam or drag-bar connected thereto, a lifting spring, and an arm provided with an incline or shoulder and adapted to be actuated by the spring, and to sustain the beam in an elevated position by means of said shoulder, substantially as described and shown.

No. 237,740.—CHARLES O. GARDINER and WILLIAM C. DOWNEE, SPRINGFIELD, OHIO, assignors to P. P. MAST & CO., same place.—*Cultivators*.—February 15, 1881. Filed June 28, 1880.

Claim.—1.—The cultivator coupling having the rigid arm, with its upper end provided with the series of holes disposed in different vertical and horizontal planes, as described and shown.

2.—The combination of the frame, the beam-coupling having the upright arm formed rigidly thereon, the spiral compression-spring, and the sliding and swinging rod, having one end seated loosely in the frame, and the other end pivoted to the upper end of the coupling-arm by an adjustable pivot, which permits the rod to be moved forward and backward in relation to the arm.

3.—The combination of the frame, the coupling having the rigid upright arm thereon, the rod and the spring, the spring being adjustable in tension, and the rod adjustable forward and backward at its point of connection with the arm, substantially as described.

4.—In combination with the axle, the draft-frame, and the beam operating rod, the flanged plate F, constructed as

described and shown, with the lip or flange, whereby it is adapted to serve the double purpose of uniting the frame and axle and of holding the rod and its spring.

5.—The combination of the parts *l, m, n*, the connecting pivot, and the screw *o*, applied to hold the pivot, as shown. No. 238,080.—LAFAYETTE K. HUTTON, MISSOURI, Mo.—*Cultivators*.—March 15, 1881. Filed November 29, 1880.

Claim.—1.—In a cultivator, the combination, with the uprights D of the carriage-frame and the couplings S T V X V attached to the plough-beam, of the frame F, having longitudinal slots in its side bars, and the fastening bolts Q, substantially as herein shown and described, whereby the forward ends of the plough-beams can be raised and lowered, as set forth.

2.—In a cultivator, the combination, with the adjustable frame P, attached to the uprights D of the carriage frame, and having lugs R upon its side bars, and the plough beams W, of the hinged rod or bolt S, the hinged plate T, having perforated cross-head upon its rear end, the plate V, having pin U, the guard plate Y, and the fastening bolt X, substantially as herein shown and described, whereby the plough beams can have a free vertical and lateral movement as set forth.

3.—In a cultivator, the combination, with the axle B and uprights D of the carriage-frame and the draft rods K, of a series of hooks L, substantially as herein shown and described, whereby the point of draft attachment can be adjusted in line with the centre of resistance, as set forth.

No. 240,571.—JONAS L. BACHMAN, STONY RUN, PA.—*Cultivators*.—April 26, 1881. Filed December 7, 1880.

Claim.—1.—A cultivator axle-tree B, having a horizontal right angle bend forward of and next to the wheels, a second bend, also at right angles, and horizontal, to form the bearings for the plough couplings E, with vertical right angle bends from said bearings, terminating with final right angle bends at the desired height under the top frame, and provided with bearings C C for the sub-axle D, the axle-tree being continuous throughout, and the bending similar from both sides, as shown, and for the purpose substantially as described.

2.—The sub-axle D, provided with the double opposite cranks, D' D', and slotted arm D'', in combination with the axle tree B by the bearings C, with the plough-beams F by the connecting rods *d, d*, and with the hand lever D''' by a pin and sliding block working in the slot of the arm D'', constructed and arranged for the purpose shown and specified.

3.—The axle B, frame M N, rock-shaft J, arms K, lever L, plow-beams F, rods *d*, and sub-axle D, substantially as shown and described.

4.—The coupling E, having laterally bifurcated head, and the bearing boxes E'' E''' at front and rear of axle, the back of box E''' and the wall of the bifurcated head being struck with a radius from the bolt E'', in combination with axle B and plow-beams F, substantially as shown and described.

5.—The hand lever D''', having its fulcrum on the axle tree B, in combination with the sub-axle D, the sliding block working in the arm D'', and with the quadrant Dv on the top frame, substantially as shown, and for the purpose specified.

6.—The pulverizing double tined harrows P, constructed and adapted to be used in combination with the shovels H', as specified, and substantially as shown.

No. 241,319.—NELSON DUNAWAY, LYNSVILLE, ILL.—*Sulky-Cultivators*.—May 10, 1881. Filed January 5, 1881.

Claim.—1.—In a sulky-cultivator, the combination, with the main frame F, of the pivoted-seat frame C D, the bars M, having stops N, and the adjustable slotted bars O, bent to form stops P, as shown and described.

2.—The standards W, supporting ploughs at their lower ends, connected at the top with hand lever pivoted between the standard connections, and immediately attached to a rocking beam X, to provide means of throwing the plough points toward or from each other, as described.

No. 241,687.—CLINTON MENDELHALL, MAR-
TINSBURG, W. VA.—*May 17, 1881. Filed February 17, 1881.*

Claim.—In a cultivator, the wheeled frame A, having lugs *a'* and parallel inclines *a'* at its forward end, in combination with cross rod *a'*, levers *b, c, d, e*, and *f*, shafts *a'*, foot pieces *b*, and ploughs *c*, substantially as shown and described.

No. 242,134.—JAMES JOHANESON, BRIDGTON, WIS.—*Sulky-Cultivators*.—May 31, 1881. Filed March 9, 1881.

Claim.—The standard E, with ball joint thereon, as shown, the device D and vertical lever K with ball joint, as shown, the side lever, *v*, coupling chain *v'*, the foot lever *w*, and hand lever L, whereby the cultivators are manipulated by the hands or feet of the operator from his seat upon the machine, substantially as and for the purpose herein particularly described and shown.

No. 242,478.—RICHARD B. ROBBINS, ADELAID, MISSOURI.—*Cultivators*.—June 7, 1881. Filed March 29, 1880.

Claim.—1.—The lever K and chain S, in combination with beam T, lever L, rack P, and roller *q*, substantially as set forth.

2.—The foot lever W, in combination with lever L, rack P, and locking bolt U, as described.

3.—The lever L, provided with sliding rod U, and operating spring, in combination with rack P, lever V, and foot lever W, the several parts operating as described.

4.—The reverse-side shovel *t*, constructed with one end wider than the other, and provided with sleeve B', slotted as described, for the purposes set forth.

5.—The standard Z, in combination with sleeve A', provided with lug *g*, and a shovel or tooth provided with sleeve B', slotted as described, for the purpose set forth.

6.—The standard iron Y, constructed as described and secured to the bottom and the side of the rail, in combination with the plough standard, substantially as described.

7.—The combination of a cultivator beam, standard iron Y, constructed and secured to the beam as described, and the standard Z, slotted and beveled along the slot and secured to said iron, as described, for the purpose set forth.

8.—The sleeve B', provided with one or more slots at both top and bottom, in combination with a double pointed shovel, for the purposes set forth.

9.—The sleeve A', provided with lug *g*, in combination with the standard Z, and sleeve B', slotted at one or both ends, substantially as described.

No. 242,497.—EDGAR A. WRIGHT, DANVERS, IOWA.—*Cultivators*.—June 7, 1881. Filed May 23, 1879.

Claim.—1.—In a cultivator, the combination of a vertically swinging drag bar or beam and a lifting spring which acts with increasing force or effect on the beam as the latter rises, and vice versa.

2.—In a wheeled cultivator, the combination of a vertically moving beam and a lifting spring, substantially as described, whereby an increasing upward strain in combination with the beam as the latter rises.

3.—The combination of a wheeled frame, a vertically moving beam or drag bar attached thereto, and a lifting spring, substantially as described, which exerts a greater strain or effect upon the beam when the latter is elevated than when it is depressed.

4.—The combination of a vertically moving beam, a lifting spring, and a shifting or changing bearing or fulcrum, whereby the lifting action or effect of the spring upon the beam is increased as the beam is elevated, substantially as described and shown.

5.—A vertically movable beam, in combination with a lifting spring, connected therewith by a changeable or shifting bearing, substantially as described, whereby the lifting force or effect of the spring upon the moving beam is maintained notwithstanding the decreasing tension of the spring.

No. 242,678.—ISAAC S. MUSSETTEK, OAKLAND,

Ohio. *Classified*.—*Jan. 7, 1881. Filed April 4, 1881.*

Claim.—In a cultivator, the combination, with the clip D, of the link E, beam G, bell crank lever H, rod I, and lever or link K, whereby the point of the beam is moved *coram pombig* with lateral movement of the handle of said beam and a straight line shaft secured for the latter in every position, substantially as shown and described.

No. 243,060.—DANIEL UNTHANK, SPIRFLAND, IND.—*Two-Horse Cultivators*.—*June 21, 1881. Filed January 22, 1881.*

Claim.—1.—In combination with the arch of a cultivator axle, the bar H, having a radially notched plate, *z*, at one side, the sleeve J, provided with a longitudinally square hole for the square bar K, and also provided with an arm, I, having a hub with radially notched face to engage with the notched face *x* of the bar H, the clamp L, with the square bar K, attached, and clamp F, all constructed and arranged to operate substantially as specified.

2.—The rear plow frame, G, having its lower end, M, cast hollow, and its ends provided with notched plates *g g*, combined with the notched hub *z*, of the plow standard O', the ratchet *z'*, with radial notches on one side and parallel notches on the projecting portion of the other side, and the plow standard O, with slot O', with recessed notched parts O', substantially as specified.

No. 243,123.—CHARLES A. HAGUE, CHB. V. O., ILL., assignor to PERSE A. BRADEN MANUFACTURING COMPANY, same place.—*Cultivators*.—*June 21, 1881. Filed November 25, 1879.*

Claim.—1.—The arm or support A, having a pivotal connection at its lower portion with the frame work of the cultivator, and arranged to rock or swing in a vertical plane in combination with a cultivator beam loosely suspended from said arm or support, and a spring loosely connected at one end with the upper portion of the latter, substantially as and for the purpose described.

2.—The combination of a rocking arm or swinging support,

A, a spring or spring arm, B, and then connecting link C with the cultivator beam E and the chain D, connecting the latter with the rocking arm or swinging support, substantially as described.

No. 243,210.—LAURANCE H. CONNER, GRAND VIEW, TEXAS.—*Cultivators*.—*June 21, 1881. Filed May 14, 1881.*

Claim.—1.—In a cultivator or other agricultural implement, the combination of carrying wheels A A, a sectional axle consisting of parts B B', each of said sections being provided upon its inner surface with cogs or teeth, and moving in suitable guides attached to a bolster carried thereon, and a geared pinion placed between the cogged sections of the axle, the parts being arranged for joint operation, substantially as set forth.

2.—The combination, in a cultivator or other agricultural implement, of the carrying wheels, two movable cogged sections of an axle, a pinion placed between said cogged portions, and a bolster carrying guides for the sections of the axle, and friction rollers for facilitating the movements of the sections of the axle, substantially as set forth.

3.—In combination with the adjustable sections of an axle for a cultivator or other agricultural implement, a geared pinion placed between the geared portions of the sections of the axle, the perforated disk H, shaft E', dog I, and spring K, the parts being arranged for joint operation, substantially as described.

No. 243,507.—HARVEY W. CHAMBERLAIN, LOCKPORT, ILL.—*Cultivators*.—*June 28, 1881. Filed February 15, 1881.*

Claim.—The combination, with the beam H and a pole A, of a coupling, R, having the groove D, a post, S, provided with the flange D', and the standard C, provided with the slotted lugs B B', bearing C', for receiving the end of the post S, and thumb set screw *a*, for adjusting said post, substantially as described.

PLOWERS - COLTINGS

	<i>Plot</i>	<i>Claim</i>		<i>Plot</i>	<i>Claim</i>		<i>Plot</i>	<i>Claim</i>
Ayres, J. and Hunt, M. F.	938	298	Hartman, C. R.	941	299	Potter, H. J.	942 $\frac{1}{2}$	300
Bossinger, J. W.	931	297	Hilesabeck, F. L.	942	299	Ray, G. W.	942	299
Bradley, B. C.	939	298	Holland, L. M.	932	297	Rockafellow, S.	937	298
Braman, P.	942	299	Kinsey, C.	940	299	Sanders, J. R.	938	298
Brock, S. W.	935	298	Letz, J. P.	935	298	Smith, W. E.	932	297
Brown, W. P.	941	299	Lueth, J.	934	297	Smith, A.	940	299
Brown, W. P.	944	300	Luppen, L.	936	298	Stover, D. C.	934	297
Brown, W. P.	943	300	Luppen, L.	936	298	Tipton, J. B.	933	297
Butterfield, J. S.	941	299	Lynch, E. P.	939	299	Underwood, F. J.	933	297
Carr, N., Jr. and J.	933	297	Manly, F. B.	943	300	" " (R.)	933	297
Coons, S. P.	940	299	Manly, F. B.	943	300	Vanbuvaee, J. and Smith,		
Crosley, S.	937	298	Needham, B. F. and L. W.	942	299	H.	937	298
Dryden, W. A.	934	297	Osborn, B. F.	935	298	Van Stecke, G. W. and		
Dryden, W. A.	932	297	Paradis, J. B.	944	300	McConaughy, C.	940	299
Fawcett, G.	937	298	Parrigo, A. S.	934	297	Van Stecke, G. W. and		
Feltman, H.	941	299	Pierpont, J.	932	297	McConaughy, C.	943	300
Fox, J.	938	298	Pitts, J. K.	938	298	Weir, W. S., Jr.	931	297
Fuberg, A.	936	298	Platt, W. H.	939	298	Weir, W. S.	939	299
Gates, E. N.	935	298	Plater, M., Jenkins, C. E.			Whitney, S. M.	931	297
Hague, C. A.	944	300	and G. F.	931	297			

No. 57,205.—W. S. W. IR, JR., MONMOUTH, ILL.—*Cultivators*, *May 14*, 1869.

Claim.—The combination with the plate D, of a cylindrical journal of the grooved bearing plate C, cylindrical projections *a*, plates B B, and screw bolt *b*, all constructed and arranged to operate in the manner and for the purpose specified.

No. 57,507.—MICHAEL PORTER, C. C. JENKINS and G. F. JENKINS, FARMINGTON, ILL.—*Cultivators*, *August 28*, 1869.

Claim.—The combination of the adjustable swivel brackets A, plough beams F F, and axle A, arranged and operating in the manner and for the purpose herein specified.

No. 57,668.—J. W. BOOSINGER, MARION, ILL.—*Cultivators*, *September 4*, 1869.

Claim.—The clevis D' and strap D' when constructed and employed substantially as described and set forth.

2.—The combination of the plough beams D, with the clevis D, also, the combination of the said beams with the devices E *et al'* for the purposes and in the manner substantially as described.

No. 58,008.—SILAS M. WITFINEY, GALESBURG, ILL.—*Cultivator or Cultivators*, *November 13*, 1869.

Claim.—The adjustable rectangular frame C, eye bolts D and F, and connecting bar B, when said parts are constructed substantially as herein shown and described, in combination with the plough beam A and axle of frame G, as and for the purpose set forth.

No. 67,078.—W. E. SMITH, OCAWKA, ILL.—*Cultivators*, *July 23*, 1867.

Claim.—The couplings G, composed of two parts, *d d*, connected by a vertical bolt *b*, and having pricking *f* interposed between them and the pin *c*, and connected to the axle and plough beams, substantially as and for the purpose set forth.

No. 69,607.—JOSHUA PIERPONT, LA HARPE, ILL., assignor to himself and SIDNEY S. TUTTLE, E. same place.—*Cultivator Couplings*, *October 8*, 1867.

Claim.—The turn table clevis, with the head *c*, in combination with the axle arm *a* both constructed and operating substantially as and for the purpose herein described.

2.—The combination of the clevis and the axle arm *a* with the connecting bar *b*, arranged and operating as and for the purpose described.

No. 70,034.—LEWIS M. HOLLAND, GALESBURG, ILL.—*Cultivators*, *July 21*, 1868.

Claim.—Coupling the shovel beams B with the axle of the cultivator by means of the screw pivots *b*, with cross pieces *c* fitting in the sockets of the plates A, substantially in the manner and for the purpose as herein set forth.

No. 82,202.—W. A. DRYDEN, MONMOUTH, ILL., assignor to himself and JOHN N. TURNBULL, same place.—*Cultivators*, *July 20*, 1868.

Claim.—The metal axle, with a vertical coupling spindle, F, cast thereon as a part of the same, substantially as described and for the purpose set forth.

No. 85,412.—FLAVIUS J. UNDERWOOD, ROCK ISLAND, ILL., assignor to B. D. BUFORD, same place.—*Cultivator*, *December 29*, 1868.

Claim.—The cultivator frame, consisting of the bars A and the bent bar B, with the axles C attached, the part A being made adjustable, substantially as shown and described.

2.—The manner of attaching the ploughs to the axle C, by means of the plates *a*, grooved boxes *c*, and studs or pins *d*, all constructed and arranged to operate as described.

3.—The shovels F, provided with the boxes *c*, bolts *e*, and bar *g*, in combination with the rounded shank *h* of the plough beam, whereby the shovels are rendered capable of being adjusted and secured in place, substantially as herein described.

4.—Connecting the handles of the two sets of cultivator shovels *f* by means of the bar *l*, when so arranged as to limit the distance to which said handles may move apart, and yet leave them free to approach each other, substantially as shown and described.

No. 4,695.—FLAVIUS J. UNDERWOOD, ROCK ISLAND, ILL., assignor to BASIL D. BUFORD, same place.—*Cultivator*, *85,412—D. M. 29*, 1868. Re-

issued *December 12*, 1871.

Claim.—In combination with the plough beams F and round axle C, a coupling joint, G, which, encircling the axle, turns around it as a center.

2.—In combination with the elements last aforesaid, a joint upon which the plough beams may swing horizontally as well as have a vertical oscillation.

3.—The studs *h* upon the axle, in combination with the plough beams and grooved boxes *c*, forming part of the joint coupling G.

4.—A series of studs, *h*, arranged along the axle C, in combination with the plough beams and adjustable grooved coupling.

5.—The coupling G, including in its construction the parts *c*, *e*, *h*, and *g*.

6.—In combination with the bent beams E and shanks F, the bolts *c*, boxes, *b*, and plates *e* for adjustably connecting the shanks and beams.

7.—In combination with the shanks F and a device substantially such as set forth for connecting them, the bent beams E, when made round at their lower ends so that the shovels may be adjusted to throw the earth to either side and be raised or lowered to regulate the depth of plowing.

8.—In combination with the plough beams E, a frame B C, to which the said beams and the wheels are attached, and a frame A, adjustably connected with one another so that the frame A can be raised or lowered without affecting the position of the plough beams and ploughs, substantially as set forth.

9.—The parts last aforesaid when adjustably connected horizontally in relation to one another, substantially in the manner set forth.

10.—The axles C C' and bar B when respectively so constructed that axles may be attached or detached substantially as set forth.

11.—The bar I and plough handles in combination when so arranged as to limit the distance to which the handles may be separated, but leaving them free to be approached at the will of the operator.

No. 85,500.—NATHAN CARR, JR., and JOHN CARR, MONMOUTH, ILL.—*Cultivator*, *January 5*, 1869.

Claim.—The plate E, cylinder M, and hook S, with nut H, constructed and arranged as described, and combined with spindle I, wrench T, and casting A, the whole being constructed, operated, and arranged in the manner substantially as described, and for the purpose set forth.

No. 87,082.—JOHN B. TIPTON, PEORIA, ILL.—*Cultivator*, *February 16*, 1869.

Claim.—In combination with a cultivator, the slotted springs C, and the ball and socket joints F, constructed and operating substantially as described.

2.—A cultivator, having ball and socket joints F, springs C, elevated axle, as described, and rest H, constructed, arranged, and operating substantially as herein specified.

No. 87,224.—D. C. STOVER, LANARK, ILL.—*Cultivator*, *March 9*, 1869.

Claim.—The combination of the pivoted adjustable yoke D with the bent rod C, bracket B, and carriage A, arranged and operating as described, and for the purpose specified.

No. 91,727.—WILLIAM A. DRYDEN, MONMOUTH, ILL., assignor to himself and J. M. TURNBULL.—*Cultivator Joints*, *June 22*, 1869.

Claim.—The combination and arrangement of the plates E and K, with their respective projections H, and *s*, and tongue *c*, with the eye bolt C, nut D, grooved journal spindle A, and beam plate J, substantially as described, and for the purpose set forth.

No. 94,407.—JOHN LUETH, KANKAKEE, ILL.—*Cultivator*, *September 7*, 1869.

Claim.—The wedge shaped plate I, provided with grooves *h h*, in combination with the grooved hack plate *n* shovel H, bolt m, and standard G', as set forth.

2.—The reversible stirraps F, provided with pivots *b b'*, placed at one side of their center, in combination with the beams G, standards G', shovels H, depending standards B, and vertical parts B' of the elevated axle, as and for the purpose set forth.

No. 95,505.—A. S. PERRIGO, SANDWICH, ILL.—*Cultivator*, *October 5*, 1869.

Claim.—1.—The two part clevises Q, pivoted to the beams A, and to the clips M, and provided with dotted ends V, for adjusting the depth which the shovels are to run in the ground, as set forth.

2.—The combination of the clevises Q, clips M, and standards K, as described.

3.—The combination of the clevises Q, standards K, clips M, and rods W E, as and for the purpose set forth.

4.—The combination of the rods d', standards V, shovels U, and cam i, for holding the shovels the required distance apart, as specified.

5.—The two part clamp Y Y, in combination with the standard V, bolt and nut Z X, angular bar O, and shovel U, for holding and adjusting said shovel, as described.

No. 97,032.—S. W. BROCK, NIANIC, Ill.—*Cultivator to s.*—*Nov. 23, 1869.*

Claim.—The curved slotted strap H, pin or key I, bar F, and adjustable bolts E with each other and with the slotted plough beams G and slotted standards C attached to the cross beam A, substantially as herein shown and described, and for the purpose set forth.

No. 97,073.—I. N. GALES, BURNSIDE, Ill.—*Cultivator to s.*—*Nov. 23, 1869.*

Claim.—The knuckle D and adjustable knuckle holder F, constructed and operating in connection with the plough beam and truck frame of a cultivator, substantially as herein shown and described, and for the purpose set forth.

No. 98,084.—JOHN P. LETZ, LYON, Ill.—*Cultivator to s.*—*January 4, 1870.*

Claim.—The plate d, provided with the circular head d' and onifice e', in combination with the rounded recesses c and bolts and staples, in the manner and for the purpose described.

No. 101,834.—BENJAMIN F. OSBORN, NASHVILLE, TENN., assignor to T. H. JONES & Co., same place.—*Cultivator to s.*—*August 30, 1871.*

Claim.—The arrangement, with respect to the beams A A and bars D E of a cultivator, of flanged vertical steel plates F G H, pivoted joint K L M, horizontal steel plate O P, and bolts X G, to admit of lateral and vertical adjustment, as shown and described.

No. 108,274.—LUTPE LUPPEN, PIRKIN, Ill.—*Show-Plough to s.*—*October 11, 1870.*

Claim.—1.—The clamp, composed of the plates G' G', which are constructed with central pins and annular flanges surrounding the same upon their opposing faces, in combination with the axle socket F, to form a coupling, substantially as set forth.

2.—The arrangement, relatively to each other, of the axle socket F, clamp G' G', draw bar G, socket G' G', and plough beams G' G', substantially as set forth.

No. 108,275.—LUTPE LUPPEN, PIRKIN, Ill.—*Show-Plough to s.*—*Oct. 11, 1870.*

Claim.—1.—The socket D, having upon its side one or more projections D', substantially as and for the purpose set forth.

2.—The combination of the socket D, shims D' and D'', and beam or draw bar A, substantially as and for the purpose set forth.

3.—The combination of the socket C or beam A, brace F, and socket D, substantially as and for the purpose set forth.

No. 114,627.—ANDREW FRIBERG, MOBILE, Ill.—*Walking Cultivator to s.*—*Feb. 27, 1871.*

Claim.—1.—The coupling F, composed of the pieces a and b, having the circumferential grooves c with lateral space e, connecting said grooves, to enable the coupling to be adjusted laterally and held in position, as described.

2.—The adjustable shovels H, in combination with a shank or beam so curved that the shovel may be adapted thereon at different inclinations without varying the height of its lower point, substantially as described.

No. 112,990.—JOHN VANLUANEE and HUGH SMITH, MOBILE, Ill.—*Walking Cultivator to s.*—*Mar. 6, 1871.*

Claim.—The combination of the grooved hub D, made adjustable on the axle A, with the circular T head F, secured to the hub by means of the segmental clamps c, substantially as set forth.

No. 124,724.—SAMUEL CROSSLEY, ROCK ISLAND, Ill.—*Cultivators to s.*—*March 19, 1872.*

Claim.—1.—The clamp B, constructed substantially as and for the purpose set forth.

2.—The boxes C C, when constructed with convex outer surfaces, for the purpose of retaining them within the clamps when in ordinary use, and also for causing them to separate said clamps when the ploughs meet with an unusual obstruction, the parts being arranged substantially as set forth.

3.—The clamps D D', constructed with concave cavities upon their inner surfaces and with slots in their front ends to allow the bolt to pass out through, substantially as and for the purpose set forth.

4.—The combination, in a plough or cultivator, of the two portions of the clamp D D', and the clamping bolts, when one of such bolts is provided with a wooden pin, substantially as and for the purpose set forth.

5.—The combination of the clamp D D', the boxes C, the clamp B, and the axle of a plough or cultivator, substantially as and for the purpose set forth.

No. 125,692.—SAMUEL ROE KATELOW, MOLINE, Ill., assignor to himself, HERMAN A. BARNARD, and J. STEAS LEAS, same place.—*Wheel Cultivator to s.*—*April 23, 1872.*

Claim.—The single coupling D, having the recess E and hollow tube d, used in connection with the beam A, and clamped to the pivoted axle G by the bolt and nut h, f, all as and for the purposes set forth.

No. 126,276.—GEORGE LAWRETT, FARMINGTON, Ill.—*Cultivator to s.*—*April 30, 1872.*

Claim.—The reversible slotted clevis E, having curved arms a, a', in combination with bolt d, eye bolt e, riding bearing f, bridge g, cylindrical nipple or bolt guard h, and plate i attached to beam C, all constructed and arranged in the manner and for the purpose as set forth.

No. 128,295.—JOHN FOX, OKALOOSA, IOWA.—*Plough to s.*—*June 25, 1872.*

Claim.—The clamping device composed of the bolts H, bars I, and bolts J, attached to the holder G, and axle B, as specified, and carrying the plough coupling K L M N O at its lower end, said coupling being vertically adjustable, as shown and described, for the purpose specified.

No. 129,642.—JAMES AYRES and MANNING F. HUNT, BISHOP, Ill.—*Cultivator to s.*—*July 23, 1872.*

Claim.—The combination of the adjustable plates E h, pivoted bolt F, beam G, nipple k, and shaft G, substantially as and for the purpose set forth.

No. 131,008.—JOHN R. SANDERS, DAVENPORT, IOWA, assignor to himself and FRANK GILBERT, same place.—*Cultivator to s.*—*Oct. 1, 1872.*

Claim.—In combination with the clamping discs I J, sectional sleeve D, and axle B, the collar cut out to form the parts N O, and having the cap F Q, so as to admit of being arranged with and permit the movement of the discs and axle, as specified.

No. 135,396.—JAMES K. FITTS, McLEANS, Ill.—*Plough Coupling to s.*—*January 28, 1873.*

Claim.—The plough coupling shown, consisting of the plates A and A' provided at their forward ends with the cylindrical opening C, and at their rear ends with the semi-spherical bosses a and recess or slot D, connected together by the bolt B, and combined with the tongue bar E and E' by means of the bolt F, substantially as and for the purpose specified.

No. 135,404.—BYRON C. BRADLEY, CHICAGO, Ill.—*Cultivator to s.*—*February 4, 1873.*

Claim.—1.—The parts A and B, constructed substantially as shown and described, and used in connection with a cultivator or plough beam and standard, substantially as and for the purpose herein specified.

2.—The parts A B, beam E, and standard F, in combination with the piece of washer D and bolt, the several parts being constructed and arranged substantially as and for the purpose described.

No. 137,024.—WILLIAM H. PLATT, DAYTON, OHIO.—*Cultivator to s.*—*March 18, 1873.*

Claim.—1.—In combination with an axle having recesses c, the sleeve H cast in a single piece, and having bolt n, substantially as specified.

ment, for dropping down the pivot below the beam, as herein set forth.

3.—The combination of the swivel bar G, with arm *h*, the beam H, with clevis K, hangers L, and pivot J, all as and for the purposes herein set forth.

No. 216,145.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Plough and Cultivator Couplings*.—*Jan* 3, 1879. Filed *March* 20, 1879.

Claim.—1.—The casting A, having three arms, C, to allow vertical adjustment of the plough beams, and having the semi-circular ribs D, corrugated at *d*, constructed and adapted to serve as set bolts.

2.—The casting B, having plate F, arms G, having central enlarged apertures H, and slots I, combined with the bracket A, C, and bolts H' I', as set forth.

3.—The staple bolt J, combined with the bracket A and B, adapted to change the line of draft as specified.

No. 238,060.—HOMER J. POTTER, CENTRALIA, KANSAS.—*Wrench Attachment for Cultivator*.—*Nov* 10, 1880. Filed *Sept* 16, 1881.

Claim.—1.—The combination, with a plough beam, D, of the bar E, provided with the slots *f* *f'* and the bolts G G', passing through said slots and through holes in the plough beam, and fastened by nuts, substantially as herein described.

2.—The plough beam D, bar E, bracket H, and slotted bar K, in combination with the plates C and hangers A of a sulky, as shown and described, for the purpose specified.

No. 238,043.—FRANK B. MANLY, MATA, OHIO.—*Wrench Cultivator*.—*March* 15, 1881. Filed *July* 22, 1881.

Claim.—1.—Box C, and plate D, in combination with plates E E', held together as described, and spring H, and bearing G, substantially as specified.

2.—In a wheel cultivator, the combination with the box C, having arms, of the plate D, having the curved slot *a'* and seat *a''*, the plate E, E', having spacers *b*, *b'*, *b''*, and curved slot *c*, the bolts Z, and S, and E', spring H, and bearing G, substantially as and for the purposes set forth.

No. 238,044.—FRANK B. MANLY, MATA, OHIO.—*Wheel Cultivator*.—*March* 15, 1881. Filed *January* 22, 1881.

Claim.—1.—Swivel plate M, having groove *P*, hole *R*, and shoulder *c*, in combination with plate E, having ribs P and slot *m*, and bolt K, substantially as described.

2.—Box B, having flanges *e* and *h*, and *h'*, in combination with bolts D D' and plate E, having ribs *p* and holes *o*, substantially as described.

3.—In a wheel cultivator, the combination of the yoke K, provided with the ears *L*, with post L', having stop-pin *S*, and the swivel plate M, having groove *p*, block X, having groove *m'* and ribs *o*, bolt Q, and set screw P, substantially as and for the purposes set forth.

No. 238,004.—GEORGE W. VAN SICKLE and CALVIN McCONAUGHY, BERTON GLENS, IOWA.—*Cultivator*.—*March* 15, 1881. Filed *January* 5, 1881.

Claim.—1.—A cultivator with its beam C secured to the axle I by hinged couplings A B, whereby, in combination

with adjustable braces D, the beams C may be raised and lowered to till more or less deeply, substantially as described.

2.—In a cultivator with hinged couplings A B, friction rollers H, and friction plates E, bolts F, and nuts affixed thereto, whereby the friction rollers may be brought more or less tightly in contact with the friction plates, substantially as and for the purpose described.

3.—In a cultivator, couplings A B, provided with friction rollers H and friction plates E, secured to the main axle I, on which they revolve, substantially as and for the purpose described.

No. 230,208.—JOHN B. PARADISE, MOBILE, ALA.—*Coupling Cultivator*.—*March* 22, 1881. Filed *June* 25, 1880.

Claim.—1.—In a cultivator coupling, the combination, with the axle plate and the clamping plate, of a J shaped coupling bar, having its straight arm secured to the cultivator beam and pivoted near one end of the axle plate, said bar, with its curved extension, moving and guided between the axle and clamping plates, substantially as described and shown.

2.—The combination of the coupling bar C with the axle plate B, yoke D, block E, and removable clamp in *g* plate F, substantially as describe I, and for the purpose set forth.

No. 249,377.—WILLIAM P. BROWN, ZANESVILLE, OHIO.—*Cultivator*.—*April* 10, 1881. Filed *February* 12, 1881.

Claim.—1.—A plough beam having in its front portion a resiliently adjustable joint, substantially as specified.

2.—A plough beam having its front portions flexibly jointed, and carrying an interacting spring between projections on the portions of the jointed plough beam, substantially as specified.

3.—The combination with the coupling sleeve and its draft shaver or projection, of the resilient flexible jointed plough beam, substantially as specified.

4.—The combination, with a plough beam and its coupling sleeve, having a draft shaver or projection, and a forward arm *d*, of the spring toggle, and tie, substantially as specified.

5.—The combination, with a flexible plough beam, of a coupling sleeve having a draft projection at one end and spring biting devices at the other end, operating in antagonism to the draft, substantially as specified.

No. 243,122.—CHARLES A. HAVUE, CHICAGO, ILL.—assignor to FURST & BRADLEY, Manufacturing Company, same place.—*Cultivator Coupling*.—*Jan* 21, 1881. Filed *Nov* 25, 1879.

Claim.—1.—A coupling head or socket formed from a single piece, having an opening to receive a pipe box or thimble, and an end opening for compression, and a slit to facilitate clamping and prevent breakage, and held in place by a clamping bolt, substantially as specified.

2.—A coupling consisting of two heads or sockets, each formed from a single piece with openings for the pipe box or thimble, and provided with compressing slots to enable a bolt to clamp each head or socket on its pipe box or thimble, substantially as and for the purposes specified.

<i>Plat. Crops</i>	<i>Plat. Crops</i>	<i>Plat. Crops</i>	<i>Plat. Crops</i>
Adams, S. H.	681 322	Bailey, B. C. and	Gehrane, J.
Adams, S. F.	1145 358	Hague C. H.	1088 380
Arey, R. C.	1083 350	Bradley, B. C.	1168 382
Albertson, C.	1087 351	Brewer, J.	985 323
Alexander, J. T.	1105 372	Bumelhoff, C. R.	993 317
Allen, W. K.	1168 359	" (R.)	994 317
Alts, A. Q.	1014 333	Frudy, I. F. C.	1007 353
Alison, A. H.	1054 344	Brown, H.	993 317
Aloways, J.	1048 342	Brown, J. C. and Slim-	
Amendt, A. A.	1149 394	pet, G. H.	985 323
Andrews, I. H.	1025 336	Brown, C. and Gerth, L.	1021 334
Andrews, J. H.	1049 342	Brown, W. J., Haylett,	
Armstrong, J. and G.	1071 347	J. G., and Seaton,	
Armstrong, J. and G.	1090 353	B. F.	1008 353
Armstrong, G. and J., Jr.	1170 374	Brown, F. C.	1147 358
Atwood, G. and Mur-		Brown, M.	1130 361
cheson, D. T.	1162 381	Brown, F.	1174 375
Atwood, C.	688 324	Brown, M.	1186 377
Atwood, C.	902 325	Brown, L.	1200 383
Atwood, C.	1051 343	Brown, J. H.	1206 385
Avery, G. C.	1000 331	Brunner, J.	1142 364
Bailey, J.	1130 361	Bryan, I.	1036 339
Bailey, J. and Marshall,		Bryan, S.	1114 358
G.	1147 369	Bryan, F. C.	1169 381
Bard, E. E.	1085 350	Buckley, R. C.	1152 367
Baker, H. H.	974 310	Budd, E. C.	1151 367
Bakewell, C. N.	1016 333	Burke, I.	1162 381
Ballagh, A. H.	1082 350	Burlingame, A. H.	995 327
Barclay, J. W. and Sel-		Burlingame, A. H.	1002 352
lar, R.	1214 388	Burlingame, A. H.	1149 362
Barringer, J. H.	1001 328	Burton, N. F.	976 320
Barr, O.	1172 374	" (R.)	979 320
Bartlett, I. W.	1060 328	Bushnell, W. K.	1149 364
Bartlett, W.	905 326	Bushnell, W. K. and D.	1146 366
Baxter, K.	1008 331	Bullitt, H. M.	1082 350
" (R.)	1008 331	Burgamier, H.	1007 353
Beal, L. W.	1021 334	Burket, G. and Gaskill,	
Beckelmyer, E. S. and		S. M.	1001 329
Conady, H. H.	1117 358	Buton, A. T. and	
Beers, E. A.	1001 352	Lundy, S. J.	1122 360
Beers, E. A.	1169 356	Cahill, L.	1119 358
Beers, E. A.	1124 360	Cahill, M. and Morey,	
Belden, C.	988 324	A. F.	1118 359
Belduke, J.	1187 379	Cahill, M.	1186 379
Benjamin, E. D.	1029 337	Cahill, I.	1201 383
Benson, B. S.	1104 355	Cahill, L.	1214 387
" (R.)	1104 355	Campbell, J.	1027 336
Besqueret, D. and Du-		Canaday, H. H.	1147 393
moulin, C.	909 328	Canaday, H. H.	1171 374
Berdan, I.	1193 371	Canaday, H. H.	1142 364
Bergqvist, A. F.	1212 387	Canaday, H. H.	1207 385
Berry, W. O. M.	1091 352	Carns, J. C.	1161 354
Berthume, L.	1107 382	Car, H. C.	1049 342
Bettendorf, W. P.	1189 379	Carter, G. R.	1030 339
Bingham, J. and Pond,		Carver, H. E.	1137 393
O. M.	1083 350	Cassaday, W. J.	1118 359
Black, J. F. and W. L.	975 320	" (R.)	1119 359
Black, J. F. and W. L.	988 321	Case, J.	967 318
Black, J. P. and Pates, T.	1176 370	Case, P. L.	1166 380
Blackstone, W.	1082 350	Chace, E. A.	1044 329
Blackwood, J.	1001 345	Chamberlain, T. B.	1155 368
Blanchard, A. D.	1174 375	Chambers, C. F.	1069 354
Bond, J. L.	1056 344	Chambers, C. F.	1133 362
Borchert, H.	1260 383	Chapman, I.	1037 339
Borchert, H.	1211 387	Chapman, I.	1057 344
Borland, A. J.	1001 345	Chapman, I.	1063 345
Borland, A. J.	1068 349	Chapman, I.	1095 346
Bowen, S. E. and Ab-		Chapman, I.	1084 350
bott, A. M.	1067 346	Chapman, I.	1129 361
Bowman, L. D.	1123 360	Chapman, I.	1142 362
Bowman, R. J.	1210 388	Chapman, L.	1143 365
Boyce, W. J. and		Chapman, L.	1168 382
Haines, G. W.	1042 341	Charles, F. G.	1066 346
Boyd, J. G.	1049 342	Charlesbro, J. E.	998 328
Bradley, B. C.	1135 393	Clark, R. M.	1205 385
Bradley, B. C.	1187 379	Clayton, J.	1179 379
Bradley, B. C. and		Clayton, J.	1159 369
Huges, C. A.	1152 397	Clees, J.	1032 338
		Cole, J. H.	1045 342
		Colton, G. D.	999 319
		Colton, G. D.	979 319
		Colvin, H. H. and John	
		son, I. R.	1131 392
		Conno, W. C.	1092 345
		Conrath, P.	1040 349
		Conway, C. R.	1133 392
		Coneth, R.	1062 345
		Coneth, R.	1081 349
		Coneth, R.	1166 356
		Connell, T. J.	992 325
		Connell, T. J.	997 327
		Corr, C. W.	986 323
		Cotton, J.	1224 399
		Covell, A. T.	1068 331
		Cox, J. and S.	1044 341
		Crane, B. J.	1071 347
		Cravath, M. A.	968 318
		Cramer, F.	1055 344
		Crossley, W. G.	1012 332
		" (R.)	1013 332
		Crossley, W. G.	1064 345
		Crothers, F. R.	979 321
		Cruthers, F. H.	1038 339
		Crothers, F. R.	1092 352
		Crump, T. J.	1149 364
		Cruttenden, A. E.	1031 338
		Culver, H.	1033 338
		Cummings, W. H.	1218 389
		Cummins, W. B.	1066 349
		Cummins, J. R.	1176 379
		Cummins, J. R.	1136 363
		Cummins, A. G. and J. R.	1083 350
		Cummins, W. H.	1218 389
		Cunningham, A.	1044 341
		Curkendall, G.	1128 391
		Currie, J.	1154 368
		Curtiss, M. S.	1010 331
		Curtiss, M. S.	1074 348
		Curtiss, M. S.	1079 349
		Curtiss, M. S.	1100 354
		Curtiss, M. S. and E. W.	1123 360
		Curtiss, M. S.	1148 366
		Dahl, G. J.	1017 333
		Dalley, A. A.	1059 343
		Dalton, H. N.	997 327
		Dalton, H. N.	1041 349
		Daniels, H. L.	1150 397
		Daniels, E. S.	1178 376
		Daniels, H. L.	1220 389
		Davenport, F. S.	979 321
		Davenport, F. S.	968 327
		Davenport, F. S.	(R.) 998 327
		Davenport, F. S.	1133 362
		Davenport, F. S.	1211 387
		Davidson, G. A.	1021 334
		" (R.)	1022 334
		Davidson, J. M. and Spen-	
		cer, N. Jr.	1028 337
		Davidson, A.	1033 338
		Dawson, C. H.	970 319
		Derwent, E. Jr.	1099 351
		Dick, C. I., and Wheel, M.	1215 388
		Dickie, W.	1099 354
		Dills, O. P.	996 327
		Dills, O. P.	1003 329
		Dixon, S.	115 372
		Dodge, R. L. and Walk-	
		er, E. M.	999 328
		Donning, L.	1010 331
		Donschke, C.	1148 366
		Donaldson, J. W., Sheets,	
		D. and Miller, A. C.	996 327
		Donaldson, I.	1012 332
		Donald, J. W.	1014 332
		Douthitt, J. H.	1002 329

Plate Claim		Plate Claim		Plate Claim	
Drake, S. E.	1150 367	Fuller, H. and Boyd, T.		Harris, M. W.	1070 347
Duane, J. B.	970 319	" " " "	1135 363	Harris, M.	1157 369
DuBois, N.	1093 352	Fuller, H. and Boyd, T.		Harris, S. M.	1145 365
Duclos, V. C.	1028 337	" " " "	1147 366	Harris, M.	1179 377
Dunant, A. P. and Buck-		Funk, W. J.	1042 341	Harrison, J. D.	1081 350
ley, D. M.	983 322	Funk, D. M.	1146 395	Harrison, J. D.	1088 351
Dunant, A. P.	989 324	Gale, A. H.	1141 364	Harrison, T. T.	1185 379
Duval, G. K.	1044 342	Gale, A. J.	1225 391	Harrison, T. T.	1268 386
Easham, C. L.	1006 330	Gale, A. H.	1187 379	Harold, M.	1095 353
Eaton, E. C.	1113 357	Gallagher, W.	1019 334	Hart, R. and Nicholson,	
Eaton, E. C.	1110 358	Gaskill, R. R.	980 324	" " " "	1186 379
Ebaugh, H. H.	1007 330	Gaskill, R. R.	966 327	Hasbrook, F.	1078 349
Eberhart, J. W.	1159 369	Gatlin, W. S. and Hul-		Hasbrook, F.	1082 350
Eckert, J. H.	990 325	lard, B. K.	1017 333	Haslup, W.	1070 347
Edleman, J. P.	1046 342	Gay, C. F.	1038 339	Hay, W. and Freeman,	
Edgell, J. B., Alexan-		Gesley, S.	1201 383	" " " "	1059 344
der, J. W. and E. A.	997 327	Gilbert, P. M.	984 322	Hemme, W.	1215 388
Edwards, C. A.	1043 341	Gilbert, I. R.	1090 351	Henry, W.	1121 359
Edwards, W. L.	1138 363	Gilbert, I. R.	1100 354	Henry, W.	1121 359
Eldred, D.	971 319	Gilbert, I. R.	1131 362	Henry, W.	1139 364
Elam, J. T., P. and J. A.	1196 381	Gilbert, I. R.	1178 376	Hepinstall, T. S.	971 319
Elliott, M. A.	1055 344	Gilbert, I. R.	1206 385	Hepinstall, T. S.	972 319
Elliott, M. A.	1207 385	Gilbert, I. R.	1184 379	Herman, P.	1040 340
Ellis, G. A.	1145 395	Gilham, S. J. and G. M.	1009 331	Herman, J. B.	1098 354
Ellison, A.	1049 342	Gilham, S. J., Taylor, W.		Hess, C.	1010 333
Elliston, C. T.	1098 353	" " " " " "	1059 344	Hewitt, H. L.	1155 368
Ellwood, R.	1223 390	Gilliland, A. L. and B.		Higgins, W. F. and Per-	
Elmer, N.	1152 397	" " " " " "	990 325	ry, J.	1019 334
Eustice, E. A.	1219 389	Glass, J. H.	1059 345	Higgins, R. S.	1104 371
Evans, W.	1123 360	Glasscock, H.	1109 382	Higgins, R. S.	1210 388
Fagan, T. B.	1120 360	Gleeson, D. H.	1043 341	Hildreth, G. W.	960 318
Faming, S. A.	1007 346	Glidden, J. F. and		" " " "	(R) 967 318
Fargo, C. A.	1036 339	Vaughn, P. W.	1158 369	Hill, F. A.	1040 340
Farrow, A.	1015 333	Glidden, J. F. and		Hill, F. A.	1111 357
Fay, D. M.	1067 346	" " " " " "	1144 365	" " " "	(R) 1111 357
Fay, J.	1104 355	Vaughn, P. W.	1209 386	Hill, F. A.	1139 364
Fay, J.	1120 359	Goddard, C. F.	993 317	Hill, F. A.	1221 389
Felker, V.	975 320	Goldthait, E.	1210 380	Hill, F. A.	1223 360
Felker, V.	985 323	Gollyer, H.	1218 389	Hoke, J. I.	1202 383
Fenner, R. R.	1110 359	Goodell, O. E.		Holgate, K.	1202 383
Ferguson, S. T.	1151 367	Goodwin, J. H. and		Holloway, L.	983 322
Ferguson, S. T.	1225 391	Woodland, D.	1144 365	Holloway, L.	1038 339
Filkins, J. D. and De		Gore, E. E.	1043 341	Horn, C. L., Jr. and	
Puy, W. H.	964 317	Graham, S.	1023 335	Mancy, I.	1026 336
Fisher, S.	973 319	Graves, R. R.	1007 330	Hoves, R. N., Borr, W.	
Fisher, D. S.	1005 339	Green, I. B.	1079 349	" " " " " "	1098 353
Fisher, J. B.	1164 372	Green, I. B.	1085 350	A. and Webster, I. B.	1058 344
Fisher, J. B.	1159 369	Greenfield, J. T.	1188 380	Hoyt, B. C.	1072 347
Fisher, J. B.	1156 368	Greener, G. W.	1172 374	Hoyt, A. W.	1049 343
Flansburgh, P. H.	1046 342	Gimes, J. W.	1122 359	Hulbard, B. R.	1014 333
Fleming, S. W.	1208 386	Gimshaw, W. S.	1076 348	Hughes, D. W.	1079 349
Fletcher, J. J. and Sursa,		Gintamer, F.	1217 388	Hughes, D. W.	1169 374
J. W.	1184 378	Ground, K. B.	1078 349	Hue, H. K.	977 320
Flinn, M.	1019 334	Groves, G. A.	1074 348	Hue, H. K.	1027 336
Florance, J. L.	1140 364	Grove, M.	1095 353	Hue, H. K.	1041 340
Flow, J.	1110 357	Haege, J.	974 320	Hue, J. M. and Card, E.	1063 345
Fosgate, D. O.	1164 372	Haege, J.	977 320	Humphrey, A. N.	1079 348
Fosgate, D. O.	1174 375	Haege, J.	977 320	Hunt, G. W.	971 319
Foster, W.	1042 332	Haege, J.	1149 367	Hunt, G. W.	978 321
Foster, F. M.	1162 371	Hague, C. A.	1224 391	Hunt, G. W.	1004 352
Foster, F. M.	1200 383	Hague, C. A.	1189 351	Hunt, L.	1020 334
Fowler, A. A.	1139 364	Haight, G. C.	1087 351	Hunt, L.	1040 340
Frank, C.	1122 360	Haines, G. W.	1067 346	Hunt, F. B.	1173 375
Franklin, B.	1176 376	Hale, A.	999 328	Hunt, F. B.	1209 386
Fraser, E. J.	973 319	Hall, T. J.	964 317	Hunter, J. B.	993 326
Fraser, E. J.	975 320	" " " "	(R) 964 317	Hunter, J. B.	1042 341
Freeman, W. H.	982 322	Hall, T. J.	1035 338	Hunter, J. B.	1102 355
Freeman, A.	1068 346	Hall, O. D.	1137 363	Hunter, E. T.	1127 360
Freeman, H. M., Lowe,		Helmaker, J.	1147 366	Hunter, E. T.	1168 373
" " " " " "		Hammitt, J. M. and		Hutchinson, S.	995 326
" " " " " "		Miller, H. T.	1000 328	Ingalls, A.	993 326
" " " " " "		Hammond, A.	985 323	Igham, J. and J.	1005 330
" " " " " "		Hammond, A.	991 325	Isaacs, W. H. and Ban-	
" " " " " "		Hammontree, J. F.	1130 393	ner, G. E.	1031 337
" " " " " "		Hance, R.	1100 354	Isaacs, F. H.	1113 357
" " " " " "		Hardin, W. E.	1017 333	Isaacs, F. H.	1166 372
" " " " " "		Hardy, J.	973 319	Jackson, J. R.	1033 338
" " " " " "		Harris, J.	1012 332	Jackson, C. L.	1150 367
" " " " " "		Harris, J.	1053 343		

	<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>		<i>Plate</i>	<i>Claim</i>
Jacoby, D.	095	327	McCool, W. C.	1073	347	Newton, F. W.	1182	378
James, W. A.	1194	384	McConnell, J. R.	1112	357	Nichol, T. M.	1104	355
" " (R.)	1104	381	McConnell, I. R.	1140	366	Norton, N. B.	1027	339
James, J. H., Tucker H.			McConnell, J. R.	1212	377	Notting, I. F.	687	324
and Ferry, T. D.	1077	349	McLennan, J. K.	1075	348	Oldenbough, H. and J.	1089	351
Jay, W. D.	1109	382	McMahan, M. S.	1135	393	Oler, J.	1057	344
Jeffnes, W. T.	1034	338	McPike, J. M.	1159	368	Olmsted, H. A.	1203	384
Jefferson, T. F.	1177	376	McTannah, F.	1030	337	Opp, H.	1108	359
Jefferson, T. E.	1181	377	Malon, I. B.	1018	334	Or, J. and Martin, H. H.	1027	339
Jefferson, T. F.	1179	377	Mannul, G. W.	1020	334	Or, W. T.	1143	395
Jefferson, T. E.	1204	384	Mannul, G. W.	1077	349	Osborn, O.	1032	338
Jefferson, T. F.	1220	391	Mannul, D. A.	1000	349	Osborn, O.	1100	359
Jefferson, T. F.	1227	392	Mannul, D. A.	1109	359	Ough, W.	1079	348
Jennings, B.	1043	341	Markillie, T. R.	972	319	Overshiner, G. J.	1090	352
Johnson, P. G.	1117	358	Markillie, T. R.	980	321	Owen, C. N.	1006	346
Julkins, M. D.	1139	393	Marr, J.	1080	349	Owen, C. N.	1073	347
Judson, A. C.	1041	349	Marsh, W. W.	1170	374	Padon, J. S.	977	320
Kay, J.	1028	339	Marshall, J. D.	1011	332	Padon, J. S.	987	324
Kensor, J. L.	1011	332	Mason, W.	1031	337	Palmer, D. W.	1195	372
Kensor, J. L.	1018	333	Mason, W.	1052	343	Paulin, W. H.	1151	367
Keith, A.	987	324	Mason, W.	1072	347	Parr, S. E.	1075	348
Kelly, I. M.	1177	376	Mason, H. W.	1050	343	Parrish, W.	1058	344
Kennig, D.	1111	357	Mathews, W. W.	1015	333	Parrish, W.	1079	347
Kennedy, J.	1147	366	Matteson, D. C.	969	318	Parrish, W. H. and J. G.	1094	346
Kennedy, I. B.	1162	371	" " (R.)	969	319	Patterson, T.	975	320
Kewin, C.	1073	348	Matteson, D. C.	1021	334	Patterson, C. and Abra-		
Keys, J. and DeMier,			Mathews, E. G.	1195	381	ham, H. I.	1212	387
J. R.	1107	356	Mead, J. F.	1142	364	Pattysop, P.	1113	358
Killan, H. and Vallau,			Meckam, O. S.	1168	373	Payne, J. M.	1124	390
G.	963	317	Medaris, J. A.	1054	343	Payne, J. M.	1145	365
Kimball, G.	1174	375	Mehany, W. J.	1190	380	Payne, J. M.	1148	366
Kincald, J. D.	1009	331	Meikle, T.	1107	373	Payne, J. M.	1178	376
King, G. S.	1131	362	Meikle, T.	1218	389	Payton, J. H.	1093	352
Kmgston, S. L. and Gore,			Meloy, E. and Stanley,			Peak, E.	1134	392
D.	966	318	A. R.	1054	343	Pearl, J. C.	1080	349
Kinkel, C.	1003	329	Melvin, M. A.	1060	346	Pennoek, S.	1142	394
Kirkpatrick, S.	1123	360	Merkel, P.	939	328	Pepler, T.	1053	343
Kirkpatrick, S.	1103	371	Mcrrill, A.	1070	347	Perry, H. L.	1004	329
Kneidler, J. D.	1028	337	Mickelson, M.	1039	340	Perry, H. L.	1011	332
Kneidler, J. A.	1099	354	Miller, I. and Kaller, H.	981	322	Peters, S.	1211	387
Kuehn, W.	978	321	Miller, W. D.	1106	382	Pough, S. B.	1096	353
Lane, J.	1073	347	Minnse, H.	1010	331	Piel, J. C.	982	322
Lane, J.	1107	373	Moore, I.	1011	332	Piel, J. C.	1006	330
Lane, J.	1163	371	Moore, J. G.	1033	338	Pierce, J.	981	322
Langsford, S. P. and			Moore, G.	1101	354	Pierce, J.	982	322
Stroud, W. N.	1132	362	Moore, G.	1107	356	Pierpont, J.	1153	368
Laraway, R. K. and J.	1003	329	Moore, G.	1112	357	Pitts, W. M.	1002	345
Latham, A.	1200	380	Moore, J. H.	1184	378	Pomeroy, S. G.	1220	389
Lathrop, L. B.	1005	330	Morgan, W. V. and Hack-			Porter, J. F. and Norton,		
Laughlin, J. L.	1127	391	man, T. W.	1208	386	A.	1022	335
Laughlin, J. L.	1224	391	Mor-man, J. A.	1221	389	Porter, A. E. and A. L.	1045	342
LeBoiteaux, J. H. and			Mowrey, C.	1146	366	Porter, J. E.	1149	364
Ashton, C. A.	986	323	Mowrey, C.	1146	366	Potter, J. O.	1052	343
Lee, J.	967	318	Mowrey, C.	1217	389	Powell, T.	1210	386
Lee, J.	967	318	Munson, A. K.	1199	380	Powell, L. W.	1203	384
Legg, J. T.	1007	330	Munz, J. F.	1195	381	Pratt, I. C.	984	322
Lendy, J. C.	1154	368	Murphy, M.	1035	338	Pratt, I. C.	987	324
Leevee, E.	1015	333	Murry, J.	1050	344	Frawl, P. and Wemple,		
Lewis, I. B. and Udall,			Myers, C.	1083	350	F. H.	1101	354
J. E.	1025	336	Myers, C.	1100	354	Price, J.	1045	342
" " (R.)	1025	336	Myers, C.	1160	373	Price, J.	1172	374
Lewis, J. W.	1036	339	Myers, C.	1215	388	Price, G. P.	1199	373
Lewis, J. W.	1037	339	Nation, R.	980	321	Price, C. G. and Merritt,		
Eikes, M.	1059	344	Neal, H. W.	1020	334	J. M.	1168	373
Lindgren, A.	1195	381	Neal, H. W.	1039	340	Pulliam, F. P.	1108	356
Littfield, C. H.	1002	329	Neal, H. W.	1071	347	Puncell, J. L.	1051	343
Litzenberg, B. F.	1193	381	Neff, S.	1085	350	Pusey, W. W.	1118	358
Litzenberg, B. F.	1217	388	Neff, J. B.	1102	381	Quick, W. B.	1058	344
Lockwood, S. M.	991	325	Neff, J. B.	1193	381	Quick, W. B.	1103	355
Logan, J. B.	1020	337	Neff, J. B.	1203	384	Quick, W. B.	1200	383
Long, I.	1002	329	Nelson, W.	1016	333	Quirin, G. and Berkel, L.	981	322
McBride, J.	1149	366	Newlin, W.	1052	343	Ralston, J. B. and Harvey,		
McCall, E. K.	1088	351	Newlin, W.	1084	359	M.	1090	351
McCleave, H. P.	1042	341	Newlin, W.	1199	380	Ralston, J. B.	1121	359
McConnell, J. K.	1026	336	Newman, W. B. and			Ralston, J. B.	1129	361
McConnell, I. R.	1051	343	Wilkinson, T. J.	1124	360	Ralston, D. W.	1102	355
McConnell, J. R.	1088	351	Newman, W. B.	1135	393	Ready, W. B.	976	320
McCool, W. C.	1069	346	Newton, R.	1085	350	" " (R.)	976	320

	<i>Pat. Claim</i>		<i>Pat. Claim</i>		<i>Plate Claim</i>
Reeve, H. F.	1205 385	Smith, H. F.	1030 339	Tustin, J.	1032 338
Reeves, H. E.	1222 300	Smith, H. B.	1002 345	Urbani, J.	1080 351
Renton, R. A.	1143 395	Smith, G. M.	1058 344	Vail, A.	1024 335
Reuss, J. L.	1207 385	Smith, J. D.	993 320	Vanarsdell, W. A.	1125 360
Reynerson, J. H. and Worrell, J.	1047 342	Smith, A. and E. S.	995 317	Van De Mark, C.	1220 389
Reynolds, E. D. and O. B.	1120 369	Smith, A.	1020 335	Van Gorder, J. L.	1048 342
Rice, W. B.	1038 330	Smith, A. and Watson, W. P.	1024 337	Van Gorder, J. L.	1001 345
Richardson, L. W.	1080 349	Smith, F. P.	1020 336	Van Gorder, G. W.	1087 351
Richardson, H.	1113 357	Smith, F. P.	1020 339	Van Winkle, G.	1102 354
Richardson, T. and McInnis, M.	1120 350	Smith, H. C.	980 324	Vollmann, B.	1000 328
Richardson, W. M.	1131 362	Smith, G. H.	1141 394	" " (K.)	1000 328
Riddle, W. N.	1130 303	Smith, D.	1100 372	Volkmann, F.	1006 330
Reggs, D. C.	1068 331	Smith, F. F.	1213 387	Wade, T. I.	1155 368
Rney, J. L.	1101 380	Smith, F. F.	1200 385	Walker, A.	1024 335
Robbins, J. H. and S.	1094 349	Smith, F. J.	1107 382	Walker, R.	1072 347
Roberts, M.	991 325	Smith, H.	980 324	Walton, E. W.	1133 362
Robertson, H. H.	972 310	Snow, W.	1080 351	Walton, E. W.	1047 342
" " (A. L.)	972 319	Snow, C. P.	1102 371	Warron, G. H.	1222 360
Robertson, E.	1003 355	Sparks, O.	974 320	Warron, G. H.	1222 360
Robertson, S. M. and Hamilton, A. V.	1210 380	Spencer, J. L.	1007 330	Warwick, J.	1121 359
Robinson, J. G.	973 319	Spencer, N., Jr.	1050 343	Warwick, J.	1013 332
Robinson, J. G.	1034 338	Spague, E. L.	1105 350	Warwick, J. and A. T.	1177 376
Rockwood, L. O.	1105 355	Stafford, H. T.	1000 351	Watkins, J. T.	1022 335
Rogers, W. E.	994 320	Standish, P. H.	1021 355	Watson, W. M.	992 325
Rogers, J. C.	1009 350	Stonly, A. R. and Ego, W. H.	1025 339	Wattles, H. J.	1010 331
Rogers, W. C.	1160 374	Stanley, J.	1108 382	Watt, G.	994 326
Rosati, M. F.	1127 391	Stations, J. L.	1039 337	Way, S.	1014 332
Rosol, L.	1074 348	Stemmer, G.	1100 353	Weaver, T.	1005 352
Root, J.	993 337	Stirling, W.	1004 352	Webb, T. W.	1030 337
Rosenitz, A. C.	1180 370	Stutt, H. C.	1101 380	Weber, H., Jr.	1222 360
Rosen, N. and Amis, G.	1104 371	Stevens, C. B.	1078 349	Webster, H. T.	983 322
Rudlick, W. A.	1120 359	Stevens, C. B.	1009 353	Webster, L. T.	1045 342
Runk, J. L.	978 321	Stockstill, S. L. and Kritz, H. D.	1077 319	Webster, L. T.	1060 345
Runk, J. L.	979 321	Stone, D.	980 321	Wen, W. S.	1138 393
Runk, J. L., Brown, J. H., and Morgan, E. M.	992 328	Stone, I.	980 322	Welch, S.	1041 341
Rush, R. D. and E. W.	1117 358	Stone, J.	1081 351	Welch, S. F.	1128 391
Russell, L. W.	1110 357	Stout, S.	990 327	Wells, J. T.	1103 355
Ryer, W. H.	1212 387	Summers, R. B. and Denant, S.	997 327	Wells, J. T.	1104 372
Sachse, L.	1070 348	Summers, F. M. and Wilson, M.	1188 380	Wharton, G.	1022 335
Sampson, O.	1055 344	Sursa, I. W.	1005 329	Wharton, G.	1034 338
Sattley, M.	979 321	Sursa, J. W.	1040 342	Whitney, J. M.	970 319
Sattley, M.	988 324	Sursa, J. W.	1050 343	Whitney, J. R.	1175 375
Sattley, M.	1075 348	Sursa, J. W.	1055 344	Whittlesey, W. H. and Noble, C. T.	1158 369
Sattley, M.	1114 358	Sutherland, W. F.	1010 334	Widol, E. and Avery, G. C.	1161 371
Scheimack, S. S.	1103 355	Sutherland, J. A.	1105 355	Wohryn, J. and Mullica, F.	690 324
Schlag, E.	1183 378	Sutton, J.	965 317	Willey, G. E.	1018 334
Schmiedel, H. J.	1134 392	Sydlow, J. H.	965 317	Wilson, R.	983 322
Schmidt, R. B.	999 319	Sydlow, J. F.	1052 343	Wilson, G. H.	1138 393
Search, C. F.	1175 375	Sweeny, W. P.	1078 349	Witt, J. W.	1221 360
Scars, D. A.	947 312	Sweet, Z. I.	1039 337	Wolcott, G. E.	1182 378
Scars, D. A.	993 352	Tappan, G. S.	1210 388	Wolf, L.	978 321
Schubel, J.	984 323	Taylor, S. H.	1214 387	Wolfe, F.	989 324
Schubert, G. and J.	974 320	Terry, F. D., Case, A., and Laflin, C.	1081 349	Woods, S. E. and Wheel- well, A. H.	1183 378
Selton, G. and J.	1035 339	Thompson, J. N. and Kenady, W.	1041 340	Woodyou, S. F.	1110 357
Sexton, F.	1001 329	Todd, G. M.	1111 357	Woolbridge, S. H.	1210 386
Shepard, J.	1037 339	Totten, J.	1142 357	Worrell, J. and Rynerson, J. H.	1050 344
Sherrill, J.	1100 374	Fozer, G.	971 347	Worrell, J. and Rynerson, J. H.	1050 344
Short, F.	982 322	Fravis, J. E.	984 322	Worrell, J. and Rynerson, J. H.	1093 345
Stegomier, C.	1105 372	Freatway, J. W.	1051 343	Worrell, J. and Rynerson, J. H.	1069 347
Stinner, J. B.	986 323	Trenoy, N. J. and Slesley, J. L.	1186 379	Worrell, J.	1074 348
Stinner, J. B.	991 325	Trumble, H. F.	1224 390	Worrell, J.	1077 348
Stinner, J. B.	1070 349	Tucker, A. W.	1158 390	Worrell, J.	1112 357
Stinner, H. M.	1070 349	Tucker, A. W.	1180 380	Worthen, S. A.	1060 315
Slaughter, W. J.	1113 358	Turley, M.	995 317	Wright, G. W.	1102 371
Shlosser, F.	1115 358	Turley, M.	968 318	Young, P.	994 320
Shlosser, B.	1023 335				
" " (R.)	1023 335				
" " (K.)	1023 335				
Shlosser, B.	1039 349				
Smalley, D. A. and J. H.	1002 352				
Smith, H. B.	1002 320				

No. 3,471.—H. BROWN, PAYSON, ILL.—*Wheeled Plough*.—*March 9, 1844.*

Claim.—1.—Constructing the plough in the manner described, that is to say, constructing a and arranging the projections H and I, upon the mould-board, so that the plough may be used either side up, a right or left.

2.—I do not claim combing a number of ploughs and at taching them to a frame.

No. 8,544.—E. GOLDFHAFF, FORT WAYNE, IND.—*Wheeled Plough*.—*November 25, 1851.*

Claim.—1.—The cutter, C, or its equivalent, to separate the sward for the first furrow at a proper distance from the coulter, acted upon by the drop, a¹ and lever, C², or their equivalents.

2.—The piece, D, fastened to the heel of the mould-board in combination with the coulter, C, to turn wide furrows.

3.—The mode of connecting the tongue and plough, respectively, to the axle, by means of the links and the loose tenon on the tongue, substantially as described, so as to allow the team to walk entirely aside from the furrow, or direct course of the plough, in ploughing prairie, marsh, or other land with soft under strata, and make the plough run smoothly and work well, and so as also to enable the ploughman to take an extraordinarily wide furrow, with one member of the team walking in the furrow with a common yoke, thus dispensing with the long yoke now commonly used for that purpose.

4.—The rope, D, and lever, D¹, or their equivalents, in combination with the mode of connecting the tongue and plough to the axle, substantially as described, for the purposes set forth.

No. 8,814.—H. KILLAM and G. VALLEAU, SCOTTSVILLE, N. Y.—*Wheeled Ploughs*.—*March 30, 1852.*

Claim.—1.—Mounting the tongue or pole, A¹, upon the timbers, D, E, and uniting the same by an intermediate jointed connecting rod, W, to the horizontal coupling rod, L, which unites the front and rearward ends of the pivoted arms, J, J, of the axles K², whereby the direction or guiding of the gang of ploughs is regulated by the action of the team itself, in moving in any direction the attendant may require.

2.—Confining the tongue or pole, A², between the horizontal plate, S, and timber, D, by means of a fulcrum bolt, U, for the purpose of allowing the tongue or pole, A², to vibrate or move right or left with the direction of the team, whereby the required direction is given to the propelling and supporting wheels; and whereby the tongue or pole may be shifted or adjusted in its position to accommodate two or three horses, and yet maintain its central draught with the ploughs.

No. 10,101.—C. R. BRINCKERHOFF, BATAVIA, N. Y.—*Wheeled Ploughs*.—*October 11, 1853.*

Claim.—1.—Combining with the plough beam, between the plough and the clevis, two wheels, one on each side of the beam, and of different diameters, the one resting in the furrow and the other on the land, for the purposes set forth.

2.—Making the tread of the furrow-wheel narrow, so that it may press lightly against the land, and gauge the width of the furrow-slice, and cast aside any small stones that may roll against the land.

3.—Making the wheels, especially the furrow wheel, adjustable in the direction of its axis, for the purpose of adapting its position to furrows of different widths.

4.—Making the furrow-wheel bevelling outward on the side which presses against the land; also, making the small wheel adjustable vertically with reference to the shaft B, and the large wheel.

No. 291.—C. R. BRINCKERHOFF, BATAVIA, N. Y.—*Wheeled Ploughs*.—*October 11, 1853.* Reissued *January 30, 1855.*

Claim.—1.—Combining with the plough beam between the plough and the forward end of the clevis, by means of a single shaft, two wheels, one on each side of the beam, and of different diameters, the one resting in the furrow, and the other on the land, for the purposes set forth and described.

2.—Making the tread of the furrow-wheel narrow, for the purposes described.

3.—Making the furrow-wheel bevelling outward on the side which presses against the land as above described and for the purposes heretofore set forth.

No. 10,453.—J. D. FULKINS and WILLIAM H. DE PUY, LIMA, INDIANA.—*Wheeled Ploughs*.—*October 25, 1853.*

Claim.—The combination of the limiter tongue b¹ and stiff tongue b with the running gear, so that the gang-plough to be drawn by two teams abreast.

No. 12,791.—T. J. HALL, TAWAKANA HILLS, TEXAS.—*Gang Ploughs*.—*May 1, 1855.*

Claim.—The arrangement of the ploughs and pivoted beams with adjustable cross-beams, so that the ploughs may have a convenient permanent adjustment, in connection with their self-adjusting property in the plough beam, as set forth and described.

No. 3,716.—THOMAS J. HALL, BRYAN, TEXAS.—*Gang Ploughs*.—*May 1, 1855.*—12,791 extended seven years. Reissued *November 9, 1860.*

Claim.—1.—The arrangement of the ploughs and pivoted beams with the adjustable cross-beams, so that the ploughs may have a convenient permanent adjustment, in connection with their self-adjusting property in the plough beam, as set forth and described.

2.—Limiting the lateral vibration of the revolving cutter or coulter, that it may not, when out of the ground, vibrate so far that it would not recover its true position when again in contact with the ground, substantially as described.

3.—The bent brace k, when constructed in the form as described and attached to the frame of the plough in the manner and for the purpose substantially as described.

No. 14,373.—AARON and THOMAS SMITH, TROY, ILL.—*Wheeled Ploughs*.—*March 4, 1856.*

Any number of shares may be used, and the front axle B may, by loosening the nut on the bolt, be adjusted so that the shares will be in line with the centre of the axle.

Claim.—Combining the axle B and wheel J with the bed piece A, when constructed and arranged substantially in the manner and for the purpose set forth.

No. 16,216.—M. TURLEY, GALESBURG, ILL.—*Wheeled Ploughs*.—*December 9, 1856.*

Claim.—The arrangement of the standard, mould-board, and slide cutter K with regard to each other, and to the other parts of the plough, so that they will operate as set forth.

No. 15,912.—JESSE FRYE, SPRINGFIELD, ILL.—*Gang Ploughs*.—*March 31, 1857.*

Claim.—The so hanging of a gang or series of ploughs upon their stock and beam as that the conductor upon his seat, may, by a system of hand-levers and connecting rods substantially such as set forth, adjust said series of ploughs to any desired depth or width of furrow, as set forth.

No. 16,913.—J. FRYE, SPRINGFIELD, ILL.—*Wheeled Ploughs*.—*March 31, 1857.*

Claim.—1.—Supporting the after end of the plough beam A, upon a vertical journal at the left hand end of the axle T, when the bearings at the opposite end of said axle are so arranged that the position thereof may be varied and adjusted, substantially in the manner and for the purpose set forth.

2.—Arranging the bearings of the rollers e e e f, and g g g in such a manner that their positions may be varied and adjusted, substantially in the manner and for the purpose set forth.

3.—In combination with the mould-board, composed principally of the series of adjustable rollers as set forth, I claim the adjustable triangular plate w, for the purpose of making the whole conform to the position in which the furrow slice is to be laid or turned substantially as set forth.

No. 17,591.—J. SUTTER, Sr. LOUIS, MO.—*Wheeled Ploughs*.—*June 16, 1857.*

Claim.—The combination of the ploughs D, with the

frame B, and pivot O, arranged and operated in the manner and for the purpose set forth.

No. 18,343.—SAMUEL L. KINGSTON and DAVID GORE, PLAINVIEW, ILL.—*Gang Ploughs*.—October 6, 1857.

Claim.—1.—Attaching the bar F to the bars A by means of the lever D and arm G, and having the ends of the bars K connected by chains *n* to arms *n*, connected to a bar L, to which a lever L', is attached, the lever O being attached to one end of the bar A and to the rod *q* as shown, and the screw rod V attached to the bar B, and passing through the bar *g*, whereby the shares may be adjusted vertically and laterally, and also raised temporarily when necessary as shown and described.

2.—A mould board, constructed of conical wire rollers N' X', arranged as shown, or in an equivalent way, for the purpose of raising and turning the sward, as set forth.

No. 18,397.—GEORGE W. HILDRETH, LOCKPORT, N. Y.—*Gang Ploughs*.—October 13, 1857.

I do not claim the arranging of ploughs in a gang so as to turn several furrows at the same time, nor the carrying it on wheels changeable in height.

Claim.—The axle-tree having a triple motion, in combination with the centre bolt and bolster plate, constructed and arranged substantially in the manner and for the purposes set forth.

No. 4,222.—GEO. W. HILDRETH, LOCKPORT, N. Y.—*Gang Ploughs*.—October 13, 1857; re-issued December 27, 1870.

Claim.—1.—The combination with the frame A of a gang; plough of crank supports, M M', for the main carrying and supporting wheels, whereby the height of the frame from the ground can be adjusted substantially as described.

2.—A crank axle-tree, for supporting the frame in a gang-plough, provided with a crank upon each end, one of which is adjustable and so secured to the axle-tree that the supporting wheels which turn upon the ends of said crank axle-tree, can be adjusted in the arcs of circles, to run upon the same or different horizontal planes, for the purposes above described.

3.—The combination, with the supporting axle-tree H in a gang plough, provided with cranks at its ends, one of which is adjustable independently of the other, of a hand lever for turning said axle-tree, for the purposes above described.

4.—The combination in a gang plough of the following elements, viz: A supporting axle-tree, provided with a crank at each end; two supporting wheels, one on each crank; a hand lever for turning the axle-tree and cranks, and a holding device for retaining the axle-tree and cranks in position when adjusted.

5.—The combination, with the frame in a gang plough, of a tongue or draft pole, which can be raised and lowered, and also moved to the right and left, for the purposes stated.

6.—The combination, with the plough frame of a laterally adjustable supporting axle-tree H, for the purposes stated.

7.—The combination, with a crank axle-tree Q R, in a gang-plough, of an eye bolt and nut, for retaining the crank and its supporting wheel in any desired adjusted position.

8.—A cast metallic frame, for carrying the gang of ploughs, constructed substantially as above described.

9.—A combined cast and wrought iron frame for gang ploughs, constructed substantially as shown and described.

10.—The combination, with the cast iron main frame, of a tool-box cast with said frame, substantially as shown and described.

11.—The combination, with the frame and axle-tree in a gang-plough, of a metallic-plate connection J J'.

12.—The grooved and tongued plough attaching plates D E, substantially as and for the purposes set forth.

13.—The combination in a gang-plough of a series of ploughs, having short and long land-sides, substantially as and for the purposes set forth.

No. 18,698.—JOEL LEE, GALESBURG, ILL.—*Gang Ploughs*.—November 24, 1857.

Claim.—1.—The peculiar arrangement consisting of the

friction wheels *d*, inclined planes *f*, and lever K, for adjusting the plough frame to any required position, as set forth.

2.—The peculiar arrangement consisting of the flange or guard *c* and pivoted axle *a* *a'*, for allowing the turning of the front truck to a position at right angles, or nearly so, to the hind truck, so that the machine may turn a square corner without liability of lifting the plough shares out of the ground, as set forth.

No. 18,803.—JARVIS CASE, SPRINGFIELD, ILL.—*Wheel Ploughs*.—December 8, 1857.

Claim.—1.—Hinging the tongue to the beam of a plough, and extending a lever or lever seat from one to the other, so that the driver mounted on the plough may, by said lever, throw the plough or ploughs out of the ground, as set forth.

2.—Supporting the front of the beam on the centre of an axle *c*, supported in wheels *c* *c*, so that said beam may be raised or lowered on said axle, but not affected by the passing of said wheels over the rough ground, as set forth and explained.

No. 18,820.—J. LEE, GALESBURG, ILL.—*Wheel Ploughs*.—December 8, 1857.

Claim.—The combination and arrangement of the two wheels E and E', attached to the different sections of the beam, swiveling quarter round in opposite directions, and tracing the ploughs as described, when used in the manner and for the purpose set forth.

No. 19,077.—M. A. CRAVATH, LODA, ILL.—*Wheel Ploughs*.—January 12, 1858.

Claim.—1.—The method substantially as described, of attaching the ploughs to the frame whereby they are made capable of being thrown out of and into action by partial rotation on their axes, as exhibited.

2.—In combination with the above, the described arrangement of the wheels E F G, whereby the chief weight of the implement devolves upon the wheels E F, which run on the level bottom of the furrow.

3.—The described construction and arrangement of the jointed land-side beam A', in combination with the lever *t*, and rack, or equivalent devices, operating substantially as set forth.

No. 19,388.—M. TURLEY, GALESBURG, ILL.—*Wheel Ploughs*.—February 16, 1858.

Claim.—1.—The combination of the beams, plough-shank, lever, and brace or adjusting rod, arranged behind the axle substantially as set forth.

2.—The combination of the wheel B, for holding with the cutter *m*, for cutting the stalks, substantially as described.

3.—The combination of the weed gatherer *n* with the plough or ploughs, when arranged and operating as set forth.

No. 20,342.—JESSE FRYE, MENDOTA, ILL.—*Gang-Ploughs*.—May 25, 1858. Antedated March 18, 1858.

Claim.—1.—The attachment of the tongues to the forward and rearward plough-stocks, and the connections between the various plough stocks, so that when the team is turned, the plough shall be turned so as to point towards a common centre, substantially in the manner and for the purpose described.

2.—The connection of the forward furrow wheel with the tongue by means of the curved slotted arm R and bolt I, in combination with the cranks and connecting rods between the wheel shafts, so that when the team is turned, the forward wheels shall be turned in the same direction, and the rear furrow wheel shall be made to track the forward wheels, substantially in the manner and for the purpose set forth.

3.—Hanging the hinged coupler *t* to the rear of the front furrow wheel by means of a chain, which, when the team is turned, will raise said coupler out of the furrow, substantially in the manner and for the purpose set forth.

No. 20,647.—DON C. MATTE SON, SPORCKTON, CA.—*Gang-Ploughs*.—June 22, 1858.

Claim.—The arrangement, as described, of the false beam N, goose-neck G, axle *w*, lever *i*, catch L, and the system of ploughs attached to their frame, as set forth; the

whole being constructed and operated substantially as and for the purpose specified.

No. 3,411.—DON CARLOS MERTSON, STOCKTON, CAL.—*Ploughs*.—*Jan.* 22, 1858. Revised *Sept.* 1, 1858, 1868.

Claim.—The arrangement, as described, of the frame N, cross neck G, axle H, lever C, catch I, and the system of ploughs attached to their frame, as set forth, the whole being constructed and operated substantially as and for the purposes specified.

No. 2,503.—G. D. COLTON, GAITHERSBURG, ILL.—*Ploughs*.—*July* 20, 1858.

Claim.—1.—Arranging the frame B, secured to the axle C, as described, with the strap A, cord G, and windlass G, the several parts being operated in the manner and for the purpose set forth.

2.—This in arrangement with the revolving coulters and a double-pointed beam, all being constructed and operated substantially as described.

No. 21,670.—B. B. SCOTFIELD, ANDOVER, ILL.—*Ploughs*.—*Sept.* 1, 1858.

Claim.—The arrangement and combination of the pivoted bar G, share D, land-side E, standard F, curved rack J, pinion G, and lever H, as and for the purposes shown and described.

No. 22,494.—JOHN B. DUANE, SOUTH CAROLINA, N. Y.—*Ploughs*.—*Jan.* 4, 1859.

Claim.—The arrangement and combination of the frame D, having wheels A, bar F, wheel G, bar E, and frame A, as and for the purpose shown and described.

No. 22,629.—G. D. COLTON, GAITHERSBURG, ILL.—*Ploughs*.—*Jan.* 18, 1859.

Claim.—Combining and arranging together the beam D, the standards A and B, upright A, lever F, axle H, brace Z, bar H, and pole C; a pole reaching forward and resting on the neck-yoke, in the manner and for the purpose specified.

No. 23,134.—JOHN M. WHITNEY, BOSTON, MASS.—*Ploughs*.—*Mar.* 9, 1859.

Claim.—The arrangement of the hinged arms C, D, adjustable brace E, and standard A, with the wheel H and plough beam G, the whole being constructed for operating substantially as and for the purpose described.

No. 23,150.—C. H. DAWSON, JACKSONVILLE, ILL.—*Ploughs*.—*Mar.* 8, 1859.

Claim.—The plough beams D, D' arranged as shown in connection with the roller G applied to the machine, substantially as and for the purpose set forth.

No. 25,810.—DAVID FLORENZ, MONMOUTH, ILL.—*Ploughs*.—*Oct.* 18, 1859.

Claim.—The arrangement, for joint operation, of the share frames B, B', axle H, and rollers L, as and for the purpose set forth.

No. 26,587.—J. S. HEPTINSTALL, MENDOTA, ILL.—*Ploughs*.—*Dec.* 27, 1859.

Claim.—The arrangement of the wheels A, B, B', shafts C and D, D', spindle E, triangle F, rod G, lever pole H, regulator I, and rollers K, K', as described and for the purpose set forth.

No. 27,311.—GEORGE W. HUNT, MUSCATINE, IOWA.—*Ploughs*.—*Mar.* 27, 1860.

Claim.—1.—The arrangement of a vertical coupling and a fastening pin I, which has that portion, which passes through the beam, rounded, and that portion, which passes through the axle, square, in combination with a drag and adjusting-bar P, a connecting rod N, and a vertical lever O, substantially as and for the purpose set forth.

2.—The arrangement of the long slot W in the axle, with an upper and under slotted spring plate L, L', and the coupling and adjusting pin I, substantially as and for the purposes set forth.

3.—The arrangement of the beam A, slotted axle D, coupling pin I, slotted plate L, L', diagonal connecting rod V, adjusting bar P, lever O, driver's seat C, treadle M, plough F, horizontal rotary land-side, wheel G, and rotary coupler H, in the manner and for the purposes set forth.

No. 28,775.—THOMAS R. MARKHILLIE, WASHINGTON, D. C.—*Ploughs*.—*July* 1, 1860.

Claim.—The arrangement of the plough or ploughs, as connected to the truck, in combination with the levers G and I, the whole being constructed and operated in the manner and for the purpose described.

No. 29,104.—HENRY H. ROBERTSON, KINGSTON, MO.—*Ploughs*.—*July* 10, 1860.

Claim.—The arrangement of a hinged plough F, carriage A, A', vertical adjusting screw A', segmental guide frames E, toothed segmental adjusting bars A', cog pinion B, pawl A', or stop m, substantially as and for the purposes set forth.

No. 30,101.—A. L. to original Letters Patent No. 20,104.—*Ploughs*.

Claim.—The arrangement of a hinged frame, consisting of a succession of angles A, A', A'', A''', A'', in combination with the beams I of an equal number of ploughs, all constructed and operated substantially as set forth.

No. 24,100.—THOMAS S. HEPTINSTALL, MENDOTA, ILL.—*Ploughs*.—*July* 17, 1860.

Claim.—The peculiar arrangement of the frame A, plough B, arms F, with wheels attached, lever C, with castor wheel on its lower end, connecting rod H, lever A, curved rack I, and pinion J, operating by means of crank handle G, when the several parts are connected substantially as and for the purpose specified.

No. 26,813.—JOSEPH HARDEY, MOLINE, ILL.—Assignor to O. CHAMBERLAIN and W. H. BARBOCK, same place.—*Ploughs*.—*August* 28, 1860.

Claim.—The arrangement of the axle B, plough G, beam H, guide bar I, rack J, sector K, standard M, castor wheel F, arbor E, and frame A, all as shown and described, for the purpose set forth.

No. 30,100.—EDWIN J. FRAZER, KANSAS CITY, MO.—*Ploughs*.—*Sept.* 26, 1860.

Claim.—Connecting the plough beam K, to the bar G, through the medium of the pendant bar L, provided with the slot Z, and bolt Z', in connection with the clip J, attached to the plough beam K, and provided with the slot Z, substantially as described.

No. 30,727.—SAMUEL FISHER, WEST WINDSOR, N. J.—*Ploughs*.—*Nov.* 27, 1860.

Claim.—The combination of the pivoted beams G with the pivoted ploughs supported by a pin, when arranged to operate in the manner and for the purpose set forth; and this whether the ploughs be made adjustable, and be raised or lowered, or held by the devices described, or by others accomplishing a similar object by substantially the same means.

No. 30,837.—JOHN G. ROBINSON, BRIDGEFORD, ME.—*Ploughs*.—*Dec.* 4, 1860.

Claim.—The arrangement of the arm B, slotted pendant C, and axle A, with the plough frame G, adjustable bar J, and adjustable lever K, as and for the purposes shown and described.

No. 30,863.—H. H. BAKER, NEW MARKET, N. J.—*Ploughs*.—*Dec.* 11, 1860.

Claim.—1.—The mounting of the plough shares upon wheels arranged in the manner shown by B and C, through the medium of a frame G, which slides vertically within, and is supported and guided by an exterior or principal frame A, as shown and described.

2.—Raising the plough I and 2, vertically at will, by the motion of the bearing wheel C, through the art of mechanism, substantially as set forth.

3.—The means, substantially as shown and described, for holding the forward side of the plough frame G higher than the rear side thereof, when in the act of being elevated, in combination with means substantially as shown and described, for holding the said plough frame level when it is fully lowered for the purpose designated.

4.—In combination with the wheels B and C, frame A, ploughs I and 2, the employment of the spring E, for the purpose designated.

5.—The employment of the adjustable standard S, in combination with the spring E, for adjusting the rigidity of the litter, in the manner and for the purpose shown.

6.—In combination with the adjustable spring E, the employment of the wheel M, for the purpose set forth.

No. 30,802.—OLIVER SPARKS, SHEPHERD, MO.—*Ploughs*.—*December* 11, 1860.

Claim.—The two ploughs, arranged one in front of the other, as and for the purposes set forth, in combination with the levers F G H and G, arranged, supported, and operating as described.

No. 30,667.—JACOB HAEGE, SHILOH, ILL.—*Gang-Ploughs*.—*December* 18, 1860.

Claim.—1.—The employment or use of vertical pivots passing through the centre of the axle, in combination with chains *c* and *f*, as and for the purpose described.

2.—The arrangement of the hinged-slotted standards J, in combination with the screw rods *k*, guards *u*, and nuts *m*, and with the adjustable plough shares D, all constructed and operating in the manner and for the purpose set forth.

3.—The arrangement of the swinging rods *l*, in combination with the lever F, and beams C, constructed and operating as and for the purpose specified.

4.—The arrangement of the belly strap I, in combination with the lever F, treadle H, and beams C, constructed and operating substantially in the manner and for the purpose described.

No. 31,503.—GEORGE SEIBERT and JOHN SEIBERT, ASHLEY, ILL.—*Ploughs*.—*February* 20, 1861.

Claim.—1.—Arranging the piece J with the axle H and tongue *v* in the manner described, for the purpose specified.

2.—The brackets *b* *h*, set screws *a* *a*, and latch E, arranged in the manner described, for the purpose specified.

3.—The slot P, the studs G G, and beam A', when arranged in relation to their respective parts substantially in the manner described, for the purpose specified.

No. 32,420.—EDWIN J. FRASER, KANSAS, MO.—*Ploughs*.—*April* 23, 1861.

Claim.—The arrangement of the levers N I O and detents P Q with each other, and with the slotted bar I, rod M, coils *k* *p*, and plough, in the manner and for the purposes shown and described.

No. 32,231.—VALENTINE FEIKER, assignor to himself and RUFUS JONES, CARROLL, ME.—*Ploughs*.—*April* 30, 1861.

Claim.—The arrangement of the plough holder, as constructed, of parts N H F E and J, attached to plough A, with plough governor B, operating as described and for the purposes set forth.

No. 32,311.—THOMAS PATTERSON, RUSH, ILL.—*Ploughs*.—*May* 14, 1861.

Claim.—The plough body G, secured to jointed beam E, as described, in combination with straps *d* *d*, lever F, jointed bar *h*, chains K K, and jointed sliding cross tree D', all arranged and combined with the wheel B B', axle A, and draught pole D, as and for the purposes set forth.

No. 32,958.—J. F. and W. L. BLACK, LANCASTER, ILL.—*Gang-Ploughs*.—*July* 30, 1861.

Claim.—The toggle L, with lever N attached, draught pole F, foot board J, driver's seat I, plough beams C C, and axle A, combined and arranged to operate as and for the purpose set forth.

No. 33,568.—N. F. BURTON, PLYMOUTH, ILL.—*Ploughs*.—*October* 29, 1861.

Claim.—1.—The combination of the subsoil plough I with the surface plough M, when said ploughs are attached to adjustable beams A A, arranged substantially as and for the purpose set forth.

2.—In combination with the subsoil and furrow ploughs I M, the roller K attached to the frame J, and arranged to operate conjointly with the ploughs, as set forth.

3.—The attaching of the axle D to the beams A A' through the medium of the ball-shaped rod L, in combination with the arm H attached to the axle D, and having its bearing or fulcrum on the rod L, as described, whereby the depth of the penetration of both shares may be regulated as desired.

No. 32,221.—N. F. BURTON, GALESBURG, ILL.—

Gang-Ploughs.—*October* 29, 1861.—Reissued *April* 10, 1860.

Claim.—1.—The device for adjusting the beams A A', by means of plate *z*, and clamps *v* *v*, and bars *g* *g*, substantially as set forth, whereby the depth of penetration of the ploughs M and I may be changed at pleasure.

2.—The combination of the subsoil plough I, having a long winged mould board, with the surface plough M, arranged as and for the purpose set forth.

3.—The attaching of the axle D to the beams A A', through the medium of the ball-shaped rod L, in combination with the arm H, attached to the axle D, and having its bearing or fulcrum on the rod L, as herein described, whereby the depth of the penetration of both ploughs may be regulated at pleasure, and they may also be made to run out of the ground when desired.

No. 33,851.—W. B. READY, SACRAMENTO, CAL.—*Gang-Ploughs*.—*December* 3, 1861.

Claim.—1.—The curved beams A, when used in connection with a gang-plough, or a series of ploughs, connected together by cross bars B B B', constructed and operating as and for the purpose set forth.

2.—The arrangement of the arms G, wheels I, and the lever J, when attached to the right hand arm G, and connected to the central beam A, as and for the purpose set forth.

No. 2,902.—WILLIAM B. READY, SACRAMENTO, CAL.—*Gang-Ploughs*.—*December* 3, 1861.—33,851. Reissued *June* 10, 1868.

Claim.—1.—The curved beams A, when used in connection with a gang-plough, or a series of ploughs connected together by cross bars B B B', constructed and operating as and for the purposes herein set forth.

2.—The arrangement of the arms G, wheels I, and lever J, when attached to the right hand arm G, and connected to the central beam A, as and for the purposes set forth.

No. 37,750.—JACOB HAEGE, SHILOH, ST. CLAIR COUNTY, ILL.—*Gang-Ploughs*.—*February* 24, 1863.

Claim.—1.—The attaching of the plough beam to the axle A by means of the strap or loop Q, pin S, and chains *d* *d'*, and bar T, and wooden pin *e*, in combination with the lever or treadle J, all arranged as shown, whereby the plough or ploughs may be readily raised above the surface of the ground when necessary, and the beam allowed to become detached from the axle or carriage when the former comes in contact with any obstruction which may be in their path.

2.—The rotary cutters I, when placed on a screw rod or shaft H, and secured thereon by nut nuts *z*, and said shaft hung in the arms G G, substantially as and for the purpose specified.

3.—The combination of the bar Z, cutter B', when applied to the subsoil plough X, and used in connection with a gang-plough for the purpose set forth.

No. 38,104.—JACOB HAEGE, SHILOH, ST. CLAIR COUNTY, ILL.—*Gang-Ploughs*.—*April* 14, 1863.

Claim.—1.—The combination and arrangement of the pole G, axle E, vertical rod H', and draught rod J, substantially as shown, to admit of the lateral adjustment of the draught relatively with a gang-plough, as set forth.

2.—The particular manner of attaching the pole G to the axle E, to wit, by means of the socket *b* fitted on the axle E, and arranged in such a manner as to receive the pole G, and having a screw *c* passing vertically through it, and through the oblong slots *z*, in the axle and pole, whereby the pole G is firmly secured to the axle E, and the former permitted to be readily adjusted when desired.

No. 36,483.—H. K. HUES, HAYWARD'S, ALAMEDA COUNTY, CAL.—*Gang-Ploughs*.—*August* 11, 1863.

Claim.—The peculiar arrangement, construction, and application of the axle D and arm E, the slotted oval *a*, and the spring slide and lever A B, for the purpose herein specified and I described.

No. 39,743.—JOHN S. PADON, LEBANON, ST. CLAIR COUNTY, ILL.—*Gang-Ploughs*.—*September* 1, 1863. Annotated *March* 1, 1863.

Claim.—1.—The combination of the movable frames, consisting of the sills K R, with the main frame, when they

are arranged on said frame, as described, and when said frame is mounted on truck wheels, as described.

2.—The combination of the movable and adjustable plough beams D with the sills R, when said beams are made to operate in combination with said sills, substantially as described.

No. 39,020.—G. W. HUNL, MESSAINE, IOWA.—*Ploughs*.—*Sept. 15, 1875*.

Claim.—Inclining the plough to suit the inclination of the land, by means and in the manner herein shown and described.

2.—The friction rollers H I, in combination with the sliding plate J, fixed plate C, and rod F, for the purpose specified.

3.—The employment or use of the two wheels V V, at the rear or back end of the beam D, when said wheels are used in combination and in relation with the plough E, and driver seat W, as set forth.

4.—The arrangement of the T, branched at its lower end to receive the axle *n* of the wheels *v v*, as and for the purpose set forth.

No. 39,004.—J. L. RUNK, NASHVILLE, WASHINGTON COUNTY, ILL.—*Gang-Ploughs*.—*Sept. 15, 1875*.

Claim.—The employment of the inclined bolster D, in combination with the screw *f*, platform E, and beams H, all being constructed and arranged to operate substantially as herein described for the purposes set forth.

No. 39,021.—WILLIAM KUFHN, LIVERY, ST. CLAIR COUNTY, ILL.—*Gang-Ploughs*.—*November 17, 1875*.

Claim.—Pivoting or hinging the front ends of the beams E U' to the top of the axle-tree A of two carriage wheels in such manner that a lifting bar *v*, or its equivalent may be applied beneath them to allow the beams to have an unrestrained swinging movement vertically, and to enable them to be operated by said bar, substantially as described.

2.—A driver's seat arranged over the axle A, and attached to the horns C C, which are secured rigidly to said axle, in combination with swinging plough beams E E', substantially as described.

3.—The arrangement and combination of the pivoted plough beams E E', pivoted draught pole D, and extended horns C C, with the supporting bar *v*, whereby the driver is enabled to raise the rear ends of the plough beams, by pressing upon the rear end of the draught pole, the driver's seat being supported by and upon the horns, substantially as described.

4.—Applying the leverage power to the hinged beams E E' in rear of the axle A, beneath said beams, by means substantially as described.

5.—The combination of swinging plough beams E E', hinged to the axle A, extended horns C C, lifting bar *v*, pivoted draught pole D, transverse stop plate *h*, and tie-rod *l*, all arranged and operating substantially as described.

No. 40,724.—LORENZ WOLF, ST. LOUIS, MO.—*Gang-Ploughs*.—*November 24, 1863*.—Antedated *November 11, 1853*.

Claim.—The employment of the standard box *f' f' f'*, constructed and arranged as herein described for the purposes set forth.

2.—The within described arrangement and combination of the levers *v v* with reference to the beam C and stem or wheel standard *l* of the improved gang-plough, substantially in the manner and for the purposes set forth.

3.—The use of the rocker *h*, formed, constructed, and arranged to operate substantially in the manner and for the purposes herein set forth.

No. 41,149.—MARKSHALL SATLEY, FAYETTSVILLE, ILL.—*Gang-Ploughs*.—*February 2, 1874*.

Claim.—Attaching the beam K to the frame by means of cranks S V, operated by a lever T, in the manner explained.

2.—The draught chains R R, attached adjustably to the axle B, and adapted to be drawn tight by lowering the ploughs to their working position.

No. 41,491.—F. S. DAVENPORT, JEFFERSONVILLE, ILL.—*Gang-Ploughs*.—*February 9, 1865*.

Claim.—The hinged or swinging axle-tree D at each end of beam A, in combination with the

adjustable stops *v v*, as and for the purpose herein set forth.

2.—The caster wheel H attached to the shaft G, which is connected to the sliding bar F, having a lever J attached, when said parts are used in combination with the swinging axle-tree D, as and for the purpose specified.

No. 41,043.—J. L. RUNK, NASHVILLE, ILL.—*Gang-Ploughs*.—*February 16, 1864*.

Claim.—The combination of the pulleys *f f*, endless chain L, and adjusting lever G, with pivoted plough beams D D' attached to the tongue C' in front of the axle-tree, all operating substantially as described.

2.—The manner herein described of uniting the two parts of the axle and the horns, so that when the axle is extended in length or shortened, the horns will be adjusted to operate therewith, as set forth.

3.—The laterally-adjustable pulley standard E, in combination with the laterally adjustable horns C, plough beams D D', and extensible axle-tree B, substantially as described.

4.—The combination of the pivoted plough beam D, extensible axle-tree B, and laterally adjustable horns C, in the manner and for the purpose specified.

5.—The specified construction of standard boxes N, so that they afford two bearings or supports *n n'* while made in one piece N, and otherwise operate, with wedges or set-screws, for the purpose set forth.

No. 41,680.—E. R. CROTHERS, SPARTA, ILL.—*Gang-Ploughs*.—*February 23, 1864*.

Claim.—Hinging the axle-tree to the frame of the machine so that the frame will swing forward of its hinge-connection, in combination with the hinging connecting rod N, cord or chain *m*, and winlass *p*, all applied and operating substantially as described.

2.—The use of a stiff rod N, in combination with a winlass *p*, and a hinged axle D, operating substantially as and for the purposes described.

3.—The manner of attaching the draught pole P to the plough beams, substantially as and for the purposes described.

No. 42,258.—ROBERT NATION, CHICASSO, ILL., assignor to himself and JAMES N. ORR.—*Gang-Ploughs*.—*April 5, 1864*.

Claim.—The combination and arrangement in a gang-plough of the plough beams D D, the guides F F, provided with the slots *a a*, the axle H, provided with the slots *v v*, the chains *c c*, the roller R, the lever L, all constructed and operating as and for the purposes herein delineated and set forth.

No. 43,804.—DRAPER STONE, PITTSFORD, N. V.—*Gang-Ploughs and Sulkies*.—*August 9, 1864*.

Claim.—The combination and relative arrangement of the draught beam A, diagonal plough beam B, ribbed jointed plate C, tie bolt *z*, (one end of which is connected to the end of the washer plate *z'*) with the seed box B, and its appendances, all being arranged and operating conjointly in the manner and for the purposes set forth.

No. 44,209.—THOMAS R. MARKH LEE, WISCONSIN, ILL.—*Gang-Ploughs*.—*September 13, 1864*.

Claim.—Hinging or pivoting the plough beams E E' to the frame beams B B, on both sides of the axle A, by means of arms *g g'*, and arranging the plough beams so that they will extend out on each side of the axle-tree to receive the forward and rear ploughs, substantially as described.

2.—The lever G, and arm *h*, and pin *k*, in combination with the hinged beams E E', constructed and operating substantially as and for the purposes described.

3.—The adjustable brackets *l l*, arranged on the frame beam B, in combination with the hinged beams E E', substantially as and for the purposes described.

4.—The adjustable vertical guide plate *h*, on the axle-tree A, adapted to receive a slot in the rear end of the pivoted draught pole C', substantially as and for the purposes described.

5.—The combination of bent levers D' pivoted to the plate D', and guide plate *h*, with the pivoted draught pole

C' and frame beams B B, arranged and operating substantially as and for the purposes described.

No. 44,351.—JOHN STONE, PLATTSBURG, MO.—*Gang Ploughs*.—*September 20, 1864.*

Claim.—1.—In combination with the levers E and ploughs I, the catches F, constructed, arranged, and operating substantially as and for the purposes herein set forth.

2.—The standard D', which supports the seat, in combination with the levers E and catches F, the same being arranged substantially as and for the purposes set forth.

No. 44,624.—S. H. ADAMS, COLEBROOK, HI.—*Gang Ploughs*.—*November 8, 1864.*

Claim.—1.—Pivoting the forward ends of the plough beams E E to a slotted lever D, and supporting the rear portions of said beams upon a slotted lever D', both lever D and D' being capable of receiving a lateral or endwise adjustment, substantially as and for the purposes described.

2.—The combination of the intermediate beam, G, lever D, and hinged plough beams E E, with the adjusting lever J, substantially as described.

3.—The laterally and vertically adjustable levers D D' pivoted to the supporting frame A B, and adapted to form a forward pivot connection and a rear support for the plough beams, substantially as described.

4.—The vertical guides c c applied to the laterally adjustable lever D', in combination with the pivoted plough beams E E and lever D, substantially as described.

No. 44,909.—JABISH PIERCE, WYAND, HI.—*Ploughing-Machinery*.—*November 8, 1864.*

Claim.—1.—The combination of the plough F F, devices G G' and axle D, with the frame A, axle D', seat M and wheels B, substantially as and for the purposes set forth.

2.—The combination of the lever H, link J, clevis P and pin K, the whole being employed in the manner and for the purposes herein specified.

No. 44,971.—GEORGE QUITIN and LORENZ BERKEI, SMITHSON, HI.—*Gang Ploughs*.—*November 8, 1864.*

Claim.—1.—The combination of the vertically adjustable bar E, pivoted bar F, and laterally adjustable pivoted connections G c, with the plough beams H H, all arranged and operating substantially as described.

2.—The combination of the sector plate supports G G, with plough beams H, which are capable of being expanded or contracted laterally, substantially as described.

3.—Securing the axle of the rear supporting wheel J, to a lever h, which is connected to a sector i by means of a rod k, the whole operating substantially as described.

No. 45,427.—LEANDER MILLER and HERMANN KALLER, CAMP POINT, HI.—*Ploughs*.—*December 13, 1864.* Antedated *January 10, 1863.*

Claim.—1.—The axle C, provided with the cranks D D, having the wheels E E attached, in connection with the lever F and stop bar G, all arranged as and for the purpose herein set forth.

2.—The bar I attached to the bar a of the frame A, as shown, and secured at the desired height by the catch j and notched segment bar J, in connection with the adjustable plough beam K attached to the bar I, substantially as and for the purpose herein set forth.

3.—The combination of the adjustable beam K, bar I, and adjustable axle C, all arranged as and for the purpose specified.

No. 45,520.—JABISH PIERCE, WYAND, HI.—*Wheel Ploughs*.—*December 20, 1864.*

Claim.—The rod O, links T and K, in combination with beams L, links N, hounds B, standards H, lever J, when constructed and arranged as herein described.

No. 45,817.—THOMAS SIBERT, FAIRMOUNT, HI.—*Gang Ploughs*.—*January 10, 1865.*

Claim.—The arrangement of the double crank shaped connecting rod G, devices c c, links a a', beam E,

lever H, and post I, the whole being employed for joint operation, in the manner and for the purpose specified.

No. 45,988.—W. H. FREEMAN, BLOOMFIELD, IOWA.—*Gang Ploughs*.—*January 24, 1865.*

Claim.—In combination with the stationary frame A, the hinged plough beam or beams F and levers G, I, and H, for the purpose of adjusting the height as well as the inclination of the ploughs, substantially in the manner and for the purposes described.

No. 46,137.—JOHN C. FFEEL, ARENZVILLE, ILL.—*Gang Ploughs*.—*January 31, 1865.*

Claim.—The arrangement of parts by which the relative positions of the plough beam and the draught pole are maintained after the front of the former has been depressed by the foot of the driver, and consisting of the tension chain K and lever G, with its retaining rack J, the points of attachment being the draught pole B and the frame A, the whole constructed and operated as described and represented.

No. 46,104.—HENRY WEESTER, BRETOWN, WIS.—*Gang Ploughs*.—*January 31, 1865.*

Claim.—1.—The employment of use in a mounted gang-plough of an oblique adjustable axle so arranged as to admit of the ready adjustment of the wheel for giving the ploughs more or less land, substantially as set forth.

2.—The frame H, applied to or connected with the draught pole A, by means of a joint in connection with the racks and toothed segments, when applied to gang ploughs, substantially as set forth.

No. 46,412.—RICHARDSON WILSON, FOWLER, N. Y.—*Wheel-Ploughs*.—*February 14, 1865.*

Claim.—The arrangement of the vertical adjustable supports D J, with regard to the beam E and the axles of the supporting wheels A, H, and for the purpose herein described and represented.

No. 46,550.—A. P. DURANT and D. M. BUCKLEY, CANTON, OHIO.—*Cultivators*.—*February 28, 1865.*

Claim.—The plough frame B B when arranged under the main frame in front of the axle-tree, and the power applied directly thereto, and when attached, adjusted and operated in relation to the main frame, substantially as set forth.

No. 46,993.—I. HOLLAWAY, GILR A, CAL.—*Gang Ploughs*.—*March 21, 1865.*

Claim.—The link joint I, in combination with the adjustable rods h, lever J, plough frame H, and truck A, constructed and operating in the manner and for the purpose substantially as herein shown and described.

No. 47,074.—IRA C. PRATT, assignor to J. M. CAMPBELL, D. MOORE, E. EMERSON, and H. REEVES, MORTON, IND.—*Sulky Gang Ploughs*.—*March 21, 1865.*

Claim.—1.—Attaching one or more ploughs E, direct to the draught pole C, when the latter is connected to the main frame A, and all arranged to operate as and for the purpose set forth.

2.—The oblique bar D, attached to the rear part of the draught pole C, and having a plough E secured to it, and arranged as shown, so as to be capable of being adjusted substantially as and for the purpose specified.

3.—The lever H, with cam I attached, arranged and applied to the draught pole to operate in relation with the axle a of frame A, and for the purposes specified.

No. 47,086.—JOHN E. TRAVIS, assignor to himself and ELON FRANCISCO, GREENVILLE, ILL.—*Gang Ploughs*.—*May 0, 1865.*

Claim.—1.—The combination of the plough frame B and its attached ploughs with the fixed frame A, by means of a fulcrum piece X, or other similar hinged joint, substantially in the manner and for the purpose herein set forth.

2.—The employment of the levers l and l', with their fulcrums l and l', and their connecting links c and c', and their bolt f and f', when combined with the frame B, substantially as and for the purposes set forth.

No. 47,642.—PHILO M. GIBBERT, KEWANEE, ILL.—*Gang Ploughs*.—*May 30, 1865.*

Claim.—1.—The combination and arrangement of the plough beams D D, the connecting adjustable straps *f f*, and the removable pivoted connection *Z*, with the tongue O, as and for the purposes herein specified and described.

2.—The combination of the plough beams D D, the jointed lever I J, the supports H, the lever F, and the standard E, arranged and operating substantially as and for the purpose specified and shown.

3.—The combination of the plough beams D D, the reciprocating beam C, the rear support N, and the tongue O, pivoted to said beams, arranged and operating as and for the purposes shown and set forth.

4.—The combination of the plough beam D D, reciprocating beam C, the axle A, provided with the slots *a a*, the bolts *b b*, rack *i*, pinion wheel *d*, and lever *e*, arranged and operating as and for the purposes specified.

No. 47,080.—JACOB SEIBEL, MANLIUS, ILL.—*Gang-Ploughs*.—*May* 30, 1865.

Claim.—The combination of the seat I, fulcrumed at J, perforated standard M, the spring K, provided with the pin *a*, the lever L, or its equivalent, for operating said spring and pin, the rod N, and plough beams P, arranged and operating substantially as and for the purposes herein specified and shown.

No. 48,049.—JOHN C. BROWN and G. H. SLIMPERT, PINKNEYVILLE, ILL.—*Gang-Ploughs*.—*June* 6, 1865.

Claim.—1.—The arrangement of the hinged adjustable beam L, with a caster wheel C, in the manner and for the purpose herein described.

2.—The use of self-locking levers J J, for raising or depressing the ploughs, applied to the adjustable guides *d d'*, substantially as described.

3.—Connecting the hooked rocking levers J J to the plough beams by means of bent swinging rods, substantially as described.

4.—The laterally adjustable slotted plates *d d'*, applied to the slotted frame G, and adapted to serve as guides for the plough beams F F, and also as bearings for levers which are used to raise and depress said beams, substantially as described.

5.—Pivoting the forward ends of the plough beams to rocking bars *a a'*, which are arranged one in advance of the other, and applying the ploughs to said beams at about equal distances from their respective pivotal connections, substantially as described.

No. 48,387.—VALENTINE FELKER, CANSEL, ME.—*Ploughs*.—*June* 27, 1865.

Claim.—1.—Elbow C, upright D, and level elbow *b*, combined and arranged to operate substantially as and for the purpose set forth.

2.—Rod G, lever H, truck *g* and adjustable collar *j*, when arranged and combined to operate substantially as described, whereby the depth of the furrow is not only controlled, but the direction of movement of the truck always corresponds to the line of draught.

3.—The arrangement of the plough holder, as constructed of parts C D B and *b*, attached to plough A, with plough govern *G H* and *j*, operating as described and for the purposes set forth.

4.—The combination of two ploughs in one gang, when combined and arranged to operate substantially as and for the purposes specified.

No. 48,512.—JAMES BREWER, ALBANY, N. Y.—*Sulky Ploughs*.—*July* 4, 1865.

Claim.—1.—Making one of the standards E E, with the plough beam in its proper position, yielding to a certain degree, for the purpose of permitting the plough to pass obstructions which are its line, and which are as hard to cut, substantially as and for the purpose specified.

2.—The combination with the plough beam of the rigid standard F, yielding standard E, screw bolt *e*, and spring *f*, substantially as and for the purposes specified.

3.—Hanging the plough beam of a sulky plough between two standards in such a manner that the operation of the plough is not affected by the passage of the supporting wheel over rough or uneven ground, as and for the purpose specified.

4.—The combination with the plough and its beam G, herein described, of the laterally adjustable caster wheel H,

when fastened to the rear of the plough beam, substantially as and for the purpose specified.

5.—Connecting the hound in the furrow side to the pole by means of a hinge *s* for the purpose of making it and the furrow wheel adaptable, as and for the purpose specified.

6.—The combination with the foot lever L and plough beam G, when capable of rotation within the standards I, of the friction rolls *t*, as and for the purposes specified.

7.—In combination with the plough beam G and tongue P the adjustable breast yoke Q, for the purpose of cutting more or less land, as herein described.

No. 48,679.—A. HAMMOND, JACKSONVILLE, ILL.—*Gang Ploughs*.—*July* 11, 1865.

Claim.—1.—The segment rack L, pawl M, and foot lever O, all arranged and applied to the plank or timber B, and beam A, substantially as and for the purpose specified.

2.—The button P, when applied to the plank or timber D, and used in connection with the rack L, pawl M, and foot lever O, for the purpose set forth.

No. 48,696.—J. H. LA BOYTEAUX and C. A. ASHTON, JACKSONVILLE, ILL.—*Gang Ploughs*.—*July* 11, 1865.

Claim.—1.—The adjusting of the axle A, and consequently of the plough beams and ploughs, by means of the lever *j* connected with the axle through the medium of the chain G, arranged substantially as described, for the purpose of adjusting the ploughs to suit the surface of the ground over which they work.

2.—The pivoted plough beams N M, in connection with the bar S, lever T, and chain N', all arranged to operate in the manner substantially as and for the purpose set forth.

No. 48,846.—JAMES E. SKINNER, ROCKFORD, ILL.—*Gang Ploughs*.—*July* 18, 1865.

Claim.—1.—The combination in a gang plough of one or more ploughs before and one or more ploughs behind the supporting axle where the ploughs are firmly attached to a rigid frame which is itself adjustable upon and in relation to the axle, substantially as set forth.

2.—The combination of the tongue with the main frame by a hinge and lock, substantially as described to render it rigid or flexible at the will of the driver.

3.—The combination of a clevis with the main frame of a gang plough and the tongue whether rigid or flexible, substantially as described to, work three or more horses abreast and equalize the draught between them.

4.—The attachment of the left supporting wheel of a gang plough to a crank axle to preserve the desired parallelism of the axle to the ground, substantially in the manner set forth.

5.—The combination of an adjustable gauge wheel with the rigid main frame of a gang plough, when arranged forward of the ploughs, substantially as and for the purpose set forth.

6.—The combination in a gang plough of a rigid main frame and an adjustable axle with a mechanism for raising and lowering the frame, substantially in the manner described for the purpose set forth.

7.—The combination of the main frame, the axle, and standards by the draught rod and reach or guides, substantially in the manner described for the purpose set forth.

No. 49,087.—C. W. CORR, CARLINVILLE, ILL.—*Gang-Ploughs*.—*In use* 1, 1865.

Claim.—1.—The crank axles C provided with the hole, or its equivalent, as shown and described.

2.—Receiving the ploughs by means of the clip *b* and brace *f*, substantially as shown and described.

3.—The combination of the plough standards *a*, stirrups *d*, and lever N, all arranged to operate as and for the purpose set forth.

4.—Attaching the independent crank axle C, one above and one below the main frame, as shown and described.

5.—The stirrup or guide V in combination with the bolt *p* and stud *p'*, for the purpose of adjusting the tongue laterally, and at the same time permit it to have a vertical movement, as and for the purpose set forth.

6.—The foot lever *W* arranged to operate in connection with the tongue and main frame, with its front end working in the slotted bolt *X*, as and for the purpose set forth.

7.—The slotted bolt *X'* in combination with the slotted wedge *a*, for the purpose of adjusting the parts, as shown and described.

No. 49,504.—HENRY SMYTH, NEW LORENZO, CAL.

—*Gang Ploughs*.—August 22, 1865.

Claim.—The construction of the eccentric shaft or axle in two parts, so as to be able to raise or lower one wheel without interfering with the other, and the arrangement of the cog wheel attached to the eccentric shaft or axle, to raise or lower the body of the plough, together with the ploughshares, by means of the wheel or endless-screw, and their combined arrangement, for manufacturing gang ploughs.

No. 49,833.—IRA C. PRATT, assignor to himself and L. F. PRATT, MORTON, ILL.—*Sulky Ploughs*.—September 5, 1865.

Claim.—1.—The plank *A*, to which the plough beams *B* are secured, connected with the draught pole *I* by joints or eyebolts *f*, and operated or adjusted by the driver on his seat, through the medium of a lever or arm, or their equivalents, substantially as set forth.

2.—The adjusting of the plank *A*, and consequently the plough beams and ploughs, higher or lower with the axle *D*, in order to regulate the depth of the penetration of the ploughs by means of the plate *E* secured to one end of the plank, and provided with a series of holes *e* in a vertical line, through any one of which the bolt *b* passes into the axle at one end, in connection with the slotted plate *C*, through which the axle passes, and the lever *F*, attached to the plank and bearing on the axle, substantially as and for the purposes set forth.

No. 49,911.—J. S. PADON, SUMMERFIELD, ILL.—*Gang Ploughs*.—September 12, 1865.

Claim.—1.—The side bars *C*, seat standards *D*, slotted axle *A*, and slotted brace *C'*, in combination with the pivoted plough beams *F*, *F'*, and rocking levers *G*, *G'*, all arranged and operating substantially as described.

2.—In a wheel-cultivator, providing for expanding or contracting plough beams *F*, *F'*, the supporting frame thereof, and the contrivances for elevating or depressing the said beams, substantially as described.

3.—Supporting the plough beams *F*, *F'* in an elevated position by means of levers *G*, *G'*, links *d*, *d'*, and a spring catch lever *g*, which is pivoted to a post projecting from the draught pole, substantially as described.

4.—Pivoting the plough beams *F* to side beams *C*, which are susceptible of being separated or contracted without detaching them from their axle *A*, substantially as described.

5.—The use of slotted standards *J*, *J*, in combination with the slotted sector plates *j*, *j*, and fastening *h*, *h'*, substantially as described.

6.—The clamps *K*, applied to the standards *J*, substantially as described.

No. 50,828.—ALBERT KEITH, LISBON, ILL.—*Sulky Ploughs*.—November 7, 1865.

Claim.—The combination of the lever *e* with the sliding brace *a*, guide standard *u* and standard *M*, and the arrangement and combination of the standard *I*, with the arm *K* and standard *M*, substantially as set forth.

No. 50,837.—ISAAC F. NUTTING, PALMER, MASS.—*Wheel Ploughs*.—November 7, 1865.

Claim.—The combination of the head lever *E*, connections *a*, *b*, *F*, with a plough *D*, and axle *B*, and draught pole *C*, when mounted on the wheels *A*, substantially in the manner and for the purpose described.

No. 51,358.—MARKHAM SATTLEY, TAYLORSVILLE, ILL.—*Gang Ploughs*.—December 5, 1865.

Claim.—1.—The frame *J*, in the described combination, with the axle *A*, plough beams *M*, levers *L*, *L'*, and uprights *e*, *g*, all constructed and operating as described.

2.—The attaching of the draught pole *W* to the frame *J* by means of the slotted plate *X* and bolts *m'*, *m'*, for the purpose of admitting the lateral shifting of the pole, and the setting of the ploughs more or less to land, as described.

No. 51,536.—CAROLL ATWOOD, LEBANON, ILL.—*Gang Ploughs*.—December 19, 1865.

Claim.—The metal bars *H* and *I* in connection with the clamp *J*, all arranged substantially as shown, to admit of the lateral adjustment of the plough beams with the sills *F*, *F'*, for the purpose set forth.

No. 51,543.—J. F. and W. L. BLACK, LANCASTER, ILL.—*Gang Ploughs*.—December 19, 1865.

Claim.—1.—The connecting of one of the wheels *C'* to its axle *A* by means of the bar *E*, fitted in the socket *D*, and connected by a chain *G* to a lever *H*, in the manner substantially as described, to admit of the vertical adjustment of the ploughs, for the purpose specified.

2.—The adjusting of the draught pole *M* laterally through the medium of the screw *g*, plate *h*, and nut *i*, substantially as and for the purpose set forth.

No. 51,790.—CHARLES BELDEN, MIDDLEBURG, OHIO.—*Gang Cultivators*.—January 2, 1866.

Claim.—The blades *a*, constructed as shown, with a rib *b*, and arranged in relation to each other diagonally across the machine, in combination with the standards *m* and diagonal frame *C'*, substantially as and for the purpose set forth.

No. 51,875.—H. C. SMITH, RIDGE FARM, ILL.—*Gang Ploughs*.—January 2, 1866.—Antelated December 28, 1865.

Claim.—1.—The connecting of the plough beams *A* to the axle *C* by means of the king bolt *D*, strap *E*, and plates *F*, *F'*, all constructed *I*, combined, and arranged in the manner and for the purpose herein set forth.

2.—The plough-beams *A* attached to the axle *C* as shown, in combination with the frame *H*, the latter being connected at its front end to the plough beams by the rod *b* and its rear end supported by the castor wheel *L*; the above parts being used in connection with the cord or chain *e*, pulley *f*, lever *J*, and the strap *K*, or its equivalent, for the purpose specified.

No. 52,104.—THOMAS WOLFE, GIRARD, ILL.—*Sulky Ploughs*.—January 10, 1866.

Claim.—1.—The connecting of the front ends of the plough beams *G* by hinges *H*, to springs *I* attached to the framing of the device, in combination with the shafts cap, arms *d*, rods *N*, and levers *P*, or an equivalent means for operating the springs, substantially as and for the purpose herein set forth.

2.—The raising and lowering of the plough beams through the medium of the rods *K*, *K'*, cranks *K''*, *K'''*, shafts *L*, *L'*, and levers *M*, *M'* all arranged substantially as described.

3.—The adjustable frame *S*, constructed and applied to the plough beams *G*, *G'*, substantially as and for the purpose specified.

No. 52,491.—A. P. DURANT, ATLANTA, ILL.—*Gang Ploughs*.—February 6, 1866.

Claim.—1.—Uniting the two ploughs *M*, *N* to a single beam *G*, where said beam is arranged between the frame *C*, *C'*, and hung on a pivot to the front end thereof and forward of the axle-tree, substantially as shown and described.

2.—The two levers *S*, *S'* when united together in the manner described, and connected to the rear end of the plough beam *G*, for the purpose of keeping said beam from twisting, or the ploughs from slewing or "creeping" out of their proper path, and for the purpose of raising them out of the ground, as set forth.

No. 52,558.—ROLAND R. GASKILL, EL PASO, ILL.—*Gang Ploughs*.—February 13, 1866.

Claim.—Hinging the tongue *A* to plough beam *B*, at the middle thereof, or directly above the share *H*, in combination with brace *L*, hinge *a*, *r*, bars *F*, *F'*, brace *K*, and axle-tree *G*, the several parts being arranged as and for the purpose set forth.

No. 52,633.—JOSEPH WHIDMAN and FRENCH MULLICA, EL PASO, ILL.—*Ploughs*.—February 13, 1866.

Claim.—1.—The attaching of the plough beam *E* to the axle *A*, through the medium of the bound *C*, *C'*, in combination with the draught pole *F* and bar *K*, attached to the plough beam, and all arranged to operate in the manner substantially as and for the purpose set forth.

2.—The arrangement of the coil or chain L, pulleys G H, and lever I, arranged and applied to the plough beam F, draught pole E, and bar K, substantially as and for the purpose specified.

No. 52,094.—JOHN F. TRAVIS, a signor to himself and LEON TRAVIS O. GREENWICH, Ill.—*Plow—Plow*, *Patent* 13, 1896. *American Inventor*, 3, 1896.

Claim.—1.—The sliding bar C, when used in connection with the axle B and bolts or D, and regulating bolts *a*, *a'*, as and for the purpose set forth.

2.—The hinged braces B H, the levers H' H', and posts F' F', for the purpose of attaching the plough frame or gang ploughs to the bolt or there to, when such parts are constructed and employed as described and set forth.

No. 52,096.—A. T. and B. F. GRIFFITH, ILLINOIS, Ill.—*Plow*, *Patent* 13, 1896. *American Inventor*, 3, 1896.

Claim.—1.—Attaching the plough beams to the axle B by means of the rock shaft D, provided with the arms *a*, and lever C, arranged to operate substantially as and for the purpose set forth.

2.—Supporting one end of the rock shaft D on the adjustable bearing *a*, in combination with the lever E, arranged as shown and described.

3.—The tongue H, attached to the front end of the plough beams, in combination with the segment G and rod *m*, provided with the arms *n*, *n'*, as shown and described.

No. 53,124.—JOHN H. ECKER, LEVANS, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The arrangement of the plough beam E F, lever M, adjustable bars *a*, adjustable guide H, rod F, screw rods G, G, in combination with the standard J, posts K, sockets L, plow bars I, and brace T, constructed and operating in the manner and for the purpose herein specified.

2.—The combination of the lever N, cross bar, notched plate *a*, and frame *b*, constructed and arranged to operate in the manner and for the purpose herein specified.

No. 53,443.—A. HAMMOND, JAKESVILLE, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—Pivoting for adjusting the two supporting wheels A and F, simultaneously, by means of a rack and screw, or their equivalent, substantially as described.

2.—Connecting the link side, which F to a spring or yielding lever G, substantially as described.

3.—Connecting the rear supporting wheel F to a spring or yielding lever H, substantially as described.

4.—Providing for adjusting the spring *a* of the lever H, substantially as described.

5.—Pivoting the axle levers of the rear supporting wheels I and J to oscillating segments, substantially as described.

No. 53,457.—SAMUEL M. LOCKWOOD, CHICAGO, Ill.—*Subsidiary Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The arrangement substantially as described of the part P, or its equivalent, in connection with the pole A, and the clamp D, or its equivalent, substantially as above described, by means of which a change of direction is obtained, substantially as set forth.

2.—The arrangement of the braces R and K, in manner substantially as set forth, with the con ploughs or their equivalent, so that the same can be pointed as one may desire, in order to plough deeper or otherwise, as one may wish.

3.—The method of raising and lowering the ploughs by the arrangement of the levers J and I, in connection with the braces E and G, running from cross bar to cross bar, as above described, or their equivalent, substantially as above set forth, with the seat K, and in connection with the axle L, substantially as described, the cross-bar C, with the arms I and M, or their equivalent, in connection with the shanks M and M, substantially as set forth, and the cross-piece H, or its equivalent, substantially as set forth.

4.—The arrangement of con ploughs in any and all of the ways substantially as set forth, in combination with a frame-work with wheels, and constructed substantially as set forth.

No. 53,740.—MILTON ROBERTS, ST. PAUL, MINN.,

assignor to himself and NATHAN H. ROBERTS, RICHMOND, MINN.—*Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The attaching of the plough to the axle and wheels, in the manner substantially as and for the purpose herein set forth.

2.—The rod J, pivoted to the axle A, and provided with a hook, L, entering end, in combination with the plough and the wheels and axle, substantially as and for the purpose specified.

3.—The wheel B, provided with the concave flange K, in combination with the plough E, substantially as and for the purpose set forth.

4.—The rollers N, placed in the frame M, having the rods O O attached, in combination with the plough and the wheels and axle, substantially as and for the purpose specified.

No. 54,020.—JAMES B. SKINNER, ROCKFORD, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The combination of the ploughs in a gang plough, with the main frame constructed, arranged and operating substantially as described when all arranged behind the axle and rendered adjustable, substantially as and for the purpose set forth.

2.—The combination of the tongue, the main frame and the locking lever, substantially as and for the purpose set forth.

No. 54,081.—C. ATWOOD, LEVANS, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—Forming the forward connection between the beams of the frame A of a metal plate C, having slots *a*, *a'*, in it for the passage of the attaching devices *b* and *b'*, so that the machine may be readily adjusted to any width.

2.—The adjustable tie or brace rods D, or their equivalents, when used as and for the purpose set forth.

3.—The combination of the shaft E, levers E' and E'', hook rods F and cross bar G, or their equivalent devices, with the plough beams of gang ploughs, for the purpose herein set forth.

4.—The combination of the strap piece *a* and set screw *c*, with the beam H and with the braces H', as and for the purpose set forth.

No. 54,453.—W. M. WATSON, TONCA, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—The combination in a gang plough of the hinged braces and bolts *a*, *c*, *c'*, or their equivalents, and side cut and support *a* and K all arranged substantially as and for the purpose set forth.

No. 54,913.—THOMAS J. CORNELL, DECATUR, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The combination of the lever M, and bent arm O for raising the beams from beneath at a point in the rear of their forward point of attachment, so as to be elevated upon the said lifting device by a weight applied to the forward end, substantially as described.

2.—The combination of the link H attached to the forward end of the beams and to the carriage, and operating substantially as described.

3.—The combination of the beam and the curved arm, or its equivalent, which in its backward motion operates to keep the beam down under the circumstances described.

4.—The mode of attaching the tongue to the carriage, consisting of the laterally sliding socket and the guides, arranged and operating as described.

5.—The combination of the links H and standards G, whose holes admit of the vertical adjustment of the links therein.

6.—The arrangement of the foot lever R, the links H and beams A, operating as described.

No. 54,965.—JACOB L. RUNK, JAMES H. BROWN, and ELIAS M. MORGAN, NASHVILLE, Ill.—*Gang Plow*, *Patent* 17, 1896. *American Inventor*, 27, 1896.

Claim.—1.—The plough beam attached to a bolster, the latter being hinged or pivoted to the axle or carriage, substantially as and for the purpose described.

2.—Vincing the draught-rod to the beam in such a manner as to utilize the draught of the team in raising the ploughs from the ground, when the forward support of the beam is removed.

3.—The combination of the beam A and tongue G, or its

1. The lever $1-1000$ is pivoted to the top $1-1-1$ of the frame bearing, by means of a nut and by means of a screw, by the screw $1-1000$ passing through the hole in the frame.

2. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

3. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

4. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

5. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

6. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

7. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

8. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

9. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

10. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

11. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

12. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

13. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

14. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

15. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

16. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

17. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

18. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

19. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

20. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

21. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

22. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

23. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

24. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

25. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

26. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

27. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

28. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

29. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

30. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

31. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

32. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

33. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

34. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

35. The lever $1-1000$ is pivoted to the frame by means of a nut and screw, by the screw $1-1000$ passing through the hole in the frame.

by means of a pin $1-1000$ and a locally adjustable plate $1-1000$, substantially as described.

36. The adjustable draught rod $1-1000$ arranged and applied to the plough frame $1-1000$ so as to operate substantially as described.

37. The combination of a pole $1-1000$, which is adjustable at its rear end, with draught rod $1-1000$, which is adjustable at its front end, substantially as described.

No. 70,200.—ED. BRUCE, WAIT, RICHMOND, VA.—*Z. 1893, 1-27-10, 1893.*

Claim. 1.—The frame $1-1000$ cast in one piece, and constructed as described, in combination with the mould board $1-1000$, land-side $1-1000$, and point $1-1000$, the whole being constructed and operating in the manner and for the purpose set forth.

2.—The curved beam $1-1000$, which is constructed to impinge upon the frame $1-1000$ behind the central point of resistance of the mould board, substantially as described.

3.—The beam $1-1000$, in combination with the brace $1-1000$ and adjustable clamp $1-1000$, for affording lateral adjustment to draw the plough in and out of land, substantially as described.

4.—In combination with the curved beam $1-1000$, the slotted block $1-1000$, $1-1000$, and wheel $1-1000$ to land between the plough handle $1-1000$, substantially as described.

5.—The wheel $1-1000$ mounted to and between the plough handle $1-1000$, substantially as described.

No. 70,201.—WILLIAM J. ROGERS, QUINCY, ILL.—*Z. 1893, 1-27-10, 1893.*

Claim. 1.—The invention, as hereinbefore set forth, of forming gang plough or cultivator beams upon a carriage that can be used to support either or both by means of the brackets $1-1000$, $1-1000$, and levers $1-1000$, or their equivalents, in combination with the shaft $1-1000$, arranged and operating substantially as described for the purpose set forth.

The shaft $1-1000$, with the brackets $1-1000$, or their equivalents, in combination with the frame $1-1000$, a horizontal set screw $1-1000$, and adjusting nut $1-1000$ to regulate the inclination of the beam by means of the bracket $1-1000$ and adjusting nut $1-1000$, and the shaft $1-1000$, and locking pins, or their equivalents.

No. 70,202.—PETER WILSON, JR., PEVON, ILL.—*Z. 1893, 1-27-10, 1893.*

Claim. 1.—The rod $1-1000$ and sliding rod $1-1000$, lever $1-1000$, and frame $1-1000$, arranged and operating as and for the purpose set forth.

2.—In combination with the above standing lever $1-1000$, arranged and operating substantially as herein shown and described.

No. 70,203.—WILLIAM BAUFEL, QUINCY, ILL.—*Z. 1893, 1-27-10, 1893.*

Claim. 1.—The coupling of the axles of the wheels $1-1000$ of the machine to the rear part of the bars $1-1000$, the front end of which is attached by hinges $1-1000$ to the front part of the frame $1-1000$, in combination with the segment bars $1-1000$ attached to the rear part of the bars $1-1000$ and the lever $1-1000$, attached to the bars $1-1000$, all arranged substantially as and for the purpose specified.

2.—The arrangement of the curved bars $1-1000$, attached to the plough bars by links $1-1000$, $1-1000$, $1-1000$, with rollers $1-1000$ in line, and the levers $1-1000$, $1-1000$, arranged to operate substantially in the manner as and for the purpose herein set forth.

3.—The construction of the clevis $1-1000$, as shown and described, for the purpose of adjusting the plough beams, as set forth.

4.—The flange $1-1000$, provided with the screws $1-1000$, in combination with the clevis $1-1000$, rod $1-1000$, and adjustable bars $1-1000$, substantially as and for the purpose set forth.

No. 70,204.—AMIEL H. HITCHINSON, GREENSBORO, ILL.—*Z. 1893, 1-27-10, 1893.*

Claim. 1.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

2.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

3.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

4.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

5.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

6.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

7.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

8.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

9.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

10.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

11.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

12.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

13.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

14.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

15.—The revolving or adjusting of the frame $1-1000$ of the machine in a vertical direction, in order to regulate the depth of the penetration of the ploughs, by means of lever $1-1000$, provided with lower segment ends $1-1000$, and secured to the sides of frame $1-1000$, in combination with the pivot pins $1-1000$, $1-1000$, attached to frame $1-1000$, and passing freely through the axle $1-1000$, substantially as shown and described.

2.—The plough frame, L, and E within the beam A, and some other parts of the O with the plate N, which form a set of work, and which the plough frame may be raised or lowered, and the plough is when at work attached to the ground, and the whole is as set forth.

No. 57,681.—A. H. BUREN, AGRICULTURIST, ILL.—*Pat. 2,782,375*, 1880.

Claim 1.—The combination of the pivot on G, pivot on C, pivot on G', plough beams D D', and finally an adjustable beam E, substantially as and for the purpose described.

2.—The rear end support J, applied and operated substantially as hereinafter described for the purposes set forth.

3.—The pivot bearing for the tongue of plough beams D D', the adjustable end support L, and the device for fully raising and lowering, substantially as described.

4.—The combination of the vertical post and the horizontal post, which slide in on D D' and E, and carry A B B', which is susceptible of being depressed or elevated at one or both ends, substantially as described, and for the purpose set forth.

No. 57,447.—DAVID JACOBY, MINNOTA, ILL.—*Pat. 2,772,174*, 1880.

Claim 1.—For the combination and combination of the beam P and its lever by which the end of the plough is elevated or depressed or lowered, or a deep or shallow ploughing executed, the lever P for directing the lateral motion and the hinged paddle G for regulating the vertical motion of the plough, with the horizontally set wheels, as hereinafter described.

No. 57,688.—JAMES W. DIXON, DANIEL SHULTS, and ALLEN C. MILLER, SEASON, CAL.—*Pat. 2,782,376*, 1880.

Claim 1.—The combination of the frame in order to obtain sufficient strength for a number of ploughs by placing the diagonal bars A A' between the parallel bars A A' and the cross braces a b', substantially as described.

2.—The manner of attachment of the ploughs to their respective portions of the frame by means of the bent braces C C' C' passing over the top of and frame-work, as hereinafter shown in combination with the ploughs, substantially as described.

3.—The adjustable wheel E and support A, with the wheels G, G', supports N H, also the turn plates H H, and connecting rods L L' with upright bars L L', seated at the turn plate H, in combination with the wheels C, substantially as described and for the purpose set forth.

No. 57,878.—O. F. DUBBS, FAIRMOUTH, KY.—*Pat. 2,782,377*, 1880.

Claim 1.—The bent adjustable bars C E F, with wheels D F attached, and the brace rod K, provided with the hook ends G, all arranged and applied to a plough, substantially in the manner as and for the purpose set forth.

No. 57,881.—FREDERICK GASKILL, MINNOTA, ILL.—*Pat. 2,782,378*, 1880.

Claim 1.—A sliding plough, having the driver's seat K so attached to it to permit it to be tilted freely, horizontally, substantially as and for the purpose set forth.

2.—The beam before described mechanism for adjusting or guiding the plough A by a system of levers G E and H, and a chain L, and several parts being respectively constructed and the whole combined substantially as set forth.

No. 57,602.—STEPHEN STOUT, TROMBAY, ILL.—*Pat. 2,782,379*, 1880.

Claim 1.—The attaching of the diagonal pole K to the plough beam E by means of the universal joint L and the C' C' to M, in combination with the ground frame in which the plough is mounted, and the whole is substantially as set forth.

2.—The hinged L applied to the bar C, and in relation to the handle K of the plough, substantially as and for the purpose specified.

3.—The brace rod N applied to the plough beam E and

to the mounted beam L, substantially as and for the purpose specified.

No. 58,048.—R. B. SUMMERS and S. DEWINT, SAVANNAH, GA.—*Pat. 2,782,380*, 1880.

Claim 1.—The manner of attaching the beam B to lever and crank G, and raising or lowering the plough D by the lever and crank G, and ratchet A, as set forth.

2.—The rod J, and spring K, as described and for the purposes set forth.

No. 58,524.—THOMAS J. CORNELL, DECATUR, ILL.—*Pat. 2,782,381*, 1880.

Claim 1.—The plough standard L, pivoted on a horizontal axle K, to allow it to swing inward under the circumstances described.

2.—The crank Q in combination with the standard L, operating as set forth.

3.—The spring R, in combination with the standard L, operating as set forth.

4.—The eccentric segment W, in combination with the frame or beam of the plough, and operating substantially as described.

No. 58,370.—H. N. DUTTON, FAIRMOUTH, CAL.—*Pat. 2,782,382*, 1880.

Claim 1.—The plough frame L, parallel arms E, beam F, axle G, axle H, and pins a', b', combined and operating substantially as described, for the purpose specified.

2.—The lever J, arms F E, beam H, and frame F, combined and operating substantially as described, for the purpose specified.

No. 58,095.—I. B. EDGELL, J. W. and E. A. ALEXANDER, TROBENSBORO, IOWA.—*Pat. 2,782,383*, 1880.

Claim 1.—The construction of a plough carriage for supporting ploughs, of the adjustable A, wheels B, beam C, seat C', beam D, pivot pole G, hand lever H, and connecting rod J, substantially as described.

2.—The pendulum I, applied to the beam D of an adjustable plough carriage, which is constructed substantially as described.

3.—Elevating a plough to an adjustable beam of a carriage, so as to operate substantially as set forth.

No. 58,624.—F. S. DAVENPORT, JERSEYVILLE, ILL.—*Pat. 2,782,384*, 1880.

Claim 1.—The lever P, rod Q, and brake R, arranged and operating as and for the purpose described.

2.—The horizontal beam G, in combination with the vertical axle, substantially as and for the purpose described.

3.—The lever O, and spindle N, for regulating the length of the furrow, substantially as and for the purpose specified.

4.—Lifting the hind part of the machine by means of the lever or arm L, in connection with the chain J, wheel K, and lever I, these parts operating together substantially as and for the purpose specified.

5.—Hinging the footboard M to the plough frame, as described.

6.—Securing the tongue or draught pole to the footboard M, in the manner and for the purpose described.

7.—The sliding plough standard B', guide block O', lever A, and notched seat standard C, when used together and in connection with the other parts.

8.—Connecting the lever L with the tongue or draught pole by fastening it to the footboard, the whole operating together substantially as and for the purpose set forth.

No. 58,606.—FREDERICK S. DAVENPORT, JERSEYVILLE, ILL., in connection with ROBERT NEWTON, —*Pat. 2,782,385*, 1880.

Claim 1.—In a wheel plough, the combination, with a swing axle and ground or carrying wheel, of friction clutch mechanism and means for engaging and disengaging the latter with the ground or carrying wheel, said parts being constructed and adapted to raise the plough by locking the swing axle to the carrying wheel by friction clutch engagement, and raise the plough beam by the

draught or power of the team, substantially as set forth.

2.—In a wheel plough, the combination, with a ground wheel, a swing axle, and a plough beam connected to the latter, of a clutch mechanism connected to the axle and adapted, by engagement with the wheel, to utilize the draught of the team in turning the swing axle into upright position, and thereby raise the plough beam, substantially as set forth.

3.—In a wheel-plough, the combination, with a ground wheel, a swing axle, and a plough beam connected to the latter, of a friction clutch connected to the axle and adapted, by contact with the wheel, to turn the axle into upright position, and thereby raise the plough beam, by aid of the draught of the team, substantially as set forth.

No. 58,773.—JAMES F. CHEASEBRO, BURLINGAME, N. Y.—*Sulky-Ploughs and Harrows*—October 16, 1866.

Claim.—1.—The combination and attachment of a plough to a sulky in such manner that the plough beam shall pass under the axle of the sulky and project forward, and the plough handles project in rear of the axle, and in convenient grasp of the ploughman as he sits upon his seat, substantially as set forth and described.

2.—The combination of the guide strap B with the slide G, for the purpose of forming a connection of the forward end of the plough beam with a sulky, substantially as set forth.

3.—Connecting the rear end of the plough to a brace or foot-board D, projecting from and in rear of the axle, for the purpose and substantially as described.

4.—The driver's seat A and foot-board D, projected and supported in rear of the axle, for the purpose and substantially as set forth.

5.—The combination of a harrow M with a sulky, for the purpose and substantially as described.

No. 58,788.—R. L. DODGE and E. M. WALKER, GAITHERSBURG, Md.—*Gauges and Subsoil Ploughs*—October 16, 1866.

Claim.—1.—The construction and arrangement of the pole H in connection with the standard I and axle B, so that it may be elevated and lowered, substantially as described.

2.—The pole H, when hinged to the cross-bar of the frame so as to form a lever to raise the ploughs, in combination with the plough beams E, E', and plough C, C', when constructed for the purposes and substantially as described.

No. 59,392.—ALONZO HALE FURUKA, Ill.—*Sulky-Ploughs*—November 6, 1866.

Claim.—1.—The jack chains Y, Y', connected to the axle B and lever K, in combination with the plough beams C, C', when constructed and operated substantially as and for the purposes herein shown and described.

2.—The chains Y, Y', in combination with the axle B, lever K, and sector Q, for the purposes herein set forth.

No. 59,812.—D. BEUFRET and E. DEMOULIN, JAMUSOWIS, Ill.—*Gauges, Ploughs*—November 20, 1866.

Claim.—A plough composed of a long and a short beam with plough shares F, F', which are operated by levers G, G', in combination with the unequal crank axle C, draught pole E, placed in line with the short beam, and with the castor wheel I, all constructed and operating substantially as and for the purpose set forth.

No. 59,855.—PETER MEKKEL, St. Louis, Mo.—*Gauges, Ploughs*—November 20, 1866.

Claim.—1.—The combination of the winless M, shaft L, with its arm n and ρ , links ρ , and plough beams I, substantially as described, for the purpose specified.

2.—The adjusting of the ploughs I higher or lower to suit the depth of furrow required, and also adjusting the wheel C', by means of the shaft G, provided with the pinions f , f' , and the rack bars F, F' and slide d , provided with a ratchet, substantially as and for the purpose set forth.

3.—The fitting and securing of the front ends of the plough beams I in a cross piece H, composed of two parallel bars ρ , provided with journals m , fitted in the rack bars F, substantially as and for the purpose specified.

No. 60,005.—BRUNO VOLKMAN, New York, N. Y.—Assignor to FREDERICK VOLKMAN, same place.—*Ploughs*—November 27, 1866.

Claim.—1.—The plough frame or plough cart ABC DE F, constructed substantially as described in combination with the plough beam L, for the purpose set forth.

2.—The small balance beam ρ , in combination with the screw chain α , the screw α' , and plough beam L, substantially as described for the purpose set forth.

3.—The screw tree L, in combination with the two horizontal frame pieces d d' and the plough beam L, substantially as described for the purpose set forth.

4.—The cast shaft G in combination with the semicircle D regulating screw S and with the plough frame ABC DE F, substantially in the manner and for the purpose described.

5.—The cast axle D' D' in combination with the movable side piece E and regulating screws F, F' for the purpose of deepening the furrows as required, substantially in the manner described.

No. 2,701.—FREDERICK VOLKMAN, HOBBOKEN, N. J.—Assignor to BRUNO VOLKMAN.—*Ploughs*—November 27, 1866. Reissued July 30, 1867.

Claim.—1.—A plough cart that is made and operating substantially as and for the purpose herein shown and described.

2.—The device for raising and lowering the front end of the plough beam I, by means of the screw shaft I, fitted in the axle D, and sliding block G, the nut ρ , and plate ρ , balance bar ρ , links ρ and ρ' , all made and operating substantially as herein shown and described.

3.—The adjustable link ρ , when so made by the application of a set screw α' , substantially as and for the purpose herein shown and described.

4.—The draught chain K, attached to the under-side of the plough beam, and to the land-fule of the same, or in other words, to the lower left-hand edge of the same, substantially as and for the purpose herein shown and described.

5.—The perforated axle D', in combination with the frame B A L, and sliding block b , for the purpose of allowing the lateral adjustment of the screw shaft L, for its equivalent, substantially as and for the purpose herein shown and described.

6.—The manner herein shown and described of adjustably securing the draught bar G to the plough cart by means of the perforated axle D', bolt K, and semicircular front plate D, and pin or set-screw S, all made and operating substantially as herein shown and described.

7.—In combination with the device for adjusting the plough beam up and down the wheel L of the cart, when so arranged that by its adjustment the axle of the cart can be sunk more or less, as set forth.

8.—Hinging the front end of the plough beam directly to the screw shaft I by means of links ρ , ρ' , balance bar ρ , and nut ρ , all made and operating substantially as herein shown and described.

9.—The draught chain K, when secured to the plough in the manner described, in combination with the laterally as well as obliquely adjustable draught bar G, as set forth.

No. 60,091.—IRA W. BARTLETT, OGDEN CREEK, Ill.—*Ploughs*—December 18, 1866.

Claim.—1.—The axle and wheels E G G', combined with the roll H, and lever L, when employed in connection with the beam A, for governing the depth of the plough, as herein set forth.

2.—The combination of the ratchet bar h and set-screw α , with the toothed coupler bar I, arranged and operating as herein set forth.

No. 60,721.—JAMES M. HAMMITT and HENRY T. MILLER, FOLLER, IOWA.—*Plough Cart*—January 1, 1867.

Claim.—A plough carriage having, in D, spring G, lever E, swing I, swinging lever H, ratchet K, pawl L, and handle and spring M, adjusted, combined, and arranged substantially as herein specified.

No. 61,030.—JOHN H. BARRINGER, HILLSBORO, Ill.—*Cultivators and Sulky Ploughs*—January 8, 1867.

Claim.—1.—The arrangements herein described of a combined cultivator and sulky-plough connected, and operating separately when the parts are fitted, substantially as herein described.

2.—The arrangement of a shifting plough F, connected with the beam *a* by the adjustable plates *g*, *h*, and suspended in the front by the joint *b*, and the bar *c*, and in the rear by the hook *d*, to the arm *e*, and the vibrating bar *f*, substantially as and for the purposes herein described.

3.—The arrangement of the shifting cultivator *u* *v* attached cut or line with each other to the bent non-beams *z*, and suspended in front by the jointed connections *y*, and behind by the hooks *t* to the arms *z*, *z'* of the vibrating bar *z*, substantially as and for the purposes herein described.

4.—The arrangement of a guide rod or lever *k*, connected with the draught pole D, substantially as and for the purpose herein specified.

No. 61,151—GEORGE BURKETT and SAMUEL M. GASKELL, BRIGHTON, OHIO.—*Sulky-Plough*.—*January 15, 1867*.

Claim.—1.—The attaching of the rear part of the plough beam by a chain or rope *b* to a pulley *d*, on a shaft H, on the homms *a* of the draught pole, and shaft H having a lever I attached, and all arranged substantially as and for the purpose specified.

2.—The slotted plate K attached to the platform D, in such a manner that it may be turned forward to embrace the plough handle and serve as a bearing or fulcrum for it, and be turned backward *h* from the plough handle when it is necessary to liberate the latter, substantially as set forth.

No. 61,408—J. H. DOUGHTY, ALBANY, OREGON.—*Gang-Plough*.—*January 22, 1867*.

Claim.—1.—The attaching of the plough beams F F to slides H H, fitted between suitable guides *c*, at the inner sides of the bars A A, in combination with the foot lever I attached to one of the slides H, and the pin K, passing through any of a series of holes in the other slide H, substantially as and for the purpose set forth.

2.—The windlass L, having the cords or chains M M, attached, and the latter connected to the plough beams F F to operate in the manner substantially as and for the purpose specified.

3.—The windlass R having a cord or chain A attached, which is connected to the plough beams F F, one of the bearings of the windlass being fitted in a slide S, and having a pulley C on one end, around which end a pulley W, on wheel D, a belt *h* passes in combination with the lever T, attached to slide S, H being arranged to operate in the manner substantially as and for the purpose set forth.

No. 61,470—ISRAEL LINDO, TERRE HAUTE, IND.—*Plough*.—*January 22, 1867*.

Claim.—1.—The adjustable beams F F, occupying positions at opposite sides of the machine and outside of the wheels, and each adapted for the attachment of one or more ploughs, substantially as and for the purpose herein specified.

2.—The combination with the ploughs G G, beam F F, of the collars E E, fitted to turn upon the end of the axle, and adjusted by means of levers or otherwise, as and for the purpose specified.

3.—The combination of the plough beams F F, collars E E, levers H, and notched levs I, all arranged and operating in the manner and for the purpose herein set forth.

4.—The adjustable double tree K, in combination with the independent homms D D, whereby the draught may be transferred to either end of the machine, substantially as and for the purpose described.

No. 61,885—H. B. SMITH, EPHRA, ILL.—*Plough Attachments*.—*February 5, 1867*.

Claim.—1.—The tongue G, attached to one end of M on the plough beam A, by means of a clip N, in such a manner that a universal joint connection will be obtained, substantially as and for the purpose set forth.

2.—The attaching of the plough beam A to the frame D, through the medium of the clip H, attached to the frame,

and by means of the plough beam *m* fitted in it, substantially as described.

3.—The adjustable wheel F, fitted on the crank arms *a*, and supported by the levers I, substantially as and for the purpose set forth.

4.—The bar K, or an equivalent chain attached to the clip H, and extending along underneath the plough beam, and connected at its front end to the levers at the front end of the plough beam, substantially as and for the purpose herein set forth.

No. 62,430.—C. H. TUTTLEFIELD, TRUSHER, ME.—*Sulky-Plough*.—*February 26, 1867*.

Claim.—The slotted non-guid, *a*, made fast to the cross bar H, and the vibrating non-guid, *a'*, connected with the axle E, in combination with the rod *b* and plough beam G, arranged and operating substantially as and for the purposes herein described.

No. 62,615—O. P. DILES, LAMBERT, KY.—*Sulky-Plough*.—*March 5, 1867*.

Claim.—The arrangement of the draught pole F and bars F C with the land and furrow wheels D K respectively attached to the base rods O P and plough beam A, for the purpose of forming a new and improved sulky plough, as set forth.

No. 62,616.—RANSOM K. LARAWAY and JEROME LARAWAY, BATTLE CREEK, MICH.—*Plough*.—*March 5, 1867*.

Claim.—1.—The manner herein described of attaching the frame B, with gang ploughs attached, to the frame A attached to driving wheels, and of attaching to the same plough H, as described and set forth.

2.—The manner herein described of raising and lowering the frame B, with ploughs attached, or single plough, by means of lever C, pawl and ratchet D and E, and flap *a* and chain G, in the manner set forth and described.

No. 63,050—CHARLES KINKEL, New York, N. Y., assignor to ALEXANDER WEDDLE, same place.—*Plough*.—*March 19, 1867*.

Claim.—1.—The general construction of the plough, consisting of the plough frame C in connection with the axle D, the plough beam B, screw tree F, and shaft H, substantially as described.

2.—The plough frame C, in combination with the screw tree F and universal joint G, substantially as set forth.

3.—The universal joint G, applied to the plough beam B and screw tree F, substantially as described.

4.—The movable axle D in combination with the plough frame C, substantially as described.

5.—The application of the improvement to ploughs of the usual construction, by means of the cast iron shoe R, substantially as described.

No. 64,152—E. SEXTON, MANSION, MASS.—*Gang-Plough*.—*April 23, 1867*.

Claim.—1.—The adjustable levs B, provided with the tubular guides or supports F for supporting the ploughs, substantially as shown.

2.—In combination with the laterally adjustable bars B, the spring rods *z* and levers I and *u*, arranged to operate as set forth.

No. 64,358.—HORACE L. PERRY, AUBURN, N. Y.—*Gang-Plough*.—*April 30, 1867*.

Claim.—1.—The cast-rod plough D, when constructed and used in combination with the ligned plough frame C, main frame A, and wheels E B, for the purposes and substantially as herein described.

2.—The combination and arrangement of the pinions E E, crank shaft F, hinged rods G G, rat-het wheel H, and stop lever H', for the purposes and substantially as herein set forth.

No. 64,850.—ELISHA A. CHASE, ROSEBORN, ILL.—*Wheel-Plough*.—*May 21, 1867*.

Claim.—A wheel-plough having the stationary frame A, pivoted frame F F', plough beam D and elevating levers G G G', arranged to operate substantially as and for the purpose described.

No. 64,923.—J. W. CURRA, SAN LEONARD, CAL.—*Gang-Plough*.—*May 21, 1867*.

Claim.—1.—The combination and arrangement of the shaft *z*, the segment arms *a*, *a'*, the axles *z'* of the wheels,

1 D, the hand lever *h*, and the rack *k*, for raising and lowering the gang-ploughs A A, substantially as herein described.

2.—The arrangement of the draught pole F, pivoted to the plough beams B B, and depressed and elevated by the screw *a*, substantially as and for the purpose set forth.

No. 65,087.—JOSEPH and JAMES INGHAM, SAN JOSE, CAL.—*Gang-Ploughs*.—May 28, 1867.

Claim.—1.—The movable pivoted bars C C' with the segments D D', wheels E E', and pinions F F' to raise and lower the ploughs, substantially as described.

2.—The two-part axle G with the vertical connecting links K K', to make the ploughs cut to an equal depth, as described.

3.—The eyes L L', together with the bar M and screw *a*, for the purpose of regulating the draught, substantially as described.

No. 65,094.—L. B. LATHROP, SAN JOSE, CAL.—*Gang-Ploughs*.—May 28, 1867.

Claim.—1.—The rotary cutters *d*, attached to the wheels C, and fanning flanges thereon, for the purpose of acting as land sides for the ploughs, substantially as set forth.

2.—The axle B, when arranged obliquely below the tongue A, and when adjustable by means of the screw bolt *a* and slotted arm *b*, substantially as and for the purpose herein shown and described.

3.—The devices for raising and lowering the ploughs, consisting of the screw K, rods *l* and *h*, and of the axle B, lugs *t* and *g*, bar F, and bolts *c*, respectively, as set forth.

4.—The double tongue A M, in combination with the wheel L, supporting the end of the main tongue, and with the hinges *U* *n* and *o* *p*, substantially as herein shown and described.

5.—The plough beams E, when bent so as to form offsets at the top of the mould boards, substantially as and for the purpose herein shown and described.

No. 65,198.—D. S. FISHER, CEDAR SPRING, IND.—*Ploughs*.—May 28, 1867.

Claim.—1.—The rising and falling or adjustable plough bars E, F, one or more arranged with a lever or levers C, D, and having rotary coulters J attached, all arranged substantially as and for the purpose set forth.

2.—The spring catches J', one or more, arranged with the bars E, F, and levers C, D, substantially as and for the purpose specified.

3.—Providing the coulters J' with the radial ribs *a*, substantially as and for the purpose set forth.

No. 65,709.—F. VALKMANN, HOBOKEN, N. J.—*Ploughs*.—Jan. 11, 1867.

Claim.—1.—Securing the upright screw shaft D in the axle A, in the manner set forth, and clamping it by means of a set screw *a'* and clamp E, substantially as herein shown and described.

2.—The link J, when arranged laterally adjustable on the plough beam, substantially as herein shown and described, and for the purpose of changing the draught of the chain I.

3.—The adjustable draught bar G, when secured by a bolt *t* to the solid axle A, and when connected with the draught chain I, substantially as set forth.

4.—Securing the front end of the plough beam to a vertical rod D, which projects from the axle of a cart, substantially as herein shown and described, the said rod not being secured or supported in any frame or other device that is ranged above the axle A, and in contact with the same, substantially as set forth, and for the purpose of making the whole car lighter and of simpler construction.

No. 65,768.—C. L. EASTMAN, RHODES POINT, ILL.—*Gang-Ploughs*.—Jan. 18, 1867.

Claim.—1.—The combination of the axle A and hinged bar C, provided with the lever *l*, and having the ploughs attached thereto, as described, all constructed and arranged to operate substantially as set forth.

2.—The combination of the lever L, connected to the plough beams and having a fulcrum at or near the axle, with the elbow lever E, pivoted to the tongue, or equivalent *a*, arranged to operate as described.

No. 65,834.—JOHN C. ROGERS, ALDEN, N. V.—*Sulky Ploughs*.—Jan. 18, 1867.

Claim.—1.—Connecting a sulky to a plough by means of the link or universal joint D', or equivalent, for the purpose and substantially as herein described.

2.—The combination and arrangement, with a plough of common construction, of the rack D, link D', pinion E, crank shaft E' F, weighted pawl G, and ratchet wheel G', all arranged upon a sulky, in the manner and for the purpose substantially as described.

3.—The projection *a'*, or equivalent, formed upon or connected to the lower end of the rack D, in rear of the link or universal joint D', for the purpose and substantially as described.

4.—The spring rods I I, when constructed and used for the purpose substantially as herein set forth.

5.—The jaws J, in combination with the pole of a sulky-plough, for the purpose and substantially as described.

No. 66,039.—JOHN C. FEIL, ARENZA, ILL.—*Gang-Ploughs*.—Jan. 25, 1867.

Claim.—1.—The lever *a*, having the cam *a'* attached and arranged to operate in combination with the tongue C and beams B and W', as shown and described.

2.—Constructing the crank axles E with a tubular portion to fit on the end of the wooden axle A, as shown and described.

No. 66,155.—JOHN T. LEGG, LEWIS COUNTY, MO.—*Gang-Ploughs*.—Jan. 25, 1867.

Claim.—1.—The ploughs A A', beams *c* *c'*, rods F F' and G G', the compound lever H H', lever handles K K', and ratchets M M', arranged, combined and operating for the purpose and in the manner substantially as described.

2.—The lever *n* *n'* and ratchet *m* *m'*, arranged, combined and operating for the purpose and in the manner described.

3.—The stay chains P P', the beams E E', the tongue Q, the strap R, and the stiffening pole S, arranged, combined and operating in the manner and for the purpose as heretofore described.

No. 66,477.—HENRY H. EBAUGH, HEREFORD, MD.—*Ploughs*.—July 9, 1867.

Claim.—1.—Mounting the supporting wheels B C in swing frames D E, pivoted to the main frame A, arranged and operating substantially as and for the purpose herein specified.

2.—The winding pulleys N O, of different sizes, in combination with the chains, bands, or ropes *n* *o*, and swing frames D E, substantially as and for the purpose herein set forth.

3.—In combination with the foregoing, the pulleys P R, crank S, and its ratchet and pawl, substantially as and for the purpose herein specified.

4.—The gauge wheel I, when arranged and operating with the swing frames D E, as and for the purposes set forth.

5.—The arrangement of the pole or tongue G in the roller H and guide socket *g*, as herein specified.

No. 66,583.—ROBERT R. GRAVES, MONTGOMERY, ALA.—*Gang-Ploughs*.—July 9, 1867.

Claim.—1.—The combination of the draw beam C, having the segment spur wheel *c'* with the vertical shaft U, having the spur wheel *i*, substantially as and for the purpose described.

2.—The combination of the movable frame F F', with the shaft I, wheel M, endless chain M', and wheel *m*, worked by the crank *m'*, substantially as and for the purpose specified.

3.—The combination of the rails K K, springs *k* *k'*, arms *k* *k'*, trucks *f* *f'* and frame F F, substantially as and for the purpose described.

4.—The combination of the rod N, spring *n'*, lever P and arms *r* *r'*, substantially as and for the purpose specified.

No. 66,748.—JAMES L. SPENCER, WELLSVILLE, VA.—*Sulky-Ploughs and Tobacco-Hiller Attachment*.—July 16, 1867.

Claim.—1.—The combination and arrangement of the

ploughs G G' G' G', with the arms M M', and *l*, substantially as and for the purpose described.

2.—The roller L, having the short arms *l l* adjustably in position, and having the handle P, substantially as and for the purpose described.

3.—The pole T, having the shovel *t*, and the blunt arm P', substantially as and for the purpose specified.

4.—The combination of the gear wheel P, the pinion *g*, the lever K, the shaft Q, bearing the wheel S, and the pivoted pole T, bearing the shovel *t*, and the blunt arm P', substantially as and for the purpose described.

No. 67,351.—D. C. RIGGS, St. JOSEPH, MO.—*Gang-Ploughs*.—July 30, 1867.

Claim.—1.—In combination with the ploughs B, the employment or use of horizontal cutters D G, arranged and applied to operate in the manner substantially as and for the purpose set forth.

2.—The lifting or elevated bar K, when arranged in connection with the axle, draft pole and plough beams, to operate in the manner substantially as and for the purpose specified.

3.—The shaft I, on the axle H, provided with the arms *k k l*, and arranged in relation with the elevating bar and plough beams, to operate in the manner as and for the purpose set forth.

No. 67,483.—ROBERT BAXTER, FRENCH CAMP, CAL.—*Gang-Ploughs*.—Aug. 20, 1867.

Claim.—The head piece or flange, in combination with and forming part of the standard, in the manner and for the purpose set forth.

No. 3,244.—ROBERT BAXTER, FRENCH CAMP, CAL.—*Gang-Ploughs*.—August 6, 1867.—07,483. *Reissued Dec. 20, 1868.*

Claim.—A standard for the support of the mold board, or other like part of a plough, formed in one piece with a projecting head, for the attachment of the beam, substantially as described.

No. 67,501.—ALLEN T. COVELL, SAN LEANDRO, CAL.—*Gang-Ploughs*.—August 6, 1867.

Claim.—1.—Attaching the beams A A' to the pole B between the reaches *a a* by the rod C, so that the ploughs may be made to move up, and down swinging on the axle J and rod by operating the lever G, when disengaged, substantially as described.

2.—Attaching the axle J' and axle bed J, angularly to the frame, the clips K K, and adjusting blocks L, substantially as described and for the purposes set forth.

3.—The links D D, attached to the beams or frame and the rigid arms E E of the roller operating in them in combination with the beams A A and pole B, substantially as described.

4.—The construction, arrangement and combination of the beams A A, pole B, reaches *a a*, rod C, axle and axle-bed J and J', temper blocks L, roller F, and arms E E, together with links D D, substantially as described and for the purposes set forth.

No. 67,772.—JAMES D. KINCAID, BOWLING GREEN, MO.—*Ploughs*.—August 13, 1867.

Claim.—1.—The rock shafts or rollers C C and their cranks or elbows *c c* of the lever C', and the chains *a a*, when combined with the post D of the plough, as and for the purposes herein set forth and described.

2.—The combination and arrangement of the levers E, the chains or rods E', the fulcrum arms *e e*, and the spring catch, substantially as described and set forth.

3.—The attachment of the plough beams to the frame A by means of the device *d d' d''*, substantially as described and set forth.

No. 67,814.—H. P. STAFFORD, DECATUR, ILL., assignor to himself and M. C. WYKEL, same place.—*Gang Ploughs*.—Aug. 13, 1867.

Claim.—1.—The attaching of the plough beams to the carriage through the medium of the pen-lan swivel guide M secured to the draught pole D, and the pins *a* in the sides of the beam H, between which pins the guide is fitted, substantially as and for the purpose specified.

2.—The attaching of the plough beam H' to the beam H by means of the pivot *b* and the guide N, substantially as and for the purpose set forth.

3.—In combination with the mode of attaching the plough beams to the carriage, as shown, the application of the draught power direct to the plough beams, substantially as set forth as and for the purpose specified.

4.—The lever P, having its fulcrum pin *p* fitted in a swivel Q on the axle A and its rear, and connected by a link *r* with a swiveled roller *r*, which works under an oblong loop or staple O on beam H, substantially as and for the purpose specified.

No. 68,005.—S. J. and G. M. GILHAM, CARLSLE, ILL.—*Gang-Ploughs*.—August 27, 1867.

Claim.—The bars H H, embracing the beams D D, and operated by the lever G, arranged in combination with the frame A, in the manner substantially as and for the purposes set forth.

No. 68,277.—G. C. AVERY, GONN'S CREEK, IND.—*Gang-Ploughs*.—August 27, 1867.

Claim.—The hinged levers D D, vertical bars G G, loops *a a*, cords *g g*, and lever H, the whole combined and operated substantially as and for the purpose herein set forth and described.

No. 68,673.—H. J. WATTLES, ROCKFORD, ILL.—*Gang-Ploughs*.—September 10, 1867.

Claim.—1.—The combination and arrangement of the ploughing frame B B, wheels H H', castor wheel F, frame support E, chains I J J', with crank *f*, operating substantially as described and for the purpose set forth.

2.—The combination and arrangement of the wheel H' with the sliding support K, groove piece L, segment lever M, spring stop *h*, with stationary segment *k*, when constructed and operating as described.

3.—In combination with the chain support I J J', the arrangement of spring pawl *c*, crank *f*, and ratchet wheel *i*, operating substantially as described.

4.—The combination of the stubble turner N with a ploughing mechanism, as described.

5.—Attaching the team to the ploughing mechanism by the evener O, and the chains P P' of unequal length, the whole arranged to draw directly upon the ploughs in such manner as to avoid all side draught, substantially as described.

No. 68,718.—LORENZO DOMING, OREGONA, ILL.—*Riding Attachments for Gang-Ploughs*.—September 10, 1867.

Claim.—1.—The attaching of the plough to the draught pole A of the riding attachment through the medium of the bell crank J, rods I K, and lever M, or their equivalents for raising the front end of the beam, in connection with the suspended rack K, and the bar P, jointed or hinged to the draught sole A, and connected with the plough beam by the stirrup O, substantially as and for the purpose specified.

2.—The cam S, on the axis or fulcrum pin of the lever L, in combination with the suspended rack R and fixed pawl *h*, all arranged substantially as and for the purpose set forth.

3.—The axle B B', projecting from opposite sides of the draught pole A at different points, and braced by the diagonal bar C, when said parts are used as a riding attachment for a tillage plough, substantially as and for the purpose specified.

No. 68,777.—HORATIO MINUSE, MILAN, OHIO.—*Carriage-Ploughs*.—September 10, 1867.

Claim.—The special arrangement and combination of the herein described plough and carriage, when operated in the manner and for the purpose substantially as set forth.

No. 69,323.—MARSHALL S. CURTISS, BRADFORD, ILL.—*Coupling Ploughs and Wheeled Carriages*.—October 1, 1867.

Claim.—1.—The curved and slotted arm C, its form and manner of adjustment between the cars I, combined with the plough beam B, substantially as and for the purpose set forth.

2.—The forward guide Q, combined with the arm sockets N, arranged to allow the forward end of the plough beam B to have a lateral and vertical motion, substantially as set forth.

3.—The arrangement of the seat F in front of the crank

axle E, combined with lever D, the whole being arranged to set plough B in the ground, or lift it out of the ground, as described and set forth.

No. 60,078.—JOHN L. KEASOR, LACOMA, N. H.—*Self-acting Plough Header*.—October 8, 1867.

Claim.—1.—Attaching one or more ploughs to the side of a wagon, substantially as herein shown and described.

2.—The combination of the horizontal bar C, vertical bar E, horizontal beam F, and brace bar H with each other and with the plough B and wagon A, substantially as herein shown and described and for the purpose set forth.

3.—The combination of the pivoted bar I, chain K or its equivalent, and lever L with each other and with the plough B and wagon A, substantially as herein shown and described and for the purpose set forth.

4.—The combination of the lever plough cleaner X with the plough B and wagon A, substantially as herein shown and described and for the purpose set forth.

No. 70,237.—JAMES D. MARSHALL, KEOKUK, MO.—*Plough and Power Combination*.—October 29, 1867.

Claim.—The carriage A, ploughs B, vertical posts a, swing frame D, and struts d, when combined and arranged in the manner described.

No. 70,243.—JOSEPHUS MOORE, BUSHNELL, Ill.—*Ploughs*.—October 20, 1867.

Claim.—1.—The combination of the beams d and e the rod r and the spring lever k, as and for the purpose described.

2.—The combination of the lever n and handle t with the axles of the wheels a and the main frame A, in manner and for purpose specified.

3.—The combination of the elbow lever v with the spring w, and connecting rod u, substantially as set forth.

4.—The combination of the elbow lever r, the spring w, and connecting rod u, with the rack plate v, and lever n, substantially as described.

No. 71,053.—HORACE L. PERRY, AVONDA, N. Y.—*Grain Ploughs*.—November 10, 1867.—Improvement on his patent July 30, 1867.

Claim.—1.—In a going plough having a main frame A, and a plough frame C, substantially as herein described, hinging the main frame A at one side upon the axle, so that it may be leveled in the manner and for the purpose set forth.

2.—The rib or flange O formed upon the supporting wheels, substantially as and for the purpose set forth.

No. 71,304.—JAMES HARRIS, SANTA CLARA CO., CAL.—*Grain Ploughs*.—November 29, 1867.

Claim.—1.—The locking bar E, to which the ploughs are attached, and by which they are turned over upon the frame.

2.—The elevating lever F, the adjustable seat I, the gauge screw J, the adjusting screws K K, the lever rod M, in combination with the locking bar E, as described, and substantially as set forth.

No. 72,375.—IRENEUS DONALDSON, TOLLAND, IOWA.—*Self-acting Ploughs*.—December 17, 1867.

Claim.—1.—In combination with the plough and carriage frame, the compound levers I I' and casters H H' placed in front and rear of the plough for regulating the cut, substantially in the manner set forth.

2.—In combination with the driver's seat G, the oscillating arm L, cord K, and adjusting levers I V, arranged substantially as and for the purpose set forth.

No. 72,730.—WILLIAM FOSTER, GREENFIELD, IND.—*Grain Ploughs*.—December 31, 1867.

Claim.—1.—In combination with the pivoted tongue C, the guide straps or bars L, pivoted jaws M M', and treadles N N' substantially as and for the purpose described.

2.—In combination with the treadles N N' and pivoted jaws M M', the spring O, and stops P P', substantially as and for the purpose specified.

3.—The upright lever K, in combination with the frame F F', and four board A' b, arranged and adapted to be operated substantially as and for the purpose set forth.

No. 72,984.—WILLIAM G. CROSSLEY, SHELTON, WIS.—*Compound Sulky Ploughs and Cultivators*.—January 7, 1868.

Claim.—1.—The arrangement and combination of the beam C, rod z, spring catch n, and lever h, for regulating the position of plough E, substantially as and for the purpose set forth.

2.—The combination of rod S, having a lever S', with arms Q Q, elbows T T, loops U U, and shanks M L, arranged to raise and lower shovels f f f f, and hold them in position as described, in conjunction with bars O O O, as set forth.

3.—The loops K H, in combination with a movable brace G, having the plate J arranged so as to fit either loop, as and for the purpose set forth.

No. 49,288.—WILLIAM G. CROSSLEY, APPLE RIVER, Ill., assignor to BLACK, IRVINE & CO.—*Wheel Ploughs*.—July 29, 1868. Reissued June 4, 1872.

Claim.—1.—The combination, with a sulky having a rigid pole, of a plough beam F, rigidly attached to the sulky frame by a catch H, at the front end of the beams, and by a hinge e, at about the centre of a curvature of the plough cast-iron, substantially as specified.

2.—The beam F, hinged and held in position as described, in combination with the rod r and spring catch H, the parts being arranged as shown and described.

3.—The combination of the shaft E, having lever F, with the elbows c, arms d' D D', and shanks b' b', substantially as specified.

4.—The loops K K', in combination with a moveable brace K', having the plate L to fit either of said loops, substantially as specified.

No. 73,143.—JOSEPH WARWICK, SPRINGBOROUGH, OHIO.—*Self-acting Ploughs*.—January 7, 1868.

Claim.—1.—The device for lowering and raising the plough beam, consisting of the plates s and t, the former being slotted, pivoted as described, adjusted by means of the set screws k, and operated by means of the lever G and low rack H, substantially as described.

2.—The screw shank c of the sheath k, and nut L, in combination with the standard P, attached to the land side I, by means of the bolt p, for the purpose of lowering the plough point, substantially as described.

3.—The mouldboard I J, with its part J bent around the sheath and secured to the same, substantially as and for the purpose described.

4.—The share M, with its bent part N connected to the land side L, and with the latter forming the point, attached and constructed substantially as described.

5.—A plough with separate mouldboards and share, both attached to the sheath in such a manner that no bolt or rivet is used on their surface, substantially as described.

No. 73,173.—JOHN W. DODD, FORK, ILLINOIS, IOWA.—*Cultivators*.—January 7, 1868.

Claim.—1.—The combination of the frame C, strengthening braces D, and diagonal plough beam E, to which the standard F of the ploughs G are attached, with each other, the said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

2.—Connecting the axle B to the tongue I of the frame C by the inclined bars J, and jointed or link connection K, substantially as herein shown and described.

3.—The combination of the cross bar M and adjustable chains L with the inclined bars J and frame C, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the lever N, chain P, and bail or bar R, with the frame C and axle B, substantially as herein shown and described, and for the purpose set forth.

5.—The combination of the levers S and T with the frame C, axle B, and inclined bar J, substantially as herein shown and described, and for the purpose set forth.

No. 73,480.—SETH WAY, LAFORIE, IND.—*Grain Ploughs*.—January 21, 1868.

Claim.—1.—The mode of supporting the weight by the tongue I, and of elevating and lowering the ploughs D D by the axle B, lever G, woodlax P, and catch J, respectively, constructed and arranged substantially as set forth.

2.—The combination of the axle B, lever G, windlass F, tongue I, and equalization doubletree H, respectively, constructed and arranged substantially as set forth.

No. 73,607.—DAVID W. HUGHES, QUINCY, ILL.—*Ploughs*.—January 21, 1868.

Claim.—1.—The placing of the ploughs at the outer sides of the wheels B B, substantially in the manner as and for the purpose set forth.

2.—Having the ploughs or shales I J placed in reverse oblique positions for the purpose of dispensing with a landside, to avoid friction and draught, and to keep the implement in line with the line of draught, as set forth.

No. 73,707.—A. FARROW, CARROLL TOWNS, ILL.—*Gang Ploughs*.—January 28, 1868.

Claim.—1.—The combination and arrangement of the lever C, link *c*, and traction connections *b b'*, herein shown and described.

2.—The lever C, arm C', sector C', rack C', and plough beam B, when combined and operated substantially in the manner and for the purpose herein shown and described.

No. 74,238.—W. W. MATTHEWS, VATES CITY, ILL.—*Gang Ploughs*.—February 11, 1868.

Claim.—1.—The braces *a a*, draught bars *b b*, standards *c c*, constructed and in combination substantially as shown, for the uses and purposes herein set forth.

2.—The method of raising, lowering, and securing the front end of plough beam by means of the levers *e* and K, pin *e*, clevises *h h*, draught bar *i*, cog wheels *m* and *n n*, with their friction roller, flanges, the lock *o*, crank lever *p*, and treadle *q*, or by any means substantially the same, all in combination and as shown, for the uses and purposes herein set forth.

No. 74,268.—A. Q. ALLIS, DAYTON, OHIO.—*Sulky Ploughs*.—February 11, 1868.

Claim.—1.—The serrated link B, or its equivalent, for the purposes and substantially as herein described.

2.—The lever and bar D, or its equivalent, used for the purpose substantially as herein set forth.

3.—The combination and arrangement of the guide bars F and the catch and lever G, for the purpose and substantially as herein set forth.

4.—The combination of the several parts, for the purpose and substantially as herein set forth.

No. 74,551.—ELIAS LEVEE, WEST POINT, IOWA.—*Sulky Ploughs*.—February 18, 1868.

Claim.—1.—The combination of the sliding guard or guide bars J and K with the plough beam A and with the tongue F or frame of the sulky, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the adjustable bar R, adjustable bent lever S, and bar or handle U with each other, and with the plough beam A and support T, attached to the tongue F or frame of the sulky, substantially as and for the purpose set forth.

3.—The combination of the crank journal *g*, slotted support *g'*, wheel I, and axle, substantially as described and for the purpose specified.

No. 75,009.—GEORGE STEINFEGGER, HIGHLAND, ILL.—*Gang Ploughs*.—March 3, 1868.

Claim.—The swinging beams B B', when lifted by the lever *h* and link *h*, substantially as shown and described, in combination with the lateral braces *l*, eye plates *l*, and bolts *l*, or their equivalent, all as and for the purpose set forth.

No. 75,268.—CHARLES HESS, LYONS CITY, IOWA.—*Gang Ploughs*.—March 10, 1868.

Claim.—1.—The slot T in the head piece, and axle to adjust the tongue.

2.—The iron beams, when used in a gang plough.

3.—The combination and arrangement of the parts, when constructed and used as above set forth.

No. 75,567.—WILLIAM NELSON, CACHERVILLE, CAL., assignor to himself, C. E. MOORE, and A. J. PRASTER.—*Gang Ploughs*.—March 17, 1868.

Claim.—1.—The attaching of the plough beam N N to the axle A by means of the boxes L L, constructed substantially as shown, in combination with the frame C, to

which the draught pole D is attached, said frame being connected to the axle A, as shown, and all arranged to operate in the manner substantially as and for the purpose set forth.

2.—The notched segment bar G, in combination with the lever H and arm J, connected by the chain I, and attached respectively to the draught pole D and the axle A, and all arranged to operate in the manner substantially as and for the purpose specified.

3.—The yokes or frames O, provided with the screws *l*, and attached to the lower plates *h* of the boxes L L, with the plough beams N passing through them, substantially as and for the purpose set forth.

No. 75,832.—C. N. RAKEWELL, NORMAL, ILL.—*Sulky Ploughs and Harrows*.—March 24, 1868.

Claim.—1.—Broadly attaching the same draught to both the plough beams and carriage, by divided tugs, in such manner that each draught is independent of the other, as herein specified.

2.—The combination of the frame A, supported upon wheels B, driver's seat E, and lever F and chains G and H, for suspending adjustably a plough or harrow, substantially in the manner set forth.

3.—The combination of the chains G and H, for suspending the plough or harrow, and lateral chains H', attached to the frame, substantially as and for the purpose set forth.

No. 75,871.—GEORGE J. DAHL, STOCKTON, CAL.—*Gang Ploughs*.—March 24, 1868.

Claim.—1.—A plough standard, constructed substantially as shown and described.

2.—The offset *n n* of the offset *m*, as and for the purpose set forth.

3.—The tenon hooks *n' n'* of the adjustable landside *m'*, as and for the purpose set forth.

4.—The head piece *h* of the standard D, constructed as described, and made with the central opening *i*, as and for the purpose set forth.

5.—The adjustable landside *m'*, in combination with the standard D, arranged in the manner described.

6.—The scraper *s*, in combination with the castor wheel *d*, as and for the purpose set forth.

7.—A series of ploughs, constructed and operating as set forth, in connection with a frame of the kind described.

No. 75,805.—WILLIAM S. GATLIN and BENJAMIN R. HUBBARD, GREEN TOP, MO.—*Gang Ploughs*.—March 24, 1868.

Claim.—1.—The construction and arrangement of the draw bars *h*, the links C, the levers C', and the racks C₂, with reference to the frame A' and the plough beams B.

2.—The device, D, D', D₂, D₃, and *d*, for lifting the ploughs up out of the ground, substantially as described and set forth.

No. 75,001.—W. E. HARDIN, BOWLING GREEN, MO.—*Ploughs*.—March 24, 1868.

Claim.—1.—The lifter D *d'* D₂ D₃, when constructed and operated as described and set forth.

2.—The adjustable axle A', when constructed and employed in the manner shown and described.

No. 75,025.—JOHN L. KEASOR, LACONIA, N. H.—*Gang Ploughs*.—March 24, 1868.

Claim.—1.—The combination of the vertical standards M, eye bolts or keepers *n'*, vertical bars N, horizontal bars O, and keepers R S with each other, with the ploughs G or H, and with the longitudinal bars F, substantially as herein shown and described, and for the purpose set forth.

2.—In combination with the shaft U, arranged as shown and described, the cams V, chains T, and horizontal bars F, all constructed and operating as described, whereby the ploughs G H are raised and lowered.

3.—The construction, combination, and arrangement of the adjustable lever W with the shaft U, for the purpose of operating said shaft, substantially as herein shown and described.

4.—The combination of the draught chains I with the bolster E and forward ends of the plough beams *c' or h'*, substantially as herein shown and described.

5.—The combination of the chains J with the forward

ends of the plough beams s' or s'' , and with the longitudinal bars E, substantially as herein shown and described.

No. 75,941.—ISAAC B. MAHON, DENKIEK, OHIO.—*Cultivator and Gang Ploughs*.—*March 24, 1868*.

Claim.—1.—Constructing the frame A of a single bar, bent so as to form three sides of a quadrangle, and braced by the bars F applied to the frame and axle, substantially in the manner as and for the purpose set forth.

2.—The construction of the plough beams K K' arranged with and applied to the main frame A to operate in the manner as and for the purpose herein set forth.

3.—The bar W, applied to the beams K K', substantially as and for the purpose specified.

4.—The oblique draught or brace rods V V', applied to the carriage and to the plough beams, substantially in the manner as and for the purpose set forth.

5.—The beam O, attached to the draught pole, and connected with the plough beams, in the manner substantially as and for the purpose herein set forth.

No. 76,283.—GEORGE F. WILLEV, LACONIA, N. H.—*Plough-Carriage*.—*March 31, 1868*.

Claim.—The construction of the carriage A A A, with the plough P and attachments, combined and adjusted as shown in the drawings.

No. 76,447.—W. F. HIGGINS and JEROME PERRY, WASHINGTON, CAL.—*Gang Ploughs*.—*April 7, 1868*.

Claim.—1.—The combination of the inclined beams I and K, braces or supporting bars J and L, adjustable pivoted M, and pivoted bars H, with each other, and with the plough frame F, sulky or wagon frame A, and axle B, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the lever P, connecting bar O, and arm N, with each other with the axle B and frame work of the sulky or wagon, substantially as herein shown and described, and for the purpose set forth.

No. 76,735.—MATTHEW FLINN, ST. LOUIS, MO.—*Gang Ploughs*.—*April 14, 1868*.

Claim.—1.—The sliding blocks c , connecting rods c' , and sectors c'' , when arranged and employed substantially as herein shown and described, for the purpose of transmitting the draught from the axle to the ploughs.

2.—The sectors of sector D, pinion d , and beams B', when combined and arranged as herein shown and described.

3.—The hook d' , and lever d'' , when combined with the beam B' and sector D, as described and shown.

No. 76,848.—B. W. SUTHERLEN, FREESPORT, MINN.—*Sulky-Ploughs*.—*April 14, 1868*.

Claim.—1.—The combination of the axle E, standards B B, and plough A, working loosely between the standards, so as to admit of a plough of any construction being suspended by the chain e' , and drawn by the chain e'' , substantially as and for the purpose specified.

2.—The frame I, in combination with the pulley G and lever L, substantially as and for the purpose described.

3.—The combination of the lever L, frame I, pulley G, chains e' , and plough A, substantially as and for the purpose specified.

No. 77,272.—WILLIAM GALLAGHER, SUFFERSBURG, WIS.—*Ploughs*.—*April 28, 1868*.

Claim.—1.—The combination of the vertical bar E with the axle B and forward end of the plough beam F, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the levers K with the plough beams F and vertical arms or bars E, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the braces O with the axle B and plough beams F, substantially as herein shown and described, and for the purpose set forth.

No. 77,617.—LEAVITT HUNT, WEATHERSFIELD, VT.—*Sulky-Ploughs*.—*May 5, 1868*.

Claim.—1.—The hinged beam D, and the plough beam E, provided with and connected by the oval axle e , and the

chain l , or its equivalent, substantially as described and set forth.

2.—The combination of the iron lever l with the bar k and the beam D, substantially as and for the purposes set forth.

3.—Providing the beam E and the pole C with the slots S and d , to act in conjunction, thereby giving the plough some longitudinal play, when the beam E is connected to the whitestone or bolt z , by the chain F, or its equivalent, substantially as described and for the purposes specified.

No. 78,111.—GEORGE W. MANUEL, SAN FRANCISCO, CAL.—*Gang-Ploughs*.—*May 19, 1868*.

Claim.—1.—The arrangement of the crank arms $d e f$, under the hounds or bars, and in relation thereto, as and for the purposes set forth.

2.—In a gang-plough, having a series of ploughs, arranged on bars or hounds parallel to each other, placing the one plough on the bar g , outside of the wheel a , and in front of the axle, a , and for the purposes specified.

3.—The combination of the extended crank arms d and e , with the lever l and curved bar a , as and for the purposes herein set forth.

4.—The crank screw r and plates s and t , for elevating and depressing the tongue, as described.

No. 78,309.—H. WALKER NEAL, SIDNEY, OHIO.—*Ploughs*.—*May 26, 1868*.

Claim.—1.—The lever E, when pivoted upon the main axle, as set forth, for raising and lowering the wheel A.

2.—The combination of the levers E and E', notched flange e' , and spring e'' , for the purpose of holding the wheel A in desired position.

3.—The combination of the tongue B, lever G, clevis H, and plough beam C, arranged and operating as and for the purpose set forth.

No. 78,494.—DON CARLOS MATTESON, STOCKTON, CAL.—*Gang Ploughs*.—*June 2, 1868*.

Claim.—1.—The bars E F, attached to the front ends of the beams A B, with the perforated draught bar G attached thereto, substantially as and for the purpose specified.

2.—The attaching of easter wheel J to a single arbor, K, provided with a scraper, j , substantially as and for the purpose set forth.

No. 78,785.—CHARLES BROWN and LEONIDAS GERH, PEORIA, ILL.—*Ploughs*.—*June 9, 1868*.

Claim.—A combined ploughing and cultivating machine, having levers B and F, with hatches thereto, rod C, chains D, knives G, frames H, P, and O, and swinging bars M, constructed, arranged, and operating substantially as specified.

No. 78,856.—LEONARD W. BEAL, DIXON, ILL., assignor to himself and A. D. DREW, same place.—*Ploughs*.—*June 16, 1868*.

Claim.—1.—A plough plate A, constructed substantially as described, so as to dispense with a landside and separate point, and operating as specified and described.

2.—The plough plate A, when constructed in the curved form symmetrically before and behind its point of attachment to its standard, so as to operate and be reversible, substantially as described and shown.

3.—The combination of one or more ploughs, A, constructed substantially as described, with a frame C, and wheels W, substantially as set forth.

4.—Securing the axle E to the frame C in such a manner as to be adjusted at pleasure, to vary its direction across the frame, substantially as herein set forth and described.

No. 79,639.—GUSTAVUS A. DAVISON, SAN LEANDRO, CAL.—*Gang-Ploughs*.—*July 7, 1868*.

Claim.—1.—Regulating the level of the machine by the device O O', and set screw P, or their equivalents, substantially as set forth.

2.—The rigid arms H H' and G, attached to the axle, and connecting the lever or sweep J, either directly to the arm G, or by the link I, substantially as and for the purpose specified.

No. 3, 609.—GUSTAVUS A. DAVISON, SAN LEAN-

PRO, CAL.—*Gang-Ploughs*.—*July 7, 1868*. 70,450. Re-issued *October 12, 1869*.

Claim.—1.—Regulating the lever of the machine by the device O O', and set screw P, or their equivalents, substantially as set forth.

2.—The rigid arms H, H', and G, attached to the axle, and connecting the lever or sweep J, either directly to the arm G, or by the link I, substantially as and for the purpose specified.

No. 70,880.—JAMES T. WATKINS, SANTA CLARA, CAL.—*Gang-Ploughs*.—*July 14, 1868*.

Claim.—1.—The ploughs H H, in combination with the blocks E E', the holding screws T T, by which the ploughs are adjusted, and the wedges a a, constructed and arranged substantially as described.

2.—The blocks E E', mounted upon the axles C C', and the bent arms J J', with the set screws K K', for regulating the depth of the furrows, substantially as described.

3.—The bent arm N, and connecting rod O, with the handle M and the catch P, for disengaging the ploughs, substantially as described.

4.—The bent axle R, with the nut K' and the screw S, for raising and depressing the furrow wheel, substantially as described.

No. 70,617.—JOHN F. PORTER and ALONZO NORTON, TIDWATER, PA.—*Gang-Ploughs*.—*July 14, 1868*.

Claim.—1.—The hinged conter I, attached to the plough, and operating as described.

2.—A plough so constructed and operating that the draught is mainly or wholly upon the point, as herein set forth.

3.—The combination of the hinged standards K K' with the plough D, substantially as described.

4.—The combination of the rack N, socket S, cam a, lever p, standard K, and plough D, substantially as described, and for the purpose set forth.

No. 80,030.—GEORGE WILKONT, JERSEYVILLE, ILL.—*Gang-Ploughs*.—*July 14, 1868*.

Claim.—1.—Constructing the axle of two parts, H I, connected by a joint, i, in combination with the two levers J J', all arranged and applied substantially in the manner as and for the purpose set forth.

2.—The foot lever M, connected with one of the beams A and to the post h of the axle, as shown, in combination with the shaft L x, secured to the axle, and having the front ends of the beam A fitted loosely to it, all arranged to operate substantially as and for the purpose specified.

3.—The treadle platform D, draught pole E, and the lever F, connected to the draught pole by chain b, all combined and arranged substantially as and for the purpose set forth.

No. 80,405.—SMITH GRAHAM, FENNIMORE, WIS.—*Gang-Ploughs*.—*July 28, 1868*.

Claim.—The hinged frame beams g g', bar i, lever h, link j, and metal strip or bar s, all combined and arranged substantially as and for the purpose described.

No. 80,427.—BENJAMIN SLUSSER, SIDNEY, OHIO.—*Sulky-Ploughs*.—*July 28, 1868*.

Claim.—1.—The combination of the lever L, having the shoulder n, with the crank i, having the projection m, and supporting the standard to which the plow is attached, when the several parts are connected and arranged so as to operate together, substantially in the manner and for the purpose specified.

2.—The combination of the crank i, standards g g', seat G, rod H, and hinged post I, substantially as and for the purpose described.

3.—Supporting the plough upon two standards, E E', bent in the form and attached to the rear side of the plough in the manner described.

No. 6,563.—BENJAMIN SLUSSER, SIDNEY, OHIO, assignor to NORMAN DU BOIS and A. F. KOOP.—*Sulky-Ploughs*.—*So. 127, July 28, 1858*. Reissued *July 7, 1875*. Filed *April 17, 1857*.

Claim.—1.—The combination of the crank-axle S S' P and jointed bent lever L n, for the purpose of raising the plough, and permitting it to rise automatically out of the ground, substantially as and for the purpose set forth.

2.—The combination of the crank-axle S S' P of a sulky plough, with the beam or frame of the plough loosely pivoted thereto, to permit the plough to rise automatically out of the ground, substantially as and for the purpose described.

No. 7,073.—BENJAMIN SLUSSER, SIDNEY, OHIO, assignor, by mesne assignments, to F. B. HUNT, J. B. FISHER and A. McCALLUM.—*Sulky-Ploughs*.—*So. 427, July 28, 1868*. Reissue 6,563, *July 27, 1875*. Reissued *November 27, 1877*. Filed *November 3, 1877*.

Claim.—1.—In a sulky plough, the combination of a crank-axle and plough beam, or frame of the plough, the latter being hinged or loosely pivoted to the former, so as to permit the plough to rise and fall, substantially as and for the purpose specified.

2.—In a sulky-plough, the combination of a crank-axle, plough-beam and lever, the latter operating to raise and lower the plough when required, but without interfering with its independent movement substantially as set forth.

3.—In a sulky plough, the plough supported by means of a beam, bent as described, and a crank-axle mounted on wheels, the beam being pivoted to the crank, so as to move therewith, substantially as and for the purpose specified.

4.—The seat G, supported on standards pivoted to the axle, as described, and connected with the draft pole by means of the rod H and hinged post I, so that the seat will always be maintained in proper position, substantially as set forth.

5.—In a sulky plough having a crank-axle and a vertically-adjustable plough attached to the crank, so as to move with it, a driver's seat arranged and combined therewith, and which maintains its vertical position without being affected by the movement of the crank and plough, substantially as and for the purpose specified.

No. 80,521.—ANDREW WALKER, CLARKFORD, N. H.—*Gang-Ploughs*.—*July 28, 1868*.

Claim.—1.—A stationary frame, with adjustable plough beams underneath, pivoted to the main frame at the rear end and suspended by the ratchet E.

2.—In combination, the gear wheel C, gear circle D, lever F, and spring catch h, in combination with the ratchet E, for the purpose of adjusting the depth of the furrow, and locking or suspending the ploughs at any given point, the whole arranged, constructed, and combined, and used in combination with and for the purpose set forth.

No. 80,838.—ANDREW SMITH and WILLIAM P. WATSON, PORTLAND, OREGON, assignors to WILLIAM P. WATSON and T. J. CARTER.—*Gang-Ploughs*.—*August 11, 1858*.

Claim.—1.—The combination of the rod K, plate J, through which the rod K screws, and which is attached to the hinge joint I, hinge plate I, plough beams F F, and standards and ploughs G H, substantially as described.

2.—The combination of the hinged beams F F, cord i, rollers M and N, ratchet m, pawl j, and foot lever r, substantially as described.

3.—Attaching the rear end of the tongue to the axle by means of a clevis, t, and a series of holes arranged as described, by which the draught can be adjusted, substantially as above set forth.

No. 81,571.—ALEXANDER VAHL, HENRY, ILL.—*Ploughs*.—*August 25, 1868*.

Claim.—1.—The beam C, supporting the plough D, and rigidly secured to the axle A, in combination with the driver's seat S, the hinged horns E E', and tongue F, substantially as and for the purpose herein set forth.

2.—The slide K, arranged to operate in connection with the beam, horns, and tongue, substantially as and for the purpose described.

3.—The hinged horns E E', in combination with a plough suspended from a beam, rigidly secured to the axle, substantially as described.

4.—The combination of the beam C, plough D, hinged horns E E', tongue F, lever I, axle A, and driver's seat S, substantially as and for the purpose described.

No. 81,700.—P. H. STANDISH, MARINETTE, CAL., as-

signor to himself and OLIVER C. COFFIN.—*Gang-Ploughs*.—September 1, 1868.

Claim.—1.—The wheel E, lever M, with pawl I and foot pawl N, and manner of arrangement thereof.

2.—The tongue-adjusting rod J, clevis K, plate P, L, as arranged, and secured to the bed or beam B.

3.—The construction and arrangement of the bed B, and the manner of attaching the standards thereto, in combination with the tongue-adjusting rod J, clevis K, and plate P, L, as shown and described.

4.—The crank-shaped standards, with slotted end and set screw, substantially as set forth.

No. 81,701.—A. R. STANLEY and HENRY W. ENSIGN, SHULSBURG, WIS.—*Sulky Ploughs*.—September 1, 1868.

Claim.—1.—The pivoted plough beam N, spring catch O, and eccentric H, arranged to operate in the manner substantially as and for the purpose set forth.

2.—The combination of the lever G attached to the eccentric H, the shaft F, pinion E, rack D, and spring catch O fitting over the end of the plough beam N, substantially as described for the purposes specified.

No. 81,724.—JAMES H. ANDREWS, BENICIA, CAL.—*Gang Ploughs*.—September 1, 1868.

Claim.—1.—Pivoting the pole C to the bounds D D by a rod, E, and linking the rear end of the pole to the arm G, of the shaft F, or equivalent device for raising and lowering the ploughs without lifting other parts of the frame, substantially as described.

2.—The double-jointed frame I, having an apron, J, attached and arranged to operate in the manner substantially as and for the purpose set forth.

3.—The manner of connecting the ploughs to the frame by the clips M M, slots N N, with bolts and nuts, substantially as described.

No. 81,799.—J. B. LEWIS and J. E. UDALL, CORCORAN, ILL.—*Sulky Ploughs*.—September 1, 1868.

Claim.—1.—The flanges G, eccentrics I, wrist pins J, and pins L, when constructed, arranged and operating substantially as herein described, and for the purposes set forth.

2.—The compound lever M, when constructed, arranged, and operating substantially as herein described, for the purpose specified.

3.—The combination and arrangement of the above-named parts with the frame A, axle B, bolt H, seat C, traction wheels K, plough beam D, plough E, and quadrant N, substantially as and for the purposes specified.

No. 3,336.—J. B. LEWIS and J. E. UDALL, CORCORAN, ILL.—*Sulky Ploughs*.—81,799, September 1, 1868. Reissued March 23, 1869.

Claim.—1.—The flanges G, eccentrics I, bolts H, wrist pins J, and pins L, when constructed, arranged, and operating substantially as and for the purposes herein described and shown.

2.—The compound lever M, when constructed and operating substantially as and for the purposes described.

3.—The arrangement of the above named parts with the frame A, axle B, seat C, traction wheels K, washers F, plough beam D, plough E, and quadrant N, when combined and operating substantially as herein set forth.

No. 82,140.—J. R. McCONNELL, MARENGO, IOWA.—*Sulky Ploughs*.—September 15, 1868.

Claim.—1.—The construction and arrangement of the pivoted draught pole K, adjustable side bar E, beam A, and lever L, as herein described, for the purpose specified.

2.—The adjustable right angular bar E, seat bar I, adjustable bar J, brace G, and lever L, in combination with the beam A, pivoted draught pole K, and plough C, all arranged as described, for the purpose specified.

3.—The adjustable right angular bar E, adapted to support the seat and bar H I, the bar J, brace G, and pivoted draught pole K, as herein described, for the purpose specified.

No. 82,165.—FREDERICK P. SMITH, PETALUMA, CAL.—*Gang Ploughs*.—September 15, 1868.

Claim.—1.—The arrangement of the devices and means herein recited for raising and lowering the frame and ploughs.

2.—The bars, with spaces on the end of the beam, and on the tongue, with the bolts and nuts for the adjustment of the land wheel axle, and the castor wheel's arm, as herein set forth.

No. 82,166.—F. P. SMITH, PETALUMA, CAL.—*Gang Ploughs*.—September 15, 1868.

Claim.—The combination of the several means and devices herein set forth, for raising and lowering the ploughs.

No. 82,223.—CHARLES L. HORN, JR., and LEONARD MANCY, ST. MORGAN, ILL., assignors to LEONARD MANCY.—*Gang Ploughs*.—September 15, 1868.

Claim.—1.—The frame A A', the wheels B and B', adjustable arms b b', post B', and brace B', when combined and arranged as herein shown and described.

2.—The plough beams C, their posts C', and the frame beam A, when constructed substantially as herein shown and described, for the purpose set forth.

3.—The beams C, post D, and seat D', when constructed and arranged as herein shown and described.

4.—The arrangement of the beams C, rod E, and lever E', in the manner and for the purpose herein described and set forth.

No. 82,241.—NELSON B. NORTON, BURLINGTON, WIS.—*Four-wheel Ploughs*.—September 15, 1868.

Claim.—1.—The arrangement of the lever H, jaws I, and metallic straps K, with the plough beam F, frame C, post or standard L, straps M, and catch b, when constructed and used as and for the purpose set forth.

2.—The adjustable rod g, in combination with the frame C, and plough beam F, when arranged as and for the purpose specified.

No. 82,306.—JAMES CAMPBELL, NEW TOWN, ILL.—*Ploughs*.—October 13, 1868.

Claim.—1.—The partially-revolving square beam B, carrying ploughs or shovels, secured to the plough frame at an acute angle to the line of the draught, constructed and operating substantially as and in the manner set forth.

2.—In combination with the above, the stirrups F F, lever D, notched bar E, brace chains M M, cross piece P, and the angle axles X X, the whole arranged and operating substantially as set forth.

No. 83,283.—H. K. HUTE, HAYWARD'S, CAL.—*Gang Ploughs*.—October 20, 1868.

Claim.—1.—Securing the arm e of the axle f to the axle-tree a by means of the eye bolt i, as shown and described.

2.—The crank bolt q, in combination with the eye bolt r, for adjusting the tongue, as herein set forth.

3.—The arrangement and construction of the plate l, ears m, and boxes n, which allows of their being cast as one piece, as herein described.

No. 83,304.—JOHNSON ORR and HENRY H. MARTIN, OXFORD, OHIO.—*Convertible Ploughs and Cultivators*.—October 27, 1868.

Claim.—1.—The combination and arrangement, substantially as described, of the frame A C, e e', swinging hangers D d' and D' d', adjustable bars E e' and E' e', nuts G G', ring bolts F f' and F' f', pins H h', apertures I, plough beams J j', pivoted sheaths K k, ties M, pins N, handles O, braces R r' and R' r', and catch S, for the object stated.

2.—The construction of the brace T, with depressed portions t, to serve as steps, and an elevated central portion, t', to which the seat P is attached, all as herein described.

No. 83,507.—JAMES KAY, SALEM, IND.—*Wheel Ploughs*.—October 27, 1868.

Claim.—1.—A two-wheel single riding plough, having the plough E and its standard C' secured to a hinged frame C, as described, in combination with lateral, front, and rear braces arranged for sustaining said standard, substantially as described.

2.—The cross bar *X*, connected to the bar *W* of the plough frame, and passing through the standard *C*, and secured to the frame *C*, substantially as described.

3.—The combination of levers or trawlers *x*, *y* with a plough which is applied to a hinged frame, *G*, upon a tow-bar of a mangle, one of which levers or trawlers is adapted for raising the plough and its frame, while the other is adapted for depressing said parts, substantially as described.

4.—The brace *z*, connected to the bracket *d'*, and the set standards *C*, substantially as and for the purposes described.

5.—The adjusting screw rods *c*, applied to the hinged frame *C*, and supporting the same upon the axle *A'* of a single riding plough, substantially as and for the purpose described.

6.—In a machine, which is constructed as described, the three hollow rods or chains *p p'*, attached to the double tire, substantially as and for the purposes described.

No. 85,641.—JOHN D. KNEIDLER, COLLETSVILLE, PA., and JOHN D. FINELL and THOMAS S. DAVIS.—*Gen'l Ploughs*.—*Nov. 11, 1868*.

Claim.—The frame *A* and vibrating frame *A'*, the spring *g*, loop *g'*, and treadle *a*, all operating and combined substantially as set forth.

No. 85,608.—JASPER N. DAVISON and NAAMAN SPENCER, JR., BUFFALO, ILL.—*Gen'l Ploughs*.—*Novem. 16, 1868*.

Claim.—1.—The combination of the ploughs, the beams, the double-tire latome, the lever *E*, and the tongue so arranged that the tongue shall be flexible when the ploughs are at work, and only stiff when used to carry the ploughs above the ground, the deflection of the cut being independently regulated, substantially in the manner set forth.

2.—The combination of the ploughs, the beams, the platform and axle, with the braces *N* and sliding seat *O*, arranged to operate, substantially as and for the purpose set forth.

No. 85,607.—V. C. DE COLLES, NEW HAVEN, ICH.—*Ploughs*.—*Nov. 16, 1868*.

Claim.—1.—The arrangement of the notched standards *J*, *J'*, *K*, and pin *h*, for the purpose of regulating the plough, substantially as herein set forth.

2.—The combination of the bounds *C*, hinged beam *F*, arm *K*, standards *J*, *J'*, and lever *I*, all constructed and operating substantially as and for the purposes herein set forth.

No. 84,552.—EDWARD D. BENJAMIN, OLD TOWN, ILL.—*Ploughs*.—*Nov. 16, 1868*.

Claim.—1.—The combination of the whittlers with the plough, when the same are constructed and arranged in connection therewith, in the manner herein shown and described.

2.—The levers *D*, *D'*, pivoted to the ends of the axle-tree, and bearing wheel axles *E*, *E'* at the ends of their short arms, and having their long arms connected by the adjustable sway bar *G*, the whole arranged and operating substantially as herein set forth and specified.

3.—The fidding frame *K*, arranged and operating as described, and for the purpose specified.

No. 84,634.—JAMES P. COGAN, RICHMOND, ILL.—*Gen'l Ploughs*.—*Decem. 1, 1868*.

Claim.—The combination and arrangement of the beams *H*, swinging levers *O* and *G*, the hinges *F*, and lever *E*, the arrangement being such that the ploughs are drawn by the levers *O*, which are attached to the forward ends of the levers *G*, substantially as shown and described.

No. 84,652.—ANN RIEW SMITH, PORTLAND, OREGON, a signor to T. J. CARTER and W. P. WATSON, same place.—*Gen'l Ploughs*.—*Dec. 1, 1868*.

Claim.—1.—The combination of the lever *O*, having the offset *a*, with the rod *P*, rod *R*, having the tooth or shoulder *z*, and lever *T*, the whole operating substantially as and for the purpose described.

2.—The arrangement of such frame, when constructed as herein described, in combination with a downy and bent axle *D*, the box straps, the braces *H*, *H'*, the diagonal pole *G*, and the wheels *L*.

3.—The arrangement of the clevis *K*, brace *H*, *H'*, king bolt *C*, cross bar *X*, and axle *D*, the axle being behind the

king bolt, and the latter being supported by the braces, and the cross bar, substantially as herein described.

4.—The braces *H* and *H'*, attached at their lower ends, respectively, to the middle bar and standard, and at their upper ends provided with screw threads, upon which are fitted, above and below the plough beam, through which the braces pass, adjusting screw nuts, substantially as and for the purpose specified.

No. 84,748.—FRANCIS M. TARNAHAN, SANTA CARA, CAL.—*Gen'l Ploughs*.—*Dec. 8, 1868*.

Claim.—1.—The frame or ground work of the gang plough.

2.—The combination and arrangement of the beam *K*, to which the ploughs are fastened, the beam to which said plough beam is fastened by hinges, the semi-circular langes, as constructed, and the manner of fastening the ploughs in the beam, all as shown.

3.—The screw *W*, *A*, in combination with the frame.

4.—The combination and arrangement of the beam *L*, to which the lever *r* is fastened, the post on which it works, the chain, the pulley on which it works, the exenter, and the guard, all as described.

5.—The square block *D* under the axle-tree, for regulating the amount of land, in combination with the exenter.

6.—The construction, combination, and arrangement of the several parts, as shown and described.

No. 84,976.—J. L. STEARNS, MAHONDI, ILL.—*Ploughs*.—*Decem. 15, 1868*.

Claim.—The combination of the axletree *A*, wheels *Q* and *R*, guide standards *L*, upright *H*, lever *G*, chain *I*, and brace *J*, with the adjustable plough beams *D* and *E*, all arranged as set forth for the purpose specified.

No. 85,496.—TIMOTHY A. WEBER, SPRINGFIELD, ILL.—*Gen'l Ploughs*.—*Decem. 29, 1868*.

Claim.—In combination with a frame, *A*, the spreader and bearers, for the purpose of mowing and working as a gang a series of single ploughs, *E*, *E'*, constructed, arranged, and operating substantially in the manner and for the purposes described.

No. 85,621.—Z. T. SWEET, FORTNE CITY, OREGON.—*Gen'l Ploughs*.—*January 5, 1869*.

Claim.—1.—The combination of the cam spring *H*, rock shaft *I*, foot piece *J*, and staple *Z*, with the side bars *a*, *a'*, block *b*, catch *b'*, and beams *G*, all arranged and operating as described, for the purpose specified.

2.—The arrangement of the rack *dx*, and the angular lever *D* with the slot *d* guide plate *d'* upon the axle, and the slide *c* upon the arm *b* of the wheel *B*, whereby the weight of the cultivator holds the lever locked in any desired position, as herein shown and described.

No. 85,768.—JOHN ROOF, HARRISBURG, N. Y.—*Sulky Ploughs*.—*January 12, 1869*.

Claim.—The combination and arrangement, with a plough, of the wheels *E*, *G*, axle *C*, and arm *F*, substantially as set forth.

No. 85,838.—WILLIAM MASON, INDIANAPOLIS, OREGON.—*Gen'l Ploughs*.—*January 12, 1869*.

Claim.—1.—In a gang plough, the bent axle herein described, connecting of the part *D*, *D'*, the part *D'* being bent at right angles, and having one of its arms fitted in a socket on the end of the part *D*, the former being made adjustable relatively with the latter, by means of nut *W*, and set screw *Z*, as and for the purpose specified.

2.—In combination with the frame *F*, *F'*, crank axle *D*, *D'*, crank shaft *J*, *J'*, and ploughs *G*, *G'*, the levers *I*, *K*, connecting rod *M*, and treadle *N*, as and for the purpose specified.

3.—The arrangement and combination of the levers *K*, *L*, *N*, rod *M*, stops *a*, *a'*, and crank shafts *D*, *D'*, *J*, which said parts are constructed to operate in the manner specified.

4.—The lever *N*, when provided with a flange *s*, and adjusting screw *t*, substantially as specified.

No. 86,231.—WILLIAM H. ISAACS, THERE HAVEN, ILL., and GEORGE E. BANNER, NEWARK, N. J.—*Sulky Ploughs*.—*January 26, 1869*.

Claim.—The construction, combination, and arrangement of the ploughs *k*, arms *h*, with sockets, as constructed, and attached by pivots to outside of frame, levers *i*, connecting rods *l*, levers *d*, *d'*, having plough levers *f* attached, camracks *e*, and handle *z*, as constructed.

No. 86,370.—A. E. CRUTTENDEN, CANASAUGA, N. Y. *Plough Attachment*.—*February 2, 1869.*

Claim.—1.—The arm B, supporting the guiding wheel D adjacently, and attached to the plough beam, in the manner described.

2.—The combination with the arm B of the vertical slide F, supporting the guiding wheel, and the spring-actuated bell crank, all substantially as and for the purpose specified.

No. 86,472.—JOSEPH TOTTEK, ALABAMA, III.—*Gang Plough*.—*February 2, 1869.*

Claim.—The combination of the wheel A, axle B, bars C and D, end bars E, and F, constructed as described, with G, castings H, pivoted castor arms I, wheels J, K, and draught bar L, with each other, substantially as herein shown and described, and for the purposes set forth.

No. 86,668.—J. TUSTIN, PORTLAND, OREGON.—*Gang Plough*.—*February 2, 1869.*

Claim.—The levers A, B, C, D, E, the links G and F, (in which may be rotated the bent axle R,) the bent axle K, and the latch I, when used in the manner described, and for the purposes set forth.

No. 87,284.—O. OSBORN, TRUMANBURG, N. Y.—*Plough*.—*February 23, 1869.*

Claim.—1.—Providing the tongue G with a lever, H, having a spring, and passing through the slotted and notched plate J, for the purpose of raising or lowering the tongue, and holding it in any position desired, substantially as shown and described.

2.—The arrangement of the plate K, cogged sliding box D, with its axle a, cogged cam F, and handle d, all constructed and operating substantially as and for the purposes herein set forth.

3.—The arrangement, on a plough carriage, of the slotted plate K, sliding plate L, and loop m, for the purpose of holding the plough beam, substantially as shown and described.

4.—The arrangement of the lever I, arm M, and spring bar N, for the purpose of steadying the plough, substantially as herein set forth.

No. 87,308.—JOSEPH CLEES, DARBYVILLE, OHIO.—*Plough*.—*March 1, 1869.*

Claim.—1.—A plough truck, having the axle constructed in two parts, and arranged to adjust either part vertically, without changing the other, substantially as specified.

2.—The part D of the axle, carrying the guiding wheel, arranged to be adjusted horizontally and vertically, independently of the other part of the said axle, substantially as specified.

3.—The part C of the axle, carrying the small wheel I, bent at right angles, and arranged for adjustment in the plate A, substantially as specified.

4.—The combination, with the parts C and D of the axle, of the arm E, substantially as specified.

5.—The combination, with the parts D and C, of the arms E and F, substantially as specified.

No. 87,641.—HIRAM CULVER, DANVILLE, N. Y.—*Plough*.—*March 9, 1869.*

Claim.—The combination and arrangement of the bar, pendulum a, chain B, and handle F, with a single or gang plough, as herein described, for the uses and purposes specified.

No. 87,677.—JOHN R. JACKSON, PRYORVILLE, MISS.—*Sally Plough*.—*March 9, 1869.*

Claim.—1.—The beams C, C', levers D, D', both plated uprights a, a', in combination with the adjustable and reversible ploughs E, E', when the whole is constructed and arranged substantially as described, as and for the purpose specified.

2.—The detachable center plough E', E, and D', with lever D', and upright E', as constructed, when the same is so arranged as to be used in combination with the two side ploughs E, E', substantially as described, as and for the purpose specified.

No. 87,861.—JOHN G. MOORE, KINGSTON, OHIO.—*Truck for Plough*.—*March 16, 1869.*

Claim.—1.—The combination with a truck, of the shoulder strap M, substantially as and for the purpose described.

2.—The combination with the shafts B and the yoke D, of the hooks F, I, and straps, substantially as and for the purpose described.

3.—The arrangement of the yoke D, axle A, and the clips E, all substantially as and for the purpose described.

No. 88,283.—ARTEMAS DAVISON, SAN LEANDRO, CAL.—*Gang Plough*.—*March 30, 1869.* Antedated *March 20, 1869.*

Claim.—1.—In combination with the arms D, D' and axes a, a', on the bar C, the clutch, consisting of the jaws F and G on the wheel and axle, respectively, substantially as and for the purpose described.

2.—The pin or arm H, and the spring M, with the lever E, or equivalent device, for engaging and disengaging the clutch, substantially as described.

3.—The rack J, constructed with the hp K together with the holding project on L, on the lever E, for retaining the jaws F and G in contact until the ploughs are raised, substantially as described.

4.—The slotted arm D, with its set screws a, a', to raise and lower the axle a, and adjust the plough, substantially as and for the purpose herein described.

No. 88,413.—JOHN G. ROBINSON, SPRINGFIELD, ILL.—*Gang and Truss Plough*.—*March 30, 1869.* Antedated *March 23, 1869.*

Claim.—1.—The combination of the angular lever A, ratchet C, and spring B, with the pitman D and sliding axle-tree arm F, in the manner described, and for the purposes set forth.

2.—The combination of the vertical coupling F, and pivot M, and horizontal bar H, with the vertical lever G, ratchet I, and spring K, in the manner described, and for the purposes set forth.

No. 88,486.—W. J. JEFFRIES, LANCASTER, OHIO.—*Plough*.—*March 30, 1869.*

Claim.—The ratchets and y, when constructed, combined, and operating substantially as and for the purposes specified.

No. 88,698.—GEORGE WHARTON, JERSEYVILLE, ILL.—*Gang Plough*.—*April 13, 1869.*

Claim.—The parts described, consisting substantially of the lever C, arm C', hub D, and catch E, when arranged and operating substantially as described and for the purpose set forth.

No. 89,144.—THOMAS J. HALL, BRYAN, TEXAS.—*Gang Plough*.—*April 20, 1869.*

Claim.—1.—The combination of the up and down adjustable slotted cross bar D, having the perforated plate J, with the plough beams E, pins a, and pivoted levers G, all arranged and operating substantially as and for the purpose herein shown and described.

2.—The lever G, pivoted to the up and down adjustable cross bar D, connected at their front ends with the plough beams, and adjusted with their rear ends on a cross bar, K, all arranged and operating substantially as described, for the purpose of oscillating the plough beams, as specified.

No. 3,775.—THOMAS J. HALL, BRYAN, TEXAS.—*Gang Plough*.—*April 20, 1869.*—89,144. Reissued *November 30, 1869.*

Claim.—1.—The combination of the up and down adjustable slotted cross bar D, having the perforated plate J, with the plough beams E, pins a, and pivoted levers G, all arranged and operating substantially as and for the purpose herein shown and described.

2.—The levers G, pivoted to the up and down adjustable cross bar D, connected at the front ends with the plough beams, and adjusted with their rear ends on a cross bar, K, all arranged and operating substantially as described, for the purpose of oscillating the plough beams, as specified.

3.—The brace or bridle P, when constructed and arranged with relation to the plough beam and revolving center T, to support and strengthen the back O, in the manner substantially as described.

No. 89,788.—MAURICE MURPHY, WYANDOTT, CAL.—*Gang Plough*.—*May 4, 1869.*

Claim.—1.—In combination with the arm or lever C, rigidly fixed upon the crank for raising the plough frame, the adjustable connection of the crank E to the axle, by a polygonal pin and corresponding eye, substantially as and for the purpose set forth.

2.—The low convexed shaft F, having the external point

3.—The frame *ACD* and *H*, constructed substantially as and for the purpose specified.

4.—The mud board *B*, when constructed with the surface *abc* *cd*, *bc* rounded, and having the convex edge *d*, substantially as and for the purpose specified.

No. 87,707.—GEORGE SEIBERT and JOHN SEIBERT, ASHLEY, Ill.—*Gen. Ploughs*.—*Ill.* 4, 1860.

Claim—1.—The strips *E* and *G*, when arranged and operating substantially as and for the purpose described.

2.—The hook *F* and perforated bar *H*, when combined with the plough beam described, and operating as and for the purposes mentioned.

No. 60,178.—J. W. LEWIS, OREGON CITY, OREGON.—*Gen. Ploughs*.—*Ill.* 18, 1860.

Claim—1.—The frame *A* and draught pole *L*, with the platform *D* for the driver's seat, and the seat *E*, in combination with the toggle *H*, lever *I*, and the rack *K*, all constructed and arranged substantially as and for the purpose specified.

2.—The pivoted bar *J*, guides *L*, *L*, *X*, pin *Y*, lever *N*, carrying the catch *O*, the chain *a*, and pulley *Z*, in combination with the axle *I*, substantially as described, for the purpose specified.

No. 61,237.—GEORGE R. CARTER, NEW YORK, N. Y.—*Gen. Ploughs*.—*Ill.* 18, 1860.

Claim—1.—In combination with the plough beams or beam frame, the tilting carriage frame, substantially as described.

2.—With the tilting carriage frame and the plough frame pivoted to the front end thereof, the long seat extending from the seat to the rear of the carriage frame, substantially as shown and described.

3.—A gang plough, having the plough beams or beam frame pivoted to the front end of the carriage frame, when the latter is arranged to tip relatively to the draught pole, substantially as shown and described.

No. 63,841.—CORYDON A. FARGO, SOOT H., CAL., and GEORGE W. BARBER, DARTING.—*Gen. Ploughs*.—*Jan.* 1, 1861.

Claim—1.—The bent plates *D*, *D*, attached to the outer frame, as described, the vertical set screws *D'*, *D'*, which bear upon the said plates, for raising or lowering the plough beams, substantially as set forth.

2.—The vertical ways *E*, *E*, friction rollers *E'*, *E'*, operating in the said ways, and the transverse bar *F*, to which the rollers are connected, substantially as and for the purpose set forth.

3.—Connecting the two crank axes *H*, *H* by the rod *K*, so that both of the said axes may be operated by the upright levers *L*, *L'*, substantially as and for the purpose specified.

4.—The set screws *J*, *J*, operating in the beams of the plough frame, and linked to the arms *F*, *F* of the axes, in combination with the said axes, as and for the purpose set forth.

5.—In combination with the levers *L*, *L'*, operating in the double rack *M*, the pawl *R*, *R*, for slipping or releasing the levers alternately from the notches *P'*, substantially as and for the purpose specified.

6.—The front end cross beam of the outer frame, for attachment of the neck or pole, axle, and crank axle of the driving wheels, in combination with the crank axle *S'* and semicircular rack *C*, the whole constructed and arranged to operate substantially as specified.

No. 63,921.—JOHN BRYAN, LEWISBURG, Ill.—*Machinery for Ploughing, and to draw up Grains*.—*Jan.* 8, 1861.

Claim—1.—The pivoted frame or bound *A*, in combination with the plough beams and main frame *J*, *J*, as constructed and arranged.

2.—The lever and link *I*, *I'*, in combination with the bound *A*, and main frame *J*, as shown.

No. 61,643.—J. W. LEWIS, OREGON CITY, OREGON.—*Gen. Ploughs*.—*Jan.* 22, 1861.

Claim—1.—The hoisting lever *G* of a gang plough, arranged for operation, in connection with the hand lever *H*, for raising the ploughs, substantially as herein described.

2.—The curved extremities of arms *F*, *F*, in combination with the hand lever *H*, and hoisting lever *G*, substantially as and for the purpose herein set forth.

3.—The swinging frame, and roller *F*, in combination with the beams *E*, and lever *G*, substantially as and for the purpose herein set forth.

No. 61,673.—JOSHUA SHEPARD, NEW YORK, N. Y.—*Gen. Ploughs*.—*Jan.* 29, 1860.

Claim—1.—The combination of the two small ploughs *A*, bars *B*, supports *D*, wheels *C*, central bar *F*, and central plough *G*, having fingers formed upon the rear edges of its wings, with each other, substantially as herein shown and described, and for the purpose set forth.

2.—The pivoted tilting beam *H*, pivoted lever *K*, and staples *L*, *L'*, arranged upon the frame *B*, *E*, *F*, bearing the wheels *C*, as herein described, for the purpose specified.

No. 62,016.—LUKE CHAPMAN, COLLINGSVILLE, COSSA, assignor to himself and COLLINS COMPANY, same place.—*Gen. Ploughs*.—*Jan.* 29, 1860.

Claim—1.—The combination of the frame of the gang plough, with the cranked axle and wheels, by means of a roller, dotted as described, the whole constructed to operate substantially as before set forth.

2.—The roller *s*, slotted substantially as described, for the purpose described.

3.—The wheel lever *L*, pivoted in the manner described, to the crank arm *y*, and pivoted at its lower extremity to the axle of the furrow wheel *a*.

4.—The combination of the pivoted wheel lever, the crank arm *y*, and the rack *m*, the whole constructed to operate substantially as before set forth.

5.—The post *r*, attached to the frame *d*, in the manner described, and the latter to the axle of the land wheel, in the manner described, connected at the top by the jointed cross bar *q*.

6.—The combination of the frame of the gang plough, the cranked axle *s*, the lifting frame, the differential pulleys, and the chain therefor, the whole constructed to operate substantially as before set forth.

7.—The combination of the frame of the gang plough, the tie, the cranked axle, the lifting frame, the seat, the pivoted wheel lever, the hand lever, and racks, the whole constructed to operate substantially as set forth.

No. 62,016.—F. R. CROTHERS, SPARTA, Ill.—*Gen. Ploughs*.—*Jan.* 29, 1860.

Claim—1.—The adjustment plates *I*, and brackets *K*, arranged to permit a lateral and vertical adjustment of the plough beams *L*, *L'*, substantially as set forth.

2.—The beams *L*, and *L'*, and the brace *N*, and link *O*, when arranged adjustably, substantially as and for the purposes set forth.

3.—The foot lever *P*, its attachment *q*, and chains *Q*, acting to raise the beams *L*, and *L'*, and combined with the detent *R*, for holding the ploughs out of ground, substantially as set forth.

4.—The axle *A*, and the adjustable sub axle *C*, and frame *G*, when combined with the beams *L*, and *L'*, by attachment devices, allowing each of said beams an independent vertical adjustment, substantially as set forth.

No. 62,060.—WILLIAM B. KIRK, OAKLAND, OREGON.—*Gen. Ploughs*.—*Jan.* 29, 1860.

Claim.—The temper holes *A*, in combination with the uprights *B*, hinges *C*, plates *D*, slot *E*, plate *F*, uprights for rollers *G*, screw *H*, lever *I*, leverage *s*, hinges *d*, chain *r*, wheel *z*, all substantially as set forth and described.

No. 62,908.—LABAN HOLLOWAY, SAN FRANCISCO, CAL.—*Gen. Ploughs*.—*July* 27, 1860.

Claim—1.—The movable arm *C*, pivoted to the sides of the frame, and the treadle lever *S* attached to the pole, so that by their simultaneous movement the plough frame can be raised and lowered, substantially as described.

2.—The slotted steps *H*, at each side of the driver's seat, and the strap or bar *L*, beneath the frame, substantially as and for the purposes set forth.

No. 63,077.—CHARLES F. GAY, ALBANY, OREGON.—*Gen. Ploughs*.—*July* 27, 1860.

Claim.—The cultivator beam described having beam *A*, rods *d*, levers *D*, *G*, and *P*, ratchet *H*, chain *h*, curved arm *n*, and attachment *Y*, constructed and arranged substantially as specified.

No. 63,451.—H. B. SMITH, FREMONT, Ill.—*Combination Ploughs, Cultivators, and Plover Plows*.—*July* 27, 1860.

Claim.—1—The combination of the tongue I, roll r, K, bar N, cleaves O, frame F, lever A', and catch bar B', with each other, substantially as herein shown and described, and for the purpose set forth.

2.—The hinged bar V, and pendant swinging bar T, when arranged with relation to the frame F and the plough beams, as herein described, for the purpose specified.

3.—The combination of the roller X, catch-lever W, and strap rod Z, with the frame F, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the lever D, to which the spindle of the furrow wheel C is attached, lever G, keeper F, and lever pawl H, with each other and with the frame E, substantially as herein shown and described, and for the purpose set forth.

No. 93,358.—BENJAMIN SLUSSER, SIDNEY, OHIO.
Sulky Ploughs.—*Inventor*, 3, 1869.

Claim.—1—In connection with such crank axle, the lug I, constructed and arranged as for the purposes set forth.

2.—In connection with such axle, the movable plate or rest C, capable of shifting position, so as to remain horizontal, whether the crank be raised or lowered, substantially as and for the purposes set forth.

3.—The combination and arrangement of the plough-beam A, axle A, part C, having the straps c, and brace B, all constructed to operate substantially as and for the purposes specified.

4.—The weighted treadle N, in combination with the lever M, rack K, catch a, and crank a' a', all constructed to operate substantially as and for the purposes described.

5.—The jointed tongue T, in combination with the slot or plate u, cross bar V, and arm a, all operating substantially as and for the purposes indicated.

No. 93,464.—M. MICKELSON, ASHLAND, MICH.,
Cranks for Plows.—*Inventor*, 10, 1869.

Claim.—1—The arrangement together with the tongue and the frame, of the pivot bolt D, yoke E, and set screws F, all substantially as specified.

2.—The combination, with the frame and axle, of the bent rod H, lever I, and levers M O, when arranged substantially as specified.

3.—The axle, constructed in two parts, hinged together, and otherwise arranged as specified, for governing the plane of the track, as described.

No. 93,549.—H. W. NEAL, SIDNEY, OHIO, assignor to JASON McVAY, same place.—*Plough*.—*Inventor*, 10, 1869.

Claim.—1—In combination with the swinging beam E, lever h', of operating substantially as and for the purpose specified.

2.—The foot levers g', pulley G, chain H, and swinging beam F, all combined to operate substantially as and for the purpose specified.

3.—The combination of foot lever h', with pivoted pawl A thereto, ratchet wheels c' f', pulley G, and pawl e', substantially as and for the purpose set forth.

No. 93,618.—PHILIP HERBERT, St. LOUIS, MO.—
Comb. Plow.—*Inventor*, 10, 1869.

Claim.—1—The axle bar a, tree journal B, and sector and pawl devices for connecting the wheel A' with the axle A, substantially as set forth.

2.—The front board F', pivot g, link h, and pole G, connected adjustably by the slot z and set screws l', substantially as set forth.

3.—The standard I, lever L, bar E', fulcrum K, links z, and cross bar l', arranged in combination with the plough beams M, substantially as set forth.

4.—The lever O, crank Q, link P, and roller R, supporting and operating the front end of the beams M, substantially as constructed and arranged.

5.—The plough N, standard u, pins w, arms v', and pawl w, when operating substantially as set forth.

No. 93,689.—PETER CONKATH, FRIEDRICH, ILL.—
Comb. Plow.—*Inventor*, 17, 18 9.

Claim.—1—The tops and bolts J, beam F, and guide E, when constructed and operating substantially in the manner and for the purpose set forth.

2.—A self-adjusting carriage gang-plough, with ploughs P, levers H, spring catches k and chains G, sliding rods N, and grooved boxes O, levers L and M, and top and foot z, beam F, and guides E, constructed and operating substantially in the manner and for the purposes set forth.

No. 93,694.—LEAVITT HUNT, WAHNERBROOK, Vt.—
Comb. Plow.—*Inventor*, 24, 18 9.

Claim.—1—The combination, substantially as herein described, with the hinged plough beam and sulky frame, of a still or rigid gauge bar to regulate the depth of furrow, and to cause the plough point to bite or enter the ground at the inst of the machine is moved forward.

2.—The combination, with the plough beam, of arms hinged to the sulky frame, and connected with the beam, and with the lever for elevating the same, as herein described, so that said arms shall serve both to stiffen or brace, and, in connection with the lever, to raise or depress the plough.

3.—The combination, with the slotted plough beam and wheel-tree, held in a slot in the sulky frame or pole, and connected with the beam by a drag-chain or equivalent device, of the hinged bracing arms, the lever for actuating the same, and the rigid or still gauge bar substantially as and for the purposes set forth.

4.—The combination and arrangement, substantially as herein specified, of the plough beam with the hand lever for raising or lowering the same, and an auxiliary foot lever, independent of, and having no connection with, the hand lever but connected with the beam, and adapted to act in conjunction with the hand lever when required.

5.—The combination with the hand lever and segmental rack, of the sliding catch on and device for operating the same, said bar being held to the lever and fitted so as to stabilize the rack, as and for the purposes shown and set forth.

6.—The combination, with the forward part of the beam of a plough of otherwise ordinary or suitable construction, of a pendulum, carrying the roller, and pivot or hinged to the plough beam, and a curved and slotted launch arm connected with both the plough beam and the roller arm, in the manner and for the purposes substantially as described.

No. 94,491.—FRANK A. HILL, MARYSVILLE, CAL.—
Comb. Plow.—*Inventor*, 7, 1869.

Claim.—1—In combination with the extended arms D of the crank, and connecting bars L, the bent shaft G, turning in boxes F, E, said shaft being rotated by a sweep, K, substantially as and for the purpose above described.

2.—The wrought-iron vertical standard h, dovetailed into the landside of the plough, substantially as and for the purpose above described.

3.—Securing the timbers E and pole P to the cross bar C, by means of the iron bar c, and bolts k, so that they may be adjustable.

No. 94,605.—A. C. JUDSON, GRAND RAPIDS, OHIO, assignor to himself and E. O. JUDSON, same place.—
Plough.—*Inventor*, 7, 1869.

Claim.—The arrangement of the beam in two parts D, stock F, foot E, block G, wheel H, draw plates K, clevis L, and bearing plates I, all substantially as specified.

No. 95,226.—HORACE R. HULL, HAYWARD, assignor to LEONARD L. TREADWELL, and GEORGE R. CARTER, SAN FRANCISCO, CAL.—*Comb. Plow*.—*Inventor*, 24, 1869.

Claim.—1—Attaching the rear end of the plough beam D to the rear end of the plough frame, by means of a link, H, substantially as herein described.

2.—The metal plate C, or equivalent device, secured to the axle B and pole D, in the manner above described, for the purpose set forth.

No. 95,437.—H. N. DALTON, PAINTER, CAL.—
Spring for Comb. Plow.—*Inventor*, 5, 1869.

Claim.—The combination of a coil or other spring with the axle and frame of a gang plough, substantially as herein shown and described, and for the purpose set forth.

No. 95,539.—J. N. THOMPSON and WILLIAM KENADY, GILBEAS, assignors to D. W. FRARY, PORTLAND, OREGON.—*Comb. Plow*.—*Inventor*, 5, 1869.

Claim.—The levers A and B, the swivel joint D, nut and screw E, link F, fulcrum G, beam H, and hook I, together with the adjusting keys J, or their equivalents, substantially as described, and for the purpose set forth.

No. 95,997.—WILLIAM J. PUNK, PORTLAND, OREGON.—*Gen. Plo. h.—October 19, 1869.*

Claim.—The combination of the rock shaft M, the eye piece P, links C and D, clevis E, roller I, incline F, and cheek J, on tongue K, when applied to a gang plough as described and for the purposes set forth.

No. 96,334.—HENRY P. McCLEAVE, TOMAHS, CAL.—*Gen. Plo. h. Cultivato s.—A.; mtes 2, 18 9.*

Claim.—The frame A, constructed substantially in the manner described, with parallel braces B B B, diagonal strap J, through which the ends of the standards pass, and the draught rod D, attached to the rear cross beam B, as specified, for the purpose set forth.

No. 96,593.—JAMES B. HUNTER, ASHLEY, ILL.—*Gen. Plo. h.—No. emb. r 9, 1869.*

Claim.—The slotted plates F and draught rod G, in combination with the plough beams D E, substantially as herein shown and described, and for the purpose set forth.

2.—The adjustable frame C D', in combination with the axle B, plough beam D, and tongue M, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the bent crank lever L with the frame C and plough beam D, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the draught rod O with the tongue M, double tree N, and plough beam D, substantially in the manner herein set forth and described.

No. 96,875.—WORDEN J. BOYCE and GEORGE W. HAINES, MAINE PRAIRIE, CAL.—*Gen. Plo. h.—A.; emb. r 16, 1869.*

Claim.—The machine described, consisting essentially of the frame a b, tongue c, adjusting devices e g i k, wheels n, and lever p, the whole being combined and arranged for the purpose set forth.

2.—The sliding stirrup c, moving in straps or ways f f at the top of the frame, and held in place by a pin, q, or their equivalents, substantially as set forth.

3.—The lifting bar i, with its movable fulcrum k, on the plate l', so that by its link, connection with the end of the tongue the draught pole can be thrown to the right or left, or the end raised and lowered, substantially as set forth.

No. 97,197.—C. A. EDWARDS, CHATHAM, MISS.—*Eng. Plo. h.—December 7, 1869.*

Claim.—The levers A and B, posts C, C, and D, post E, iron rod F, bed timber G, axle I, plough beam J, and chain or rope M, all constructed, combined, and arranged as set forth.

No. 97,580.—DENNIS H. GLEESON, SAN LEANDRO, CAL., assignor to himself and DENNIS GANNON, same place.—*Gen. Plo. h.—December 7, 1869.*

Claim.—The combination and arrangement of the parts of my gang-plough, as herein described, this combination and arrangement consisting in attaching the draught pole E, rigidly to the non-extensible axle of the carrying wheels, the plough beams being hung on the fulcrum bolt D, which passes through the forward standard of the driver's seat and the draught pole in advance of the axle, and which plough beams are operated by a roller shaft and attachments, as shown, the whole of the parts being combined and arranged together in manner substantially as described, and for the purposes as set forth.

No. 97,646.—BYRON JENNINGS, GILROY, CAL., assignor to himself and HENRY W. BRIGGS, same place.—*Gen. Plo. h.—December 7, 1869.* Antedated D. emb. r 1, 1869.

Claim.—The combination, with the arms h, on the shaft C, of the plates d, provided with holes e, for making their connection adjustable, substantially as and for the purpose set forth.

2.—The curved arm E, attached to the shaft C, sliding bar g, and guide k, substantially as and for the purpose described.

3.—The bent lever F, with its slotted inclined lug i, together with the bent pin or staple n, substantially as described.

No. 98,370.—EMERSON E. GORE, PHOENIX, OREGON.—*Gen. Plo. h.—D. emb. r 28, 1869.*

Claim.—The combination of the stops R' K' with the frames A and A', and arms D' and E', whereby the latter are retained in an inclined position, and the ploughs thereby prevented from rising or falling, substantially as and for the purpose specified.

2.—The links D' E', connecting the frame A A', the hind links being slotted, for the purpose of allowing the ploughs to be raised in an inclined direction, as specified.

3.—The hoisting lever M', link K', and crank P', in combination with the links D' E', and frames A A', of a gang-plough, as specified.

4.—The spring catch O', pivoted to the frame A, for the purpose of locking the frame A' in its elevated position, as specified.

5.—The frame A, supported on the front axle by the rods C, and on the swiveled castor wheel O, substantially as described, so that it can be raised or lowered at will, to adjust the position of either plough, or of both, substantially as specified.

6.—The levers D, connected separately with the axle and with the frame A, for raising or lowering the latter, as specified.

7.—The lever P, connected with the swiveled shank N of the castor wheel O, and pivoted to a jointed arm Q, that projects from the frame A, to adjust the latter, substantially as herein shown and described.

8.—The combination, with the frame A and axle B, of the jointed rod H, adjustable rod I, and jointed rod J, substantially as specified.

No. 98,599.—ARTHUR CUNNINGHAM, CINCINNATI, OHIO.—*Plo. h. and Harrowing Machines.—January 4, 1870.*

Claim.—The connection of the plough beam to the truck, by means of the projecting beam D and draw rod E', the latter being provided with the adjustable block F, substantially as specified.

2.—The combination with the plough beam and platform, of the levers N K, rod M, and chain I, substantially as specified.

3.—The combination, with the plough handles and platform, of the beam T, perforated bars R, and detachable rod Q, when arranged substantially as specified.

4.—The combination, with the truck and plough, of the vertically adjustable guide W, substantially as specified.

5.—The combination, with the guide, arranged as described, of the lever K, rod V, lever Z, and foot piece Z', substantially as specified.

6.—The combination with the truck and plough, of the harrow, substantially as specified.

7.—The combination of the harrow, suspending rod X', clearing plate Y', lever Y', rod Y', and notched post Y', all arranged substantially as specified.

8.—The combination, with the plough and beam V, of the cham U, substantially as specified.

No. 99,379.—SAMUEL WELCH, BELLESA, OREGON.—*Gen. Plo. h.—February 1, 1870.*

Claim.—The construction, combination, and arrangement of the axle A, bonds N, post G, with friction roller, sliding groove F, plough frame E, lever B, joint bolt K, lever C, post I, and fulcrum D, as shown and described.

No. 99,538.—JOHN COX and SOLOMON COX, EUGENE CITY, OREGON.—*Gen. Plo. h.—February 8, 1870.*

Claim.—The bars f g h, when combined with the upright bar E and plough beams D D, substantially in the manner and for the purpose herein shown and described.

2.—The ratchet wheel I and loose lever H, when used in combination with the pawl n, and with the ropes or chains m, substantially as herein shown and described.

No. 100,383.—GEORGE R. DUVAL, SALEM, OREGON.—*Gang Ploughs*.—March 1, 1870.

Claim.—The hinged and adjustable axle C and the lever G, with the parts connected therewith, that is to say, the chain J, bars n and o, tongue F, and brake m, in combination with a gang-plough, arranged and operating substantially as described.

No. 100,690.—LEWIS T. WEBSTER, NORTHFIELD, MASS.—*Ploughs*.—March 8, 1870.

Claim.—1.—The compound bifurcated tongue and beams A A', when constructed as herein set forth.

2.—The draught rod O, in combination with the shaft C and adjustable collar N, as specified.

3.—The guide L, constructed and arranged as described.

4.—The arms D and D', in combination with the wheels B and B', and their respective axles, and lifting device C' F G I, when arranged as specified.

No. 100,800.—A. E. PORTER and A. L. PORTER, LAMONET, ILL.—*Riding Attachments for Ploughs*.—March 15, 1870.

Claim.—1.—The riding attachment for ploughs hereinbefore described, composed of the standard A, with pin or bolt b, axle-tree B with seat G, and arc of holes Z, wheel D, and braces C and E, the said several parts being constructed, arranged, combined, and operated substantially as and for the purposes hereinbefore described.

2.—The lever F with its roller I, in combination with the plough proper J M, provided with the described riding attachment A B G D E C, substantially as and for the purposes described.

No. 101,035.—JACOB PRICE, SAN LEANDRO, CAL.—*Gang Ploughs*.—March 22, 1870.

Claim.—1.—The levers F, constructed as described, and having the foot board G attached to their forward ends, in combination with the axle D D', and plough beams B, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the rack bar J, brace bar K, and spring lever catch L M, with the foot board G, levers F, beams B, and tongue C, substantially as herein shown and described, and for the purposes set forth.

No. 101,435.—JOHN H. COLE, VACAVILLE, CAL.—*Sulky Ploughs*.—April 5, 1870.

Claim.—The ploughing sulky above described, consisting of the wheels A upon a suitable axle, the tongue B, the quadrant C, the rock shaft D, the rock arms E, the clevis plate F, the king bolt G, the lever H, the frame I, the socket K, the swivel brace L, in connection with one or more suitable ploughs, and provided with a driver's seat, when the several parts are constructed as described, and combined and arranged to operate as and for the purpose set forth.

No. 101,519.—JAMES W. SURSA, SAN LEANDRO, CAL.—*Gang Ploughs*.—April 5, 1870.

Claim.—In combination with the axle E, lever L, ploughs S, and frame of the plough, the collar n, all arranged substantially as and for the purpose specified.

No. 101,574.—JOHN G. BOYD, DECATUR, TEXAS, assignor to himself and ALLEN BAILEY, same place.—*Sulky Ploughs*.—April 5, 1870.

Claim.—The lever H, bifurcated at d, the standards F and F', beam E, and guides C, all arranged and operating substantially as and for the purposes set forth.

No. 102,801.—PEEER H. FLANSBURGH, HAYWARD, CAL.—*Gang Ploughs*.—May 10, 1870.

Claim.—1.—The ploughs D D' in a gang, moved up and down by the standards F F', forming racks, as shown, the segments F F', the levers G G', or an equivalent device, operating substantially as and for the purpose herein described.

2.—The braces b b', attached to the ploughs at one end, and operating to throw the ploughs out of the ground in raising, substantially as herein described, in combination with the lifting device above claimed.

No. 103,855.—JAMES P. EDDLEMAN, PLEASANT POINT, TEXAS.—*Combined Sowers, Planters, Cultivators, Scrapers, and Gang Ploughs*.—June 7, 1870.

Claim.—1.—The combination of the seed box H, recessed roller I, and band J, with the wheels A, spindles B, uprights

C, levers E, frame D, and pivoted frame S, to which the ploughs are attached, substantially as herein shown and described, and for the purpose set forth.

2.—The combination of the hoppers K, dropping slides L, cross-bar M, bow or bent bar N, springs O, plough standards Q, and conductor spouts R, with each other and with the frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

3.—The combination of the turn or breaking ploughs U V W, and lever F', with the pivoted frame S, frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

4.—The combination of the outer cultivator ploughs A' B', inner cultivator ploughs C' D', and lever E', with the pivoted frame S, lever F', frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

No. 105,528.—ELISHAW W. WALTON, SAN LEANDRO, CAL.—*Gang Ploughs*.—July 10, 1870.

Claim.—The device for elevating and lowering the plough frame, consisting of the slotted plates E, the plates e, and the cams G, with their arms f and rods g, said rods being attached to the arm h of the shaft H, and the whole operated by the sweep I, substantially as described.

No. 105,600.—DELOS A. SEAKS, ROCKFORD, ILL.—*Gang Ploughs*.—July 10, 1870.

Claim.—1.—The combination of the curving standards C, having the seat thereon, with standards G H, rack and pinions I, and dog J, as and for the purpose described.

2.—The combination of lever N with the bearing plate z, constructed as described, for the purpose set forth.

3.—The combination and arrangement of the axle A, with the wheels a, A, brace B, standards C, tongue D, beam E, plough frame F, standards G H, rack and pinion I, dog J, brace M, and lever N, as described, for the purpose set forth.

No. 105,849.—JAMES H. REYNOLSON and JOHN WORRELL, CANTON, IND.—*Sulky Attachment to Ploughs*.—July 20, 1870.

Claim.—1.—The lever d and staple c, when arranged as described, in combination with the plough and sulky, herein shown and specified.

2.—The lever H, with its slot and the stop e, in combination with the plough and sulky herein shown and specified.

3.—The clevis m and bolt n, in combination with the arms g g' and the sulky plough, as described.

No. 105,879.—JOHN ALLOWAYS, DECATUR, ILL., assignor to himself and W. CUMMINGS, same place.—*Gang Ploughs*.—August 2, 1870.

Claim.—The arrangement, with relation to the beams F F', shaft O, and axle A, of the pivoted pendant X, and arm G, adjustably connected at their lower or outer ends, as and for the purpose specified.

No. 106,003.—JAMES L. VAN GORDER, SIDNEY OHIO.—*Sulky Plough*.—August 2, 1870.

Claim.—1.—The combination of lever K, loop d, hook e, catch h, and sliding bar G, substantially as and for the purpose described.

2.—The axle A, wheels B B', frame C, sliding bars G G', plough beams H H', loops d, d', cranks f, f', levers K K', and hooks h, h, all constructed and arranged to operate substantially as and for the purposes herein set forth.

No. 106,548.—HENRY C. CARR, BORDENTOWN, N. J.—*Wheel Ploughs*.—August 23, 1870.

Claim.—1.—The arrangement of the beams B, made adjustable by means of a series of holes, h, shaft P, and cross beam C, substantially as set forth.

2.—The arrangement of the beams B, rock shaft F, arms E, and adjustable rollers E', substantially as set forth.

No. 106,799.—ABRAM ELLISON, MARYSVILLE, CAL.—*Gang Ploughs*.—August 30, 1870.

Claim.—The combination, with the bent arms or levers I, pivoted at one end, and holding the axles p of the lever K, provided with the curved slotted arm or link J, and held by a rack, or equivalent device, substantially as and for the purpose specified.

No. 106,982.—JAMES H. ANDREWS, BENICIA, CAL.—*Gang Ploughs*.—September 6, 1870.

Claim.—The combination, with the levers *E*, connected to the plough frame by links *G*, of the levers *H*, provided with friction rollers *i*, and held by a rack *J*, or other equivalent device, with the plough beam *A* for the purpose herein set forth.

No. 107,052.—BENJAMIN R. HU BEARD, HILLSBOROUGH, Ill.—*Sulky Ploughs*.—September 6, 1870.

Claim.—The construction and arrangement of the metallic support *B*, the tongue *F*, and the wire or chain attachment *M*, substantially in the manner and for the purpose described.

No. 107,228.—ALBERT A. DAILEY, WILSON, N. Y.—*Plough*.—Sept. number 13, 1870.

Claim.—The combination of the curved or inclined axle *M*, slotted pivoted arm *N*, and gauge plate *P*, with each other and with the plough-beam *A*, substantially as herein shown and described, and for the purpose set forth.

No. 107,563.—JAMES W. SURN, SAN FRANCISCO, CAL.—*Gang Plough Beams*.—September 20, 1870.

Claim.—1.—The long beam *B*, short beam *C*, and brace *D*, combined with the tongue *A*, as and for the purpose described.

2.—The arrangement of angular brace *B*, and angle clip *F*, *F*, as and for the purpose described.

No. 107,829.—NAAMAN SPENCER, JR., EAGLE POINT, Ill.—*Gang Ploughs*.—Sep. number 27, 1870.

Claim.—1.—In a gang plough, the vibrating platform *C*, in combination with draft beam or plank *E*, bolt standards *c*, and adjusting nuts, substantially as set forth.

2.—The combination of the adjustable-draft beam *E*, disk coulters *H*, standards *H*, and draft rods *I* substantially as set forth.

3.—The combination of the coulters *H*, standards *H*, connecting rod *H*, and draft rods *I*, substantially as set forth.

No. 107,938.—HENRY W. MASON, HAGERSTOWN, Md.—*Sulky Ploughs*.—October 4, 1870.

Claim.—The bar *a*, provided with the slotted flanges *t*, the plough beam *b*, the plates *b*, provided with the lugs *e* and the pin *f*, arranged together as described.

No. 108,214.—JAMES W. TREADWAY, CROWN POINT CENTER, N. Y., assignor to OLIVER A. WHITE-MORE, DENVER, COLORADO.—*Gang Ploughs*.—October 11, 1870.

Claim.—1.—The combination of the beams *D*, ploughs *G*, adjustable gauge-wheels *I*, pivoted draft bars *J*, uprights *E*, pivoted guard bars *K*, and perforated bar *L*, with each other, and with the frame *B*, axle tree *A*, and wheels *C*, substantially as herein shown and described, and for the purpose set forth.

2.—The cam levers *X*, *n'*, ropes or chains *O*, and *U*, and *S*, crank drum *V*, drum *I*, and roller *K*, with the plough beams *D*, all arranged substantially as shown and described, whereby said beams may be singly or collectively elevated.

No. 108,311.—CARELL ATWOOD, LEVANS, Ill.—*Gang Ploughs*.—October 18, 1870.

Claim.—1.—The combination of the levers *e*, bolts *d'*, rods-shafts *g*, bolts *l* with the plough standards, constructed to operate in the manner and for the purpose substantially as described.

2.—The slotted plates *C*, *C*, with bolt *a'*, for adjusting the draft right or left, substantially as and for the purpose hereinbefore set forth.

No. 108,516.—JOSEPH L. PURCELL, THOMPSON, Ill.—*Gang Ploughs*.—October 18, 1870.

Claim.—The arrangement, in a gang plough, of the slot and platform *V*, clamps *J*, screw rod *K*, beams *B*, rods *g*, *N*, catch lever *j*, rack *V*, rod *T*, crank lever *F*, *S*, and stand and *O*, *O*, as and for the purpose set forth.

No. 108,724.—WILLIAM NEWLIN, ALIHA, IND.—*Gang Ploughs*.—October 25, 1870.

Claim.—1.—In combination with the axle *A*, the clevises *H*, *H*, connected by the strap joints *e*, *e*, and securing the plough beams *I*, all substantially as set forth.

2.—The combination of the bent axle *A*, tongue *D*, bearing bar *C*, cogged staple *G*, and bar *L*, with slips *n* and set screws *e*, *e*, all as shown and described.

3.—In combination with the strap joint clevises *H*, *H*, the plough beam *I*, the front ends of which are curved as de-

scribed, and provided with the lugs *i*, *i*, substantially as and for the purposes herein set forth.

4.—The spring ring *K*, for connecting the rear ends of the plough beams, substantially as and for the purposes herein set forth.

5.—The arrangement of the shaft, with its bearings in the tongue *D* and bar *L*, the lever *h* and chains or rods *k*, substantially as shown and described and for the purposes set forth.

6.—The stay or side rods *m*, *m*, connecting the plough beams with the axle, substantially as and for the purposes herein set forth.

No. 109,048.—JAMES O. POTTER, ROSSVILLE, PA.—*Device for Operating Ploughs*.—November 8, 1870.

Claim.—An axle *C*, bent to form the central recess *D*, combined with a plough and beam hung under it, and movable upwardly into it, as described.

No. 109,136.—WILLIAM MASON, INDEPENDENCE, OREGON.—*Gang Ploughs*.—November 8, 1870.

Claim.—The tongue *A*, extension *A''*, crank arms *B* and *a*, and axle *A'*, constructed, arranged, and combined with the plough beams *C*, *C*, and system of levers and connecting rods, as shown and described, and for the purpose specified.

No. 109,684.—JOHN E. SWALLOW, HAGERSTOWN, Md.—*Wheel Ploughs*.—November 29, 1870.

Claim.—1.—The coupling *G*, connecting the tongue and forward end of the plough beam, and constructed with segmental racks *G'*, in combination with the pinions *H* *H* substantially as set forth.

2.—The slotted plough beam *D*, *d'*, in combination with the guide bars *C*, *c*, sliding bolt *D'*, provided with a sleeve, *D''*, *d''*, and means substantially such as described, to operate upon the sliding bolt to raise and lower the rear end of the plough beam.

No. 110,281.—THOMAS PEPPER, HIGHTSTOWN, N. J.—*Gang Ploughs*.—December 20, 1870.

Claim.—The gang plough, composed of the square axle *A*, adjustable box *C*, caps *e*, *e*, movable pendants *D*, *D*, the double joints or jaws *E*, *E*, constructed for the purpose herein set forth.

No. 110,356.—JAMES HARRIS, SAN FRANCISCO, CAL.—*Gang Ploughs*.—December 20, 1870.

Claim.—The axle *E*, recessed as described, in combination with the tubers *A*, *B*, extended cross pieces *D*, *D'*, and pins *a*, for adjusting the plough frame, seat, and the level of the ploughs, substantially as above described.

No. 110,911.—JOHN H. SUDYAM, MINN.—*Wheel Ploughs*.—December 21, 1870.

Claim.—The within described attachment for ploughs, consisting of the wheel *I*, axle *G*, elongated seat *J*, brace *K*, slotted knee *H*, and clamp *a*, all constructed and used substantially as set forth.

No. 111,226.—JOHN R. McCONNELL, MARIENGO, IOWA.—*Gang Ploughs*.—January 24, 1871. Antedated January 18, 1871.

Claim.—The arrangement in a gang-plough, and with respect to a wheel, *L*, and shaft *H*, of the wheel *L*, and the shaft *J*, adjustable in the apertured standard *H'*, *K*, as shown and described, and for the purpose specified.

No. 111,228.—JAMES A. MEDAKIS, SULLIVAN, IND.—*Combined Gang Ploughs and Cultivators*.—January 24, 1871.

Claim.—1.—The arrangement of the axle *A* with cranks *a*, *a*, wheels *B*, *B'*, frame *C*, and frame or platform *G*, all substantially as shown and described.

2.—The arrangement of the frame *G*, side blocks *I*, *I*, cultivator ploughs *J* and *J'*, ploughs *K*, and subsiders *L*, all as shown and described.

3.—The arrangement, with the frame or platform *G*, of the hinged cultivator ploughs *J*, *J'*, rod *h*, foot lever *f*, rods *i*, false doubletree *N*, doubletree *O*, and singletrees *P*, *P*, substantially as shown and described.

No. 111,366.—EDWARD MELOY and ABRAM R. STANLEY, SUIHLEBURG, WIS.—*Sulky Ploughs*.—January 31, 1871.

Claim.—In a combination with the plough beam, the sulky frame, and the king bolt *G*, the levers *J*, *K*, chain and pulley *i*, and rod *h*, arranged to fit the front and rear ends

of the plough beam, substantially as described for the purpose specified.

No. 111,799.—ASA H. ALLISON, CHARLOTTEVILLE, IND.—*Sulky Attachment for Breaking Ploughs*.—February 14, 1871.

Claim.—The beam J, in combination with the rear lifting device F, d, h, and f, clevis I, rack H, clamp b, and lever D, as and for the purpose set forth.

No. 111,911.—FRANCIS CREMER, ELMWOOD, ILL.—*Ploughs*.—February 21, 1871.

Claim.—1.—The combination of the suspended adjustable beams G G, cross bar H, swiveled vertical screw I, upright plate C c d, and guides e f, with the axle B of a wheel plough, to admit of a vertical adjustment of the shovels F, as described.

2.—The up-and-down adjustable cross bar H, supporting the vertical plough beams, substantially as and for the purpose herein shown and described.

3.—The combination with a wheel plough, of the chain L and pulleys I I I, arranged and described, to equalize the draught.

No. 112,079.—DRENTEN SAMPTON, PETERSBERG, ILL.—*Combined Gang Ploughs and Cultivators*.—February 21, 1871. Antedated February 20, 1871.

Claim.—The combination of the main frame B, mounted on wheels a, and provided with the seat C, with the auxiliary frame D having the adjustable tongue G attached, and adapted to carry either ploughs or cultivators, whereby the implement is fitted to be used either as a gang-plough or a cultivator, as set forth.

No. 112,394.—JAMES W. CURSA, SAN LEANDRO, CAL.—*Gang Ploughs*.—March 7, 1871.

Claim.—The axles C and D, arms F and G, and link H, in combination with a single lever L, when constructed to regulate the depth of the furrow without leaving the seat, substantially as described.

No. 112,434.—MILF A. ELLIOTT, STRATFORD HOLLOW, N. H.—*Sulky Ploughs*.—March 7, 1871.

Claim.—1.—The arm J, projecting laterally beyond the plough, and following in the rear thereof, for the purpose of preventing the soil from falling back into the furrow.

2.—The application of the downwardly projecting and rearwardly curved arm P to the cross-bar E of a plough frame for the purpose of balancing the machine and enabling the plough to run with uniform strides.

No. 113,081.—JOHN MURRAY, SILVERVILLE, CAL.—*Gang Ploughs*.—March 28, 1871.

Claim.—The arrangement of the frame A, bars C, axle E, lever K, balance-beam H, connecting rod G, and link L, as described, for the purpose set forth.

No. 113,234.—JOHN WOKRELL, and JAMES RYNERSON, CLAYTON, IND.—*Sulky Attachments for Ploughs*.—March 28, 1871.

Claim.—In a sulky attachment for ploughs, the combination of the bent lever G and adjustable bar F with the foot lever L, shaft f, brace-arm N, and clamp s t, substantially as specified, as an improvement upon our patent of July 26, 1870.

No. 113,235.—JOHN WOKRELL, and JAMES RYNERSON, CLAYTON, IND.—*Sulky Attachments for Ploughs*.—March 28, 1871.

Claim.—1.—In a sulky for ploughs, the axle herein described, having the double bend b z, substantially as specified.

2.—In a sulky attachment for ploughs, in combination with the square axle bent in U shape, and pivoted, as described, the bent arm r, cam hook c, and stop f, substantially as specified.

No. 113,393.—JOEL I. BONI, MARSHALTOWN, IOWA.—*Gang and Sulky Ploughs*.—April 4, 1871.

Claim.—1.—The arrangement of the beams A A' cross-bar H, bent brace J, plates G G', clamps a a' and b, bolt and nut d, and the plough bars C C', all substantially as shown and described, and for the purposes herein set forth.

2.—The arrangement with the frame beams A A' of the adjustable rods K K', frame L, bar e, loop f, seed drill box N, and gauge wheel M, all constructed and operating substantially as set forth.

No. 113,627.—LUKE CHAPMAN, COLLETSVILLE,

CONN., assignor to himself and THE COLLINS COMPANY.—*Gang Ploughs*.—April 11, 1871.

Claim.—1.—In a gang plough, the combination of the parts j and j' and the clamp u with the wheel v, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

2.—The combination of the frame a, cranked axle c, jointed lever j j' clamp u, and wheels e and f, as parts of a gang plough, the whole constructed, arranged and operated substantially as and for the purposes set forth.

No. 114,037.—JOSEPH OLIVER, EAGLE POINT, ILL.—*Gang Ploughs*.—April 25, 1871.

Claim.—1.—In combination with the laterally adjustable plough beams, the laterally-adjustable coulters, substantially as set forth.

2.—The combination of the platform C, the movable tongue E, the double or reversible ratchet standards F', sector lever P, and the tongue-loops F F', substantially as set forth.

3.—The combination, in a gang-plough, of yoke N, coulters b d, forked standard a, and coulters M.

No. 115,057.—BENJAMIN C. HOY F, FORT ATKINSON, WIS.—*Reeling Ploughs*.—May 23, 1871.

Claim.—1.—The single pivoted lever D, slotted disk A, and wheel G, all combined as described, for the purpose specified.

2.—The bracket K, hub H, and shaft B, all combined as described, for the purpose specified.

No. 115,337.—GEORGE M. SMITH, PETERSBERG, IND.—*Sulky Attachment for Ploughs*.—May 30, 1871.

Claim.—The reversible slides G, adjustable spindles F, and transverse bar B, clef at each end, and provided with the adjusting sectors H, constructed, combined, and arranged substantially as and for the purpose specified.

No. 115,533.—WILLIAM B. QUICK, BELLEVILLE, ILL.—*Gang Ploughs*.—June 9, 1871.

Claim.—The combination and arrangement of the seat frame E, foot board F, movable frame G connected to plough beams D, lever shaft H, carrying hook rod I, with friction roller P, substantially as and for the purpose specified.

No. 115,688.—WILLIAM PARRISH, DAVEN, OREGON.—*Gang Ploughs*.—June 13, 1871.

Claim.—The sulky attachment herein described, connected as specified, in combination with the yoke C, center wheel D, arms E E', and lever F', substantially as and for the purpose set forth.

No. 116,332.—MICHAEL LILES, MASSILLON, OHIO.—*Gang Plough*.—June 27, 1871.

Claim.—An improved gang plough, formed by the arrangement of the frame A a', wheels C E, dovetailed block D d', lever G, tongue H, pivoted bar I, plough beam J, ploughs K, standards F, gauge wheel M, slotted standard N, lever O, swiveled bolt P, and seat Q, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

No. 116,428.—SAMUEL J. GILLHAM, WILLIAM C. TAYLOR, and JAMES W. STOLLE, VANDALIA, ILL., assignors to said GILLHAM and TAYLOR.—*Gang Ploughs*.—June 27, 1871.

Claim.—1.—The adjustable hinge connection c d e f, between the fore ends of the beams and the frame, in combination with the guide yokes H H', connected to the axle-bar by adjustable socket bolts h, substantially as and for the purpose set forth.

2.—The adjustable brace connections K k l / M N O h, in combination with the beam G, standard I, and axle C, substantially as set forth.

No. 116,059.—WILLIAM HAY and THOMAS B. FREEMAN, HILLSBORO, OHIO.—*Gang Ploughs*.—July 11, 1871.—Antedated July 4, 1871.

Claim.—1.—The frame F having the ploughs G attached, in combination with the axle A having the arms f attached, the frame and axle being connected by the hinged rod or stump I, substantially as described.

2.—The axle A, having the plates c secured to each end, in combination with the bent arms C having the level E and each a rigidly attached threer, said arms being pivoted one

to the upper and the other to the lower side of the axle, substantially as set forth.

No. 117,704.—JAMES H. GLASS, MCGREGOR, IOWA, assignor, by mesne assignment, to LOUISA J. GLASS.—*Gen. P'tnts. July 25, 1871.*

Claim.—1.—The box C, operated as described, and serving as a protection for the screw and studs *a'*, in combination with the flange of plate D, constructed and arranged substantially as specified.

2.—The dog O, in combination with the chain M, shackle N, in combination with axle A, and beam G, substantially as and for the purpose set forth.

No. 117,707.—LEWIS T. WEBSTER, NORTHFIELD, MAS.—*Gen. P'tnts. July 25, 1871.*

Claim.—1.—The circular revolving beveled furrow guide *a*, as herein shown and described, in combination with the adjustable arm *b* and brace *f*, as recited.

2.—The arrangement of the shaft *h* in relation to the axle or shaft and beam, as and for the purpose set forth.

3.—The arrangement of the adjustable springs *m* and *n* in relation to the ploughs, as described.

No. 117,711.—SAMUEL A. WORTHEN, THOMSON, ILL.—*Gen. P'tnts. Aug. 1, 1871.*

Claim.—The curved bar M, axle I, cams L, lever N, and segment R, for the purpose of operating the plough beams B, in the manner and for the uses and purposes shown and described.

No. 117,734.—ANDREW J. BURLAND, CHARLESTON, IOWA.—*U. S. Pat. Aug. 1, 1871.*

Claim.—1.—The slotted bar *a* and bar J, combined as described, with the beam E to adjust the plough laterally at the point for taking more or less land.

2.—The combination of the axle A, wheel B, tongue C, and brace D, forming one part, with the rock-shaft G, seat I, and rod *h*, forming the second part, and with the plough beam E and lever H of the third part, all arranged substantially as herein shown and described.

No. 117,770.—JOHN B. WOODWARD, MADISON TOWNSHIP, OHIO.—*Gen. P'tnts. Aug. 15, 1871.*

Claim.—1.—The reversible clevis blocks J, in combination with the axle B, plough beams G, and clevis or stays K, substantially as herein shown and described, and for the purpose set forth.

2.—The arrangement of the wheels A, double crank axle B, lever C, catch bar *c'*, forward beam D, tongue E, adjustable slotted gauge plate F, ploughs G H, inclined and cross braces of bolts I, reversible clevis blocks J, clevises or stays K, rear frame L, center wheel M, chain N, pulley O, brackets P, capstan Q, bracket R, hand wheel S, ratchet wheel T, spring pawl U, and driver's seat V W, with each other, substantially as herein shown and described, and for the purposes set forth.

No. 118,593.—JAMES I. VAN GORDER, SIDNEY, OHIO.—*Sidey Plough—August 29, 1871.*

Claim.—1.—The combination of the cranked axle A A', the coupling I F', its equivalent, lever L, and the plough beam with plough attached, substantially as described.

2.—In combination with the elements of the preceding claim, the pivot foot piece P, and latched latch K, which is linked to the foot piece, substantially as and for the purpose set forth.

3.—The combination of the vertical part A' of the cranked axle, coupling I F', plough beam E, and lever G, the short arm of which is linked to the plough beam for turning it horizontally, substantially as and for the purpose set forth.

No. 118,604.—K. DODD, CORELLI, NEW BRUNSWICK, TEXAS.—*Wheel Ploughs—Sept. 18, 1871.*

Claim.—1.—In combination with a gang-plough frame B, pivoted in another C, the mechanism, consisting of bent levers V, pins W, spring X, toes Y, shaft Z, and levers A', all arranged as and for the purpose described.

2.—The frame work H H', bars I J, cross bar K, and catch-lever L, in combination with the frame C, to which the revolving plough-frame B A is pivoted, and crank axle E, substantially as herein shown and described, and for the purpose set forth.

3.—The bent bars M, pivoted cross bar O *c'*, spring Q, and slotted standard P, in combination with the double crank-rod I, beam T, and the teeth formed upon the lower part

of the forward arms of the frames H, substantially as herein shown and described, and for the purpose set forth.

No. 118,702.—WILLIAM J. CONNOR, BOSTON, ILL.—*Whe. Pl. Aug. 8—September 12, 1871.*

Claim.—1.—The hinged and pivoted plough standard B, in combination with the rod *a* and hand wheel *m*; for adjusting the pitch of the plough, substantially as described.

2.—The beam A, recessed, as described, to receive the standards B of the ploughs, and furnished with screws, bolts and nuts which allow the ploughs to be adjusted laterally and serve to firmly sustain them in position, substantially as described.

3.—The slotted and vertically adjustable standards C C', which E, beam A, ploughs B b, and swinging seat D, arranged substantially as described.

No. 116,102.—JOSEPH E. SMITH, TRUMONT, ILL.—*Gen. P'tnts. July 19, 1871.*

Claim.—1.—In three horse ploughs, the beams M M, combined with draft bar and block O P, having long upper double tree clevis *o'* and short lower middle-horse single-tree clevis *o'*, for the purpose of enabling the middle horse to walk in the furrow, one side horse on the land, and the other on the ploughed ground.

2.—The vibratory guide V pivoted to the axle and applied to the beams, as specified.

No. 116,104.—WARREN M. PITTS, HODDERS, MO.—*Whe. Cultivators—Sept. 26, 1871.*

Claim.—1.—The detachable beam Q constructed and secured to the standards P, substantially in the manner herein shown and described, to receive the scraper plates S, as set forth.

2.—The flanges U, formed upon the sides of the bases of the feet Q, to receive the cutter plates R, substantially as herein shown and described, and for the purpose set forth.

No. 120,384.—IAS M. HUE and ELISHA CARD, SAN FRANCISCO, CAL.—*Gen. P'tnts. October 31, 1871.*

Claim.—The combination in a wheel gang plough, of the frame H H, cross timber A, pole J, wheels B E, plate M with their guiding prongs *m*, shaft *a*, bar *g*, plate *l*, lever *s*, and link *z*, arranged and operating as described.

No. 120,565.—JOHN WORRELL and JAMES H. KYNERSON, CLAYTON, IND.—*Sulky Attachments to Ploughs—October 31, 1871.*

Claim.—The curved rack H and hinge F, in combination with the lever H', beam E, bar D, and arms C C', when constructed and arranged substantially as and for the purpose specified.

No. 128,572.—LUKE CHAPMAN, COLTSVILLE, CONN., assignor to himself and THE COLLINS COMPANY, same place.—*Gen. P'tnts. Nov. 16, 1871.*

Claim.—1.—The beam *a*, made reversible and provided with sets of ploughs both before and behind the point of suspension, substantially as described.

2.—The reversible beam *a* combined with the swivel *b*, sliding block *p'*, and standard *a'*, and made rotary by means of the worm gear *c* and worm *d'*, substantially as described.

3.—The pairs clamped in the manually preceding clause, combined with the lifting jack described, substantially as described.

4.—The standard *d* having a reversible beam *a* hung thereon, and made oscillatory sidewise upon the main axle *e* by means of the ball-plate *f* pivoted to the axle-plate *p'*, and the worm *p'* and worm-teeth *f'*, substantially as described.

5.—In combination with a reversible plough beam *a*, the gauge wheel *m*, attached adjustably thereto, substantially as described.

6.—A plough beam *a*, made reversible by mechanism substantially as described, made adjustable vertically and sidewise by mechanism substantially as described, and the whole hung on a main axle *e*, permanently sunk below the level of the centers of the supporting wheels, substantially as described.

No. 122,442.—WILLIAM G. CROSSLEY, APPLE RIVER, ILL.—*Whe. Ploughs—January 2, 1872.*

Claim.—The combination of the centrally adjustable guides M M with the depending laterally adjustable standard J J, said standard being arranged to hold the forward ends of the beams C D in position when elevated, and leaving the

same free when the ploughs are elevated, as set forth and shown.

No. 123,154.—WILLIAM H. PARRISH and JOHN G. PARRISH, PORTLAND, OREGON.—*Wheel Ploughs*.—*January 30, 1872*.

Claim.—In a sulky plough, we claim the combination and arrangement of the link M, pivoted to the hind part of the plough-beam, the lever I, pivoted to the link M, the spring k^2 , the post H, and the ratchet bar G, as and for the purpose specified.

2.—In combination with the mould-board of a sulky plough, we claim the additional plate or heel S, constructed and arranged as described, to assist in supporting the plough, and in allowing it to be turned around.

No. 123,704.—JOHN H. ROBBINS and SAMUEL ROBBINS, BURLINGTON, OREGON.—*Wheel-Ploughs*.—*January 30, 1872*.

Claim.—The adjustable side yoke F and pin k , and the lever frame G g^2 , having hook g^1 , combined with beam D D^1 D^2 , having chain g^3 , all arranged as and for the purpose described.

No. 123,339.—LUKE CHAPMAN, COLINSVILLE, CONN., a signor to himself and THE COLLINS COMPANY, same place.—*Ploughs*.—*February 9, 1872*.

Claim.—The frame d^1 d^2 d^3 , provided with the journals h rigidly attached thereto, in combination with the rotary plough beam a , provided with the right and left ploughs b , c , substantially as described.

2.—The rotating standard e , provided with wheel or crank and handle e^1 , arranged to be operated by the driver, in combination with the bearing f and rotating plough beam a , substantially as and for the purpose set forth.

No. 123,400.—MARK A. MELVIN, WASHINGTON COURT HOUSE, OHIO.—*Wheel-Ploughs*.—*February 6, 1872*.

Claim.—The flexible connection device formed by the link L and duplex k , in combination with the perforated bar g , attached to the frame, the clevis d of the plough, and the adjusting device u w p q , r , all arranged as herein shown and described, and for the purpose specified.

No. 123,455.—HARLES N. OWEN, SALT LAKE, OHIO.—*Wheel-Ploughs*.—*February 9, 1872*.

Claim.—The combination of a yoke or bracket, C, having a vertical vibration, a hanger F E, adjustable in an arc of a circle, and a vertical pivot k , to which the plough beam is attached, substantially as described.

2.—In a sulky plough, the combination, with the yoke C, to which the plough beam is attached, of a hand lever, cogged sector a , and a foot lever, operating as set forth, to lift the plough from the ground.

3.—In combination with the yoke C, and the hand-lever and foot-lever, operating as set forth, the stop b , ratchet wheel c , and weighted pawl d , for locking the plough in an elevated position, substantially as set forth.

4.—In combination with tongue B, beam D, and drop iron D¹, the adjustable stop d^1 , substantially as described.

No. 123,616.—WILLIAM E. CUMMINS, LEON, IOWA.—*Sulky-Ploughs*.—*February 13, 1872*.

Claim.—The combination of the tongue A, curved bar B, bars or frame C, round or bar c^1 , vertical frame D, seat F, axles F, wheels G, keeper L, connecting bar N, lever O, elbow lever P, connecting rod Q, pawl R, notched bar S with the plough beam J, substantially as and for the purpose herein shown and described.

2.—The combination of the pin T, flanged friction roller U u , curved bar V, catch bar W, z , spring X, connecting rod Y, lever Z, lever O, and its z^1 clevis, segmental rack S, and frame C with the plough beam J, substantially as shown and described, for the purpose specified.

No. 123,869.—FRANK G. CHARLES, GAITHERSBURG, MD.—*Gang-Ploughs*.—*February 20, 1872*.

Claim.—The beams D, adjustably pivoted to the rod H by plates E and blocks J, in combination with plates G and M, adjustable rack bars L, levers K, and staples z , substantially as and for the purpose specified.

2.—The axle tree A, made in two sections and placed one above the other as shown, the upper one having an

axle for one wheel and the lower one an axle for the opposite wheel, in combination with the arches X X and screws P P, which said arches are both firmly bolted to the lower axle tree and the screws swivelled to the upper one, as shown and described.

No. 124.—[So.—SAMUEL B. BOWEN and AMERICAS M. ABBOTT, STOCKTON, CAL.—*Gang-Ploughs*.—*March 12, 1872*.

Claim.—The bent or crank axle A, having rigid standards d secured to it at right angles with said crane, in combination with the plough beams D D, when the said beams are pivoted to the jointed links F F and are secured to the under side of the pole or tongue E, and operated by the lever H rigidly attached to the crank axle, substantially in the manner herein shown and described.

No. 124,571.—GEO. L. W. HAINES, MAINE PRAIRIE, CAL.—*Gang-Ploughs*.—*March 12, 1872*. Antelated *March 7, 1872*.

Claim.—The operating device for elevating and depressing the ploughs, consisting of the lever M L H and the links I X, or an equivalent device, substantially as described.

2.—The seat E, supported directly upon the axle D, as shown, and locked by means of the slotted standards C and clamp screw, as described.

3.—The arms P P and the double vibrating lever R, together with the shaft rod S and the operating lever, as described and set forth.

4.—A clamp a gang plough having, in combination, the seat, support d as shown, together with the herein described device for giving a vertical and a side or curving movement.

No. 124,812.—FRANK M. FAY, MONROE CO., ILL., assignor to one half his right to A. S. MCGREW, same place.—*Gang-Ploughs*.—*March 10, 1872*.

Claim.—The beams F E E', having mould plates G, in combination with pendulums D' D' D^2 , bars C, and standards H having mould boards b , substantially as and for the purpose specified.

No. 125,185.—SAMUEL A. FANNING, JACKSONVILLE, FLA.—*Ploughs*.—*April 2, 1872*.

Claim.—The roller F, arranged as described, in the rear and to one side of the turn plough G, so as to pulverize the furrow slice as soon as turned over.

2.—The bar N, pivoted to the heel of plough G, and notched so as to fasten over a bar on the rear of the plough frame, as and for the purpose described.

No. 125,285.—ANDREW FREEMAN, HOMER, ILL.—*Gang-Ploughs*.—*April 2, 1872*.

Claim.—The combination, in a gang or sulky plough, of the lever L, beams P F, link J, roll g^1 , the whitetrees, bar H, the tongue, beam z , beams E E, guides M M, and staples or loops K K, all substantially as shown and described.

No. 126,255.—ANDREW J. BURLAND, DONALDSON, IOWA.—*Wheel-Ploughs*.—*April 30, 1872*.

Claim.—The brace pendulum a , combined with the axle p , plate n , bars m , and levers m , as specified.

2.—The roll-shaft g , combined with the elbow lever g^1 , g^2 , strap z , connecting rod z^1 , lever h , and plate d , as set forth.

3.—The plate d having an inner series of holes, h^1 , and combined with the rod z , strap z^1 , and the land-pin as specified.

No. 126,447.—JOSEPH COCHRANE, INDIANOLA, IOWA.—*Wheel-Ploughs*.—*May 7, 1872*.

Claim.—The rear frame D, pivoted to the front frame F, supported by the adjustable wheel N, and having the seat E, with levers A C arranged to be operated by the driver, as and for the purpose set forth.

No. 126,670.—WELLS MCGOOL, GILBERT CENTER, IOWA.—*Wheel-Ploughs*.—*May 21, 1872*.

Claim.—The spool a F, provided with a clevis, G, and hook, H, either of both, and a swivel N, to adapt for attachment to a sulky, A B C D E, and plough I U K L, substantially as herein shown and described, and for the purpose set forth.

No. 127,495.—DAVID A. MANUEL, NAPA, CAL.—*Gang-Ploughs*.—*Jan. 4, 1872*.

Claim.—The combination of the beams C C, cast-iron wheel socket z , arms z^1 z^2 , z^3 , z^4 , rod z^5 , and lever z^6 , arranged

to be secured for the purpose of raising and lowering the plough.

No. 127,538.—JOHN WOKRELL, and JAMES H. RYNERSON, CHICAGO, ILL.—*See Ploughs*.—*Jan. 4, 1872.*

Claim.—In a sulky plough, the bent axle B having the vertical arms a of unequal lengths, which a is slotted at a' , in combination with the frame G for supporting the plough beam, substantially as and for the purposes specified.

2.—The combination, with the bent axle B having the slotted arm a , and supporting the hinged adjustable frame G, of the diagonal braces E E', slotted at E for the purpose of a fastening, and adapted for use with either a left or right hand plough, substantially as specified.

3.—The adjustable standard H, having pivoted to its lower end the cylinder J, and provided with the foot plate K, substantially as and for the purpose specified.

No. 127,785.—ARTHUR MEKKILL, INDIANOLA, CANADA.—*See Ploughs*.—*Jan. 11, 1872.*

Claim.—In a plough, the ploughs D E F G, constructed substantially as herein shown and described, to adapt them for at tasking directly to the side of the beam, as and for the purpose set forth.

2.—A gang of ploughs, D, arranged in the diagonal beam C, combined, as described, with one or more plates, H, arranged on the shaft beam A, and cutting the ground to counteract strain upon the line of shaft.

3.—The combination of the long staple or bar N, lever O, wheel P, and adjustable support Q, with the front beam B of the frame A B C, substantially as herein shown and described, and for the purpose set forth.

No. 127,878.—WILLIAM HASTUP, STINEY, OHIO, assignor to JAMES H. G. G. HASTUP, SR., and R. B. HASTUP, JR., same place.—*See Ploughs*.—*Jan. 11, 1872.*

Claim.—In a combination of the tongue A, plates B B with pivot and cap C C to form a joint between the tongue and the sulky, substantially as herein set forth.

2.—The plate D and foot-lever E, arranged with the top plate B and top-cap C, substantially as and for the purposes herein set forth.

3.—In combination with the plough beam, the brace R, made adjustable in the bottom cap C, and fastened by the set-screw a , substantially as herein set forth.

No. 128,215.—WILLIAM PARRISH, DAVENPORT, IOWA.—*See Ploughs*.—*Jan. 25, 1872.*

Claim.—In a combination of the beam G, adjustable screw C, lever K, and roller a , constructed, combined, and arranged in a plough, substantially as and for the purpose specified.

2.—In a gang plough having two or more beams with cast-iron lever attachments, as described, the slotted connecting bar C, slotted beam B, and pivot pin C', constructed and arranged substantially as and for the purpose specified.

No. 128,282.—MILTON W. HARRIS, DES MOINES, IOWA.—*See Ploughs*.—*July 2, 1872.*

Claim.—The double axle A, the rollers a , the plate F F, the long-bolt b , the frame beam D D, made combined, and operated in a gang-plough substantially as described, and for the purposes specified.

No. 128,290.—GUY TOWNER, JACKSON, MO.—*Wheel Ploughs*.—*July 9, 1872.*

Claim.—The frame A B C D, combined with the furrow-wheel E, pivot-bar H, and land-wheel F, as and for the purposes described.

No. 128,052.—E. J. JAWIN, J. CRANE, RIFON, WIS.—*Wheel Ploughs*.—*July 10, 1872.*

Claim.—The beam A provided with the double plates B, the axle H, the adjustable supporting-bar G, the crank shaft C pivoted to the support G, the foot-lever L, all combined and operating together, as and for the purposes described.

No. 129,101.—H. W. NEAL, WELLSVILLE, PA., assignor to JASON McVAY, STINEY, OHIO.—*Wheel Ploughs*.—*July 10, 1872.*

Claim.—The frame formed by the parts b , c , d , e , f , g , h , i , j , k , l , m , n , o , p , q , r , s , t , u , v , w , x , y , z , aa , bb , cc , dd , ee , ff , gg , hh , ii , jj , kk , ll , mm , nn , oo , pp , qq , rr , ss , tt , uu , vv , ww , xx , yy , zz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kkk , lll , mmm , nnn , ooo , ppp , qqq , rrr , sss , ttt , uuu , vvv , www , xxx , yyy , zzz , aaa , bbb , ccc , ddd , eee , fff , ggg , hhh , iii , jjj , kk

manner described, of the rods M and shifting evener K, substantially as specified.

5.—The combination of the notched diagonal beam C, hangers F, ploughs D, beams E, and levers F, substantially as specified.

No. 132,010.—CHARLES KEWIN, SAN FRANCISCO, CAL.—*Comb. Ploughs*.—*August 12, 1872*.

Claim.—1.—The cranked axle F with its rigid arms *jj*, in combination with the lever-bar K with its arm *m* and the operating lever O, the two levers being so combined as to provide a compound lever for raising and lowering the ploughs and frame, substantially as above described.

2.—The seat E supported by the loosely connected standards *g*, and supported by the adjustable brace or link *g*, substantially as and for the purpose above described.

3.—In combination with the above-described compound lever, I claim the weight S, substantially as and for the purpose above described.

No. 132,206.—MARSHALL S. CURTISS, BRADFORD, ILL.—*Comb. Ploughs*.—*November 19, 1872*.

Claim.—1.—The plough, having a free lateral motion with respect to the wheels and axle A by means of the rod *g*, arranged to oscillate within the eye of the clevis *h* of *f* of the plough, in combination with slots or guides *d*, hinged platform B and hinged iron I, having transverse arms *k* arranged to oscillate in slots or guides *l* of the beams G, G, substantially as set forth.

2.—The vertical rod F with foot board *h*, transverse horizontal bar *l*, slots *h*, *h*, and slots or guides *d*, in combination with platform B having a hinged connection with axle A, so as to effect the raising or lowering of the points of the ploughs by means of the driver's foot, substantially as set forth.

3.—The lever D, link *n*, and arm *m* of axle A with hinged platform B and hinged iron I, in combination with the notched parallel guides *p* *q* and beams G, in order to throw or turn the axle forward so as to elevate the beams and ploughs out of the soil, when desired, substantially as set forth.

No. 134,121.—JOHN WORRELL, CRAWFORD, IND.—*Sully Plows*.—*December 17, 1872*.

Claim.—1.—The slotted adjustable axle arms C, holding the wheels B, and having their inner ends enlarged and provided with the set screws D, in combination with the bent axle tree A, substantially as specified.

2.—The lever I, pivoted to the plough beam E, and connected to the bent rod J running lengthwise of the tongue F, and through the seat-upon F, and having the eye K and arm or handle N, substantially as specified.

No. 134,316.—FRASIER ROOP, DAKEN, WIS.—*Ploughs*.—*December 24, 1872*.

Claim.—The combination of the frame A, hinged boards B, B, notched plates F, F, standards D' and E', slotted levers C, wheel L, L, and one or more ploughs, E, M, all constructed and arranged substantially as set forth.

No. 134,540.—GEORGE A. GROVES, EAST CLARKSON, N. Y.—*Comb. Ploughs*.—*January 7, 1873*.

Claim.—1.—The branch arm *f* of the plough G guided in the standard H, as and for the purpose set forth.

2.—The ploughs G provided with the shanks *u* and branch F and pivoted to the bars *a* *a* of the frame A, in combination with the rock shaft K, arm *m*, guide-standards H, pulley K, and cord or chain I, all constructed and arranged as and for the purpose described.

No. 134,878.—HARLOW M. FREEMAN, JOHN LOWE, and JOHN E. STEVENS, LAURENCE, MD.—*Wheel Ploughs*.—*January 14, 1873*.

Claim.—1.—The combination of the rigid frame K M N and pivoted draught bars J, L, O, and P, with each other and with the tongue D of the machine, substantially as herein shown and described, and as and for the purpose set forth.

2.—The combination of the angled plate F, rod G, bent bar H, and short bar I, with the tongue D and pivoted draught-bars J, L, O, and P, substantially as herein shown and described, for connecting the plough beams R with said draught bars, as set forth.

No. 135,357.—SAMUEL E. PARR, SMITHVILLE, ILL.—*Comb. Ploughs*.—*January 28, 1873*.

Claim.—The bent axle B, having *dot*, in combination

with the frame A *a' b' c'*, vertical post *d*, adjustable tongue F, and joint C, constructed and arranged so that the beams of a gang-plough or stalk-cutter can be readily attached, substantially in the manner as herein shown and set forth.

No. 135,504.—MARSHALL SATTLEY, TAYLORVILLE, ILL.—*Wheel Ploughs*.—*February 4, 1873*.

Claim.—1.—In combination with the frame of the machine and with the pivoted plough beam, the tongue I pivoted in front of its rear end, the lever K provided with the arms *k* and *l*, and the connection L, substantially as and for the purpose shown.

2.—The harness-tree-ribbed machine, consisting of the axle A, ground wheels B, rails C and C', plough beam E, clevis F, plough G, standards H and H', pole I, lever K and *h*, detent K', connection L, and quadrant M, when said parts are constructed and combined to operate substantially as and for the purpose specified.

No. 135,554.—JOHN K. McLENNAN, ELMIRA, ILL.—*Comb. Ploughs*.—*February 11, 1873*.

Claim.—1.—The bent slotted levers D, D, with their adjusting-eyes G, G, or equivalent, attached to the axle B, as constructed in combination with their horizontal bars *k* & *k*, attached to the plough beams A, A, substantially as described.

2.—The plough-beams A, A, when constructed as described, and carrying the axle-trees *ii*, and pivoted at the front to the head of the tongue, and connected with the pivoted foot board E; strap *ll*, connecting the latter to the head of the tongue; the bar *l*, and connecting-bar *xy* pivoted to the foot board E, combined and arranged to operate in combination with the levers D, D and supporting-rods *k* & *k* of the plough beam *z*, as described.

No. 135,806.—WILLIAM S. GRIMSHAW, PITTSBURGH, ILL.—*Wheel Ploughs*.—*February 11, 1873*.

Claim.—1.—The combination of the movable frame D, D with the axle-tree B, said frame having the rock-shaft E, to which the plough-beam is fastened, substantially as described.

2.—The rod P attached to the rock-shaft E and the plough beam, and acting as an adjustable brace and guide to the plough.

3.—The foot lever K, in combination with the axle-tree B and the frame D, D, acting as a convenient and efficient device for lowering the plough.

4.—The combination of the movable frame D, D, the rod P, and the foot lever K, acting together, substantially as described, and for the purposes herein set forth.

No. 136,035.—WILLIAM O'GILL, OREGON, ILL.—*Sully Ploughs*.—*February 18, 1873*.

Claim.—The plate G, pivoted to the plough-frame H, receiving wheel *m*, *n*, and provided with a lever *h*, in combination with arc-slotted and notched plate *z*, and lock mechanism *i* *l* *o*, substantially as and for the purpose described.

No. 136,662.—ALBERT N. HUMPHREY, BROWN VAL, WIS.—*Comb. Ploughs*.—*February 18, 1873*.

Claim.—1.—The combination and arrangement of the pivoted iron frame C carrying the ploughs I, and transverse rod P, the outer draft frame B having the slotted segmental plates B' and levers E, substantially as specified.

2.—The plate S secured to the axle A, and plate S' secured to the frame B, in combination with the evener Q, double tree O, and angle trees P, P, R, substantially as described.

No. 136,674.—LOUIS SACHSE, MONMOUTH, ILL.—*Wheel Ploughs*.—*March 11, 1873*.

Claim.—The wheels O, K, having axles N, O, connected by crank arm P, and provided with spur-wheels S, T and lever U, in combination with the plough frame A, as and for the purpose described.

No. 137,014.—JOHN WORRELL, BELLEVILLE, IND.—*Wheel Ploughs*.—*March 18, 1873*.

Claim.—1.—The axle A having the arm B, B' projecting vertically downward, one bent at a right angle and extending toward one side, and the other bent at an obtuse angle and extending downward and toward the rear, substantially as shown and described.

2.—The combination of the lever K and notched bar L,

jointed pole M, connecting-bar G, and plough beam K, substantially as shown and described.

3.—The combination with the jointed pole and lever, of the elbow-lever H, radial linkage-brace D D E, plough-beam and connecting devices I and G, substantially as specified.

No. 137,611.—JOAB H. JAMES, HARVEY TUCKER and THIGHMAN D. TERRY, KNOXSBOROUGH, MO.—*Wheel Ploughs*.—April 8, 1873. Filed February 27, 1873.

Claim.—1.—The arrangement of the axle A, beam C with castor-wheel D and seat E, tongue K, and plough-frame G, all substantially as shown and described, and for the purposes herein set forth.

2.—The arrangement upon one axle, A, of the plough-frame G, and drum or roller L, substantially as and for the purposes herein set forth.

No. 137,697.—GEORGE W. MANUEL, NAPA, CAL.—*Gang Ploughs*.—April 8, 1873. Filed September 20, 1873.

Claim.—In a gang-plough, of substantially the described construction, the lever *m*, adapted to slide in notches of its rack, in combination with the lever *m'*, adapted to be moved forward and backward, and the connecting parts, arranged as described, for the purpose set forth.

No. 137,870.—STEPHEN L. STOCKSTILL, MEDWAY, OHIO, and HENRY D. KUTZ, HARRISBURG, PA.—*Ploughs*.—April 15, 1873. Filed September 7, 1872.

Claim.—The plough-beam, provided with perforated ears *a*, and the pin *b* formed on the end of the axle C, the sleeve *c*, and set-screw *d*, all arranged as shown and described, for the purpose of allowing vertical adjustment of the axle, as specified.

No. 137,915.—RICHARD B. GROUND, EDWARDSVILLE, assignor of one-half of his right to CHANCY G. SAUNDERS, assignor, by mesne assignments, to NELSON D. SWEENEY, MARISE, ILL.—*Ploughs*.—April 15, 1873. Filed June 27, 1872.

Claim.—A plough in combination with the sulky attachment A F, clamp composed of the bolts *a* *b* and slotted plate *c*, slotted lever B', lock lever E, elevated bar D, and perforated arc C, all the parts being constructed and arranged substantially as and for the purpose specified.

No. 137,975.—WILLIAM P. SWEENEY, MARISE, ILL.—*Wheel Ploughs*.—April 15, 1873. Filed September 27, 1872.

Claim.—The beam of a wheel-plough in combination with castor-wheel A, lever B, a locking latch attached to the lever, and a fixed notched arc C' C', all arranged and operating substantially in the manner and for the purpose specified.

No. 138,329.—FRED. HASBROOK, STOKES' MOUND, MO.—*Wheel Ploughs*.—April 29, 1873. Filed August 13, 1872.

Claim.—The combination of the bar or rod A, box C, block G, chain F, and lever E, substantially as and for the purpose specified.

No. 139,032.—CHARLES B. STEVENS, DONNELSON, IOWA.—*Wheel Ploughs*.—May 23, 1873. Filed January 16, 1873.

Claim.—The frame A B, supporting-wheels E F and sliding seat L, in combination with pivoted plough N, the seat being arranged so that the driver may throw his weight on the rear of the frame to assist in raising the plough, all substantially as described and for the purposes set forth.

No. 139,059.—ISAAC B. GREEN, GILLESPIE, ILL.—*Wheel Ploughs*.—May 20, 1873. Filed March 15, 1873.

Claim.—The pentent standard K and guide Q, arranged under the axle, in combination with a two-barred plough beam, as and for the purpose described.

No. 140,480.—MARSHALL S. CURTISS, BRADFORD, ILL.—*Gang Ploughs*.—July 1, 1873. Filed November 13, 1872.

Claim.—The plate B provided with teeth or cogs *k*, and pivoted to axle A, in combination with lever B', and transverse arms *f* *f'* of rod *b* having transverse arms *d* arranged in guides *c* *c'* of beams C C, the whole constructed to operate substantially as set forth.

No. 140,505.—DAVID W. HUGHES, MEXICO, MO.—*Sulky Ploughs*.—July 1, 1873. Filed October 12, 1872.

Claim.—1.—In a wheel-plough, the transverse bar D, con-

structed and arranged and used to support the driver's seat E' and tongue C, in the manner substantially as described.

2.—The bar H', braces L, beam A, plough-beam E', lever K, and chain Z, combined substantially as and for the purpose set forth.

No. 141,551.—HENRY M. SKINNER, ROCKFORD, ILL., assignor to CHESTER C. BRIGGS and ABRAHAM I. ENOCH.—*Wheel Ploughs*.—July 1, 1873. Filed March 29, 1873.

Claim.—1.—The self-tilting plough-beam and hinged tongue, in combination with the tilting locking lever I, operating substantially as described.

2.—The combination of evener M with the forward end of the tilting plough-beam, and with the pivoted tongue, by means of the chain N, as and for the purpose described.

3.—The angular stub axle plate A', made adjustable on the axle-bar as and for the purpose set forth.

4.—The adjustable coupler standard K, in combination with the adjustable supporting plates *s* provided with slots with knife-edge pivot-bearings *t* formed on them, as described.

No. 141,073.—JOHN C. PEARL, MENDOTA, ILL.—*Wheel Ploughs*.—July 22, 1873. Filed February 21, 1873.

Claim.—1.—The combination of the suspension-rod H, which swivels in a sliding coupling attached to the frame of the carriage, and the plough-beam E, which is loosely sustained in the fork of the suspension-rod by a bolt passing underneath it, substantially as and for the purpose specified.

2.—The herein described coupling for suspending a plough-beam, composed of the parts H, H', H", and H', constructed and connected, substantially as set forth.

3.—The combination of the platform D, elongated socket G fixed thereto, angular draft and suspension-rod F E', and laterally adjustable plough-beam E, all constructed and connected substantially as specified.

No. 141,881.—JAMES MARR, SIMCOE, CANADA.—*Ploughs*.—August 19, 1873. Filed March 14, 1873.

Claim.—1.—The combined axle and lever *a*, constructed in one piece, bent and arranged as described, and attached to the beam A by the hanger *b*, in combination with the wheel D and rack *b*, as hereinbefore specified.

2.—In a self-holding plough, the upright *e*, carrying the holding-wheel E and attached to the slotted arm *f*, substantially as and for the purpose described.

No. 141,951.—JONEL W. RICHARDSON, ROSCOE, ILL.—*Wheel Ploughs*.—August 19, 1873. Filed May 31, 1873.

Claim.—1.—The combination of the sleeves F, pivoted rods G, clamp H I, and draught rod K, with the arched or bent axle A and plough-beam J, substantially as herein shown and described.

2.—The combination of the bent lever Q and swivel connecting-rod K with the arched or bent axle A, and the clamp H I, pivoted connecting-rods G, and sleeves F, substantially as herein shown and described.

No. 142,084.—RUDOLPH CORETH, WEST BATTLEVILLE, ILL.—*Gang Ploughs*.—August 26, 1873. Filed June 21, 1873.

Claim.—1.—The standard-racks F F, mounted on the cranked axle B', applied to the standards E E on frame A A, and being combined with them the pawls *f* *f'* and the devices for operating these pawls, substantially as described.

2.—The steps *s*, applied to a rack-rod, *r*, having a handle-bar, G, on it, in combination with the revolving frame, carrying one or more ploughs, P, and a cranked axle, B', suspended in front out of the way of said frame, substantially as described.

3.—The standards F, perforated and provided with adjustable stoppings *p*, in combination with the standard racks and their pawls, and with lifting-arcs *d'* on a turning plough-frame, substantially as described.

No. 142,964.—THIGHMAN D. TERRY, ALONZO CASE, and CHARLES LARKIN, KNOXSBOROUGH, MO.—*Wheel Ploughs*.—September 16, 1873. Filed April 5, 1873.

Claim.—1.—The combination with the tongue A, axle B, and wheels C C, of the bar G, hinged at its front end to

the tongue and supporting the seat E, and the bar G' pivoted to the rear end of the bar G, and having the plough H and couler J attached to it, all substantially as herein set forth.

2.—The lever J', with arm h and studs i P', and bars G G', staple P', and support k, the several parts being constructed and arranged as and for the purpose specified.

3.—The wheel P, constructed as described, with the outer and inner cutting rims d e, substantially as and for the purposes herein set forth.

4.—In combination with a plough arranged on one side of the centre, as shown, the double tree K, equalizing-bar L, single-trees M, rollers P', and chain a, all arranged and operated substantially as and for the purposes herein set forth.

No. 143,147.—JOHN D. HARRISON, MIDDLETOWN, OHIO.—*Wheel Ploughs*.—September 23, 1873. Filed August 2, 1872.

Claim.—1.—The combination of arm l, link j, lever m, pawl k, and short arm i with studs n P', crank c, and ratchet wheel h, substantially as and for the purpose described.

2.—The combination of the frame a b c e with the journalled double crank e and adjustable tongue d, substantially as described, for the purposes specified.

No. 143,434.—HENRY M. BULLITT, LOUISVILLE, KY.—*Plough Carriage*.—October 7, 1873. Filed June 28, 1873.

Claim.—The uprights C, provided with axles B at their lower ends, and connected together at top by an axle D, upon which depends a hanger K, in combination with the strap I, L, M, brace rods G G', and adjusting holes H P, and plough-beam F, constructed and arranged as and for the purpose set forth.

No. 143,666.—WILLIAM BLACKSTONE, SHELBY, OHIO, III.—*Plough*.—October 7, 1873. Filed July 28, 1873.

Claim.—1.—Rock-shaft and lever B, with its slotted arm P', in combination with the plough beam and rear connecting-hook, as and for the purpose described.

2.—Lever No. 6 and connection P, in combination with lever No. 5, with joint S, and the plough beam, as and for the purpose described.

3.—The combination of the plough-beam, the rock shaft, and lever B, levers 5 and 6, with their connecting joints and slot, and ratchets 9 and k, as and for the purpose described.

No. 144,453.—FRED HASBROOK, STOKES' MOUND, MO.—*Wheel Ploughs*.—November 11, 1873. Filed September 6, 1873.

Claim.—The combination of locking bar L and rod K with bifurcated tongue A B and beam F, as and for the purpose specified.

No. 145,083.—ANDREW H. BALLAGH, BOWENSBURG, assignor to himself and MARTIE McNITT, MOUND STATION, III.—*Riding Attachment for Ploughs*.—December 2, 1873. Filed June 21, 1873.

Claim.—The triangular frame A, castor-wheel B, beam D, and draft-rod E, combined in a riding plough, as and for the purpose described.

No. 145,147.—JACOB BINGHAM and ORLANDO M. POND, WATERLOO, IOWA.—*Wheel Ploughs*.—December 2, 1873. Filed October 30, 1873.

Claim.—In a plough carriage, the axle A, having the adjustable screw lifting device a b d at one end, and the plate and box a' with set screw b' at the other end, of the axle, in combination with the plough-beam D and staple c, sliding on axle-arm B', and the plough-beam D', adjustable by slotted guides on the axle, substantially in the manner and for the purpose herein set forth.

No. 145,361.—CHRISTIAN MYERS, MARYSVILLE, CAL., assignor to himself and FRANCIS J. SCHAEFFER, DAVENPORT, IOWA.—*Subsoil Gang Ploughs*.—December 9, 1873. Filed August 16, 1873.

Claim.—The combination of detachable share G, having hoes c and rear extension of point H, with under side G' and land-side H', by means of slot c', apertures f f', and wedge piece g, for the purpose set forth.

No. 146,502.—ROBERT C. AIREY, HIGHLAND, ILL.

—*One Wheeled Three-Horse King-Ploughs*.—January 20, 1874. Filed November 8, 1873.

Claim.—1.—The combination, with the hinged plough-beam G, hinged arc-bar M, lever K, and locking device N O, of the horizontal lever P, rod R, and adjustable keeper O, as shown and described.

2.—The combination of the slotted beam E, arranged diagonally with beam D and axle C, adjustable keeper O, hinged plough-beam G, hinged arc-bar M, lever K, and locking device N O, as shown and described.

No. 146,807.—ALLISON G. CUMMINS and JOHN R. CUMMINS, McKENNEY, TEX.—*Gang Ploughs*.—January 27, 1874. Filed May 24, 1873.

Claim.—The combination, with the hinged plough beam or frame F and the tongue O, of the king-bolt H extended upward, as shown, the lever P hinged thereto, and the connecting-link Q, all as shown and described, whereby the said lever can be swung over onto the king-bolt and the parts locked, as and for the purpose specified.

No. 147,930.—WILLIAM NEWLIN, ATTICA, IND.—*Gang Ploughs*.—January 27, 1874. Filed July 3, 1873.

Claim.—1.—The combination in a gang plough, of the axle A, box G, slotted box H, set-screw J, and wheels C C, all substantially as and for the purposes set forth.

2.—The combination, in a two-wheeled gang plough, of the tongue B, secured to the outside of the axle, the bar D, beams a a', with ploughs h h', the moving bar h and its brace i, and the braces k and l, all constructed and operated substantially as and for the purposes set forth.

No. 146,987.—LUKE CHAMMAN, COLUMBIANA, CONN., assignor to himself and THE C. CLINE COMPANY, same place.—*Double-Furrow Plough*.—February 3, 1874. Filed July 28, 1873.

Claim.—1.—The forced lever d, carrying the wheel e between the ploughs, and having a spring adjusting device, in combination with the frame a and the ploughs, all constructed, arranged, and designed for operation substantially as shown and described.

2.—The combination of the double sided rack e, the lever d, the hollow barrel f, the two pistons P P' resting upon the spring within the barrel, the whole arranged, constructed, and designed for operation and use substantially as described.

No. 147,063.—SOLOMON NEFF, CURA, ILL.—*Wheel Ploughs*.—February 3, 1874. Filed August 30, 1873.

Claim.—1.—The frame C, with forwardly-projecting arms F and braces G, vertically adjustable through slots in the short axles B, in combination with the plough beams D, carried up in the axle-frame, and pivoted to the front projecting arms F, all as and for the purpose described.

2.—The combination, with tongue K, of clevis H, having several perforations, and the cross-bolt of extension F E, to which the tongue is loosely connected by an eyebolt, and adjustable to regulate the width of cut, in the manner set forth.

No. 147,156.—ROBERT NEWTON, DESEVILLE, ILL.—*Sulky Ploughs*.—February 3, 1874. Filed Jan. 10, 1872.

An improvement upon the patent granted F. S. DAVENPORT, October 9, 1866.

Claim.—In a wheel-plough, the combination of the adjustable hinge with the foot-board B, beam A, and axle, as described.

No. 147,320.—ISAAC B. GREEN, GILLESPIE, ILL.—*Wheel Ploughs*.—February 10, 1874. Filed September 13, 1873.

Claim.—The combination of the two detachable and exchangeable double-bar plough beams E, and their attached ploughs, with the guides N, slotted standards F, bars or shaft I, levers J, sliding blocks L, and braces M, and with the frame C, substantially as herein shown and described.

No. 147,741.—ELASON B. BAIRD, PEORIE, ILL., assignor to one-half of his right to RUSSELL C. BAIRD, same place.—*Sulky Ploughs*.—February 24, 1874. Filed November 25, 1873.

Claim.—The push-bar H, pivoted to the rear of the plough beam A and to the axle B, by means of which bar the sulky frame is driven, and a backward movement given

to the plough when the latter is raised, in combination with the stirrup G, levers K and P T, and chain L, substantially as described.

No. 147,882.—JOHN UREAN, BELTON, TEXAS.—*Compound Ploughs, Planters and Cultivators*.—February 24, 1874. Filed September 20, 1873.

Claim.—The combination, with the two parallel beams A A, of the adjustable cross beams P and the side beams K S, adjustable in the beams P, as described, to form a frame adapted to be used with a planter, ploughs, or cultivators.

No. 148,149.—WILLIAM SNOW, WAVERLY, ILL.—*The Wheel-Driving Ploughs*.—March 3, 1874. Filed December 1, 1873.

Claim.—1.—In a wheel-plough, the combination, with wheels A D and tongue J, having swiveled cross-bar H, of the swiveled standards B, having the wheel journals, and the arms F F, connected by rods G, as and for the purpose described.

2.—The combination, with the truck-frame and plough-beam, of swiveled standard E, having arm O and the journal of which rear wheel turns, the rod X, and the standard B, having arm M, and vibrated from the tongue, as and for the purpose set forth.

3.—The combination of the lever F', the armed shaft E' D' G', clevis C', link H', rod Y, armed shaft K' J' M', and bar N', with the plough-beam B' and frame work C, substantially as herein shown and described.

No. 148,398.—CALVIN ALBERTSON, DALTON, IND.—*Revolving Ploughs*.—March 10, 1874. Filed January 31, 1874.

Claim.—The sulky-frame B B' and tongue A, in combination with braces D, pivoted both on the spindles and plough-beam, rods h, and spindles a a, when constructed and arranged as and for the purpose herein specified.

No. 148,418.—GEORGE C. HAIGHT, NEWARK, WIS.—*Wheel Ploughs*.—March 10, 1874. Filed September 8, 1873.

Claim.—1.—The combination, with the wheels C C, of the axle composed of the long arm A, with its inner ends a bent upward, the short arm A', with its inner end a' bent upward, and the two upward bent ends a a', secured together by the stirrup-clamp B and its nuts, all as shown in Fig. 3, for the purpose set forth.

2.—The combination of the axle A A', wheels C C, tongue D, brace E, clips B B', curved bars G G, and foot-lever J, all constructed and arranged substantially as and for the purposes herein set forth.

3.—The combination of the axle A A', wheels C C, tongue D, brace E, clips B B', curved bars G G, foot-lever J, stirrups N O, and beam L, all constructed and arranged substantially as and for the purposes herein set forth.

No. 148,583.—GEORGE W. VAN GORDER, WARREN, OHIO.—*Sulky-Plough and Harrows*.—March 17, 1874. Filed December 17, 1873.

Claim.—The frame A D, having the wheel-spindles attached near to the center of the ends, and the harrow or plough attached to one side, in combination with the lever C and the bow E, carrying the seat, and resting upon the other side of said frame, substantially in the manner as described, and for the purpose set forth.

No. 149,140.—JOHN R. MCCONNELL, WAVERLY, IOWA.—*Wheel Ploughs*.—March 31, 1874. Filed August 9, 1873.

Claim.—1.—In combination with the slotted adjustable axle-arm F and rigid arm H, carrying the wheels G I, the triangular frame formed of the front plough-beam A, the diagonal bar C, carrying the draft bar K, and axle D, all constructed and arranged as shown and described, for the purpose specified.

2.—The combination of the rear plough-beam B, lever T U, draft bar K, vertical guide-bars L, to adjust laterally both plough-beam and lever, axle D, and bar M, all constructed and arranged as shown and described.

No. 150,034.—JOHN D. HARRISON, MIDDELTOWN, OHIO, assignor to one-fourth his right to P. P. LA TOUR RETHE, same place.—*Sulky-Ploughs*. April 21, 1874. Filed October 3, 1873.

Claim.—1.—The plough-sulky frame herein described,

consisting of two side pieces, each composed of three bars, A, B, and C, pivoted together at their front ends, the bars A A having spindles for the driving wheels K K, the bars B B connected by cross-bars D D' D', and the bars C C connected by a shaft to which the plough is attached, all combined substantially as herein set forth.

2.—In combination with the plough-sulky frame herein described, the shaft J with arms u u, connecting-bars m m, and the sleeve f with lever l, arm u', and connecting-bar m', all substantially as and for the purposes set forth.

No. 150,425.—EDWIN R. MC CALL, WAVERLY, IOWA.—*Wheel Plough Attachments*.—May 5, 1874. Filed February 12, 1874.

Claim.—1.—The combination of the draft-beam H, with its adjusting device h, connected with the plough beams J J' and their link attachments j j' with the diagonal timber I, the connecting chains k, arms u, and hand-lever l, operating in the manner described.

2.—The combination of the frame A, standards F and G, draft-beam H, plough-beams J J', ploughs K K', lever L, connecting-links i i, chains k k, and the adjusting device h, substantially as herein shown and described.

No. 150,702.—HENRY OLDENDORPH and JOHN OLDENDORPH, MELLSHAF, ILL.—*Gang-Ploughs*.—May 12, 1874. Filed February 26, 1874.

Claim.—1.—The pivoted axle-arm F, provided with rack-bar f, formed part of said arm, as and for the purpose set forth.

2.—The combination of the pivoted axle arm F, its rack f, pinion f', with compound lever C, having branch arms c c', as and for the purpose set forth.

3.—The combination of the foot-treadle f', crank-shaft f', chain f', spring-pawl lever f', pinion f', compound lever C, hand-lever G, lock-plate g', pivoted axle-arm F, with rack f, to operate as and for the purpose set forth.

4.—The combination of compound lever C, consisting of branch arms c c', chain d, pulley d', hand-lever E, its spring-pawl lever e' ratchet-plate e', all constructed to operate as and for the purpose set forth.

No. 150,727.—JAMES STONE, BOND COUNTY, ILL.—*Gang-Ploughs*.—May 12, 1874. Filed March 21, 1873.

Claim.—1.—The ploughs arranged obliquely upon curved beams B, of graduated length, and connected, at their rear ends, by rod C and sleeves D B, in combination with double loops E, revolving cutters F, frame A, and rod G, substantially as shown and described.

2.—The plough beams and their connections, in combination with the posts I, branched cross-bar M, brake-lever N, and ratchet O, all arranged substantially as and for the purpose set forth.

No. 151,054.—JOHN B. RALSTON and MATTHEW HARVEY, ROCKFORD, ILL.—*Wheel Ploughs*.—May 19, 1874. Filed December 3, 1873.

Claim.—1.—The clamp I, provided with the stud P, in combination with the box E', connected to the frame by pivoted links, for allowing the plough both a lateral and vertical movement, as described.

2.—The combination, with the clamp composed of plates i i', as described, of the vertical pin f', box E', and link E, all arranged and operating substantially as described.

3.—The clamp I', double-pivoted link k, arm L', and cross bar L, in combination with the plough-beam, having a vertical pivotal connection with the frame for turning the plough to or from the land, as described.

4.—The combination of the forked or Y-shaped tongue-frame, axle B, arm K, and cross-bar L, with its arm L', all arranged for supporting and guiding the plough, in the manner described.

No. 151,114.—ISAAC R. GILBERT, CHAMPAIGN, ILL.—*Wheel Ploughs*.—May 19, 1874. Filed March 19, 1874.

Claim.—1.—The rock-shaft f', having the elbow-lever f' and the arm f' rigidly attached, and adapted to raise the plough by means of hand-lever l and its connecting-chains, and to depress it by means of foot-lever J and the connecting-chains j'.

2.—The combination of the beam A, cross-bar B, tongue C, arms D D', adjustable wheels E F', and adjustable seat

H, all constructed substantially as and for the purposes herein set forth.

3.—The combination of the foot-lever J, chain f^1 , arm f^2 , shaft f^3 , elbow-lever f^4 , rod f^5 , and a plough, G, substantially as and for the purposes herein set forth.

4.—The combination, with the plough G, of the shaft m^1 , rod m^2 , with nuts a, lever m^3 , and sleeve m^4 , all substantially as and for the purposes herein set forth.

No. 151,425.—GIDEON J. OVERSHINER, HOLLISTER, CAL.—*Gang Ploughs*.—May 26, 1874. Filed April 16, 1873.

Claim.—In a gang plough, the combination of the springs I and lever G, for lifting the frame A and ploughs B, constructed and operating substantially as set forth.

No. 151,649.—EDWIN A. BEERS, SYCAMORE, ILL., assignor of one half his right to E. T. NYE, same place.—*Gang Ploughs*.—June 2, 1874. Filed February 25, 1874.

Claim.—1.—In the combination with the plough-beams S and S and laterally adjustable blocks P and P, provided with the slots p^1 and p^2 , the tongued and slotted blocks Q, q^1 , and q^2 , and the clevises K and R, substantially as and for the purpose shown.

2.—A plough-beam swiveled at its front end within a suitable attachment, and locked in position therein by means of a set-screw, substantially as and for the purpose set forth.

3.—In combination with the plough-beam S, hinged at its front end, the bar h^1 , pivoted at one end to the rear end of said beam, jointed at its longitudinal center, and provided at its rear end with a longitudinal slot, h^2 , which embraces the pin h^3 , substantially as and for the purpose shown and described.

No. 152,018.—DAVID A. SMALLEY, and JAMES H. SMALLEY, BUNKER HILL, ILL.—*Sully Ploughs and Cultivators*.—Jan 10, 1874. Filed January 29, 1874.

Claim.—1.—The combination of the metal piece W, having rigid arms X X, and the crank shaft Q, having toothed disks S, with the lever K and spring-stop T, as and for the purpose described.

2.—The combination, with bar f , of toothed disk H, having front extension with hole or slot, and the pendent strap C, as and for purpose specified.

3.—The combination, with the plough, of the adjustable cutter or rudder L, connecting-rod, and locking cam, as and for the purpose specified.

4.—The combination of axle B, having crank D, hand-lever E, and disk G, the toothed segment H, having side loop h^1 , and the pendent arm I of the main axle, all combined by a single bolt, as and for the purpose specified.

No. 152,458.—ALBERT H. BURLINGAME, SPARTA, ILL.—*Gang Ploughs*.—June 30, 1874. Filed May 2, 1874.

Claim.—1.—The tubular axle fastened to the plough-frame and having connecting screws or pins, the solid revolving crank-arms having grooves in their circumference, the adjusting levers, and the notched stop-bars, all combined substantially as and for the purpose herein described.

2.—The bars M, M^1 , and M^2 , constructed as described, in combination with the ploughs and laterally-adjustable pendants of the frame and axle, as and for the purpose herein described.

3.—The combination of the oblique lifting-chain M, the bars M M^1 M^2 , provided with a lifting extension, and the independently-hinged ploughs, substantially as described.

No. 152,464.—FINLEY R. CROTHERS, SPARTA, ILL.—*Gang Ploughs*.—June 30, 1874. Filed March 14, 1874.

Claim.—The clamp F, having a broad slot on its under side and adjustably secured to the cross-beam by set-screw G, in combination with the double bracket E, having hook-plate H, and right angled flanges adapted to spring and catch in the slotted clamps, as shown and described, for the purpose specified.

No. 152,507.—JOHN H. PAYTON, RANTOUL, ILL.—*Riding Ploughs*.—June 30, 1874. Filed March 28, 1874.

Claim.—1.—The combination of the adjustable gauge-beam T, and the adjusting bolts U V, with the plough-beam N, substantially as herein shown and described.

2.—The combination of the bow or staple P, the perfor-

ated block L' with the rack-axle C, and with the standard P' of the rotary cutter H', substantially as herein shown and described.

No. 152,731.—NORMAN DU BOIS, GREENVILLE, OHIO.—*Sully Ploughs*.—July 7, 1874. Filed March 13, 1874.

Claim.—1.—The combination and arrangement of the channeled arc P, chain M, and lever E, having the curved foot Q and jaw K, with pin S, substantially as shown and described for the purposes specified.

2.—The toothed arc T and lever D, having stud h attached to the bound K, in combination with the arm P', attached to the axle C, and with arc P, chain M, and lever E, substantially as shown and described.

No. 152,771.—DELOS A. SEARS, ROCKFORD, ILL.—*Sully Ploughs*.—July 7, 1874. Filed March 15, 1873.

Claim.—1.—The combination of the wheels, the axle, the frame-beam pivoted on the brace-rods, the seat-standards hinged to the axle and serving as guides to the frame-beam, the segment-gears G, mounted on a rock-shaft in the frame-beam, gearing into racks on the seat-standards, and controlled by the hand-lever, and sector-rack on the frame-beam all these members being constructed and operating in combination, substantially as described, to raise, lower, and adjust the frame-beam independently of the axle and without tipping the ploughs, as set forth.

2.—The combination of the wheels, the axle, the laterally swinging plough-beam, the vertically adjustable frame-beam, and the tongue hinged thereto, to play freely vertically, or to be locked rigidly, when desired, all these members being constructed and operating in combination, as set forth.

3.—The combination of the rolling couler its radius-arms, quadrant flange, and hook bolt, these members being constructed and operating in combination, substantially as set forth, to render the couler laterally adjustable.

No. 153,037.—WM. O. M. BERRY, SAN FRANCISCO, CAL.—*Gang Ploughs*.—July 14, 1874. Filed May 12, 1874.

Claim.—In combination with the plough-beams H H' with their connecting rod n , the vertical rod L and tube K, with its horizontal tube n , crank-lever O, and connecting rod P, substantially as and for the purpose above described.

No. 153,256.—GEORGE W. HUNT, MUSCATINE CO., IOWA.—*Carrage Ploughs*.—July 21, 1874. Filed February 17, 1874.

Claim.—1.—In combination with the gallews C C, tongue B, and beam A, constructed and arranged as herein described, the adjustable connecting gauge-bolt E, with lever J and chain f , as and for the purpose set forth.

2.—In combination with the plough-beam A, mounted as described, the hinged bar P and adjustable axle Q, provided with wheel N, constructed and arranged as described, and for the purpose set forth.

3.—In combination with the plough-beam A, axle-stand O, and wheel M, the upright hand-lever J, gauge-bar U, axle or bar P, and brace B, constructed and arranged as herein described, and for the purpose set forth.

4.—A carriage-plough, consisting of the fore wheels D D, gallews C C, tongue B, connecting adjustable gauge-bolt E, plough-beams A and Y, wheel M, and adjustable wheel N, all constructed and arranged substantially as herein described.

154,203.—WILLIAM STARRING, LA PRAIRIE, ILL.—*Sully Ploughs*.—August 18, 1874. Filed March 14, 1874.

Claim.—1.—The crank-bar K, combined with the plough-beam N, lever L, and axle A, as and for the purpose set forth, so that the horses are made to raise the plough out of the ground.

2.—The combination of the jointed lever U V and stop W, with the brace J, tongue I, and plough-beam N, substantially as herein shown and described.

3.—The quadrant T, provided with the long keeper t^1 , the open keeper t^2 , and the two bolts t^3 t^4 , in combination with the standard S of a rotary cutter, for connecting said cutter adjustably to a plough-beam, substantially as herein shown and described.

No. 154,300.—T. WEAVER, HARRISBERG, PA.—*Sully Attachments for Ploughs*.—August 18, 1874. Filed June 26, 1873.

Claim.—The clamp-holder constructed substantially as herein set forth, in combination with the plough-beam J and the fully attachment proper, for the purpose set forth.

2.—The major clip $m' n' o'$, pivoted with the arms R R', in combination with the stays F F' of the treadle H H', united by the cross-slips Q Q', or their equivalent, to form the sliding joint, substantially as and for the purpose herein set forth.

3.—The stays F F', pivoted to the treadle H H' at $n' o'$, and clamped adjacently by the binding cross at L L', in combination with the sulky axle W W W', by means of the chain P P', or its equivalent, when the force and lift-shifting of the axle is thereby effected, substantially in the manner as and for the purpose herein set forth.

4.—The groove S' and slot S'' in the major clip, in combination with the vertical joint O of the arched frame E E', secured together by the bolt and nut d', or their equivalent, for the purpose herein set forth.

5.—In combination with segment E E', having detents D and guard P', the slotted lever A X and plunger E', having hooked fit $r' c'$, to reach through said slotted lever, and hold it adjusted and applied to the segment, substantially in the manner described.

6.—The arrangement of the pivots W, W', V, and V' to form the triangle or quadrangle in cutting the plough beam, substantially as herein set forth.

7.—The combination of the lever A X, rod or strap V', frame E E', and axle W W W', three parts operating conjointly to rotate the beam J, substantially as set forth.

No. 151,476.—MICHAEL GROVE, PHILADELPHIA, PA., assignor of one half his right to WM. GROVE, same place. —*Sulky Plough*.—*Invent* 25, 1874. Filed July 10, 1874.

Claim.—In a sulky-plough the crank axle A, bent up at both ends, as herein shown and described, and having the plates D D' adjacently attached thereto, in combination with the radial arms C C' of the short axles of the wheels B B', constructed and arranged substantially as set forth.

No. 154,863.—MAHON HARRIOT D. WARE, ILL. —*Gun-Plough*.—*September* 8, 1874. Filed Jan. 5, 1874.

Claim.—In a gang-plough, having two separate and independent ploughs, the arrangement of the pivoted and adjustable plough-beams E and E', one on the inside and the other on the outside of the wheel B, one in front and the other in the rear of the axle, the wheel B being directly in rear of and on a line with the inner edge of the front plough, as set forth.

2.—The combination of the axle A, spindle a, wheel B, beams C C', plough-beam F E', and braces D D', all substantially as and for the purposes herein set forth.

3.—The combination of the plough-beam E, beam C, bolt b, cutting b' , brace m , and standard H, all constructed substantially as and for the purposes herein set forth.

4.—The supporting-piece d' , in combination with the standard H and share J, for the purposes herein set forth.

No. 154,904.—C. B. STEVENS, DUNSTON, IOWA. —*Wagon Plough*.—*September* 15, 1874. Filed January 9, 1874.

Claim.—The combination of levers K S', frame C, water-tail T, sliding pivot-holder R, plough M, holder O, and pivoted detent-gulch U A W, substantially as set forth.

2.—The combination of the plough M, frame C, with its pivot T, and lever S', arranged to rock the plough-neck and hold it at any inclination, and to lift it when required, substantially as set forth.

No. 155,049.—SPENCER B. PEUGH, SAME IND. —*Clay-Press Plough*.—*September* 15, 1874. Filed July 14, 1874.

Claim.—In an agricultural implement, the combination of wheel B, axle b' , necking-post C, crank-arm c' , connecting-rod E, and lever F, substantially as and for the purposes described.

No. 155,134.—JAMES ARMSTRONG and GEORGE ARMSTRONG, ELMIRA, ILL.—*Gun-Plough*.—*September* 22, 1874. Filed Dec. 22, 1873.

Claim.—The combination of the notched plate D, attached to the tongue, the spring bolt c' , and lever c' , pivoted set to L, chain k , and link l , attached to front

of plough-frame, for elevating the ploughs from the ground, substantially as shown and described.

2.—The casing M, provided with slots s and notched segment z , substantially as shown and described, for the attachment and ready adjustment of the couler by means of levers.

3.—In combination with the plate M, constructed as described, the couler P, pivoted bar Q, and hand lever R, all arranged and operating substantially as shown and described.

No. 155,418.—HENRY B. MCGARNER, DUBUIK, IOWA.—*Gun-Plough*.—*September* 29, 1874. Filed July 14, 1874.

Claim.—The combination of wheels A B, axle a C, standard b , tongue D, standard E, arms $d' c'$, draught bar G, brace H, and levers F' K', constructed and adapted to be used as right-hand or left-hand plough devices, substantially as described.

2.—In combination with wheels A B, axle a C, standard b , lever F, draught bar G, and brace H, the arms $d' c'$, standard and wheel E' b' , and levers F' K', constructed and adapted to be operated with oxen, substantially as described.

3.—The combination with axle a C, standard b , brace c' , lever F, and lever an L, draught bar G, and brace H, constructed and adapted to carry either tongue D, standard E, arms $d' c'$, and levers F' K', to operate the ploughs with horses, or to carry standard and wheel E' b' , arms $d' c'$, and levers F' K', to operate the ploughs with oxen, substantially as described.

4.—The combination of wheels A B, axle C, standard b , brace c' , lever F, and lever an L, adapted to carry either tongue D, arms $d' c'$, standard E, and lever L, to operate a single plough with horses, or to carry arms $d' c'$, standard and wheel E' b' , and lever F, to operate a single plough with oxen, substantially as described.

No. 155,825.—F. E. C. BRIMLY, LOUISVILLE, KY. —*Wheel Plough*.—*October* 13, 1874. Filed July 28, 1874.

Claim.—In combination with a plough, the carriage, composed of the wheels D D', slotted uprights E E', vertically adjustable bar C', with hanger B' B' B' and braces F' F', and the vertically-adjustable wheel G, behind the mould-board of the plough, all substantially as and for the purpose specified.

2.—In combination with the beam of a plough, suspended from a carriage such as described, the seat F and foot supports $b' b'$, substantially as and for the purpose specified.

No. 155,871.—ROBERT N. HOWES, WILLIAM A. DORR, and JOSHUA B. WEBSTER, STOKTON, CAL.—*Gun-Plough*.—*October* 13, 1874. Filed August 17, 1874.

Claim.—In combination with the standard X and castor-wheel a' , the side plate p' , forming a support for the wheel and a seat for the steeper r' , as set forth.

2.—The adjustable draught bar M, provided with the attachment $h' s'$ and having the bent ends g' , which are adjustable in the gulleys r' , in combination with the timbers B C and brace p' , all constructed and operating substantially as above described.

No. 150,128.—WM. J. BROWN, J. G. HAVZLETT, and BENJ. F. SEATON, MARIETTA, IOWA.—*Gun-Plough*.—*October* 23, 1874. Filed Jan. 27, 1874.

Claim.—The combination of lever H, tongue J, curved brace a, and beams E E', all arranged as described.

2.—The combination in a sulky plough, of the lever H B, arm b' , rod G, bolted arc b' , bail F, clamps $c' c'$, standard S, and plough beams B B', all arranged as and for the purpose set forth.

No. 156,554.—CHAS. T. ELLISTON, CHESTON, MO.—*Plough*.—*November* 3, 1874. Filed August 3, 1874.

Claim.—The combination with the axle A and tongue D, of the bent bar G, with upright bar K, and plough beam H, all constructed substantially as and for the purpose herein set forth.

2.—The combination of the roller a and the notched plough-beam H with the bar K, passing through slots in plough-beam and tongue, and frame G, substantially as shown and described.

3.—The combination of the colter X, hinged bar O, hinged pivot P, and adjustable straps S, S', substantially as and for the purposes herein set forth.

No. 150,024.—J. B. BERMAN, OF BR., N. BR.—*Wool-Plough*.—*Nov. sub. r* 17, 1874. Filed *August 10, 1874*.

Claim.—1.—The combination of the lever S and catch bar T with two parts of the plough-beam O, substantially as herein shown and described.

2.—The combination of the slide W, sliding bar V, and lock-lever N, with the catch arm T, lever S, and plough beam O, substantially as herein shown and described.

No. 157,110.—E. BERWENT, JR., OF KROON, ILL., as agent for THOS. BERWENT & SONS, same place.—*Sulky-Plough*.—*November 21, 1874*. Filed *May 15, 1874*.

Claim.—1.—The combination of the coulted axle A, having two parallel vertical portions, *a*, supported on two carrying-wheels L, the cross-head P, fitted to slide vertically on the two vertical portions *a* of the axle, and plough-beam L, to which the plough is attached by ball and socket joint, as and for the purpose set forth.

2.—The combination of the axle A, cross-head P, plate and ball-joint O, and plough-beam L, in combination with the raising and lowering devices, as described, and for the purpose set forth.

No. 157,372.—CHARLES F. CHAMBERS, OF HENSON, ILL.—*Plough*.—*December 1, 1874*. Filed *October 1, 1874*.

Claim.—1.—A sulky plough, whose plough proper, A C D, is pivoted in the latter end to the tongue E, and the point of whose plough beam D is capable of being secured in the cam-yoke J.

2.—The plough proper A B C D, whose beam is bifurcated to receive a furrow-wheel E, operating in rear of the share, and is contained in and pivoted to the bifurcated tongue E.

3.—In a sulky plough, the combination of the tongue E and beam D, each before it is to receive the furrow-wheel F, with the extension axle G', and the harrow R S, on the furrow-side, as and for the purposes set forth.

157,842.—JNO. A. KNEEDLER, OF GRANVILLE, PA.—*Sulky-Plough*.—*December 15, 1874*. Filed *October 3, 1874*.

Claim.—The combination of crank K, double crank L, connecting rod M, and lever N with hinged tongue E, rigid bar C, and axle B, as and for the purpose described.

No. 158,005.—WILLIAM DICKIE, OF GAITHERSBURG, ILL.—*Wool-Plough*.—*December 22, 1874*. Filed *October 24, 1874*.

Claim.—1.—The combination of the brackets O, a justable pivot-arm P, and adjustable collars Q, with the plough-beam J, and the cross-rods B, of the frame A B, substantially as herein shown and described.

2.—The combination of the lever R, the lever-pawl S, and the notched bar T with the plough-beam J, the forward pivot-arm P, and the forward cross-rod B, of the frame A B, substantially as herein shown and described.

3.—The branched spring standard B', in combination with the rods E, of the frame A B, for supporting the driver's seat A', and making it adjustable laterally, substantially as herein shown and described.

158,009.—ROYAL HANCE, OF PEYDERSVILLE, ILL.—*Gang-Plough*.—*December 22, 1874*. Filed *July 11, 1874*.

Claim.—The combination of the stationary wood axle H, with a pivot-rod L, the L-shaped notched plate N, pivoted at one end, the angular axle arm I P V', with lever-rod A, rigidly attached thereto, the annular groove Y in the axle arm I, and the detachable V-shaped bolt K, passing around the axle arm and through the wood axle, all substantially as and for the purposes set forth.

No. 158,257.—SAMUEL R. GIBBERT, OF CHAMPAIGN, ILL.—*Wool-Plough*.—*December 29, 1874*. Filed *Nov. sub. r* 5, 1874.

Claim.—1.—The extended spindle G', provided with eccentric pivots *e* at its ends, in combination with the braces H H' and plough-beam P, as and for the purposes herein set forth.

2.—The lever P', with its ratchet devices *r* h, rod I attached to the lever, the spindle G', and arm K, having a socket, all combined substantially as and for the purposes set forth.

3.—The braces H H', bolted or secured rigidly to the plough-beam, and pivoted to either end of spindle G', for the purpose of holding the plough-beam in place.

No. 158,253.—MARSHALL S. CURTISS, OF EARLYVILLE, ILL.—*Gang-Plough*.—*December 29, 1874*. Filed *May 27, 1874*.

Claim.—1.—The adjustable draught-beam F, pivoted centrally to the cross-bar *h h*, attached to the head of the plough-beams G H, in combination with the cross-rod E, arranged in the slotted guides *g g*, and regulator *h*, constructed to operate substantially as set forth.

2.—The rotary cutters K K, having their standards provided with the lugs *g*, in combination with the adjustable socket plates *r* and *r'*, pivoted to the beam G, plate *r* having a recess or depression, *cs*, constructed substantially as set forth.

3.—The construction and arrangement of the beams G H, outer sockets *r r'*, cutters K K, with lugs *g*, cross-bars *h h h*, carrying the forward cutter, and U, which the beam F is pivoted, cross-bar *a a*, pin *u*, and plate *g*, or heel of draught-beam F, substantially as described.

No. 158,387.—CHRISTIAN MYERS, OF MARYSVILLE, CAL.—*Gang-Plough*.—*January 5, 1875*. Filed *October 20, 1874*.

Claim.—In a gang plough, the fixed axle C, provided with the articulated crank joints D, connected by link E to the ends of the double-crank, rotating shaft H, provided with the hand-lever L, with a ratchet in the end of the link E, substantially as and for the purposes hereinbefore set forth.

No. 158,735.—PETERSON FRAWL, and FRANCIS H. WEMPLE, OF WAREHO, ILL.—*Wool-Plough*.—*January 12, 1875*. Filed *October 31, 1874*.

Claim.—1.—The loose arm J, pivoted on axle G, and swiveled to the I arm K, as and for the purpose described.

2.—The combination of the arm M, lever N, lever catch O, lever-pawl P, and notched bar Q, with the axle G, the arms I, K, and the plough-beam A, substantially as herein shown and described.

3.—The arrangement of the transporting-wheel F H, in connection with the plough-beam A and plough-beam D, enable both of said wheels to run in furrows, substantially as herein shown and described.

No. 158,850.—GILPIN MOORE, OF MOBILE, ILL.—*Gang-Plough*.—*January 19, 1875*. Filed *October 28, 1874*.

Claim.—1.—The axle constructed in two parts, the bent or arched inner ends of which overlap and are pivoted to each other, the fixed portion A carrying the ratchet bar, and the movable portion A' carrying the plough beams and mechanism for raising, lowering, and adjusting the ploughs, substantially as and for the purpose set forth.

2.—The hand-lever E, constructed as described, with a foot on its lower end, and arranged to operate with the lugs *h* on the hub of the supporting wheel, and with the ratchet bar F, sectional axle A A', and plough-beams D D, substantially as described, and for the purpose specified.

3.—The ratchet bar F, constructed as described, with a diverging arm E, arranged to operate with the hand-lever E, lugs *h*, sectional axle A A', and plough-beams D D, substantially as and for the purpose specified.

4.—The bar G G' G'', arranged to operate with the sectional axle A A' and plough-beams D D, substantially as described, and for the purpose specified.

5.—The combination of the tongue L, pivoted plate *d*, and fixed plate J, the tongue secured to the plate *d*, so as to oscillate vertically and made adjustable laterally, substantially as and for the purpose set forth.

No. 159,642.—JAMES C. CARNS, OF HARBOR, ILL.—*Sulky-Plough*.—*February 9, 1875*. Filed *January 12, 1875*.

Claim.—The combination, with the frame A, arched axle B, plough-beam P, and pivot K, constructed as described, of the lever J, catch *m*, perforated guide *n*, and lever Q, all constructed and operating as shown and described.

No. 159,779.—GARRETT VAN WINKLE, OF AVON, ILL.—*Sulky-Plough*.—*February 9, 1875*. Filed *January 12, 1875*.

Claim.—1.—The frame G, constructed as described, pivoted to the bar D', and laterally adjustable upon the axle A,

and arranged to operate with the plough M and bar K, substantially as and for the purpose specified.

2.—The bars B, adjustably attached to the bars A, and combined with the axle A and bar D', for adjusting the plough frame and attaching cultivators, substantially as described, and for the purpose specified.

3.—The draft pole E, pivotally and reversibly attached to the bar D' and axle A, and arranged to operate with the said parts, and with the cultivator ploughs F and frame G, interchangeably, substantially as described, and for the purpose specified.

4.—The hand lever K, racks K', and L', bar J, screw I, and plough M, in combination with the pivoted frame G, axle A, and bar D', substantially as and for the purpose specified.

No. 100,000.—JAMES B. HUNTER, ASHELY, Ill.—*Gang Ploughs*.—*February* 23, 1875. Filed *October* 24, 1874.

Claim.—The combination of the fixed U bar G, the slot-dial vertically adjustable forward standard K, and slotted rear standard J, with the axle F, the plough beams A, B, and the tongue J, as herein shown and described.

No. 100,230.—D. W. RAUSTON, ROCKFORD, Ill.—*Plough Curves*.—*February* 23, Filed *October* 23, 1874.

Claim.—The arm or lever C, connected with the swiveled plough-beam, as described, and provided with the hand lever C' and treadle C', whereby the driver is enabled to raise the plough by the aid either of his hand or his feet, or both, as described.

2.—The clamp which connects the plough beam with the vertical swivel and bar, composed of the slotted angular plate F and the angular bolt P, substantially as and for the purpose set forth.

3.—The furrow-wheel sub-axle crank K, mounted upon the crank-axle A, and having the eccentrically-slotted plate B rigidly connected to it, in combination with the lever L, provided with a pin for actuating the axle K, arranged and operating as described.

No. 100,283.—WILLIAM B. QUICK, ST. LOUIS, Mo.—*Swive Ploughs*.—*March* 2, 1875. Filed *November* 7, 1874.

Claim.—1.—The plough-beam C, arranged in relation with the axle A as herein shown and described, and hinged by its braces to the frame B and sub-beam D' in the manner and for the purpose set forth.

2.—The combination of the adjustable frame B, its braces B' B', levers B' B', rods B', and axle A, as herein shown and described, to operate as and for the purpose set forth.

No. 101,281.—S. S. SCHEUMACK, WARDEN, TEXAS.—*Gang Ploughs*.—*March* 23, 1875. Filed *December* 12, 1874.

Claim.—The plough-frame A, A', E, and saddle H, having adjusting hangers b, h, and pivoted braces I, L, combined with the axle K, as and for the purpose specified.

No. 101,443.—EDWIN R. BERTSSEN, FAIRMOUNT, Ill.—*Swive Ploughs*.—*March* 30, 1875. Filed *December* 5, 1874.

Claim.—The straight and sulky plough-beam G, in combination with the diagonal brace G', both pivoted and vertically adjustable by the means and for the purpose described.

No. 101,645.—JAMES T. WELLS, SCOTT COUNTY, Ill.—*Rear Attachments for Ploughs*.—*April* 6, 1875. Filed *November* 13, 1874.

Claim.—1.—Blocks C, in combination with lever D', rod C', and upright D', substantially as and for the purpose set forth.

2.—Levers D' and G, upright d', rod c', and block c', in combination with pieces C', B' B', b' b', all constructed and arranged to operate substantially as and for the purpose set forth.

No. 101,770.—JOHN EAY, NEW BOSTON, Mo.—*Swive Ploughs*.—*April* 6, 1875. Filed *January* 22, 1875.

Claim.—The pulley G, lever H, ratchet C, pawls h, and chains I, L, in combination with the tongue and plough-beam of a sulky plough, substantially as and for the purpose set forth.

2.—The combination of the bolt a, swivel b, guide-bars D D', set screws c, eyebolt d, nuts e, and braces F F', in

combination with the axle and pole to receive and guide a plough beam, substantially as described.

No. 102,015.—BENJAMIN S. BENSON, BALTIMORE, Md.—*April* 13, 1875. Filed *January* 10, 1875.

Claim.—1.—The combination, with a plough, of an inclined wheel, provided with a circumferential groove that receives and runs upon the projecting edge of the unploughed ground, substantially as and for the purpose described.

2.—The combination, with the plough beam A, and the axle B, of the inclined grooved wheel E, for the purpose of regulating the furrow, substantially as described.

3.—The combination, with a plough, having a detachable heel piece, of the rear wheel F, inclined to the vertical plane and constructed as described, with a circumferential groove for the purpose of lightening the draft and rendering the plough self-guiding, substantially as described.

No. 102,311.—BENJ. S. BENSON, BALTIMORE, Md., assignor to HENRY A. SEYMOUR, said SEYMOUR assignor to THOMAS B. HALL, WASHINGTON, D. C.—*Ploughs*.—*102,315*.—*April* 13, 1875.—Reissued *February* 1, 1881. Filed *November* 16, 1880.

Claim.—1.—In a plough supported by carrying-wheels, the combination, with a supporting-axle, of supporting or carrying wheels connected with the opposite ends of said axle and located on opposite sides of the plough, one of said wheels being inclined and adapted to bear against the vertical wall of the unploughed ground, substantially as set forth.

2.—In a plough supported by carrying-wheels, the combination, with a supporting axle, of supporting or carrying wheels connected with the opposite ends of said axle and located on opposite sides of the plough, one of said wheels being inclined and laterally adjustable and adapted to bear against the vertical wall of the unploughed ground, substantially as set forth.

3.—The combination, with a plough, of an inclined wheel provided with a circumferential groove that receives and runs upon the projecting edge of the unploughed ground, substantially as and for the purpose set forth.

4.—The combination, with the plough beam A and the axle B, of the inclined grooved wheel E, for the purpose of regulating the furrow, substantially as described.

No. 102,004.—THOS. M. NICHOL, SPARTA, Ill.—*Gang Ploughs*.—*April* 13, 1875. Filed *October* 24, 1874.

Claim.—1.—The combination, with crank axles F, of the bent bar C, tug plates D, and bolts E, as and for the purpose described.

2.—The combination, with the swiveled plough-beam holders or blocks M, of blocks O and levers P, having a lateral adjustment, as and for the purpose set forth.

No. 102,115.—J. A. SUTHERLAND, ELMWOOD, Ill.—*Gang Ploughs*.—*April* 13, 1875. Filed *December* 5, 1874.

Claim.—1.—In a four wheel gang plough, the axle trees B C, having standards c, provided with pins d, in combination with holders L and adjustable plough-frame G, constructed to operate substantially as and for the purpose set forth.

2.—The combination of the adjustable plough-frame G, carrying the ploughs I, J, and cultivars J', K, seat frame O, holders L, and bolt rods E, L, springs F, standards a, pins d, and axle-tree B C, substantially as and for the purpose set forth.

No. 102,254.—LEORING O. ROCKWOOD, OTTAWA, Ill.—*Gang Ploughs*.—*April* 20, 1875. Filed *February* 4, 1875.

Claim.—1.—The elliptical lever frame E, secured in a vertical position upon the axle A, and adjustable upon it by the slide K and the collar I, L, substantially as and for the purpose set forth.

2.—The elliptical frame E, in combination with the lever J, the lever D, and the lever X, in the manner and for the purposes set forth.

3.—The elliptical frame E, in combination with the plough-beams M M, the slotted plates N N, the gang-spacer or clevis K, the balance lever Q, the sway rod S, the sleeve P, and the brace rod T, in the manner and for the purpose set forth.

4.—The shd clamp O, having the ends cut away to receive and secure the plough beams M M to each other, with

of screw-eyes passing through the flanged inner ends, and engaging against the inside of the plough beams to adjust their relative position, in the manner and for the purposes set forth.

No. 102,709.—F. J. SPRAGUE, CASHIOWA, N. Y.—*Gang Plough*.—April 27, 1875. Filed January 2, 1875.

Claim.—The combination, with the loops F laterally adjustable on axle G, and the supporting legs J, of the adjusting screw S, substantially as specified.

2.—In a gang plough the combination, substantially as described, of the clip loops F, extending rearwardly from the axle G, the slotted beam F, secured in on the front ends of the plough-frames, the adjustable connecting links D, and the vertically-adjustable screw E, all operating substantially as and for the purpose set forth.

No. 102,942.—ORVAN OSBORN, TREMANSBURG, N. Y.—*Self-Regulating Plough*.—May 4, 1875. Filed February 4, 1875.

Claim.—The swinging frame, consisting of the sleeve G, arms H I, and curved arm J, in combination with the plough-beam K, pivoted to the arm I, and held by the loop A, all substantially as herein set forth.

2.—The combination of the two-handled lever P, having a toothed ratchet-hub L, both a spring C, and rod or chain F, with the swinging frame G H I J, having loop A, and the plough-beam K, all substantially as and for the purposes herein set forth.

No. 103,104.—R. CORETH, WEST BETHLEHEM, Ill.—*Self-Regulating Plough*.—May 18, 1875. Filed October 24, 1874.

Claim.—The combination of the lever J, having a link L, with the carriage frame B, having the plough-frame A attached to it, and with the bearing or hanger F of the axle C, substantially as and for the purpose set forth.

2.—The combination of the adjustable self-rising gauge-top M, toothed segment N, the lever J, having a link L, the carriage frame B, having plough-frame A attached to it, and the bearing hanger F of the axle, substantially as described.

3.—The link L, of the lever J, attached to the guiding-piece of the hanger or bearing F of the axle, so as to slip through said piece, and thus give a longer adjustment than is required for the movement of the lever at the time when the plough frame is revolving, substantially as and for the purpose described.

No. 103,505.—JOHN KEYS and JOHN R. DE MEER, CHICAGO, ILL.—*Self-Regulating Plough*.—May 25, 1875. Filed February 2, 1875.

Claim.—The arched axle A, combined with the spindles *a b*, in combination with the short vertical axes C, combined loosely thereon by nuts, in the manner and for the purpose herein described.

2.—The link bars J, pivoted to the sides of the arched axle A, and pivoted at their front end by a pivot *d* to yoke P, in combination with the bar K, bell-crank L, lever I, and a ratchet-top *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *aa*, *bb*, *cc*, *dd*, *ee*, *ff*, *gg*, *hh*, *ii*, *jj*, *kk*, *ll*, *mm*, *nn*, *oo*, *pp*, *qq*, *rr*, *ss*, *tt*, *uu*, *vv*, *ww*, *xx*, *yy*, *zz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*, *hhh*, *iii*, *jjj*, *kkk*, *lll*, *mmm*, *nnn*, *ooo*, *ppp*, *qqq*, *rrr*, *sss*, *ttt*, *uuu*, *vvv*, *www*, *xxx*, *yyy*, *zzz*, *aaa*, *bbb*, *ccc*, *ddd*, *eee*, *fff*, *ggg*

to any desirable point upon the axle G, the lever D, provided with fulcrum irons *d d'*, and the fulcrum post T.

3.—The combination of the following elements: the lever *a*, pivoted to one of the timbers F, timbers E, E, plough beam A, lever D, cross-bar *g*, and tongue P, as shown and described.

No. 107,474.—ELLI W. RUSSELL, ASHLEY, MO.—*Sulky Ploughs*.—September 21, 1875. Filed June 19, 1875.

Claim.—The combination of the adjustable beam G, the pivoted curved bar J, the rigid arm K, and the lever L with the frame A B and the plough H I, substantially as herein shown and described.

No. 107,887.—JAS. FLOW, PILOT POINT, TEX.—*Wheel Ploughs*.—September 21, 1875. Filed July 3, 1875.

Claim.—In a wheel-plough, the frame A B F, arranged with one side longitudinally adjustable upon the axle G, in combination with the two sets of rigid guides K N and slotted plough-beam J, whereby the plough is gauged to take more or less land substantially as shown and described.

No. 108,795.—S. F. WOODWORTH, ROCKFORD, ILL.—*Sulky Ploughs*.—October 11, 1875. Filed August 2, 1875.

Claim.—1.—The crank-formed lever axle-arm E, composed of arms *e e'*, brace *d*, and lever *c*, in combination with the internally-toothed segment-ratchet G, as for the purpose set forth.

2.—The combination of the angle lever J, segment-toothed ratchet *h*, link *k*, screw-clamping device *h*, and curved guide-bars H, for the purpose of raising and lowering the plough, and holding it in position, substantially as shown and described.

3.—The tongue K, linged to the plough-beam between the axle and the clevis, substantially as described, in combination with the guide plate Q, secured to the rear end of the tongue, to work in the grooved curved guideway *p*, secured to the clamping device *h*, the upward-projecting radial arm of lever L, fitted to slide in *h* upon tongue K, all these members being constructed and arranged to operate substantially as described, for the purpose of holding the tongue rigid with the plough-beam laterally, and to permit of a free independent vertical movement, as described and shown.

4.—The lever M and link *s*, in combination with the tongue K and clevis L, for the purpose of tilting the plough on the axle, and holding it in the tilted position, substantially as described.

5.—The couler W, yoke *w*, clevis *v*, bars *r*, tube *z*, and yoke *l*, in combination with the axle and plough-beams adjustable thereon, as described.

No. 108,646.—DANIEL KENDIG, NAPA CITY, CAL.—*Gang Ploughs*.—October 11, 1875. Filed July 28, 1875.

Claim.—The semicircle or rack P, in combination with the lever C, having the sliding boxes D and F, and their connecting arm E, and the pawl G, rod H, and operating lever I, the whole constructed substantially as and for the purpose herein described.

No. 109,313.—G. M. TODD, WATERLOO, IOWA.—*Plough Attachments*.—October 26, 1875. Filed October 1, 1874.

Claim.—1.—In a sulky-plough, the angular draw-bar *b b*, supported below the frame by the long bolts and sleeves *e e*, and braces *f f* in *l a a*, as set forth.

2.—The combination of the draw-bar *b b* and braces *a a* with the sulky frame, and with the plough-beams *c c*, and the adjustable connecting bars *g g*, substantially as shown and described.

No. 170,262.—FRANK A. HILL, SAN LEANDRO, CAL.—*Gang Ploughs*.—November 23, 1875. Filed August 19, 1875.

Claim.—1.—The standards F F, which support the shaft D, and to which the beams M M are secured, having the slots *h*, through which the axle A passes, in combination with the cranks K K, connecting-bars J I, shaft D, and lever L, substantially as and for the purpose set forth.

2.—The lever I, crank-shaft D, link *c*, and crank-axle A *d c*, in combination with the slotted-standards F F, cranks K, links I, and plough-beams M M, all constructed and arranged substantially as and for the purpose described.

No. 7,204.—FRANK A. HILL, SAN LEANDRO, CAL.—*Gang Ploughs*.—170,262. November 23, 1875. Reissued July 4, 1876. Filed May 23, 1876.

Claim.—1.—The standards F F, which support the shaft D, and to which the beams M M are secured, having the slots *h*, through which the axle A passes, in combination with the cranks K K, connecting-bars J I, shaft D, and lever L, substantially as and for the purpose set forth.

2.—The lever I, crank-shaft D, link *c*, and crank-axle A *d c*, in combination with the slotted-standards F F, cranks K, links I, and plough-beams M M, all constructed and arranged substantially as and for the purpose described.

3.—The vertically-grooved block or casting P, perforated as described, and arranged to be adjusted laterally between the beams M M, in combination with the pole O and journal plate N, substantially as and for the purposes described.

No. 170,487.—GEORGE MOOR, LAFAYETTE, OREGON.—*Sulky Ploughs*.—November 30, 1875. Filed June 18, 1875.

Claim.—1.—In a sulky-plough, the branched and curved plough-beam E, having the slots *J' L*, in combination with the rods J and K and the sleeve or spreader I, substantially as shown and described.

2.—In combination with the axle and frame, the branched beam E, curved hangers D, pivoted bar F, arms C, and rigid lever A, whereby the plough is held or raised in a horizontal or level position, substantially as shown and described.

No. 171,205.—JOHN WORRELL, CLAYTON, IND.—*Ploughs*.—December 14, 1875. Filed November 27, 1875.

Claim.—The plates *c c*, secured to the plough-beam O by means of staples and nuts *d*, and having pivoted between them the oscillating bar *e*, in combination with adjustable bearings *f*, arched bar D, and arms E, pivoted to the vertical portions *a a'* of an arched axle, B, substantially as described.

No. 171,299.—J. R. McCORMICK, GEORGETOWN, TEX.—*Gang Ploughs*.—December 21, 1875. Filed October 9, 1875.

Claim.—1.—In a gang-plough, the beams E, pivoted to the rod *a*, in combination with the bifurcated connections G, adjustable on rod *d*, links J, adjustable arms J', and lever K, substantially as described.

2.—In combination with the front adjusting devices described, the links J, adjustable arms P on shaft P, arms *g*, connecting-rod *g*, and adjusting lever *g'*, substantially as specified.

No. 171,427.—H. RICHARDSON, JANESVILLE, WIS.—*Sulky Ploughs*.—December 21, 1875. Filed November 3, 1875.

Claim.—1.—The adjustable rod C, running from the axle A to the plate B, and having the plough-coupling D placed thereon, substantially as and for the purposes herein set forth.

2.—The plate E, carrying the spindle attachment G, and made movable on the axle, in combination with the adjusting-bolts, plate H, and axle A, substantially as shown and described.

No. 172,025.—F. H. ISAACS, NEWARK, N. J.—*Sulky Ploughs*.—January 11, 1876. Filed October 14, 1875.

Claim.—1.—The ploughs A, by the lifters B, hung to the revolving shafts C, and the flange-tops *d*, in combination with the frame D, substantially as and for the purposes specified.

2.—The ploughs standing at an oblique angle in the lifters, and provided with the scale-gauges S, to graduate the width and depth of cut, and hung, one on the outside and the other on the inside of the frame, substantially as set forth, and for the purposes specified.

3.—The combination of the lever H, operating in the semicircle I, rods G, cranks *f f*, rock-shafts *c c*, arms B, and ploughs A, whereby both ploughs are operated by one lever, substantially as and for the purposes set forth.

4.—The ploughs A, lifters B, shafts C, and weight M, in combination with the lever H and connecting-rods and cranks G *f*, arranged substantially as shown and described, and for the purposes set forth.

No. 172,403.—EDWIN C. EATON, PINKNEYVILLE, ILL.—*Gang Ploughs*.—January 18, 1876. Filed October 2, 1875.

Claim.—1.—The couplings F, the levers G, and the U-bars H, in combination with the frame C and the plough-beams I, substantially as herein shown and described.

2.—The combination of the guides L, the ratchets M, the lever-pawls N, the bent levers O, and the links P, with the levers G, and the frame C, substantially as herein shown and described.

No. 173,825.—PHILOXAS PATTYSON, PEASANI VIEW, KANSAS.—*Sulky Ploughs*.—*February 1, 1876*. Filed *October 26, 1875*.

Claim.—The bars E, having perforated ears E', the swivel-clip post, with its clavis device C', and the friction-pulley C"; in combination with the angular lever F, or its equivalent, and with the plough beam and frame, all constructed substantially as shown and described.

No. 173,138.—MARSHALL SATTLEY, TAYLORVILLE, ILL.—*Wheel Ploughs*.—*February 8, 1876*. Filed *November 8, 1874*.

Claim.—1.—In a riding plough, the combination of the main frame A, *b*, with the vertical bars *c*, *r*, rectangular frame *y*, and diagonal braces *s*, *k*, *k*, substantially as described.

2.—The diagonal braces *k*, *k*, slides *l*, *l*, pivoted bar *m* and pivoted draft bars *f*, *f*, in combination with the plough-beam B, and perpendicular bars *e*, *e*, substantially as described.

3.—The combination of the bell crank lever *n*, pivoted draft bars *l*, *l*, plough beam B, pivoted bar *m*, slides *l*, *l*, and diagonal braces *k*, *k*, substantially as described.

No. 173,204.—SAMUEL BRYAN, TWIN GROVE, WIS.—*Gang Ploughs*.—*February 8, 1876*. Filed *July 13, 1875*.

Claim.—1.—The plough-standards I, extending up through the plough frame, and pivoted to the top of the standards G, H above said frame, substantially as and for the purpose described.

2.—The spring clasps J, combined with the beams *d*, long spring metal plough-standards I, and standards G, H, substantially as and for the purpose described.

No. 173,505.—E. SLOSSON, MORRIS, ILL.—*Scraper Ploughs*.—*February 15, 1876*. Filed *October 23, 1875*.

Claim.—1.—The combination with scraper plate A and standard C, of the connecting plates B, E, rigidly fastened to the former, and pivoted to the latter, as and for the purpose described.

2.—The combination of plates A, B and standard C, the former pivoted to and projecting behind the latter, with a cross pin, D, and wedge E, to adjust pitch of scrapers, as set forth.

3.—The combination with scrapers A, attached to pivoted plates B, of standards C, C', cross-bar H, and braced I, all loosely connected, as and for the purpose specified.

No. 174,079.—W. J. SAUGHTER, GALENSFIELD, ILL.—*Sulky Ploughs*.—*February 15, 1876*. Filed *July 2, 1875*.

Claim.—1.—The combination of the plane F', pulley lever H, yokes C, D, and plough E, J, substantially as described.

2.—The combination of the plane J, pulley-lever H, yokes C and D, and plough E, J, substantially as described.

3.—In a plough, the lever H, provided with the pulley G, in combination with the planes F', and J, substantially as described.

No. 174,343.—SAMUEL T. ADAMS, MEDINA, OHIO.—*Wheel Ploughs*.—*March 7, 1876*. Filed *February 23, 1876*.

Claim.—1.—The carriage frame C, having the crooked axle B rigidly, but adjustably, secured to it, and having the draft pole D pivoted to its front end *a*, in combination with the lever E, its foot-rod segment G, the lever K, and its anti-friction roller *h*, substantially as described.

2.—The combination of the clasp F, provided with the standard *f*, clip *g*, washer *h*, and collar *g*, with the rear rod *a'* of the shaft-frame C, substantially as described, and for the purpose set forth.

No. 174,416.—LEONARD C. KATON, PINKNEYVILLE, ILL.—*Gang Ploughs*.—*March 7, 1876*. Filed *January 14, 1876*.

Claim.—1.—The combination of the post A, brace B, bearing block C, provided with the double shoulder-stops

C', and the lever D, provided with the hooks E, to adapt the device for attachment to the frame of a gang-plough for raising the ploughs, substantially as herein shown and described.

2.—The combination of the block H, provided with the slot *h'* and hook *h'*, and the clamping screw I, with the axle G and the frame F of a gang-plough, substantially as herein shown and described.

No. 174,473.—LEROY CAMILL, KALAMAZOO, MICH.—*Wheel Ploughs*.—*March 7, 1876*. Filed *March 2, 1876*.

Claim.—1.—The combination of the frame, consisting of the perforated bars A, D and C', separated by the side bars B, as described, the perforated tongue S, and pins *r*, *r*, whereby the tongue may be shifted from the centre to the side, and *r*, *r*, *r*, *r*, all constructed substantially as set forth.

2.—The combination of the platform E, with slot *a* and bolt *b*, the seat G, double-spring supports H, H, and bolts *h*, *h*, to adjust the seat back and forth, as herein set forth.

3.—The combination of the hangers P', crank axle J, with perforated disk L, bolt *h*, and nut *r*, as and for the purposes herein set forth.

4.—The combination of the frame A, D, C', having shifting tongue, and with extended bar B at one side, the hangers *m*, *m*, bar M, having extended arm, the link N, pivoted to the front end of the bar, and to the lever O, which is pivoted to the forward part of the extended bar P, all constructed substantially as and for the purposes herein set forth.

No. 175,879.—RALPH D. RUSH and EPHRAIM W. RUSH, WASHINGTON, N. C.—*Gang Ploughs*.—*April 11, 1876*. Filed *January 24, 1876*.

Claim.—1.—The combination with a slotted plough-beam, of plough, having a standard provided with holes *c*, *c*, the pin E, pivot E', and adjustable link E', substantially as set forth.

2.—The combination of the wheels A, A, the axle B, the plough-beam C, the removable beam C', and the beam C", provided with two slots, *c*, *c*, whereby the ploughs may be arranged for ploughing com, or as a gang-plough, at the option of operator, substantially as set forth.

No. 175,917.—EDWARD S. BECKELHYMER and HUGH H. CANADAY, FAIRFIELD, IOWA.—*Gang Ploughs*.—*April 11, 1876*. Filed *February 21, 1876*.

Claim.—The combination of the bent levers K, Q, P, and N, and the chains O and M, with the plough beams G, the coupling bar J, and the carriage A, B, C, substantially as herein shown and described.

No. 175,921.—EDMUND C. BROWN, ANTILOPE, CAL.—*Wheel Ploughs*.—*April 11, 1876*. Filed *August 23, 1875*.

Claim.—In combination with a plough, having one pole G secured to a rounded plate *r*, and its rear end engaged with a sliding casting, C, the lever H and plate J, with its holes *h* and *m* and the horn outlet rack, L and P, substantially as and for the purpose described.

No. 176,019.—P. G. JOHNSON, HESPERIAN, ILL.—*Ploughs*.—*April 11, 1876*. Filed *March 4, 1876*.

Claim.—The combination with the plough beam and the bar lever G, pivoted to the frame and provided with an arm, H, extending upward, as shown, of the rotating lever, *c*, the clamping eyebolts *e*, and plate *f*, all as and for the purpose specified.

No. 176,359.—WILLIAM W. FUSEY, CURA, ILL., assignor of one-half his right to FRANCIS M. SMITH and WM. H. WILSON same place.—*Gang Ploughs*.—*April 18, 1876*. Filed *February 20, 1876*.

Claim.—1.—The plough-frame A, D, B, provided with standards F, H, cross-pin M, carrying the adjustable wheel-frame H, H, screw K, and wheel F, substantially as and for the purposes described.

2.—The combination with the plough frame, of the plough-beams O, O', pivoted to each other from ends upon the cross-rod B, the adjustable link, C, levers Q, and horn outlet locking device W, as and for the purposes described.

3.—The combination with the beam, and pivoted upon the cross-rod B, in combination with the plough-beam O, provided with the trumpet and the lever Q, locking upon the

cross-bar M of the frame, whereby the ploughs are held above the ground, as shown and described.

4.—The combination, with the levers G and I the plough-beam O O, laterally adjustable upon the pivot-rods B R, of the elevated frame I M F and cross-brace K, as and for the purposes described.

5.—The slotted recessed clevis or pivotal recess a, and sleeve or bolt x, substantially as and for the purposes described.

No. 176 505—MORTIMER CATTLE and AMOS F. MOREY, AVON, Ill., said assignor to said CATTLE.—*Sully Ploughs*,—*May 25, 1876*. Filed *January 25, 1875*.

Claim.—1.—The skeleton frame A A, composed of a tongue with arms branching to the rear, having the hangers α α and circle plates b b , in combination with the levers C C, extended to form crank axles c c , and spring catches D D, substantially as shown and described.

2.—The combination of frame A A, hangers α α , levers C C, and circle plates b b , adapted to carry the rectangular frame H, supporting a plough-beam, or the double jointed couplings attached to cultivator beams, constructed and arranged to operate substantially as and for the purpose set forth.

No. 176 830—W. L. CASADAY, NEW CARLETON, IND.—*Sully Ploughs*,—*May 2, 1876*. Filed *January 21, 1876*.

Claim.—1.—The skeleton axle C, united by the vertical posts α α , and having a fixed wheel spindle at one end, and at the other end a spindle capable of oblique vertical adjustment, whereby the wheel is adjusted to stand vertically, or at an inclined angle from the other, substantially as shown and described.

2.—The skeleton axle tree C, provided with the guide-braces α α , in combination with the slotted plates c c sliding thereon, and with the plough-beam or beams A, whereby the ploughs are adjusted to any desirable depth and width of furrow, substantially as shown and described.

3.—The combination of the beam or beams A, plates c c , axle tree C, links I I, shaft G, provided with arms g g , and lever H, whereby the said axle tree is operated, substantially in the manner hereinbefore described, for the purposes set forth.

4.—The block d' swivelled vertically upon the axle a , and held at any adjustment thereon by set-screw e , in combination with the wheel-spindle d , placed at right angles therewith, the two adjustably connected by theatchet-disks, whereby the wheel D' may be adjusted to various angles to the axle, substantially as shown and described.

5.—In a sulky plough, the wheel D' provided with an angular pointed rim, e , in combination with the frame C C, having the adjustable spindle and axle a , and the wheel-spindle d , substantially as shown and described.

No. 7 943—WILLIAM L. CASADAY, NEW CARLETON, IND.—*Sully Ploughs*,—176 830, *May 2, 1876*. Re-issued *November 13, 1877*. Filed *January 20, 1877*.

Claim.—1.—A sulky-plough, one of the wheels of which is adjustable to an inclined position from the vertical, substantially as and for the purposes described.

2.—The skeleton axle C, united to the frame or axle proper by the posts α α , and having a fixed wheel spindle at one end and at the other end a spindle capable of oblique adjustment, whereby the wheel is adjusted to stand vertical or at an inclined angle from the other, substantially as shown and described.

3.—The skeleton axle-tree C, provided with guide-braces α α , in combination with the slotted plates c c sliding thereon, and with the plough-beam or beams A, whereby the ploughs are adjustable to any desirable depth and width of furrow, substantially as and for the purpose described.

4.—The combination of the beam or beams A, plates c c , axle-tree C, links I I, shaft G, with arms g g , and lever H, whereby the said plough is operated, substantially in the manner and for the purpose set forth.

5.—The block d' swivelled upon the axle a , and held at any point of adjustment thereon by set-screws e , in combination with the wheel-spindle d , placed at right angles therewith, the two adjustably connected byatchet-disks, whereby the wheel D' may be adjusted to various angles to the axle, substantially as shown and described.

6.—In a sulky plough, the wheel D' provided with an

angular pointed rim, e , in combination with the frame C C, having the adjustable spindle and axle a , and the wheel-spindle d , substantially as shown and described.

No. 176 945—JOHN EAY, WYOMING, Mo.—*Sully Ploughs*,—*May 2, 1876*. Filed *January 28, 1876*.

Claim.—1.—In a sulky plough, the combination with the frame D and beam C of the axles B, having arms adjustable in either end of the said beam, the brace rods J J, and the plates k k , substantially as described and shown.

2.—The combination of the guide E, laterally adjustable at the upper end, with the cranked shaft b and lever γ , substantially as described and shown.

3.—The combination with the frame D and beam C of the vertically adjustable axles B, the gang of ploughs G' G', the lever H, and the chains I P P' P', all substantially as described and shown.

No. 177 078—THOMAS RICHARDSON and MALCOLM MANNES, FREDAS, CANADA.—*Gang-Ploughs*,—*May 9, 1876*. Filed *March 13, 1876*.

Claim.—1.—The frame of a gang-plough, composed of the rails A, B, and J and brace K, in combination with the clevis block L and the plough-standard E, F, and G, having shoulders and flat shanks, as shown and described.

2.—The bell crank P, having holes p pierced in one of its arms, as shown, and connected to the cranked axle L by the rod R and lever S, in combination with the rod Q, quadrant O, hand-lever N, and cranked axle M, arranged and operated substantially as and for the purpose specified.

No. 177 562—W. A. RUDOLPH K. CARHAGE, Mo.—*Wheel-Ploughs*,—*May 16, 1876*. Filed *March 21, 1876*.

Claim.—The V frame B C, vertically adjustable cast-iron wheel D, vertically adjustable wheel E, and the vertically adjustable tongue F, combined and arranged with the plough, substantially as specified.

No. 177 975—JOSEPH WARWICK, FRANKLIN, OHIO, assignor to two thirds his right to MOSES SMITH and PERRY LUKENS.—*Sully Plough*,—*May 30, 1876*. Filed *October 9, 1875*.

Claim.—The bolted hinged frame F, in combination with the inclined self-adjusting yoke d , to which the plough is connected, substantially as and for the purpose described.

No. 178 523—WILLIAM HENRY, TRENTON, Mo., assignor of one half his right to GEORGE W. MOBERLY, same place.—*Sully Ploughs*,—*Jun. 13, 1876*. Filed *January 13, 1876*.

Claim.—In a sulky attachment for ploughs, the combination of the cranked axle A, strengthening levers or clutches α α , tongue G, and lever I, whereby the pitch of the axle A may be adjusted at the will of the operator, substantially as and for the purpose hereinbefore set forth.

No. 178 524—WILLIAM HENRY, TRENTON, Mo., assignor of one half his right to GEORGE W. MOBERLY, same place.—*Sully Ploughs*,—*June 13, 1876*. Filed *December 17, 1875*.

Claim.—In a sulky attachment for ploughs, the combination of the double axle-tree K L, having set-screws α , with the downwardly-projecting casting C, having slots β , by which its position relative to axle K L may be adjusted, substantially as and for the purpose hereinbefore set forth.

No. 178 528—JOHN B. RALESTON, ROCKFORD, Ill., assignor to himself and M. HARVEY, same place.—*Sully Ploughs*,—*Jun. 13, 1876*. Filed *December 30, 1875*.

Claim.—1.—The combination of base-plate B and clamping-plates C, corrugated, substantially as described, and clamping-bolts L, operating to clamp the plough-beam α α and to plough cutting furrows of different widths, substantially as hereinbefore set forth.

2.—The base-plate B and side clamping-plates C, corrugated, substantially as described, clamping-bolts L, and clamping-bar F, in combination with the box A, swivelled thereby by king-bolt connection, substantially as and for the purpose hereinbefore set forth.

No. 179 044—JOHN W. GRIMES, APPLETON, CHIA, Mo.—*Sully Ploughs*,—*Jun. 20, 1876*. Filed *April 28, 1876*.

Claim.—The slotted shafted D, pivoted to the pendant C of the frame B, in combination with the plough-beam e ,

and mechanism *a d e f c*, for adjusting the same vertically, as shown and described.

No. 179,794.—ANSON T. BUTTON and SAMUEL J. LUNDY, UMBRIAGE, CANADA.—*Gang-Ploughs*.—June 27, 1876. Filed March 7, 1876.

Claim.—1.—In a plough, the shares *B*, having the arms *b* and *b'*, the former extending upward perpendicularly from and on a line with, and directly over the land-side of the share, and the latter extending laterally from the base of the former on the land-side of the share, whereby when the beam *A* is secured in the set thus constituted on the share, the land-side of the share will be on a line with the furrow-side of the beam, as described, and for the purposes specified.

2.—In a gang-plough, the combination of the guide-wheel *C* on axle *c*, carried by swivel-arm *c'*, the bar *D*, with its female screw *d'*, the slotted upright bracket *F*, male screw *e'*, crank *e'*, and cam-lever *d''*, all arranged to operate as and for the purpose specified.

3.—In a gang-plough, the slip draw-clevis *F*, having the key *f*, with its rearward opening slot *f'*, the chain *g'*, bolt *f''* and nut *f'*, arranged to operate for the purpose specified.

No. 174,291.—CHAS. FRANK, FREEBURG, ILL.—*Combined Ploughs and Cultivators*.—June 27, 1876. Filed March 6, 1876.

Claim.—1.—The inclined shoulders *f'*, formed upon the outer sides of the rear parts of the side bars of the frame *F*, to receive the arms of the lifting-bar *P*, substantially as herein shown and described.

2.—The combination of the hook bolts *M'* with the tongue *L'* and the cross-bars of the frame *F*, for securing the said tongue to said frame adjustably, substantially as herein shown and described.

3.—The combination of the hook-lever *B'* and the flanged pulley or roller *A'* with the frame *F* and with the lifting-bar *P*, with which the plough beams are connected, substantially as herein shown and described.

No. 179,545.—WILLIAM EVANS, MOLINE, ILL.—assignor to the MOLINE PLOUGH COMPANY, same place.—*Wheel Ploughs*.—July 4, 1876. Filed April 15, 1876.

Claim.—The combination, in a sulky-plough, of the two crank-shafts *E* and *F*, with the pulleys *e* and *n* and the chain *S*, or its equivalent, all arranged to operate substantially as and for the purpose set forth.

No. 179,764.—I. D. BOWMAN, BEFORD, TENN.—*Sulky-Ploughs*.—July 11, 1876. Filed April 1, 1876.

Claim.—In a gang-plough, an apparatus for elevating or depressing the ploughs, consisting of the combination of the rock-halt *a*, hand lever *J*, notched rim *K*, link *i*, ratchet-wheel *H*, and pawl *L*, substantially as described.

No. 181,137.—S. KIRKPATRICK, WATERMAN, ILL.—*Gang-Ploughs*.—July 25, 1876. Filed May 26, 1875.

Claim.—1.—The combination of the hanger *F*, pivoted to the tongue-frame, and provided with an adjusting-slot, tightening bolt for fastening the hanger, and plough-beam *G* supported in the hanger, all constructed and operating as described, for the purpose of adjusting the rear end of the plough-beam laterally, substantially as set forth.

2.—The combination of the plough-beam *G*, pivoted coupler-plate *Z*, and curved coupler-stand, all constructed and operating as described, for the purpose of holding the coupler-stand to the plough-beam, and adjusting it thereon, substantially as set forth.

No. 18,461.—MARSHALL S. CURTIS and EDGAR W. CURTIS, BRADFORD, ILL., assignors of one-third their right to J. B. DOYLE, same place.—*Gang-Ploughs*.—August 1, 1876. Filed December 29, 1875.

Claim 1.—The lifting-link *F*, provided with the pivot-joint *g*, connecting with the arc-headed bar *E* and slot *u*, connecting with the pin *j* of the lever *H*, in combination with the arc-headed lever *E* and the lifting-lever *H*, substantially as and for the purpose described.

2.—The lifting-link *F*, provided with a slot *u* and pivot *g*, the arc-headed bar *E*, its bearing-slot *z*, and the lifting-lever *H* and its detent jaw *k*, substantially arranged as described.

3.—The plough-beam *K*, provided with the loop *t*, in combination with the lifting-bar *D*, and with the slotted link *F*, arc-headed bar *E*, keeper *z*, lever *H*, pins *j*, and with the frame, substantially as shown and described.

4.—The combination, with the coupler-stand *p* and its staple, of the set-screw *q*, as and for the purpose described.

No. 180,624.—WILLIAM B. NEWMAN and THOMAS J. WILKINSON, WARRENBURG, MO.—*Ploughs*.—August 1, 1876. Filed May 13, 1876.

Claim.—The combination of the plough-beam *E* with standards *f f* and guide-loop *J*, the pivoted tongue *H*, straps *h h* forked lever *K*, and ratchet and pawl *k k'*, as and for the purpose set forth.

No. 181,200.—JOSEPH M. FAYNE, DALLAS, TEXAS.—*Sulky Ploughs*.—August 15, 1876. Filed May 27, 1876.

Claim.—1.—The combination of operating and suspending-lever *L*, with stirrup *K*, spring *O*, and plough-beam *G*, substantially as set forth.

2.—The combination of draft-rod *P*, plough-beam *G*, guide-loop *K*, and perforated link *h*, substantially as described, and for the purpose set forth.

No. 181,931.—EDWIN A. BEERS, DE KALB CENTRE, ILL.—*Gang-Ploughs*.—September 5, 1876. Filed June 2, 1876.

Claim.—1.—In combination with the bar *W*, the pole *V*, provided at its rear end with the forked plate *V'*, which is pivoted upon said bar, and the adjuster collars *w* and *z* placed around the latter, and bearing against the forked ends of said plate, substantially as and for the purpose specified.

2.—In combination with the main frame, the axle tree *C*, with the crank portion *c*, journal *d* within the plates *B* and *B'*, and having secured upon one end a radial arm, *D*, that contains the axle-arm *d* of the ground-wheel *E*, substantially as and for the purpose shown.

3.—The axle tree *C*, the arm *D*, *d*, the main frame *A*, *A'*, *B*, and *B'*, and the plow-frame *L*, *M*, *N*, *S*, *Q*, and *R*, constructed and combined in the manner and for the purpose set forth.

4.—The plow-frames, consisting of the beams *L*, *L*, and *M*, cross-bars *N* and *N*, disk *Q*, plate *R*, and pivotal bolt, all combined to operate substantially as and for the purpose shown and described.

5.—In combination with the plow-frame, hinged to or upon the double-crank axle-tree *c*, the quadrant *T*, having the radial slot *t* and shoulder *t'*, the lever *C*, and the bar *C'*, substantially as and for the purpose specified.

6.—In combination with the main frame, the caster-beam *L*, pivoted at its front end to said frame, forward of the axle, supported at its rear end, in rear of the plows, by a caster-wheel *K*, and having at such end independent lateral motion, substantially as and for the purpose shown.

No. 182,218.—W. A. VANARDELLE, M'AFFEE, KY.—*Sulky-Ploughs*.—September 12, 1876. Filed January 22, 1876.

Claim.—1.—The combination of the axle-tree *D*, slotted *L*-shaped iron *F*, wheel spindle *d*, with collar *e*, box *G*, with rod *h* and nut *z*, substantially as and for the purpose herein set forth.

No. 182,569.—THOMAS B. FAGAN, VAN WERT, OHIO.—*Sulky Gang-Ploughs*.—September 26, 1876. Filed August 7, 1876.

Claim.—In a sulky gang-plough, the combination of the axle secured obliquely to the tongue, and of curved and slotted guide-bars attached thereto, with the swinging plough-beams, substantially in the manner and for the purpose set forth.

No. 182,735.—EDMUND D. REVNOLDS and OLIVER B. REYNOLDS, BROOKTON, MASS.—*Wheel-Ploughs*.—September 26, 1876. Filed March 13, 1876.

Claim.—1.—In a lifting device for ploughs, the toggles *m m'* and bar *A*, in combination with the bars *9, 9*, substantially as and for the purpose set forth.

2.—The toggles *m m'* and bar *A'*, in combination with the bars *9, 9*, arms *10, 10*, and shaft *D*, substantially as and for the purpose set forth.

3.—The slotted arms *e e* and beams *f g*, provided with bifurcated ends, in combination with the bars *12, 12*, arms *e' e'*, and shaft *E*, substantially as and for the purpose set forth.

No. 182,829.—E. T. HUNTER, HALLSVILLE, ILL.—*Wheel-Ploughs*.—October 3, 1876. Filed July 22, 1876.

Claim.—1.—The combination of the axle *G*, provided with the cranks *g' g'*, the lever *O*, the hold-rod *d'*, the notched

lar P, and the coupling Q K with the bars H, the wheels F, and an ordinary plough, substantially as herein shown and described.

2.—The combination of the reversible board T, provided with the slotted corrugated plates K, and the tongue J, provided with the corrugated plates L I', with the bars H, attached to the axle G, e^1 , e^2 , substantially as herein shown and described.

No. 183,178.—JOHN L. LAUGHLIN, PERU, ILL.—*Sulky-Ploughs*.—October 10, 1876. Filed July 23, 1876.

Claim.—1.—The combination of the U-shaped frame F and the plough hung to the central portion *d* of the same, with the pivoted lever H, from opposite ends of which the arms *c* *c'* of the said frame are suspended, substantially as described.

2.—The combination of the lever H, hung to the frame A of the plough, with blocks G, connected to said lever and adapted for the reception of the side bars of the plough-carrying frame F, as set forth.

No. 183,213.—MARIE E. RONAT, ROCHELLE, ILL.—*Plow*.—October 10, 1876. Filed July 17, 1876.

Claim.—1.—The combination of the plough-beams A A, tie plough-standards and mould boards L M, pivoted thereto, with the chains P, sheaves O, and winchlass Q, for throwing the ploughs in and out of working position, in the manner described.

2.—The combination of the axle C C, plough-beams A A, cross-bars B B, main cross-beam E E, standards F F, and adjusting screws D D, substantially as and for the purpose set forth.

3.—The combination of the axle C C, detached axle-section C' guiding-standard F, and adjusting-screws D and H, and as for the purpose set forth.

4.—The combination of the plough-beams A A, cross-bars B B, and draft-chains P attached thereto, as and for the purpose set forth.

5.—The combination of the axle C C, carrying wheels G, G', and F, the gauge-wheels S S, with the ploughs A L M, as for the purposes set forth.

6.—The combination of the pivoted ploughs L M, beams A A, short beams L', lugs P, and locking bar K, as and for the purpose set forth.

7.—The combination of the pivoted ploughs L M, chains P P', winchlass Q, locking rock-shaft W, arms X, and pins a, as and for the purposes set forth.

8.—The combination, with a gang plough, constructed to operate substantially as herein set forth, of the platform U, driver's seat V, and operating-arms *g* R', projecting above said platform, within reach of the driver, substantially as herein set forth.

No. 183,254.—GEORGE CURKENDALL, DAVENPORT, IOWA.—*Sulky-Ploughs*.—October 17, 1876. Filed May 24, 1876.

Claim.—1.—The axle A, having a central crank, A, and side cranks a' a'' , and the horizontal parts A' A'', arranged to operate with one or more ploughs, L, attached to the central portion of the axle, and with arch C, substantially as described, and for the purpose specified.

2.—The axle A, having central crank *a* and side crank a' rigidly connected thereto, and side crank a'' adjustably attached thereto, for operation with one or more ploughs, L, arch C, and wheels B B', substantially as described, and for the purpose specified.

3.—The lever J, arranged to operate with the cranks a' a'' , arch C, plough L, wheels B B', and crank a'' , substantially as and for the purpose set forth.

4.—The lever K and the adjustable crank a'' combined with the axle A, having cranks a' a'' , substantially as and for the purpose specified.

5.—Levers J and K, attached respectively to the axles a' a'' , and arranged to both operate upon the same segment-bar H, as and for the purpose set forth.

6.—The braces M, attached at their forward ends to the axle A, and at their rear ends to the beams L' by a pivotal bolt, *m*, and a bolt, m' , through a slot, m'' , substantially as and for the purpose specified.

7.—The arch C and tongue G, combined with the triple crank-axle A, plow L, and wheels B B', substantially as and for the purpose specified.

8.—The arch C and tongue G, combined with the triple

crank axle A, plough L, wheels B B', driver's seat D, levers J K, and segment H, substantially as and for the purpose specified.

No. 183,610.—S. F. WELCH, OMAHA, ILL.—*Wheel-Ploughs*.—October 24, 1876. Filed June 15, 1876.

Claim.—1.—The perforated leveling arms n' n'' of the lifting frame i^1 i^2 n n' n'' , in combination with said frame, and with the lugs d^1 d^2 of the rear clip-plate d^2 , and with said plate, substantially as described, and for the purpose specified.

2.—The slotted clip-plates d and d^2 , in combination with clamps *l* and m , and with the plough-beam B substantially as described, and for the purpose specified.

3.—The special arrangement and combination of levers F and A, pawls o and o' , notched segments N and D, connecting-bars *c* and H, the lifting-frame and clip-plates d and d^2 , substantially as described, and for the purpose specified.

No. 183,794.—LUKE CHAPMAN, COLLINSVILLE, CONNECTICUT, assignor to the COLLINS COMPANY, same place.—*Gang-Ploughs*.—October 31, 1876. Filed February 10, 1876.

Claim.—The wheel *c*, hung on the arm d , the lever *e*, and toothed quadrant arm a , all rigidly secured together, in combination with the rigid arm *g*, pawl *h*, and shaft *a*, all constructed and arranged for operation substantially as described.

No. 184,425.—JOHN B. RALSTON, ROCKFORD, ILL.—*Gang-Ploughs*.—November 14, 1876. Filed Jan. 23, 1876.

Claim.—1.—The beams A and D, with ploughs thereto attached, connected by a hinge joint, substantially as described, permitting of an independent lateral swinging movement of the ploughs, and made vertically adjustable relatively with each other, and adapted to wheeled sulky attachment to be connected thereto by means of the usual connection, substantially in the manner and for the purpose hereinbefore set forth.

2.—The brace rod *m*, constructed with adjusting screws, as described, in combination with the bracket C, and plough-beam D, for the purpose of raising or lowering the rear end of the plough thereto attached, to adjust it to the proper working depth and holding it vertically rigid relative with the plough to which it is attached, as and for the purpose hereinbefore set forth.

3.—The bed-block *z*, and cap *z*, with arms *z*, in combination with the brace *m*, and plough-beam D, having a plough thereto attached, for the purpose of leveling the plough E latterly, substantially as and for the purpose hereinbefore set forth.

4.—In combination with the plough-beams A and D, having ploughs thereto attached, the clasp-lever F, pivoted thereto and fitted with loops to engage the beams for the purpose of connecting or disconnecting the ploughs, substantially as and for the purpose hereinbefore set forth.

No. 184,499.—MERCER BROWN, Sr., JOSEPH, ILL.—*Sulky-Ploughs*.—November 21, 1876. Filed July 1, 1876.

Claim.—1.—The frame-work formed of the bent axle B, the tongue C, the forward braces D E, and the rear braces F G, constructed and combined with each other substantially as herein shown and described.

2.—The combination of the adjustable hook-rods I, with the forward end of the plough-beam H, and with the forwardly-projecting ends of the rear braces E G, substantially as herein shown and described.

3.—The combination of the plough H I K, hung by pivoted adjustable rods to the elevating mechanism, with the leveling devices, consisting of the cross-rod W, rock-shaft V, and lever U, and with the adjustable draft-braces L L, to take more or less land, all constructed substantially as shown and described.

No. 184,570.—JOHN BAILEY, BELLEVILLE, ILLINOIS, assignor to the PUMP AND SKEIN COMPANY, same place.—*Riding Attachment for Ploughs*.—November 21, 1876. Filed May 27, 1876.

Claim.—The combination, with the castor-wheel L M, of the socket-piece I, connected to the frame C by parallel rods or arms k' K, preserving the verticality of the socket, substantially as set forth.

No. 184,583.—ALBERT H. BURLINGAME, SHARTA, Ill.—*Wheel-Ploughs*.—November 21, 1876. Filed October 23, 1876.

Claim.—1.—The wheeled frame C, as described, in combination with the lever F, having a lifting chain *f*, the plough-beam G, having a draft clevis, *g*, and links K, and the lever M, substantially as set forth.

2.—The wheeled frame C, as described, in combination with the lever M, having a link, N, the plough beam G, having a draft clevis, *g*, and links K, substantially as set forth.

No. 184,610.—ISAAC K. GILBERT, LOUISVILLE, KY.—*Wheel-Ploughs*.—November 21, 1876. Filed October 31, 1876.

Claim.—1.—The combination of the plain half-circle R, provided with the stop-lug, as described, the movable lock-notch Z, adapted to be fastened at any point on the circle by a set-screw, and the lever L, all as and for the purposes herein set forth.

2.—The combination of the horizontal socket B B', socket or box A, and the platform supporting the beam P, all in one solid arch, *B'*, substantially as herein set forth.

3.—The combination of the arch *B'*, socket B', with adjustable plug having eccentric pin on its inner end, and the crank-shaft H, with arm placed on said pin substantially as and for the purposes set forth.

4.—The rag wheel on the wheel W, the pawl K, provided with spring and extended lug, the brace J, with inclined lug end, and their connections with the lever L, and latch M, substantially as for the purposes herein set forth.

No. 184,629.—G. S. KING, MINNEAPOLIS, MINN.—*Plough-Attachments*.—November 21, 1876. Filed September 30, 1876.

Claim.—1.—The combination, with a plough beam, of attaching plate A with segmental geared levers B and C and gauge wheel I, substantially as set forth.

2.—In a plough, the combination of fixed standard A' with pivoted standard E, connecting rod F, plate A, and lever B, substantially as set forth.

3.—In a plough, the combination, with geared lever B and gauge wheel I, of an actuating geared lever, C, adapted to be operated by hand and by foot, substantially as set forth.

4.—The combination of tubular standard E with rod G, capable of rotation therein, gauge wheel I secured to the lower end of said rod, connecting-rod F, fixed standard A', and segmentally-geared levers B C, substantially as set forth.

No. 184,635.—WILLIAM M. RICHARDSON, ROCHESTER, Ill., assignor of one-half of his right to F. W. WARNER, same place.—*Gang Ploughs*.—November 21, 1876. Filed August 26, 1876.

Claim.—The gang plough herein described, consisting of the bent longitudinal bars A A', connect'd by the bars C D, all made in one piece, and standards F F', having upper extensions *f* and lower extensions *f'* bolted to the landsides G G' of ploughs, substantially as described, and for the purpose set forth.

No. 185,207.—HANNIBAL H. COLVIN and ISAAC R. JOHNSON, WINFIELD, IOWA.—*Ploughs*.—December 12, 1876. Filed October 12, 1876.

Claim.—1.—The combination of the rigid frames A D, the plough beam H, pivoted frame I, rod *i*, double-crank M, rod *m*, and lever N, substantially as and for the purposes herein set forth.

2.—The combination of the frames A D, connected rollers G G', arms *f* *f* *h*, adjustable connection I F', sliding connection J, plough beam H, and lever K, substantially as and for the purposes herein set forth.

No. 185,338.—S. F. LANGSFORD and W. N. STROUT, WYANDOT, TEXAS.—*Sulky Attachments for Ploughs*.—December 12, 1876. Filed August 21, 1876.

Claim.—1.—The perforated bar B, sliding on vertical bands of short axles, and the shoe B', connected therewith by two bolts, in combination with the two rods D H, passing through fixed perforated plate C', and operated by the bifurcated lever E, as and for the purpose specified.

No. 185,493.—LUKE CHAPMAN, COLLINSVILLE, CONN., assignor of one-half of his right to the COLLINS CON-

PANY, same place.—*Gang-Ploughs*.—December 19, 1876. Filed April 14, 1875.

Claim.—1.—The main shaft *e*, centrally enlarged and shouldered, as described, combined with the plough-frame through the medium of the journal boxes *ff* and the U-bolts *g*, substantially in the manner and for the purpose set forth.

2.—The wedging brace or clamp *m*, in combination with the jointed lever *h*, the arms or levers *h* *h'*, axle *e*, and wheel *k*, substantially as and for the purpose described.

3.—The combination of the machine *p* and *h'*, the lever *s*, the rod *r*, and the frame of the machine, substantially in the manner and for the purpose set forth.

4.—The combination of the arm *h*, the shaft *e*, the perforated disk *u*, pins *r*, and side bar *a*, substantially in the manner and for the purpose set forth.

5.—The seat-standard *x*, in combination with the cross-piece *u*, side pieces *a* *b*, axle *e*, and brace *x'*, arranged as shown, whereby the said standard and axle are mutually supporting, substantially as specified.

No. 185,601.—E. W. WALTON, COLLETSVILLE, CAL.—*Gang-Ploughs*.—December 19, 1876. Filed May 16, 1876.

Claim.—1.—In combination with the plough-beam D, supported above the axle A and plate C, and operated by the cam E and lever F, the inclined links *g* *g'*, substantially as and for the purpose described.

2.—The combination of tongue C and slotted plate I, rigidly bolted to each other, one end of the plate being pivoted to the axle-tree, and the other end moved by the lever J, thus giving the plough more or less land, as desired.

No. 185,725.—C. F. CHAMBERS, HUNTSVILLE, ILL.—*Wheel-Ploughs*.—December 26, 1876. Filed June 20, 1876.

Claim.—1.—In combination with the pivoted plough A, having the handle C and catch V, and the goose-neck W, the adjustable and releasable cam-yoke X, connected with lever I, capable of engagement in rack 2, in the manner set forth.

2.—The combination of the perforated plates 8, 13 and 14, rods 9, 11, and 12, and single-toe 10, for regulating the width of furrow and the amount of draft, as explained.

No. 185,729.—CHARLES R. CONWAY, MIHAW, WIS., assignor to JANE E. CONWAY, same place.—*Wheeled Ploughs*.—December 26, 1876. Filed October 23, 1876.

Claim.—The combination with the front cam-lever N, connected by cord O with the rear of plough-beam, of a tongue, C, passing beyond the axle, and thence curving upwardly, hangers J K, and pulleys P Q, all arranged as shown and described, for the purpose specified.

No. 185,821.—F. S. DAVENPORT, JERSEYVILLE, Ill.—*Wheel-Ploughs*.—January 2, 1877. Filed October 28, 1876.

Claim.—The axle-arm *A*, pivoted upon the suspension-bar C, so as to admit of angular adjustment with reference to the opposite axle, and secured in position relative thereto by the locking device described, or its equivalent, so that both axles may be simultaneously actuated for either raising or lowering the plough by the single hand lever E, the combination and operation of said parts being substantially as and for the purpose herein set forth.

No. 185,972.—H. J. SCHMEISER, BURLINGTON, assignor of one-half of his right to J. SCHMEISER, DES MOINES COUNTY, IOWA.—*Sulky-Ploughs*.—January 2, 1877. Filed October 23, 1876.

Claim.—The combination of the frames *a* *b* *c*, and the adjustable plate *d*, substantially as described.

No. 186,269.—EZRA PEAK, MONTANA, KAN. AR.—*Gang-Ploughs*.—January 16, 1877. Filed July 11, 1876.

Claim.—The combination of matched wheels A with the frame C of a gang plough, substantially as herein shown and described.

No. 186,335.—WILLIAM FRUHLING, SAN JOSE, CAL.—*Gang Plough*.—January 16, 1877. Filed December 6, 1876.

Claim.—1.—The forward frame *a*, provided with the wheel A, seat B, and lever E, in combination with the plough-frame C, pivoted as described, and provided with the rods F and lever G, all constructed to operate substantially as and for the purpose set forth.

2.—The plough consisting of the parts *a* and *C*, constructed as described, in combination with the swinging harrow *H* and lever *K*, all constructed to operate substantially as and for the purpose set forth.

No. 7,031.—WILLIAM FRUHLING, SAN JOSE, CAL.—*Gang Ploughs*.—180 335. *January 10, 1877*. Reissued *October 30, 1877*. Filed *October 2, 1877*.

Claim.—1.—The combination of the frame *a*, rigidly attached to the axle, with triangular plough-carrying frame *C* and bent lever *E*, pivoted directly to and arranged to lift the plough-frame from the front, all substantially as shown and described.

2.—The forward frame *a*, provided with the wheel *A*, seat *B*, and lever *E*, in combination with the plough-frame *C*, pivoted as described, and provided with the rake *F* and lever *G*, all constructed to operate substantially as and for the purpose set forth.

3.—The plough consisting of the parts *a* and *C*, constructed as described, in combination with the swinging harrow *H* and lever *K*, all constructed to operate substantially as and for the purpose set forth.

No. 186 40.—BYRON C. BRADLEY, CHICAGO, ILL.—*Axle for Sulkies and Gang Ploughs*.—*January 23, 1877*. Filed *Sept. 15, 1875*.

Claim.—1.—The grooved plate *A* and plate *C*, provided with a journal upon its outer side to receive a wheel, and with a groove or grooves upon its inner side to receive the pin *b*, in combination with the angle plate *B*, substantially as and for the purpose specified.

2.—The combination of the plates *A B C* with the groove *a*, pin *b*, crank *d*, and ratchet *e*, substantially as set forth.

No. 186 073.—H. FULLER and T. L. BOYD, FRANKLIN, OHIO.—*Sulky Ploughs*.—*January 30, 1870*. Filed *May 12, 1870*.

Claim.—1.—The combination of the plough-beam *D*, provided with the standard *E* and friction wheels *a b*, and the frame *A*, provided with the standard *B* and draft stud *F*, substantially as and for the purpose herein specified.

2.—The combination and arrangement of the plough-stand *E*, upright *B*, loops *H I*, and suspending and elevating mechanism *L M N*, substantially in the manner and for the purposes described.

No. 180,867.—W. B. NEWMAN, PITTSVILLE, MO.—*Sulky Ploughs*.—*January 30, 1877*. Filed *September 2, 1875*.

Claim.—1.—The combination of adjusting lever *G* with the draft tongue, the pivoted plough-beam, and the bars *e'*, whereby said lever is adapted to adjust the draft tongue vertically, and the plough beam and plough laterally, substantially as set forth.

2.—The combination of lever *O* with pivoted plate *Q* and loop *R*, having rock *s*, and with plates *o o*, rod *p*, and segmental rack *O'*, substantially as and for the purpose set forth.

No. 187,032.—M. S. McMAHAN, SAN JOSE, CAL.—*Gang Ploughs*.—*February 6, 1877*. Filed *December 4, 1875*.

Claim.—1.—The combination of the frame *b*, rocking upon the axle with triangular plough-carrying frame *H I L* and *M* and with the bent lever *E*, the latter arranged to lift the plough frame *H* from the front or to hold it down when at work, all substantially as shown and described.

2.—The specially curved reversible plough-share *A*, having an angular slot upon its edge, in combination with the standard *B*, bent and notched at its lower end, and with the key *C*, arranged to hold either end of the share in proper working position, as shown and described.

No. 187,132.—JACKSON F. HAMMONTREF, HARRISVILLE, MO.—*Sulky Ploughs*.—*February 6, 1877*. Filed *June 17, 1876*.

Claim.—In combination with a plough-beam, *G*, the double clevis *K C* attached to the loop *N* and to the lever *I*, substantially as described.

No. 187,218.—J. R. CUMMINS, MCKINNEY, TEX.—*Gang Ploughs*.—*February 20, 1877*. Filed *December 4, 1876*.

Claim.—In a gang plough, the crank-axles *G*, provided with a nut-se upon their front and rear sides, in combination with the removable levers *H* and notched segment *L*,

whereby the levers may be inserted in either side of the crank-axles, and locked in the ratchet, adjusting the wheels *a* to height, and causing them to run in front or rear of the main-axle, substantially as and for the purpose specified.

No. 187,560.—WM. S. RIDDLE, CADDO COUNTY, TEX.—*Sulky Ploughs*.—*February 20, 1877*. Filed *December 4, 1876*.

Claim.—1.—In a wheel-plough, the main beam *A*, extended rigidly forward to form the tongue, in combination with the adjustable plough-beam *B*, and adjustable wheel *S*, pivoted behind the plough to the rear end of the tongue, substantially as and for the purpose specified.

2.—The combination of the keepers *G E I*, with the plough-beam *B*, the double-tree *H*, and the tongue *A*, substantially as herein shown and described.

3.—The combination of the pivoted axle *O*, the connecting-rod *P*, the pivoted lever *Q*, and the catch bar *K*, with the tongue *A*, and the wheel *N*, substantially as herein shown and described.

No. 188 247.—MARK D. HUDKINS, OSARKS, MISS.—*Gang Ploughs*.—*March 13, 1877*. Filed *June 6, 1876*.

Claim.—1.—In a gang-plough, of two ploughs or more, the combination of the crank axle *A*, side bars *C C*, having corner pieces *b b*, the rear cross-bar *D*, with bolts *d d* and nuts *e e*, and the swivelled frame *G*, with the wheel *E*, all substantially as and for the purposes herein set forth.

2.—The combination of the crank-axle *A* with the lever *M*, the plough-beams *H* having notches *X* near their rear ends, and the crank-rod *J*, substantially and for the purposes herein set forth.

No. 188,586.—H. H. CANADAY, FAIRFIELD, IOWA.—*Gang Ploughs*.—*March 20, 1877*. Filed *February 17, 1877*.

Claim.—The combination of the vertically vibrating frame *G*, and the beam frame *F F'*, having staples *H*, with shaft *D*, arms *b b*, chains *E*, levers *e o i i'*, and chain *P*, substantially as specified.

No. 188,797.—O. D. HALL, FREEPORT, ILL.—*Sulky Ploughs*.—*March 27, 1877*. Filed *February 8, 1877*.

Claim.—1.—The latch or trigger *p*, adapted to be operated by the feet in combination with the draw-rod and chain *G G*, for applying the power of the team to the raising of the plough, and for holding the plough off the ground, substantially as described and represented.

2.—In combination with the draw rod and pulley, the branch lever *I*, for the purposes substantially as described and represented.

3.—The combination of the draw-rod, pulley, and chain with the lever *F*, latch *p*, and plough beam *C*, substantially as and for the purpose described and represented.

No. 188,856.—H. E. CARVER, MARION, IOWA, assignor of one-half of his right to A. J. BOARDMAN, same place.—*Sulky Ploughs*.—*March 27, 1877*. Filed *May 25, 1876*.

Claim.—An attachment for sulky-ploughs, consisting of a frame constructed of parallel beams *B' B' B'*, arranged in pairs on each side of the tongue, and united by cross-pieces *B'' B''*, each pair or set carrying brackets *F' F' F'* for the support of the stub-axles carrying the wheels, substantially as and for the purpose herein shown and specified.

No. 19,0016.—WM. L. EDWARDS, ELLISON, ILL.—*Ploughs*.—*April 24, 1877*. Filed *November 16, 1876*.

Claim.—The combination, in a wheel-plough, of the square axle *A*, the beam *G*, supported on top of the same, and held thereto by the clip *b*, and the brace *H*, connected to the beam, and having a square loop to pass around the axle, thereby providing for lateral adjustment of the beam on the axle, all constructed substantially as and for the purposes herein set forth.

No. 192,470.—GEO. H. WILSON, DAVENPORT, IOWA.—*Gang Ploughs*.—*May 8, 1877*. Filed *April 19, 1876*.

Claim.—1.—The spring-catch *H*, in combination with the castor-wheel *C*, substantially as specified.

2.—In combination with the frame *A*, a castor wheel that is allowed to swing freely around, and that can be locked rigidly in position for the purpose set forth, substantially as specified.

No. 100,632.—WILLIAM S. WEIR, MOONSBOTH, ILL.

—*Sulky-Ploughs*.—May 8, 1877. Filed January 18, 1877.

Claim.—1.—In combination with the axle A and yoke H, to which the plough is secured, the double-elbow lever L, link O, lever N, and link P, the lever N being pivoted to the axle, and the whole arranged in close proximity thereto, substantially as and for the purpose specified.

2.—The bolt F, having a detent, f' , arranged to operate with the sliding plate D', constructed as described, and with the perforated plate a' , substantially as and for the purpose specified.

No. 190,737.—W. K. BUSHNELL, BURLINGTON, IOWA.—*Sulky Attachments for Ploughs*.—May 15, 1877.—Filed March 24, 1877.

Claim.—The combination of the parallel slotted uprights H, the three bolts K I K, the slotted plates J, and the keeper a' , with the wheels and axle F G, and the plough-beam A, substantially as herein shown and described.

No. 191,342.—FRANK A. HILL, SAN LEANDRO, CAL.—*Sulky Ploughs*.—May 29, 1877. Filed March 1, 1877.

Claim.—1.—The combination, in a wheel plough, of the wheels E E', oppositely-inclined crank-axes D D', extension arms F F', supplement shafts G G', reversely-operated levers J J, and racks V V', the several parts constructed and arranged to operate in the manner substantially as herein shown and described.

2.—In combination with the beam B, diagonal brace b , and axle A, of the sectional beam C, having both parts secured by the bolts of the brace b , adapting the frame to the use of one or two ploughs, substantially as herein shown and described.

3.—The mould-board X and land-side, formed in one piece, and provided with the block Y and extended brace Z, in combination with the share V', with its grooved projection g , the two parts being secured by a bolt and key or wedge, h , substantially as and for the purpose described.

No. 191,588.—WILLIAM HENRY TRENTON, Mo., assignor of one-half his right to GEORGE W. MOBERLY, same place.—*Sulky Ploughs*.—June 5, 1877. Filed February 19, 1877.

Claim.—The combination of frame A B C, having bearings a b c , long axle F having lever H', and nails or keepers I K rigidly attached thereto, swinging plough-beam K', and pivoted brace L, substantially as and for the purpose herein shown and specified.

No. 191,667.—ALBERT A. FOWLER, PLANO, TEX.—*Sulky-Ploughs*.—June 5, 1877. Filed April 13, 1877.

Claim.—1.—The combination of a jointed frame, pivoted to the arch C of the plough, the beams B, studs i , and slotted guides h , as shown and described.

2.—The combination of the plough beams, the pivot-studs, the vertically-slotted guides, the pivoted parts H I of the vibrating frame, having the parallel slots l , all as shown and described.

No. 192,142.—A. A. AMONETT, WRIGHTSBOROUGH, TEX., assignor to himself and JAS. E. WELLS, same place.—*Wheel Ploughs*.—June 19, 1877. Filed April 23, 1877.

Claim.—The combination of the bars B and their cross-bar E and bolts C D F, the cross-rod G, and the eyebolts H, with the plough-beam A and the wheels and axle J I, substantially as herein shown and described.

No. 192,279.—JOHN E. PORTER, CHIROKEE STATION, KANSAS.—*Sulky Ploughs*.—June 19, 1877. Filed May 12, 1877.

Claim.—1.—In a sulky plough, the axle forming the straight arm G, crank-arm G', and centre crank G'', in combination with the wheels E, arm a with chain b connecting with the plough-beam, and the lever H, whereby the plough is raised or lowered and the wheels adjusted with one operation of the same lever as set forth.

2.—The combination of the pivoted lever H', with guide i , the sliding rod h , forked at its lower end, and the plough-beam K, substantially as and for the purpose described.

No. 193,152.—J. L. FLORANCE, PLANO, TEXAS.—*Riding Ploughs*.—July 17, 1877. Filed April 2, 1877.

Claim.—1.—The combination, with the frame D, pivoted to the cranked axle C C', and having apertured cross bar, of

the supero-sol beam E, having bolts e' , as and for the purpose described.

2.—The combination of the hook-arms O with the hinged frame D, and with the crank e' of the axle C, substantially as herein shown and described.

No. 193,226.—THOMAS J. CRUMP, BUENA VISTA, TEX.—*Gang Ploughs*.—July 17, 1877. Filed May 19, 1877.

Claim.—1.—An improved gang-plough, consisting of the plough A A' A² A³, front bar or frame B, auxiliary frame B', rear or carriage frame B, pivoted seat C, elevating device E, backing device H I L, and central coupler D, the several parts being constructed, arranged, and combined to operate substantially as specified.

2.—The combination of the ploughs A' A² and auxiliary frame B', with the main frame or bar B, and rear carriage-frame B, substantially as described.

No. 193,899.—GEO. H. SMITH, ROCKFORD, ILL.—*Sulky Ploughs*.—August 7, 1877.—Filed September 7, 1877.

Claim.—1.—The herein described screw-gear u l , toothed rack z , socket I, and shaft H, having annular grooves, i and swivelled trunnion-plates at its lower end, in combination with a plough beam, for the purpose of raising and lowering the plough thereto attached, to regulate its working depth and hold it suspended for transportation, as hereinbefore set forth.

2.—In combination with a plough beam having a plough thereto attached, the clamping-plates a , shaft H, toothed rack z , and socket I, to admit of a vertical rocking movement and a lateral oscillatory or swinging movement of the plough, as and for the purpose hereinbefore set forth.

3.—The socket I, with slotted bed-plate f , fitted with shaft H, capable of an oscillatory and a vertical movement in the socket, with plough thereto attached, pivoted to the bed plate h , in combination with the axle tree, to incline the socket from a vertical position to either side to level the plough, as hereinbefore set forth.

No. 193,941.—ANSEL H. GALE, FREEPORT, ILL.—*Sulky Ploughs*.—August 7, 1877. Filed June 29, 1877.

Claim.—1.—The combination of the plough-beam B, pivoted bars G, sliding draft bar E, and frame-bars A, substantially as described and shown.

2.—The combination of plough-beam B, bars G, guide L, latch M, spring S, and draft-bar E, substantially as shown and described.

3.—The sliding clamp F, carrying the draft-bar E, pivoted connecting bars G, rock-shaft N, with arm I, lever H, and bar K, in combination with plough-beam B and frame-bars A, substantially as shown and described.

No. 193,983.—J. F. MEAD, DEKALB, ILL.—*Ploughs*.—August 7, 1877. Filed June 28, 1877.

Claim.—The combination of the axle A, having the forward-projecting arms e' e' , the plough-beam E, pivoted to axle arms e' e' , and the claw-lever F, hinged to the axle and linked to the rear end of the plough-beam, substantially as shown and described.

No. 194,029.—T. BRUNER, RICHFIELD, MINN.—*August 14, 1877. Filed September 16, 1876.*

Claim.—In combination with the frame A, having openings at its front and rear, the plough-beams connected, as shown, and provided with the perforated plates b and bolt c , as and for the purpose set forth.

No. 194,072.—H. H. CANADAY, FAIRFIELD, IOWA.—*Sulky Ploughs*.—August 14, 1877. Filed June 9, 1877.

Claim.—The combination, with a sulky-carriage, the vertically vibrating frame G, and the plough-beam F, of the adjustable clamp-plates F' F' and the clamp-tables loosely straddling the end bar of said frame, substantially as specified.

No. 194,167.—SAMUEL PENNOCK, ITHACA, N. Y.—*Plough Sulkies*.—August 14, 1877. Filed June 18, 1877.

Claim.—1.—The combination, with round bar G, supported under frame A, of the turning and sliding sleeve H, provided with longitudinal coe-g l and teeth g , and having arm I, attached to the plough-beam, as and for the purpose described.

2.—The combination, with the sleeve H, having rack and longitudinal coe-g, of the pivoted sector h , having lever

and the lever K, having toothed sector *m*, as and for the purpose specified.

No. 193258—WILLIAM T. ORR, KANSAS, ILL., assignor to JOSEPH ORR, same place.—*Sulky Ploughs*.—*August 14, 1877*. Filed *December 2, 1876*.

Claim.—1.—The vibrating arm L, journaled in front of the axle-tree, and having both vertical and horizontal movement, adapted for use substantially as specified.

2.—In combination with the vertically vibrating beam having a curved serrated rod, N, and the vertically vibrating arm L, to the end of which the said beam is pivoted, the connecting-rod *p*, vibrating knee-crank G', lever H, having staple *o*, a pawl, *r*, and a mechanism for actuating the same, substantially as specified.

3.—The arm L, having universal movement relative to the axle tree, in combination with a vertically and horizontally vibrating beam and a rod for sustaining its front end, as set forth.

4.—The rod L, pivoted to the axle, and having a vertical eye, *k*, in its free end, in combination with the T-shaped bolt *m*, having tubular arm *n* and an attaching nut, *u*, the forked front end of a plough-beam, and a bolt passing through eyes in the fork, registering with the bore of the bolt *m*, substantially as specified.

5.—The pulitzer, consisting of the walking-beam P, having arms *v* *w* of unequal lengths, the rods *x* *x'*, connecting the double tree and single-tree, respectively, with the said arms, and the regulating rod *y*, connecting-rod *z*, *z'*, combined and arranged substantially as specified.

No. 194614.—R. A. RENO, ROCKWELL, TEXAS.—*Sulky Plough*.—*August 28, 1877*. Filed *June 11, 1877*.

Claim.—The combination with crank-axle, frame, and beams, of the struts E, bearings F, clips G, rods H, armed shaft I, pivoted rod J, and lever K, as and for the purpose specified.

No. 194813.—I. CHAPMAN, COLLINSVILLE, CONN., assignor of one-half his right to the COLLINS COMPANY, same place.—*Wheel Ploughs*.—*September 4, 1877*. Filed *December 23, 1876*.

Claim.—1.—In a wheel plough, the combination of the plough-beam *k*, sleeve *l*, embracing and rotating on the main axle *a*, and the lever *k*, adapted to be operated by the driver's foot, all arranged as described.

2.—In combination, the plough-beam *j* and lever *k*, pivoted on axle *a*, and the pawl *m*, located with reference to the foot-lever, so that both lever and pawl may be operated by the driver's foot, substantially as shown and described.

3.—In a wheel-plough, the combination of the foot lever *k*, and the pivoted hand lever *r*, also jointed to the foot-lever, for raising and lowering the plough, substantially as shown and described.

No. 195041.—JOHN H. GOODWIN and DAVID WOODARD, LAMAR STATION, MO.—*Sulky and Gang Ploughs*.—*September 11, 1877*. Filed *February 3, 1877*.

Claim.—1.—As an improvement in gang-ploughs, the combination of the pivoted plough-beams B and hinged beam brace F with the connecting chains, rafter frame, and adjusting crank-lever mechanism, substantially as and for the purpose set forth.

2.—The combination of the pivot-plough beams B and hinged braces F with the connecting chains *a* *a'*, jointed pulley frame D, and crank-lever mechanism to raise ploughs into upright position with pulley frame after work, substantially as set forth.

No. 195119.—JOS. F. GIBBEN and PHINEAS W. VAUGHAN, D. KANS., ILL.—*Sulky Plough*.—*September 11, 1877*. Filed *August 18, 1877*.

Claim.—1.—In a sulky-plough, the furrow-wheel placed upon a spring support directly in the rear end of the plough-beam and in an arm attached to the plough, substantially as set forth.

2.—The combination of the axle C, adjustable bar L, pivot arms X, N, and tongue M, as set forth.

3.—The combination of the tongue M, elbow lever P, E, S, with slot *v*, and the plough-beam with adjustable clip *h*, having projecting pin *r*, substantially as and for the purposes set forth.

No. 195272.—M. HARRIS, FOREST GROVE, ILL.,

CON.—*Wheel Plough*.—*September 18, 1877*. Filed *May 28, 1877*.

Claim.—The combination, with the crank axles J arranged in bearings, supported on cross bar E, of the rack levers L and spring jaws N, as shown and described.

No. 195380.—JOSEPH M. PAYNE, DALLAS, TEX.—*Sulky Ploughs*.—*September 18, 1877*. Filed *July 28, 1877*.

Claim.—1.—In a sulky-plough, the combination, with the plough and frame, of the pivoted connecting bars D D', having holes *a* in their inner ends for adjusting the plough at different distances from the wheels, substantially as herein set forth.

2.—In a sulky plough, the combination of the pivoted connecting-bars D D', with adjusting-holes at their inner ends, and a plough, with its beam at their outer ends, and the independent levers J J', with pawls and ratchet-segments K K', substantially as and for the purpose set forth.

No. 195491.—GEORGE A. ELLIS, PHILADELPHIA, PA., assignor of one-half his right to T. L. RICART, same place.—*Sulky Ploughs*.—*September 25, 1877*. Filed *March 20, 1877*.

Claim.—1.—In combination with the bars D D, arms *d* *d'*, and standards *d* *d'*, the levers E, rod *d*, and spring E', substantially as shown and described.

2.—In combination with the frame A and axle C, the crank *a*, having openings for the journal-axles, and slots *b*, and being secured to said frame and axle, respectively, by means of bolts *b'* and screws *b'*, substantially as shown and described.

3.—The plough-share F, hung upon the beam or bar F', substantially as described, so as to slide or move longitudinally thereon.

4.—In combination with the share F, beam F', and standards *f* *f'*, the buffer-spring I, for the purpose described.

5.—In combination with the beam F', arranged at a right angle with the axis of the wheels C, the plough-share F, suspended from said beam by the standards *f* *f'*, and arranged to swing upon said beam, substantially as described and shown.

6.—In combination with the beam F', plough-share F, and standards *f* *f'* turning on the beam, the elbow lever M and connecting-rod N, said connecting-rod being arranged, substantially as described, so as to permit free lateral movement of the share, for the purpose set forth.

7.—In combination with the rolling or sliding platform G and axle C, having a rack, *c*, the crank-shaft P and pinion *c'*, substantially as shown and set forth.

8.—In combination with the transverse-bar A² and platform G, the sliding or rolling carriage, composed of the plate P, strap P', and roller Q, substantially as shown and described.

9.—In combination with the carriage P and platform G, the vertically adjustable bracket R, substantially as shown and described.

10.—The combination, with the bracket R and platform G, of the eccentric crank S and lever S', arranged and operating, substantially as shown and described, to raise and lower the point of the plough share F.

No. 194468.—DANIEL M. FUNK, HARRISBURG, ORE. CON.—*Gang Ploughs*.—*September 25, 1877*. Filed *July 30, 1877*.

Claim.—1.—The combination of the forwardly-projecting bar C, the rearwardly-projecting bar D, the cross bar E, the swivel screws F, and the lead bar G, with each other and with the wheels and axle A B for connecting the plough beams with said wheels and axle substantially as herein shown and described.

2.—The combination of the straps H, the pivoted blocks I, and pivoted bars J with the lead-bar G, and with the beams K, to enable the pitch of the ploughs to be temporarily changed without changing the position of the lead bar G, substantially as herein shown and described.

3.—The combination of the shaft N, the chains M and P, and the lever and catch plate Q R and the plough beams K, the pivoted bars J, and the lead bar G, substantially as herein shown and described.

4.—The combination of the shaft and pulleys U T, the

chains S and W, and the lever and catch-plate X V with the plough-beams K, the frame C D E, and the axle B, substantially as herein shown and described.

No. 195,977.—WM. K. BUSHNELL, and DAVID BUSHNELL, BURLINGTON, WIS.—*Sulky Attachments for Ploughs*.—*October 9, 1877*. Filed July 26, 1877.

Claim.—The adjustable plates forming the rear side of slots in uprights H, the hinged and slotted keeper, with the headless bolt with flange in the centre, the forcing-lever and slotted plate above the foot-board, and the adjustable pole, all in combination as specified.

No. 197,159.—CHARLES MOWREY, STOCKTON, CAL.—*Gang-Ploughs*.—*November 13, 1877*. Filed August 4, 1877.

Claim.—1.—The bent arms H, supporting the front of the frame A, and journaled in the links or arms M, which project from the shaft N, said shaft turning in boxes on the bolster O, and provided with the lever P, so that the plough-frame A may be raised and lowered, substantially as herein described.

2.—The levers P and L, with their operative devices, as shown, in combination with the sliding guide T and connecting rods S and U, substantially as and for the purpose herein described.

No. 197,160.—CHARLES MOWREY, STOCKTON, CAL.—*Gang-Ploughs*.—*November 13, 1877*. Filed March 23, 1877.

Claim.—1.—The plough-beams A, having the shaft E and arms F, connecting them with the axle, in combination with the arms J, united by the links K to the axle H, and the operating lever L, whereby the ploughs are allowed to enter the ground or caused to rise out of it, substantially as herein described.

2.—In combination with the beams A, connected with the axle H by the shaft E, arms F, the links K, arms J, and operating lever L, the wheel, with its crank arm G, mounted upon the axle H, substantially as herein described.

3.—The rack X and the boxes D, formed in one casting, and so fitted to the frame A as to support each other and the frame, substantially as herein described.

4.—The box W, fitted to the shaft E so as to be moved from side to side, in combination with the lever W', tongue T, and screw V, said box being constructed to receive the end of the tongue, and to form journal boxes, within which the crank-screw V turns, and elevates or depresses the pole, substantially as herein described.

No. 197,385.—JAMES KENNEDY, MINNESOTA CITY, MINN.—*Riding-Ploughs*.—*November 20, 1877*. Filed October 13, 1873.

Claim.—1.—In combination with a plough, the sulky attachment, consisting of the slotted beams D D, axle A, wheels E E', adjustable seat G', swiveled hook I, and bar H, all substantially as and for the purposes set forth.

2.—The rod L, with arms h h, forked at their lower ends, forming clamps, and provided with bolt i, in combination with the handles of a plough, substantially as and for the purposes set forth.

No. 198,017.—JOHN HAMAKER, WHITE CLOUD, IOWA.—*Sulky-Ploughs*.—*December 11, 1877*. Filed November 6, 1877.

Claim.—The bail l, having the journals 5, in combination with the plough m, lever 6, and chain 7, substantially as described.

No. 198,068.—JOHN BAILEY and GEORGE MARSHALL, BELLVILLE, ILL.—*Riding Attachments for Ploughs*.—*December 11, 1877*. Filed March 21, 1877.

Claim.—1.—In a one-wheel plough attachment, the cross-bar C, rigidly secured to the plough-beam by means of a broad bearing-plate, C', and constructed with an arm C'', adapted to form a support for a seat and a foot-rest, and a stud or spindle, s, forming a bearing for a crank-lever, which carries the wheel, as and for the purposes set forth.

2.—The lever K and arm I, attached to or near the bar C, in combination with the cog-segments k and h, substantially as and for the purpose set forth.

3.—The bar C, rigidly attached to the beam B, in combination with the wheel F, bell crank lever D, spring catch G,

or equivalent, and notched quadrant or rack F, substantially as and for the purpose set forth.

No. 198,069.—HENRY FULLER and THOMAS L. BOYD, FRANKLIN, OHIO.—*Sulky Ploughs*.—*December 11, 1877*. Filed June 5, 1877.

Claim.—The frame consisting of the plates B, guides h, and tongue A, in combination with the pivot provided with grooved rolls z, upon which the plough beam C works, substantially as described.

No. 198,193.—MARSHALL S. CURTISS, BRADFORD, ILL., assignor of two-thirds of his right to JAMES B. DOYLE and HAKON PHENIX, same place.—*Gang-Ploughs*.—*December 18, 1877*. Filed July 3, 1877.

Claim.—1.—A beam-adjusting lever as a connection between the plough-beam and its draught-bar B or transverse hitching-bar, said lever pivoted at its forward end to said draught-bar, and behind said bar again pivoted to the plough beam, and having a detent at the rear, for the purpose of the lateral adjustment of the head of said beam in taking more or less width of land in ploughing, substantially as and for the purposes described.

2.—The combination of the lever F with the plough-beam A and a transverse draught bar, adapted to swing the front end of the plough beam laterally, substantially as and for the purposes described.

3.—The combination of the lever F, to move the plough-beam horizontally, with the detent-bar M and the draught-bar or leader B, substantially as and for the purposes described.

4.—The combination of the lever F, bar B, detent-bar G, and staple h, or detent of beam E, substantially as and for the purposes described.

5.—The draught-bar or beam-supporter B, pivoted to the pivotal braces C and to the forward end of lever F, substantially as and for the purposes described.

6.—The combination, with the beam A, provided with lever F, and connected to bar B, operated by the notched detent-bar G, of the lifter L, with its slides k, arm K, connecting-rod I, and lever H, attached to the tongue, and substantially as described.

No. 198,193.—CHARLES DOMSCHKE, ALTON, ILL.—*Gang-Ploughs and Cultivators*.—*December 18, 1877*. Filed October 16, 1877.

Claim.—The combined gang-plough and cultivator frame A, having a perforated front cross-bar and perforated rear cross-bar, the claw levers B B, carrying the adjustable wheel C, C, laterally-moving tongue G, and laterally-movable brackets g, g, all adapted to receive plough-shares or cultivators that are attached to the under side of the frame A, substantially as specified.

No. 198,912.—JOSEPH M. PAYNE, DALLAS, TEXAS.—*Ploughs*.—*January 1, 1878*. Filed January 13, 1877.

Claim.—1.—In a one-wheel plough, the combination of the cross-bar H, having the ratchet H', and being rigidly secured to the plough-beam, with the bell-crank lever F, carrying the wheel G upon its shorter arm, and the spindle-crank 7, journaled to the cross-bar, substantially as described, and for the purpose set forth.

No. 199,082.—JOHN McBRIDE, DES MOINES, IOWA.—*January 8, 1878*. Filed March 17, 1877.

Claim.—1.—In combination with the plough-beam and hinged axle, the lever B, having the conical rack and fender p, and lever B', provided with the spring-latch c, substantially as and for the purposes shown and described.

2.—The adjustable and jointed fulcrum l, adapted to support the lever B', and to clamp the cutter w, a to the plough-beam, substantially as shown and described.

3.—The vertical lever B, having the combined rack and fender w and the gravitating latch h, the hinged axle G carrying the wheel D and rack z, the jointed fulcrum l clamping the coulter w, a, the horizontal lever l', having a spring-latch at its rear end, and carrying a cast-iron wheel at its front end, and the hinged and adjustable brace m, when arranged and combined to operate substantially as and for the purposes shown and described.

No. 199,083.—JOHN R. McCORMICK, GEORGETOWN, TEXAS.—*January 8, 1878*. Filed Jan. 30, 1877.

Claim.—1.—The combination, with the plough beam frame A, having ploughs F m on the sub-beams, the one in advance

of the other, and axle C, having the double crank F, of the transporting wheel D' arranged on said axle, and working between the side bars a a', upon solid ground between the furrows of said beam frame, substantially as specified.

2.—The combination with the axle C, having the double crank F, of the transporting wheel D', journaled upon the outer bend of said crank, working between the side beams a a' of the plough-beam frame, and the connecting-rods r r', pivoted, respectively, to the said side bars, and to the end and inner bend of said crank, substantially as specified.

No. 109,153.—CHARLES A. HAGUE, CHICAGO, ILL.—*Sulky Ploughs*.—January 15, 1878. Filed July 28, 1877.

Claim.—1.—The independent spindle g, carrying the land wheel A', and connected with the machine by arms F E, in combination with lever G and rack d, for vertically raising or lowering that portion of the frame and crank next to the land-wheel, for the purpose of leveling the plough transversely, and at the same time keeping the axles of the wheels in the same vertical plane, substantially as specified.

2.—The spindle c, carrying the land-wheel, crank B, frame C' D, arms F E, hinged to each other at i, the arm F being secured by the spindle c, and the arm E being hinged to the crank B, in combination with devices for raising and lowering the end of the frame and axle next to the land-wheel, substantially as specified.

3.—The spindle e, carrying the land-wheel, in combination with the crank B, frame C' D, rack d, arms F E, lever G, and sector i, all constructed and operating substantially as described.

No. 109,413.—O'NEALUS L. JACKSON, MILFORD, ILL.—*Wheel Ploughs*.—January 22, 1878. Filed April 25, 1877.

Claim.—1.—The combination of the V-LEVER D, crank axle H, U-trap I, and spring J with the plough beams and wheels, as and for the purpose described.

2.—The tandem K, made with a lateral offset or bend, and provided with a slotted top plate, the curved brace E, the handle-seat L, and the arm M, in combination with the beam, the mould board, and the share of a plough, substantially as herein shown and described.

No. 109,622.—HORACE L. DANIELS, REDWOOD FALLS, MINN.—*Gang and Sulky Ploughs*.—January 29, 1878. Filed November 3, 1877.

Claim.—The bent frame D, having braces a, clevises f, and clips b, and the sulky frame, in combination with the beams G, draught bar I, and operating levers H H', constructed and arranged substantially as and for the purpose set forth.

No. 109,620.—SAMUEL E. DRAKE, CANTON, ILL., assignor to GEORGE H. PLATT, same place.—*Sulky Ploughs*.—January 20, 1878. Filed June 5, 1877.

Claim.—1.—An axle constructed, substantially as described, of a wrought iron bar having vertical side and horizontal portions a a', and cast-iron plates B B, having flanges b b' and circle disks, for the purpose specified.

2.—The disks E, constructed in two pairs, secured together, as shown, at c c', combined to operate with the disks C, substantially as described, and for the purpose specified.

3.—The slotted angle plates V' and bolts E', arranged to operate with the slot of saddle V', yoke I, and plough beam J, substantially as and for the purposes specified.

No. 109,684.—ELIJAH C. BUDD, PEVRIE GREEN, ILL.—*Sulky Ploughs*.—January 20, 1878. Filed October 6, 1877.

Claim.—The combination with plough beam G, pivoted to frame D, of the loosely-swinging yoke H, attached to plough beam by a loop that slides thereon, as shown and described, for the purpose specified.

No. 109,035.—WILLIAM H. PARLIN, CANTON, ILL., assignor to PARKIN & ORENDOFF, same place.—*Sulky Ploughs*.—February 5, 1878. Filed October 12, 1877.

Claim.—1.—In a sulky plough, an axle A, having a double crank a, to which the plough is attached, and a crank a', carrying the land-side wheel, said crank diverging obliquely on the wheel spindle, as shown and described,

whereby the weight of the driver and frame is utilized in raising the plough from the ground, substantially as and for the purpose specified.

2.—The axle A having central double crank a, to which the plough is attached, the oblique crank a' at one end, and a fixed crank G, upon the other end, and a crank, I, is journaled, and on which the furrow wheel B', is carried, substantially as and for the purpose specified.

3.—The crank axle A, constructed as described, and combined with the cranks G and I, levers H and J, rack bars F F', arch C, plough K, and wheels B B', substantially as and for the purpose specified.

4.—The axle A, having double crank a and crank G in the relative radial positions described, arranged to operate with the crank I, arch C, and plough K, substantially as described, and for the purpose specified.

No. 200,038.—SAM T. FERGUSON, MINNEAPOLIS, MINN.—*Sulky Ploughs*.—February 5, 1878. Filed January 8, 1876.

Claim.—1.—The independent crank arms C and C', having different lengths of crank or radius, combined with the running-wheels and the platform, and extended past each other in parallel position, to form a stiff support for said platform, as described.

2.—The crank arms made of bent tubular sections a and b, of different diameters, secured the one within the other, with the joint in the radial portion, substantially as described.

3.—The plough pivoted to its supporting frame, as described, so as to swing over the platform in a reversed position, in combination with a laterally adjustable seat, substantially as and for the purpose described.

4.—The combination, with an adjustable lifting frame, substantially as described, of a plough having its beam pivoted to said frame in the rear of its draft connection, so as to swing over the platform in a reversed position, as and for the purpose set forth.

5.—The slotted and adjustable gauge-bar I, located upon the lever H, and provided with a foot or stop, in combination with the platform, the lever, and the plough, for the purpose of adjusting the latter as to depth, as set forth.

No. 202,249.—BYRON C. BRADLEY and CHARLES A. HAGUE, CHICAGO, ILL.—*Sulky Ploughs*.—February 12, 1878. Filed July 28, 1877.

Claim.—1.—In a sulky or gang-plough, a plough hinged upon a crank, in combination with a lever permanently secured to the crank, and a rack or other equivalent device connected with the plough beam, for the purpose of raising and lowering the plough independently of the frame, and locking the plough when in use, so that it cannot turn on the crank, substantially as specified.

2.—A plough beam hinged to a crank, B, in combination with the frame C D, supporting a seat, tongue M, stop a, lever L, and rack J, substantially as and for the purpose set forth.

3.—The sleeve h provided with spur z, to fit a corresponding recess in the spindle-arm, and having the hole that receives the spindle diagonal to or not concentric with the circumference of the sleeve, whereby the sleeve is prevented from turning upon the spindle, and the pitch or gather of the wheel is regulated, substantially as specified.

No. 200,502.—ROBERT C. BUCKLEY, PEORIA, ILL.—*Sulky Ploughs*.—February 19, 1878. Filed September 24, 1877.

Claim.—1.—The bar or platform F, one end hinged to the under side of the axle tree, and its other connected with a lever, by means of which and its connection with the plough-beam the position of the plough with relation to the sulky frame is adjusted, substantially as and for the purpose specified.

2.—The combination of the inclined axle-tree C, hinged platform F, and lever G with the bar I, substantially as and for the purpose specified.

3.—The combination of the inclined axle-tree C, hinged platform F, bar I and lever K, substantially as and for the purposes specified.

No. 200,650.—NATHAN ELMER, FREEPORT, ILL.—*Sulky Ploughs*.—February 2, 1878. Filed November 6, 1877.

Claim.—1.—The combination with the plough standard,

of a diverging plough-beam constructed with downward-projecting rear end, between the plates of which the standard is pivoted, the lower rear portion of said beam serving as a stop to limit the movement of the plough standard, substantially as described.

2.—The combination, with a plough standard, of a diverging plough-beam constructed with downward-projecting rear end, between the plates of which the standard is pivoted, the lower rear portion of said beam provided with a set-screw for adjusting the position of the plough, substantially as described.

3.—The combination, with a vertically-adjustable main frame, of the diverging plough-beam, brace at its forward end by a cross-bar, and having the plough standard pivoted between the plates of its rear end, said beam constructed with a downward rear projection, which serves as a stop to limit the movement of the plough, substantially as described.

4.—The combination, with the diverging bars of the plough-beam and cross-bar located between said bars, of a vertical coultter-shaft, provided with a crank on its lower end, to which is pivoted the yoke of a rolling coultter, and a screw-cybolt engaging with the cross-bar and coultter-shaft, whereby the rolling coultter may be adjusted either vertically or laterally, substantially as and for the purpose described.

5.—The rock-shaft journaled in the main frame, and provided at one end with a hand lever, *h*, and at the other end with a curved arm, *h'*, in combination with the locking and lifting lever *G*, which is pivoted to the seat-support, link, connecting the rear end of the lifting lever with the plough beam, and curved link *h''*, connecting the lever *G* with the curved arm *h'*, substantially as described.

6.—The combination, with the curved arm *h'*, rock shaft *H*, lever *G*, and curved link *h''*, of the draw bar, constructed and arranged substantially as described, whereby the power of the team may be employed to raise the lock and plough, substantially as described.

7.—The combination with the rock-shaft provided with the hand lever and curved arm, the lifting lever *G*, and curved link *h''*, of the draw bar, constructed and arranged substantially as described, whereby the joint action of the operator and team may be employed to raise and lock the plow suspended, substantially as described.

No. 200 811.—JOSHUA PIERPONT, BUSHY, Ill.—*Sulky Ploughs*,—*March 5, 1878*. Filed *June 9, 1877*.

Claim.—1.—In a sulky plough in which the plough-beam is connected to the axle by means of a pivoted yoke projecting rearward from the axle or frame, the combination of a pivoted yoke projecting forward from the axle or frame, and connected to the plough-beam by means of a link or lever, so as to permit the plough to rise and lower by the oscillation of the yokes, substantially as and for the purposes specified.

2.—In combination with a plough connected to the axle by a rear yoke, a forward yoke, link, and lever, *L*, by means of which the plough may be raised from the soil with its joint end first, substantially as described, and for the purpose specified.

3.—The lever *K*, arranged to operate with the yokes *G* *H*, lever *L*, axle *A*, and wheels *C*, substantially as described, and for the purpose specified.

No. 201,025.—JAMES C. LEIDY, GALESBURG, Ill.—*Sulky Ploughs*,—*March 5, 1878*. Filed *October 12, 1877*.

Claim.—1.—The bar *L* *P*, arranged to operate with the rock-shaft *J*, independent cranks *j* *k'*, connecting rods *l* *l'* *l''*, and sulky *A* *B*, substantially as and for the purpose specified.

2.—The levers *k* and *M* and their respective cranks or arms *k'* *j*, and links *l* *l'* *l''*, combined with the plough *D*, hinged to the sulky frame, so as to have lateral oscillation, substantially as and for the purpose specified.

3.—The combination of the laterally-hinged plough with two cranks or arms *j* *k'*, to which the plough is connected, so that the one crank, *j*, may be oscillated to incline the plough, while the other, *k'*, aids in retaining it in position, substantially as and for the purpose specified.

4.—In combination with the frame *A*, the yoke *E*, having ends *e* *e'*, bent or curved as described, to facilitate placing

and removal in the frame *A*, substantially as and for the purpose specified.

No. 211,097.—JOHN CURRIE, LONDON, ONTARIO, CANADA.—*Gang Plough Frame*,—*March 12, 1878*. Filed *August 8, 1877*.

Claim.—The herein described gang-plough frame, consisting of the single wrought-iron bar *A*, bent as shown, in combination with the brace *B*, top and bottom plates *c* *c'*, and the standards *D* *D'* *D''*, secured to the bar and brace, as specified.

No. 201,227.—THOMAS B. CHAMBERLIN, CLARINDA, Iowa.—*Sulky Plough*,—*March 12, 1878*. Filed *July 2, 1877*.

Claim.—1.—An attachment to sulky ploughs for sustaining the plough in proper working position, consisting of two bearing plates pivoted together, one being secured to the axle or frame, and the other to the plough-beam, substantially as set forth, said plates having the devices, substantially as described, to lock the plough in position or allow its limited or unlimited lateral oscillation.

2.—An attachment to wheel-ploughs consisting of two bearing plates pivoted together, substantially as described, one or both plates being beveled or made convex, so that the carriage-frame may have a rocking motion, and may oscillate without affecting the position of the plough, substantially as set forth.

No. 201,576.—THOMAS I. WADE, STILSON, KANSAS, assignor of one-half his right to THEO. A. McCORMICK.—*Plow*,—*March 16, 1878*. Filed *August 21, 1877*.

Claim.—1.—In combination with the plough-carriage hereinbefore described, the lever *E*, link *I*, arms *L* *J*, and slide *K*, all arranged to carry the plough and load it in position when ploughing, substantially as described.

2.—The combination of the cross-piece *C*, adjustably arranged on the tongue *A*, and arms *I* *J*, adjustably connected together, with lever *E*, link *I*, and slide *K*, as and for the purpose set forth.

No. 201,576.—HORACE L. HEWITT, ALTON, Ill., assignor of one-half his right to LEWIS M. RUMSEY and MOSES RUMSEY, St. Louis, Mo.—*Sulky Ploughs*,—*March 26, 1878*. Filed *January 14, 1878*.

Claim.—1.—The arched axle *E*, in combination with the crank *D*, pivoted plate *G*, axle-crank *C*, lever *F*, and spring catch lever *H*, all constructed and arranged to operate substantially as described.

2.—The arched axle *E*, having knees *E'*, in combination with the corner-brackets *L*, having pivot-pins *L'*, the said corner-brackets constructed to embrace and strengthen the axle at the knees *E'*, and serve as a pivotal connection for the frame *J*, all substantially as and for the purpose set forth.

No. 201 604.—JOHN M. McPIKE, St. Helena, Cal.—*Harrow Attachments for Ploughs*,—*March 26, 1878*. Filed *February 16, 1878*.

Claim.—1.—The harrow consisting of the single-tooth bearing-beam *E*, supported from the plough-beam by means of the spring arms *B* *G*, and the vertical standards *D*, substantially as herein described.

2.—The single-beam harrow *E*, with its vertical standards *D*, guided and supported by the spring-arms *B* *G*, and provided with the adjusting collars and screws *F*, substantially as herein described.

No. 201,765.—JAY BOSTWICK FISHER, DAVENPORT, Iowa.—*Sulky Ploughs*,—*March 26, 1878*. Filed *February 2, 1878*.

Claim.—1.—A plough having a mould-board constructed, substantially as described, with the parts *O* *O'* *O''*, so as to turn over the furrow slice smoothly and evenly without breaking, substantially as set forth.

2.—In combination with a plough having a mould-board constructed substantially as described, the concave revolving mould-boards *F*, arranged to scrape smooth and fill up the crevice or joint between the moulds, substantially as set forth.

3.—In combination with a plough, *N*, constructed substantially as described, and with the revolving mould-boards *F*, a seeding device *C*, consisting of the rimless wheel *V*, and *V'*, spring *z'*, and set-screw slides *W* *W'*,

constructed and operating substantially as and for the purpose specified.

4.—The combination in a plough, of the mould-board O , O' , plates P , P' , point Q , post u , and beam G , substantially as and for the purpose specified.

5.—The sulk's frame consisting of the beam A , wheel B , spindle C , and spring d , with the lever E , substantially as and for the purpose specified.

6.—In combination with the beam A , wheel B , and spindle C , the slotted plate e , which permits of the wheel B turning without affecting the working position of the plough, substantially as set forth.

7.—In combination with the bar A , wheel B , and spindle C , and plate C , the spring d , operating substantially as and for the purpose specified.

8.—The combination of the plate C , bar A , spindle C , and spring d , with the levers e' and e'' , substantially as and for the purpose specified.

9.—The plough post n and plough-beam G , constructed, as described, of two plates, one passing through between the doubled portion of the post and the other overlapping it, as described, in combination with the adjusting-screw, substantially as and for the purpose specified.

10.—In combination with the frame A and plough-beam G , the adjusting devices H H' and I I' , which also constitute the means for hinging the beam to the frame, substantially as set forth.

11.—The combination of the couler K and circular-saw cutter K' , geared together, so as to operate substantially as and for the purpose specified.

12.—The lever J , having the forward-bent portion J' , operating in combination with the frame A and devices H H' and I I' to raise and lower the plough, and with the rod i to limit its forward swinging movement, substantially as set forth.

13.—The combination of the plate H and adjustable cap-plate H' , having bifurcated journal bearing arms, substantially as and for the purpose specified.

14.—The revolving couler K , constructed with air-shaped knives or indentations, and so as to leave flat propelling points arranged at right angles to the cutting-edges, substantially as set forth.

15.—The serrated rod K , pivoted sleeve L , and spring plates S , in combination with plate L' , and with the frame A and plough, substantially as and for the purpose specified.

16.—In combination with a perforated plate, H , and adjustable cap H' , spring-join h' , for the purpose of adjustment, substantially as set forth.

17.—The lever Z , in combination with the frame A and adjustable devices H' and I' , for the purpose of adjusting the lateral movement of the beam while the point remains in its proper position, substantially as set forth.

No. 230,777.—MILBURN HARRIS, JAMES OWEN, & C. V.—*Iron or Steel Ploughs*.—*March 20, 1878*. Filed *March 15, 1875*.

Claim.—1.—A shaft attachment to operate in front of a plough-beam, consisting of the track E , the perforated and laterally adjustable standard A , and vertically adjustable pole B , constructed and arranged substantially as shown and described.

2.—The combination of track E , standard A , pole B , bar C , and plough-beam F , all combined and arranged substantially as shown and described.

No. 202,344.—ARGYLE W. TUCKER, WAXAHU HILL, & SONS, to ALFORD & SORLEY, DALLAS, TEXAS.—*Sick Plows*.—*April 6, 1878*. Filed *July 28, 1877*.

Claim.—1.—The reversible bail or clevis J , pivoted on the ends of the axle A , adapted for the reception of plough-beams, or cultivator beams, and operated by means of the adjustable lever D , backing pin d' , spring handle h' , and perforated segment E , substantially as and for the purposes herein set forth.

2.—In a sulky plough and cultivator, the frame C , consisting of a single rod, bent substantially in the manner shown and described, and forming the seat-supporting arm, as well as the parallel bars P d' , to which the adjustable tongue F is fastened, substantially as herein set forth.

3.—The combination of the reversible clevis J , with its

operating lever D' , the plough-beam F , clevis h' h'' , and ends or clips m m' , with the pins or lugs n on the clevis, substantially as and for the purposes herein set forth.

4.—The bent or curved axle, provided with a rigid crank or arm at each end, projecting in opposite directions in combination with a lock-lever i , which is one which is raised and lowered by the same motion of the lever, substantially as described.

No. 202,338.—JOSEPH E. GILDEDEN and PHINEAS W. VAUGHAN, DE KALB, IOWA.—*Plows*.—*April 16, 1878*. Filed *January 16, 1878*.

Claim.—1.—In a one wheel sulky plough, an axle A , having at the end opposite the wheel a pin or rod a , extending downward at right angles with the axle, and at its lower end supported in an angular bracket b , in combination with a swiveled frame C , and a plough, substantially as and for the purposes set forth.

2.—The swiveled frame C , the lower end of which is attached to the hind-side of a plough, and having the brace I secured to the plough-beam, and extending rearward to form one of the bearings for the wheel J of the plough, substantially as described, and for the purposes set forth.

3.—The combination of the axle A , with elongated screw-rod at the end, the arms K K , nuts k k , tongue L , and brace M , with screw rod and nuts m m , whereby the tongue can be adjusted on or off the land, for the purposes set forth.

No. 202,015.—WM. H. WHITELESEY and CHAS. F. NOBLE, RUSSELL, IOWA.—*Plows*.—*April 16, 1878*. Filed *January 17, 1878*.

Claim.—1.—The combination, with the independent foot-levers E E' and plough-beam C' , of the transverse slotted plates F , or other equivalent mechanism, to attach the free rear ends of said levers to the plough-beam and allow the latter to slide thereon, whereby the plough-beam may have free longitudinal movement when being raised, and the plough may be leveled, substantially as shown and described.

2.—The foot-levers E , provided with spring pawls and ratchets e e' , in combination with the parallel plates F , between which slide the free rear ends of the levers E E' and plough-beam C' , substantially as and for the purpose set forth.

No. 203,027.—HARLOW M. FREEMAN, IANDBROOK, Mo.—*Rising Attachment to Plough*.—*April 30, 1878*. Filed *February 21, 1878*.

Claim.—1.—The combination of the crank D , the axle E , the pivoted block G , and the lever I with the plough beam A , the wheel F , and the frame H , substantially as herein shown and described.

2.—The combination of the notched bar S , the connecting bar L , the catch-lever U , the latch V , and the spring W with the axle E and the frame H , substantially as herein shown and described.

No. 203,420.—JOHN CLAYTON, THE GRANGE FARM, CLAYTON TOWN, (BRANARD P. O.), MISS.—*Head Attachment to Plough*.—*May 7, 1878*. Filed *February 27, 1878*.

Claim.—The head-block A , having a hole formed through its upper part to receive a plough-beam, and grooves and slots formed in its lower part, and provided with the plate C and the screw D , for clamping the plough beam, and with the bolts G and the bearings H for the wheel-shafts or axle, substantially as herein shown and described.

No. 203,432.—JACOB W. FRIEDHART, MISHAWAKA, IND.—*Sulky Ploughs*.—*May 7, 1878*. Filed *March 27, 1878*.

Claim.—1.—The arched axle A , provided with the bearings a a at each end, through which the cranks B B' pass, the levers D D' , connected to the inner ends of said cranks, and the strap I , all constructed substantially as and for the purpose herein set forth.

2.—The combination of the swinging strap I , plough-beam G , slotted angular plates b b' , clip d , and adjustable collar f , substantially as and for the purposes herein set forth.

No. 233,908.—JAY B. FISHER, DAVENPORT, IOWA.—*Sulky Plough*.—*May 21, 1878*. Filed *April 6, 1878*.

Claim.—1.—A sulky frame consisting of the axle A' , air-shaped reach V' , wheels C C' , rollers b b' , and cast-

guide-wheel B, constructed substantially as and for the purpose specified.

2.—A caster guide-wheel, B, having projections *a* and knife-cutting edges between them, substantially as and for the purpose specified.

3.—The caster guide-wheel, B, having projections *a*, and cutting edges between them, and having the upright standards *i''''* fastened to the rear end of the lengthwise plate *i''''*, having wings *a'* and slot *i''* between the said standards *i''''*, and having the vertical journal-shaft *a''''*, on which the caster guide-wheel B operates, secured to the front end of said plate *i''''*, in order to form a long bearing-shoulder *a''*, and strong lockage at the rear end, formed and operating substantially as and for the purpose specified.

4.—The caster guide-wheel B, having projections *a*, and cutting-edges between them, and having the upright standards *i''''* fastened to the rear end of the lengthwise plate *i''''*, having wings *a'* and slot *i''* between the said standards, and having the vertical journal-shaft *a''''*, on which the caster guide-wheel turns, secured to the front end of said plate *i''''*, in combination with the bearing-box *a''''* and lock-pin *i'*, pivoted to the lever F, all operating together for the purpose of cutting a straight furrow across the field, substantially as shown, and for the purpose specified.

5.—The combination of an arc-shaped reach *A'*, with the seat D, convolute-spring support *e*, foot-rests, clasp-hand *e'*, bolted so as to be adjusted back and forth, and arm-bearing band *f*, bolted to the seat-spring *e*, to hold and adjust the top D' substantially as and for the purpose specified.

6.—The combination of the arm-bearing band *f* with the seat D, elbow-sleeve *f'*, jointed stem *f''''*, adjustable rod-band *g'*, adjustable arm-rods *g*, plate *g'*, plate *h*, and collar-block *h''''*, substantially as and for the purpose specified.

7.—The combination of the top D', consisting of the elbow-sleeve *f'*, jointed stem *f''''*, adjustable rod-band *g'*, plate *g'*, plate *h*, rim rods *h'*, circular-rod *h''*, and collar-blocks *h''''*, all constructed substantially as and for the purpose specified.

8.—Lever O', having an elbow-support bearing, *u''''*, provided with hinged arms *u''''*, which have the other end pivoted to the sleeve of cup *u'*, to allow the friction-spring O to rise and lower with the plough, and plate *u''''*, hinged to the lever O', for its fulcrum adjustment, substantially as and for the purpose specified.

9.—The coil-spring O, having cup-caps *u u'*, sleeve-bearing *u''*, and bent or double-rod *u''''*, substantially as and for the purpose specified.

10.—The combination of the friction coil-spring O, having cup-caps *u u'*, sleeve-bearing *u''*, and bent or double-rod *u''''*, with the post Q', lever O', rod O'', and rack O''', substantially as and for the purpose specified.

11.—The combination of rod O'' with the axle-lever O', having plate *u''''* and journal shaft *a''''*, substantially as and for the purpose specified.

12.—The combination of the furrow-guide support N, having its lower end divided, as shown, and upper end perforated, with the bar N' and plough P, to operate substantially as described, for the purpose set forth.

13.—In a sulky-plough, the combination of an adjustable bar N', with the axle, furrow-guide support N, and journal-shaft *a''''*, substantially as and for the purpose specified.

14.—The lever G, with its respective elbow *j*, bolted to the bar *j''*, which is hinged with it to the axle or frame of the sulky, and bearing bifurcated end *j'*, substantially as and for the purpose specified.

15.—The arms *k*, having a bearing-collar, *k'*, and collar-box *m*, constructed substantially as and for the purpose specified.

16.—The combination of the yoke I, having journal ends and journal-pin *l*, with the arms I', knee plate I'', and arm *k*, substantially as and for the purpose specified.

17.—The combination of the arms *k*, having the collar *b w m*, with the elbow-lever *j'*, to lock the central lateral

movement of the plough-beam, semi circular bar *j''*, and rod *j''''*, substantially as and for the purpose specified.

18.—The perforated tubular cog-bearing brace *w*, provided with a bearing-rod, *w'*, and connecting-pin *w''''*, constructed substantially as and for the purpose specified.

19.—The combination of the perforated tubular cog-bearing brace *w*, provided with a bearing-rod, *w'*, and connecting-pin *w''''*, with the double beam Q, one bar having cog pins, arms I', and knee-plate I'', having the knee-pans *n*, to operate substantially as and for the purpose specified.

20.—In a sulky-plough, the combination of the operating device II, consisting of the arms *k*, yoke I, arms I', knee plate I'', and levers J J', with the double beam Q, having the cog-brace *w*, and lever G, having bifurcated end *j'*, the elbow *j*, bolted to the bar *j''*, having bar *j''''*, and axle or frame of the sulky-plough, substantially as and for the purpose specified.

21.—The lever G, having the elbow *j*, bolted to the bar *j''*, having hinged ends *j''''* and bifurcated end *j'*, in combination with the frame A or axle and journal-bearing collar-neck *k'*, substantially as and for the purpose specified.

22.—The combination of the hinged lever J, having elbow-arms *e* and handles *e'*, with the knee-plate I'', elbow-lever J', and seat D, to regulate the lateral movement of the plough, substantially as and for the purpose specified.

23.—In combination, the elbow-lever J' with the spring collar-bow *m* and knee-plate I'', for the purpose of locking the lateral movement of the plough, substantially as and for the purpose specified.

24.—The lever-rack K, having the spring collar-bows *p*, made more than semi circular in form, in order to clasp and hold the levers, substantially as shown for the purpose set forth.

25.—The combination of the lever-rack K, having the spring collar-bows *p*, with the arc-shaped reach and lever G, substantially as and for the purpose specified.

26.—In combination, the sleeve-rubber *p'* with the rack K and lever G, for the purpose of securing a safe and firm vibrating hold of the lever in the collar-bows, with easy adjustment, substantially as and for the purpose specified.

27.—In combination, the lap-spring sleeve *r'* with the lever M and rack K, for the purpose of securing an up-and-down movement of lever M in the collar-bows *p*, when rising and lowering the plough, and lateral movement, substantially as and for the purpose specified.

28.—In combination, the hinged lever M, made adjustable up and down by the lap-spring sleeve *r'*, to correspond with the vertical motion of the plough by the lever G, operating substantially as and for the purpose specified.

29.—In combination, the furrow-cutter I, consisting of the disk-blade mould boards *s'*, divided, as shown, with cutting-edges the whole length of each blade, and dish-shaped from the centre of the mould boards to the end of blades, circular blade-scrappers *s*, as shown, having two blades on each sleeve, secured to the axle between the said mould-boards, to remove obstruction from between the divisions of the blades, and frame *r*, having axle *r'* and arms *r''*, with the plough-beam Q, mould-board T, and share S, for the purpose of dividing the furrow slice as it passes over the said mould-board and share, substantially as and for the purpose specified.

30.—The land-side reversible plate R, made wedge-shaped from the ends to the centre, to be used end for end upside down, having a rib-shoe, *v*, constructed substantially as and for the purpose specified.

31.—The combination of the reversible land-side plate R, made wedge-shaped from the ends to the centre, and having a rib-shoe, *v'*, with the post Q made substantially as and for the purpose specified.

32.—In a plough, the combination of an adjustable double-beam Q, post Q', land-side reversible plate R, mould-boards T, and reversible share S, substantially as and for the purpose specified.

No. 234,091.—WALLACE C. RODGERS, PAPILLON, NEBRASKA.—*Sulky Ploughs*.—*May* 21, 1878. Filed *March* 10, 1878.

Claim.—1.—In a plough-sulky, the frame consisting of the bars A, vertical bars B B', spindles, and wheels, in combination with tongue E and braces G G', substantially as and for the purposes set forth.

2.—The combination of the bars A A, forked plate or bar I, with roller *z*, plough-beam J, and the dog *p*, taking into notches on one of the bars A, substantially as and for the purposes set forth.

3.—The combination, with the forked plate I and plough-beam J, of the plates *h h*, rod *f*, pivoted strap L, the quad ram M, formed with the catch *m*, and a laterally adjustable device, all substantially as and for the purposes set forth.

No. 204,517.—EDWARD WIARD and GEORGE C. AVERY, LOUISVILLE, KY., assignors to B. AVERY & SONS, same place.—*Sulky Ploughs*.—*Jan* 4, 1878. Filed *April* 20, 1878.

Claim.—1.—The double-crank-axle frame, consisting of the arms C C' and E E', which form angles at or about the center of the wheels of the plough, the front and rear connecting-bars F and F', and the short axles B and B', one of which is adjustable, said frame being adapted for having the plough proper hung upon its rear bar and the tongue-support to rest and rock upon its front bar, substantially as and for the purpose described.

2.—The adjustable axle-arm B', having the clamping or slotted slide attached to it, and connected to the divergent perforated arm E' of the double-crank-axle frame, as shown so that when the plough proper is raised and the arm is nearly horizontal the slide with axle and wheel are capable of moving backward until the axle B' coincides with the axle B, substantially as and for the purpose described.

3.—The rocking double-crank-axle frame having a brace or support, *o*, attached to it, in combination with the link *m* l, lever M, rocking frame G G', and driver's seat, whereby facilities for raising the plough are afforded, and the weight of the driver, when on the seat, assists to lift the plough, substantially as described.

4.—The combination of the short axles, one of which is adjustable, as described, double-crank-axle frame having arms which form angles at or about the center of the supporting-wheels, and the rocking support or seat-frame G G', substantially as and for the purposes described.

5.—The combination of the tubular brackets J J, attached to the beam of the plough and to the rear bar of the double-crank-axle frame, the tubular stop J' on said bar and between the tubes of the brackets, the set-screw J'', and the braces K, substantially as and for the purposes described.

No. 234,612.—NELSON ROWEN and GARRET AMES, OSWEGO, KANSAS.—*Wheel Ploughs*.—*June* 4, 1878. Filed *March* 30, 1878.

Claim.—The combination of the strap H, with plough connected thereto, the rod or link *m*, lever *e*, rod or link *b*, slide C, and wheel D, all constructed and arranged substantially as and for the purposes set forth.

No. 204,890.—FRANCIS M. FOSTER, MONTGOMERY COUNTY, assignor of one-half his right to W. A. PEPPER, COFFEYVILLE, KANSAS.—*Sulky Ploughs*.—*Jan* 18, 1878. Filed *April* 25, 1877.

Claim.—1.—In a sulky-plough, the combination of the axle A, rigid arms B B, plough-beam C, pivoted between said arms and provided with segment-gear *b* and elbow lever K, having geared segment *a*, substantially as shown and described.

2.—The axle A, arms B B, lever K, provided with segment-gear *a* and rack *f*, in combination, with pivoted plough-beam C, having segment gear *b* and cast-wheel *d*, substantially as shown and described.

No. 205,025.—GEORGE W. WRIGHT, FISHERSBERG, IND.—*Sulky Ploughs*.—*June* 18, 1878. Filed *April* 15, 1878.

Claim.—1.—An axle constructed with its wheel-spindles on different sides of and parallel with itself, in combination with a frame-work loosely mounted thereon, so that said frame-work may always retain its level independently of the position of the wheels, substantially as herin shown and specified.

2.—In combination with the axle, substantially as described, and a frame-work loosely mounted thereon, a laterally-adjustable driver's seat, by which an accurate balance is maintained, substantially as herein shown and specified.

No. 205,397.—ESTER B. KENNEY, CHARLOTTE, MISS.—*Tools for Agricultural Implements*.—*June* 25, 1878. Filed *April* 15, 1878.

Claim.—The combination of the pole A B, made in two parts, jointed together at *a*, the frame C, caster wheel D, clevis E, clips G G', and link H, all constructed substantially as and for the purposes herein set forth.

No. 205,509.—CHARLES F. SNOW, FREEPORT, ILL., assignor of one-half his right to HIRAM BRIGGHT, same place.—*Ploughs*.—*July* 2, 1878. Filed *February* 28, 1878.

Claim.—1.—The segmental gearing *t h*, lever *l*, and rack E, in combination with the sleeve *h*, lips *z*, plough-beam *l*, and bar *m*, substantially as set forth.

2.—As a means for allowing the lateral movement of the plough-beam *l*, the curved bar *m*, hinged at each end to the axle B, and provided on its under surface with the lips *z*, and on its upper surface with the foot-lever *p*, in combination with the sleeve *h*, having lips *z*, between which the plough-beam is pivoted, substantially as set forth.

No. 205,752.—JOHN LANE, CHICAGO, ILL., assignor of one-half his right to the CHICAGO PLOUGH MANUFACTURING COMPANY, same place.—*Sulky Ploughs*.—*July* 9, 1878. Filed *January* 15, 1878.

Claim.—1.—The lever H, rod *d*³, and carrier D, arranged and operating as shown, with rod-link *e*, extension *h*¹, and support C, all arranged and operating substantially as shown, and for the purposes set forth.

2.—The lever H, carrying the lock-lever *h*², with segment G, connected therewith, as shown, and operating with rod *d*² and carrier D, also with rod-link *e*, foot-roll *z*, extension *h*¹, and support C, all arranged and combined substantially as shown, and for the purpose set forth.

3.—The carrier D, bent and formed as shown, and the ends of the arms pivoted on the pivot-centers *d*¹ and *d*², extended forward of the axle to near the forward end of the plough-beam, where its forward end rests on top of the plough-beam, and rod *d*², the lever H, all arranged and operating substantially as shown, and for the purposes set forth.

4.—The lever H, rod-link *e*, extension *h*¹, and support C, arranged as shown, and having the foot-roll *z* attached to the rod-link *e*, and all arranged and operating substantially as shown, and for the purpose set forth.

5.—The rod-link *e*, connecting the short arm *h*¹ of the lever H and extension *h*², and the top end of rod-link *e*, extending and supporting the foot-roll *z*, as shown, all arranged and operating substantially as shown, and for the purpose set forth.

No. 205,827.—ISAAC BERDAN, CHATFIELD, MINN.—*Sulkies for Ploughs*.—*July* 9, 1878. Filed *May* 22, 1878.

Claim.—The combination, with the frame *a*, tongue *a*², and axle *b*, extended and formed into a crank, *e*, on the outer side of the wheel *b*¹, of the plate *a*¹, having slots *c*¹, adjusting arm *c*, provided with horizontal pins *c*², beam *d*, attached by suitable clevises, to plate *a*¹, so that its forward end has a free vertical movement, and chain *f*, all arranged substantially as and for the purpose set forth.

No. 205,874.—SMILEY KIRKPATRICK, WATERMAN, ILL.—*Sulky Ploughs*.—*July* 9, 1878. Filed *April* 13, 1878.

Claim.—The crank-shaft *k*, provided with the lifting foot-lever K, and a depressing foot-lever M, both attached to said shaft, in combination with the rock shaft *h*, provided with the lifting foot-lever H, the plough-beam F, connected at its rear and front ends to the shafts, respectively, as specified, and the catch-springs I N, substantially as and for the purpose set forth.

No. 206,732.—R. S. HIGGINS, NIOUA, ILL.—*Reaper-Ploughs*.—*August* 6, 1878. Filed *December* 29, 1877.

Claim.—1.—The combination, with the beam A, standard B, and share C, of the land-side D, constructed with a vertical arm *d*, forming a bearing for the furrow-wheel, and the rod or bar *d*¹, for bracing said arm to the beam and standard, substantially as shown and described.

2.—The combination of beam A, provided with plate Q, having notches *q*, the crank axle G, the lever K, the bar L, fulcrumed to the bent lever K, and constructed with a hook *l'*, adapted to engage in said notches, and the supporting wheels E and H, all arranged substantially as shown and described, for carrying the plough in the furrow.

No. 207,089.—JOHN C. WELSH, STOCKS STATON, ILL., assignor to himself and WILLIAM W. WELSH, same place.—*Sulky Ploughs*.—August 13, 1878. Filed June 4, 1878.

Claim.—The lever-plate *m*, swinging and provided with foot-piece below its fulcrum in combination with the tongue *d* and lever *k*, having pin *l'* as and for the purpose specified.

No. 207,598.—JAY B. FISHER, DAVENPORT, IOWA.—*Sulky Ploughs*.—September 3, 1878. Filed July 19, 1876.

Claim.—1.—A tubular axle having a slot *a'*, constructed substantially as and for the purpose specified.

2.—The crank-spindle D, having the grooves *d* and *d'*, to operate substantially as and for the purpose specified.

3.—The combination of the crank-spindle D, having the grooves *d* and *d'*, with the tubular axle A, having slot *a'*, screw *d''*, and wheel to adjust the spindle D, substantially as and for the purposes specified.

4.—In combination, the crank-spindle D, having the grooves *d* and *d'*, with the tubular axle A, screw *d''*, wheel, and semi-circular rim E, for the purpose of leveling the sulky frame, substantially as and for the purpose specified.

5.—In a sulky plough, the combination of the lever F with the tubular axle A, having the slot *a'*, and semi-circular rim E, to operate substantially as and for the purpose specified.

6.—The bifurcated lock lever M, having the neck *m*, arms *m'*, and ends *m''*, substantially as and for the purpose specified.

7.—In combination, the bifurcated lock lever M, having the neck *m*, arms *m'*, and ends *m''*, with the lever F, semi-circular rim E, and the bifurcated arms *l*, to operate substantially as and for the purpose specified.

8.—In combination, the bifurcated lock lever M, having the neck *m*, arms *m'*, and ends *m''*, with the lever F, semi-circular rim E, bifurcated arms *l*, and spring-lever N, for the purpose of lockage, substantially as and for the purpose specified.

9.—The combination of the bifurcated arms *l* with the lever F, semi-circular rim E, bifurcated lock-lever M, and yoke O, substantially as and for the purpose specified.

10.—In combination, the spring-lever N with the lever F and bifurcated lock lever M, substantially as and for the purpose specified.

11.—The yoke O, having a swivel bearing neck *o*, projecting rearward, for the purpose of freeing the plough from obstacles by throwing the sulky frame forward, substantially as and for the purpose specified.

12.—The combination of the yoke O, having a swivel bearing neck *o*, with the bifurcated arms *l* and bifurcated arms P, having a swivel neck *p*, and knee pins *p'*, substantially as and for the purpose specified.

13.—In combination with the tubular axle A, having slot *a'*, and plough beam, the operating device consisting of levers F and N, bifurcated arms *l*, bifurcated lock lever M, semi-circular rim E, yoke O, bifurcated arms P, and knee-pins *p'*, which also constitute the means for hinging the tubular axle to the plough-beam, substantially as and for the purpose specified.

14.—The combination of the bifurcated arms P, with the knee pins *p'*, plough beam, and yoke O, having the neck *o*, to operate substantially as and for the purpose specified.

15.—The combination of the tubular axle A, having slots *a'*, with the spindle B, pin *b'*, and wheel, substantially as and for the purpose specified.

16.—In combination, the tubular axle A, having slot *a'*, with the spindle B, pin *b'*, wheel, and staple *c*, having slot *b*, which permits of the rising of the wheel up, in the manner substantially as described, without affecting the working position of the plough, substantially as and for the purpose specified.

17.—In combination with the tubular axle A, having slot *a'*, spindle B, pin *b'*, wheel, and staple *c*, having slot *b*, the coil-spring C, operating substantially as and for the purpose specified.

18.—The combination of the staple *c*, having the slot *b*, with the tubular axle A, substantially as and for the purpose specified.

19.—In combination, the staple *c*, having the slot *b*, with the tubular axle A, spindle B, pin *b'*, and coil-spring C, substantially as and for the purpose specified.

No. 207,650.—DANIEL O. FOSGATE, ETO WING, MISSOURI.—*Ploughs*.—September 3, 1878. Filed August 26, 1877.

Claim.—1.—The combination of frame A, axles B, stand-ard H, tongue support D', and tongue E, in a sulky plough, as shown and described.

2.—The frame A, having the central bend, *e*, in combination with the plough-beam passing through said bend and supported at the front of frame, substantially as shown and described.

No. 207,674.—DENNIS W. PALMER, DETROIT, MO.—*Sulky Ploughs*.—September 3, 1878. Filed June 17, 1878.

Claim.—1.—The combination, with sulky and plough-beam, of the tongue E, having central slots *e, e'*, the braces J K M N, the pivoted bars I O, having jaws *h m*, and the link connected levers, substantially as shown and described.

No. 207,620.—STEPHEN DIXON, ROYALTON, ILL.—*Sulky Ploughs*.—September 3, 1878. Filed August 12, 1878.

Claim.—1.—In a wheel-plough, the land-side bar of the plough, constructed substantially as described, and with a lower sharpened edge to facilitate its entrance into the soil when raised and lowered by slight elevations under the land-side wheel, as and for the purpose specified.

2.—The land-side bar F', of a plough constructed with a lower sharpened edge, substantially as described, and for the purpose specified.

3.—In a wheel-plough, the brace G, attached at one end to the plough and at the other end to the wheel-frame, in combination with the plough, having the rear lower portion of its land-side inclined upward and its lower edge sharpened, substantially as described, and for the purpose specified.

No. 2,80,53.—JAMES E. ALEXANDER, NEOSHO, MO.—*Sulky Ploughs*.—September 17, 1878. Filed June 7, 1878.

Claim.—In a sulky-plough, the slotted arm *l*, hinged loosely upon the axle *c*, in combination with the plate *b*, carrying the journal for the wheel *g*, substantially as and for the purpose specified.

No. 268,426.—CONRAD STEIGERKNER, BILDER CO., OHIO.—*Plough-Sulky*.—September 24, 1879. Filed July 2, 1878.

Claim.—1.—In a sulky plough, the combination, with the main frame and plough beam, of the sub-frame I, the guide chain *o*, the lifting lever and chain M O, and the adjustable non-lifting depressor T S, substantially as shown and specified.

2.—The axle D, sub-frame I, articulating joint J, twisting lever O, radius bar H, connecting rod G, and adjusting lever F, all combined, substantially as specified.

No. 268,408.—DAVID SMITH, JAMES TOWN, N. Y., assignor to MOSES B. SMITH, same place.—*Beam Truss*.—October 1, 1878. Filed July 21, 1878.

Claim.—The combination, with axle A, formed with the central inclined body B and flat top *a*, made in a single piece therewith, of cylinder C, which is adjustably fastened in the series of holes *b*, passing transversely through said arched body, and is provided with loose link D, together with hammer-strap E, projecting rearwardly over said flat top, and formed with hook extremity *e*, substantially as set forth.

No. 2,80,78.—FREDERIC H. ISAACS, NEWARK, N. J.—*Sulky Plough*.—October 15, 1878. Filed September 7, 1877.

Claim.—1.—The lever C, having the cut-offs A and B, in combination with the connecting rod G, crank *z*, jaws I Q, and notched segment D, whereby the lever is locked to the driving wheel and the plough raised or lowered by the forward movement of the machine, substantially as shown and described.

2.—The combination of the lever C, having the cut-offs A and B, and spurs *s*, with the springs H P, and jaws I Q, substantially as specified.

3.—The combination of the ratchet K and gear wheel L, rigid upon the driving-wheel or axle, with the ratchet K, gear wheel S, lever C, cut-offs A B, pawls I Q, springs H P, lugs *m*, and notched segment D, substantially as set forth.

No. 209,567.—CHRISTIAN MYERS, NAPA CITY, CAL.—*Ploughs*.—October 15, 1878. Filed August 29, 1878.

Claim.—1.—In a plough, the combination, with the axle D, provided with the arms A A, having spindles B B and studs C C, and the plough-beams E E, of the rod G, for connecting said beams at their forward ends, racks H H, having the lower right angled portions *h h* secured to said rod G, curved spring-levers K K, having detents L L, and the perforated arms M N, the several parts constructed and relatively arranged to operate substantially in the manner herein shown and described.

2.—In a plough, the slip-share P, having tongue Q and lug U, the frog S and fixed portion T, having groove R and slot V, in combination with sliding portion W of land-side W, having stud *u*, and bolt and nut X N, constructed and operating substantially as and for the purposes set forth.

No. 209,175.—JOHN LANE, HYDE PARK, ILL.—*Sulky-Ploughs*.—October 22, 1878. Filed June 13, 1878.

Claim.—1.—In a sulky plough, the frame consisting of arch B, foot-rail C, tongue-brace C', and elbow E, combined with the axle A and tongue D, all arranged and bolted or riveted together as shown, and operating substantially as and for the purpose set forth.

2.—The combination of the bent axle A, the arch B, the latter adjustably attached to the former by means of the bolts *h*, substantially as shown, the crank-axle A', the segment-sleeve *a'*, and the lever *a'*, substantially as and for the purpose set forth.

3.—The rod-brace F, having an eye at one end and a nut and screw-thread at the other end, combined with the arch B, elbow E, and tongue D, all arranged substantially as and for the purpose set forth.

4.—The hanger M, having slotted eye *w* and grooves *r*, all substantially as shown, and for the purpose set forth.

5.—The foot-lift L, locked in position by the lever R, lock-lever S, and link L', and the yoke J, hinged to the foot-lift L, by the bolts at *l*, and limited by the stop-hook *h'*, and the yoke J, pivoting on the pins *h* and arch B, and the plough-beam K, connected to the yoke J by means of the saddle P and hangers M, having slotted eyes *m*, all arranged and operating substantially as shown, whereby the depth of ploughing is controlled and the plough kept in its steady forward progress while the land-wheel is passing over ridges and furrows, and the tongue is swaying laterally, as set forth.

6.—The combination of the bail-yoke J, having both limbs *j j'* extending forward of the axle, and the extensions having two perforations, *h*, and having a stop hook, *h'*, formed offset at the bottom of the extreme forward end, all as shown with the foot-lift L, connected therewith, substantially as shown, whereby they are made rigid or flexibly connected, as shown, and with the arch B, the axle A, and the plough-beam K, all substantially as and for the purpose set forth.

7.—The foot-lift L, bent shape, having two arms and a closed end, and rear ends of the arms *a a'* connected with the extensions *j j'* of the bail-yoke J, and provided for both rigid and flexible connection, as shown, and the forward part of the arm *a*, bent upward, supporting the closed end as a foot-board rest, as specified, in combination with the bail yoke J, constructed substantially as shown, and with the arch B, the axle A, and beam K, all substantially as and for the purpose set forth.

8.—The combination of the plough W, the beam K, the latter bent curved and supporting plough W, as shown, the slicing-plough W', consisting of a share only, without turning mould-board, in advance of and above the cutting-line of plough W, the beam K', bent curved and supporting slicing-plough W', and connected to the beam K, and the revolving-disk coultter X, arranged to cut perpendicularly down by the side of and in advance of the slicing plough W' to the depth of ploughing of the plough W, substantially as and for the purpose set forth and shown.

9.—The combination of the slicing-plough W, consisting of a share having an extending high breast, as shown, and for the purpose shown, and without a turning mould board,

plough W, having a turning mould-board, the plough W', arranged in advance of and above the cutting line of the plough W, and the disk-revolving coultter X, the latter arranged to cut down by the side of and in advance of plough W' to the depth of ploughing of plough W, substantially as and for the purposes set forth.

No. 209,283.—THOMAS MEIKLE, LOUISVILLE, KY.—*Sulky-Ploughs*.—October 22, 1878. Filed August 31, 1878.

Claim.—In combination, the U-shaped grooved standard F and the sliding box G', with the plough D attached outside of the wheel, as and for the purposes substantially as described.

No. 209,512.—CHAUNCY G. PRICE and JAMES M. MERRITT, TAMA COUNTY, IOWA.—*Sulky-Ploughs*.—October 29, 1878. Filed February 28, 1878.

Claim.—1.—The combination, with a crank-axle made with the two right-angular arms formed thereon, of the lever which is fulcrumed on the axle-spindle, and adapted to engage respectively with the outer extremities of said arms by suitable bolt-connection, substantially as set forth.

2.—The combination, with a crank axle provided with the two arms formed right angularly on opposite sides thereof, of the lever, fulcrumed on the axle-spindle, and adapted to be engaged by bolt-connection with either one of the arms, said lever being made with the spring-ratchet, which engages with the segmental rack, substantially as set forth.

3.—The combination, with a crank axle made with the two right-angular arms projecting respectively from opposite sides thereof, of the lever adapted to engage with the outer extremities of the arms, said lever being made with a bifurcated lower end, which loosely embraces the axle-spindle, and adapts the lever to be operated when connected respectively with either one of said angular arms, substantially as set forth.

4.—The adjustable clamp composed of the U-shaped side pieces, *l*, and tie-rods *l'*, in combination with a plough-beam and bail and clamping-collars, whereby any width of beam may be secured either above or below the bail, substantially as set forth.

No. 209,688.—EDWARD T. HUNTER, HALLSVILLE, ILL.—*Sulky-Breaking-Ploughs*.—November 5, 1878. Filed September 9, 1878.

Claim.—1.—The combination, with the crank axle D, of the disk F, the pivoted angle-plate G, the spindle H, the wheel I, the sliding-plate J, the pivoted-rod K, and the lever L, as and for the purpose specified.

2.—The combination of the block F', convexed and corrugated upon its upper side, with the lower block, E, concaved and corrugated upon its lower side, the four bolts H', and the bottom plate, J' for connecting the plough-beam adjustably with the axle D, substantially as herein shown and described.

3.—The combination of the adjustable pin J' with the bent axle D, provided with holes to receive it, and the blocks E', provided with a ring-groove in their grooved faces, substantially as herein shown and described.

No. 210,137.—OLIVER S. MECHAM, CHAMPAIGN, ILL.—*Wheel-Ploughs*.—November 19, 1878. Filed August 17, 1878.

Claim.—The arrangement, in a wheel-plough, of the rectangular frame *c*, having seat-frame *l* rigidly secured to the inside thereof, the axle *a*, provided with lever *m* and four bearings, as described, and having the plough-beam pivoted to the central bent portion thereof, the slotted frame *g*, secured to the frame *c*, and having one of the end bearings of the axle in its lower end, the rack-bar *p*, wheel *r*, and lever *i* all constructed and arranged to operate as described.

No. 210,147.—GEORGE P. PRICE, CARLISLE STATION, OHIO.—*Plough-Sulky and Cultivator*.—November 10, 1878. Filed October 12, 1878.

Claim.—In a plough sulky, the combination of the frame F, composed of the arms *f¹ f²* and the short arms *f¹ f²*, provided with the removable frame *v'*, the short arms *f² f²* being adapted to be sprung into and removed from holes in the frames D D, in combination therewith, and with the frame E, composed of the arms E' *e¹ e²*, and *e²*, removably connected to a clamping-frame upon the plough-beam near

its end, and adapted to be operated by suitable levers, as G J, for the purpose of permitting the plough-beam to be removed and replaced by cultivators, as set forth.

No. 210,425.—DAVID W. HUGHES, BUTLER COUNTY, OHIO.—*Riding Ploughs*.—December 3, 1878. Filed February 9, 1878.

Claim.—1.—The combination, with an axle of a riding-plough sully, of a side-frame consisting of the angular bar E, having a vertical and horizontal branch, and the bar F, having a horizontal and inclined branch, converged to form a plate for a pivoted tongue in front, substantially as specified.

2.—In combination with a sulky-plough frame and a plough outside of the wheels, the angular arm H, pivoted to the axle, the arm-brace G attached to the plough-beam and coupled therewith, and the lever J', fulcrumed on said axle and connected with said arm, substantially as specified.

3.—The combination, with a plough and its carriage, of the vibrating brace H', the connecting-rod J, and a lever K, as and for the purpose specified.

No. 210,599.—JAMES SHERRILL, HARRISBURG, OR. EGON.—*Gang Cultivators and Seeders*.—December 3, 1878. Filed July 27, 1878.

Claim.—1.—In a gang-cultivator, the combination, with a diagonal cross-bar, to which the forward extremities of the plough-beams are secured, and which is adapted to move the ploughs collectively to or from the land, of levers and connecting mechanism adapted to vary and maintain said bar in any desired vertical adjustment, substantially as set forth.

2.—The combination, with a diagonal cross-bar, to which the forward and downwardly-curved extremities of the plough-beams are secured, and a second diagonal cross-bar, to which the rear arched portions of said beams are loosely connected, so as to have free vibratory movement in a lateral direction, of a lever which engages with said front diagonal cross-bar and operates the same in a rocking motion, whereby said plough-beams are thrown to or from the land, substantially as set forth.

3.—In a gang-cultivator, the combination of the two diagonal cross-bars, to which, respectively, the forward and rear bodies of the plough-beams are connected, said bars being adapted to be independently varied in adjustment to or from the ground, and said forward cross-bar being adapted to be laterally moved or rocked, substantially as set forth.

4.—A gang-cultivator constructed with a bar, to which the plough-beams are secured, and which is capable of moving the ploughs laterally to or from the land, in combination with mechanism adapted, respectively, to vary the degree of the angular inclination of the plough-points to the ground, and to bodily raise or lower the ploughs relative to the latter, substantially as set forth.

5.—The combination, with the front diagonal cross-bar, having depending clamp-pieces on its under side, to which the plough-beams are pivoted, of the upright lever, provided with a spring-clamp, and the horizontal locking-bar, having notches with which the side projection of said lever engages, substantially as set forth.

6.—The combination, with the front diagonal cross-bar, to which the plough-beams are indirectly pivoted, of the levers attached to the top frame, and the connecting links secured to opposite ends of the cross-bar, said levers being adapted to engage with rock-bars, substantially as set forth.

7.—The combination, with the front diagonal cross-bar, to which the plough-beams are indirectly pivoted, so as to have independent vertical movement, of the central draft clevis, connecting by rods with the axle-tree and said diagonal cross-bar, the latter being provided with rod-connecting clevises, which are longitudinally adjustable thereon, substantially as set forth.

8.—The combination, with the top frame, having loop engagement with the axle-tree at its forward end, and provided with a caster-wheel at its rear end, of the rear diagonal cross-bar, supporting the plough-beams by loops, and connected with the top frame by bell-crank levers, which latter are operated by a hand lever and intermediate connecting links, said hand-lever engaging with a rock-bar, substantially as set forth.

No. 210,830.—GEORGE ARMSTRONG and ROBERT ARMSTRONG, executor of JAMES ARMSTRONG, JR.,

deceased, ELMIRA, ILL.; said ROBERT ARMSTRONG assignor to said GEORGE ARMSTRONG.—*Gang-Ploughs*.—December 17, 1878. Filed February 25, 1878.

Claim.—In a gang-plough, the combination of the perforated cross-bar C, the adjustably-pivoted draw-bar B, the perforated movable D, pivoted lever G, and segmental rack K, all substantially as and for the purpose herein set forth.

No. 210,867.—WILLIAM W. MARSH, SYCAMORE, ILL.—*Sulky Ploughs*.—December 17, 1878. Filed April 16, 1878.

Claim.—1.—The frame formed from a single piece, and having a vertical portion, B', provided with a head to receive the sliding head for operating the land-wheel, and a vertical portion B'', provided with an opening C, all substantially as and for the purpose specified.

2.—The frame formed from a single piece, having the vertical portions B' B'' to receive the spindles for the wheels, and provided with the opening C and the recess or shoulder D for attaching the tongue-support, substantially as specified.

3.—The reversible head W, provided with hub G' and pins e' e', and carrying the spindle D', in combination with a supporting-head and device for enabling the spindle to be reversed when worn, substantially as specified.

4.—The pivoted plate P, provided with the ears n and with the projections i, which form spaces j between them, in combination with the bail or swinging frame Q, the rod o, and the plough-beam, substantially as and for the purposes herein set forth.

No. 210,992.—HUGH B. CANADAV, FAIRFIELD, IOWA.—*Ploughs*.—December 17, 1878. Filed November 9, 1878.

Claim.—The combination, with the platform A, having depending hangers E, the vertically-vibrating bail F, pivoted thereto, and the beam G, coupled to said bail at its front end, of the swinging bail H, its operating lever I, the ratchet J, and the clevis-bail K, vibrating on the bail H and coupled to the beam, substantially as specified.

No. 211,007.—GEORGE W. GREENER, LONG POINT, ILL.—*Sulky Ploughs*.—December 17, 1878. Filed June 10, 1878.

Claim.—The axle a, having the U-shaped bend at or near its center, the said bend being made to support the seat, and just wide enough to act as a guide for the plough-beam, and to receive the roller over which the elevating chain passes, substantially as shown.

No. 211,372.—ORLANDO BARR, ELGIN, ILL., assignor of one-half his right to GEORGE P. LORD, same place.—*Sulky Gang Ploughs*.—January 14, 1879. Filed February 21, 1878.

Claim.—1.—In a sulky for ploughs, the main axle A, constructed with double bonds, whereby a central closed stirrup adapted to receive and guide the front end of a plow-beam is provided, substantially as described.

2.—The main axle A, bent as set forth to form a closed stirrup, in combination with the plough-beam E, arranged within the stirrup, which serves as a guide and support thereto, substantially as described.

3.—In a sulky plough, the main axle bent as set forth to form a closed stirrup, in combination with the plough-beam, arranged with a loose joint within said stirrup, which serves as a guide and support thereto, whereby the axle may be tilted at either end without affecting the position of the ploughs, substantially as described.

4.—The main axle A, provided with the stirrup a, in combination with the clamps F, provided with lugs f, which inclose the sides of said stirrup to make a loose joint, and the plough-beam E, substantially as described.

5.—The clamping-irons F, having their outer surfaces convex, and provided with lugs or projections f, substantially as described.

6.—The plough-beam E and clamp F, arranged to move in the axle-stirrup a, in combination with the link-rod G, provided with a slot g, coupled to the clamp F, and the lever H, substantially as described.

No. 211,425.—JACOB PRICE, SAN LEANDRO, CAL.—*Sulky Ploughs*.—January 14, 1879. Filed September 12, 1878.

Claim.—1.—In a sulky-plough, the combination of the axle C, having the fixed crank D and the loose spur-wheel H, with the loose journal-crank D', the spindle shaft F, pinion G, and brake I, as and for the purpose specified.

2.—In a sulky-plough, the combination of the rigid plough-frame A A' L, the double-crank axle, the pinion G, spur-wheel H, brake I, and levers K N, substantially as shown and described.

3.—The combination of the double-crank axle, the gear wheels G H, corrugated brake I J, foot-lever K, locking-lever N, and segment M, with adjustable stop, substantially as shown and described.

No. 211,626.—MAX J. FREEMAN, WALLA WALLA, W. T.—*Sulky-Ploughs*.—January 28, 1879. Filed October 21, 1878.

Claim.—1.—The bed-plates B B', the transverse shaft b' the pivot b, the foot-lever F', main axle a, wheels A A', hand-lever F, the upright frame C, supporting the plough-beams carrying ploughs, all said parts being combined, constructed, and arranged to operate substantially as set forth.

2.—In a gang-plough, the combination of the eccentric having cam-arm, the plough-beam having oval yoke-bar, the chain-connection of cam-arm with foot-stanchion, the hand-lever to operate said eccentric, the guide-frame, all said parts being constructed and arranged as shown and described to operate the ploughs for vertical adjustment, as and for the purposes set forth.

3.—In a gang-plough, the plough-beams carrying ploughs, the oval yoke-bar, the eccentric having cam-arm the chain-connection of cam-arm with foot-stanchion, the hand-lever to operate said eccentric, the guide-frame having its lower end secured to a transverse shaft, the plough-truck having bed-plate parts to contain said shaft, all said parts being combined, constructed, and arranged as shown and described, to operate in the manner, and for the purposes set forth.

4.—The hand lever H, the segment-bar b, the collars g g', the arms g' g', and the connecting rod g', in combination with the plough-beams carrying ploughs, the standards of which pass through said collars, by means whereof the lateral adjustment of the ploughs is achieved, in the manner and for the purposes set forth.

No. 211,662.—FRANKLIN B. HUNT, RICHMOND, IND.—*Sulky-Ploughs*.—January 28, 1879. Filed March 27, 1878.

Claim.—1.—In a wheel or sulky plough, the combination, with the plough-beam, of a circular vibrating leveling-block, through which the plough-beam passes, substantially as set forth.

2.—In a wheel or sulky plough, the combination, with the plough-beam, of the laterally-vibrating leveling block, through which the plough beam passes, and the longitudinal-vibrating bearing blocks, connected directly to the crank-axle, substantially as set forth.

3.—In a wheel or sulky plough, the combination, with the plough-beam and adjustable crank-axle, of the pivoted bearing-blocks F F' and circular leveling-block E, forming a direct connection between said plough-beam and crank-axle, substantially as set forth.

4.—In a wheel or sulky plough, the combination of the seat-arch, the stationary furrow-wheel axle, and the crank-axle, said furrow-wheel axle arranged below the line of the crank axle, and both directly connected to and by said seat-arch, and each operating independent of the other substantially as herein shown and described.

5.—The combination, with the plough-beam, of the slotted circular leveling block E, provided with lugs for the reception of pins or bolts, to secure the plough-beam thereto, substantially as specified.

6.—The combination of the slotted circular leveling-block E and the adjustable pivoted blocks F F', provided with interior bearing for supporting said leveling-block, substantially as specified.

7.—The combination of the seat-arch provided with the lug N and the slotted seat or foot-rest suspended thereon, and the bolts or screws for adjustably securing the seat or foot rest in any desired position, substantially as specified.

8.—In a wheel or sulky plough, the combination, with the plough-beam and seat-arch, of the leveling and pivoted bearing blocks and crank and furrow-wheel axles, directly at-

tached to said seat-arch, one above the line of the other substantially as herein shown and described.

9.—The seat arch provided with two extended socketed bearings, P P', cast with and forming a part of the seat arch, as and for the purpose herein shown and described.

10.—The quadrant attached to the seat-arch in rear and to the tongue-bearing in front, in combination with the lever and the segment K, pivoted to the lug L', attached to the seat-arch, substantially as specified.

11.—The seat-arch provided with the bearings for the crank and furrow-wheel axles, tongue, segment K, and quadrant M, substantially as specified.

12.—The seat arch provided with the bearings for the crank and furrow wheel axles, quadrant M, and double bearings for the tongue, cast as integral parts of said seat-arch, substantially as set forth.

13.—The pivoting-blocks F F', attached to the crank axle, in combination with bolts or screws, by means of which the leveling-block E, attached to the plough beam, is clamped and held in position when adjusted, substantially as set forth.

14.—In combination with the crank-axle and segment J, a detachable segment, K, whereby the plough may be permitted to play automatically, substantially as shown and described.

No. 211,666.—JEROV BROWN, WAITSBURG, W. T.—*Sulky-Ploughs*.—January 28, 1879. Filed Jan 13, 1878.

Claim.—The plate I, bolted adjustably to the frame E, in combination with the tongue K, the lever L, and the hinged pin N as and for the purpose specified.

No. 211,724.—DANIEL O. FOSGATE, ROCHESTER, MINN.—*Sulky-Ploughs*.—January 28, 1879. Filed November 15, 1878.

Claim.—The combination of the centrally pivoted tongue embracing and sliding on the post J, the curved bar O, having notches formed in its convex side, the sliding bolt P, and the pivoted lever Q with the horizontal bar K, brace L, frame F, and axle A, whereby the tongue may be fixed or freely vibrate in a vertical plane, substantially as shown and described.

No. 211,968.—ALBERT D. BLANCHARD, HUTCHINSON, KANSAS.—*Wheel-Ploughs*.—February 4, 1879. Filed June 20, 1878.

Claim.—1.—The combination of the eccentric d, lever e, and ratchet c with the slotted lever a, catch n, standard b, plough-beam h, and frame, substantially as shown and described.

2.—The eccentric d, made rigid upon the lower end of the lever e, and provided with the ratchet-plate c, having a slot, s, and being actuated by the spring-catch f, substantially as shown and described.

No. 212,234.—GEORGE KIMBALL, LAWRENCE, KANSAS.—*Wheel-Ploughs*.—February 11, 1879. Filed December 30, 1878.

Claim.—The frame A, having the plough connected to its outer side so as to run just in front of the small wheel O by means of a pivot-plate, R, the front end of the frame being made to catch in the clasp or clip U, secured to the plough so as to limit the distance which the plough will turn substantially as described.

No. 212,341.—JAMES R. WHITNEY, MAGNOLIA, WIS.—*Sulky-Ploughs*.—February 18, 1879. Filed October 23, 1877.

Claim.—The combination, in a sulky-plough, of the beam formed of two bars, a a', standing edgewise, having the rear ends bolted to the axle and their forward ends curved, as shown, the standard-socket B, arranged between and bolted to said bars, and the shank of the plough adjustable vertically in said socket, all constructed and operating as described.

No. 212,750.—CASPER F. SEARCH, CHICAGO, ILL., assignor of one-half interest to JOHN C. COONLEV, same place.—*Sulky-Ploughs*.—February 25, 1879. Filed September 25, 1878.

Claim.—1.—The combination, in an adjusting device, of a crank-axle journaled in swinging bearings, a spur-wheel mounted on the said axle, and a rack engaging the said wheel, substantially as specified.

2.—The combination of the swinging bearing B, the

axle D, carrying a crank-arm, the wheel C, mounted on the said axle, and the rack G, all operating together substantially as specified, in connection with an adjusting-lever and a bolt or catch.

No. 212,919.—BENJAMIN FRANKLIN, JAMESTOWN, N. Y.—*Ploughs and Farm Trucks*.—March 4, 1879. Filed December 4, 1878.

Claim.—1.—The combination, in a farm truck, of the draft-pole A and U-shaped clevis F, having slots *f*, and adapted to embrace and slide vertically upon the rear end of the draft-pole, the draft rod I, pivoted to said draft-pole, extending rearwardly through said clevis, and provided with hook *k*, substantially as specified.

2.—The combination, in a farm-truck, of the draft-pole A, curved sectional frame B, forming journals *c'* for the axle C, carrying the adjustable wheels D, the U-shaped clevis F, provided with adjusting slots *f*, engaging bolt *e* on the rear end of said pole, and the longitudinal draft-rod I, passing through said clevis, connected to the draft pole, and provided with a loop, *k*, whereby a plough or other farm implement may be attached, as specified.

No. 213,178.—JOHN R. CUMMINS, MCKINNEY, TEXAS.—*Attachments for Ploughs*.—March 11, 1879. Filed December 21, 1878.

Claim.—The combination, with a plough-beam, A, and a circle-plate, B, provided with transverse rib *a*, and having said beam clamped thereto, of the bearing-plate C, having transverse-sleeve *d* extending beyond the edges thereof, an axle, D, extending through said sleeve, a pivot-bolt, *f*, connecting the circle and bearing plates, and adjustable collars *d'*, substantially as specified.

No. 213,614.—JOSEPH BLACK and T. PATER, ALTON, ILL., assignors to HARGOOD & CO., ST. LOUIS, MO.—*Sulky Ploughs*.—March 25, 1879. Filed February 13, 1878.

Claim.—1.—The foot-rail C, consisting of a bent bar, U-shaped, and the end of one of the arms extending bent upward, forming the seat *c*, for supporting the tongue, and both arms attached to the arched axle A, all substantially as shown, in combination with the arched axle A, tongue D, and brace E, all constructed to operate as described.

2.—The brace E, provided with flanges *f f'*, embracing the sides of the tongue, and with seat *c'*, in combination with the tongue D, foot rail C, and arched axle A, all constructed to operate as described.

3.—The sulky-plough frame consisting of the arched axle A, tongue D, and foot rail G, provided with one arm extending bent upward, forming the seat *c*, and both arms atached to the axle, and brace E, provided with flanges *f f'*, all constructed and arranged to operate as shown.

4.—The combination of the beam K, adjusting rod I, bail J, provided with extension P, link *l*^h, and lever S, provided with means for adjustable stoppages, segment K, tongue D, and arched axle A, all constructed to operate substantially as shown.

No. 213,623.—JOHN CLAYTON, CLAYTON GRANGE FARM, BRAINARD P. O., MINN.—*Gang Ploughs*.—March 25, 1879. Filed December 10, 1878.

Claim.—1.—The arms A, provided with the slots D, and pivoted at their centers, and through the said slots to the under side of the beam, and at the ends to the side beams, B B, substantially as herein shown and described, and for the purpose described.

2.—The flanged side beams, B B, attached to the ends of the arms A, and provided with slots, by means of which, and bolts and screws, the hangers C' C' and the posts B' B' may be adjusted and secured at any desired inclination, substantially as herein shown and described.

3.—The side brackets, substantially as shown and described, on the clevis end of the beam, for preventing the rods from being pulled out of upright position by the action of the lever.

No. 213,717.—JOSEPH WARWICK and ALFRED T. WARWICK, FRANKLIN, assignors of one-half their right to SARAH CLEAVER, WEST CARROLLTON, OHIO.—*Plough Sulkies*.—March 25, 1879. Filed March 30, 1878.

Claim.—1.—The combination with the seat, of the supporting cross-bar provided on one of its vertical sides with a

pivot or lug, upon which said seat is pivoted, substantially as shown and described.

2.—The combination, with the seat-support, of the seat-pivoted thereto and adapted to be rocked or vibrated laterally thereon, substantially as shown, and for the purpose set forth.

3.—The combination, in a wheel-plough, of the laterally-vibrating plough-beam and the pivoted seat, adapted to vibrate or rock laterally upon a horizontal axis, substantially as and for the purpose described.

4.—The combination of the loosely-sliding stirrup J, casting K, with tube *k* and recess *x*, the adjustable leveling-plate I, and the bolts *h*, plate *m*, and nuts *i*, all substantially as and for the purposes herein set forth.

5.—The combination of the stirrup J, which slides loosely through the pivoted tubes *d d'*, and the elbow-lever N, with eye *n*, substantially as and for the purposes herein set forth.

No. 213,906.—LEMUEL M. KELLY, LITCHFIELD, KY.—*Gang Ploughs*.—April 1, 1879. Filed December 7, 1878.

Claim.—The combination of the tongue and axle frame, having rod *z*, with eyes *p h*, the plough-beams *o o*, connected at the rear by a laterally-adjustable lift-frame, and in front with the eye *p* of tongue-frame, and the lever *i*, arranged as shown and described.

No. 214,396.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Sulky Ploughs*.—April 15, 1879. Filed October 28, 1878.

Claim.—1.—In a plough, the chain or its equivalent *k*, arranged as shown, for the purpose of securing the mould-board firmly in place to the fulcrum *g*, around which it swings, substantially as set forth, by which the ordinary support from the land-side is dispensed with.

2.—A wheel plough having two supporting-wheels in the same transverse line, one of which is arranged to run in a land-side furrow and the other in an open furrow previously formed, and one or more ploughs having the long mould-board or mould-boards adapted to extend back and sidewise sufficiently to embrace the entire space between the wheels, and to invert the soil behind the furrow-side wheel, substantially as described.

3.—In combination with the swinging mould-board *H h* and its stationary frame *a*, the stationary knife or cutter *i*, as and for the purpose set forth and described.

No. 214,440.—JOSEPH M. PAYNE, BOONVILLE, MO.—*Sulky Ploughs*.—April 15, 1879. Filed October 23, 1878.

Claim.—The plate O, having bearings N N, bolts T T, and plate S, in combination with the slotted rack R, straddling the bolts T T, and having eye Q, castor-wheel L, having shank M, swiveled in the bearings N N Q, and the segment-lever W V, for operating the rack, the whole arranged and operating substantially as described, for the purpose set forth.

No. 215,268.—EDWIN S. DANIEL, BUTLER, MO.—*Sulky Ploughs*.—May 13, 1879. Filed February 11, 1879.

Claim.—1.—The combination, with rock-shaft L, provided with a rearwardly-extending arm, M, and forwardly-extending slotted arm K, and lever I, provided with a stud *i*, working in the slot *k* in arm K, of the plough beam N and chains S S, substantially as described, for the purpose set forth.

2.—The combination, with the sulky-frame, having depending brackets or hangers K R, crank-shaft Q, and rock-shaft L, provided with arms M K, and lever I, of the plough-beam N and chains S S, substantially as described, for the purpose herein set forth.

No. 215,346.—ISAAC R. GILBERT, LOUISVILLE, KY.—*Sulky Ploughs*.—May 13, 1879. Filed March 13, 1879.

Claim.—1.—The flanged bracket I, removably attached to the elbow-lever K, as and for the purposes herein set forth.

2.—The movable arm M and rock-shaft *h'*, in combination with plough-beam A and tubular bearings B' B', substantially as and for the purpose set forth.

3.—The lever O, combined with the elbow-lever P, spring-pawl *p*, and roller *r*, substantially as herein set forth.

4.—In a sulky-plough, the arrangement of devices, substantially as herein described, whereby the spring-pawl that engages with the rack and the pawl that engages with the

tatchet wheel on the hub may be operated simultaneously for raising the plough from the ground.

5.—The foot lever S, provided with the projections *s*, in combination with the roller *r* and spring pawl *p*, substantially as and for the purposes herein set forth.

6.—The combination of the foot-lever S, slotted link V, lifting-pawl W, and tatchet wheel Y, substantially as and for the purposes herein set forth.

No. 215,918.—MILLO HARRIS, JAMESTOWN, N. Y.—*Farm Tractor or Draught Attachments for Ploughs or Harrows*.—May 27, 1879. Filed November 9, 1878.

Claim.—1.—In farm-trucks, the cast-standard D, having cap E and mortise *h* formed thereon, in combination with spring *g* and seat G, constructed in the manner substantially as shown and described.

2.—In combination with a plough attached to a farm truck by a loose joint, the plough-holder P, having wheel or wheels Q and adjusting-chain R, substantially as shown and described.

3.—The combination, in a farm truck, of the main axle C, the adjustable arm-spindle *i*, and the cast-standard D, having cap E and mortise *h*, with the gain at the bottom, and projection for attaching the braces L, substantially as shown and described.

No. 215,929.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Sulky Ploughs*.—May 27, 1879. Filed April 19, 1879.

Claim.—1.—In a sulky-plough, two or more ploughs arranged abreast of each other, and having mould-boards or shares of approximately equal length opposite each other, and having between their inclined opposite surfaces an unobstructed space, in order that the slice or tunnel earth of the land-side share or mould-board may be thrown and inverted into the furrow formed by the furrow side plow, substantially as described.

2.—The combination, with the ploughs, of the beveled bearing wheels *b b'* and the counter-bearing wheel's *d d'*, whereby the lateral strain is resisted at both ends of the plough, and the same caused to run straight, substantially as described.

3.—The combination of the two rear bearing-wheels, *b b'*, and the self-locking levers *u u'*, for the purpose of elevating the ploughs, substantially as set forth.

4.—The combination, with the pivoted or fulcrumed ploughs, of the rigid adjustable braces or stays *v v'*, connected to the rear end of the mould-board S, whereby the mould-board may be adjusted in either direction and firmly held in position, substantially as described.

5.—The combination of the adjustable braces *v v'* with the double bearings and fulcrumed in the bifurcated levers *u u'*, for the purpose set forth.

6.—The bearings and fulcrum in levers *u u'*, as constructed with hanging brackets *u u u u'* from the main axle *a*, as and for the purpose set forth.

7.—One or more revolving disks, *x*, arranged at the rear end of the mould-board, for the purpose of pulverizing and inverting the soil, substantially as described.

8.—The combination of one or more ploughs, S S', movable on fulcrum *m m'*, with braces or stays 16 16 and *v v'*, as and for the purpose set forth.

9.—The combination of the notched arms or levers 19 19, rocking wheels *g* on shaft S, main shaft *a*, and levers *u u'*, as and for the purpose set forth.

10.—In combination with rocking ploughs S, locking-lever *u*, and sliding horizontal notched link, 19, as and for the purpose set forth.

11.—The combination or sliding pole 12, pole shaft 8, and disks *g* *g*, as and for the purpose set forth.

12.—The combination of the pole 12, spring 15, pole shaft 8, disks *g* *g*, and notched levers or links 19 19, as set forth.

13.—The wheel *e*, having projecting from its periphery the continuous annular cutting and bearing rim, having a sharp edge and concave faces, substantially as and for the purpose set forth.

14.—The herein described self-adjusting elastic seat 1, with its adjustable foot rest 3 on the foot-bar 2, ear 4, bolt 5, spring 6, and standard 7, as and for the purpose set forth.

15.—The combination of sliding-pole 12, pole-shaft 8, oscillating disks *g* on link 19, and self-locking lever *u u'* with

rear bearing furrow wheels *b b'*, for the purpose of elevating the ploughs, substantially as set forth.

16.—The plough having the upward projecting bifurcated standard fulcrumed to and embracing bracket support *u u*, projecting downward from the frame, substantially as described, and for the purpose set forth.

No. 216,375.—MEKCEK BROWN, VERMILION GROVE, Ill.—*Sulky Plough Attachments*.—June 10, 1879. Filed April 7, 1879.

Claim.—1.—In a sulky-plough, the axle A, having the right angular bend *b* at one end and the obtuse-angular bend *b'* at the other, in combination with a slide, E, working on the latter bend, and actuated by a lever mechanism to tip or tilt the plough, substantially as specified.

2.—In a sulky-plough, the sub-frame consisting of the bail H, the sliding cross rod G', the axle A, having incline *b* at one end, the slide on said incline, a lever mechanism raising or lowering said slide, and a plough beam suspended from said bail, substantially as specified.

No. 216,415.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Sulky Ploughs*.—June 10, 1879. Filed May 17, 1879.

Claim.—1.—The axle B, anti friction pulley C, arms C', and friction roller C', combined with the knife-arm D' pivoted at *d'*, to give upward stroke to the knife, as and for the purpose set forth.

2.—The knife-arm D' D, having knife D', as shown, combined with the eccentrics C' C' and cutting guides *d'*, as set forth.

3.—The curved bars E, carrying the ploughs, combined with the adjustable frame F, as set forth.

4.—The adjustable frame F, combined with the operating thumb-nut *f'*, and with springs *f'* above and below, as specified.

5.—The adjustable harrow composed of the shaft T and disks T', combined with the slot *t'* in the frame T' and proper securing devices, whereby the said harrow may be adjusted independent of the mould board, as specified.

6.—A double-slotted sliding tongue, combined with a double-tree and an intervening spring, J, as and for the purpose specified.

7.—The sliding-slotted tongue and double-tree and spring J, combined with an elbow-lever, H, and chain I, for raising the points of the ploughs out of the ground, by the draught, as specified.

8.—The tongue, draught-chain I, and elbow-lever H', combined with a self-adjusting king-bolt, K, pawl K', and notches K', as set forth.

9.—The self-adjusting king bolt K, pawl K', and notched tongue K', combined with pedal L, elbow-lever H', and chain I, connecting with draught, as set forth.

10.—In a sulky plough, the combination of the slotted hollow king-bolt K, pawl K', pedal lever L, and draught, as specified.

11.—The spring draught-bar M', combined with the king-bolt K, frame M', and draught, as and for the purposes set forth.

12.—The elbow-lever H' H, having pulleys *g'*, and the draught and connecting-chain, with the plough-frames G, with jaws G', as and for the purpose set forth.

13.—The elbow-lever H' H and plough-frames G G', *g'*, combined with the rod 11, nut 13, and spring 12, which overbalances the soil, as and for the purposes set forth.

14.—The spring 12, rod 11, and adjusting-nut 13, to counterbalance the soil upon the ploughs, combined with the plough-frames and the main frame A, as set forth.

15.—The cushions *h'* on bar A of the elbow-lever H', to allow and modify a yielding lateral motion to the front end of ploughs, as specified.

16.—The spring 12 and connections 11 and 13 on the elbow H' and frame, in combination with the cushions *h'* on the bar H, to regulate and modify the perpendicular and lateral motion of the front of the ploughs, as specified.

17.—The combination of the draught-spring J, spring 12, and cushions *h'*, with their connections, to prevent concussion from the front of the ploughs coming in contact with resting substances, as set forth.

18.—A furrow side wheel attached to or journaled in an oscillating standard, and adapted to automatically adjust itself with its connections, as and for the purpose set forth.

19.—The standard X, carrying furrow-wheel 25, pivoted loosely at Z, and adapted to swing in a modified degree in a curved slot, *x*, as set forth.

20.—The combination of the standard X, furrow-wheel 25, curved slot *x*, and pulleys *w* *z* with the arm W of the frame, and arm V, as specified.

21.—The pivoted frames E and pivoted levers G', comprising the plough-supporting-frame, as set forth.

22.—The springs *f*² *f*³ and frame E, combined with the rear portion of the plough-frame E G', to cushion the ploughs vertically in either direction, as specified.

23.—The frame E, pivoted to the cross-bar A' of the frame A, and the frame G', pivoted at G to the frame E, adapted to support the ploughs, and having a double pivoted joint, as shown.

24.—The vertical bar F', nut *f*¹, and frame F, combined with the springs *f*² above and below the nut *f*¹, and with the plough-frame E, as set forth.

25.—The bifurcated frames G' 28, pivoted to the horizontal shaft G, combined with the ploughs, and with the bar H, to afford a firm support to the ploughs, as specified.

26.—The combination of the springs *f*² *f*³ and the cushion *h* with the plough-frame and frame A, to cushion the plough-frames both laterally and vertically, as shown and described.

27.—In combination with the plough having a belt or endless-chain mould-board, the seeder and planter V, having automatic feed-bar *w*, combined with the harrow T T' and connecting tubes *v*', as set forth.

28.—The pint K, held upon the share R' by the point R² and the securing wedge K' R², as and for the purpose set forth.

29.—A reversible adjustable flexible coulter, N, inclined as shown, combined with the frame G' G' and plough, as set forth.

30.—A plough mold-board consisting of one or more traveling belts or endless aprons, running over a forward approximately horizontal roll and a rear vertical roll adapted to receive the soil from the share near the point and elevate, carry, disintegrate, and invert the same, as specified.

31.—The harrows T T', inclined as shown, combined with one or more carrying belts, as shown, for the purpose specified.

32.—One or more cleaners S' as shown, combined with the belt P' and rollers S, adapted to automatically clean both at the same time, as specified.

33.—One or more cleaners situated in rear of belts, and adapted to clean the harrows T and outside of belt at same time, as set forth.

34.—The chain formed of the metal plates P', having sharpened edges and end loops, and endless chains passing through said loops, as and for the purposes set forth.

35.—The roller 14, having slots 15, 19, and 20, combined with flanged cap 16, 18 and cup cap 21, as set forth.

36.—The cup cap 21, combined with cap or cover 23, cut away at 23^b, and with the covering securing cap 24, adapted to serve, with the roller 14, as set forth.

37.—In a plough, the combination of the self-lubricating roll 14 described with one or more traveling belts, as specified.

No. 216,412.—EDWIN W. NEWTON, FRANKLIN GROVE, ILL.—*Sulky Ploughs*.—June 10, 1879. Filed January 9, 1879.

Claim.—1.—The two-part sulky frame joined in front by the pivot bolt D and at the back end by a curved guide-bar P, one part carrying the driver and the other the plough, substantially as shown and described.

2.—The combination of the curved guide-bar P with the connecting bar Q and the lever N, fitted with a set of holes arranged in a curved line, for the purpose of leveling the sulky-frame, all substantially as shown and described.

3.—The combination of the short lever-arm with the long and highly inclined braces T T', for the purpose of causing the point of the plough to rise much faster than the heel when coming out, and drop much faster than the heel

when going into, the ground, substantially as shown and described.

4.—The combination of the prolonged open beam, the bolt S, and the lever N, to let the plough turn horizontally and adjust itself to the line of draft in turning, substantially as shown and described.

No. 216,714.—GIDEON E. WOLCOTT, DE KALB, ILL.—*Riding-Ploughs*.—June 17, 1879. Filed December 5, 1878.

Claim.—1.—The plough-carriage formed of the rear or long axle D, having an offset formed upon it, and having the journal at its furrow end inclined downward, and the bar E, the forward or short axle, F, hinged to the forward end of the bar E, and having its journal inclined downward, the brace-bar X, the upright land-side wheel A, and the two inclined furrow wheels B C, substantially as herein shown and described.

2.—The draw-bar K, pivoted to the bolt that hinges the forward end of the bar E and the inner end of the forward or short axle, F, to each other, and having its rear part bent outward and provided with a hook, K', to hook upon the said axle F, substantially as herein shown and described.

No. 217,036.—SAMUEL E. WOODS and ARTHUR H. WHEWELL, LEEDS, COUNTY OF YORK, ENGLAND.—*Agricultural Implements*.—July 1, 1879. Filed February 20, 1879. Patented in England, December 15, 1876.

Claim.—1.—The combination of the plough-beam 3 with the short front link, 5, and longer rear-link, 5a, and with the two brackets 2, 2, in which said links are always free to vibrate, and with the lifting device 6, by which both ends of the plough-beam are simultaneously raised or lowered, all substantially as herein shown and described.

2.—The combination, in an agricultural implement, of lever 18, draw-bars 21 21, cross-bar 11, carriage 11a, guide-rods 19 19, connecting rods 12 12, cranks, 13 13, vertical shafts 14 14, and brackets 15 15, as and for the purposes herein set forth.

3.—The combination, in an agricultural implement, of lever 18, draw-bars 21 21, and frame lock-pieces 22 22 with pivoted plough-beams 3, substantially as described.

4.—The combination, in an agricultural implement, of the balancing beam 7, chains 6 6, and frames or bars 3 3, substantially as described.

No. 217,491.—EDWARD SCHLAG, CHICAGO, ILL.—*Agricultural Implements*.—July 15, 1879. Filed January 10, 1879.

Claim.—1.—The rotary plough or cultivator D, made in the form of a spiral or screw of only one convolution, and provided with the cutter D', substantially as shown and described.

2.—The combination, with the frame A, of a series of rotary ploughs, D, each made in the form of a spiral or screw of only one convolution, arranged obliquely, and provided with the cutter D', substantially as shown and described.

3.—The combination, with the frame A, trucks J, frame *s*, a vertical spindle *u*, and crank *m*, of the driving wheels B B', pulleys C', and ploughs D, substantially as and for the purpose specified.

4.—The roller P, and guide-wheel 1, journaled upon the shaft *t*, in combination with the vertical sliding frame *y*, rod *h*, and lever *l*, substantially as shown and described.

No. 217,893.—JESSEE H. MOORE, ALBION, ILL.—*Sulky Ploughs*.—July 29, 1879. Filed September 4, 1878.

Claim.—1.—The axle formed with a series of right-angled bends, forming the cross-portions C E D and the longitudinal sections F G, in combination with the seat-support *b* upon the middle section of the axle, whereby the weight of the driver is equalized, and offers no resistance in raising the plough, as and for the purpose specified.

2.—The bent axle, as shown and described, in combination with the furrow wheel A and its spindle arm L, provided with a bearing for the axle at each end, to adjust the wheel straight from the axle or to provide a crank, as shown and specified.

3.—The seat support *b*, having a loose bearing upon the axle, in combination with the bar V, loop W, cross-bar T, and bent axle, substantially as shown and described.

No. 218,250.—JOHN J. FLETCHER and JAMES W.

SURSA, VENICE, ILL.—*Gang Ploughs*.—August 5, 1879. Filed November 4, 1878.

Claim.—1.—The axle B, having cranks of unequal length and provided with the arms B', in combination with the plough-frame having the cross-bar E, with ears *e*, and lever F, substantially as shown and described.

2.—The combination of the solid body C, rigid plough-beam I, and the removable plough-beam M, the latter being adapted to be entirely removed from the body to form a single plough, said beams, when in use, being secured together by the inclined brace-bar O, and to the sides of the solid body by through-bolts N X N', as shown and described.

No. 218,516.—ISAAC R. GILBERT, LOUISVILLE, KY.—*Sulky Ploughs*.—August 12, 1879. Filed March 13, 1879.

Claim.—1.—The curved rack-bar G, provided with the clip or bracket *b* on its inner side, for the purpose of fitting over the end of the arched axle, and bracing the rack-bar both lengthwise and transversely, substantially as set forth.

2.—The combination of the arched axle A with the curved guide H, rack I, and arm *j*, when said guide, rack, and arm are cast in one piece, substantially in the manner and for the purpose set forth.

3.—The combination of the L-shaped lever K, curved guide H, link *l*, pivoted lever J, and spindle *o*', all arranged for joint operation substantially as described.

4.—The combination of the plough-beam P, plates R, with lugs *r*, the automatic adjusting seat *s*, and the clip *t*, with bolts *u*, substantially as and for the purposes herein set forth.

5.—The elevs composed of the plates SS and T and open tube V, and the laterally-adjustable coupling W, provided with the tubular extension *x*, substantially as and for the purposes herein set forth.

No. 218,734.—THOMAS T. HARRISON, AUBURN, KANSAS.—*Sulky Ploughs*.—August 19, 1879. Filed May 24, 1879.

Claim.—The sulky formed by the combination of the wheels A, the swiveled crank-axes B, the frame C, the short side bars D, the cross bar E, and the pivoted tongue R with each other, to adapt it to receive a breaking plough or cultivating plough, substantially as herein shown and described.

No. 218,840.—NELSON J. TRENERV and JOHN L. SISELEV, MEEHIN, WIS.—*Sulky Cultivators*.—August 26, 1879. Filed October 2, 1878.

Claim.—The combination of the uprights *a* and cross-bar *b* and *j* with a plough and sulky-cultivator, means being provided for the adjustable attachment of the parts to the axle and lifting chains of the cultivator and to the beam of the plough, all substantially as described, and for the purpose set forth.

No. 218,856.—MORTIMER CAMILL, STERLING, ILL.—*Sulky Ploughs*.—August 26, 1879. Filed December 9, 1878.

Claim.—1.—The clamp D, capable of lateral adjustment upon the crank *c*, said clamp having the horizontal section *d* and vertical sleeve *e*', collar *g*', and set-screw *f*, in combination with a clamping device for holding the plough beam secured to a bolt passing through the vertical sleeve *e*', substantially as and for the purpose described.

2.—The ratchet wheel *u*, connected to the pivotal horizontal crank *e* by link *m*, working in combination with lever F, slotted plates *e*, and stop H, all constructed to operate substantially as and for the purpose set forth.

3.—The combination, with the clamp D, formed with horizontal section *d*, vertical sleeve *e*', and the collar *g*, with set-screw *f* of the pivotal bolt *h*, angle-iron I, plates *i* *k*, and set-screws *j*, substantially as and for the purpose set forth.

No. 219,381.—WILLIAM P. BETTENDORE, PERT, ILL.—*Cultivators and Ploughs*.—September 9, 1879. Filed December 14, 1878.

Claim.—1.—A crank-operating lever having interacting latches or levers, one connected with the detent of said lever upon the usual ratcheted arc of a plough or cultivator, the other connected with a detent arranged to lock the crank-axle to the wheel when it is required to raise the plough or cultivator shovels simultaneously with the liberation of the

main lever from its ratcheted arc, and a forward motion of said lever for the purpose of obviating two distinct movements in different directions in the process of depressing the crank axle and engaging the wheel with the crank to assist the motion, substantially as and for the purpose described.

2.—The combination, with a crank axle, of a curved arm for automatically releasing the clutch bolt, an intermediate arm or lever, a main lever provided with two spring-latches and connecting rods, and a curved ratchet, substantially as and for the purposes set forth.

3.—The combination, with lever F, of lever F', having an engagement on the cam or arm *g* of the lower lever or latch F', so as to operate the rods *e* *f* of respective latches simultaneously, substantially as and for the purposes specified.

4.—The combination, with a crank axle, of the clutch-bolt *d*, curved releasing arm *k*, lever G, and operating lever E, provided with two hand-levers or latches and connecting rods, substantially as shown and described.

5.—The cam-headed stop or arm *k* on arch B, in combination with the arm *z* of crank G, for reversing or withdrawing the bolt *d* at the end of the forward-stroke of lever E, substantially as described.

6.—The combination and arrangement, with crank C, arc H, and lever E, of latches F' F, rods *f* *e*, lever G, bolt *d*, ratchet *m*, and stop *k*, substantially as and for the purposes described.

No. 219,467.—REUBEN HART and MILFORD P. NICHOLSON, SANTA MARIA, CAL.—September 9, 1879. Filed May 20, 1879.

Claim.—1.—In a gang-plough, the diagonal plank or plough-beam F, having slots *a* *a* near its ends, in combination with the beams C D, to which it is bolted, whereby said beam is suspended and adapted to be adjusted at both ends forward or backward, to adjust the plough toward or from the land, substantially as herein shown and described.

2.—The links K K, connected with the outside of the beams C D at the front, and the standard O, secured to the rear end of the beam D, in combination with the lever M and the bifurcated lever L, whereby the beams C D are supported and actuated from three points out of line, and are prevented from tilting to one side, substantially as herein described.

3.—The beams C D, with their tubes or sleeves I, moving upon the guides H, said tubes projecting above the plough-beam, so as to enter depressions in the axle B and steady the ploughs, substantially as herein described.

No. 219,565.—JOSEPH BELDUKE, SAN FRANCISCO, CAL.—*Gang-Ploughs*.—September 16, 1879. Filed February 18, 1879.

Claim.—1.—The plough-beams G I of a gang-plough, connected by the rear angular brace *j*, with its slot and pin fastening, and having the bridge-shaped braces K, said beams and braces being connected by a cross rod, L, and the forward ends of the beams being connected and with arms C D, of unequal length, substantially as and for the purpose described.

2.—The axle A, with its arms C D of unequal length, in combination with the plough-beams G I, which are loosely connected at the rear ends, substantially as and for the purpose described.

No. 219,799.—ANSEL HAYES GALE, FREEPORT, ILL.—*Sulky Ploughs*.—September 16, 1879. Filed November 1, 1877.

Claim.—1.—The combination of the iron frame *a* *a'*, the stationary side plates, *b* *b*, bolted thereto, and the adjustable outer plates, *c* *c*, turning upon rigid studs *b''''*, projecting from the faces of the inner plates, *e* *e*, as described.

2.—The combination, with the iron frame *a* *a'* of the inner plates, *b* *b*, fixed thereto, the outer plates, *c* *c*, carrying the wheel spindles *u* *u*, and turning on rigid studs *b''''*, *b''''*, the fastening-bolts *v* *v*, and clips *e* *e*, substantially as and for the purpose set forth.

No. 219,799.—BYRON C. BRADLEY, CHICAGO, ILL.—*Sulky Ploughs*.—September 23, 1879. Filed July 14, 1879.

Claim.—1.—In a sulky-plough, the lever E, in combination with a friction band, *b* and a shoulder or stop, *b*, all so constructed that the lever E can be used to apply the friction

tion-band to the hub, and also for raising the plough by the action of the operator alone, substantially as specified.

2.—In a sulky plough, the lever E, in combination with the friction-l and h, shoulder or stop h, and rack G, substantially as and for the purposes specified.

3.—In a sulky-plough, the lever E, in combination with the casting F, provided with a shoulder or stop, h, substantially as specified.

No. 219 800.—BYRON C. BRADLEY and CHARLES A. HAGUE, CHICAGO, ILL.—*Sulky Ploughs*.—September 23, 1879. Filed April 28, 1879.

Claim.—1.—In a sulky-plough, the friction-band c and a connecting bar or piece, i, in combination with the crank-axle and one of the hubs, or an extension thereof, for the purpose of raising the plough out of the ground, substantially as specified.

2.—In a sulky-plough, the friction-band c and connecting piece i, and the levers e f g and bar h, in combination with the axle B and one of the hubs, or an extension thereof, substantially as and for the purposes specified.

No. 219 935.—JOHN T. GREENFIELD, NEWTOWN, KY.—*Ploughs*.—September 23, 1879. Filed April 29, 1879.

Claim.—The combination of the beam A, having a curved and grooved standard B, the axle G, provided with the toothed slide C, the quadrant-lever F, the curved lever J, sliding in guides h and carrying the gauge wheel K, and the hinged frame I, all arranged substantially as shown and described.

No. 219 997.—LAWRENCE M. SUMMERS and MORDECAI WILSON, NORFOLK, MO.—*Sulky Ploughs*.—September 23, 1879. Filed January 22, 1879.

Claim.—In a sulky-plough, a main wooden frame, A, recessed to receive the plough-beam, and provided with a strip a, around the recess, and with short axles bolted to the said frame, in combination with the slotted plates held to the main frame by bolts, and adjustable vertically, said slotted plates carrying the crank-shaft C, journaled in bearings on their lower ends, all the parts being constructed and arranged as and for the purpose set forth.

No. 220 426.—ALBERT C. ROSENCRANZ, EVANSVILLE, IND.—*Wheel-Ploughs*.—October 7, 1879. Filed August 30, 1879.

Claim.—1.—The side-wheel, r, having its supporting standard passed through the socket of a swinging plate or bar and pivoted to the adjustable lever t, whereby the wheel may be adjusted to level the plough and to regulate the side draft upon hill-sides, substantially as set forth.

2.—The combination of the wheel r with the standard r', pivoted plate s, lever t, bar Q, rack-bar s' w, and spring-catch upon the lever t, substantially as set forth.

No. 220 446.—ARGYLE W. TUCKER, WAXAHACH, TEXAS, assignor to GEORGE F. ALFORD, DALLAS, TEXAS.—*Ploughs*.—October 7, 1879. Filed July 18, 1879.

Claim.—1.—The combination of the arched axle E, with opposite crank-spindles h, reversely adjusted by lever F, and wheels F, with rollers i in their hubs, substantially as and for the purposes herein set forth.

2.—The combination of the arched axle E, rocked by the lever F, the two independent hails or clevises G H, levers I J, and rack-bars I, J, all constructed and arranged substantially as and for the purposes herein set forth.

3.—The combination, with a sulky-frame, of one or more plough-beams, J, front clevis, G, with clips g, rear clevis, H, with plates h m and bolts n, and the operating-levers I P F, substantially as and for the purposes herein set forth.

No. 220 633.—WILLIAM J. MEHARRY, STATE LINE, IND., (SHELDON, III., P. O.)—*Sulky Ploughs*.—October 14, 1879. Filed February 20, 1879.

Claim.—1.—The sulky-frame C E D, the axle F, having a crank, f', upon its land-side end, the larger furrow wheel G, and the smaller land-wheel, I, in combination with the lever I, cranks K, rigid arms J, and plough-beam A, whereby the plough is raised and the land wheel lowered at one stroke of the lever, as specified.

2.—The combination, with axle F, plough H, and beam A, of the arms J, crank-arms K, and lever I, as and for the purposes specified.

3.—The combination of the two rigid arms J, the two crank arms K, the hand lever I, and the four-lever M with the plough A H and the axle F of the sulky, substantially as herein shown and described.

No. 220 643.—WILLIAM NEWLIN, ATTICA, IND.—*Wheel Ploughs*.—October 14, 1879. Filed January 14, 1879.

Claim.—1.—In a wheel-plough, the jointed axle B C, in combination with the hubbed clutch I, having recess a, and the crank J, with lug i, substantially as and for the purposes herein set forth.

2.—The combination of the axle B, crank E, pivoted thereon and having one arm slotted longitudinally, the bowl f, and wheel-spindle e, adjustable in the slot in the crank-arm, and a lever, dog, and a rack for holding the crank in different position, substantially as set forth.

3.—In combination with a two-wheeled plough having the plough-beam suspended below the axle, the slotted bent bar M, provided with the flanges m m and adjustable foot-rest O, and the plough-beam N, with its forward end arranged between the foot-rest O and flange m, substantially as and for the purposes herein set forth.

4.—The combination of the bent axle B and clutch I with the movable lock-lever F', having a slotted connection with the clutch, whereby said axle has a limited free movement, substantially as specified.

5.—The combination, with the crank B and plough-beam N, of the hanger t, pivoted to the crank and loosely connected with the beam, and braces p, pivoted at both ends, substantially as specified.

No. 220 701.—PHILO L. CASE, DES MOINES, IOWA.—*Sulky Ploughs*.—October 21, 1879. Filed May 27, 1879.

Claim.—1.—In a sulky-plough, the bowed carriage-axle A, having branches B B, the cross-bar D, the revolving parts E, and the vertically-adjustable hubs f, formed with wheel-spindles, whereby the wheels are turned by the tongue independent of the frame, arranged and combined substantially as shown and described, to operate in the manner set forth.

2.—The rack h, having a hubs, i, in combination with the post F, the hub f, carrying the wheel G, and the operating mechanism h m n, substantially as shown and described, for the purposes specified.

3.—The rigid carriage axle and frame A B B' C' C' D, the revolving part F, the adjustable vertical hubs f, carrying wheels G, the pivoted pole P, and the pivoted cross-bar R, having arms s, flexibly connected with its ends, arranged and combined substantially as shown and described, to operate in the manner set forth, for the purposes specified.

No. 221 597.—ALEX. K. MUNSON, MARYSVILLE, KANSAS.—*Sulky Ploughs*.—November 11, 1879. Filed June 11, 1879.

Claim.—1.—A plough-frame having the slotted hangers g, in combination with the slotted yoke h and shackle i, having tenons l, as shown and described.

2.—The combination of the plough frame e f, slotted hangers g, yoke h, shackle i, adjustable notched plate p, hub, m, and lever n, as and for the purpose set forth.

3.—The combination of the plough beam l, draft rods l', slotted hangers g, slotted yoke h, shackle i, connections r r', rock-shaft r, lever i', and bent cross-bar s, as and for the purpose specified.

No. 222 341.—THOMAS L. RINEY, LADPONA, MO.—*Wheel Ploughs*.—December 9, 1879. Filed July 8, 1879.

Claim.—In a sulky plough, the combination of the crank-bar h, having the extension or lug h', projecting forward of its bearings c r a k s a', the lever h, interposed on the part of the crank b forward of its center of motion, and the brace h', connecting the lever with the crank in the rear of said center of motion, substantially as and for the purposes set forth.

No. 223 180.—HENRY C. STUART, WARRENTON, MO.—*Sulky Plough*.—December 30, 1879. Filed October 28, 1879.

Claim.—1.—The combination of the axle A, with arms A', having an eye in its end, the vertical frame C, with side rod, h, the brace d, lever D, and chain e, substantially as and for the purposes herein set forth.

2.—The combination of the vertical adjustable frame C, keepers *b* *k*, upright I, with plough-beam attached thereto, and the lever D, as and for the purposes herein set forth.

223,881.—ISAAC BURKE, SACRAMENTO, CAL.—*Sulky Plough*.—January 27, 1880. Filed January 31, 1879.

Claim.—1.—The combination of the axle C, constructed as described, the guide-standard K, gauge-standard G, and frame M, substantially as and for the purposes set forth.

2.—The axle tree or bar C, having the sockets C' and the boxes F formed with or upon it, to receive the standards G and K, so that the ploughs are guided and the pressure is applied to them directly through the line of the axle, substantially as and for the purpose herein described.

No. 223,833.—GEORGE ARMSTRONG, ELMIRA, and DUNCAN E. MURCHISON, WEATHERSFIELD, ILL.; said MURCHISON assignor to said ARMSTRONG.—*Gang Plough*.—January 27, 1880. Filed February 8, 1878.

Claim.—In a gang plough, the pulley C D, in combination with the bar B, lever F, and rod H, substantially as and for the purpose specified.

No. 224,934.—JOSEPH B. NEFF, CUBA, assignor to REUBEN ELWOOD, SYCAMORE, ILL.—*Sulky Plough*.—February 3, 1880. Filed December 16, 1878.

Claim.—1.—The combination of the brackets *c*, attached to the plough-beam with the rods *a* and adjustable collars *d*, for allowing the brackets a limited free play on the rods, substantially as described.

2.—The combination of the brackets *c*, rods *a*, and adjustable collars *d* with the collar *b* and rock-shaft C, substantially as set forth.

3.—The plate *k*, having the ears *l*, in combination with the beam D and bar or rod O, substantially as described.

4.—The extended bar *m*, for supporting an evener independently of its clevis-support, constructed and applied substantially as specified.

5.—The combination of the bent axle or frame A, arms N, rod O, adjusting-bar P, and bar F with the cranked or bent rock-shaft C, lever, J, one or more rods, *a*, one or more brackets, *c*, and plough-beam D, all constructed and operating substantially as specified.

No. 224,035.—JOSEPH B. NEFF, CUBA, assignor to REUBEN ELWOOD, SYCAMORE, ILL.—*Sulky Plough*.—February 3, 1880. Filed December 16, 1878.

Claim.—In combination with the pivoted tongue F, the adjustable inverted stirrup *e*, and slotted bracket *a*, the pivotal bolt *d*, serrated plate *b*, and bolt *c*, substantially as shown and described.

No. 224,095.—BENJAMIN E. LITZENBERG, RUSSELL, IOWA.—*Sulky Plough*.—February 3, 1880. Filed December 12, 1879.

Claim.—The herein-described improved sulky-frame, consisting of the reversible sides A A, axle D, crank-axle F, having lever M, foot-bar or bail L, and spindles H H, all constructed, combined, and operating substantially as and for the purpose set forth.

No. 224,188.—WILLIAM A. JAMES, ST. LOUIS, MO.—*Sulky Plough*.—February 3, 1880. Filed December 4, 1879.

Claim.—In a sulky plough, the combination, with the crank C of the axle B and the beam D of a plough, of the bent bar G, provided with stops H, the angle-irons I, adjusting-bolts, and the adjusting-braces L, substantially as herein shown and described, so that the plough may have the adjustments as set forth.

No. 9,514.—WILLIAM A. JAMES, ST. LOUIS, MO.—*Sulky Plough*.—224,188. February 3, 1880.—Reissued December 1, 1880. Filed November 1, 1880.

Claim.—1.—In a sulky-plough, the combination, with the crank C of the axle-arms B B' and the beam D of a plough, of the bent bar G, provided with stops H, the angle-irons I, adjusting-bolts, and the adjusting-braces L, substantially as herein shown and described, so that the plough may have the adjustments as set forth.

2.—The combination of axle B B' C, arched seat support P, and arm R, attached to the part B of the axle and hinged to the support P, substantially as and for the purpose set forth.

3.—The combination, in a sulky-plough, of lever Y, nched segment *c*, crank-axle B B' C, arched seat-support

P, and arm R, constructed and relatively arranged substantially as set forth.

4.—The combination of axle-crank C, bridge bar G, and angle-irons I, adjusting-bolts and nuts J K N, bars L, and plough-beam with eye-lugs M, for the purpose set forth.

5.—The combination of bridge-bar G, with slotted ends to embrace the axle, and blocks O, constructed to fit the slotted ends and bear against the under side of the axle, for the purpose set forth.

6.—The combination of axle-crank C, bridge-bar G, stops H, and angle-irons I, substantially as and for the purpose set forth.

No. 224,195.—AUGUST LINDGREN, MOLINE, ILL.—*Sulky Plough*.—February 3, 1880. Filed June 28, 1879.

Claim.—1.—In a sulky-plough, the combination, with a hand-lever O, having toothed segment at lower end, of the bar E, pivoted near its forward end to the bar F, provided with the furrow-wheel axle H, and having the toothed segment M, the axis of the furrow-wheel being distinct from that of the segment and in the rear thereof, as shown and described, whereby the furrow-wheel and segment are lifted together.

2.—The combination of the connecting-bar V, the crank W, and the sleeve X with the bent bar E, the block G of bar E, the catch-plate C', the lever Y, and the slide L, that carries the axle of the land side wheel, as shown and described.

No. 224,455.—ELBRIDGE G. MATTHEWS, LA SANK, MINN.—*Plough*.—February 10, 1880. Filed March 1, 1879.

Claim.—1.—In a plough, the combination of the crank-axle C, having the perforated disk D, with the sliding-arm M, substantially as and for the purposes set forth.

2.—In a plough, the crank-axle C, having the perforated disk D, with the sliding arm, in combination with the ploughs L L', secured to the racks F, working in ways in the block E, and the pinions G G upon the shaft J, carrying the perforated disks H I, and the hooked rods K, substantially as and for the purposes set forth.

No. 224,713.—JAKOB E. MUNZ, DELAWARE, OHIO.—*Sulky Plough*.—February 17, 1880. Filed December 3, 1879.

Claim.—1.—The combination, with the arch *a*² and the brace or frame *a*¹, having the series of holes *i* in its lower end, of the swing-brace *b*¹, having its upper end pivoted near the upper end of the inner side of the vertical arm *a*¹, the head-block *h*, journaled in the lower end of the brace *b*¹ and in one of holes *i* of frame *a*¹, and yoke or bail *d*, substantially as set forth.

2.—In a sulky for ploughs and cultivators, the combination of the side bars, *a*, the arch *a*², the braces or frames *a*¹, having their ends secured to the bars *a* in front and rear of the vertical arm *a*² of the arch *a*², and having their lower or bow ends secured to the lower ends of the vertical arms *a*¹, the yokes *c* and *d*, one of which is journaled to the lower end of the brace *a*¹ in front of the vertical axial plane of the wheel, and the other journaled to said brace in rear of said axial plane, and the rotating head-blocks *h* *h*, all arranged to operate substantially as set forth.

No. 224,820.—JOEL ELAM, THOMAS P. ELAM, and JOHN A. ELAM, GREENVILLE, ILL.—*Sulky Plough*.—February 24, 1880. Filed April 25, 1879.

Claim.—The combination of the axle A, having downwardly-projecting arms B C, placed at an angle of about sixty or sixty-five degrees to each other, tongue I, brace K, connecting the tongue with the rearward-extending arm B, bail L, hinged upon the spindle of arm B, plough M N, pivoted upon the forward end of said bail, furrow-wheel E, and adjustable transporting-wheel H, all arranged and operating substantially as and for the purpose set forth.

No. 225,105.—FRANKLIN C. BRYAN, WINONA, MINN.—*Sulky Plough*.—March 2, 1880. Filed January 6, 1880.

Claim.—In a reversible sulky-plough, the combination of the frame A and independent crank-axes E E', having separate operating-levers *l*, with the right and left ploughs G G' and their beams F F', independent plough-supporting cranks K K', having separate operating-levers I, and suit-

ble catches for said levers, all arranged substantially as specified.

No. 225,138.—WM. D. JAPS, WATERTOWN, MINN.—*Sulky Ploughs*.—March 2, 1885. Filed December 29, 1879.

Claim.—1.—In combination with the frame A and rod B, the L-shaped bars H H, cap-piece with slotted arm I, and the adjustable seat J, as and for the purposes herein set forth.

2.—The combination, with the pole L, of the movable collar with the slotted arm *m* and the tongue-holder M, all constructed substantially as and for the purposes herein set forth.

3.—The combination of the shaft P, arm *w*, lugs *x* *h*, spring *d'*, cogged swinging arm S, pinion *a'*, crank-shaft V, and foot lever W, substantially as and for the purposes herein set forth.

No. 225,156.—WILLIAM D. MILLER, SPRINGFIELD, OHIO.—*Wheel Ploughs*.—March 2, 1880. Filed October 7, 1879.

Claim.—1.—In a wheel-plough, the bail H, supporting the front end of the plough-beam K, fitted rigidly to the square journal of the crank axle, and having an independent lifting-lever, J, whereby the axle is turned to level the frame and the front end of the plough-beam lifted by the same stroke of the lever.

2.—The bail G, provided with a swivel coupling for attachment of the plough-beam K, combined with the bail H, provided with the rod *e*, to form a long loop or slot, in which the plough-beam may move laterally.

3.—An adjustable swivel-coupling for the bail and plough-beam, composed of the slotted-plate M, with its lugs *i* *i*, and the plate N, mounted upon horizontal pivots, combined with the saddle-plate O, mounted upon said plate N, with a vertical axis, and provided with tie-bolts *l* *l*, tie-plate *d*, with upturned lugs at its ends, and coupling-bolt *g*, substantially as set forth.

4.—In combination, in a sulky-plough, a frame mounted upon wheels, two bails whereby the plough is connected to the sulky-frame, and a plough-the land-side whereof is arched from the front along its lower edge, so that it does not bear upon the bottom of the furrow except at its point, for the purpose set forth.

No. 225 207.—LOUIS BERTHIAUME, ST. PAUL, MINN.—*Sulky Ploughs*.—March 9, 1880. Filed November 29, 1879.

Claim.—1.—The combination of the coupler-shaft K² and collar P, provided with lugs P², adapted to fit in slots in the plate P¹, to allow lateral play of the collar, with the beam B, slotted clamping-plates P¹ P², check-plates P³ P⁴, and bolt P⁵ P⁶, substantially as described, and for the purpose set forth.

2.—The combination, with the right-angled frame M¹, having the standard R¹ bolted thereto, of the vertical shaft K², provided with the cross-piece R² and spring *r*, and R³, foot lever K¹, and beam B, substantially as described, and for the purpose set forth.

3.—The combination, with a plough having a short land-side and a standard vertically and angularly adjustable in a clamp attached to the plough-beam, of the beam B, attached to the pivoted bail P¹ by a swivel-clamp, and the sulky-frame and tongue, substantially as described, and for the purpose set forth.

No. 225 538.—FREDRICK J. SMITH, CHICAGO, ILL.—*Sulky Ploughs*.—March 16, 1880. Filed December 5, 1879.

Claim.—1.—The combination of the vertical inclined beam with screw *c'* with the adjustable lever fulcrum-block *e*, adapted to move up or down on said screw, the connecting-rod 5, clamp *b*, and the plough A, as and for the purpose set forth.

2.—The combination, with the hand-lever *a*, having the arm-extensions *a'* and *a''*, and the adjustable rack-frame *a'*, of the adjustable fulcrum *e*, the vertical inclined screw *c'*, the connecting-rod 5, clamp *b*, and the plough A, substantially as and for the purpose described.

3.—The combination, with a rectangular lever consisting of arms S and *o*, and having the foot lever H integral therewith, of the arc 10, perforated in the manner shown and adapted to secure the arm *o* in different positions, as

herein described, the vertical arm 12, the horizontal connection 13, shaft 14, connecting-rod 15, clamp 16, and the plough A, substantially as and for the purpose herein described.

4.—In a sulky attachment for ploughs, the combination of the following elements, consisting of the hand-lever *a*, having extensions *a'* and *a''*, the adjustable part *c*, the vertical inclined screw *c'*, connecting-rod 5, clamp *b*, the rectangular lever consisting of arms S and *o*, the arc 10, vertical arm 12, horizontal arm 13, shaft 14, connecting-rod 15, clamp 16, and the plough A, all constructed and arranged as herein shown and described.

No. 225,608.—GEORGE H. WARRREN, TAMA CITY, IOWA.—*Sulky Ploughs*.—March 16, 1880. Filed December 18, 1879.

Claim.—1.—In a sulky-plough, the combination of the pivoted bail F with arm H, the braces I *l*, roller *d*, and cam-lever J, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2.—The combination, with the wheel slides D D, having rack-bars *h* *h*, of the segmental racks K K and *g*, connecting-rod or rods *r*, and single lever I, whereby the wheels may be adjusted simultaneously, one up and the other down, substantially as and for the purposes herein set forth.

3.—The combination of the bail F, plough-beam N, and the double-clamp S, having each side made in two parts, substantially as shown and described, and for the purposes set forth.

No. 225,744.—LUKE CHAPMAN, COLLINSVILLE, CONN., assignor of one-half of his right to the COLLINS COMPANY, same place.—*Wheel Ploughs*.—March 23, 1880. Filed December 6, 1879.

Claim.—1.—In a wheeled plough, the combination of the wheeled carriage, a wheel-bridge adaptable to both wheels, and a plough borne by the wheel-bridge outside and on either side the wheels, substantially as shown and described.

2.—In a wheeled plough, the combination of the wheeled carriage, the T-joint, the wheel-bridge, and the plough borne outside the wheels, substantially as shown and described.

3.—In a wheeled plough, the combination of the wheel-carriage, the wheel-bridge, the parti-disk pivotally hung to the wheel-bridge, and the plough pivotally hung to the parti-disk, substantially as shown and described.

4.—In a wheeled plough, the combination of the wheeled carriage, the wheel-bridge, the parti-disk pivotally hung to the wheel-bridge, the plough pivotally hung to the parti-disk, the lever for operating the parti-disk and the pawl-and-ratchet gear for retaining the parti-disk in adjustment, substantially as shown and described.

5.—The combination of the plough-beam *z*, with its stand and mould-board, and share, the frame *r*, screws *u* *u*, and the sleeve *o*, bearing the trunnions *p* *p*, all substantially as shown and described.

6.—In a wheeled plough, the combination of the wheeled carriage, the wheel-bridge, the parti-disk pivotally hung to the wheel-bridge, the crank-pin *u*, the sleeve *o*, with its trunnions *p* *p*, the frame *r*, and the plough-beam *z*, with its stand and mould-board, and share, all substantially as shown and described.

No. 225 769.—FRANCIS STANLEY, TORONTO, ONTARIO, CANADA.—*Ploughs*.—March 23, 1880. Filed October 17, 1879.

Claim.—The plough-share B, pivoted on the bolt D to the frame A, the coupler F, and coupler-bar F', attached to the plough-share B, and working in the guide-bars E', in combination with the links Q and lever O, pivoted to the pillar P, the whole arranged substantially as and for the purpose specified.

No. 226,027.—BYRON C. BRADLEY, CHICAGO, ILL.—*Sulky Ploughs*.—March 30, 1880. Filed June 17, 1878.

Claim.—The combination of the bar B, having turned-down arms C, the reversible bracket *e*, the tongue H, substantially as and for the purposes herein set forth.

No. 226 069.—MARION GLASSCOCK, MOUNT VERNON, MO.—*Ploughs*.—April 20, 1880. Filed February 9, 1880.

Claim.—1.—In a wheel-plough, the curved braces C C,

pivoted to the horizontal ends of the arched axle A, and having the end bearings, *e e*, arranged to clamp the plough beam, substantially as shown and described.

2.—The combination of the arched axle A, the bearing-blocks B B, the curved braces C C, with bearings *c c*, and bolts *b*, the foot lever *d*, and the plough beam D, the plough-beam and braces made removable to adapt for the attachment of cultivator beams, substantially as shown and described.

No. 226,735.—LEROY BROWN, WAITSBURG, W. T.—*Sulky Ploughs*.—April 20, 1885. Filed Sept. 18, 1879.

Claim.—1.—The combination of the pivoted bar Y and the sliding keeper *y* with the bar G, the axle C, and the cross-head *u*, provided with a number of holes and formed upon the rear end of the bar U, which passes around the off wheel A, and with which the plough beam L is connected substantially as herein shown and described.

2.—The combination of the lever A' and the connecting bar Z with the rear end of the bar E, the pivoted bar Y, the sliding keeper *y*, and the bar U, which passes around the off wheel A, and with which the plough beam L is connected, substantially as herein shown and described.

No. 2,679.—FRANCIS M. FOSTER, COFFEYVILLE, KANSAS, assignor to himself and ELISHA GALLUP, same place.—*Sulky Ploughs*.—April 20, 1880. Filed July 22, 1879.

Claim.—1.—The combination of the lever G, provided with the cam Q, the curved ratchet-bar I, with the crank-axle F, the tongue L, the arms C, and the cross-bar D, substantially as herein shown and described.

2.—The combination of the cam Q with the movable crank-axle F, the arms C, the tongue L, the plough beam M, and the lever G, substantially as herein shown and described.

No. 227,723.—HENRY BOREHART, ARKORA, MISS.—*W. Wheel Ploughs*.—May 18, 1885. Filed October 31, 1879.

Claim.—1.—The combination of seat-bar D, hinged frame H, and screw-rod I with the beam B of plough A, substantially as and for the purposes set forth.

2.—In a one-wheel-plough, the combination of the plough A and frame H, hinged to the seat-beam D, and adjustable by rod I, with adjustable wheel C, substantially as shown and described.

No. 228, 676.—WILLIAM B. QUICK, WYANDOTE, KANSAS, assignor to REUBEN W. FISHBORN and HENRY HAFNER, same place, one-third to each.—*Sulky Ploughs*.—June 8, 1880. Filed April 20, 1880.

Claim.—1.—In a sulky plough, the combination of platform D, axle A, made with a forwardly extending tail or tongue B, and spindles F, drive-wheel G, journaled upon said spindle and provided with the concentric clutch Q, grooved wheel O, sliding upon the axle and provided with the concentric clutch P, connecting chain Y, rock-shaft W, provided with the arms X Z, connecting-link A', and hinged plough beam B', substantially as and for the purpose herein shown and specified.

2.—In combination with the hinged and vertically-adjustable plough-beam B', link A', and rock-shaft W, having arms X Z, for operating the same, the sliding bolt or lock-bar I, with its operating mechanism, composed of the rock-shaft Q', having arms *a a* and spring *d*, substantially as and for the purpose herein shown and described.

No. 229,375.—LE ROY CAHILL, KAMAZOO, MICH.—*Sulky Plough Carriages*.—June 29, 1885. Filed April 2, 1885.

Claim.—1.—In a sulky plough carriage, the device herein described, consisting of the socket or collar D, disk D', and cone-table D'', and provided with means for adjusting the lever thereon.

2.—The combination, with a crank axle, of the device D D' D'', having the part D' corrugated, as described, the corrugated washer I, lever G, and bolt and nut, substantially as herein set forth.

No. 229,816.—SABER GESLEY, BELMONT, WIS.—*Sulky Ploughs*.—July 13, 1880. Filed April 26, 1880.

Claim.—1.—The axle B, having one long angle or crank, to which the plough K is attached, and a shorter angle or crank carrying the land-side wheel, the axle B being bent and *e* in contact in one piece, in the form shown and de-

scribed, whereby, in this peculiar form of construction and arrangement of the axle, the plough may be raised and the land-wheel lowered by slightly rotating the axle by means of the lever F, substantially as shown as herein particularly specified.

2.—The box and clip H, having the downwardly-projecting arm, in combination with the bar G, lever F, and ratchet E, substantially as and for the purpose set forth.

3.—The plough and beam K, with the axle B and wheels A, to the long angle or crank of which axle the plough-beam K is journaled and secured by means of the box and clip H, in combination with the wedge *i*, downwardly-projecting arm of the box and clip H, bar G, lever F, and ratchet E, substantially as and for the purpose hereinbefore particularly described.

No. 229,822.—REUBEN HOLTGATE, NEPONSET, ILL.—*Gang Ploughs*.—July 13, 1880. Filed August 16, 1879.

Claim.—1.—In combination with a telescopic axle, A' A'', and ploughs, a telescopic bar, A''', adapted to be raised and lowered to allow the ploughs to rise and lower and to adjust their depth of ploughing, as and for the purpose specified.

2.—In combination with the telescopic bars A' A'' and the ploughs, the bar A''', adjustably secured to the bars A' A'' by yoke H and sliding plate *e*, substantially as and for the purpose specified.

4.—In combination with the bars A' A'' and adjustable bar A''', the hollow shaft F, having pinions *f f*, and end *a'* of the bar A''', having pinion *f'*, substantially as and for the purpose specified.

4.—The clutched sleeve I and cord *i'*, in combination with the clutched end *a'* of the bar A''', and with pinion *f'*, and shaft E, having pinions *f f'*, and shaft *a'*, having pinion F, substantially as described, and for the purpose specified.

5.—In combination with the hinged bars P' P' P' P'', fixed block P''''', and ploughs L and O, the link P''', substantially as and for the purpose specified.

6.—In combination with a plate K', hinged to the shaft K, the yoke K'', and beam L, connected substantially as and for the purpose specified.

7.—In combination with the shaft K, yoke K'', beam L, and plate K', the standard K', and the cord *u u'*, for adjusting depth of ploughing, substantially as and for the purpose specified.

8.—The lever M, bolt *m*, and cord *m'*, in combination with the bar A''', block J, and shaft K, to which the plough L is attached, substantially as and for the purpose specified.

9.—The lever M and pawl *m m'*, in combination with the sleeve N, having notched disk *n*, and with the shaft K, substantially as and for the purpose specified.

10.—The detent *n'*, in combination with the sleeve N, notched disk *n*, pawl lever M, block P''''', link P''', bars P' P' P' P'', and plough O, as and for the purpose specified.

11.—The draft-bars S' S'', hinged to the block J and plough-beam O', respectively, in combination with ploughs L, O, bars R, and equalizer-bar S, substantially as and for the purpose specified.

12.—The rods Q, in combination with plough beam O' and adjustable bar A''', of a gang-plough, as and for the purpose specified.

13.—In a gang-plough, oscillating draft bars S' S'', in combination with a draft-bar, S, and with a plough, L, fixed to the wheel-frame, and a plough, O, connected with the plough L, substantially as and for the purpose specified.

14.—In a gang-plough, a plough, L, hinged to the axle or wheel-frame, and a plough, O, connected with the plough L, by hinged connections P' P' P' P'', so as to permit the ploughs to approach each other in turning at the ends of furrows, substantially as and for the purpose specified.

No. 230,014.—JOHN I. HOKE, SOUTH BEND, IND.—*Sulky Ploughs*.—July 13, 1880. Filed April 16, 1885.

Claim.—1.—The combination of beam B', bracket D, plate D', the disks D'' and D''', and bolt D'', and their equivalents, the clevis E, the locking-slide F, arm F', and the tongue of the machine, the parts being constructed and arranged for joint operation, substantially as set forth, whereby the plough can be turned around by the direct draft of the team

2.—In combination with the beam of a plough, a bracket, D, and adjustable plate D', a lever D², and hub D³, the parts being arranged for operation substantially as described, whereby they may be made to give the proper dip or position to the point of the plough and to regulate the same with reference to hard and soft ground, as described.

3.—The combination of the adjustable plate D', having a groove in its upper surface, the link D², having a projection on its under surface, and the bolt D³, whereby the width of the furrow cut by the plough can be regulated by a transverse movement of the disk upon the plate described.

No. 230,042.—JOSEPH B. NEFF, BUSHNET, ILL.—*Sulky-Ploughs*.—July 13, 1880. Filed January 20, 1880.

Claim.—1.—In combination with the wheel and axle of a plough, a toggle-joint having one of its bars provided with a rack-bar, arranged to operate with its other bar provided with a pawl, by means of which the toggle bars may be locked at different angles to or in a straight line with each other, substantially as and for the purpose herein shown and set forth.

2.—In combination with the wheel and axle of a plough, a toggle joint having one of its bars provided with a rack-bar, arranged to operate with its other bar extended to form a hand-lever, and provided with a pawl, by means of which the toggle bars may be locked in different relative positions, substantially as described, and for the purpose specified.

3.—In combination with the axle or frame of a wheel-plough and a sliding plate which carries the wheel, a toggle-joint having one of its bars provided with a rack bar arranged to operate with its other bar extended to form a hand-lever, and provided with a pawl, by means of which the toggle-bars may be locked in different relative positions, to adjust the height of the sliding plate and wheel relatively with the axle, substantially as and for the purpose specified.

4.—In combination with a wheel-plough frame and plough, the vertically and laterally adjustable stop I, arranged so as to tilt or turn to one side, substantially as and for the purpose specified.

No. 230,192.—HENRY A. OLMSTED, OAKLAND, CAL.—*Gang-Plough*.—July 20, 1880. Filed May 11, 1880.

Claim.—In combination with the plough-beams G, carrying the ploughs G', said beams being hinged, pivoted, or otherwise loosely connected to the wheeled frames, the slides F, guides E, and lever H, and the rear guides J, and lever I, where, by, both forward and rear ends of the ploughs are correspondingly elevated from the ground, substantially as and for the purpose herein described.

No. 230,335.—LOUIS W. POWELL, MEXIA, TEX.—*Sulky-Plow*.—July 20, 1880. Filed March 26, 1880.

Claim.—The combination of the slotted axle A, adjustable hangers C D, and diagonal braces E, with the slotted beam F, adjustable hangers H I, and braces K, adapted for the attachment of beams of various sizes, as described.

No. 230,419.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Plough*.—July 27, 1880. Filed June 17, 1880.

Claim.—1.—The combination, with a main frame, A, of a plough having the mould-board attached to it, of an auxiliary frame, C, having forward extensions to which the plough-beam is attached, and rear extensions to which the furrow-side wheel is applied, said auxiliary frame being hinged intermediate its ends to the main frame, substantially as and for the purpose described.

2.—In combination with a plough or ploughs, one or more harrowing or cultivating devices, as at B, or their equivalents, for relieving said ploughs or ploughs from pressure and friction on their land-sides, and harrowing or cultivating the ploughed soil simultaneously with the operation of ploughing, substantially as set forth.

3.—Cutting wheels or disks, or the equivalent thereof, as at B, of relatively large and small diameters or size, in combination with a plough, whereby the ploughed soil is uniformly harrowed or cultivated, and also the pressure and friction on the land side of the plough are avoided, substantially as set forth.

4.—In combination with a plough, the obliquely-set contrivance B, for relieving a plough of pressure on its land-side, and a land-side bearing wheel, A', substantially as and for the purpose described.

5.—In combination with a plough, the contrivance or device, as at B, for relieving a plough of pressure on its land-side, the forward grooved wheel, A', and landside-bearing wheel A', substantially as described.

6.—In a plough, the furrow-side bearing-wheel B, applied to an auxiliary frame, C, having a plough attached to it, in combination with disks or wheels, as at B, applied to a main frame, A, whereby the frames are supported on the furrow side by the disks or equivalent contrivance while ploughing and harrowing are going on, and by the furrow side wheel when the said operations cease and the plough and disks are raised out of the soil, substantially as described.

7.—The mould-board N, having edged wheels α extending up through its curved surface above the place where ordinary horizontal cutters have been applied, and in rear of and to one side of the place where an ordinary yielding-cutter has been applied, said edged cutters serving for reducing friction, and also enabling the plough to cut narrow slices and hold them while they are being turned over, substantially as set forth.

8.—The mould-board N, provided with lapping extensions g , notches g^2 and g^3 , and lugs g^4 and g^5 , in combination with the share N', provided with a slotted arm, h h^2 , lapping extensions g , and a thickened portion h' , and with the point N', provided with lapping extensions g , thickened extension g^2 , and a screw-threaded bar, g^3 , passed through the lug g^4 of the mould-board, substantially as described.

9.—An edged cutter, Q, provided with laterally yielding blocks or cushions m at its centre or hub, in combination with a plough, whereby it is allowed to yield laterally independently of the plough when it meets unyielding obstructions, substantially as described.

10.—A rolling cutter having an automatic back and upward movement and provided with a relief-spring, substantially as and for the purpose described.

11.—In combination with a plough, an edged cutter provided with yielding devices for relieving it of strain in both its upward and backward and its lateral movements, substantially as described.

12.—A plough having its front bearing-wheel hanger extended upward to form supports which are forward of the centre of the axial stem J of said hanger, substantially as and for the purpose described.

13.—In a plough, the forward-bearing-wheel, A', having the stem J, of its supporting-hanger J' pivoted in a laterally adjustable bearing, J², and extended upward beyond said bearing to form supports g for a pivot, g' of a draft tongue or pole, K, forward of the centre of the vertical axis of said stem J, and for a guiding-friction-roller, g^2 , to rest in, in combination with a tongue or draft pole K, which is provided with grooved pulleys l , and is pivoted to said stem or shaft J, whereby the tongue and draft-chains l and l' are allowed to move in vertical and horizontal planes without liability of binding, substantially as described.

14.—In a plough, the part or section l' of the tongue or pole K, provided with a treaded wheel or wheels, L, or the equivalent thereof, and a drum, l , and with a plain supporting and guiding wheel, L', substantially as and for the purpose described.

15.—In a plough, the combination, with the tongue or pole K, of the treaded wheel or wheels L, drum l , plain supporting and guiding wheel L', or its equivalent, pulleys P, rollers q , draft chains P' P', windlasses q^2 and q^3 , ratchet wheel or wheels P', and pawl P', substantially as and for the purpose described.

16.—The tuning-stem or shaft J, of the hanger of the front supporting wheel, A', provided with a guiding friction-roller g^2 , in combination with a hinged draft pole or tongue, K, provided with guide-pulleys, P' forward of the axis of said stem or shaft J, substantially as described.

17.—The combination of the part or section l' of the draft-pole K, provided with guide and supported wheel or wheels L, and the outer tubular part, l , of said tongue or pole, provided with a rack, L', or its equivalent, for said wheel, L, or wheels to gear with, substantially as described.

18.—The combination of the part l' of the draft tongue or pole K, provided with a guided or supported wheel or wheels, L, and the outer tubular part, l , of said tongue K, provided with a rack, L', a winless mechanism, and a

plough whereby the draft of the team can be employed in a very effective way for raising the plough, and the back movement of the team for lowering the same, substantially as described.

10.—In a plough, the combination of the adjustable gauge-top *F*, with the extendible tongue *K* and a winlass mechanism, whereby the depth to which the plough is automatically lowered is controlled, substantially as described.

20.—In a plough, the gauge-top applied to the winlass-shaft *F'*, in combination with the plough-frame and lugged-plough, substantially as described.

21.—In a plough, the combination of the stem *J* of the front wheel, *A'*, laterally adjustable bearing block *J'*, and the pole or tongue *K*, whereby the center draft of the plough and its appliances may be regulated, substantially as set forth.

22.—In a plough, the spring seat *L*, comprising the rearward extended stay-bar *P'*, spring *P''*, pendule rod *P'''*, standard *P''''*, spring *P'''''*, and guiding-eye *P''''''*, substantially as and for the purpose described.

23.—A removable box for journal-bearings having screw-threads on its outer surface for insertion into a hanger or frame, in combination with the revolving shafts or axles and the friction roller, substantially as shown and described.

24.—The combination of the seed-plating mechanism, as at *E E'*, with the main frame, auxiliary frame, oblique disks or wheels, as at *B*, or an equivalent contrivance for achieving the plough from pressure and friction on its land side and also harrowing or cultivating the soil, and a plough for turning over the soil, substantially as described.

No. 230,417.—HORACE F. REEVES, FORT DODGE, IOWA, assignor to GEORGE B. SHEKMAN, same place.—*Sulky Ploughs*.—July 27, 1885. Filed *February 15, 1885*.

Claim.—1.—In a sulky-plough, the combination with the plough-beam *N*, having its forward end bent upward, and the bearings *L*, of the connecting-bar *T* and the lever *U*, pivoted upon said bearing, substantially as herein shown and described, whereby these parts all rock upon the axle, as specified.

2.—In a sulky plough, the combination, with the lever *U* and inclined bar *d*, of the slotted and notched plate *L*, having its forward end beveled, the wooden pin *i*, and stop pin *j*, substantially as herein shown and described, whereby the plough is allowed to swing back should it strike an obstruction, as set forth.

No. 230,528.—ROSWELL M. CLARK, McPHERSON, KANSAS.—*Wheel-Ploughs*.—July 27, 1885. Filed *April 27, 1885*.

Claim.—1.—The combination, with the frame of the plough, of a wheel, *B*, behind the plough, having its axis in a stationary bearing, and a wheel, *B'*, turning on a short axis pivoted at one side of the frame, to permit said wheel to be brought at right angles to the frame at one side thereof, substantially as set forth.

2.—The bifurcated push-rod or brace *I*, in combination with the frame *A*, plough *C*, and the adjusting device, substantially as described, for moving the plough-beam vertically, substantially as set forth.

3.—The combination of the hand lever *G*, rock shaft *F*, sleeve *E*, and connecting devices with the plough *C*, having a beam, *a*, extending loosely into said sleeve, substantially as herein set forth.

4.—In a wheel-plough, the combination, with the frame, of a plough and push-rod arranged substantially as shown, whereby the plough may be propelled from the rear, substantially as set forth.

5.—The combination of the frame, plough, and a push-rod *L*, arranged to propel the plough from the rear, the said plough being pivoted to said rod to vibrate from side to side, and adjustable, as set forth.

No. 230,707.—ISAAC R. GILBERT, LOUISVILLE, KY.—*Wheel Ploughs*.—August 3, 1886. Filed *April 26, 1879*.

Claim.—1.—The combination of the slide *C*, having sleeve *e* and rack-bar *D* attached thereto, with axle *A*, slotted arm *g*, L-shaped lever *E*, and spring pawl *a*, all constructed and arranged to operate substantially as and for the purposes set forth.

2.—The combination, in a sulky-plough, of axle *A*, plate *B*, and slide *C* with rack-bar *D*, L-shaped lever *F*, slotted

arm *g*, and spindle *e*, all constructed and arranged substantially as and for the purposes described.

No. 230,850.—JOHN H. BROWN, CRESTON, ILL.—*Sulky Ploughs*.—August 15, 1885. Filed *April 10, 1885*.

Claim.—1.—In a sulky plough, the combination, with the plough and beam *A*, of the clamping rod *5*, the clamps *6* and *7*, the oscillating box *8*, and the jointed lever *9*, substantially as and for the purpose described.

2.—In a sulky plough, the combination, with the plough *A*, of the rod *5*, the oscillating box *8*, the lever *9*, provided with the pivoted joint *11*, the box *10*, attached to the frame *D*, the oscillating box *12*, and the angular rock shaft *13*, substantially as herein shown and described.

3.—In a sulky plough, the combination of the following elements, consisting of the plough proper and the beam *A*, the clamping rod *5*, the clamps *6* and *7*, the oscillating box *8*, the jointed lever *9*, the boxes *10* and *12*, the angular rock shaft *13*, the fulcrum-block *16*, the clamp *17*, and the operating lever *14*, all constructed and arranged as herein shown and described.

No. 230,625.—FRANCIS F. SMITH, AKRON, ILL., assignor of one-half of his right to JOHN M. LEE KWOOD, PORTAGE TOWNSHIP, OHIO.—*Clay-Box for Sulky and other Ploughs*.—August 10, 1886. Filed *January 28, 1886*.

Claim.—1.—The coupling *C*, composed of the two plates *b b'*, mated together, as described, and having the rear central bearing *a*, and a front stop at *c*, whereby the shaft or axle is coupled to the plough and yet allowed free lateral and longitudinal motion and the plough-beam and coupling are allowed free vertical oscillation, while tilting of the shaft or axle and plough independently of each other is prevented substantially as set forth.

2.—The coupling *C*, composed of the plates *b b'*, mated together, as described, and having the rear central bearing, *a*, and a front stop *c'*, in combination with the axle or shaft *A*, collars *D D'*, and plough beam *B*, substantially as shown and set forth.

3.—The combination of the coupling device *C*, axle *A* of a sulky or carriage, a plough-beam, *B*, stop-pin holes *E E'*, stop-pins *f f'*, and adjustable collars *D D'*, substantially as described.

No. 231,103.—JOHN L. REUSS, CASTROVILLE, TEXAS.—*Wheel-Ploughs*.—August 17, 1886. Filed *June 2, 1886*.

Claim.—1.—The combination of the bent axle *A*, axles *B B'* of the axle, guide *c*, sheath *b'*, link *F'*, having angular bend at its lower end, elbow lever *F*, and eccentric rack *E*, all substantially in the manner shown and described.

2.—The combination of the tongue *H*, plow-beam *C*, rigid to the carriage axle *A*, lever *I*, and link *m*, the tongue being pivoted to the plough forward of the axle, and the link *m* to the tongue between the axle *A* and the pivot *g*, all substantially as and for the purpose herein described.

3.—The combination of the double-armed crank-shaft *n'* and its adjusting lever *K* with the plates *h' h'* and the pole or tongue *H*, pivoted, as at *g g'*, to the rigid forwardly-extended end of the plow-beam *C*, substantially as and for the purpose described.

No. 231,210.—HUGH H. CANADAY, FAIRFIELD, IOWA.—*Sulky Ploughs*.—August 17, 1885. Filed *June 26, 1885*.

Claim.—1.—The combination of the combined rock shaft and bail *G h*, having rigid arms *k* and *m*, and the hand-lever *J*, by means of a link *l*, substantially as shown and described, for the purpose specified.

2.—The combination of the rock-shaft and bail *G h*, having rigid arms *k* and *m*, the lever *J* and link *l*, and the sub-axle *C d*, having a rigid standard, *i*, for the purposes specified.

3.—The straight axle *A*, the carriage-frame *B b*, the stub axle *C d*, having a standard *f*, the combined rock-shaft and lock-bail *G h*, having rigid arms *k* and *m*, the hand-lever *J*, the connecting link *l*, and the rack *m*, arranged and combined substantially as shown and described, for the purposes specified.

No. 231,218.—MILWA A. ELLIOTT, STRATFORD HOWLAND, N. H.—*Ploughs*.—August 17, 1885. Filed *March 17, 1885*.

Claim.—1.—In a plough, the combination with the *A*

ship: Farm O, connected to the plow-beams by rods H I, of the pole B and the auxiliary tongue L, carrying the double-tree m, and the pivoted hook n, substantially as and for the purposes set forth.

2.—In a plough, the combination of the plow-beams G, pivoted as shown, with the pivoted hook n, shaft H, lever L, and pole and tongue B L, substantially as and for the purposes set forth.

No. 231,392.—SAMUEL W. FLEMING, DUNKIRK, OHIO, assignor of one-half of his right to JAMES RUSH, same place.—*Plough Tools*.—August 17, 1880. Filed May 6, 1880.

Claim.—In a plough truck, the combination, with the axle B thereof and the beam D, secured by braces E, of the rearward and upward curved truck-post C, of levers G, H, I, G', and loop-bolt H, having tight-riding-handle I, constructed and operating substantially as and for the purposes set forth.

No. 232,252.—WILLIAM V. MORGAN and THOMAS W. HACKMAN, ALBERTON, IOWA.—*Sulky Ploughs*.—September 7, 1880. Filed February 19, 1880.

Claim.—1.—In a sulky-plough, the beam-clamp constructed substantially as herein shown and described, consisting of the hook-bolt O, the flanged plate Q, and the nut R, whereby the plow-beam P will be held securely, as set forth.

2.—In a sulky-plough, the combination, with the bent axle B, of the bulk K, the arms N, the cross-bar M, the socket-block L, and the clamp O Q R, substantially as herein shown and described, whereby the plough will be connected with the carriage adjustably, as set forth.

No. 232,258.—THOMAS T. HARRISON, AUBREY, KANSAS.—*Sulky Ploughs*.—September 14, 1880. Filed Jan. 17, 1880.

Claim.—1.—The spindles B, axles D, having vertical end posts, C, the arches I, E, having end holes, the plate H, crank screw J, and cross-beam F, combined, as and for the purpose described.

2.—The braces Q, plate R, top S, pin V, bent lever W, and plow-beam T, combined to adjustably support the front end of plow-beam, as shown and described.

No. 232,345.—CHARLES F. GODDARD, WEST-MITCHELL, IOWA.—*Ploughs*.—September 21, 1880. Filed March 18, 1879.

Claim.—The curved plough-beam A, provided with the slot a, in combination with the slotted rear arm, F, adjustable spindle B, front wheel, C, and rear wheel E, arranged so that the line of support between the wheels may pass the middle of the plough, whereby it is supported from downward and lateral pressure without the aid of a handle-tongue, or tail-wheel, substantially as shown and described.

No. 232,555.—FRANKLIN B. HUNT, RICHMOND, IND., assignor of one-half of his right to D. B. ROBBINS.—*Sulky Ploughs*.—September 21, 1880. Filed March 2, 1880.

Claim.—1.—In combination with the pendant or plough-beam-supporting pivoting device T T', attached to the crank, the bar E, also secured to the side arms of the crank, and the adjuster L, slotted plate F', as and for the purpose specified.

2.—The pendant or plough-beam-supporting device T T', combined with the swivel X, said swivel provided with a wedge-shaped hole, k, for the plough-beam to move obliquely in, and also provided with a lug h', and a set-screw, h', at one side and a notched lug, h', at the other side, substantially as described, for the purpose specified.

3.—The swivel device X, provided with the wedge-shaped hole k, for the plough-beam to receive an oblique adjustment, and also provided with the lug h' and set-screw h' at one side and a notched lug, h', at the other side, substantially as shown, for the purpose, specified.

4.—In combination with the plough-beam B, the oblique adjusting device composed of the hollow case S', having a lug h, on one side to engage in the notched lug h' of the swivel device, the screw-shaft K', nut V, and the hand-wheel, z, as and for the purpose specified.

5.—In a sulky-plough, the oblique adjusting device V R', combined with the oscillating or rotating adjusting device X for the plough-beam, the pendant T T', the crank, I I', and adjustable block, E', as and for the purpose specified.

6.—In a sulky-plough, the beam D, provided with the sleeve S', combined with the oblique adjusting device com-

posed of the hollow case S', having a lug, h, on one side to engage in the notched lug h' of the swivel device, the screw-shaft K', nut V, and hand-wheel z, the swivel X, and the pendant T T', as and for the purpose specified.

7.—In a sulky-plough, the seat-arch W, provided with the sockets M and U, having their lower edges projecting on both sides to form a strong support for the tongue and permit the mechanism to be reversed to adjust it to a right or left hand plough, substantially as described.

8.—In a sulky-plough, the seat arch W, provided at one side with a bracket, J', combined with the double-ended stud X' X', the removable quadrant J, and lever H G, substantially as described, for the purpose specified.

9.—In a sulky-plough, the quadrant J, having retainers for the lever H on one side of the arch and a downward-projecting arm, J', provided with a hole, a', and a notch, a', at its lower end, substantially as shown, for the purpose specified.

10.—In combination with the curved seat-arch K, the spring K', having its downward-curved end operating on the upper edge of the arch W, as described, for the purpose specified.

11.—In combination with the horizontal longitudinal pivot m, the pivot-plate L, the pivot-plate J, the stud-elt n, and the seat-springs K and K', substantially as described.

12.—In a sulky-plough, the combination of the plough-beam-supporting devices T T', the oblique adjusting devices S' R' V', the vertical adjusting-crank I I', and the lateral adjusting slotted plate E', as and for the purposes specified.

13.—In a sulky-plough, the seat arch W, having a central seat mounted on a spring, K, and supported laterally by the spring K', combined with the central forward-projecting arm O, having a slot in its outer end, and the foot rest P, substantially as described.

No. 232,517.—ABOLPHUS LATHAM, TIPPECANOE-TOWNS, IND.—*Plough Trucks*.—September 21, 1880. Filed February 16, 1880.

Claim.—In a plough-truck for supporting a plough, the compound wheel D C, the wheel D running on the arm of the truck frame, and being provided with a thimble-arm, E, on which the wheel C is placed, so that both wheels may have an independent movement or rotation, or both may rotate together, in combination with a single wheel on the opposite arm of the truck, as specified.

No. 232,855.—THOMAS POWELL, STOCKTON, CAL.—*Gang Ploughs*.—October 5, 1880. Filed June 11, 1879.

Claim.—In a gang-plough and harrow combined, the combination, with the oblique beam A, connected to the side-parallel bars or beams, C D, and having the angular lever arm P H, of the harrow Q, having its right-angled bars arranged or pivoted to the beam A, and having the operating lever a, as and for the purpose set forth.

No. 232,877.—SILAS H. WOODRIDGE, VENICE, Ill.—*Gang Ploughs*.—October 5, 1880. Filed February 14, 1880.

Claim.—1.—The frame A, pivoted to the axle at a', and provided with the hanger n and lever L, in combination with the diagonal rock-shaft D, with its idlers E, g, lever G, and connecting-links, and plough beams B B', substantially as shown and described.

2.—The frame A, in combination with two or more independent or pivoted plough beams, B B', of unequal length, said beams being pivoted to the inner sides of the beams a' a' of the frame, and confined by oblong loops, as at c and d, and occupying a position above the axle, and also being connected with a diagonal rock shaft D, and to a hand lever G, by devices F E and g g', substantially in the manner and for the purpose described.

No. 233,855.—HENRY GOFFLER, WHITE HALL, Ill.—*Ploughs*.—October 12, 1880. Filed June 19, 1880.

Claim.—1.—In a sulky-plough, the combination, with the plough-beam, of the angular lever and chain, both connected thereto, and slotted standard secured upon the bar A, substantially as and for the purpose specified.

2.—In a wheel plough, the standard H, adapted to hold the plough-beam between its vertical parallel arms, and having its lower end pivoted to the axle, the lever J, pivoted to

the standard H, the claim m, and link l, arranged to operate substantially as and for the purpose set forth.

3.—In a wheel-plough having a slotted standard, H, the a flexible clamp P, composed of plates j' and bolts j'' , the plate j' being furnished with bearings K, and a lug j'' , and the friction-rollers k' , arranged in pairs to bear against the front and rear edges of the side bars of the standard, substantially as set forth.

No. 233,276.—SAMUEL PETERS, CROWN POINT, ILL., assignor to GEORGE SANFORD, same place.—*Plough-Tracks*.—October 12, 1880. Filed September 13, 1880.

Claim.—In a plough truck, the combination, with the axle, of the standard D, provided upon its front edge with open notches d' , the slip-link F, closed at both ends and provided at its rear end with a screw threaded seat, f , and the eyebolt G, screw-threaded to fit the seat f , and adapted to engage with the standard D at one end and to receive the plough-clevis at the other end, g' , substantially as set forth.

No. 233,722.—HENRY BORCHERT, AURORA, MINN.—*One-Wheel Ploughs*.—October 26, 1880. Filed June 23, 1880.

Claim.—1.—In a one-wheel-plough, the combination of beam or bar F, having boxes e and shaft or rod e' , with lever H, fixed to one end of said rod, and tongue G, fixed to the other end of said rod, and plough-beam a , substantially as and for the purposes set forth.

2.—The combination of plough A, axle B, wheel C, and foot-lever D with beam or bar E, boxes e , and shaft or rod e' , and tongue G, jointed thereby at or near the forward end of tongue a , and lever H, hinged to the beam E about on a line with the rear end of G and forward end of tongue a , substantially as and for the purposes set forth.

No. 234,176.—FREDERICK S. DAVENPORT, JERSEYVILLE, ILL.—*Wheel Ploughs*.—November 9, 1880. Filed July 9, 1880.

Claim.—1.—In a wheel-plough having an axle adapted to turn and thereby raise the plough from the ground, the combination, with the axle provided with a rigid arm, a platform, journaled on the axle, and a plough-beam mounted on the platform, of draft mechanism directly connected to the axle-arm and a locking device which detachably secures together the platform and the axle-arm, said locking device being connected to the platform at a point forward of the axle-arm and adapted to transmit the draft to the axle in a line passing through the latter, substantially as set forth.

2.—In a wheel-plough having an axle adapted to turn and thereby raise the plough from the ground, the combination, with said axle provided with a rigid arm, a platform journaled on the axle, and a plough-beam mounted on the platform, of a pawl pivoted on the latter for engaging or disengaging with axle-arm, a longitudinally-sliding draft rod, and a connecting device between the latter and the axle-arm, substantially as set forth.

3.—In a wheel-plough having an axle adapted to turn and thereby raise the plough from the ground, the combination with said axle provided with a rigid arm, a platform journaled on the axle, and a plough-beam mounted upon the platform, of a spring-pressed foot pawl pivoted on the platform and engaging with notches formed on the arm, a longitudinally-sliding draft bar, and a link connecting the latter with the axle-arm, substantially as set forth.

234,328.—CHARLTON PATTERSON and HEKMAN L. ABRAHAMSON, RUSSELL, KANSAS.—*Sulky Ploughs*.—November 9, 1880. Filed July 2, 1880.

Claim.—The arch A, having the rack M, the parallel bars B, provided with bearings, and the vertical bar C, forming a slot or guide, in combination with the axle-arm D, having the cross head E, the curved link G, and the elbow lever H, substantially as shown and described.

No. 234,615.—WILLIAM H. RYER, LA CROSSE, WIS., assignor to himself and ALBERT HIRSHHEIMER, same place.—*Sulky Ploughs*.—November 16, 1880. Filed July 19, 1880.

Claim.—The combination, with the arched cross-bar A, having the tumblers m , of the U-shaped cross-bar n , connecting with lever r and extending backward to support the plough, the plate p , and half-tube q , the rod s , having

spiral spring u , and the frame having lug t , substantially as and for the purpose specified.

No. 234,683.—JOHN R. McCORMICK, GROESBECK, TEXAS.—*Sulky Ploughs*.—November 23, 1880. Filed May 25, 1880.

Claim.—The combination, with the crank-axle and tongue, of the angular guide-braces D D, diagonal brace E, and the adjustable collars G G, substantially as and for the purposes set forth.

No. 234,743.—AXEL F. BERGQVIST, FAIRFIELD, IOWA, assignor to himself and DAVID LOCKE, same place.—*Sulky Ploughs*.—November 23, 1880. Filed September 4, 1880.

Claim.—1.—The combination, with the bail having a crank-extension, g , and the wheel B', carried by a rock-shaft, C, having cranks i and l , of a lever, F, connected above its fulcrum with the crank i by a link, h , passing over the axle, and connected below its fulcrum and below the axle with the crank of the bail by link-bar f , substantially as shown and described.

2.—The combination, with the bail and the plough-beam, of the clip plate m , fastened to the beam, and the swinging-plate n , connected at its middle to the bail and jointed to the clip-plate, and a chain, o , connecting the upper end of plate n with the forward end of the clip-plate, substantially as shown and described.

3.—The combination, with the axle and the bail, of the U-shaped frame D, bent over and extended down below the axle in the rear thereof, and provided with bearings for the bail, and the braces e , passing beneath the axle and connecting the side bars of the frame D with its rear and pendant ends, as shown and described.

No. 235,175.—FRANCIS F. SMITH, AURORA, ILL.—*Sulky Ploughs*.—December 7, 1880. Filed May 22, 1880.

Claim.—1.—The combination, with the supporting-bar A, and crank-shaft k' , of sector k'' , having a bracket, k'' , which limits against the side and edges of the supporting-bar A, substantially as and for the purpose described.

2.—The combination of the lever M, toggle-lever m' , sector k'' , having a bracket, k'' , and the crank-shaft k' , and supporting-bar A, substantially as and for the purpose described.

3.—The combination of the sectors $k'' k''$, having brackets $k'' k''$, in combination with the slide B, having a bracket, k'' , the axles $A' A''$ of the sulky-carriage, set out of line with one another, and the crank-shaft k' , having its arms in line with each other, substantially as and for the purpose described.

4.—The combination, with the supporting-bar A and crank-shaft k' , of sector k'' on the landside of the carriage, provided with a bracket k'' , which serves both as a set gauge for the sector and as an extended support for one end of the crank-shaft, a lever, link, and a slide, B, the parts being arranged to limit the extreme up and down movement of the slide, substantially as described.

5.—The spring check-roller J, suspended upon a supporting-frame, provided with stops, in combination with the plough-beam K', whereby a spring-roller and a laterally vibrating plough-beam are adapted for operating together in a sulky-plough, substantially as and for the purpose described.

No. 235,205.—LE ROY CAHILL, KALAMAZOO, MICH.—*Sulky Ploughs*.—December 7, 1880. Filed April 28, 1870.

Claim.—1.—The combination of the axle I, crank or arm J, provided with the ratchet disk d , the lever L, provided with similar disk d' , and the rack-bar M, as and for the purpose set forth.

2.—The combination of the pole E, having slot a , or its equivalent, the eye-bolt p , plate K, rod S, and thumb-nut t , whereby an up-and-down and a backward-and-forward adjustment of the rod S is secured, as and for the purposes herein set forth.

3.—The swivelled crank-hook m and shouldered casting n , in combination with the bail N, for the purposes set forth.

No. 235,313.—SAMUEL H. TAYLOR, KANSAS CITY, MO.—*Sulky Ploughs*.—December 7, 1880. Filed September 30, 1880.

Claim 1.—The combination with the wheel A, axle B, yoke C, and plough beam G, of the bars H, provided with the slots I, for preventing lateral deviation of the plough, substantially as herein described.

2.—The combination of the bars H, provided with the foot-board or cross-bar K, and the axle B and plough-beam G, for raising the plough from the ground, substantially as herein described.

No. 235,495.—J. W. BARCLAY, ABERDEEN, and ROBERT SELLAR, HUNTERLY, COUNTY OF ABERDEEN, SCOTLAND.—*Combined Ploughs and Diggers*.—December 14, 1880. Filed August 11, 1880. Patented in England July 24, 1879.

Claim 1.—The combination, in a plough, of a share, a segmentary mould-board, and one or more interposed horizontal, or substantially horizontal, blades or tines twisted obliquely to the line of draught, the lower side having a cutting-edge, and the blades or tines separated from each other and from the share and mould-board by intervening spaces, substantially as and for the purpose specified.

2.—In a gang-plough, a shaft having a crank-axle and carrying wheel at one end, and a crank-arm, link, and shoe at the opposite end, in combination with a lever for operating the shaft, and a chain and screw-rod for controlling the lever, substantially as and for the purpose specified.

3.—A gang plough having a crank-lever and conveying-wheels or shoes for raising the ploughs out of the furrows, and a independent pivoted guide wheel, the shaft of which has a limited vertical movement in the collar by which it is attached to the frame, substantially as and for the purposes described.

No. 235,767.—WM. HEMME, MICHIGAN VALLEY, KANSAS.—*Sulky Ploughs*.—December 21, 1880. Filed August 7, 1880.

Claim 1.—In a sulky-plough, the combination of the axle A, the lever, X, hinge O, U-shaped holder P, in which the plough-beam Q is clamped by means of the bolts 2, the supporting rod S, and brace R, the beam being adjustable laterally up on the axle, substantially as shown.

No. 235,800.—CHRISTIAN MYEKS, SAN FRANCISCO, CAL.—*Gang Ploughs*.—December 28, 1880. Filed October 2, 1880.

Claim 1.—In combination with the side bars or beams, A, A', of a plough frame, the plate B, having turned-up ends or flanges for securing the beams to it, and having the thumb C, to receive the pin or bolt of the draught-pole, substantially as herein described, to operate as set forth.

2.—The L-shaped standard G, having the fulcrum for the lever M, and the upright bar J, having the segment B, both fitted together, substantially as described, and secured to the side bar or beam, A, of a gang-plough, substantially as described, for the purposes set forth.

No. 236,146.—CHARLES L. DICK and MICHAEL WOHLE, CORVADO, IND.—*Ploughs*.—January 4, 1881. Filed September 20, 1880.

Claim 1.—In a sulky-plough, the combination, with the vertical frame B C D, provided with the short axle C', of the forwardly projecting upwardly curved arm D', having a short horizontal extension, provided with an upwardly extended and forwardly curved and perforated rack-arm F, short axle G, having short vertical arm H, provided with flanges I F' at its lower and upper ends, forwardly extended pivoted arm J, latching lever K, and detent M, the several parts constructed and relatively arranged to operate substantially in the manner herein shown and described.

2.—In a sulky-plough, the vertical sliding frame N, having the bearings O, the shaft P, carrying loop P', and the pivoted forked arm T', carrying the loop U, in combination with the pivoted latching-lever S, vertical arm R, horizontal arm R', stirrup R', and tongue V, constructed and operating substantially as and for the purposes set forth.

No. 236,157.—ROZANDER S. HIGGINS, NEWA, ILL.—*Sulky Ploughs*.—January 4, 1881. Filed October 25, 1880.

Claim 1.—The combination of hinged arm E, standard B, the furrow-wheel F, and set-screw K, as and for the purpose set forth.

2.—The combination, with the hinged arm E and furrow-wheel, of the strap plate J, having lug J', and set-screw K, as and for the purpose set forth.

3.—The combination of the vertical bar H, foot-lever I, hinged arm E, furrow-wheel F, and plough-standard, as and for the purpose set forth.

4.—The scraper L, having horizontal portion L, hinged on the top of the plough beam A, formed with lateral extension P', and provided with set-screw M, in combination with the furrow-wheel F, as set forth.

No. 236,193.—GEORGE S. TAPPAN, PALMYRA, NEBRASKA.—*Sulky Ploughs*.—January 4, 1881. Filed June 21, 1880.

Claim 1.—The combination, in a sulky plough, of the block D, hinged tongue E, frame A B C, having bail T, hinged frame U, having stem V, lever Q, connecting-rods S W, and the plough, the beam of which is provided with a transversely-perforated bail or bracket, by which it is pivoted upon the stem V of the frame U, substantially as and for the purpose herein shown and specified.

No. 236,536.—ROBERT J. BOWMAN, ALEXANDRIA, VA.—*Gang Ploughs, Planters and Cultivators*.—January 11, 1881. Filed July 9, 1880.

Claim 1.—In a combined gang-plough, planter, and cultivator, the combination, with the frame A, the plough-beams K, and the gear-wheels V, of the cross-beam P, the connecting-bars J, the pivoted equal-armed levers B, and the curved rack-bars G, substantially as herein shown and described, whereby the rear ends of the plough-beams will be raised at the same time and by the same movement as the forward ends, as set forth.

2.—In a combined gang-plough, planter, and cultivator, the combination, with the frame A and the shaft W, that carries the gear-wheels V, of the coiled-spring C, the sleeve A, the pawl G, and the ratchet wheel E, substantially as herein shown and described, whereby the weight of the beams and their attachments are balanced, and the ploughman relieved from the said weight when adjusting the machine, as set forth.

3.—In a combined gang-plough, planter, and cultivator, the combination, with the plough beams K and the forward cross-beam, N, of the right-angled clevis L, the two eyebolts M, and the grooved or flanged washers O, substantially as herein shown and described, whereby the plough-beams are adjustably and firmly connected with the forward cross-beam, as set forth.

4.—In a combined gang-plough, planter, and cultivator, the combination with the plough beams K and the rear cross-beam, P, of the plates Q, having aperture, and the wedge-keys R, substantially as herein shown and described, whereby the plough-beams are connected with the rear cross-beam adjustably and firmly, as set forth.

5.—In a combined gang-plough, planter, and cultivator, the combination, with the connecting-bars J and the rear cross-beam, P, of the clevis L, the eyebolt or plate m, the flanged or grooved plates or washers u, and the wedge-keys v, substantially as herein shown and described, whereby the cross-beam is held from longitudinal movement, as set forth.

No. 236,574.—FRITZ GIRTANER, HO STONE CITY, IOWA.—*Trash Gatherer*.—January 11, 1881. Filed August 31, 1880.

Claim 1.—The trash-gatherer X, having its upper portion twisted obliquely to its body portion, then outwardly, downwardly, and backwardly, substantially as shown and described.

2.—The plough W, in combination with a trash-gatherer fastened to the face of the plough-standard and having its upper portion twisted toward the mould-board side of the plough, said upper portion being twisted obliquely to the body portion, which is secured to the forward face of the plough-standard, then outwardly, downwardly, and backwardly, substantially as set forth.

No. 236,601.—BENJAMIN F. LITZENBERG, RUSSELL, IOWA.—*Sulky Ploughs*.—January 11, 1881. Filed June 23, 1880.

Claim.—In a sulky-plough, the frame or side piece, A, A, having four equidistant adjusting perforations, B D E F, in combination with cross-bar G, bail C, and wheel-jandles

11, whereby said plough can be changed to a cultivator, or in location, one spindle higher than the other, or to a right or left hand plough, without reversing or shifting said side pieces, A A, in the manner herein shown and described.

No. 230,907.—CHARLES MOWREY, STONINGTON, CAL.—*Sulky Ploughs*.—January 25, 1881. Filed *September 24, 1880*.

Claim.—1.—The combination of the plough-beam A, the swivel-support D', secured to the shaft D, the sliding support C', secured to the forward shaft, J, and means for moving the same laterally, substantially as set forth.

2.—The combination of the plough-beam A, the swivel-support D', the sliding swivel-support C', secured to the shaft J by plates a, b, and sleeve E', and crank-screw G', substantially as described.

3.—The hinged tongue H', in combination with lever N, arm M', rod L', braces P' and P'', and a rest for the rear end of the tongue, substantially as described.

4.—The combination of movable frame A and plough-beam A', lever N, shafts J and I, and connecting-cranks, hinged tongue H', arm M', and rod L', substantially as described.

No. 237,010.—OLIVER E. GOODELL, BANGOR, MICH.—*Plough Carriages*.—January 25, 1881. Filed *April 1, 1879*.

Claim.—In a plough-carriage, the bail J, reversibly secured within the frame A, substantially as described, in combination with the lever L, arm K, and link N, as and for the purposes set forth and shown.

No. 237,795.—THOMAS MEIKLE, LOUISVILLE, KY.—*Sulky Ploughs*.—February 15, 1881. Filed *December 6, 1880*.

Claim.—1.—In a sulky-plough, the combination of the axle A, vertical frame or standard D, the double bars C' C', wheel B, and castor-wheels G G', substantially as shown and described.

2.—The combination of the triangular frame C' C' C', having the vertical standard D, forming a guide for the plough-clamp and slide, the bell crank lever F, link O, and plough-beam P, substantially as shown and described.

No. 237,824.—WILLIAM H. CUMMINGS, BOONSBORO, IOWA.—*Sulky Ploughs*.—February 15, 1881. Filed *October 23, 1880*.

Claim.—The combination, in a sulky-plough, of a lever-frame fulcrumed to the axle and carrying the plough at its lower end and the seat at the other, with the upright pivoted to the foot-step and the frame of the machine, and suitable levers and devices for operating the lever-frame, substantially as and for the purposes specified.

No. 237,842.—EDWARD A. EUSTICE, GREENSBALT, ILL.—*Sulky-Ploughs*.—February 15, 1881. Filed *October 13, 1880*.

Claim.—1.—The combination, with the wheel-spindle having the vertical arm D, and the link and lever H G, of the angular flanged bar E, its vertical part forming a groove for the spindle-arm, and a rack to secure the wheel in vertical adjustment, and its horizontal part slotted and seated upon axle B, whereby the axle may be extended, substantially as shown and described.

2.—The combination of the grooved and flanged bar M, bolted to axle, the bars N, having flanges to rest against said bar M, and slotted extension-plates O, bolted to the plough-beam and forming a slide to lift the beam P, and the bolt Q, all substantially as shown and described.

3.—The plough-standard c, having a rear hole to receive bolt d, a curved front slot, e, the corrugations f, the toothed washer g h, and the bolt i, as and for the purpose described.

No. 238,053.—SAMUEL M. ROBERTSON and AUGUSTUS A. HAMILTON, LYNNVILLE, IOWA.—*Sulky Ploughs*.—February 22, 1881. Filed *September 13, 1880*.

Claim.—In a sulky-plough the combination of beam D, frames C, lever K, link h, arm i, and U-shaped frame J, having bifurcated ends, as shown and described, for attachment to the frames C, as set forth.

No. 238,766.—HORACE L. DANIELS, RICHMOND FALLS, MINN.—*Sulky-Ploughs*.—March 15, 1881. Filed *June 9, 1880*.

Claim.—The lever h, of curved form, and pivoted at its center and provided with the foot-rests c c', in combination

with the plough-beam I, carrying plough J, bail E, and lever G, constructed and operating substantially as and for the purpose set forth.

No. 238,808.—ENEAS G. SPOMEROY, KING'S FERRY, N. Y.—*Sulky Ploughs*.—March 15, 1881. Filed *December 2, 1880*.

Claim.—1.—In a sulky-plough, the combination of a vertically-adjustable bar or plate having the spindle secured thereto, said plate or bar having a rack formed on its rear side, of a spring pressed locking-plate located in horizontal grooves in the guide way and adapted to engage the teeth of said rack, a bell crank lever pivoted at one end to the locking-plate, and a rod attached to the other end of the bell crank lever and extending forward and adapted to be operated by the foot of the driver, substantially as set forth.

2.—In a sulky-plough, the combination, with a pivotal bracket located over the axle of diverging hangers M, secured at one end to the bracket and rigid with the plough-beam, and a hanger, S, secured at one end to the plough-beam and having its opposite end attached to one of the hangers M, and a bell crank lever for raising and lowering the plough, substantially as set forth.

3.—In a sulky-plough, the combination, with the pivotal plate or bracket N, of the diverging hangers M, secured at one end to said plate or bracket, and at their lower ends rigidly secured to the plough-beam, a hanger, S, secured at one end to the plough-beam and at its upper end to the plate or bracket N, and a bell crank lever and chain for raising and lowering the plough, substantially as set forth.

No. 238,993.—CHARLES VAN DE MARK, HILLSDALE, MICH.—*Riding-Ploughs*.—March 15, 1881. Filed *September 14, 1880*.

Claim.—1.—In a riding plough, a centrally pivoted tilting frame having the tongue supported by the rear end, and the driver's seat supported wholly by the forward end thereof, and adapted to tilt independently of the tongue and main frame of the machine, whereby the weight of the driver is utilized to counterbalance and raise the plough, substantially as and for the purpose herein specified.

2.—In combination with the tilting frame G H I I, and the plough K, supported by the rear end thereof, the standard F of the driver's seat, arranged to be adjusted forward and backward on the said tilting frame while the pivots of the latter remain substantially in the vertical plane of the axle-support, substantially as and for the purpose herein specified.

3.—In combination with the centrally-pivoted tilting frame G H I I, the plough K, suspended from the rear end thereof by means of a suspending-lever, L, pivoted to the said frame so as to impart a lateral angular adjustment to the plough, substantially as and for the purpose herein specified.

4.—The block or hanger d, having the round bearing c' and vertically-oblong bearing t, for receiving the pivot c, of the plough-suspending lever L, in combination with the tilting frame, substantially as and for the purpose herein specified.

No. 239,249.—FRANK A. HILL, SAN LEANDRO, CAL.—*Sulky Ploughs*.—March 22, 1881.—Filed *November 5, 1880*.

Claim.—The axle C, having the arms D D', and locking-lever I, in combination with the bolster B, carrying-beams A A', and also pivoted on said arms, and with the lever F, bell crank E, connecting link G, and wheel K, all as and for the purpose set forth.

No. 239,530.—JOHN A. MORSMAN, CENTRALIA, ILL.—*Sulky-Ploughs*.—March 29, 1881. Filed *January 4, 1881*.

Claim.—1.—The combination, in a sulky-plough, of the plough-beam, with the frame A' and links C' for supporting it, the lever D', connecting with said link and fulcrumed upon the main frame, the link F' connecting with the forward end of said lever, which is extended in advance of its fulcrum, and the counter-balance M', said members being constructed and adapted for operation, substantially as described.

2.—The combination, in a sulky-plough, of the plough-beam, supported at a point between its forward end and the plough-share, with the pivoted lever D', fulcrumed upon the

main frame, a link connecting said lever with the forward end of the plough-beam, a notched arm, G' , connected with the forward end of the lever by a link, the pawl K' , for engaging the notches of said arm, and the counter-balance M' , all constructed substantially as described.

3.—The combination, in a sulky-plough, of the main frame with the pivoted lever S , the rod or link V , connecting the rear end of said lever with the plough beam, the counter-balance M' at the forward end of the lever, the notched arm G' , the lever D' , carrying a pawl adapted to engage the notches of said notched arm, the link F' , the forward end of the lever D' , with the lever S and with the notched arm, and a link connecting the lever carrying the pawl with the forward end of the plough beam, substantially as described.

4.—The combination, in a sulky-plough, of the frame A and the cross-bar H with the plough-beam W , its supporting-frame A' , hung upon the swinging frame B' , the rod or link V , the adjustable segment U , pivoted lever S , link F' , notched arm G' , pivoted lever D' , carrying a pawl, K , the counter-balance M' , and the link C' , connecting the lever carrying the pawl with the forward end of the plough-beam, said members being constructed and organized for operation substantially as described.

No. 239,587.—JOHN W. WITT, GRENOLA, KANSAS.
—*Sulky-Ploughs*.—March 29, 1881. Filed November 26, 1880.

Claim.—The combination, with the arched axle B , plough-beam E , and lever M , of an angle bar, having its vertical arm attached to the top of the axle, extending downward parallel to and below said axle, bent twice at right angles and secured to the spindle arm to form a beam-guide, adjustable to either side for a right or left plough, substantially as described.

No. 240,207.—GEORGE H. WARREN, HAMPTON, IOWA.—*Sulky-Ploughs*.—April 12, 1881. Filed August 14, 1880.

Claim.—1.—A clamp for securing the plough beam to the bail of a sulky-plough, the same consisting of two jaws provided with shoulders to form a seat for the beam, the said jaws being slotted at their upper and lower ends, the upper ends having an adjustable clamping-bolt, and the lower ends adjustable clamping-blocks and a clamping-bolt, whereby the jaws may be clamped upon the beam and bail, substantially as herein specified.

2.—In combination with the clamping-jaws, adapted to embrace the plough-beam and bail, the adjustable clamping-blocks, corrugated as described, and the corrugations on the outer faces of the jaws, with the clamping-bolts, by means of which the jaws are clamped to the beam and bail, substantially as and for the purposes specified.

No. 243,290.—GEORGE H. WARREN, HAMPTON, IOWA.—*Sulky-Plough Attachments*.—April 19, 1881. Filed August 20, 1880.

Claim.—1.—In combination with the foot lever of a sulky-plough, the angle-lever M , pivoted in a slot in one arm, K , of the same, and provided with bearings at opposite ends, by which it may be operated to lock and unlock the said foot-lever, substantially as specified.

2.—The combination, with the foot rest A , constructed with recesses C H , the foot-lever K , pivoted therein, and having an angle-clutching lever d , M , fulcrumed in a recess in the upper arm thereof, the other arm being connected with the forward end of a plough-beam by a pitman, L , arranged as set forth.

No. 240,025.—HORACE E. REEVES, FORT DOWNE, IOWA, assignor to GEORGE B. SHERMAN, same place.
—*Sulky-Ploughs*.—March 3, 1881. Filed October 19, 1880.

Claim.—1.—The combination of the hollow sleeves or casings B B' , the notched plates F , rigidly attached thereto and the double crank axle C , substantially as described.

2.—The yoke H , provided with the swivel G , screw-pin g , and tail nut i , in combination with the plough-beam D , substantially as described.

3.—The combination of the lever S , vertical spring-catch c , jointed straight arm T , curved arm U , and plough beam D , substantially as described.

4.—The combination of the jointed bar or arm T , lever S ,

curved arm U , and break-pins f and f' , whereby, in meeting an obstruction, the plough and beam are made free to rise clear from the ground, and, if necessary, as high as the driver's seat.

5.—The combination of lever S , arm T , curved arm U , clamp V , and plough-beam D , substantially as described.

6.—The combination of the yoke H , supporting-frame L , M N X , and sleeves B B' , the latter provided with the losses p p' , to which the rear end of the supporting-frame is secured.

No. 241,103.—HENRY WEBER, JR., GRAND MEADOW, MINN.—*Plough-Sulkies*.—May 3, 1881. Filed February 19, 1881.

Claim.—1.—The combination, with axle, seat, and arms M , of the brace G , provided with a bearing for said axle, and the collar H , provided with a projection, J , as and for the purpose specified.

2.—In a plough-sulky, the combination, with the axle D , the tongue-brace G , and the driver's seat, K , of the arms M , the hinged rods I , and the inclined bar O , substantially as herein shown and described, whereby the driver's weight is made to balance the weight of the plough, as set forth.

3.—In a plough-sulky, the combination, with the lever U , the axle D , and the crank-axle C , of the arm V , substantially as herein shown and described, whereby the crank-axle C is locked in place when both cranks are in vertical positions, as set forth.

No. 241,848.—REUBEN ELLIOTT, SYCAMORE, ILL.
—*Sulky-Ploughs*.—May 24, 1881. Filed January 10, 1880.

Claim.—1.—In a sulky-plough, the arched frame C , provided with the forwardly projecting extensions C' , and carrying a crank, from which the plough-beam is suspended, in combination with the connection for the forward end of the plough-beam, formed by passing the cross-rod through the clevis and connecting its ends to the forward extensions of the arched frame, substantially as described, whereby when the plough is locked the forward connection becomes rigid, substantially as described.

2.—In combination with the plough-crank and plough-beam, the socket g , arranged on the crank, and provided with the rearward extension g' , and the stirrup h , pivoted at its ends to the rearward extension g' and to the plough beam respectively, substantially as described, whereby the plough-beam can swing vertically and forwardly and rearwardly, as set forth.

No. 242,320.—FRANK A. HILL, SAN LEANDRO, CAL.
—*Side Hill Ploughs*.—May 31, 1881. Filed October 18, 1880.

Claim.—1.—In combination, the beams B B' , cross-pieces a b , connected to the tongue, the whole forming the frame which supports the ploughs, said frame being pivoted to the straight axle A on one side and moving in guide on the other side, the rod k , and the hand-lever, substantially as described.

2.—In combination with the plough-share having the inclined recess e and projection f , the detached portion m , with a corresponding recess e and projection n , and the fastening-bolts.

No. 242,431.—JOHN CATTON, WEST JERSEY, ILL.—*Plough Trusses*.—June 7, 1881. Filed December 2, 1880.

Claim.—A sulky-plough provided with an adjustable plate C , provided with sockets E E' , in combination with segment G , attached to the plate C , and laterally-adjustable crank-axes F F' , provided with levers H , and bolts or stops I , working upon said segments, substantially as and for the purpose specified.

No. 242,459.—HENRY E. TRUMBULL, KALAMAZOO, MICH., assignor of one-half to G. EDWIN DUNBAR, same place.—*Riding Sulkies for Ploughs*.—Jan. 7, 1881. Filed August 10, 1880.

Claim.—1.—The frame with its perpendicular and obliquely-angled loops, and the recesses or ways, the lever having the obliquely-angled slotted extension, and its ratchet secured to the side of the forward loop of the frame, the bail rod having its ends loosely located in said ways of the frame and slots of the angled extension of said lever, the bail having the rear plough clamp or holder locat'd thereon.

all in combination, substantially as described and shown, for the objects set forth.

2.—The bail bar supporting the rear clamp, the ends of said bail located both in the ways of the looped frame and the slot of the angled extension of the lever, the lever having the hook rod and adjusting chain, said chain connecting with the bail near where the clamp is located all in combination substantially as described.

3.—In a lifting-sulky for ploughs, the frame having the ways or recess shown, the nut with its eye or loop end adjustably located in said way and supporting and securing together the clutch joint, and also adjustably retaining in its eye the angled extension of the wheel axle, all constructed and combined substantially as specified and shown, for the object set forth.

4.—In a sulky-plough, the bail-bar having either end loosely located both in the ways of the looped frame and in the slot of the lifting lever, all substantially as described and shown.

No. 243,125.—CHARLES A. HAGUE, CHICAGO, ILL., assignor to FURSE & BRADLEY MANUFACTURING COMPANY, same place.—*Sulky-Ploughs*.—*Jan 24, 1881*. Filed *October 13, 1879*.

Claim.—1.—In a sulky-plough having a frame or arch, B, mounted on wheels and a single independent crank or bail, A, carrying a plough-beam, G, and a plough, a pivoted connection for the plough-beam to the crank, which will carry the beam in the arc of a circle on a line passing through or near the centre of the axial supports for the frame or arch, substantially as described.

2.—In a sulky-plough, the frame or arch B, horizontal supports or arms C, and crank or bail A, carrying the plough-beam G, in combination with the lever K, directly attached to one end of the crank or bail, substantially as specified.

3.—In a sulky-plough, the combination of the arch or frame mounted on wheels, the tongue rigidly connected with the arch or frame, the crank having a connection with the plough-beam which carries the plough in the arc of a circle on a line passing through or near the centre of the axial supports, the rack rigidly attached to one side of the tongue, and a hand-lever rigidly attached to the crank and arranged to engage the rack, all substantially as described, for the purpose set forth.

No. 243,140.—JOHN L. LAUGHLIN, RACINE, WIS.—*Wheel-Ploughs*.—*June 21, 1881*. Filed *April 7, 1880*.

Claim.—1.—The arm a''' , journaled on the end of the axle A, and carrying the wheel B' at its lower end and lever C' at its upper end, in combination with the axle A and plough and yoke F, which is journaled to the axle and connected with the arm a''' by a link, L, substantially as and for the purpose specified.

2.—In combination with the axle A and yoke F, hinged to the axle, and to which the plough is attached, the arm a''' , journaled on the axle A, and the lever M, provided with a dog, m' , adapted to engage with the notched hub of the wheel B', and thereby oscillate the arm a''' and yoke F, which is connected therewith by a link, L, and raise the plough by the draught of the team, substantially as and for the purpose specified.

3.—In combination with the arm a''' , journaled on the end of the axle A, the levers C and M, connected by a slotted arm, c , substantially as described, and for the purpose specified.

4.—In combination with the arm a''' , journaled on the axle A, and levers C and M, which may be oscillated together, and are adapted to raise the ploughs by the draught of the team, the rack-bar K, having a cam-projection k'' , on its front end, substantially as and for the purpose set forth.

5.—In a wheel or sulky-plough, the combination of the arched axle A, having a slot f'' , in one of its vertical sides, the yoke F, journaled at one end to the vertical side part of the axle and its other end seated in the slot f'' in the axle, link J, arm J, rock-shaft H, and lever H', substantially as and for the purpose herein shown and described.

No. 243,236.—SAM. T. FERGUSON, MINNEAPOLIS, MINN.—*Sulky Ploughs*.—*June 21, 1881*. Filed *Mar 4, 1881*.

Claim.—1.—The combination, with the plough, the bail C, having upwardly extended and slotted arm F, and the link of the hand-lever, of a screw stem, G, projecting upwardly through the said arm into range of reach from the driver's seat, and a nut connected to the link and surrounding said screw, substantially as shown and described.

2.—The combination, with the link E and the hand-lever D, of the foot lever H and a separate link, d , connecting the foot lever to the link of the hand lever, and extending above the fulcrum of the hand-lever, as shown and described.

No. 243,242.—AUGUSTUS J. GALE, ALBION, MICH.—*Sulky-Ploughs*.—*Jan 21, 1881*. Filed *February 17, 1881*.

Claim.—In combination with the frame A, pivoted bail D, and hanger E, having arms a , a' , to which the levers F, G are pivoted, the pivoted lever F, connected at one end with the bail D, and having at its other end a roller working in the curved slot d of the lever G, substantially as and for the purpose described.

No. 243,676.—THOMAS E. JEFFERSON, BOSTON, MASS.—*Sulky-Ploughs*.—*Jan 28, 1881*. Filed *May 21, 1881*.

Claim.—1.—The main frame, constructed, preferably, of metal, having the extension a and the shorter extension a^2 a^2 , united to the first by the part a' , and having also the front projecting bar, to which the tongue of the machine is adapted to be attached, substantially as described.

2.—The combination, with the main frame, of the rotary axle, having its bearings in the lower end of the extension a and in the inner part of the extension a^2 a^2 , the fixed axle, secured to the outer part of the extension a^2 a^2 , and the supporting wheels, one secured to the rotating axle and the other mounted loosely upon the fixed axle, substantially as described.

3.—The means for suspending the plough, consisting of the short curved arm adapted to be secured to the suspending shaft, and having side flanges, the link articulated to the flanges of the said curved arm and adapted to work between the same, and one or more other links for forming the connection between the first link and the plough, substantially as described.

4.—The combination of the suspending cross-shaft, the flanged curved arm secured thereto, the links forming the connection between the arm and the plough, with the plough and means for rotating the shaft, whereby, when the shaft is rotated, the point of suspension of the plough is gradually removed farther from the axis of the shaft, so as to cause the plough to be raised out of the soil slowly at first, but faster as the lifting operation proceeds, substantially as described.

5.—The combination, with the suspending cross-shaft, of the curved arm having an opening through it for the accommodation of the shaft larger than the diameter of the latter and the bolt for holding the arm on the shaft, whereby the arm is allowed to tilt to permit the plough to swing laterally slightly in either direction, substantially as described.

6.—The combination of the cross-shaft, the plough suspended therefrom by a flexible connection, with means for driving said shaft from the rotating axle, so as to raise the plough by the power of the team, substantially as described.

7.—The combination of the cross-shaft, the plough-suspending devices, and the plough with the fixed pulley on the cross shaft, the loose pulley on the rotating axle, the endless chain, and means for throwing the loose pulley into and out of engagement at will with a clutch on the rotating axle, substantially as described.

8.—The combination, with the pulley on the end of the plough-suspending shaft, of the lever D, having the laterally-projecting pin, the spring for bearing against said pin to force the lever outward, and the stationary shouldered locking-plate, with which said lever automatically engages when the plough is raised, substantially as described.

9.—The combination, with the loose pulley on the revolving axle, of the stop on the frame, adapted to automatically engage with the stud on the pulley when the plough is lifted to its highest point, so as to throw the said pulley out of engagement with the clutch on the revolving axle, substantially as described.

10.—The combination, with the fixed pulley on the sus-

pending cross-shaft and the loose pulley on the revolving axle, and their connecting chain, of means, substantially as described, for automatically disengaging the loose pulley from the revolving clutch when the plough is elevated, and other means, substantially as described, for automatically locking the cross-shaft from backward rotation at the time when or immediately after such disengagement of the loose pulley takes place.

11.—The combination, with the main frame and a plough flexibly suspended therefrom so as to be capable of vertical movement, of a rocking frame pivoted to or hung upon the main frame, and having chains or their equivalents extending to the standard of the plough and to the plough-beam, substantially as shown, whereby, when the plough meets an obstruction, its point is automatically caused to rise and its rear portion to descend so as to clear the same, substantially as described.

12.—The combination, with the main frame and a plough suspended therefrom so as to be capable of a slight lateral movement, of a rocking frame pivoted to or hung upon the main frame, and having chains or their equivalents extending to the plough-standard and to the plough-beam, substantially as shown, whereby the plough is caused to automatically pass around an obstacle without throwing the main frame and wheels out of their course, and to be afterward brought back again into normal position, substantially as described.

13.—The combination, with the main frame and a plough suspended therefrom so as to be capable of both a vertical and a lateral movement, of the rocking frame and the chains connecting it to the plough, substantially as described.

14.—The main frame of the machine and the plough suspended therefrom, in combination with the revolving axle, arranged to receive the side draft or side thrust of the machine upon its inner end, at or near the center of the machine substantially as described.

15.—In a sulky-plough, the combination of a main frame, a plough suspended therefrom and adapted to be raised by power derived from the team, with one or more of the supporting-wheels, having a peripheral flange or flanges thereon, and adapted to resist the side pressure of the plough, and thus increase the traction or lifting-power of said wheels, substantially as described.

16.—The combination, with a plough, of a couler consisting of a concavo-convex disk arranged on a substantially horizontal axis obliquely to the line of draft, and adapted to automatically yield readily to rocks or other obstructions with which it comes in contact, substantially as described.

17.—The combination of the concavo-convex blade of the couler with the inclined arm in which the blade is mounted, the vertical arm to which the inclined arm is articulated, the horizontal arm above the plough-beam, the stationary metal straps, and the nuts and bolts, or their equivalents, for adjusting the blade to the desired angle with respect to the line of draft, substantially as described.

18.—The combination, with the plough, of one or more revolving disks arranged at the rear of the mould-board, and having openings through them to permit of the passage of the soil for the purpose of securing more thorough pulverization of the latter, and also to render said disks self-cleaning, substantially as described.

19.—The combination, substantially as described, of the mould-board of the plough, the plate R, having the loop or socket, and the part P, carrying the disk or disks, and rendered adjustable in and out and forward and backward by means of the adjusting-bolts, substantially as described.

20.—The plate R, having the loop or socket, and having segmental slots and bolts, whereby to adjust it so as to cause the part P and its disks to be moved up or down, substantially as described.

21.—The combination, with a main frame and a plough suspended therefrom, of a series of oblique rotary disks placed directly opposite the mould-board and upon the ploughed furrows, for dividing and harrowing the turned soil, and for the further purpose of resisting the tendency of the side thrust of the plough to twist around the frame and tongue and exert a side pressure upon the team, substantially as described.

22.—The combination, with the main frame, the plough suspended therefrom, and the supporting wheels, one of

which has a peripheral flange, of a series of obliquely-positioned rotary disks arranged abreast the plough, and operating in connection with the flanged wheel to oppose in direct line the side pressure of the plough, substantially as described.

23.—The oblique harrowing-disks mounted in arms which are hung upon diagonal axes, substantially as described.

24.—The oblique harrowing-disks mounted in arms hung upon diagonal axes and kept down to their work by means of springs or their equivalents, substantially as described.

25.—The combination of the heads V V, clamped to their shaft, and having ears v' v' , and guide-loops v'' , with the arms v' , curved arm v' , and springs v' , substantially as described.

26.—In a sulky-plough, the combination, with the series of obliquely-arranged harrowing-disks, of the rock shaft mounted in the extension of the main frame, and upon which the supports of said disks are mounted, and the hand-lever projecting within reach of the driver from his seat, whereby the said series of disks are adapted to be raised or lowered at will, substantially as described.

27.—The combination, with the main frame and its supporting-wheels, of the suspended plough having the harrowing-disks O at the rear of its mould-board for harrowing the soil as it is being turned to prepare it for the reception of the seed, the seed and fertilizer-swing devices mounted upon the frame between the plough and the supporting-wheel on the furrow side, and deriving motion from the rotating axle, and the series of oblique harrowing-disks for further harrowing the soil and covering the seed, all arranged and operated substantially as described.

28.—The combination, with the main frame of the machine, the plough, and the oblique harrowing disks, of seed and fertilizer-sowing mechanisms arranged upon the main frame, and the levers a' a' , under the control of the driver from his seat, for throwing into or out of operation at will either or both of said mechanisms, substantially as described.

29.—In a wheeled plough, the combination of a main frame and supporting wheels, a plough suspended from the main frame by a flexible connection, and chains or their equivalent for connecting the beam of the plough directly or indirectly to said main frame, as described, whereby, by the application of the draught to the plough beam, the proper position of the plough in the ground is automatically preserved, substantially as described.

30.—The gear-wheel a' , mounted to rely upon the hub of the fixed disk b' , and having a segmental slot, in combination with the lateral pin or stud on the said disk, and the spring y' , for the purpose of preventing breakage of the teeth of the gears when thrown into engagement while the machine is running, substantially as described.

No. 213,576.—THOMAS E. JEFFERS ON, BOSTON, MA S.—*Plough*.—*June 28, 1881. Filed April 22, 1881.*

Claim.—1.—A mould-board having its rear portion cut away, as shown, to extend the length or curvature of the mould-board and more efficiently invert the furrow with the same or less amount of metal, forming fingers, which also serve to pulverize or disintegrate the furrow with approximately the same draft-power, as specified.

2.—A cut-away mould-board having holding-sockets and set-screws, or their equivalents, combined with cutting knives secured thereto at any desired point of extension, and adapted to serve the double purpose of extending the curvature of the mould-board, to insure the turning of the furrow, and to cut the tenacious soil or soil, as specified.

3.—A cut-away mould-board having holding means and provided with independent teeth of concavo-convex form in transverse section, and each adjustably secured thereto by a set-screw or the like, as and for the purposes set forth.

4.—The couler-plough H, having continuous cutting edge h' and arms h'' , combined with the sockets h' and set-screws h' , said sockets and screws upon the landside in rear of the line of travel, as shown and set forth.

5.—The ploughshare A' , cut away upon its forward surface at a' in combination with the jointer H, provided with dovetailed flange b' , as and for the purposes specified.

6.—In a sulky plough, a ridge or land wheel having a holding flange, combined with adjustable harrow disks, as and for the purposes set forth.

7.—A sulky for ploughs having a single riding wheel upon the land side and harrow disks upon the furrow side, said disks being capable of being converted into transporting wheels at will, as herein specified.

8.—In a sulky plough the harrow disks operated automatically to serve as pulverizers or transporting means as the plough is in or out of service, as specified.

9.—A sulky plough in combination with harrow disks operated automatically to serve together in action, said disks serving as bearing-wheels when not in service, combined with operating means, substantially as set forth.

10.—The combination of the plough *A A'* and harrow disks *d d'* with the crank-lever *C C'*, lever *D*, rock-shaft *D'*, and bevel gears, or a pulvulent means, for simultaneously placing the disks and plough in and out of operation, as set forth.

11.—In a sulky plough, the loose loop *B*, combined with the elbow crank lever *C*, spring-rod *f*, and rack-bar *E E'*, and plough-beam *A*, as and for the purposes set forth.

12.—In a sulky plough, the combination of the wheel and plough-beam with the springs *e' e'*, or their equivalents, upon the rod *E*, acting with a constant force in reverse directions to allow either the plough or wheel to ride over obstructions without disturbing the other or affecting the line of travel, as specified.

13.—In a sulky-plough, the combination of the beam *A* and wheel with the bail *B* and the springs *b b*, or their equivalents, acting in reverse horizontal directions to allow lateral play to the beam without disturbing the line of travel or affecting the wheel as the plough passes obstructions, as set forth.

14.—In a sulky-plough, the combination of the beam *A*, wheel *X*, bail *B*, and rod *E* with the springs *e' e'*, or their equivalents, as and for the purposes set forth.

15.—The vertical attachment to *L*, having collar *e*, combined with the frame *C'*, the plough, the carriage, and the duplex-springs, and with the means for regulating the depth of the furrow, as specified.

16.—The combination of the draft-bar *M*, or its equivalent, having suitable draft attachment, with the plough and the sulky-frame, by means of which construct on the plough is forced into the soil by reason of the draft, as specified.

17.—The combination of the braces *m*, connecting the draft mechanism *M* and the plough-beam, with the sulky-frame, whereby a vertical parallel relation between the said part *m* and frame is always maintained, and the draft exerts a constant influence, both up and down, to hold the plough in its most operative position, as herein specified.

18.—In a sulky plough, the combination of the harrow-disks *d'* with the pulverizing fingers upon the mould board, each being so inclined from the plane of the line of travel that the side pressure of either will approximately counteract the opposite side pressure of the other, as herein specified.

19.—A revolving coultter swiveled to a frame or beam and held in contact with the soil by the constant force of a spring, in combination with the plough-beam, whereby

lateral and vertical play is afforded to the coultter, substantially as and for the purposes set forth.

20.—In a ploughshare, the dovetailed spaces 2, lip spaces 1, and arms 3, combined with an intermediate point having corresponding connections, and the whole adapted to serve as and for the purposes set forth.

21.—The share *A'*, having spaces 1 2 and arms 3, dovetailed or otherwise, combined with an intermediate point 4, and a toe point, 7, and with connecting devices 5, 6, 8, 9, 10, and 11, and holding means 12, as and for the purposes set forth.

22.—In a plough, a revolving coultter, swiveled or jointed to the plough by compound joints, and provided with a spring, in combination with the plough-beam, whereby the coultter will accumulate itself to the sweep of the plough in turning without wrenching the coultter while in the ground, and will be held in constant contact with the soil by the force of the spring, as specified.

23.—A lever, *D*, and connections *D' d' d'*, combined with lever *C'*, and harrow-disks *d'*, and adapted to throw said disks into service as harrows or transporting means at will, as and for the purposes set forth.

24.—The toe-point 7, having cut-away portions 8 and 10, and arm 9, with beveled edges, combined with a share or intermediate point having corresponding recess, substantially as shown and set forth.

25.—The toe-point 7, having cut-away portions 8 10 and beveled arm 9, combined with the share *A'* or point 4, and with lateral set-screw 17, operating through loop or lugs 11, as and for the purposes set forth.

26.—The combination of the frame *C* with the bail or loop *B*, suspended therefrom, and side springs, *b*, or their equivalents, and with the beam *A*, as and for the purposes set forth.

27.—In a plough, a mould-board having sockets or other holding devices at its rear end, in combination with adjustable and removable extensions, as 14 *Y*, and susceptible of being elongated, contracted, or removed to insure the inversion of the furrow, whatever the depth, as specified.

28.—The revolving coultter, combined with the beam, and attached thereto by a compound swivel, as shown in Fig. 5, and for the purposes set forth.

29.—In a sulky-plough, the bearing wheel *X*, having flange *e*, adapted to serve as a coultter to the furrow being turned, as a means for resisting side pressure, and as a riding means, as shown in Fig. 25, and also adapted to serve as a marker and coultter for the succeeding furrow, a riding means, and a means for resisting side pressure while traversing the land, as shown in Fig. 24, substantially as herein set forth.

30.—In combination with the plough-beam, the revolving coultter, attached thereto by the compound swivel joints *d' d'*, and provided with a spring or springs, substantially as shown and described.

31.—The combination of the draft mechanism, the rod *L*, and springs with the beam *A*, whereby both the springs and draft serve to hold the plough in its most effective position by a constant force, and to return it thereto after displacement, as specified.





