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The

FARMERS' CATALOGUE

of

Agricultural and Horticultural

Implements and Machinery

and of

Garden Tools

141

With a brief description of the best

Fertilizers.

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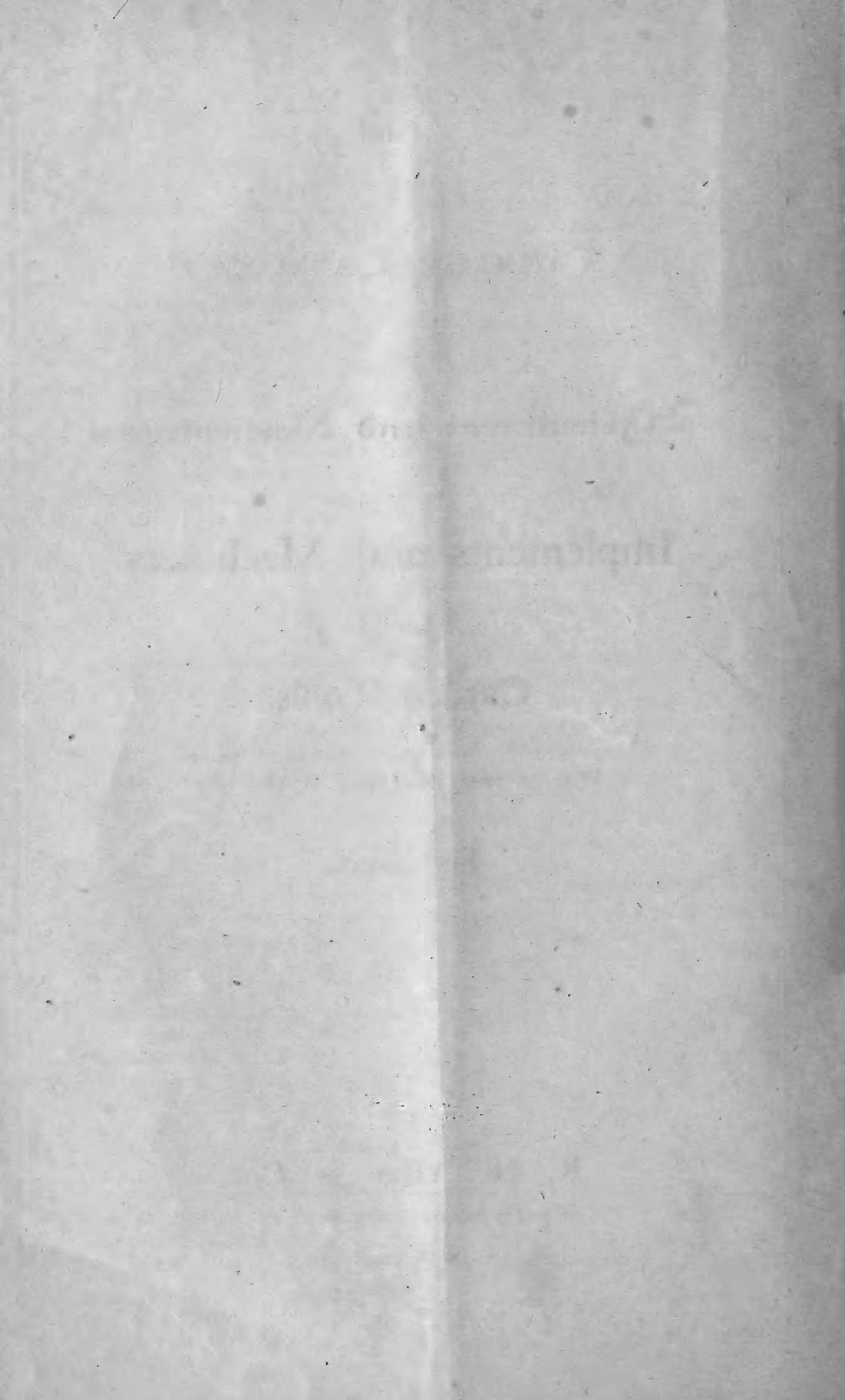
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✓
R. H. Allen & Co.

Nos. 189 and 191 Water Street, New-York.

April, 1868.

Price, . . . Twenty-five Cents.



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1868

FERTILIZERS.

The following Fertilizers we recommend as reliable in their composition, and in every respect valuable manures.

Among them we place, first,

E. F. COE'S SUPERPHOSPHATE OF LIME.

An experience of many years in the sale of this Superphosphate, as well as our personal knowledge of its effect upon general crops, enables us to recommend it in preference to any other fertilizer in our market.

The following analysis is by Professor Johnson :

Moisture expelled at boiling heat,.....	12.18
Sand and insoluble substances,.....	2.14
Combined water, organic and volatile matters,.....	35.10
Yielding ammonia,.....	2.76
Lime,	18.74
Phosphoric acid, soluble,.....	9.43
“ “ insoluble,.....	1.65
Sulphuric acid,.....	19.87
Oxide of iron, magnesia, and loss,.....	.89

It is manufactured, under our own supervision, from raw bones, or bone black from the sugar refiners, (which last is pure bone,) with a considerable percentage of ammonia added. These are dissolved (reduced to their primitive elements) by adding sulphuric acid, which is itself a fertilizer.

The only difference between pure bone and the superphosphate (in addition to the artificial increase of ammonia) consists in its thorough decomposition, in which condition it is readily dissolved in the soil, and can thus be instantaneously taken up by the rootlets of plants. For an immediate effect it is obvious that it is decidedly preferable to Ground Bone or even the Flour of Bone; but, in consequence of its more readily yielding its fertilizing properties to the growing crops, its influence in the soil is not so enduring.

It is applied precisely like Peruvian Guano, though it may be used in larger measure without injury to the seed or plants.

It is shipped in barrels of about two hundred and fifty pounds each.

GROUND BONE.

This has been fully proved one of the best top-dressings for grass lands that can be used, as the constant removal of this crop exhausts the phosphates from the soil rapidly, and bones abound, beyond any other fertilizer, in the materials necessary to supply this exhaustion. To so great an extent have the phosphates been abstracted from some pasture lands by long continued cropping, that the first application of bones more than doubles the crop, and the grass thus grown is much more valuable for the cattle, as it contains a larger proportion of bone-forming and milk-forming materials.

Animals feeding in a pasture where a portion of it has been dressed with bone, will soon resort to it, and remain there till the herbage is cropped close to the ground.

All crops are benefited by it, where the soil is not already supplied

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with the phosphates, but those most which are most nutritious for man and beast. The following analysis is by Professor G. A. Liebig, who is well known as one of our most eminent agricultural chemists.

Inorganic incombustible matter,.....	60.61
Containing of bone phosphate of lime,....	36.63
Organic nitrogenous matter,.....	32.44
Yielding of ammonia,.....	4.54
Water,	6.95
This represents a pure article of commercial bone dust.	
BALTIMORE, Md., 30th Jan., 1865.	G. A. LIEBIG.

From ten to twenty bushels per acre is the usual dressing, though more for a first application is better, as it requires several seasons to fully decompose it, and the effect of a large application is felt for many years.

It should be sown broadcast on grass land, and harrowed in with the seed, or deposited with the seed in hills or drills when grain or roots are planted.

It is shipped in tight barrels, containing from two hundred to two hundred and fifty pounds each.

FLOUR OF BONE.

This is a new form of bone fertilizer, recently put upon our market, and wherever bones are applied, and an immediate effect upon the crops desired, this will be found a very satisfactory manure.

Two grades of this are made: the Floated, which is reduced to powder, and No. 1, somewhat coarser, though finer than the ordinary ground bone. Of both these, the quantity to be applied is much less than of the latter article, but the effect is of course less permanent. The Flour of Bone is guaranteed to be pure and unburned bone, with about five per cent of salt to prevent decomposition in the barrel.

The following analysis is by Dr. Hayes, the distinguished State Assayer of Massachusetts:

Moisture,	5.10
Dry animal matter,.....	34.50
Carbonate of lime,.....	14.10
Bone and phosphate of lime,.....	41.70
Phosphates, magnesia and iron,.....	4.20
Sand and fibres,.....	0.40

The animal matter here given is perfectly dry, and represents 5 93-00 of dry ammonia, as resulting from its decomposition in the soil.

It is shipped in barrels containing about three hundred pounds.

PERUVIAN GUANO.

This is probably the most concentrated, and by many is still considered the most valuable manure offered to the American farmer. This is owing to the fact that it is derived principally from the excrements of birds subsisting entirely on fish, which yield even richer deposits than those of our

gallinaceous fowls, which, as every farmer knows, are the strongest of our animal manures. The other original constituents of Peruvian Guano are the unconsumed remains of fish and birds that have perished, and whose remains and excrements have, by slow decay in an intensely dry climate, where no rain ever falls, thrown off most of their moisture and carbonaceous matters, which are of minor importance as manure, and left only the highly concentrated salts, every one of which is essential to vegetable growth. This will appear from the analysis given by Dr. Ure, whose statements are of the highest authority, as follows :

Organic matter, containing nitrogen, including urate of ammonia, and capable of affording from eight to seventeen per cent of ammonia, by slow change in the soil,.....	50
Water, 11, phosphate of lime, 25,.....	36
Ammonia, phosphate of magnesia, phosphate of ammonia, and oxalate of ammonia, containing from four to nine per cent of ammonia,.....	13
Silicious matter from the crops of birds,.....	1

The ammonia, as shown above, is the principal ingredient of fertility, but this is largely aided by the phosphates and other alkaline salts contained in it, which last, however, can be obtained at much cheaper rates in bones, and in properly made super-phosphates of lime. The ammonia is a stimulant which gives instant and powerful effect to the germinating seed and young plants, producing the rich, healthy green which, under favorable circumstances of warmth and moisture, always characterizes vegetation in soils that have received an application of Peruvian Guano. But such soils must always contain a much larger proportion of other salts than is found in guano, or by its constant use they will soon become exhausted. For these we must look for other and cheaper sources of supply, or a very few seasons will show a diminished crop. The phosphate of lime to be found in bones; the sulphate of lime to be found in plaster of Paris; carbonate of lime in oyster-shell or other quick-limes; potash in wood ashes and decaying vegetable matter, rich turfs, etc.; and carbonaceous matter furnished also from the last sources, peat, clover, and other crops turned under, etc.; soda from common salt, seaweed, kelp, and the waste derived from these articles, where the soda of commerce is manufactured; and lastly, the ordinary manures of the farm-yards, all furnish materials which are required by successive crops beyond what is furnished by Peruvian Guano.

APPLICATION.—Reduce the lumps to powder, by grinding or pounding, then sow in drills or broadcast, at the rate of one hundred and fifty to three hundred pounds per acre, and cover lightly with the harrow or other implement, planting the seed directly over it. Dissolved with one hundred or more times its weight of water, and sprinkled around the roots of plants, especially just before a rain, so that the salts can be washed around the rootlets, the effect is almost instantaneous and highly beneficial.

For grass land, sow broadcast just before a rain. The best effects are more fully secured by first mixing with plaster of Paris, rich loam, etc.

CAST-IRON PLOWS.

NEARLY all plows in this catalogue are made from our own patterns, by machinery especially adapted to the purpose. All the sizes of the same number are therefore precisely alike, and if any part be broken a duplicate can easily be obtained, and the repairs made on the farm without expense.

In shipment to distant ports it is recommended that all the larger plows be taken apart and packed.

For numbers and style of fitting up all plows, consult the general price-list.

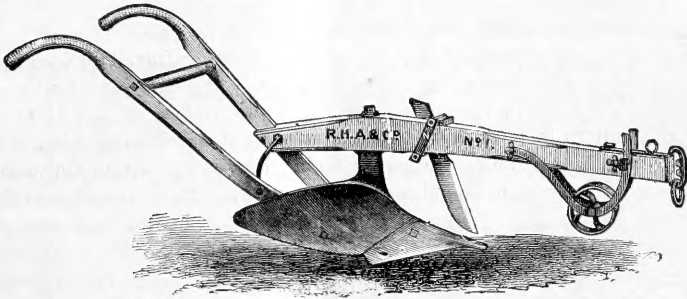


FIG. 2.—PATENT CYLINDER PLOW.

This plow derives its name from the form of the mould-board, which is a segment of a perfect cylinder, with its ends cut in the style of ordinary mould-boards. Its lines are thus always horizontal to the surface of the land, and consequently it turns the furrow-slice with the same uniformity as a wheel on its axle, and with the least possible friction. The friction is still further reduced by the peculiar arrangement of the share and land side, which, combined with its other improvements, reduces the draught from one fourth to one third less than that required by the best class of plows now in general use.

For lightness of draught, simplicity of construction, ease of holding, and certainty of turning all soils of any required depth and width, it far surpasses any other plow.

All the sizes are capable of turning either flat or lap furrows, of any required lap, by using shares suited to various widths, all of which can be supplied; and every furrow may be left concave on the under, and convex on the upper side, which gives the lightest and most friable condition to the soil, admitting of easy and thorough pulverization by a light harrow or cultivator.

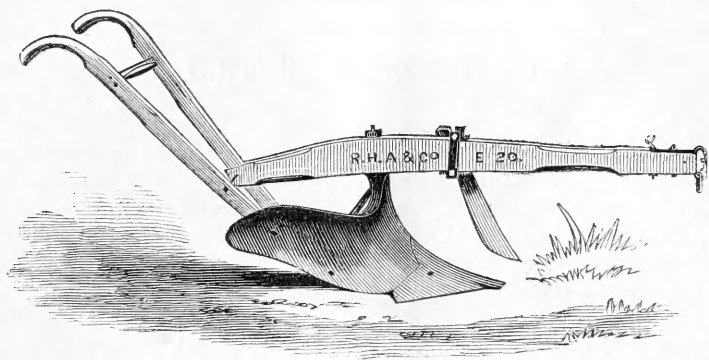


FIG. 3.—EAGLE PLOW No. 20.

The above cut represents a series of plows ranging from the No. 18, a light one-horse stirring plow, to No. 22, a heavy breaking plow for three horses. They are in general use in the Northern States, as well as a favorite pattern in some parts of the South and of Foreign countries.

Fig. 17, page 17, shows the smallest plow of this series made of steel, but is a good representation also of the iron plow.

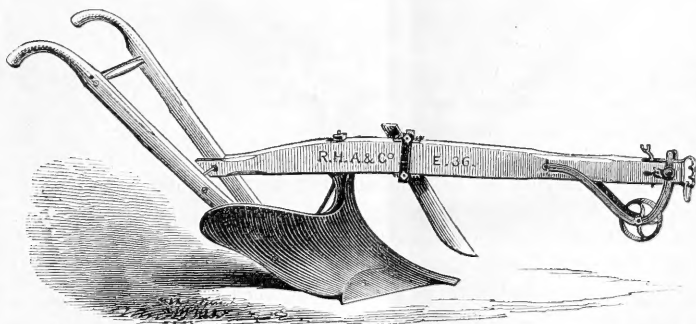


FIG. 4.—EAGLE PLOW No. 36.

In this new pattern of plow of our own invention we combine advantages hitherto only found in several different kinds.

It can be set so as to turn up the soil shallow or deep, as may be desired, and is so shaped as to bury grass, weeds, and trash of all kinds beneath the turning furrow as it moves through the ground.

The series contains seven numbers, of about the same sizes as the style represented by Fig. 3 above.

They are all made with high or low standards, as may be required.

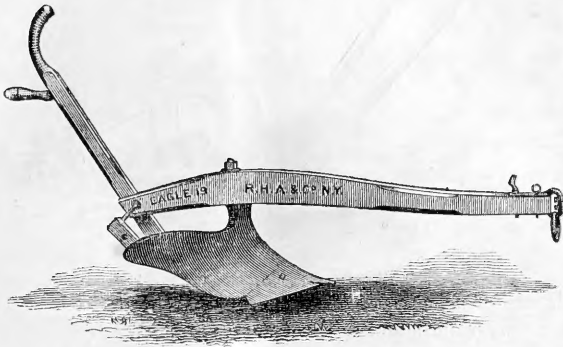


FIG. 5.—PLOW No. 19, WITH ONE HANDLE.

We give a cut of this plow, made with one handle, as it is frequently so ordered by our friends in some sections of the United States, in Spanish America, and especially on the West Coast of South-America. It differs only in the handles from the plow shown at Fig. 3.

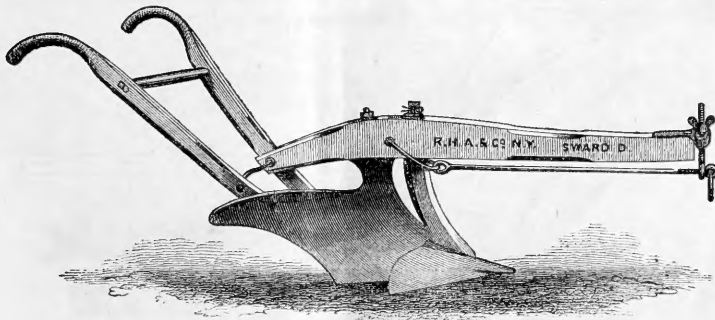


FIG. 6.—SWARD D PLOW.

A strong four-horse plow, with a wrought lock-coulter. To this plow is affixed, when required, a sharp, steel-edged share or point, cutting very wide, and a reversed or drag cutter for the purpose of more completely turning over the surface of wet meadows, when drained by ditching.

A crane or dial-clevis, with draught rod, is attached to the end of the beam, which enables the off ox or horse to keep clear of the miry open furrow, so very fatiguing to him, and tread on the unbroken ground, thus making it comparatively easy work for the team, and obviating the great objection to breaking up wet meadows or swampy ground. When the fixtures for meadow plowing are removed, and the original point or share is replaced, the plow is again adapted to the rugged upland soils, thus answering the double purpose of an upland and meadow plow.

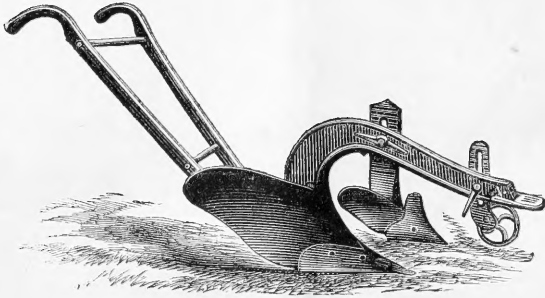


FIG. 11.—IRON BEAM PLOW.

This is one of a series of two-horse plows, with the beam of iron cast in one piece with the standard.

The shortness of the beam brings the team nearer to the work, thus lessening the draught, and giving the plowman better control of his implement. The great space between the point and the beam prevents clogging in overgrown stubble or sod lands.

The front plow shown in the cut can be raised or lowered or removed entirely, as is the case with the Cylinder plow.

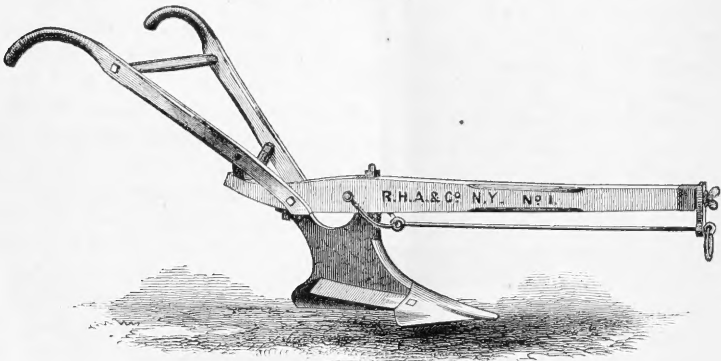


FIG. 12.—SUB-SOIL PLOW.

All sizes of these are constructed on the principle of the Scotch Sub-soil Plow.

They are used by following directly after the plow which turns up the surface-soil, and in the same furrow. This is of great advantage to the crops, both in dry and wet land. In the former, the sub-soil being deeply broken up and well pulverized, the moisture is retained much longer than it otherwise would be, and the roots of plants can descend much lower and wider for their food; while in the latter, the excess of moisture filters below and is readily carried off. They, however, require that the earth below them be sufficiently porous to admit of the escape of an excess of moisture, or their beneficial use is not felt till the land is well drained.

We recommend the use of the draught-rod on all sizes of the sub-soil plows, as we consider it almost indispensable in enabling the off animal to walk on the solid ground, and the plow to work easily in the surface-soil furrow.

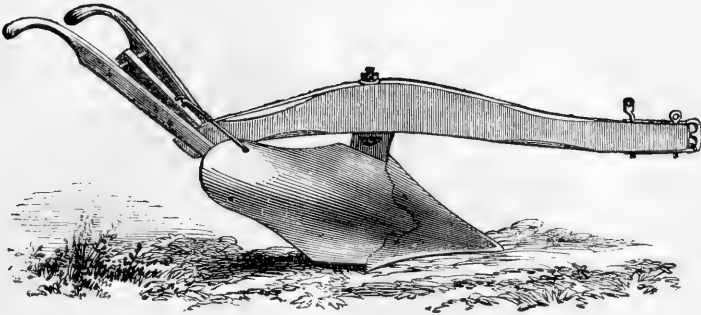


FIG. 13.—SIDE-HILL OR SWIVEL PLOW.

A series of several sizes, from a light one-horse to a heavy four-horse plow. They are so constructed that the mould-board can be instantly changed from one side to the other, which enables the operator to perform the work horizontally upon side-hills, going back and forth on the same side, and turning all the furrow-slices with great accuracy downward. They are much liked at the South; for by this system of turning and laying the soil, it is prevented from being washed into those deep gullies so destructive to the general face of the country.

They are employed by many for level plowing, as this leaves the field without any centre, dead or finishing furrow; nor does it make banks or ridges by turning two furrows towards each other. With a wheel and cutter, the medium sizes are frequently used for turning over mowing land for the purpose of re-seeding in the autumn, as with the cutter they lay the furrow-slice flat, with great uniformity, avoiding the centre and bank furrows, and leaving the land, without any intermediate crop, of the same general level as before plowing. When thus used, they save much labor by allowing the team to turn short about at the ends of the furrows, instead of obliging it to travel across the wide ends of each land in the field.

They are useful also for plowing down the banks of ditches, as they carefully turn the furrows from the ditch by carrying the earth upon the level ground.

RICE-TRENCHING PLOW.

This is made from a pattern furnished by an eminent Southern planter. In trenching a field for the rice-crop it will do the work of many hands with hoes, and will be found a great labor-saving implement for this purpose. It is an excellent implement also for opening drills for corn or cotton, and for various root-crops.

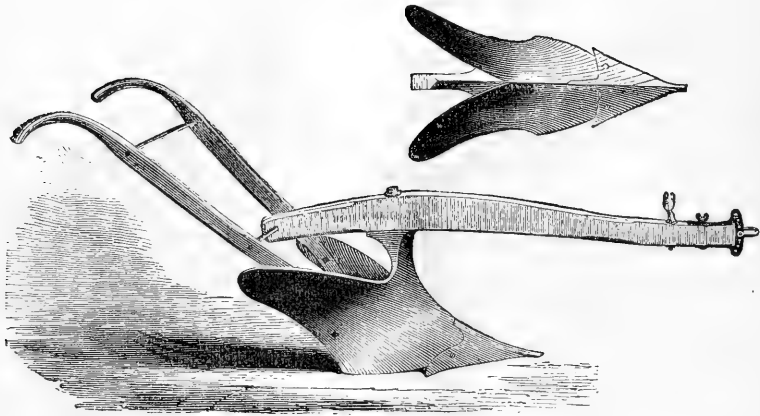


FIG. 14.—RIDGING OR DOUBLE-MOULD PLOW.

A plow well known and in very general use over all parts of the United States, and frequently ordered from Foreign countries.

For opening drills to plant potatoes, corn, etc., for ditching, and for plowing out between narrow rows, it is admirably adapted. In this last work it throws the earth both ways to the rows, and does the duty of two single mould-board plows.

It is serviceable also in digging potatoes, when the crop is not sufficiently large to justify the use of a regular potato digger.

The larger sizes are frequently used on small sugar estates, in furrowing for the planting of cane.

The upper section of the cut shows the form of the mould-board.

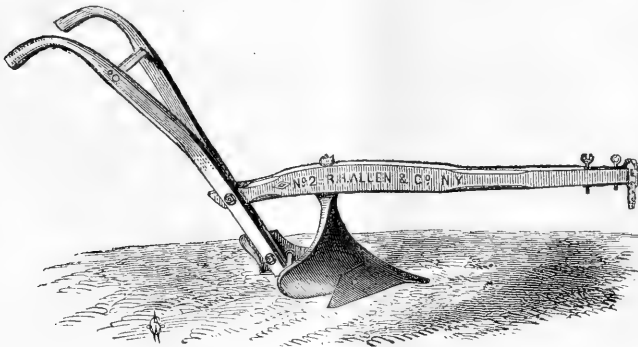


FIG. 15.—CABBAGE PLOW.

This is used for the cultivation of cabbages and similar crops, and is a very convenient and useful implement for stirring the soil between the rows.

The mould-board being shortened, as shown in the cut, allows the plow

to run close to the plant, and under the spreading leaves, without injuring or throwing the earth over them.

We make this plow of two patterns, No. 2 M and No. 19. Both of these are in all respects like the breaking plows of the same numbers, except in the modification of the mould-board.

SOUTHERN PLOWS.

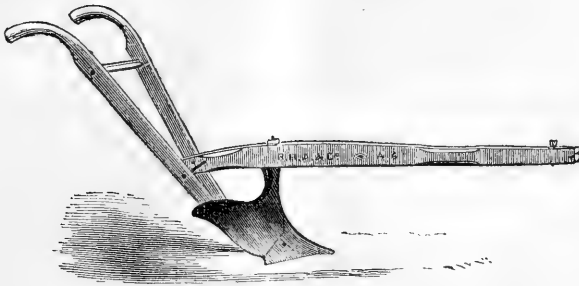


FIG. 16.—PLOW No. A 6.

The above title will best indicate a number of patterns of cheap cast-iron plows used for stirring, and in some places for breaking up the light soils of the South.

They are made without any extra finish, but of very good material, while the castings are of the best iron, and being cheap, yet strong and efficient, are very largely used on the light soils of the Southern States.

A special list will be furnished of the different styles, but the Fig. 16 above shows their general character, and Figs. 17, 18 and 19, among the Steel plows, represent others.

STEEL CYLINDER PLOW.

The Cylinder plow described on page 8 is made, in the three smaller sizes, of steel as well as of cast iron.

Though this style is comparatively new, it is as rapidly growing into favor among users of steel plows as the cast iron style has done among farmers in general.

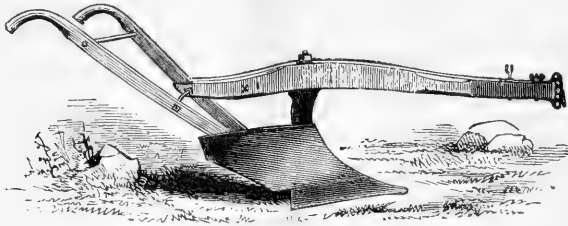


FIG. 24.—PLOW No. X 1.

This is a small pattern of the X series, and worked by a single horse. It cuts from four to six inches deep, and from nine to ten inches wide.

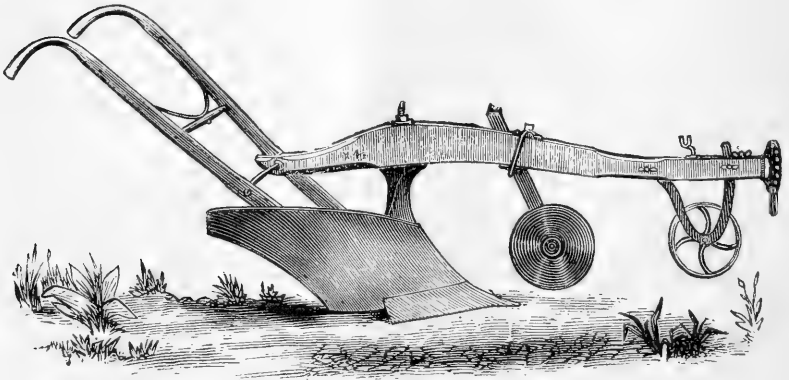


FIG. 25.—PLOW No. X $4\frac{1}{2}$.

This is one of the same series as the above, fitted with the circular or wheel cutter, as shown in the cut, or with the Peacock cutter, which is represented as attached to the U G $3\frac{1}{2}$ plow, Fig. 28.

Without these, which can be easily detached, the plow is suitable for old ground work.

It is a light two or three-horse plow, turning the ground from five to eight inches deep and from twelve to fourteen inches wide.

HARROWS.

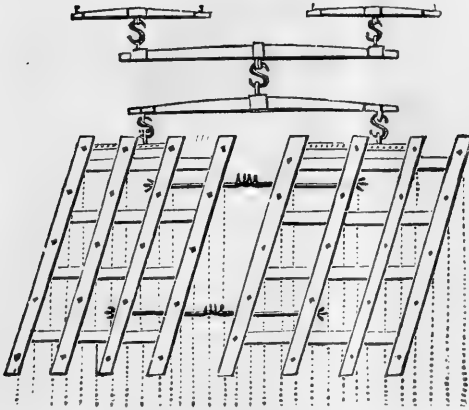


FIG. 37.—SCOTCH HARROW.

weighs one hundred and thirty-five pounds; No. 2, one hundred and fifty pounds.

This is a double Harrow, as shown in the cut, but, by disconnecting the two parts, either may be used singly.

There is only one size, containing thirty-two teeth; these are made, however, of different sizes of iron, and designated as No. 1 and No. 2.

This Harrow, though wide is light, and particularly intended for seeding, or for light lands. No. 1

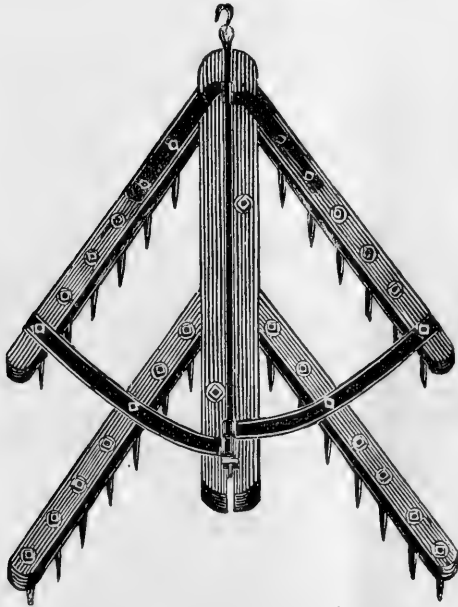


FIG. 38.—GEDDES FOLDING HARROW.

This is generally considered the best of the double harrows. The two side frames, in all the sizes, are joined together by hinges, so that the harrow works over the surface of uneven land uniformly, is very conveniently managed in the field, and, when folded, is easily transported about the farm. The teeth are made of the best iron, and the upper end of each is formed to fit a mortice made tapering from the lower to the upper side of the timber, with a screw upon the upper end of the tooth. They are fastened by nuts, screwed close down upon

iron washers, which prevent all liability of the teeth to become loose and drop out. Their position in the framework is such that each one operates distinctly from the others, and the number of impressions made on the soil will be equal to the number of teeth, and at equal distances.

The weights range from eighty-five pounds for the smallest to two hundred and thirty-five for the largest size.

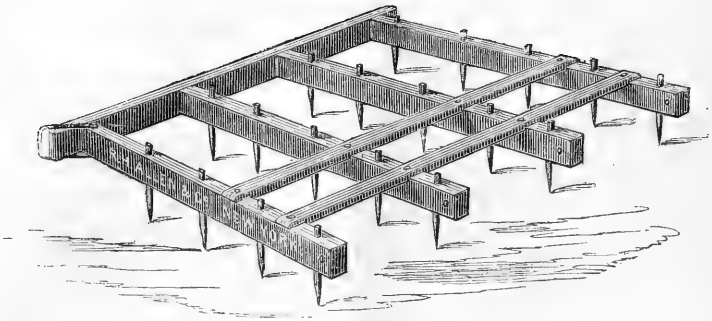


FIG. 39.—COMMON SQUARE HARROW.

This is the simplest and cheapest form of harrow on our list. It is made of three sizes, with fifteen, nineteen and twenty-three teeth respectively. These are tapering in shape, so that when loosened by weather or rough usage they can be driven tight again.

The teeth bars, being riveted at their ends, can not split.

IMPROVED HINGE HARROW.

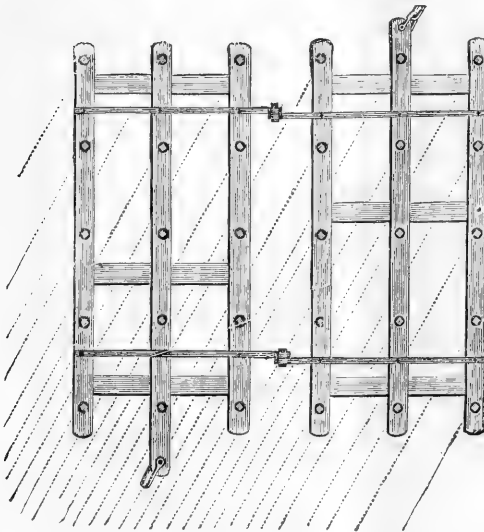


FIG. 40.

This harrow may be folded, or separated into two parts for the convenience of transportation or other purpose. Either half may be lifted while the implement is in motion, and the easy and independent play of the parts up and down upon the hinges enables the instrument to adapt itself to the surface of the ground in all places, so that whether going through hollows, or over knolls and ridges it is always at work and every tooth has a hold upon the soil. The

teeth stand equidistant and wide apart, so that while from their number and arrangement the ground is worked fine they are not liable to clog. This harrow is made heavy to fit it for rough land and the pulverizing of sod furrows. It can be drawn either end forward, and when the teeth become dull by working in one direction the team may be hitched to the other end, and they become sharp again.

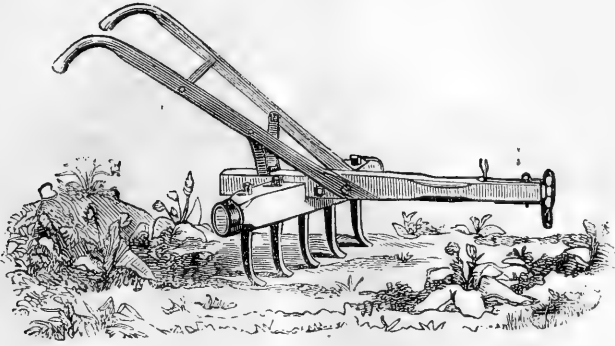


FIG. 41.—SIZER'S COTTON HARROW.

A very effective implement for destroying weeds and loosening the soil between the rows of cotton. The teeth are strong and so shaped as to prevent their clogging or loading with earth. When taken apart and packed for shipment this Harrow measures three cubic feet.

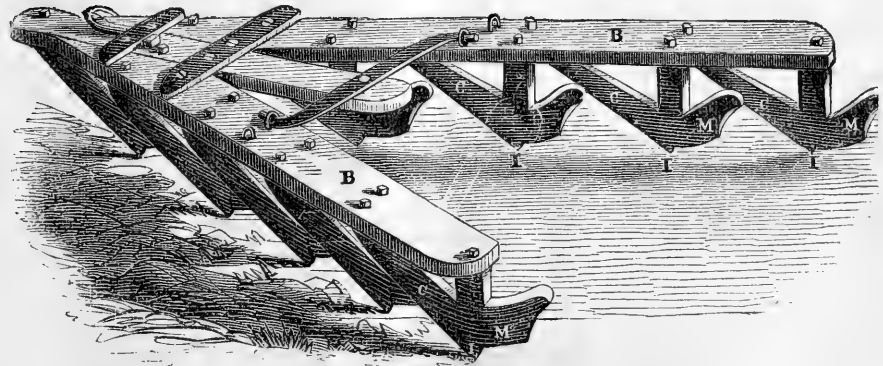


FIG. 41A. SHARES' PATENT COULTER HARROW.

The advantages of this Harrow lie principally in the construction of the teeth or coulters, which are broad, thin blades of cast iron, inclining forward so as to prevent their clogging with roots, grass, stones, etc., as well as to cut the sods and force an easy entrance into any kind of soil. The mould-board is attached to, and forms the lower or back end of the coulter, the lower edge of which is continued a short distance below the covering portion of the tooth and forms the point. This serves to elevate the teeth over stumps, stones and other impediments, and also gives them durability. In preparing land which ordinarily needs plowing several times for root crops or grain, by the use of this Harrow it is only necessary to plow once, and it will, by its lifting, pulverizing process, prepare and finish the ground more thoroughly and satisfactorily than can be done with the usual styles of harrows, and in less time.

This Harrow is six feet in width when expanded, but when closed for transportation is less than two feet. It is seven feet long and weighs one hundred and fifty-five pounds.

ROLLERS.

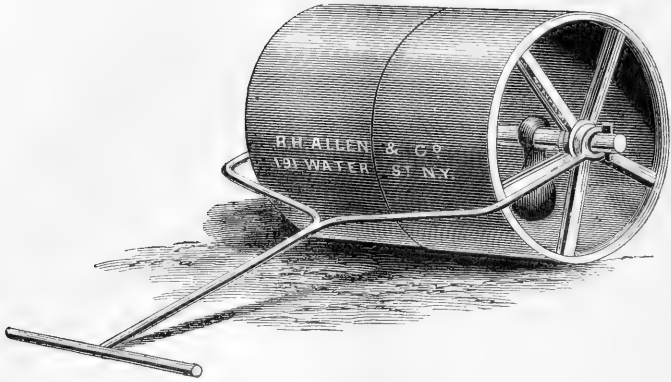


FIG. 42.—GARDEN ROLLER.

Since the Hand Roller was first introduced it has been greatly improved in style and variety of forms. It is now made of several sizes, with from one to three sections.

By the addition of weights along the shaft, as shown in the cut, greater weight is obtained, while they are so adjusted that when not in use the handle is thrown up from the ground and kept clean and out of the way.

The cut is faulty in not showing this feature. It seems hardly necessary to add that it is drawn on a larger scale than the Field Roller and Clod Crusher, the sections being never of greater diameter than twenty-seven inches, and usually of twenty inches only.

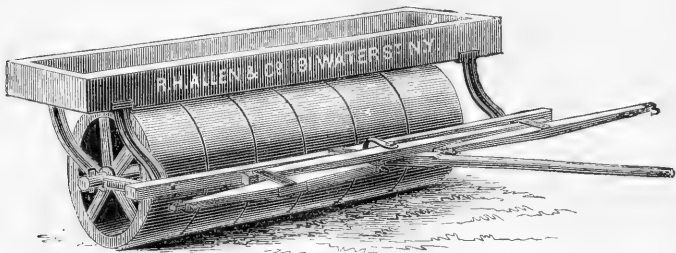


FIG. 43.—FIELD ROLLER.

These are important implements, and are now in general use. They crush all sods and lumps that remain on the top of the ground after the harrow has passed, and force down small stones level with the surface. They render the field smooth for the cradle, scythe, and rake, press the earth close about the seed and secure a more sure and quick germination.

On light and sandy lands they are invaluable, and in all cases their use has greatly increased the product. Much benefit is undoubtedly found in

compressing the surface of such light soils, by preventing the escape of those gases from the manure so essential to vegetation, and which are so rapidly extracted by the sun and winds.

Great advantage is gained by rolling early in the spring while the ground is yet soft. Clay lands, by heaving, pull to pieces and displace the roots of grain and grasses sown the previous autumn, and the heavy roller presses the roots and earth together to their proper position, when vegetation goes on again, and thus, in a measure, prevents what is termed winter killing.

Fig. 43 represents the most approved kind, constructed wholly of iron except the tongue and box which are of wood. These rollers are made of various diameters from twenty to thirty-six inches, in separate sections, each one foot long, placed on a wrought-iron shaft independently of each other, thus turning without much friction and leaving the ground smooth. They are generally used with from three to six sections. If four only are required, thills or shafts may be substituted for the tongue and the roller drawn by one horse, or both may be used alternately according to the team.

The box is attached to receive stones, etc., picked up on the field, and for giving weight to the roller according to the work required.

Extra sizes, with four or five sections of fifteen inches face and five feet diameter have been made for use on roads, and found very efficient for this purpose. Each section in these rollers weighs nine hundred pounds.

To save the cost of transportation to any great distance the iron sections and standards are furnished to order, either with or without the wrought-iron shaft, the wood parts being furnished and attached by any wheel-wright or carpenter in the district where the roller may go.

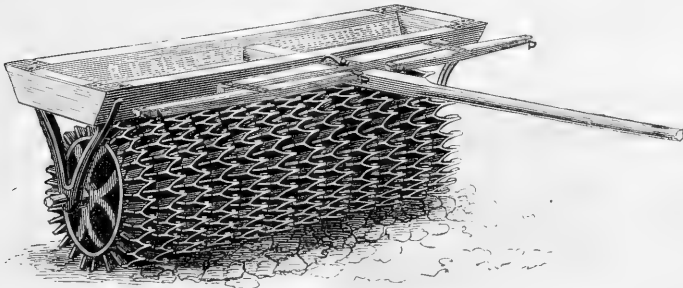


FIG. 44.—CLOD CRUSHER.

This is made from our own patterns, as modified from the original English model, and is strongly recommended to our farmers and planters for heavy clay soils, and for seeding grain or grass lands.

It is made, like the field rollers, in sections, kept apart by washers on the main shaft. It is toothed both upon the face and sides, and thoroughly pulverizes the soil and compacts the surface earth.

Many are now being used upon the sugar estates of Cuba, and are increasing in favor with intelligent agriculturists everywhere.

CULTIVATORS.

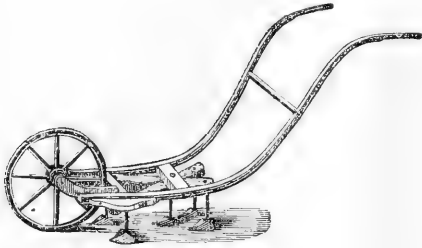


FIG. 45.—HARRINGTON'S CULTIVATOR.

A recently invented implement, which, as an easily managed Hand Cultivator, is growing rapidly into public favor for gardens and other light work.

By removal of the irons and substitution of others it is changed into a good Seed Sower, as represented by Fig. 57, on page 39.

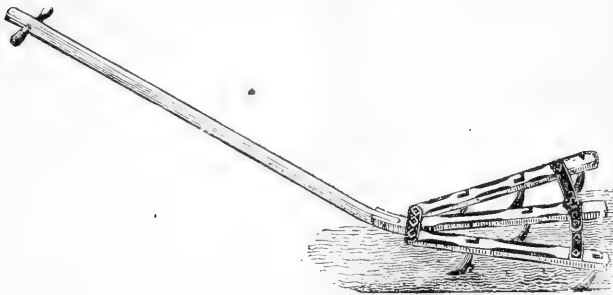


FIG. 46.—HAND CULTIVATOR.

This Cultivator is made entirely of cast iron, except the handle, and expands from ten to eighteen inches. It is used in gardens and often in field culture, among rows of carrots, beets, etc. There is but one size, which has six teeth. These are fastened by a wedge and can be removed at pleasure.



FIG. 47.—HAND PLOW.

A useful implement for hilling between the rows and stirring the soil more deeply than can be done with the hand cultivator.

It is made of cast iron and highly polished. The share and mould are in one piece, and the whole fitted with a sliding gauge and thumb screw for regulating the depth of furrow.

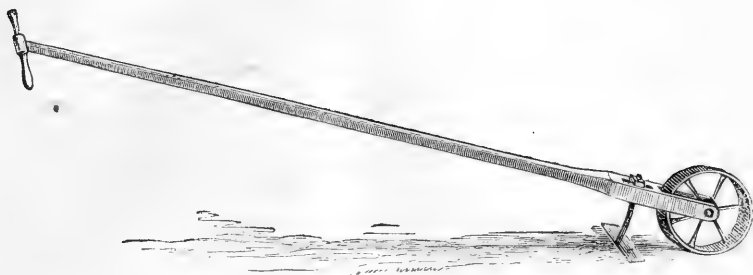


FIG. 48.—WEEDING HOE.

This is a new and patented article, made with one or two wheels, as may be wanted, and used in weeding garden or field crops.

It is light, and managed with ease, as the operator pushes the implement before him while in an upright position, and in full view of the plants.

The blade can be adjusted so as to cut any required depth.

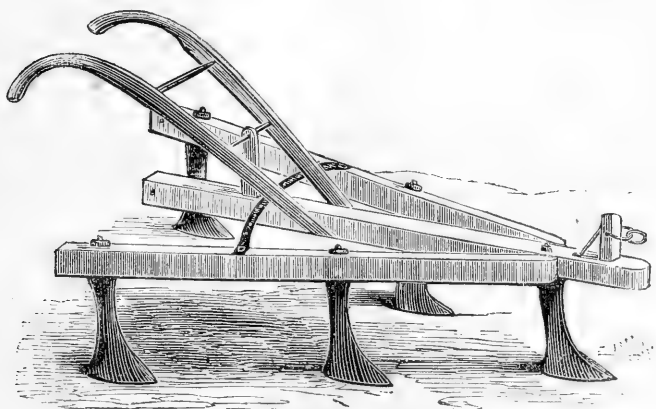


FIG. 49.—COMMON EXPANDING CULTIVATOR.

This is the ordinary form of Cultivator, with teeth of cast iron, and made with or without the front wheel, as shown at Fig. 50.

The wheel, however, is found to be a great improvement, and is recommended in all cases, as it causes the implement to move steadily and easily, and assists the operator in getting around the ends of rows and obstructions in the field.

This Cultivator can be expanded to work between rows four feet apart.

It is made with three or with five teeth.

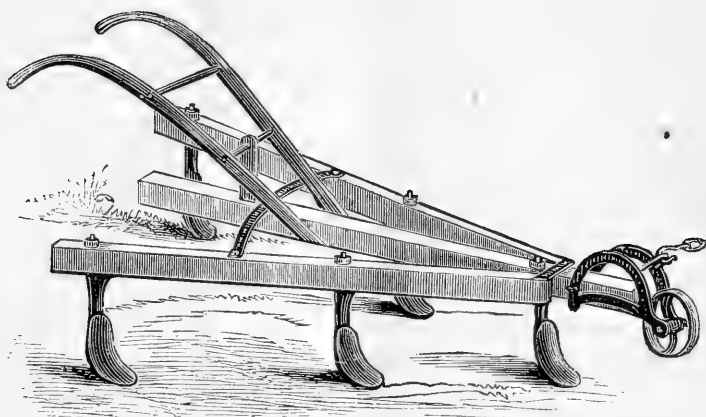


FIG. 50.—IMPROVED EXPANDING CULTIVATOR.

This is made of the same form and size as the ordinary Cultivator, but the teeth are of heavy plate steel bolted to a cast standard, and of such shape that, when worn by long use, they can be reversed, and are then as serviceable as when new.

By the substitution of mould-boards for the rear teeth of this Cultivator, it will throw the earth toward or away from the plants.

In this shape it takes the name of the Long Island Cultivator.

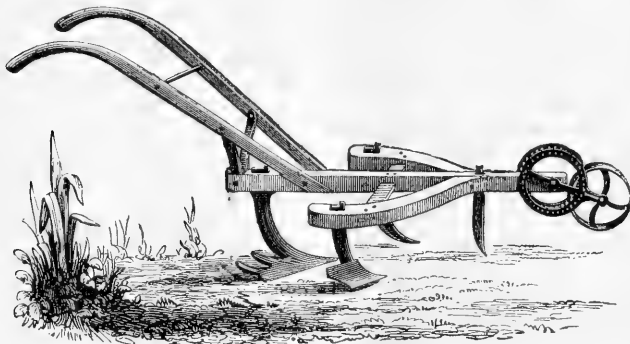


FIG. 51.—HORSE HOE.

This implement is intended for the same work as the Cultivator, and is by some considered an improvement upon the latter.

It is made of three sizes, to suit the various widths required, though none of these can be expanded.

We have another pattern, however, of more recent date, differing slightly from the cut in the form of the front teeth. This can be expanded or contracted, like the Cultivators, though not to so great an extent, as it will not thoroughly clean between rows more than three feet apart. We make but one size of this pattern.

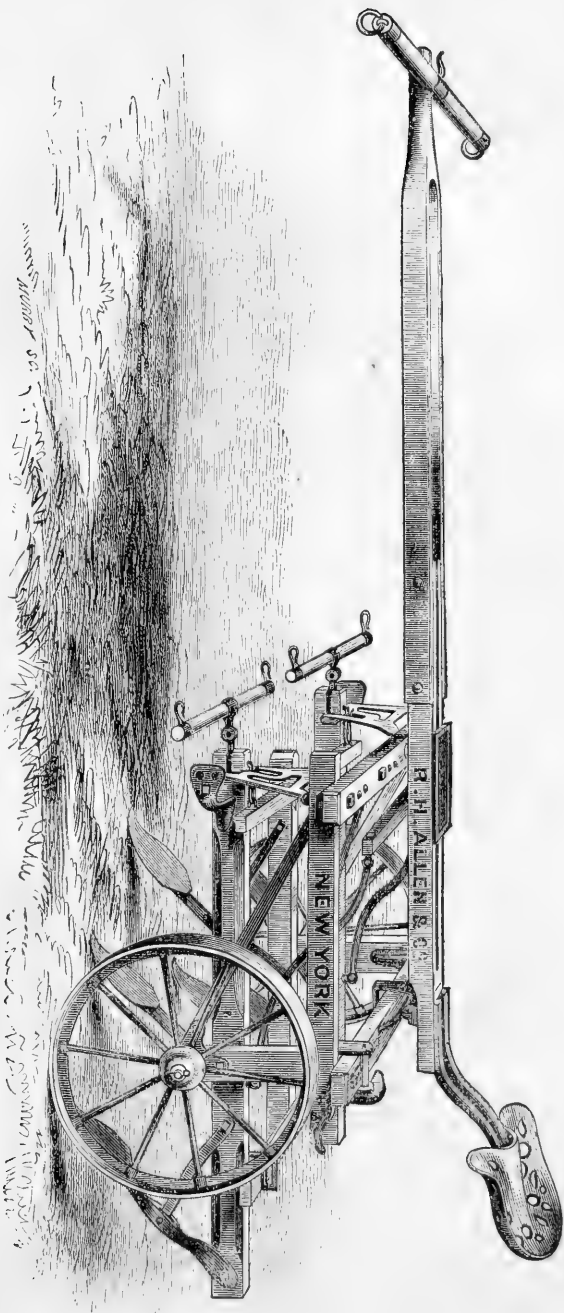


FIG. 52B.—HOWE'S EXCELSIOR CULTIVATOR.
(See page 37.)

HOWE'S EXCELSIOR SULKY CULTIVATOR.

This is one of the most desirable in this class of labor-saving machinery.

It can be used in the cultivation of nearly all crops planted in hills or drills, till they reach a growth of four feet; also for covering seed or for cross-plowing or harrowing.

In all cases it thoroughly pulverizes the soil, and is not choked by weeds, grass, trash, etc.

The chief point of superiority of this Cultivator is in the attachment of the whiffletree to the beams instead of to the pole, making a direct line of draft and avoiding all strain on the frame and pressure on the horses necks.

The draft is equalized, and the pressure applied to the teeth by pointed pushing braces attached to the cultivators at their rear ends and to the cross-trees under the tongue at their front end.

The tongue is made of two parallel bars, leaving an open space its entire length, through which are seen the row, the front shovels, and the feet of the horses. This greatly facilitates guiding the team, and avoids injuring the plants.

The teeth are suspended in front by swinging pendants, which regulate the depth and keep them upright; and in the rear, by chains attached to revolving levers for raising and keeping them out of the ground while turning or traveling on the road or fields. They may be placed at any required distance apart, and the earth stirred and thrown toward or from the rows.

They are turned from a direct line in crooked rows, or to avoid obstructions, or to work up to a hill-side, by pressing the feet on the iron stirrups near the wheels.

In case they catch, they are saved from injury by the arrangement of the pin passing through the shank.

The entire machine weighs about four hundred pounds.

CANE CULTIVATOR.

This is an implement of our own manufacture, and like our Hall and Cuba plows, is made with especial reference to use on the large sugar estates of Cuba and the other West-Indian islands.

The frame is of the best oak timber and the teeth of heavy plate steel, secured to the frame by bolts running the entire length of the standard.

The side beams are hinged to the frame so as to allow them to be expanded or contracted, to suit the various widths of rows.

It weighs about one hundred and thirty pounds.

HAND SEED SOWERS.

The several machines shown below have been long in use in this country and in England, and are found to plant all the various small seeds rapidly and with regularity. The cuts represent the machines with the hoppers and apparatus for sowing the small garden seeds, such as onions, turnips, carrots, parsnips, beets, etc.; and also millet and other small grains in drills. They are easily arranged to plant a greater or less quantity, as may be required.

By substituting other hoppers, with different dropping fixtures, peas, beans, corn, etc., may be planted in drills, or in hills from six inches to two feet apart. It is but a moment's work to exchange one for the other, and in all of them the quantity of seed planted is easily regulated.

The drill is opened, and the seed is deposited, covered, and the soil compressed at a single operation.

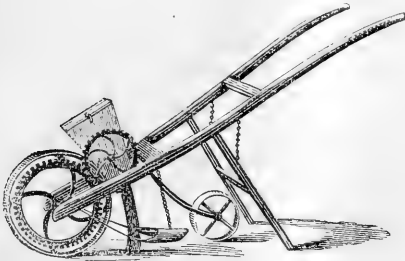


FIG. 54.

SEED SOWER No. 1.

Seed Sower No. 1, or English Drill, is a size larger than No. 0, though designed for sowing the same kinds of seeds in the garden or field. The cylinder and brush within the hopper are worked by gearing, and thus are always sure to operate.



FIG. 55.—SEED SOWER No. 2.

Seed Sower No. 2 combines several important improvements upon the English Drill, particularly in those additions which fit it for sowing large seeds. The brush and cylinder of No. 2, which distribute the seeds, are worked by graduated rows of iron cogs or gearings, which operate simply and uniformly, are durable, and not likely to get out of order, and by which the speed of the dropping may be increased or lessened, large or small seeds sown, in all their varieties, at any desirable distances, in hills or drills. The several necessary changes for the purpose are made easily and

expeditiously. The brush is used for small seeds, as turnips, carrots, etc., and the cylinder for corn, peas, beans, etc. Six tins with different sized holes accompany each machine to be used in connection with the brush as circumstances may require.

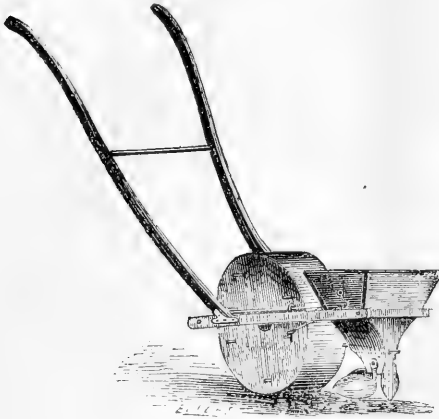


FIG. 56.—WETHERSFIELD SEED DRILL.

in exactly the variety and proportions of crop he wishes, and secures uniformity throughout.

It is worked by cast-iron reeds, instead of with a brush. These vary in size from No. 1, suitable for corn, beans, etc., to No. 8, which is used in sowing turnips and similar seeds. But one size of drill, however, is made.

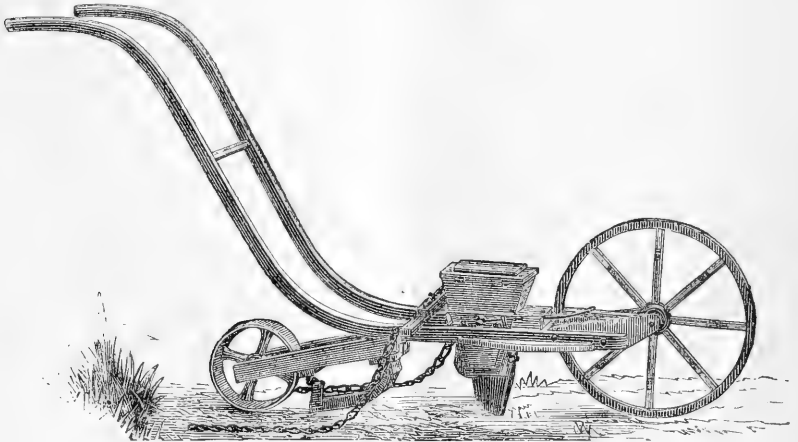


FIG. 57.—HARRINGTON'S SEED SOWER.

This new Seed Sower, which in another form is referred to under page 33, Fig. 45, combines all the important requisites of good drills with the advantage of being easily converted into a Cultivator, as shown above.

All slides, reed and brushes are dispensed with in this form of sower.

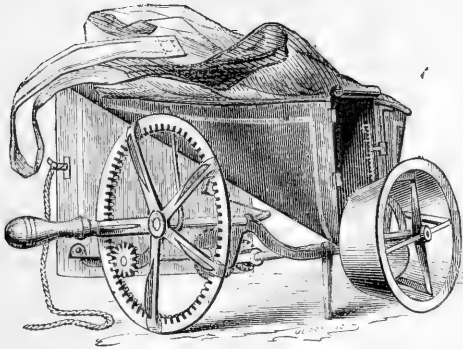


FIG. 58.—CAHOON'S BROADCAST SEED SOWER.

This Broadcast Sower is the only one of its kind in our market.

It consists of a light sheet iron frame-work, with a canvas bag or hopper surmounting it, which will hold about half a bushel of seed.

It is suspended by a strap from the operator's neck, and held in position by a strap around his waist.

In operating it the grain falls through an opening that can be graduated as to the quantity sown per acre, and is discharged through a flanged mouth or spout, which is rapidly rotated by turning the handle. The motion of the latter is greatly multiplied by the gearing connecting it with the spout. The seed is thrown from eight to twenty feet on each side of the operator; the heavier seed being of course thrown the greatest distance.

Since the introduction of this Seed Sower we have greatly improved its mechanical construction, and it is now a strong as well as a simple machine, and with careful usage will last many years. It saves much of the labor and time, enables any one, with a little experience, to sow with regularity, and in consequence of the evenness with which it distributes the seed, saves from one quarter to one third of the grain ordinarily required. A complete separation of the seed is effected, and each kernel falls separately upon the ground, thus causing great regularity of distribution and giving the best opportunity for the growth and development of the grain.

The Hand machine, at a common walking gait, sows from four to eight acres per hour.

The Horse Power machine is worked by an endless chain passing over a rim bolted to the wheel of the wagon or cart that carries the machine. At the usual walking gait of a horse, it sows from ten to fifteen acres per hour.

In shipment abroad the Hand machines are packed a half dozen in a box, measuring eight cubic feet, and weighing seventy-five pounds.

POWER SEED SOWERS.

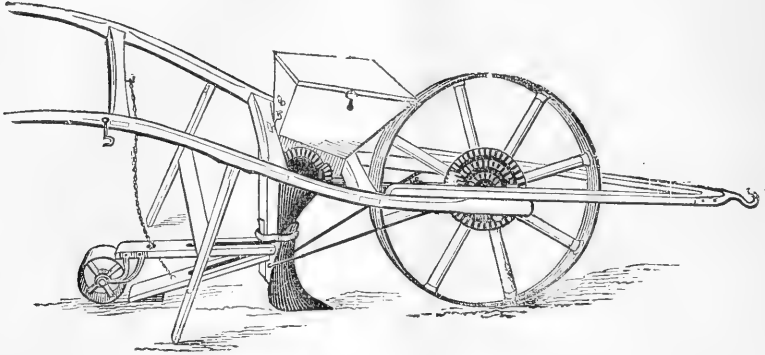


FIG. 59.—No. 3 SEED SOWER, OR EMERY'S DRILL.

This machine, which is substantially like Sower No. 2, is adapted to horse power, sowing seeds continuously in drills, or planting them in hills. By change of cylinders, it sows large or small seeds. The gearings for the purpose of producing a rapid or slow motion, in order to adapt the machine to sowing at different distances, are simple yet excellent. They are made of iron, are durable, and work with regularity and accuracy.

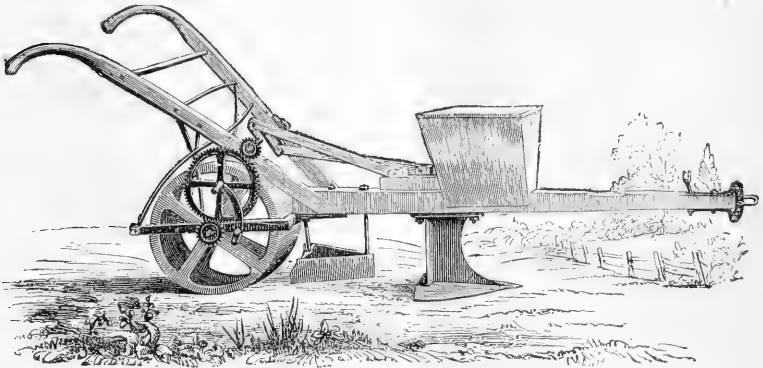


FIG. 60.—BACHELDER'S CORN PLANTER.

This is one of the best machines for planting corn. The seed is put into the hopper above the beam, and as the horse moves along the share below opens the furrow; the corn is then dropped by arms moving horizontally.

These arms have holes that can be altered to a proper size for receiving any required number of grains, and as they pass in and out of the hopper the holes are filled with the seed, which is dropped into a tube conducting it to the bottom of the drill made by the share, and so formed that it passes under the surface at any required depth, where the grain is deposited without turning over the earth. A triangular iron follows to remove all lumps and stones, and a roller to compress the earth over the seed. The dropping of the seed is always visible to the operator, and thus insures his work being perfectly done. The arms are made to drop the corn nearer or further apart by different sized wheels fastened on the crank moving the arms quicker or slower as required.

The machine requires a small horse or mule to draw it, and with a boy to tend and drive will plant from eight to ten acres per day according to the width of the rows, and at any required distance apart.

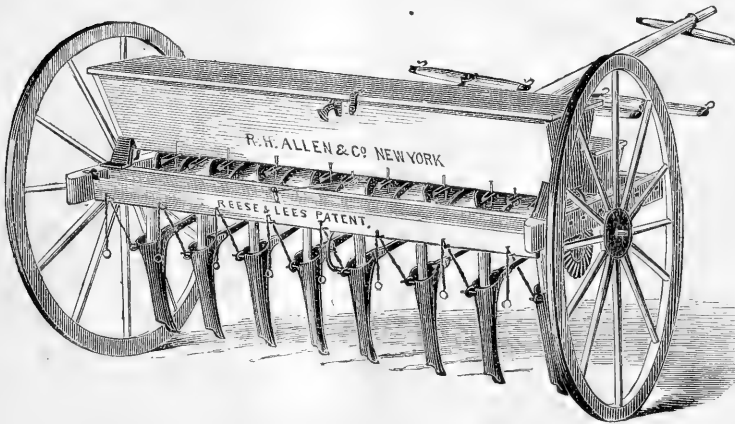


FIG. 61.—LEE'S PATENT GRAIN DRILL.

We have two sizes of this Drill, both intended to be drawn by two horses.

The smaller is made with eight tubes, and has a total width of six and a quarter feet; the larger, with nine tubes, is seven feet in width.

The tubes are six inches apart, and will sow from ten to fifteen acres in a day.

The seed-box contains a bushel and a half of grain.

The machines weigh about five hundred pounds.

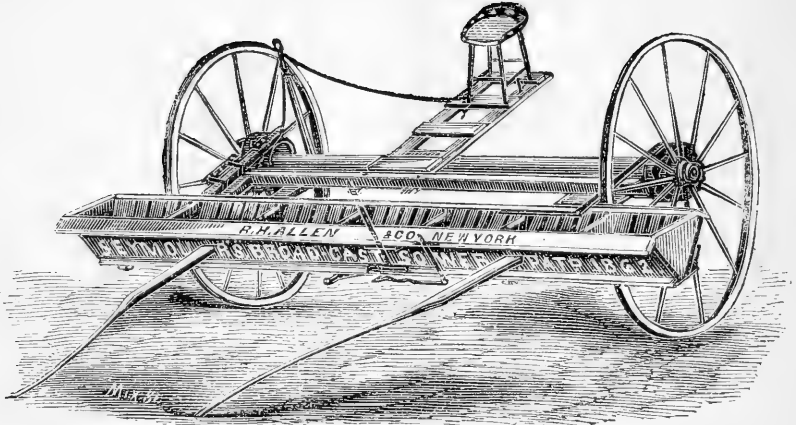


FIG. 63.—BROADCAST SOWING MACHINE.

This machine sows evenly any desired quantity per acre of all grains and seeds, and all fertilizers and manures of a dusty nature.

It is capable of dusting every inch of ground on an acre of land with less than half a bushel of plaster, and thirty or forty bushels of lime may be thus evenly applied to the same amount of land. It sows a breadth of ten feet.

The machines are furnished with thills unless ordered with tongue.

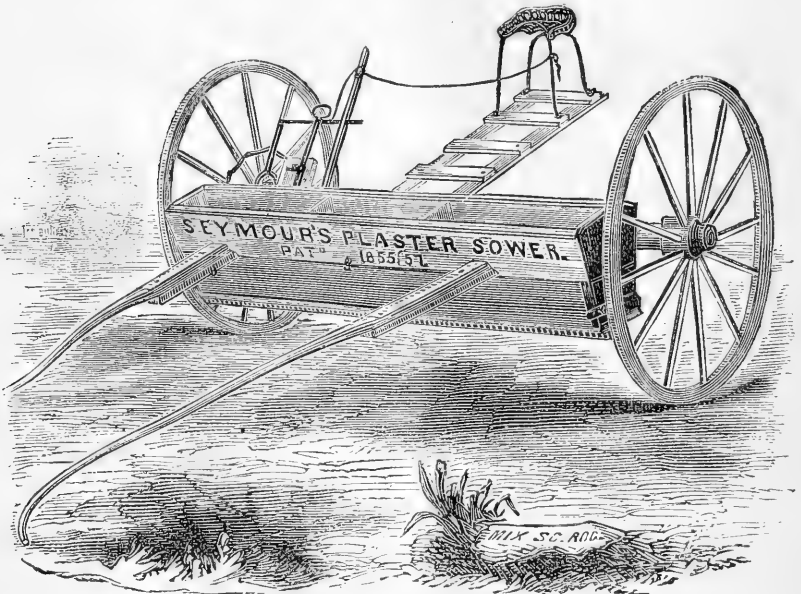


FIG. 64.—PLASTER SOWER.

This machine will sow guano, bone dust, plaster, ashes, lime, and all

fine fertilizers, regulating the quantity as desired, and sowing them as well when damp as when dry. Coals in wood-ashes, and all lumpy substances not harder than charcoal, are readily crushed or ground while sowing. Wet ashes from the leach-tub can be sown in the most perfect manner.

A Grass Seeder is added at a small additional expense, so that clover or timothy seed may be sown when sowing the fertilizers.

The machine is easy of draught for one horse, but a tongue is furnished instead of thills if desired.

It sows a breadth of eight feet.

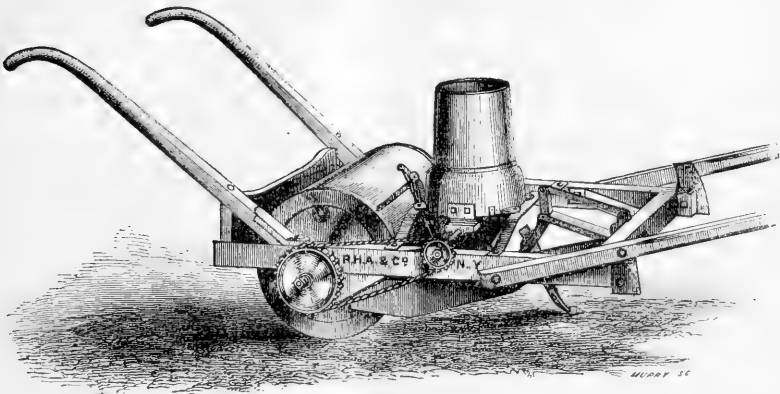


FIG. 64A.—COTTON PLANTER.

This Planter will work well in all soils, even in such as are incumbered by the trash of the previous crop, and sows the seed, without any preparation, just as it is taken from the cotton-gin.

It is readily adjusted to sow any quantity of seed that may be desired; it opens the furrow, sows with great regularity as to quantity and depth, and compacts the surface soil after the seed is sown. This latter operation does much to insure the germination of the plant.

It is drawn by a light horse or mule, and will sow from eight to ten acres per day.

It is seven feet long, exclusive of the shafts; is about two feet wide, and weighs two hundred pounds.

HARVESTING IMPLEMENTS.

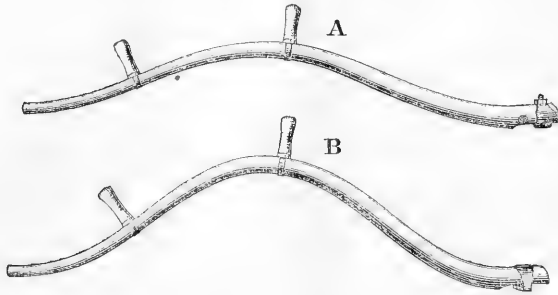


FIG. 65.—SCYTHE SNATHS.

These are the styles generally used for grass, lawn, and bush Scythes.

The Grass Snaths (B) are No. 0, with a hook bolt fastening; No. 1, with a graduating socket; No. 1 Extra, with a socket, full plate, ring, and brass ferule; and No. 20, with the patent loop fastening and adjusting screw.

Bush Snaths (A) are made extra heavy, and of two kinds; one with two rings; the other with the patent loop fastening.

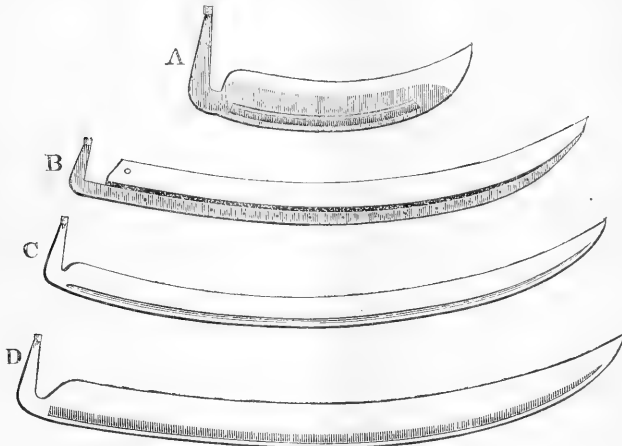


FIG. 66.—SCYTHES.

Our cuts represent the patterns of Scythes in ordinary use.

A is the Bush Scythe of German or cast steel. It varies in length from eighteen to twenty-six inches.

B shows the imported English Lawn Scythe, made with a riveted back, and ranging in length from thirty to forty-four inches.

C shows the New-York pattern of Grass Scythe made of three qualities; the German, cast, and silver steel, and of any length from thirty-six to forty-six inches.

D shows the New-York pattern of Grain Cradle Scythe, which is made of the same qualities as the Grass Scythe, and of any length required from forty to fifty-six inches.

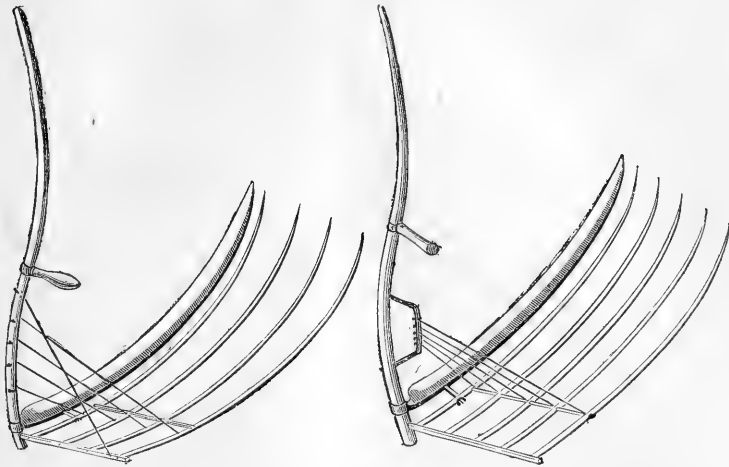


FIG. 67. GRAIN CRADLES. FIG. 68.

We have these of three patterns, two of which are shown above.

Fig. 67 represents the Turkey Wing Cradle, in general use in the Northern States, and Fig. 68 the Southern Cradle, a stronger and more expensive pattern.

The Grape Vine Cradle, used in certain sections of the country, resembles the Turkey Wing Cradle, except in the form of handle or snath, which is much more curved.

This last is made with four and five fingers, the Southern with four, five and six fingers.

All are of the best selected ash timber, and fitted with scythes of first quality, with the new adjustable wedge.

They can be taken apart and packed in boxes, measuring five to eight cubic feet to the dozen, according to the size of the cradles.



FIG. 69—CLOW'S PATENT BARLEY FORKS.

These are intended for gathering the grain from the swath into gavels for binding; and also for pitching barley, oats, etc., from the swath into the wagon when the grain is harvested without binding.

They are made with malleable iron heads, and with three or four wood tines, thus rendering the fork very light yet strong.

The teeth are fastened in the head independently of each other, so that if one be broken it may be easily replaced.

They are packed for shipment in boxes of one dozen, measuring about five cubic feet, and weighing seventy-five pounds.

The four-tine forks weigh about three and a half pounds each.

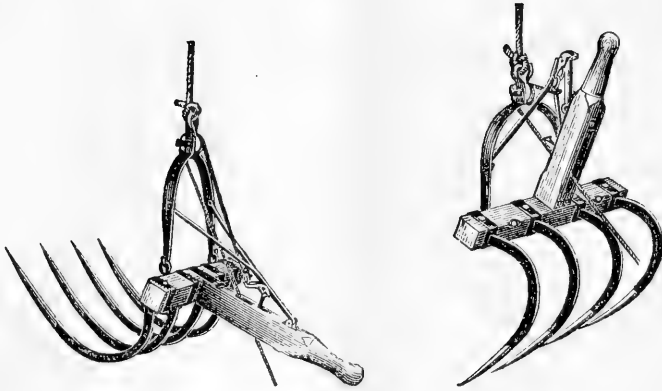


FIG. 70.—PALMER'S HORSE HAY FORK.

This fork has been in practical use for several years, and having been improved in several respects is confidently recommended as one of the best in market. By means of the pulleys furnished with the fork it can be rigged to deposit the hay in any part of the mow by pulling a small cord. It is equally adapted for stacking. The handle being short is out of the way for going over or under beams, through sheds, windows, etc. The bail and brace being made of wrought iron and the tines of steel and sickle shaped, it is very strong and durable and will hold as much as a horse can draw. As the bail folds to the handle when the hay is discharged it occupies less room to work in than any other. The head is protected by patented self-tightening bands through which the tines pass, thus rendering it perfectly safe. Although very strong it is small and compact, and can be used by a boy. It will take off a load of hay in from three to six minutes.

The fork is furnished with pulleys and hooks, but without rope.

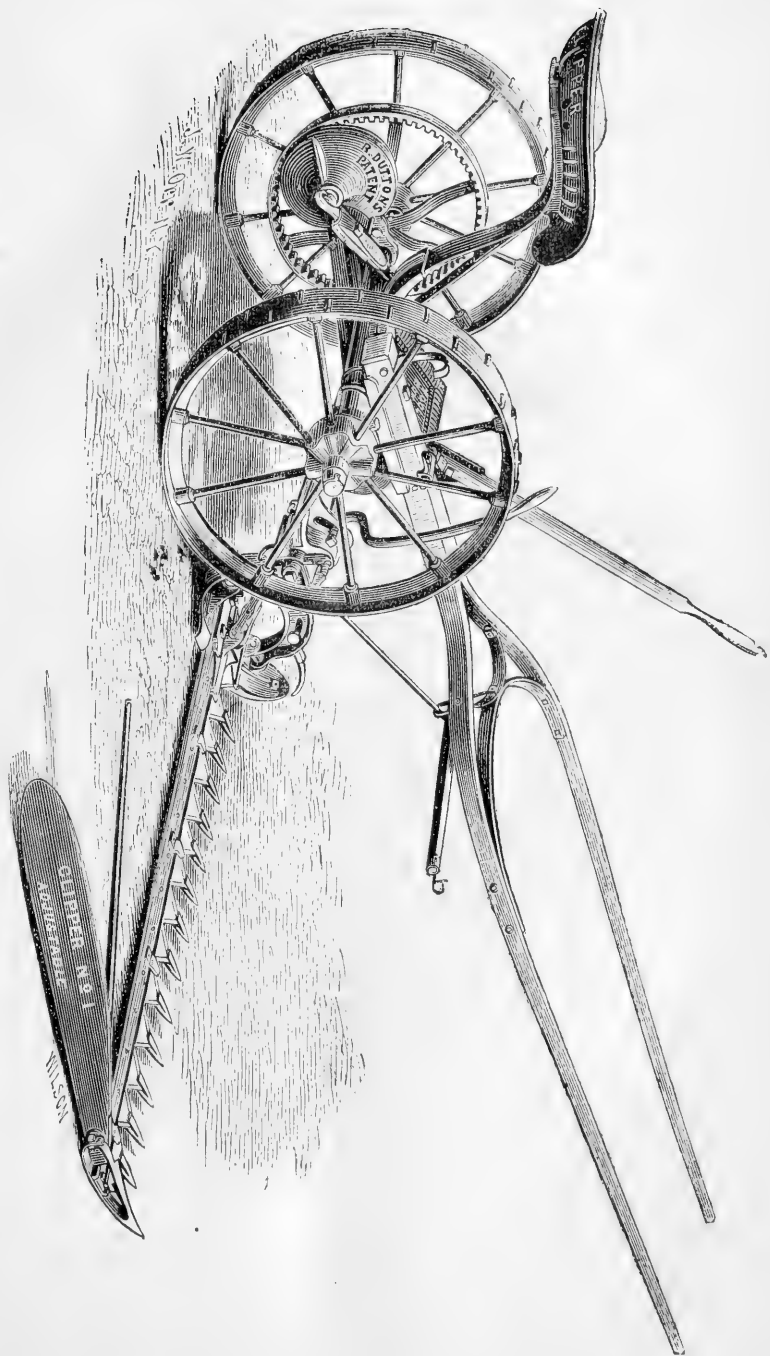


FIG. 71.—PONY, OR ONE-HORSE CLIPPER MOWING MACHINE.

This machine received a Gold Medal, the highest premium, from the New-York State Agricultural Society, at the great trial of Mowing Machines, at Auburn, in July, 1866, in which there were fifty-nine entries.

CLIPPER MOWING AND REAPING MACHINES.

This machine was introduced by us into this market in 1863. Although it at once took the first place among this class of machines, it has since been modified from year to year, as each successive season's experience in the field showed any point susceptible of improvement, and it now ranks among harvesting machines as our modern light steel tools, plows, etc., do in comparison with the old-fashioned and heavy implements of the past generation.

To avoid bulk and secure durability, iron has been substituted for wood; to avoid weight and secure strength, wrought and malleable iron have been largely substituted for cast iron, and steel for wrought iron; and to secure simplicity, the pieces or parts of the machine have been reduced to about one half the number generally used, without sacrificing either its utility, convenience, or durability. The machine is, in fact, so simple, and with so few parts, that but twenty-seven bolts, and these of only two sizes, are required to put it together.

The parts of all machines of the same size are interchangeable. This is a feature which is peculiar to the Clipper machine, and which renders it particularly adapted to shipment abroad, when duplicate pieces must be ordered from a distance, or where, from the high cost of freight, it may be desirable to have machines shipped in parts to be put together upon arrival at their destination.

The frame is entirely of iron, and so made by a combination of parts that if either is injured, only that part need be replaced. The material of which it is made renders it indestructible, except by ill usage, while it can not be warped or injured in any way by exposure to the weather, as is the case with wood frame machines.

The drive-wheels have ten wrought-iron spokes, each bracing the two adjoining ones, instead of six of cast iron, which is the number generally used. The rim is thus supported at ten different points, and the wheels are lighter, and at the same time much stronger, than the ordinary cast iron wheels. Though they are independent of each other, each will drive. Both are in gear while advancing, and out of gear while backing. The inside wheel runs in the track of the shoe and does not press down the cut grass.

The fast running gearing and shafts are entirely cased, thus excluding dust, dirt, and the grass, and preventing any injury to the clothes or person of the driver; and as the journal-boxes are formed within this casing and sleeve, the shafts and gearing can not be thrown out of line by the warping or twisting of the frame. The crank-wheel is also entirely protected from dirt and the grass by a hinged fender.

The casing, together with the perfection of the gearing, and the me-

chanical arrangement of the several parts, renders this machine almost noiseless in its operation.

The whiffle-trees are underneath the pole and attached to the front bar by a short draught-rod. The draught is thus applied as low and as near the finger-bar as possible, so that when it meets an obstruction, the strain is not transmitted through the machine, but is taken off very near the point at which it was received. When the draught is by the pole, and the machine strikes an obstruction, the strain is transmitted through its whole frame-work, and, not infrequently, the shafts and gears are thrown out of line, causing the machine to run hard and stiff without any apparent reason. The draught being applied to the front end of the machine below the pole, the tendency is to lift the shoe and make it pass lightly over the ground. The power required to draw the machine is thus considerably lessened, as the weight, which otherwise would rest on the shoe, is transferred to the wheels. A small wheel, fastened either directly to the shoe or at the front end of the frame, is not infrequently resorted to to accomplish this object, but by adding weight it increases the evil which the diminished friction from the use of the wheel was intended to prevent, and necessitates lifting the inside shoe when turning corners. The method of drawing from the front end of the frame below the pole gives a true centre draught, thus avoiding all weight on the horse's neck and side draught. In the Clipper the bar is drawn instead of being pushed, as is done in other machines, cutting in front, when drawn by the pole. This secures a uniform and very light draught.

By means of a lever convenient to the right hand of the driver, the points of the guards and knives can instantly be raised or lowered while the machine is in motion, thus varying the angle of cut and adapting it to lodged grass or rough, boggy ground. This may be regarded, in connection with our self-adjusting knife-head, as one of the most important and distinctive features of the machine.

The finger-bar is made of cast steel, with the front edge rolled or turned up, thus greatly strengthening it and answering the purpose of a cross-bar in front of the knife-bar.

The guards are of forged cast steel, with tempered cutting faces and points, and of such shape that they will not clog. Although light, they are so strong that they can hardly be broken, even by the roughest usage.

The rolled bar and steel guards of the Clipper are as much in advance of the usual style of flat bar and malleable guards, as the latter are in advance of the old wood bars and cast iron guards.

The shifting-lever is convenient to the left foot of the driver, with which he can instantly throw the machine either in or out of gear, without using his hands.

The lifting-lever is convenient to the driver's right hand. The machine being so nearly balanced, he can easily raise the outer end of the bar two feet, and the inner end eight inches from the ground. The bar can be readily folded without the necessity of the driver leaving his seat.

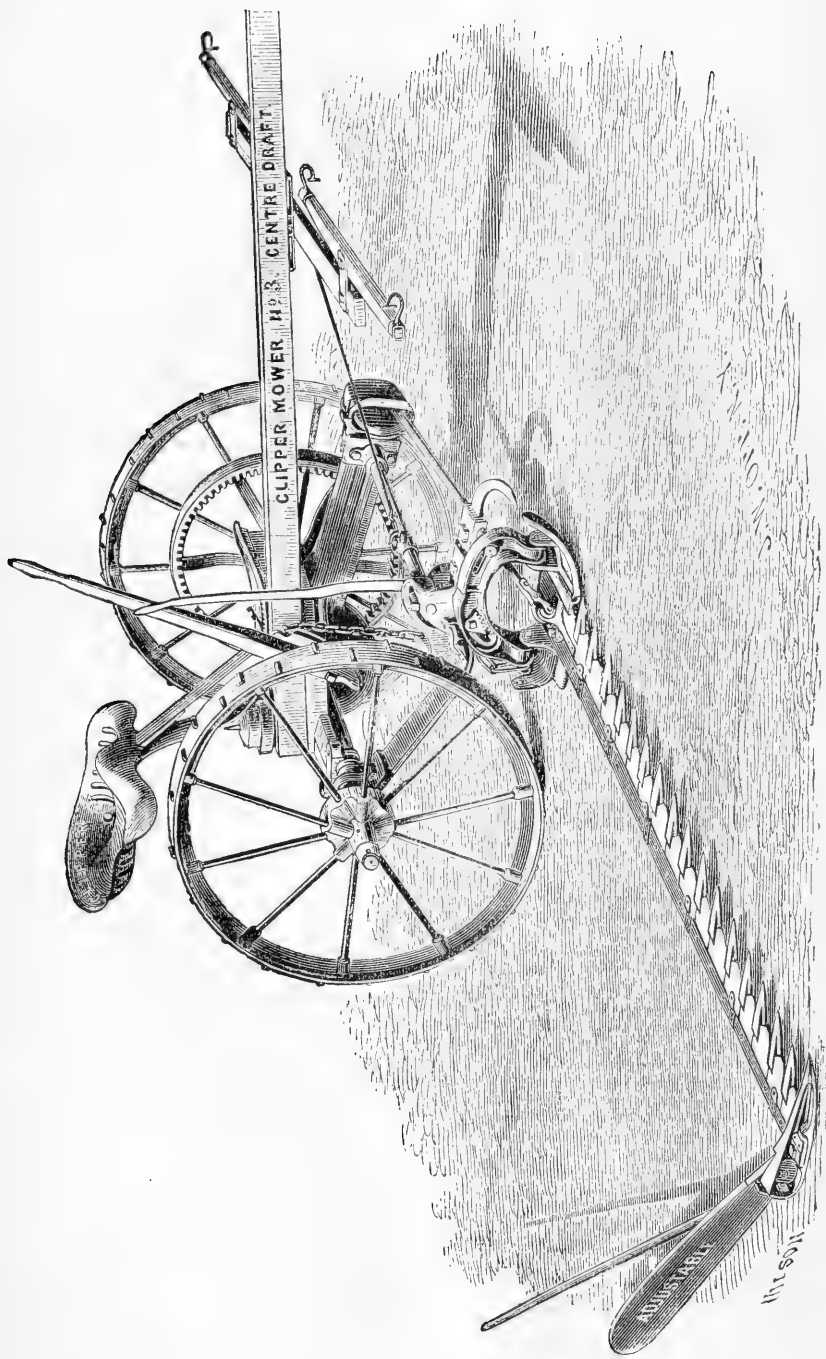


FIG. 71A.—TWO-HORSE CLIPPER MOWING MACHINE

In its general appearance, the absence of the heavy, cumbersome wooden frame, the fine and well-adjusted proportions and tasteful design of the machine, make the Clipper Mower one of the most attractive of all the implements used on a farm; while, from its costly material and workmanship, it is cheaper at its price than any other in market, and can be sold at the list price only because we use the most expensive and elaborate machinery expressly built for its manufacture.

The Clipper is built of four sizes, as follows:

No.	Length of cut.	Diameter of wheel.	Power.	Weight.	Shipping Measurement.
1,	$3\frac{1}{2}$ feet,	30 inches,	.1 horse,	480 lbs.,	From 35
2,	.4 " " "	30 " "	.2 horses, (light,)	.510 " "	.. to
3,	.4 $\frac{1}{4}$ " " "	32 " "	.2 " "	.620 " "	..40 cubic
4,	.4 $\frac{1}{2}$ and 5 ft.,	36 " "	.2 " "	.680 " "	.. feet.

No. 4 can be readily fitted for a Reaping machine, and, when so fitted, weighs nine hundred and fifty pounds and measures seventy cubic feet.

The One-Horse Mower is as light for one horse as the Two-Horse machine is for two horses. It will cut from three quarters of an acre to an acre of grass an hour, and is, in fact, the only practical one-horse machine in market.

SWIFT'S IMPROVED LAWN-MOWING MACHINES.

This machine has become indispensable to all owners of lawns who value a fine, close and evenly cut turf, which is impossible to be secured by the use of lawn scythes, even in the most experienced hands. When properly used, it leaves the grass not only evenly cut, but the heavy roller compacts the sod and the soil below, with manifest advantage to the appearance of the lawn as well as its permanent improvement. As all the sizes are made with compound swivel rollers, and evenly balanced, they can be turned squarely around with ease, and without marking the lawn.

The cut grass is scattered evenly over the surface by the action of the knives, and thus acts as a mulch or shade to the sod, and a great protection from the summer heat; or, if this be considered unnecessary, it can be gathered by the same action of the knives, into the box attached to the front of the machine, and removed as fast as filled.

Where hand machines only are used, the grass should be cut closely and never allowed to grow so as to take off more than one and a half inches at a cutting. The lawn should be smooth and the grass cut as frequently as once a week, which should be done during the early and growing season.

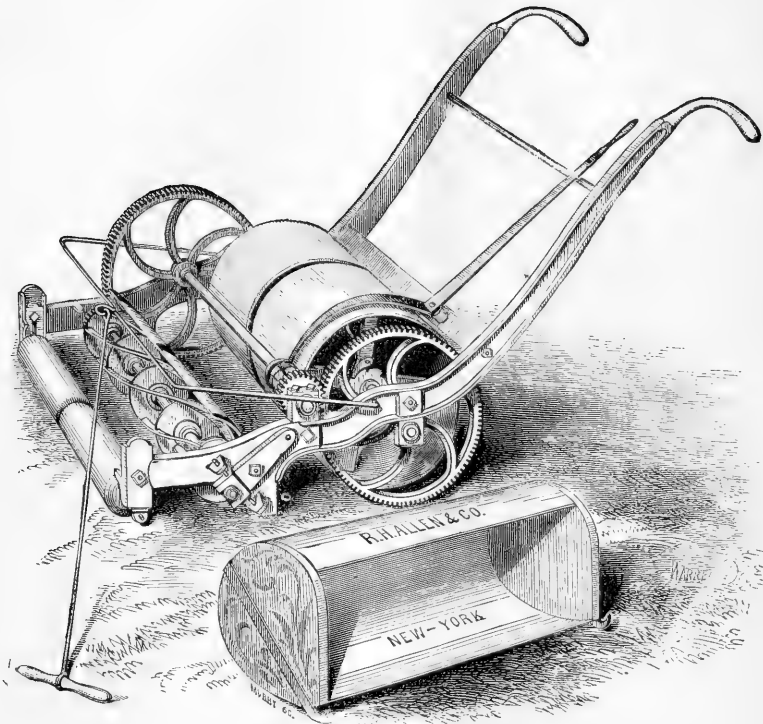


FIG. 72A.—LAWN MOWER, TO BE WORKED BY ONE OR TWO MEN.

[In this cut the grass box is represented separate from the machine, so as to show the rollers and knives.]

All the horse machines are made to discharge the grass behind the machine, and so arranged that the grass box can be emptied by the person guiding it without leaving his position, or being compelled to throw the cut grass on the walks or on the uncut grass.

In wet weather, or early in the season, the horse's shoes are sometimes injurious to the surface of the lawn. This objection is remedied by using the horse boots, and without any inconvenience to the horse.

The following table gives the necessary details of the different sizes:

No.	Power required.	Width of cut.	Weight.
2,	One Man,	16 inches,	210 lbs.
3,	Two Men,	20 "	225 "
5,	Pony,	24 "	320 "
6,	One Horse,	30 "	600 "
8,	" "	36 "	630 "
9,	" "	42 "	700 "

RAKES.

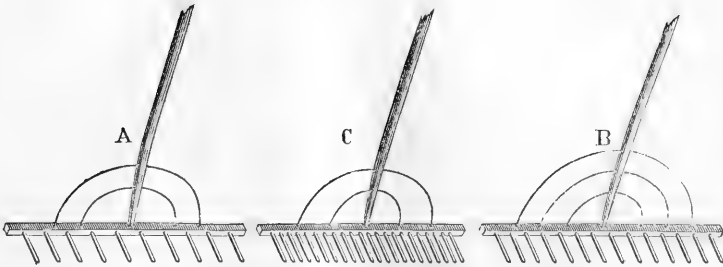


FIG. 73.—HAND HAY RAKES.

These are made of two styles, as shown in the cut, (A and B,) with two and with three supporting bows.

They are generally of white ash and hickory wood, but vary in quality, as shown by the number and position on the rake-head of the makers' brands.

The Double Bowed Rake has ten teeth, and is made of four qualities; without brand, with one brand, with two straight brands, and with two oval brands.

The Three Bowed Rake is made with twelve and with fourteen teeth, and is of two qualities; with two straight brands and with two oval brands.

FIG. 73 (C).—WOOD LAWN RAKE.

This is intended for use on lawns in raking the short, cut grass.

The head is somewhat shorter than the ordinary hay rake, set with twenty-two teeth, which are one inch apart.

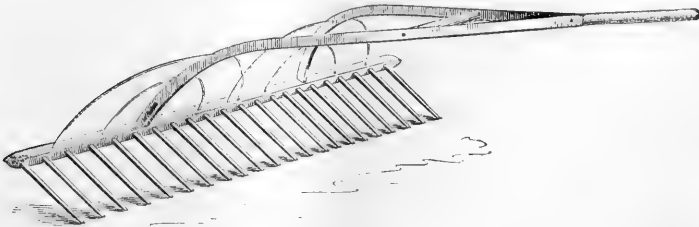


FIG. 74.—BROAD HAND HAY RAKE.

This is designed for use in the hay-field, in raking after the wagon.

There are two sizes, with broad light heads, five and a half and six feet long.

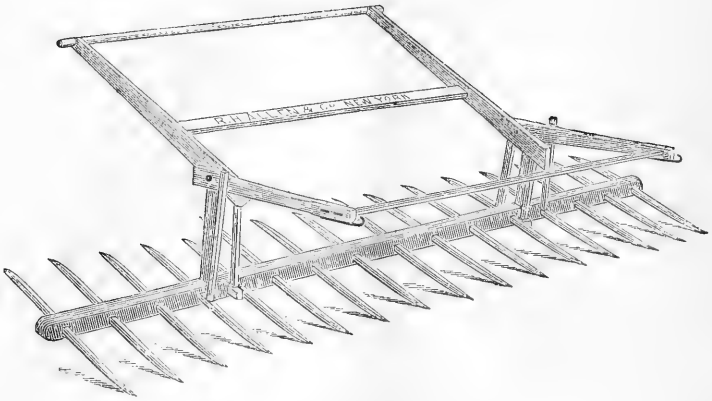


FIG. 75.—REVOLVING HORSE RAKE.

This is the best pattern of the several different rakes now in market.

It is made of the first quality of timber; in the most substantial manner, with square teeth of hickory or ash.

The width of the rake head is nine feet.

For shipment they are packed so that each complete rake occupies a space of eighteen cubic feet, and weighs about seventy-two pounds.

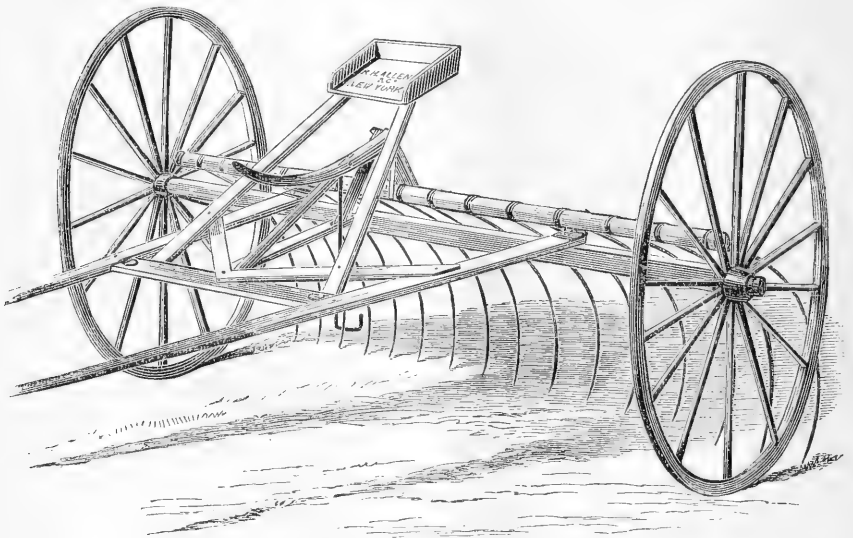


FIG. 76.—WHITCOMB'S HORSE RAKE.

In the department of agricultural implements there is none superior to the above as a labor-saving machine.

It is useful as a gleaner in the grain fields after the cradle or reaping machine, as well as a rake in the hay-field.

It can be worked by a boy, is very easy in draught, not liable to get out of order, and, from the elasticity of the teeth and their position in the rake-head, it works equally well on rough and uneven as on smooth surfaces.

Being on wheels, and with spring teeth easily regulated as to height from the ground, it avoids the usual fault in metallic tooth rakes of tearing the sod and collecting dirt and stones with the hay.

The load is discharged by raising the lever in front of the seat, which is convenient to the driver's hand, and by the same means the teeth are thrown up to clear any unusual obstacle.

It will rake cleanly a width of eight feet, and measures nine feet from the outside of the hubs. The weight is two hundred pounds.

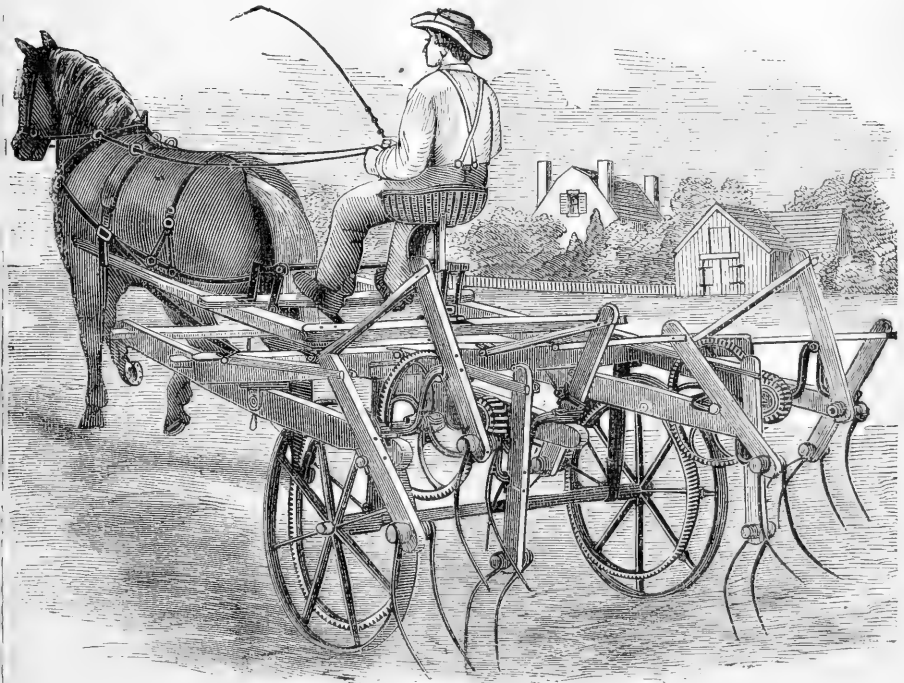


FIG. 77.—BULLARD'S HAY TEDDER.

The Bullard Hay Tedder, patented in 1861, has been in practical use ever since, and by several improvements is now perfectly adapted to the varying conditions of the hay-field.

The forks are worked by gearing attached to the wheels, and when in motion turn the grass, leaving it tossed up lightly and crossed in every

direction in the best condition to be evenly and quickly dried by the circulation of the air. In this mode only can the sugar, starch, etc., which constitute the nutritive properties of the grass, be preserved; and what is almost of as much importance, in this way alone can be retained the sweetness and fragrance of the hay, that makes it most palatable to the animal.

When the grass is wet and matted to the ground after heavy rains, the Tedder will sometimes save its cost in a single crop in shaking out the moisture and leaving it open to air and sunlight.

This machine will thoroughly turn four acres of grass in an hour, thus accomplishing the work of from eight to twelve men, and at a period in the day when time is very precious. It leaves the grass lighter for drying and in better condition for the rake and for storage in the barn, and does the work so quickly that the process of turning can be several times repeated; and the curing by this means is so hastened that the hay can be taken to the barn in the best condition the same day it is cut. It thus brings the entire process of harvesting the hay into one good hay day. Where this can not be accomplished, hay thus treated may be safely left in the cock for the remainder of the process of curing.

Of course this shortening of the process of hay-making enables the farmer to cut his hay when it is nearest ripe for the harvest, and much diminishes the risk of its injury from bad weather.

It can be used on rough ground and in heavy grass, and it never clogs.

We have but one size, which is made with eight forks and fitted either with pole or shafts as required.

The forks spread seven feet in width and the whole machine occupies a ground space of seven feet by five feet.

When packed for shipment it measures seventy cubic feet and weighs five hundred pounds.

THE EMPIRE POTATO HARVESTER.

The adjoining cut accurately represents our new Potato Harvester.

The concave rollers in front closely fit both sides of the row and press down the vines, weeds, grass, etc., and while held in this position the double-mould plow, with a cutting edge, follows closely and cuts them off with most of the surface earth overlying the potatoes, throwing all off on either side.

The plow is followed by a scoop, which runs under the potatoes and brings them, with a portion of earth, within reach of the revolving fingers or prongs. These take up the potatoes and throw them behind the machine on the surface, or deposit them in a box, as may be preferred.

The machine digs much cleaner than is usually done by hand, and as fast as the horses can walk.

It is easily drawn by a pair of light horses or oxen, and is no more liable to get out of order than a plow.

It weighs seven hundred and eighty pounds.

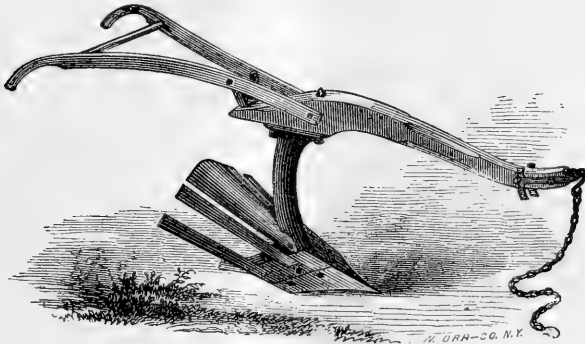


FIG. 79.—ALLEN'S POTATO DIGGER.

This implement weighs one hundred pounds, and is of very light draught. A pair of small horses or oxen, with a boy to drive, will easily dig potatoes as fast as twenty men can pick up. It turns them out so cleanly that scarcely one bushel in fifty, whether small or large, is left uncovered.

The standard is high, so as to allow of its working freely, without clogging from weeds and potato vines, but in harvesting for an early market, when the vines are long and still green, the work will be much facilitated by cutting these and removing them from the rows.

The prongs in this Digger are of wrought iron, and are made of any size or shape to suit different soils. They are attached by bolts to the mould-board, and easily removed if necessary.

A smaller and cheaper form of Potato Digger is made with prongs of iron cast in one piece with the mould-board, but this is liable to break in hard or stony soils, and is then difficult to be repaired. We should advise its use only on very light soils and for small crops.

HORSE POWERS.

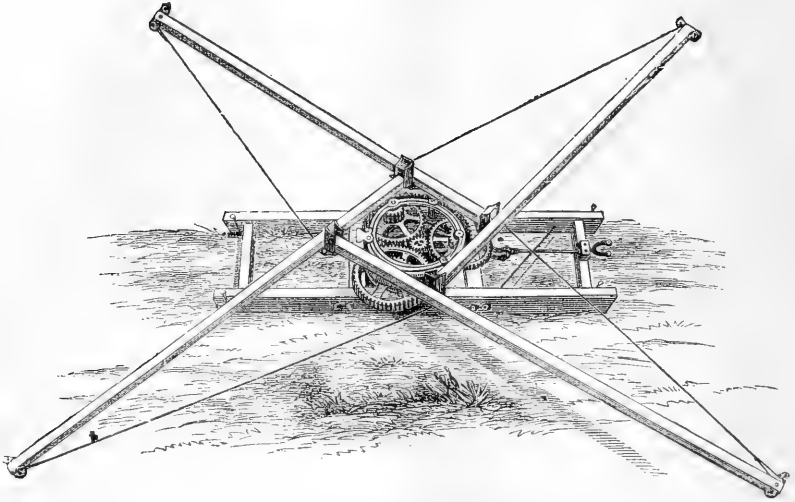


FIG. 86.—LIGHT HORSE POWER.

This power is designed for from one to four horses, for driving cotton-gins, corn-shellers, etc., for pumping, or any other light work.

It is made of iron, in the best manner throughout, with strict regard to mechanical principles, and, being very strongly braced, it is a durable as well as a cheap motive power.

It weighs about three hundred pounds.

ANTI-FRICTION HORSE POWER.

Wherever a strong and durable as well as easy running Lever Power is required for heavy work, we recommend the Anti-Friction Patent, of either the Upper or Lower Gear. They are made at our own manufactory, of the best materials and workmanship, and guaranteed in all respects.

They are adapted for from one to eight horses, and run with so light a draught that a single horse will work them effectively; yet if heavy work is to be done, the Power is strong enough to bear the combined force of eight horses. By the peculiar combination of gearing, great speed is obtained directly upon the Power itself, thus obviating the expense of putting up counter-shafting to get up speed and saving the power required to drive it.

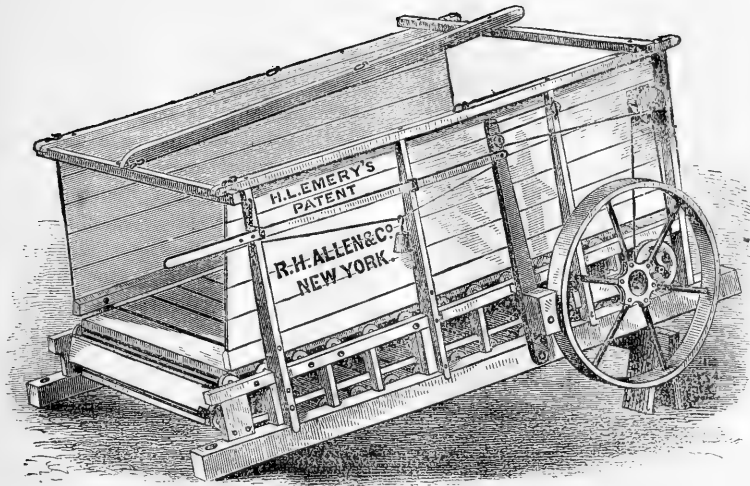


FIG. 89.—PATENT RAILWAY HORSE POWER.

This Power is constructed upon the Reel principle, with adjustable main and counter shafts, and with small traveling shafts, which connect the links of the chains and carry the small traveling wheels. These main and counter shafts are mounted in Babbited bearings, and are adjustable for regulating the running of the endless platform and the tension of the chains. They are fitted with uniform couplings and fastenings upon their ends, outside of and on both sides of the Power, and receive their several gears and pulleys of different diameters, where they are free from the droppings of the animals and easily accessible. By the transposition and changes of these gears and pulleys, all the various degrees of force and motion, which are required of the driving-band wheel, are instantly produced for working the different agricultural machines, and for other purposes, without changing the labor of the animals.

The patent Governor can be attached to all Powers, and being self-operating, no danger need be apprehended from the breaking or running off of the belt.

The Single Power has a platform ten feet long, with a stall two feet four inches wide. It weighs eleven hundred pounds, and measures eighty-three cubic feet.

The Double Power has a platform four feet wide and ten feet long, with a stall four feet and nine inches wide, affording ample room for the largest horses. It weighs nearly seventeen hundred pounds, and measures one hundred and thirty cubic feet.

A Three-Horse Power is also made of corresponding size.

This Power is conveniently constructed for being mounted on wheels, making a perfect wagon, on which may be carried the other machinery to be driven by it, such as Threshing-machines, Cotton-gins, etc., etc.

(For description of TAPLIN'S PORTABLE CIRCULAR HORSE POWER, see page 70.)



FIG. 90.—DOG POWER.

This is intended principally for dairy purposes, but can be made use of wherever a light and portable power is desired.

The principle of construction is materially the same as that of the larger railway powers, with such modifications, diminution of friction, etc., as are needed to fit it to be moved by small animals.

A dog, sheep or goat is sufficient to work it.

The wheels are of iron instead of wood, as in the old styles of Dog Powers, and the lever is adjustable, so that the power may be set in any position with regard to the churn.

The Single Power is three and three quarters feet high, five and three quarters feet long, and two feet wide. It weighs one hundred and ten pounds. The Double Power is of the same length and height, but one foot wider. It weighs one hundred and eighty pounds.

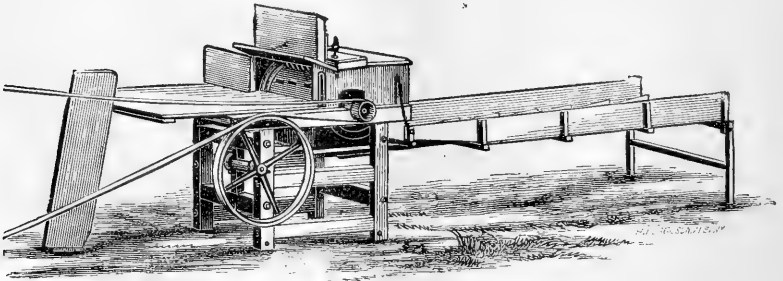


FIG. 91.—PATENT THRESHER AND SEPARATOR.

This is now made of three sizes, adapted to the One, Two, and Three Horse Railway Powers, but it can be used with any other motive power.

The One Horse machine has a cylinder twenty-six inches long, and weighs three hundred and forty pounds. It measures seventy-two cubic feet.

It is worked by two or three hands, and will thresh and separate from the straw seventy-five to one hundred and twenty-five bushels of wheat per day.

The Power, Thresher and Separator together weigh about thirteen hundred pounds.

The Two Horse machine has a cylinder thirty inches long, and weighs three hundred and eighty pounds. It measures ninety cubic feet.

It is worked with three to five hands, and will thresh and separate from the straw two hundred to two hundred and fifty bushels of wheat per day.

With the Power and Separator it weighs nearly twenty-one hundred pounds.

The Three Horse Machine, with a cylinder of thirty-four inches, is of proportionate weight and capacity to the smaller machines, and is generally used in threshing by steam or a heavy lever power, although it can be run by the Two Horse Power.

In threshing oats with these machines the capacity is double that in threshing wheat or rye.

It is of course understood that this Separator leaves the grain free from the straw only, and needing to be passed through a Fanning Mill to separate the dirt, chaff, etc.

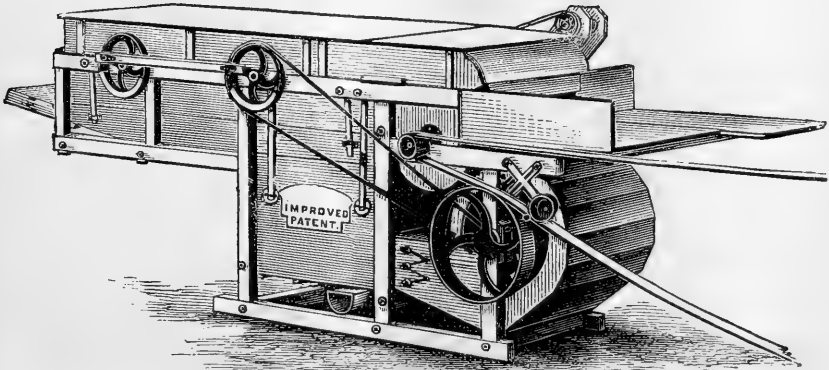


FIG. 92.—PATENT THRESHER AND CLEANER.

This machine combines the Thresher and Separator with the Fanning Mill, and leaves the grain ready for market.

It was invented and first manufactured in 1851, and has since been constantly improved until it is now perfectly adapted to the purpose for which it is intended.

The separating and cleaning portion of the machine is now constructed in two parts, entirely independent of each other, and driven in opposite directions.

This arrangement effects a perfect balance of the reciprocating parts, and the whole machine stands firmly and works steadily, thus requiring less

power and rendering it very durable, as well as particularly adapting it to the wants of all who wish to use it upon a truck or wagon.

The straw is carried from the machine by a revolving rake, which, by alternately raising and shaking it, insures the most perfect separation of the grain. This rake is patented, and is used only on this machine.

The sieves are of sheet iron.

The dust is carried away from the feeder by the blast of air from the threshing cylinder.

The tailings are returned to the feeding table and passed through the machine a second time.

In addition to the main belt only two small bands are required. Cog gearing is entirely discarded.

The No. 2 machine, with twenty-six inches cylinder, will thresh and clean from ten to fifteen bushels per hour.

It weighs one thousand pounds, and measures one hundred and forty cubic feet.

The No. 1 machine, with a cylinder of thirty inches, will thresh and clean from fifteen to twenty bushels per hour, and weighs eleven hundred pounds. It measures one hundred and seventy cubic feet.

Both of the above machines require a Two Horse Power.

The No. 1 extra machine, with cylinder of thirty-four inches length, will thresh and clean from twenty to thirty bushels per hour, but this size demands at least a power of three horses.

It weighs thirteen hundred and seventy pounds, and measures two hundred and sixteen cubic feet.

The capacity, as given above, is for wheat, rye and barley; for oats it is about double.

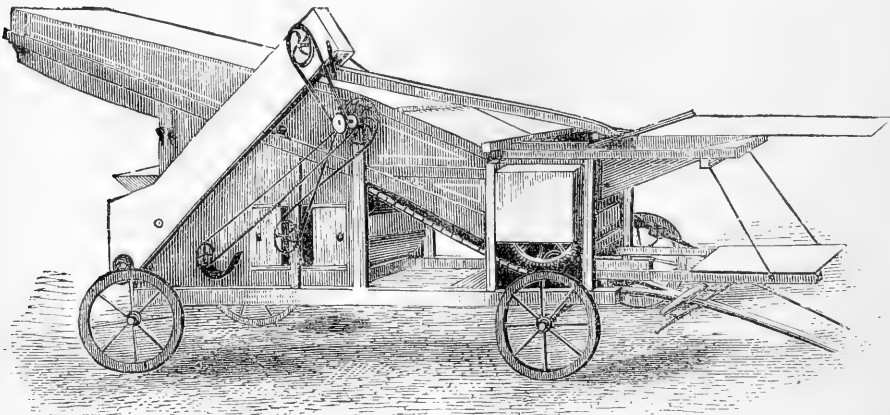


FIG. 93.—PITTS' THRESHING MACHINE, SEPARATOR AND CLEANER.

Wherever a very large quantity of grain is to be threshed the Pitts' patent machine is without question the best.

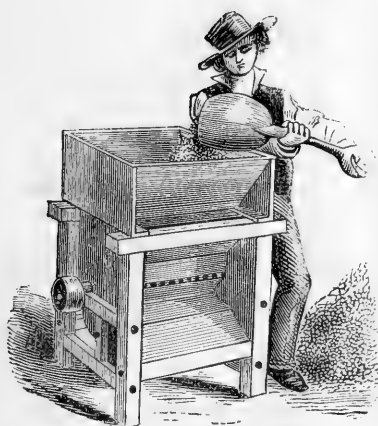


FIG. 96.

CLOVER HULLER.

This is a compact, simple and durable machine, doing its work well without injury to the seed, and hulling from five to fifteen bushels per day, with a power of one horse.

It weighs one hundred and sixty pounds, and measures twenty-three cubic feet.

SMUT MACHINES.

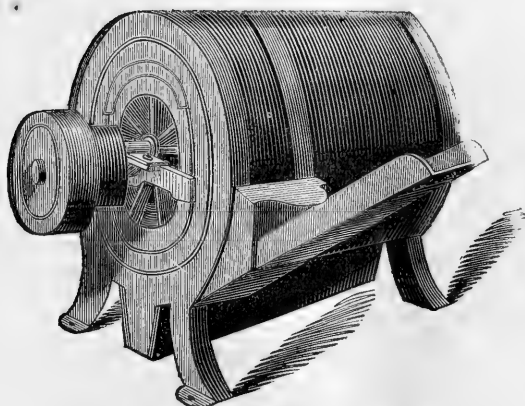


FIG. 97.—PILKINTON'S SMUT MACHINE.

will be found a satisfactory and useful machine. Only one size is made, which measures about twenty-six cubic feet, and weighs four hundred and eighty pounds.

This is one of the earliest of the several machines of this class now in use, and is still a favorite pattern in many portions of this and other countries.

It is simple, compact and, though limited in its capacity in comparison with the more recent inventions,

CORN SHELLERS.

CLINTON CORN SHELLER.

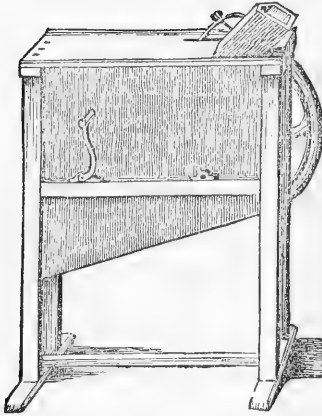


FIG. 99.

This is the ordinary style of Corn Sheller, used for shelling the small and medium sized varieties of Indian corn.

It is made with either one or two balance wheels. The cut shows the single wheel, but by the addition of a second the machine runs much more steadily and with greater ease to the workman.

From ten to fifteen bushels of shelled corn per hour is its usual capacity when operated by one man, with a boy to put in the ears.

In shipping, two are put together and skeleton boxed. In this form, they measure nineteen cubic feet, and weigh two hundred and thirty pounds.

FIG. 105.—IMPROVED CLINTON CORN SHELLER. PAGE 77.

The Clinton Sheller has recently been improved by making the frame in such manner that the legs can be detached and packed inside of it, thus saving largely in the cost of freight in shipment to distant ports.

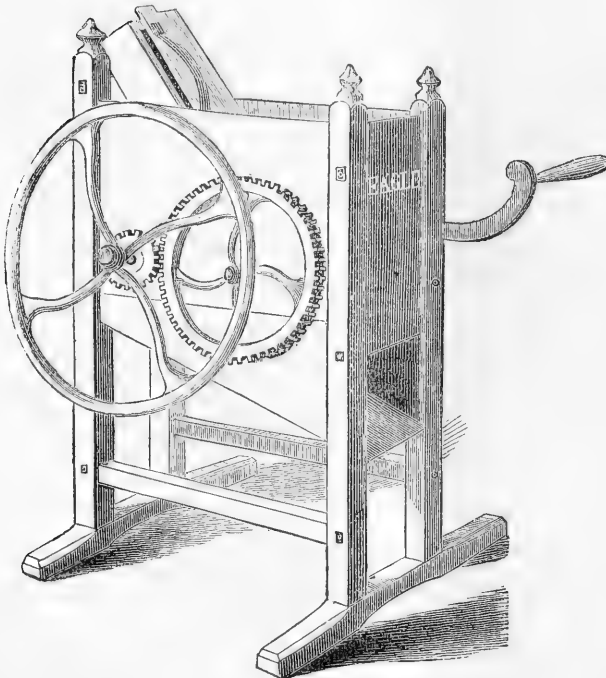


FIG. 100.—EAGLE CORN SHELLER.

This is made in the same style as our Clinton Corn Sheller, but with a heavier frame and irons, and finished in a superior manner.

It is made with a single or double hopper, as may be required; the former is worked by hand and the latter by either hand or horse power. The extra weight and size add much to the durability and ease of operating this over the smaller shellers.

The single hopper Sheller weighs one hundred and thirty-five pounds and measures fourteen cubic feet.

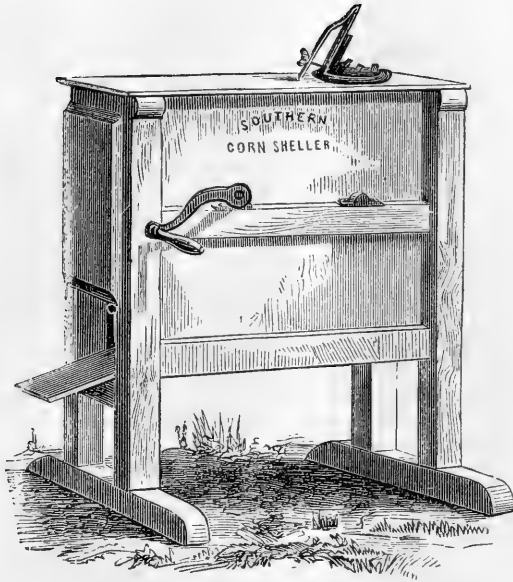


FIG. 101.

SOUTHERN CORN SHELLER.

This is a pattern of Corn Sheller made expressly for the large farms and plantations of the South and West, in which sections the corn is so much larger in the ear than that of the Middle and Eastern States.

The whole is made much heavier than the ordinary shellers, and with a single or double hopper.



FIG. 102.

BURRALL'S CORN SHELLER.

This is made entirely of iron, after the same pattern as the Clinton Sheller in internal arrangement and mode of shelling, but improved upon that pattern in the mode of delivery, the ears and grain being perfectly separated by the action of the machine.

It will shell at least one hundred bushels per day, and for very hot climates, where wood is very liable to decay or shrink, thus rendering an iron frame preferable, we advise the Burrall patent.

It is more convenient too for packing for shipment, as the legs can be removed and the whole tightly boxed to occupy not over four cubic feet.

The weight of the Sheller is one hundred and twenty pounds.

It is equally adapted to the large corn of the West and South, and the small yellow corn of the Northern States.

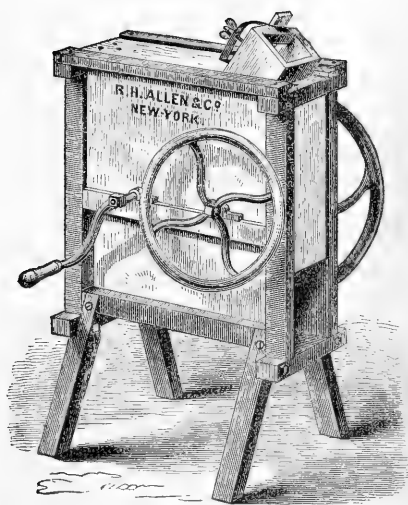


FIG. 105.—IMPROVED CLINTON SHELLER.

This cut shows the improvement recently made in the ordinary Clinton Sheller, Fig. 99.

The frame is so constructed that the legs can be detached and packed inside of it, thus saving largely in the cost of freight in shipment to distant ports.

When thus packed, each Sheller measures five cubic feet, and weighs one hundred and five pounds.

It is made with a single or a double wheel, and in all other respects is the same as the common Sheller.

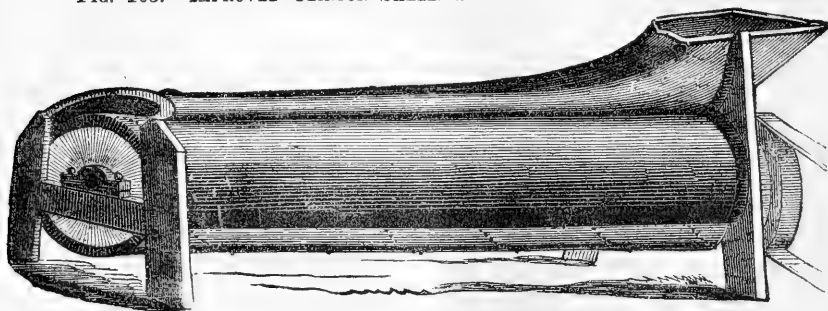


FIG. 106.—SMITH'S CORN SHELLER, No. 2.

The shelling-plate in this machine is a horizontal toothed cylinder, six feet long and one foot two inches in diameter. In working, the ears of corn are confined to the upper and rising side of this cylinder by means of a cast-iron concave, extending the whole length of the machine; and being admitted into it at the hopper, they are driven through, and the cobs discharged at the opposite end, while the grain falls below the cylinder. The operation is governed by elevating or depressing the discharge end, which regulates the speed of the ears in passing through the machine. It is capable of shelling thoroughly one hundred and fifty bushels of ears of corn per hour.

In shipping order, it measures forty cubic feet, and weighs four hundred and sixty-five pounds.

To be worked properly, this Sheller needs a two-horse power.

FAN MILLS.

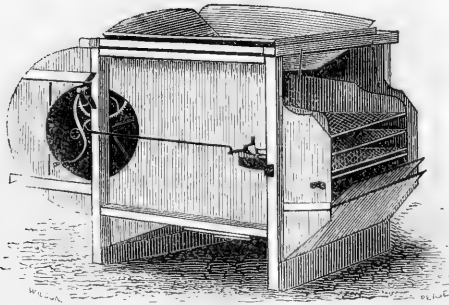


FIG. 107.—GRANT'S PATENT FAN MILL.

There are eight of the latter, by varying which, as to position or number, the mill is adapted to different grains and other substances.

It will clean from thirty to sixty bushels per hour, according to the size of mill and the substance to be cleaned. All the sizes can be worked by hand, but Nos. 5 and 6 have an extra long shaft to which a pulley can be fitted for power.

- It can be taken apart for transportation, and this should always be done in shipment to great distances, as the machine is very bulky. So packed, it measures from thirteen to nineteen cubic feet, and weighs from two hundred and seventy to three hundred and seventy pounds, according to the size.

B. GRANT'S FAN MILL.

This is a smaller and cheaper mill than the one shown in the cut, but like it in general appearance.

It is designed for those having but little grain to clean, and where rapidity of work is not essential.

Six sizes are made, each having four sieves.

COFFEE FAN.

The four larger numbers of the ordinary Fan Mill are, by a peculiar adaptation of the sieves and by divisions in the frame, particularly fitted for cleaning and separating the various sizes of Coffee. They are made somewhat heavier than the ordinary mill, to fit them for their peculiar work.

COCHINEAL FAN.

This is the ordinary Fan Mill, with four sieves, made with especial reference to cleaning Cochineal.

IRON COFFEE, GRAIN AND DRUG MILLS.

The grinding plates of all Mills of Swift's Patent are made with raised points cast on the surface, and working between each other, so that the substance to be ground is cut instead of bruised.

The plates are very durable and are easily replaced when worn.

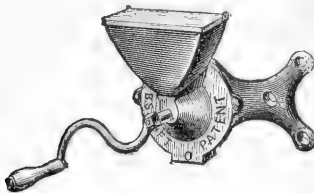


FIG. 108.—No. 0 MILL.

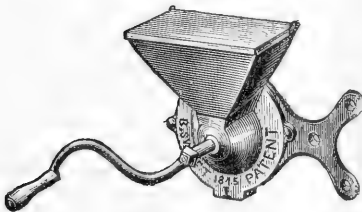


FIG. 109.—No. 1 MILL.

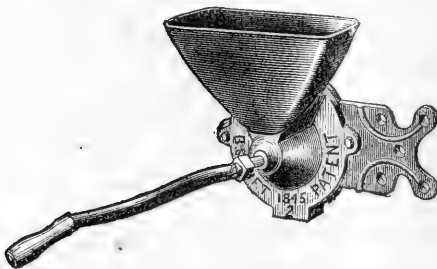


FIG. 110.—No. 2 MILL.

SWIFT'S COFFEE MILLS.

These are particularly constructed for coffee, though they will grind spices and grain.

They will grind from eight to sixteen quarts per hour, according to the size and the speed at which they are run.

These Mills are made entirely of iron, in three sizes, as shown by the cuts, all without frames, and can be attached to a post or board in any part of the house, or placed on a simple frame.

For ordinary kitchen use these are the best Mills in the market.

In shipping, they are packed in boxes of one dozen each, measuring, for No. 0, two cubic feet, and weighing fifty-five pounds; for No. 1, two and a half feet, weighing ninety pounds; and for No. 2, three and two thirds feet, weighing one hundred and fifty pounds.

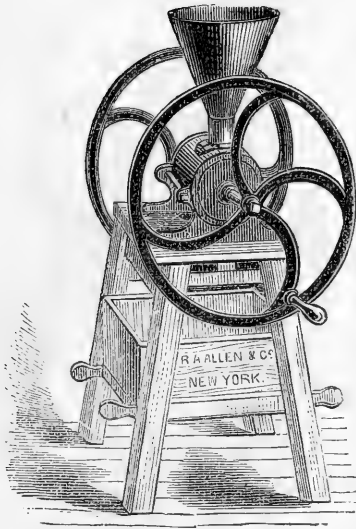


FIG. 113.

three quarters high, but when packed for shipment one foot less. It is about two feet square at the base.

ALLEN'S CAST-IRON CORN MILL.

This is a pattern of our own, recently introduced.

The plates or grinding surfaces of this mill are made of the best cast iron, with superior finish, and will grind more rapidly, are more durable, and less likely to break than those generally used in cheap cast iron mills.

We confidently recommend it as the best cheap mill in use.

It will grind from two to five bushels of grain per hour, according to the fineness of the meal required and the power applied.

The mill weighs one hundred and thirty-five pounds, stands,

with the hopper on, four feet and

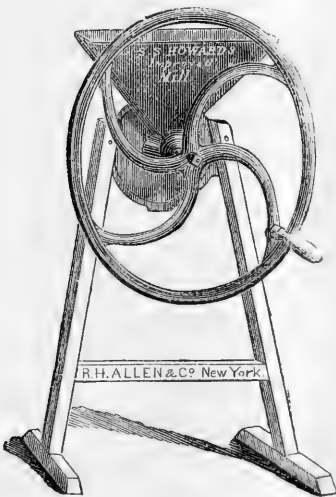


FIG. 114.

The hand-mill shown in Fig. 114 is made of two sizes; No. 1 three and a quarter feet high and No. 2 three and a half feet. The former weighs sixty and the latter seventy pounds.

HOWARD'S MILL.

This mill, which was originally made up under the supervision of Messrs. A. B. Allen & Co. as a cheap hand-mill for grinding corn, coffee or spices, has been, by a modification of the grinding plates, adapted for cracking and grinding various other articles.

It is protected by patents, and though so protected is cheap and furnished at a price at which any farmer can afford to purchase.

The plates are fluted, and can be set to grind any required fineness of meal or other product, and are easily replaced when worn.

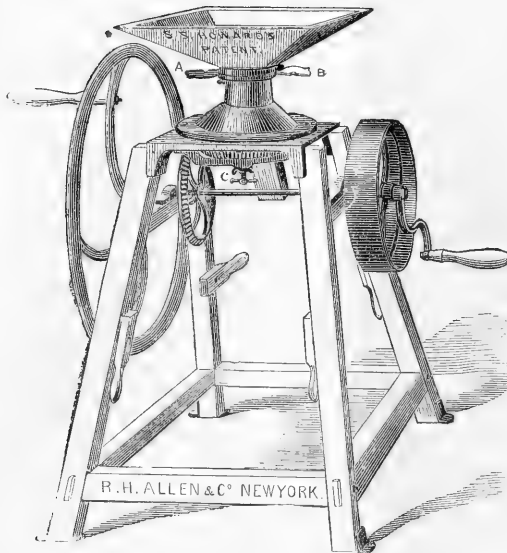


FIG. 115.—HOWARD'S LARGE MILL.

fine or coarse by adjusting the screw with the thumb nut shown at C.

The handles for lifting the mill are so fastened that when not in use they can be swung out of the way, and in transportation are not liable to be broken. A pulley for the application of power is always sent, which can be attached to the shaft by the ordinary set screw. The shaft is always made of sufficient length to allow of this.

This size with the hopper on is about four feet high, without the hopper three and a half feet. It weighs, without the pulley, one hundred and seventy-two pounds. The latter is fourteen pounds additional.

The large Howard Mill, which is intended for hand or for power, is made much heavier and larger, though with the same style of plates.

We have recently adopted for this pattern a new arrangement of slide for limiting the feed, and by these, as shown in the cut at A and B, the quantity of grain passing from the hopper is regulated and the efficiency of the mill and ease of working it greatly increased.

The mill will grind

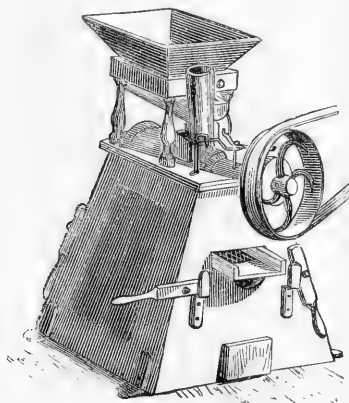


FIG. 116.

IMPROVED IRON FARM MILL.

This mill, a recent improvement upon the Coleman grain mill, is adapted only for power and for grinding meal and feed. As a Farm mill it is unsurpassed, and we recommend it to all who do not wish to incur the expense of the French stone mill.

The grinding surfaces are of chilled iron, so arranged as to be self-sharpening and working constantly for years without repairs.

When the latter are necessary, new plates can be put in at small expense.

BARK AND COB CRUSHERS.

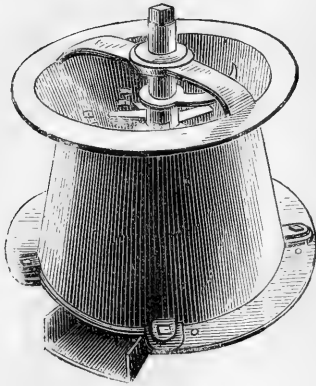


FIG. 122.—BARK MILL.

This is an improved form of the old style of mill for crushing oak and hemlock bark for tanners' use, though it is equally adapted to cracking Indian corn with the cobs for feeding stock. For this latter purpose, however, the Little Giant Mill, as described below, is preferable.

This mill occupies a space of two and a half square feet, measures six cubic feet, and weighs two hundred pounds.

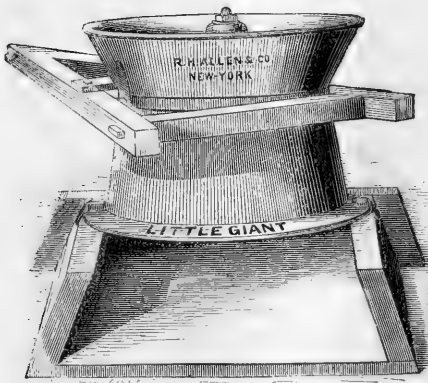


FIG. 123.—LITTLE GIANT CORN AND COB CRUSHER.

This is designed for crushing Indian corn with the cobs, for feeding to stock or previous to passing through a grain mill for grinding into fine provender. It is also used for cracking corn only, suitable for hominy or for feeding to horses and cattle. It will grind from four to eight bushels per hour, leaving the product of a nearly uniform degree of fineness, and this it will do when the corn is damp, or even green, without clogging.

The Mill occupies a ground space of twelve square feet, and measures about thirty-three cubic feet. It weighs two hundred and eighty-five pounds.

The sweep is twelve and a half feet long, and weighs fifty pounds.

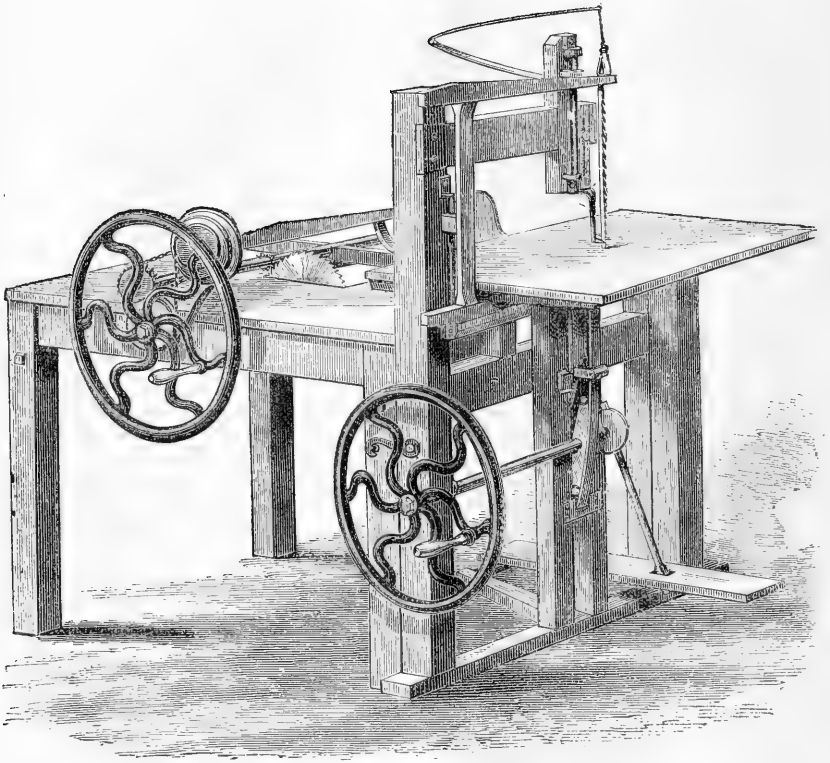


FIG. 140.—HAND-SAWING MACHINE.

This machine is designed for sawing any kind of wood, and will accomplish, with ease, the work of three men, besides doing it more accurately.

It is intended either for a cross-cut or ripping saw, and may be combined with the Jig attachment or used separately.

Any person ordering, should specify whether the combined machine or only one is desired.

It will saw hard wood two inches thick and soft wood three inches thick.

The circular saw usually sent is ten inches in diameter; the whole machine weighs three hundred and fifty pounds, and, when packed for shipment, occupies a space of five feet long by three and a quarter wide, and one foot high.

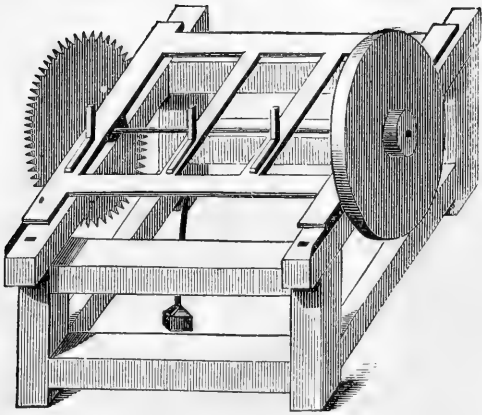


FIG. 141.—WOOD-SAWING MACHINE FOR CUTTING FUEL.

The cut shows a machine in general use for sawing wood for fuel.

The timber, or stick of wood, is placed on the sliding frame on the top of the machine, against the small uprights, and then pushed, with the frame, against the saw.

When cut, the frame with the stick is withdrawn, and ready for renewing the operation.

It is easily driven by a one-horse power, and will saw six cords of wood per day.

This machine occupies a space about four and a quarter feet square, weighs three hundred and twenty pounds, and is three feet high.

It has a pulley six inches in diameter with a four and a half inch face, and a twenty-four inch saw.

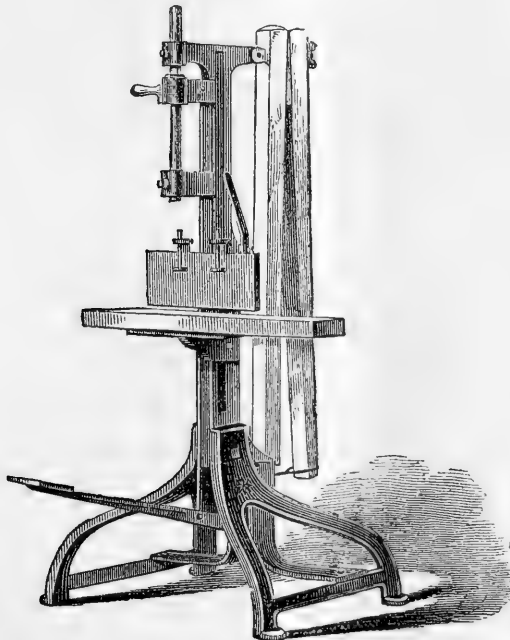


FIG. 142.—PORTABLE FOOT MORTISING MACHINE.

This machine is light and portable, but as it has a substantial iron frame, is quite strong enough to resist the strain of its peculiar work.

It is worked by the pressure of the foot upon the lever, the chisel being drawn back by a frictionless wooden spring, and reversed by hand. Each machine is furnished with a wrench and three chisels, three eighths, four eighths, and five eighths inch wide,

SORGHO MILLS.

THE VICTOR MILL.

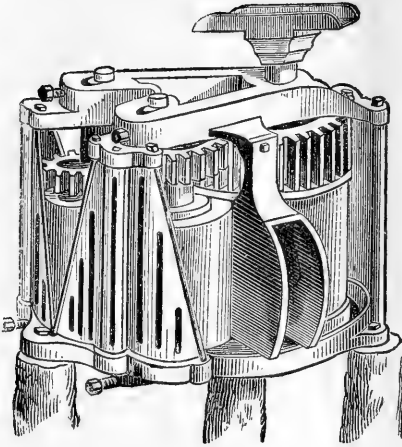


FIG. 153.

This mill combines, with the excellencies of the old style of mill, other features entirely new, making it distinct from all other patterns.

The gearing upon the master roll is made double the width of that on the minor rolls, causing the gearing of the latter to overlap, and thus bringing the faces of the small rolls in direct contact, and dispensing entirely with the guide between the rolls. By this arrangement, together with the heavy projecting flanges, the cane obtains a free and direct passage from the feed to the discharge roll, and

all choking is avoided, as well as the expense of stripping the cane. The gearing being placed between the plates gives the operator easy access to the journals above and below, and enables him to secure their constant and perfect lubrication.

The diagonal braces are of wrought iron, and projecting outwards as stays, give much more strength to the frame of the mill than can be obtained by upright supports.

The boxes of the lower journals are perfectly tight, and as the oil can not escape the perfect oiling of the lower journals is secured. A step in this box, upon which the lower end of the shaft rests lifts the rolls so as to remove all friction between the bottom of the rolls and the plate.

A square eye in the sweep cap, with the top of the driving shaft adjusted to it, enables the operator to remove it at pleasure. This arrangement, and the absence of all keys, enables any one with a wrench to take the mill entirely apart in a few minutes.

An adjustable false plate is supported under the delivering roll, extending out over the flange of the bottom plate, preventing the dry bagasse as it leaves the rolls from dipping into and re-absorbing the juice.

Cleaning scrapers are attached to the stay-braces on the discharge side of the mill, and being held to the faces of the rolls by springs, serve as wipers or mops to cleanse the rolls. By this arrangement the fragments

of cane are thrown off on the discharge side, and the working portion of the rolls always kept clean.

A circular trough in the bottom plate carries off the juice directly from the rolls, and thus prevents the filling up and overflowing of the bottom plate.

There are six sizes, needing from one to four horse power to drive them.

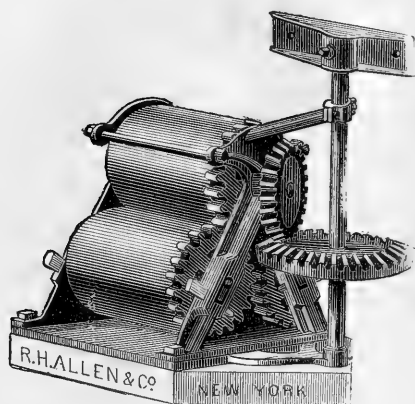


FIG. 154.

HORIZONTAL SORGHO MILL.

As many persons prefer a Horizontal Mill for grinding the Chinese sugar-cane, we include in our list the adjoining pattern, which we consider the best of the several kinds now in the market.

It is light and cheap, but very strong, and these advantages, as well as the greater convenience of feeding, render it popular in many sections of the United States.

It will be found useful also

in the South and all sugar-raising countries where only a limited quantity of cane is ground.

The Mill is made of three sizes with wood or iron frames.

The cut shows the medium size, with the rollers eleven inches long and ten inches in diameter.

The entire weight of this size is six hundred pounds.



FIG. 157.—COOK'S PORTABLE SUGAR EVAPORATOR.

COOK'S PORTABLE SUGAR EVAPORATOR.

This is very simple yet scientific in its construction. It consists of an evaporating pan of galvanized iron or copper, with wooden sides, so divided by ledges as to form a continuous transverse channel over a furnace of heavy cast and sheet iron lined with brick; the whole mounted on rockers of angle iron.

The thorough and rapid defecation of the juice of the Sorgho and common sugar canes, so necessary to the production of crystallizable syrup, can only be attained by the exposure of a shallow body of juice, through different degrees, up to intense heat. This is accomplished successfully by the Cook's Evaporator, and by no other, by moving the juice gently back and forth, securing thereby rapid and thorough defecation without danger of burning. The continued flowing of the juice keeps that in the first few channels comparatively cool, while it gradually becomes more intensely heated as it nears the finishing channels. This beautifully philosophical device does away with the necessity of a chain of kettles or pans, and makes the Cook's a complete evaporator.

STATIONARY PANS.—For those preferring stationary pans, on account of their cheapness, to the portable evaporator, we have adapted the Cook evaporating pan to the brick arch, by means of one or more high ledges and gates, the flow of juice being regulated by the opening or closing of the latter, thus dispensing with rockers.

PLANTATION PANS.—The large sizes of our stationary pans are called, by way of distinction, plantation pans. They are designed for working up large quantities of cane, and are not only greatly superior in other respects but are far more economical than steam pans. The cost of machinery and expenses of running steam evaporators, are four times as great as those of our fire evaporators of the same capacity. The plantation pan is much more easily worked than the smaller pans, the finishing channels being thrown so far from the fire as to render it easy to reduce the juice to very thick syrup and with little labor in skimming.

STEAM PANS.—This consists in the Cook evaporating pan being adapted to steam by means of a steam chamber attached to the bottom. Coils are entirely discarded so that the heat is applied as in ordinary evaporators.



FIG. 158.—MOTT'S PATENT FARMER'S BOILER.

The above cut represents our new and improved style of Combined Furnace and Cauldron; or Farmer's Boiler, with longer and wider fire-boxes than the old style, and the sides of the furnace corrugated so as to give additional strength and to better resist the action of the heat. They are made to answer the same purpose as kettles set in brick, and are much more convenient and economical, besides being cheaper. They are portable and operate perfectly well out of doors, requiring merely a joint of stove-pipe to give the necessary draft.

We make eight sizes, of ten, fifteen, twenty-two, thirty, forty-five, sixty, ninety, and one hundred and twenty gallons capacity, with or without furnaces as may be ordered.

They range in weight from one hundred and five to seven hundred and twenty-five pounds.

When coal is to be burned fixtures can be inserted at a small additional expense, but if not specified the furnace will be sent arranged for burning wood only.

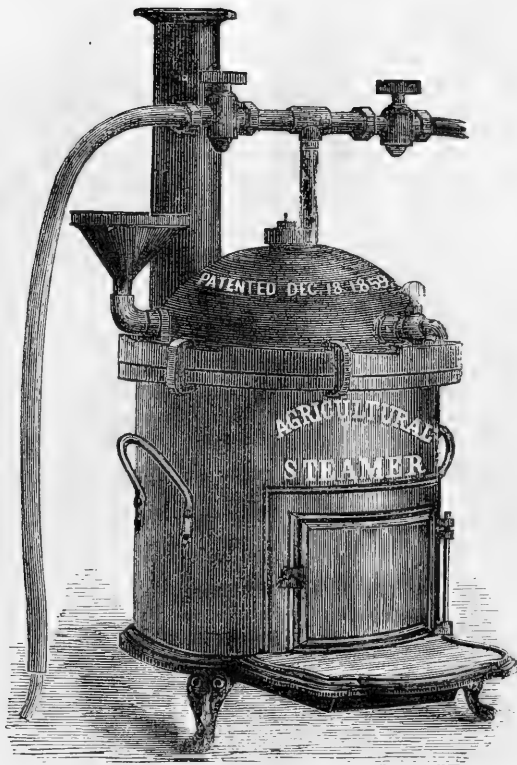


FIG. 159.—VEGETABLE CAULDRON AND STEAMER.

This is a new and patented apparatus for cooking food by steam, though useful on the farm and elsewhere for many other purposes. It is made in two sections, the lower one being the Cauldron, and the upper one the Steam Attachment. Both sections are designed to be used separately from, or conjointly with the stove, or on an arch, as may be preferred.

For all indoor work, this Steamer will be found very valuable, as it is perfectly secured from all danger of communicating fire, and, by an improved combined vacuum and pressure safety-valve, from danger of explosion.

The furnace is of wrought and cast iron. The cylinder, or stove, is of heavy boiler iron, light yet strong, and the base, jambs, flues, coal fixtures, etc., of cast iron, which are easily removed and cheaply replaced when worn out.

Four sizes are made, to hold one, two, two and a half, and three and one quarter barreis, and all are sold with fixtures complete for wood.

SAUSAGE CUTTERS AND STUFFERS:

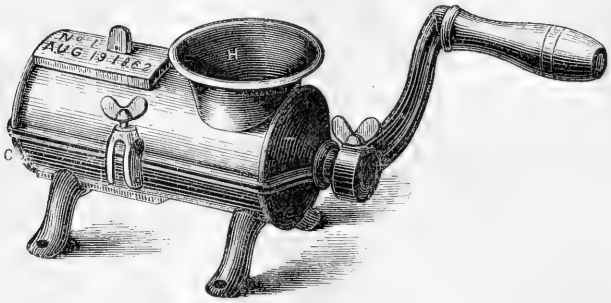


FIG. 162.—MEAT CUTTER, NO. 1.

This cuts the meat evenly and rapidly, and the knives are so secured that they can hardly be broken, even by the introduction of any foreign substance.

The Hand machines are made of three sizes, either with or without the iron stands.

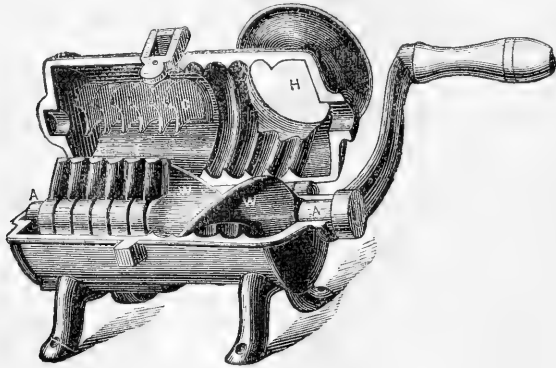


FIG. 162A.—MEAT CUTTER OPEN.

In shipping, they are packed in boxes of a half dozen machines, measuring, for the Plain Cutters, from one to two cubic feet each box, and weighing from thirty-five to eighty pounds. For the machines with stands, the measurement is about double that of the Plain machines, and the weight is from fifty-five to one hundred and twenty pounds for each box.

Larger and heavier machines are also made of increased capacity to be

worked by hand and power, or by power only. All, however, are on the same principle.

Of the small machines, No. 1 will cut from twenty-five to fifty pounds per hour; No. 2, fifty to eighty pounds; and No. 3, seventy-five to one hundred and fifty pounds.

The large Cutters, of which we have five sizes, will cut from one hundred and fifty to fifteen hundred pounds per hour.

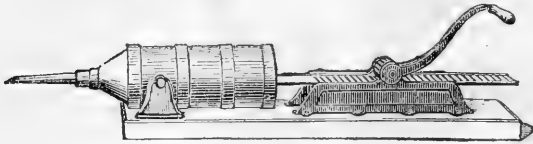


FIG. 163.—SAUSAGE STUFFER.

Of this pattern we have six sizes, of which No. 0, the smaller, is made with but one tube; Nos. 1, 2, and 3, with two

tubes. Nos. 4 and 5 are geared, the former having one and the latter having two tubes.

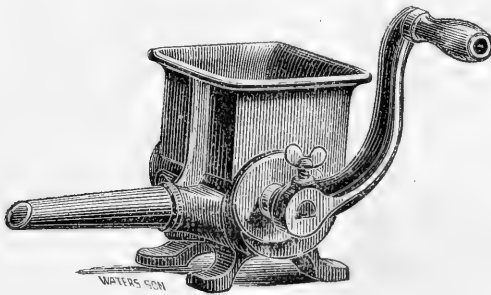


FIG. 163A.—FAMILY SAUSAGE STUFFER.

This Sausage Stuffer differs very essentially in its mode of operating from any Stuffer yet brought before the public, and has several decided and very valuable improvements over any of the old-style machines.

The top is made open, so that the machine can be filled without stopping. It is strong, compact, and durable, and made very simple in its parts, so that it is not liable to get out of order.

The Family machine is made with a hopper three inches in diameter.

The larger machines of six, eight, and ten inches diameter, are intended for Butchers' use.

HAY, STRAW AND STALK CUTTERS.

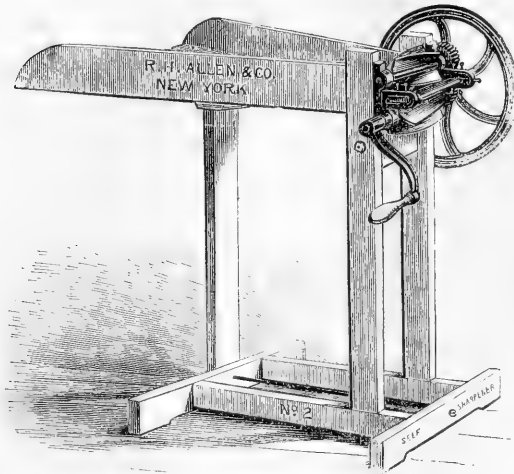


FIG. 165.—SELF-SHARPENING HAY CUTTER.

The knife is stationary, and can be ground in the machine by the application of oil and emery and reversing the motion of the cylinders.

This cutter is, like the Hide Roller, made of a great variety of sizes, the larger of which are worked by power.

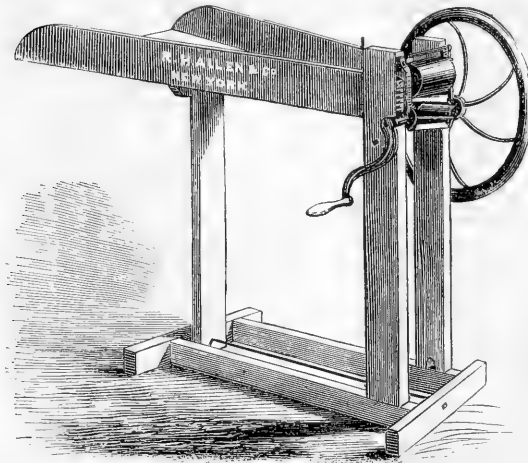


FIG. 166.—HIDE ROLLER CUTTER WITH STRAIGHT KNIVES.

This is a patented article, made with a frame like the Hide Roller Cutter, but with a single straight knife which cuts against revolving flanged cylinders.

These flanges vary in the different sizes with the desired length of cut, the latter ranging from three eighths of an inch to two inches.

Fig. 166 represents the Hide Roller Cutter with Straight Knives, and Fig. 167 the same with Spiral Knives. Both are made in a great variety of sizes chiefly for hand, the few larger being fitted with pulley for horse power when desired.

This style of Cutter is in general use, and needs no description. Our price-list

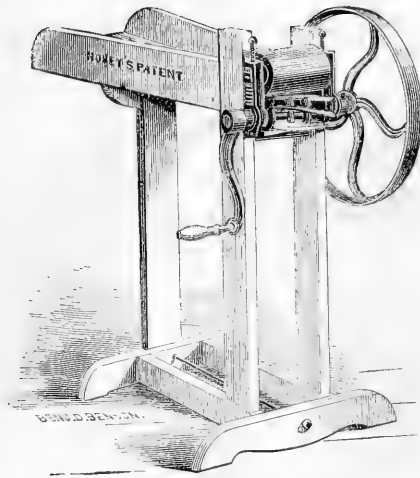


FIG. 167.—HIDE ROLLER CUTTER WITH SPIRAL KNIVES.

gives details as to the length of knives and cut, and where but a small number of animals are to be provided for the Hide Roller is the best on our list. Any part can, when worn out, be replaced with ease at small cost, and the entire machine taken apart and boxed for transportation and readily set up again.

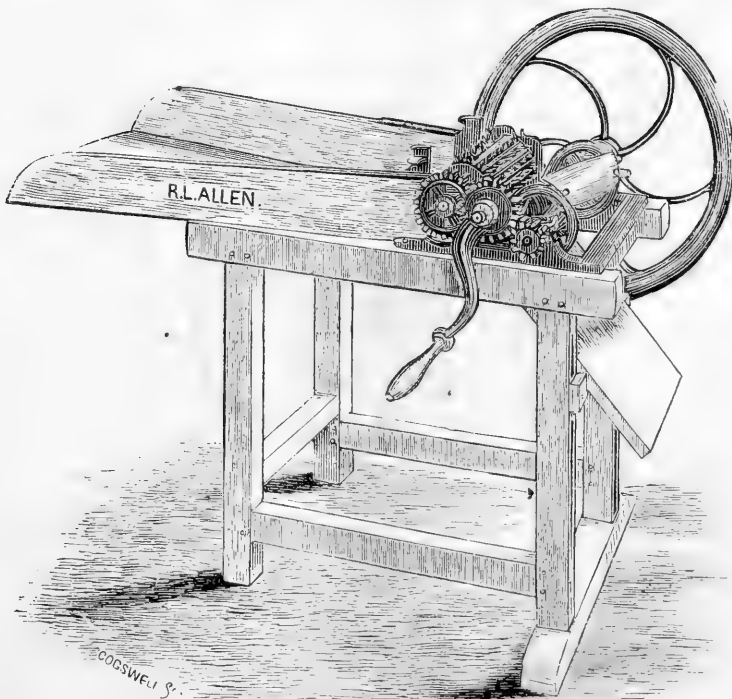


FIG. 168.—CYLINDER HAY AND STALK CUTTER.

In capacity and price this ranks on our list between the Daniels and

medium sizes of the Hide roller cutter. It has long been favorably known to the farmers and dealers of the United States and in Spanish America. We have but one size, cutting a length of about one and a quarter inch.

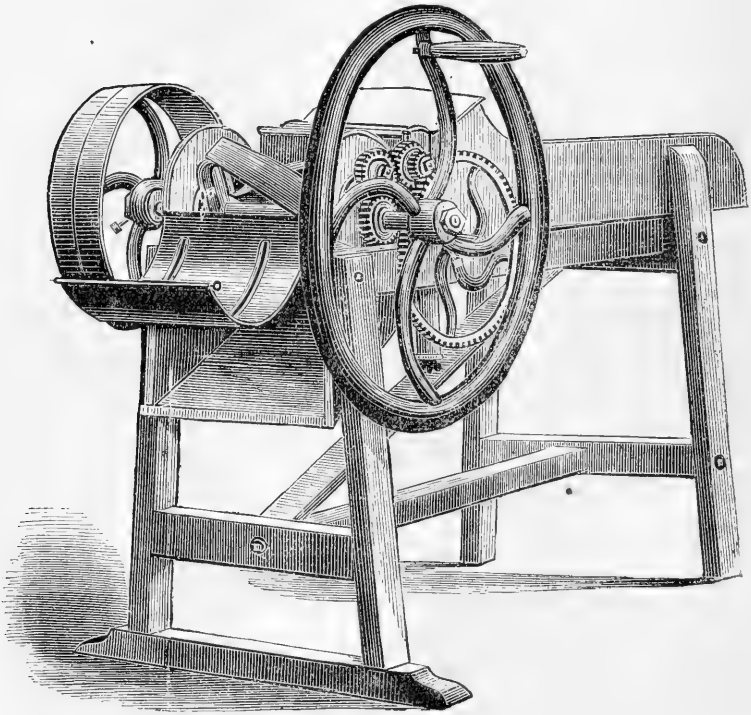


FIG. 169.—EUREKA STALK CUTTER.

One of the best large stalk cutters on our list.

It has four double-edged knives beveled and ground on the inside. The outer side is the section of a cylinder whose surface in revolving always touches the same straight line. In case of breaking or uneven grinding, therefore, the edge is not removed from the cutter bar.

The knives are reversible, and when worn out on one edge can be turned and used as a new set of knives.

Patented springs are used in connection with the cast-iron feeding rollers, which will give any required amount of crushing power, and break up the fibre of the stalks before they reach the knives, thus lessening the resistance to the latter and leaving the fodder in better condition for the animals.

The cutter is protected from injury in over-feeding by means of finger gearing, which is thrown out of gear when fed too fast.

We have four sizes; Nos. 0 and 1 are made for hand power only; No. 2

for hand or horse power as may be desired; while No. 3 is made more especially for horse power, but can be used by hand when necessary.

No. 0 is three feet in height, three and a half feet long, and weighs eighty pounds. No. 1 is three and a half feet high, five feet long, and weighs two hundred pounds. No. 2 is a little larger in measurement than No. 1, weighing two hundred and fifty pounds. No. 3, the largest size, is of the same height as No. 2, with a length of six feet and weight of nearly four hundred pounds.

In this last machine the length of cut can be varied from one quarter to three quarters of an inch. In the other sizes it is about half an inch.

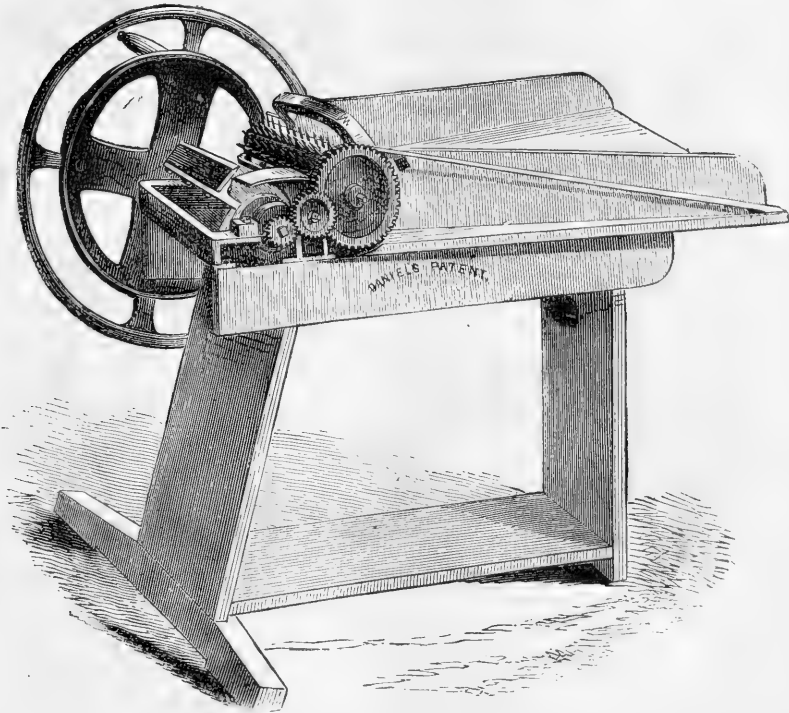


FIG. 170 —DANIELS' PATENT SELF-SHARPENING FODDER CUTTER.

The above cut represents our No. 1 machine.

We have two sizes of these Cutters, and wherever a strong, reliable and easy cutting machine is desired, capable of doing a larger amount of work than any other machine of its size, they will give entire satisfaction.

The No. 1 Cutter, with a ten-inch blade, is designed for hand power, but may be used with horse power. It is arranged, by a change of gears, to cut either one inch or half an inch in length, as may be desired.

The No. 2 Cutter, with a sixteen-inch blade, is designed for horse power.

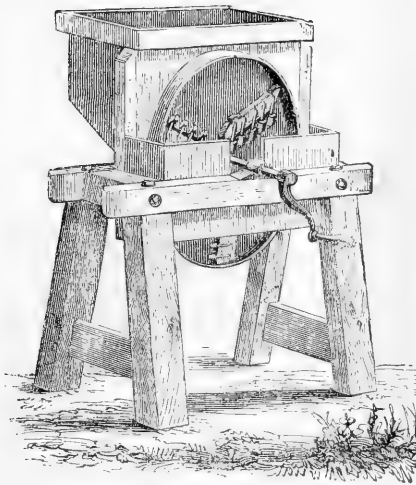


FIG. 172.

high, and measures seventeen cubic feet when packed; it weighs one hundred and fifty pounds.

Only one size is made, which is worked by hand.

N. M. & Co. ROOT CUTTER.

The cutting-wheel of this implement is made of cast iron, faced on one side, through which are inserted three knives like plane irons. These cut the vegetables in thin slices with great rapidity, and, by cross-knives, into slips of convenient form and size for cattle or sheep to eat without danger of choking. The pieces, after cutting, lie loosely, and can easily be taken up by the animal.

The machine will cut fifty bushels per hour.

It stands about four feet

WELLINGTON'S ROOT CUTTER.

This is a new patent, with semi-circular steel knives arranged on the surface of a cone, as shown in the cut.

Two sizes of machines are made: No. 1, which is intended for hand use only, has a hopper containing one bushel, which it will cut in about one minute. The frame is three feet in height, and the whole machine weighs one hundred and fifteen pounds. It measures eight cubic feet when packed for shipment.

No. 2, which can be driven by hand but is intended for a light one-horse power, has a hopper holding four bushels of roots.

When properly worked it will cut this quantity in about one minute.

It weighs three hundred and seventy-five pounds and measures twenty-three cubic feet when packed for shipment.

The frame is a little higher than that of the hand machine.

Both sizes are made entirely of iron, with balance-wheels to secure steadiness of motion, and with the gearing fully protected from the roots or dirt.

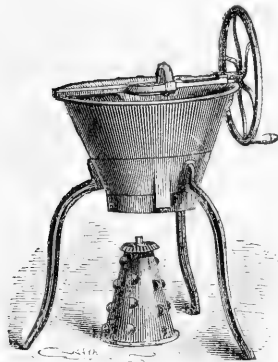


FIG. 173.

APPLE-PARERS AND COFFEE-ROASTERS.

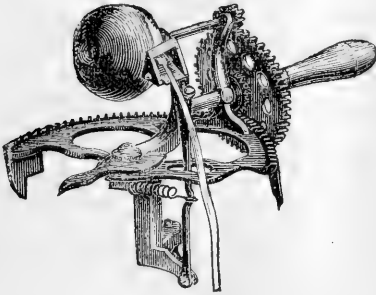


FIG. 174.—LIGHTNING APPLE-PARER.

This machine does its work rapidly and perfectly, and is very simple as well as durable.

It is worked by pushing the crank around the table, and not by turning it.

It is packed for shipment in boxes of a dozen each, which measure one cubic foot and weigh about thirty pounds.

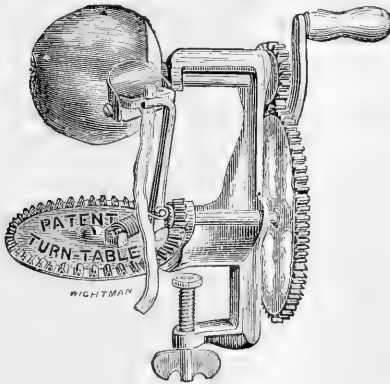


FIG. 175.—TURN-TABLE APPLE-PARER.

This is a well-known and very popular style of Parer. By means of a spring, the knife is kept closely to the most uneven surface, and pares cleanly and quickly.

At the end of each revolution, the knife is in its first position, ready for use again.

It is of about the same size and weight as the one described above.

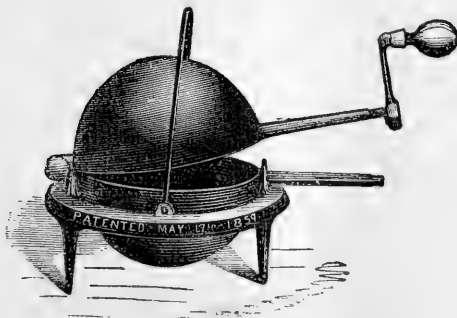


FIG. 176.—GLOBE COFFEE-ROASTER.

This is a hollow cylinder of cast-iron turned by a crank. It can be placed over any ordinary range or stove, and entirely confines the aroma of the roasting berry, thus greatly improving the quality.

There are two sizes, made of seven and of nine inches diameter.

In shipping, six machines are placed in a box

measuring one and two cubic feet, and weighing seventy and ninety pounds, according to the size of the machine.

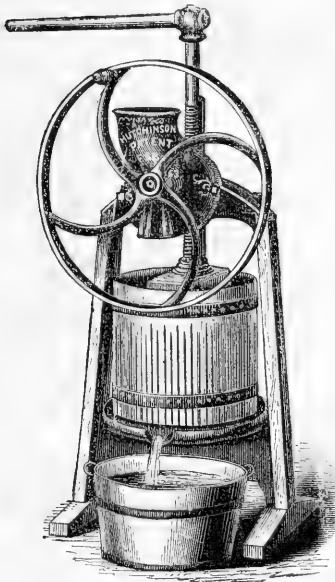
PORTABLE WINE AND CIDER MILLS AND PRESSES.

These enable the owner to produce sweet cider and wine at any time, and thus save all the apples, grapes, and other perishable fruits that would otherwise be lost. The product will be clean, clear, and pure, and when made from sound apples will remain sweet for a long time.

In the mode of grinding they are superior to all other mills in use, first crushing the fruit, then grinding it into a very fine pomace without breaking the seeds, and discharging directly into the press beneath, or into a tub or vat, to be pressed afterward. The teeth of the grinders are now so arranged that no apples, however large and soft, can clog or stick in them, and the grinding is much faster than in former mills.

The screws are made of the very best wrought iron, with fine threads and nuts cut through solid metal, which render them very powerful and durable.

The pressing is a very simple and easy process.



HUTCHINSON'S CIDER AND WINE
MILL

Will grind from six to eight bushels of apples, and from ten to twelve bushels of grapes, currants, etc., per hour. It is now made with wooden slats, held together by strong iron bolts. It is very neat, compact, and simple, easily handled by one man, and answers an excellent purpose for a family having a few barrels of cider or wine to make, as also for grocers, fruit-dealers, etc. One man can make with it from two to three barrels of cider, or from one hundred to one hundred and fifty gallons of wine per day, while it is always ready to make a pitcher or pail of cider in a few minutes.

FIG. 177.

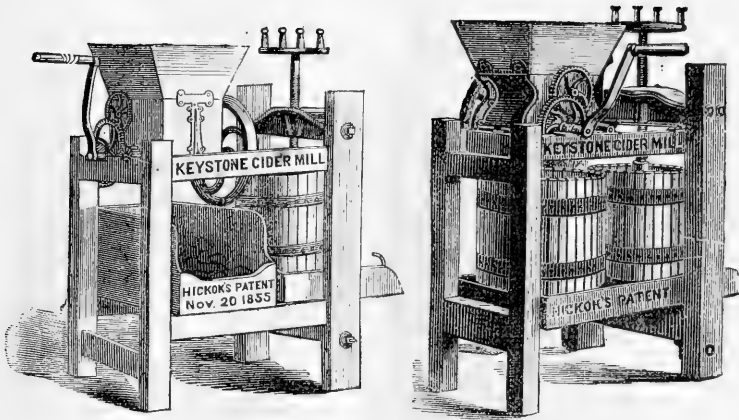


FIG. 178.—KEYSTONE CIDER MILL

Is made in two different styles; the old style with one tub, the new with two tubs and without the pomace box.

Each style of mill occupies about two and a half feet by four feet, is four and a half feet high, weighs four hundred pounds, and is in every way portable and convenient. It is worked by horse, steam or hand power, and when properly managed is capable of making six to twelve barrels of cider a day.

The press has an iron beam and a two-inch wrought (not cast) iron screw, with a heavy $\frac{1}{2}$ V thread. A boy can work it with ease.

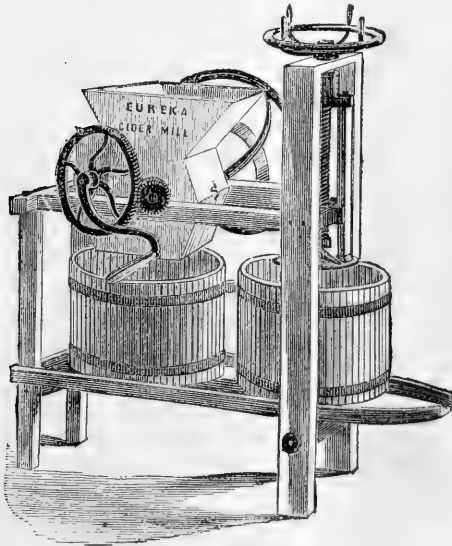


FIG. 179.

EUREKA MILL

In external appearance and arrangement is like the two-tub Hickok, though somewhat larger. The grinding apparatus is new, and its peculiar principle renders it easy to commence grinding with a full hopper, and to crush any size of apples with equal facility. The crushers are adjusted to grind fine or coarse, so that when crushing grapes they will not break the seeds.

It weighs three hundred and fifty pounds, and can be worked by hand or power.

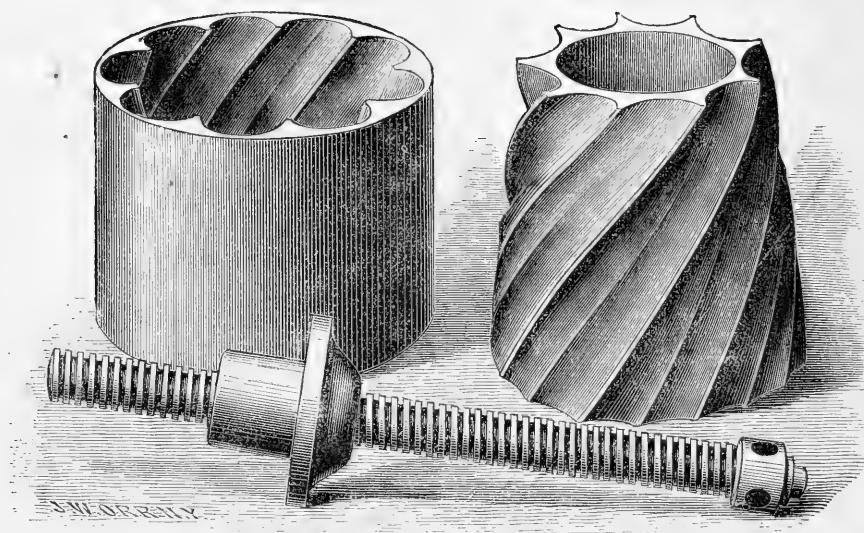


FIG. 180.—CAST-IRON APPLE GRINDER.

Many persons who wish a heavier apparatus for making cider than the mills described on previous pages, will find in the above grinder, the best for a stationary mill. It will grind from sixty to seventy bushels per hour, and is uninjured by stones or other hard substances that may be accidentally thrown in with the fruit. The cost of wooding the Grinder will be from \$12 to \$15. Full directions for doing this are furnished with it.

PRESSES.

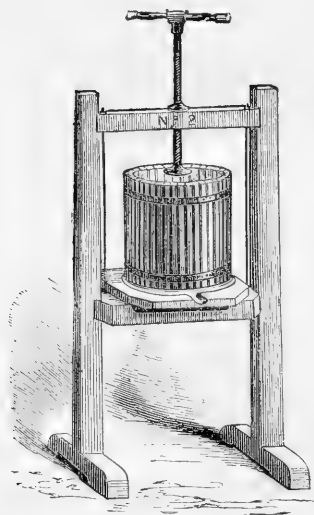


FIG. 181.

LARD, CIDER, OR WINE HAND PRESS.

We have three sizes of these, all of them light and portable, but well and strongly made with good screws.

HEAVY LARD PRESS.

This is larger and heavier than any of the above series, but is well represented by the cut.

It is made purposely for pressing lard, having an iron bottom with the same tub and beam as are used in the Keystone mill.

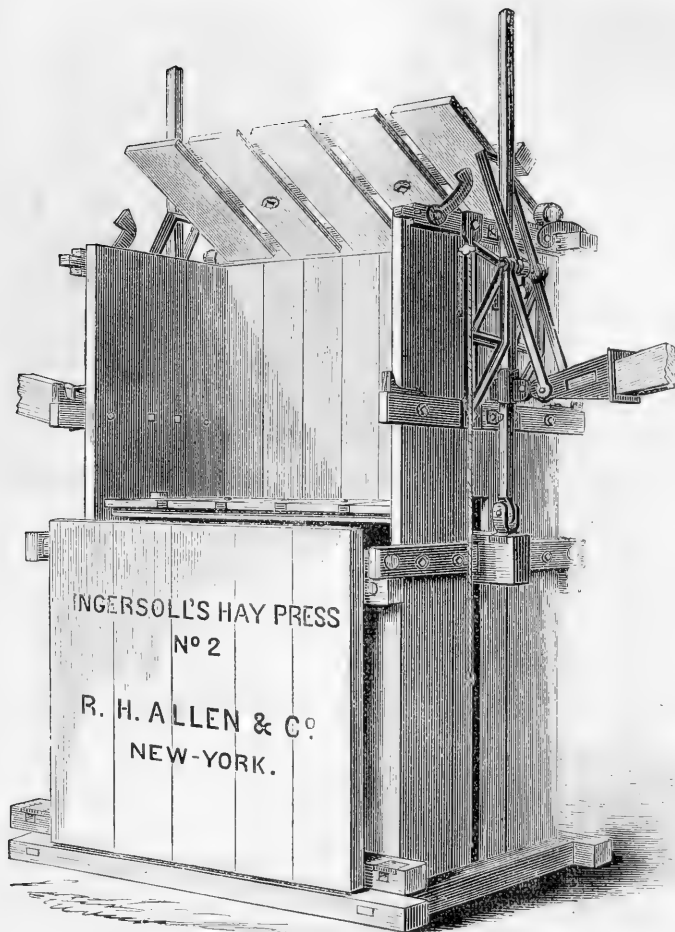


FIG. 184.—INGERSOLL'S HAY PRESS.

This is a well-known Press, and in more general use for pressing hay than any other.

The list given below is for Presses for Hay only, but the same are made, with modifications, for Rags, Hides, Hair, Wool, etc., etc., slightly differing in size, weight, and price.

FOR HAND POWER.

	Weight of bale.	Size of bale.	Weight of Press.	Measurement.
No. 1,...	150 to 200 lbs.,...	.46 × 25 × 25 in.,...	850 lbs.,...	60 cubic ft.
" 2,...	250 " 300 "	...49 × 27 × 28 "	...1300 "	... 75 "

FOR HORSE POWER.

No. 1,...	200 to 250 lbs.,...	.46 × 25 × 25 in.,...	1900 lbs.,...	200 cubic ft.
" 2,...	300 " 350 "	...48 × 26 × 26 "	...2600 "	...225 "

CHURNS.

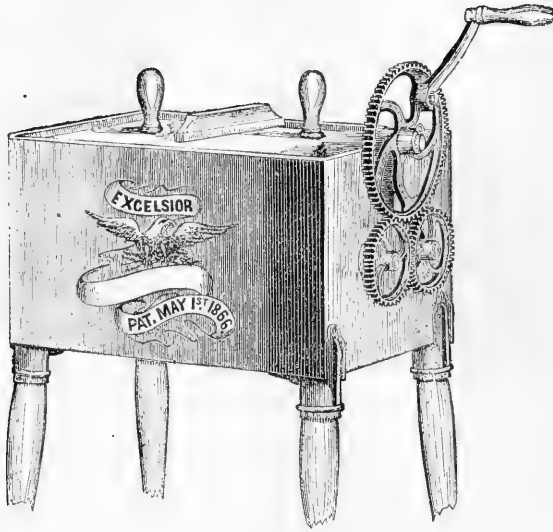


FIG. 188.—EXCELSIOR CHURN.

The internal arrangement of this Churn consists of two dashers, parallel with each other, and running in opposite directions.

These carry the cream from the sides and surface to the centre, where it comes in contact with a conical arrangement rising from the bottom of the Churn, and is driven to the surface, thus thoroughly agitating and exposing it to the air, and producing the butter quickly and in the best possible condition.

By reversing the motion of the dashers, the butter is quickly and effectually separated from the buttermilk; and, by successive changes of cold water, is washed without the necessity of hand labor.

The temperature of the cream is regulated by placing hot or cold water in the chamber beneath the working apparatus.

Three sizes are made: No. 1, churning from two to five gallons; No. 2, from three to seven gallons; and No. 3, from three to nine gallons.

They weigh from thirty-five to fifty pounds, according to their size.

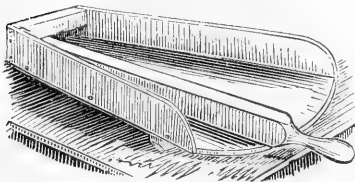


FIG. 189.—LEVER BUTTER-WORKER.

This is a very simple and effective machine for working butter. It is easily cleansed, and occupies but little room.

Two sizes are made, two feet and three feet long, weighing about twenty pounds.

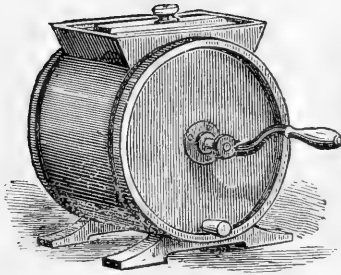


FIG. 190.—CYLINDER CHURN.

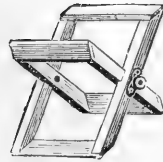


FIG. 191.—WINGS OR DASHER.

This is a very favorite style of churn in use for many years in this country, and largely shipped to foreign markets. Five sizes are made, to hold from three to fifteen gallons. The larger can be fitted for power when necessary, though it is not too large for hand.

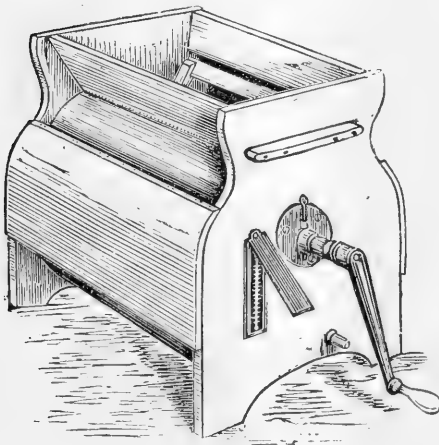


FIG. 192.—THERMOMETER CHURN.

This is a well-known modification of the Cylinder Churn, improved by placing a thermometer in the side, which indicates the temperature of the cream within. To make the greatest quantity of butter in the least time, this should be at 55° Fahrenheit at the commencement of the operation, and gradually rise to 63° or 65° at which it should stand when the operation is concluded. A double metallic bottom is constructed, in which warm or cold water, or even ice may be placed, so as

to regulate the temperature. They are one of the most important of the dairy improvements of the day. They are made of seven sizes, from two and a half to twenty-eight gallons. The latter is always fitted for power, and No. 5, the next size, holding fourteen and a half gallons, can be with advantage also so arranged if desired.

SPAIN'S PATENT ATMOSPHERIC CHURN.

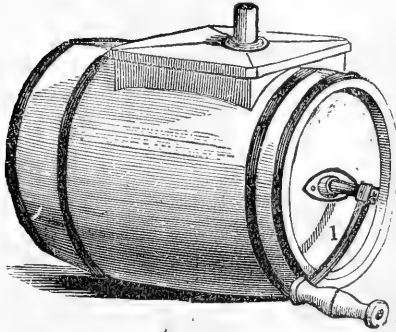


FIG. 193.

This, though perfectly simple and not expensive, is one of our best churns. It is entirely free from the objection which is occasionally urged against the Thermometer churn, of the butter adhering to the metallic bottom and sides.

The dashers are so made as to give a transverse motion to the cream, keeping it constantly agitated, and bringing every portion into successive contact

with the atmosphere through the open tube in the lid. They can also be lifted out entire by unscrewing the handle, thus making the cleansing much easier and more thorough.

There are six sizes of this style, holding from four to twenty-five gallons.

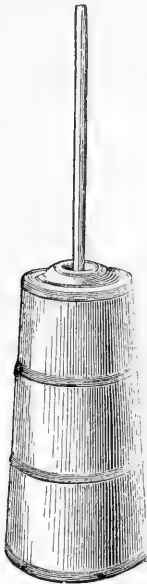


FIG. 194.

DASH CHURN.

This is the old-fashioned style of Churn, by many even still preferred to the newer and more elaborate patterns. They are made of various sizes, from six to sixty gallons, and any of the larger numbers can be worked by power, as shown by Fig. 90 on page 67.

Each size contains about a quarter more than the preceding one, but it should be understood that the capacity is twice as large as the quantity of milk that can be churned at a single working. this kind of churn being worked only when about half full, to give room for full play to the dasher.

BARROWS.

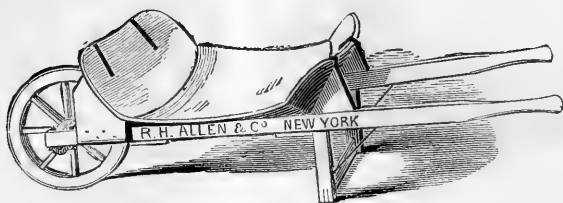


FIG. 195.—CANAL BARROW.

This is the ordinary barrow in universal use for canals, railroads or mines, and for all rough work where a cheap and light barrow is wanted.

The tray is of bent timber, strongly braced by strap iron bands, combining strength and lightness at but small cost and weight. For shipment the trays are packed in nests, the handles strapped together in one bundle, and the wheels and small pieces boxed.

Each dozen, when packed, measures thirty-two cubic feet, weighing six hundred pounds.



FIG. 196.—GARDEN BARROW.

We make these of three sizes, the smallest being intended for boys' or ladies' use. They are made with a single or double iron brace, at a slight difference in cost.

The cut represents the double-braced barrow. In shipment, the sides are removed and packed in bundles. In this shape each barrow of the largest size measures about twenty-five cubic feet and weighs sixty pounds.

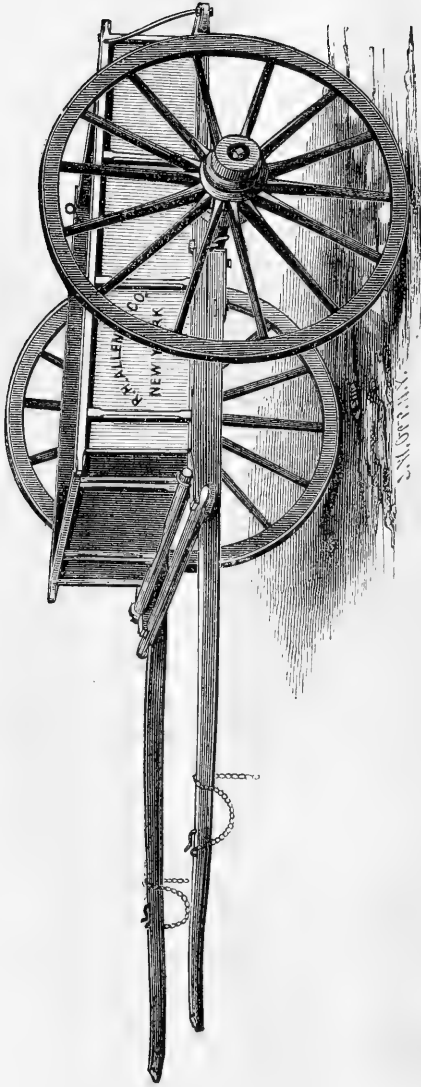


FIG. 222.—DONKEY, MULE, OR HORSE CART.

These Carts are made of three sizes, as specified below. The medium size, or Mule Cart, is the one generally shipped to Spanish America. All these are made to dump by removing the cross-bar in front.

The body of the Donkey Cart is four and three quarters feet long, two and three quarters feet wide, and one foot high. The wheels are four feet two inches high, and the cart weighs two hundred and eighty pounds.

The body of the Mule Cart is five and a half feet long, three feet wide, and fifteen inches high. The wheels are four feet four inches in diameter, and the whole cart weighs four hundred pounds.

The body of the Horse Cart is five and three quarters feet long, three feet wide, and sixteen inches high. The wheels are four and a half feet in diameter, and the whole weight four hundred and forty pounds.

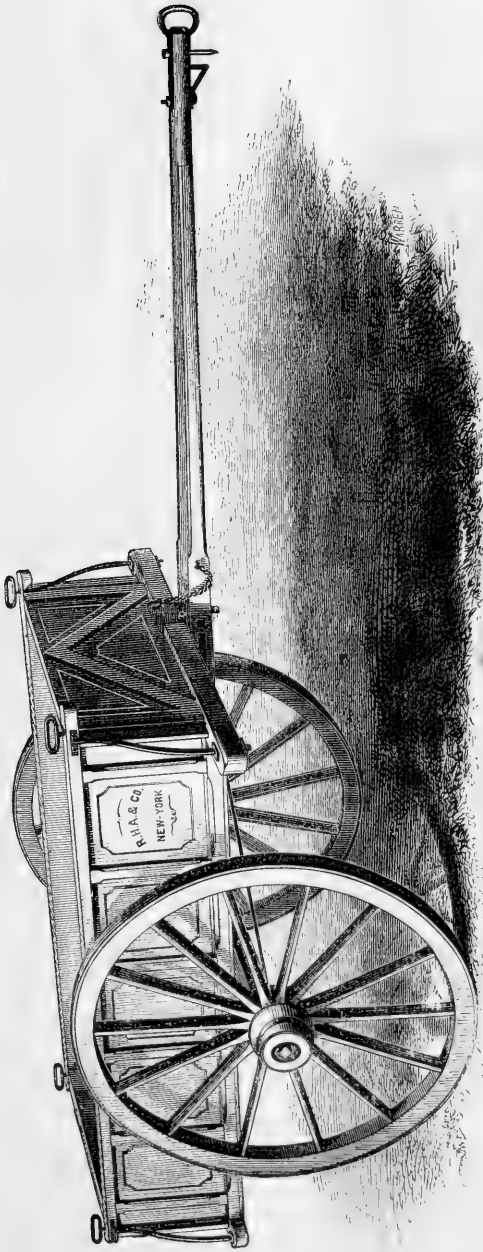


FIG. 224.—OX CART.

This is a Dumping Cart, made much heavier than the ordinary Horse Cart, and with particular reference to the carrying of heavy loads by a team of oxen.

The body is eight feet long, four feet wide; the sides are two feet high, and the wheels five feet in diameter. The Cart weighs ten hundred and fifty pounds

COTTON CART.—(See Fig. 224.)

For the convenience of our friends who are engaged in the cultivation of cotton, we have built this cart with raised sides, somewhat in the same style as the Bagasse Cart and Bagasse Wagon, and recommend its use in this form, not only for carrying cotton, but all other materials that are bulky in proportion to their weight.

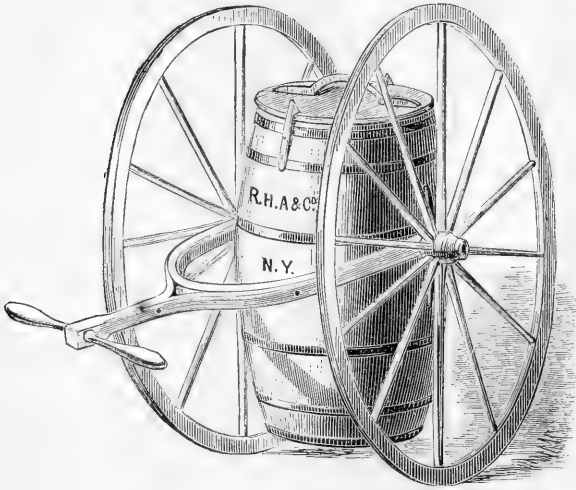


FIG. 225.—WATER BARREL.

The size shown in the cut contains forty gallons, and is made with or without faucet, as may be ordered. It is, however, generally emptied by swinging on the centre.

It will be found very useful for farms, gardens, or for household purposes.

It weighs one hundred and thirty-five pounds, and has wheels four feet high, with tires one and a quarter inches wide.



FIG. 226.—WATER CART.

This is made in a great variety of sizes, for any purpose that may be required. The hogshead containing the water is usually of one hundred and twenty gallons capacity, but can be made as large as two hundred and fifty gallons capacity. The wheels are four and a third feet high, and the whole cart weighs five hundred and thirty pounds.

For spreading liquid manure, or for watering the streets, a sprinkling arrangement is attached, under the control of the driver, as shown by the cut.

DRAY CART.—(See Fig. 227.)

This is the usual pattern of Cart used in this city, made either with or without springs, and with or without the arrangement for dumping.

The usual size has a body eight feet long, three and a half feet wide, with four feet wheels.

It weighs twelve hundred and seventy pounds, and will carry two tons, or as much as a single animal can draw.

WAGONS.

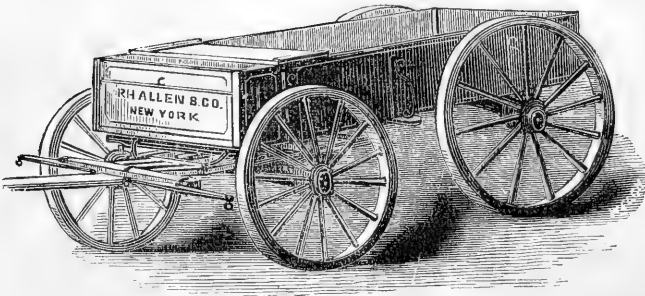


FIG. 228.—FARM WAGON.

Our Farm and Road Wagons, for one, two, or more horses, are made of various weights, strength, size, form, and finish, from a light one-horse farm and road wagon, to the large and heavy wagon, suitable for carrying three or four tons, and requiring four to six horses to draw it. They are made with low wheels for smooth, and high for rough roads; with narrow and heavy tires for stony, and broad and light tires for wet, clayey, and sandy roads.

In our usual size of this Wagon, the body is ten feet long by three and a third feet wide, and fifteen inches deep. The front wheels are three feet ten inches high and the rear four and a half feet.

Its entire weight is about eight hundred pounds.

FEED RACKS, MANGERS, ETC.

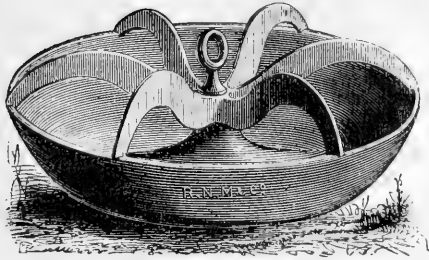


FIG. 232A.—PIG TROUGH.

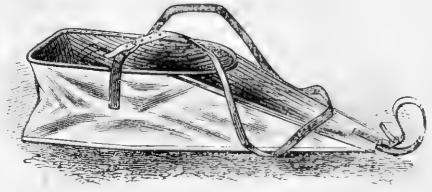


FIG. 232B.—FEEDING BAG.

FIG. 232A.—CAST-IRON PIG TROUGH.

Its construction prevents the larger animals from putting their feet in the food, and from interfering with the smaller and weaker ones.

It weighs one hundred and ten pounds.

FIG. 232B.—FEEDING BAG FOR HORSES.

This is a patented article, and a great improvement over the usual style, both in its convenience to the animal and in its economy of the food.

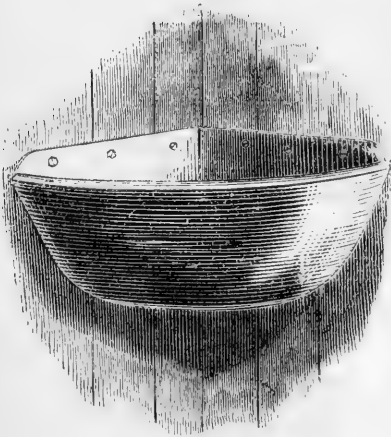


FIG. 233.—MANGER.

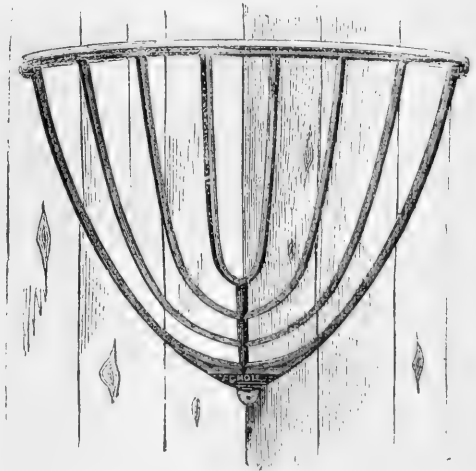


FIG. 233A.—RACK.

These Mangers and Racks are easily cleaned, are proof against destruction by crib-biters, and will not communicate any maladies from diseased animals.

We have them of all sizes and shapes, to suit the different positions in which they are to be placed.

LAUNDRY MACHINES.

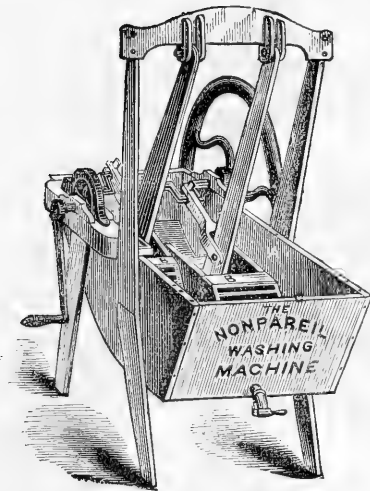


FIG. 234.

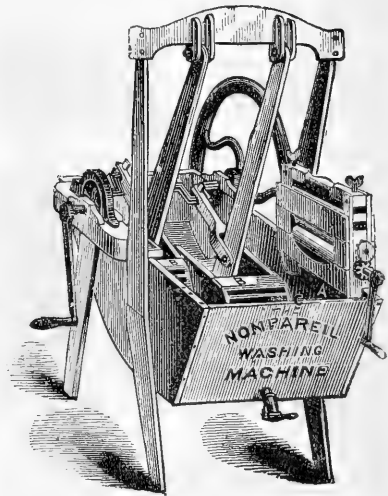


FIG. 235.

NONPAREIL WASHING MACHINE.

This machine does the work of cleansing the clothes by the direct pressure of the plungers, B B. The operation is so simple that the least skillful person may perform it, and as the clothes are not rubbed or strained, the most delicate fabric cannot be injured. A girl or boy can work the machine effectively, and it may be relied on to cleanse the clothing thoroughly without assistance from hand-rubbing. It performs the work with neatness, and there is no splashing of suds over the box.

For washing wool, these machines are unrivaled.

The No. 1 Hand machine occupies a ground space of six square feet, and will wash at one time the bulk of five shirts; the No. 2 occupies eight square feet, and will wash eight shirts; the No. 3 occupies ten square feet, and will wash twelve shirts. The No. 1 is for light family work; the No. 2 is suitable for general use; and the No. 3 for use in large families and institutions in which there is no steam power.

The shipping measurement of No. 1 is seven cubic feet; of No. 2, nine cubic feet; of No. 3, twelve cubic feet.

Fig. 235 shows the machine with the Wringer attached.

The Large Laundry machine occupies a ground space of thirty square feet. It has four plungers, which move two and two, alternately, requires about one-horse power to drive it, and will wash, with one attendant, two hundred and fifty to three hundred pieces of clothing per hour. It may be worked either by steam or horse-power, and when a roller-wringer is attached, both are operated by a counter-shaft suspended overhead.

REFRIGERATORS AND FREEZERS.

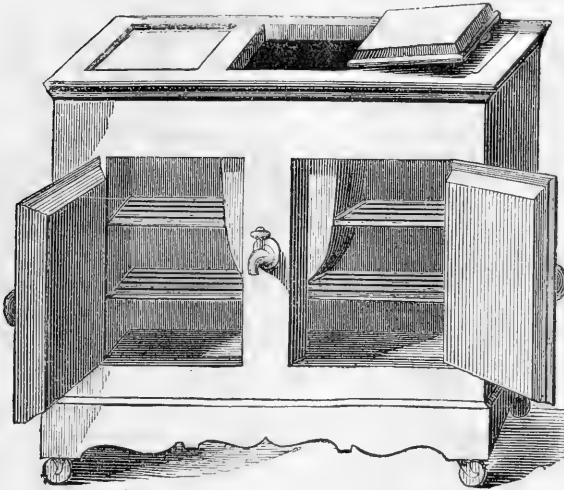


FIG. 256.—AMERICAN REFRIGERATOR.

This is made of five sizes, as shown in the table below, of wood grained like oak, lined with zinc and filled with charcoal.

The shelves are of galvanized wire, and the faucet is handsomely plated with silver. The cut shows the Refrigerator open, and the

size, shape, and position of the ice-box, with the opening at the top.

It keeps all the articles perfectly dry, and with less consumption of ice than any other Refrigerator we know.

No.	Length.	Depth.	Height.	Weight.
1,...	36 inches,	...20 inches,	...32 inches,	...135 pounds.
2,...	39 " "	...21 " "	...34 " "	...145 " "
3,...	42 " "	...22 " "	...36 " "	...180 " "
4,...	45 " "	...23 " "	...38 " "	...195 " "
5,...	48 " "	...24 " "	...40 " "	...225 " "

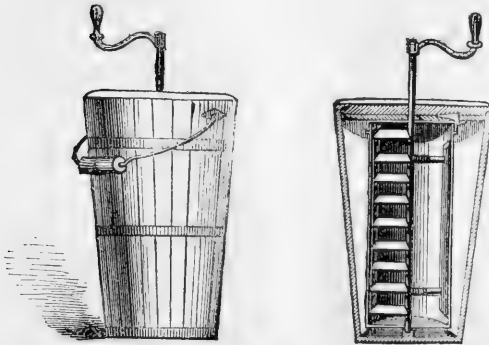


FIG. 257.—ICE-CREAM FREEZER.

This is the only Freezer made with a revolving can and spring blade scraper, a combination which hastens the freezing of the cream by removing it to the centre as fast as it freezes on the outer edge. It is simple in construction, rapid in its operation, and economical in its consumption of ice.

SCALES.

PORTABLE PLATFORM SCALE,

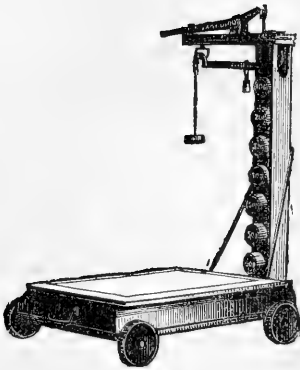


FIG. 258.

Made of eleven sizes, and weighing from three hundred to four thousand pounds.

Those weighing up to three hundred pounds, by quarters, are well adapted to the wants of small grocers.

Those weighing up to six and ten hundred pounds, by quarters, are adapted to those doing a more extensive business.

The twelve, fifteen, and twenty hundred pounds scales, weighing by halves, are well calculated for wholesale grocers.

The three largest sizes, which weigh from twenty-five hundred to four thousand pounds, by halves, are extensively used

by ship-chandlers, founders, and on board of steamers.

We have them plain, on wheels, with axle and extra large wheels and with brace and lever.

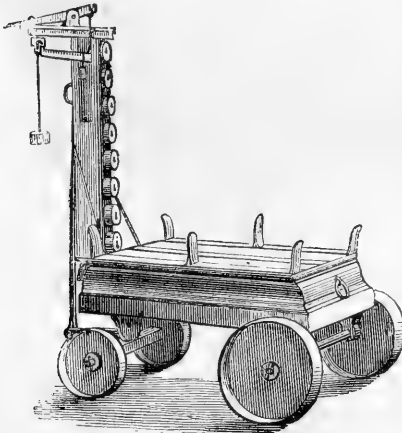


FIG. 259.

IRON SCALE,

Weighing from three thousand to four thousand pounds. This is extensively used by iron merchants and founders, and being made expressly for heavy work, can be relied upon for durability and accuracy.

ROOT AND STUMP PULLERS.

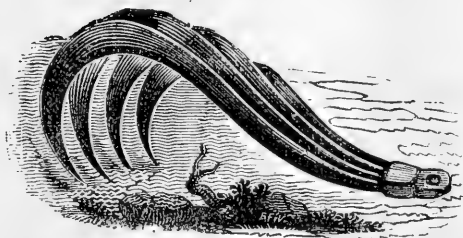


FIG. 266.—ROOT PULLER.

pounds; for the three-pronged, forty pounds; and for the four-pronged, sixty pounds.

This is a very useful implement for extracting roots, bushes, etc.

It is made with two, three, or four claws, of any size or weight desired.

The usual weights of these pullers are, for the two-pronged, thirty

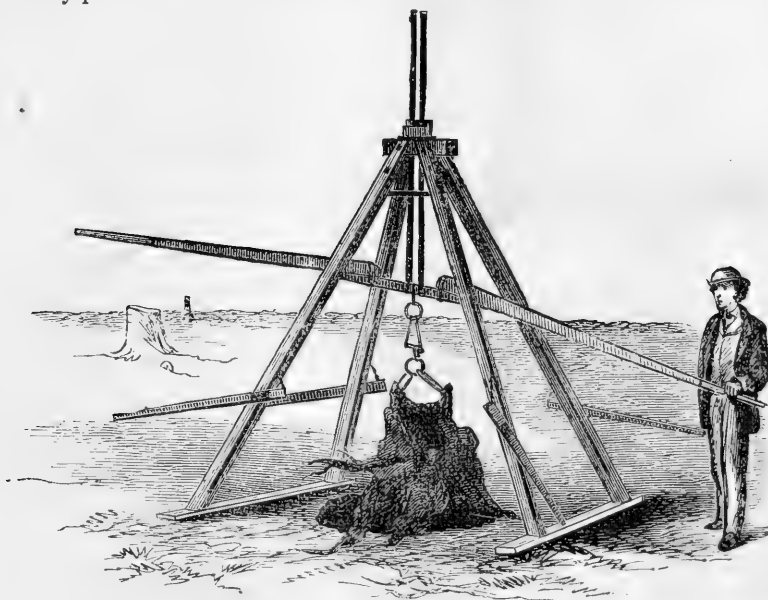


FIG. 267.—LIGHT STUMP PULLER.

This is the only good cheap Stump machine in use, and for light work is confidently recommended to the trade, and to all needing such an implement.

It consists of a strong frame, with four corner posts, about seven feet long, framed together at the top and spread outward at the bottom, with the lower ends framed into strong cross-pieces, which rest on the ground. At each end are two handles, with which two men can easily carry it from place to place. Two bars of iron, having notches in one side, are let down from the top of the frame, and the lower ends are secured by bolts to a

long horizontal lever. A strong chain is hitched around the stump, or, if it is too short, a pair of heavy iron forcep-dogs are made fast to the stump, rock, or whatever is to be lifted, and the lever worked up and down, like a pump-handle, lifting one of the notched bars about one inch, when an iron pawl falls into the notch, and holds all that is gained in lifting. When the opposite end of the lever goes up, the other notched bar rises one notch, and is held by the pawl. This operation is continued till the stump is extracted.

In localities where the timber is heavy and stumps very large, this hand machine is not sufficiently powerful to take out large stumps which require an effective force, adequate to raise twenty or thirty tons, but two men with it can pull any ordinary stump, or lift rocks of five or six tons weight.

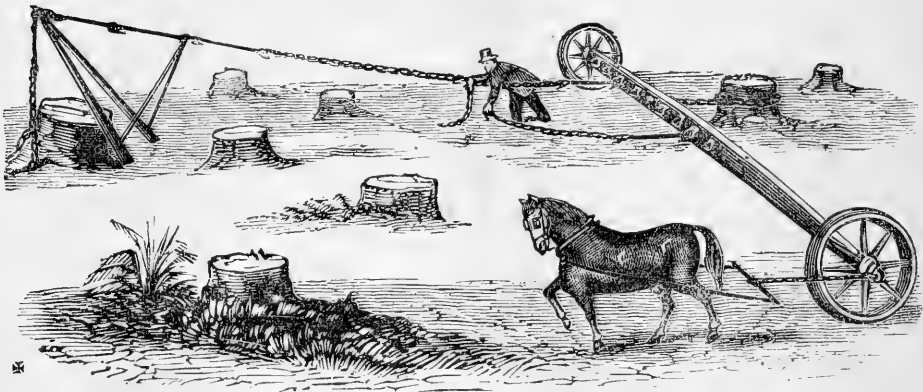


FIG. 268.—WILLIS'S PATENT STUMP PULLER.

This is a simple single-lever power, having chains so arranged in connection with it that the resistance it is capable of overcoming is made to depend, not upon the strength of the team, but upon the time it works. Thus, a team that would overcome a resistance of ten tons in one minute, would overcome a resistance of a hundred tons in ten minutes.

It is secured to one anchor stump, in a central point, and turns upon such anchor, without change of fastening, till a large space of ground is cleared quickly, and with but little labor, as compared with the work done. The machine is equally well adapted to clearing land of large stones, pulling them from their resting-place, and lifting them high enough to place a cart or stone-boat under, and then depositing the stone on the vehicle, for removal from the field. It is also advantageously employed in the moving of buildings and in the construction of roads, by removing trees, stumps, stones, and other obstructions from the route.

We have three sizes of this machine, which weigh from twelve hundred to nineteen hundred pounds. They are designated as Nos. 1, 2, and 3; the rods being three quarters of an inch, seven eighths of an inch, and one inch in diameter, and made of the best wrought iron.

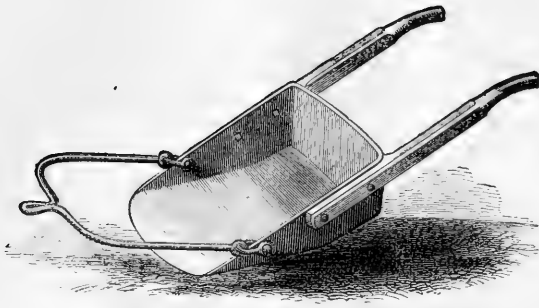


FIG. 272.—DIRT SCRAPER, OR OX SHOVEL.

This is drawn by a team of horses or oxen, for carrying away earth and scooping out ditches, drains, and any excavations.

It is made of three sizes, with wood or iron backs, and weighs from seventy-five to one hundred and thirty pounds. We call particular attention to the improvement in the pattern of our Scrapers, and to the peculiar patented clevis which we put on all of them.



FIG. 273.—POST-HOLE AUGER.

These are designed for boring holes in the ground, of dimensions suited to posts of any required sizes. They lift the soil from the hole as it is bored, without the necessity of using a spade or post-spoon.

Eight sizes of these Augers are made of from five to twelve inches diameter.

We have still another style, nine inches in diameter, made of steel, and of a peculiar construction, which is patented. It is much lighter than the ordinary cast and wrought-iron auger.

GRINDSTONES.

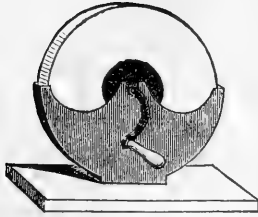


FIG. 276.

FAMILY GRINDSTONE.

We have these of nine sizes of from six to fourteen inches diameter. The stones are of best Berea grit.

The frames are of cast iron.



FIG. 277.

FARM GRINDSTONE.

This figure represents a Grindstone hung on rollers and turned by a crank on one side and a treadle on the other. The treadle arrangement is designed more particularly for the sharpening of small tools without the aid of a second person to turn, the grinder operating the stone by his foot upon the treadle.

The fixtures are very durable, and save much friction and labor in turning the stone.

The grindstones vary in diameter from eighteen inches to three feet, and in weight from forty to two hundred pounds. The width of face is from two to three and a half inches. They are all of the best Berea grit, and hung with the fixtures shown in the cut below.

We have also constantly on hand stones of all sizes and kinds, without frames or fixtures.

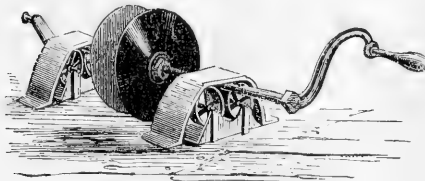


FIG. 278.—GRINDSTONE FIXTURES.

Fig. 278 represents a Grindstone Shaft, Crank, Rollers and Roller Covers. To the arbor is attached a fixed and loose flange; the stone is placed against the fixed flange and held firmly between the two by a large

screw nut, which works on a screw cut round the arbor, forcing the stone and loose flange against the tight one. In this way the stone is not liable to get out of place, and the liability to split, by the force of wedges used to confine the stone on the common arbor, is entirely avoided.

WAGON JACKS.

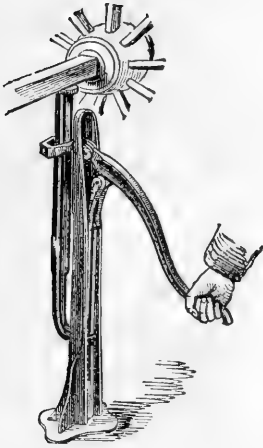


FIG. 278A.—LIGHT CARRIAGE JACK.

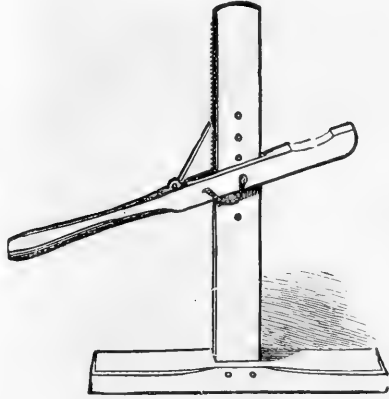


FIG. 279.—HEAVY TRUCK JACK.

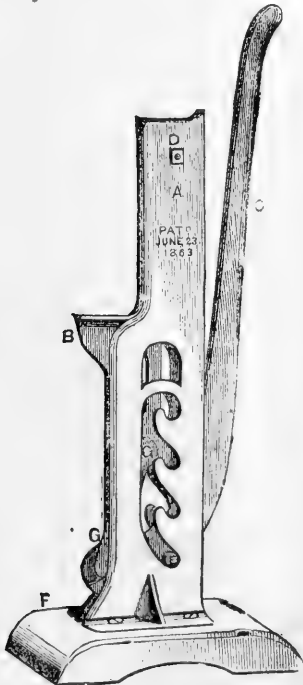


FIG. 280.—IRON JACK.

These are very simple and convenient instruments for raising cart, wagon, or carriage bodies, to remove the wheels for greasing, washing, etc.

The Jack shown by Fig. 278A is designed for carriages and light wagons. It is made of three sizes, all of iron. Nos. 1 and 2 are packed for shipment in boxes of six each. No. 3 in boxes of four each.

The Wooden Jack, Fig. 279, is made very strong, and designed for raising heavy trucks, wagons, etc., for which it is better adapted than the lighter iron Jacks.

Fig. 280 represents the Iron Jack, made at our own factory, on a new principle. It is light, yet strong enough for the heaviest work.

Only one size is made, which will raise from twenty-six to thirty inches.

BEE HIVES AND COW MILKERS.

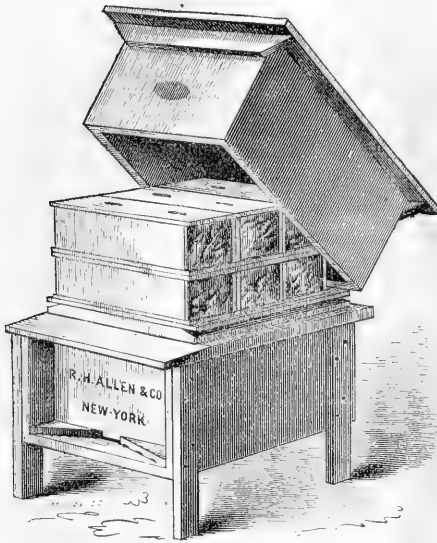


FIG. 280.

LANGSTROTH'S MOVABLE
COMB BEE HIVE.

The principle on which this Hive is constructed has proved to be the best, and in fact essential to the highest success in bee-keeping.

The capacity for the storage of the surplus honey is very great in proportion to the size of the Hive, and by the use of movable honey-boxes, in which the bees deposit their first honey made, the owner can always secure it in clean and freshly-made comb, and to any extent he desires.

A double set of honey-boxes is sent with each Hive.

But one size is made, which, in shipping order, measures six cubic feet, and weighs fifty-five pounds.

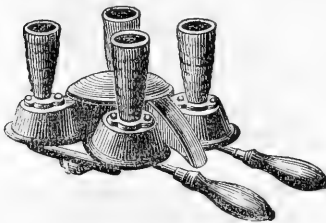


FIG. 281.—HAND COW MILKER.

This machine, which is now coming into general use in certain sections of our own country, but principally abroad, is made from new patterns, and greatly improved upon those which we first sent out.

The operation is a very simple one, and consists only in working back and forth the movable handle.

The action upon the teats is similar to that of the human hand.

The frame is of iron, strong though light, and the tubes are of india-rubber. It weighs five pounds, and is one foot in length.

PUMPS.

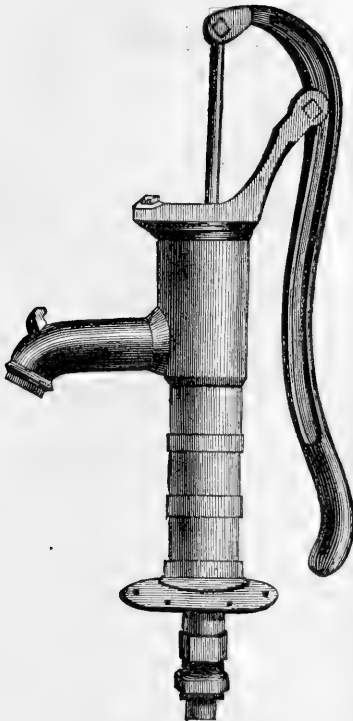


FIG. 282.—REVOLVING STAND
PUMP.

This is the ordinary Suction Pump, for raising water from any depth not greater than twenty-five feet. It is made with a revolving stand, so that the handle can be turned in any direction, and is unscrewed from the top of the flange above the platform, so that access is easily gained to the lower valve and inside of the pump without detaching the pipes or platform. It has a screw coupling and brass tube for more readily and securely connecting the lead pipe. Proper couplings for wrought-iron pipe will be furnished when specially ordered.

The water can be let off at pleasure.

This style of Pump cannot be used close to a wall or in a corner, as the handle and spout will interfere while being screwed into place. For such positions, the Pump with the Improved Connection, as described on page 181, is preferable.

Seven sizes of the Revolving Stand Pump are made, Nos. 0 to 6, with a capacity of from six to thirty

gallons per minute, needing pipe of from three quarters of an inch to two and a quarter inches diameter, according to the size of the pump and the height to which the water is to be raised.

They are made of iron or brass, the latter being much more expensive.

Nos. 2 and 3 are sometimes made with two lifting-rods instead of one.

For the calculation of freights, we would add that these Pumps weigh from fifteen to fifty pounds each, according to size, and are packed in hogsheads containing from forty Pumps of No. 0 to twelve Pumps of No. 6, the largest size.

GARDEN AND FIRE-ENGINES ETC.

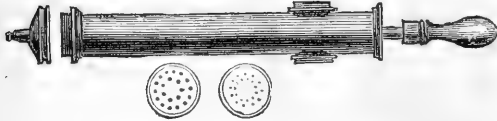


FIG. 296.—GARDEN SYRINGE.

These are of various materials and sizes. The cut shows the Sorby brass Syringe, made with the ordinary plain jet and with two roses of different sized holes, which are attached to the sides of the Syringe when not in use. This is made of three sizes, either with or without the side-screws.

The "F. & M." Syringe is somewhat similar, and equally good, with two roses and the ordinary jet, the former of which are attached to the Syringe.

Both of the above are made with and without the air-pipe, which adds to the discharging force of the instrument.

We have also Syringes of Britannia metal and of tin, much cheaper in price.

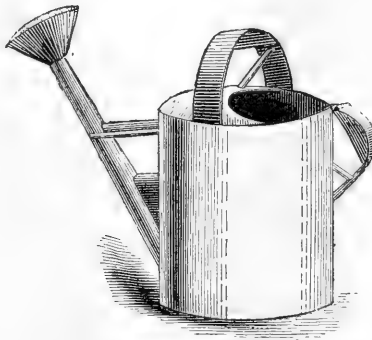


FIG. 297.—WATERING POT.

Our Watering Pots are of five sizes, holding three, six, ten, twelve, and sixteen quarts.

They are well and strongly made, and tastefully painted.



FIG. 298.—AQUARIUS.

FIG. 299.—GREENHOUSE
ENGINE.

FIG. 298.—AQUARIUS.

This is a small and easily managed apparatus for washing windows, etc., and for watering purposes in general. Its portability renders it useful when more bulky engines could not be readily used.

It weighs only eight pounds, and will throw eight gallons of water per minute to a distance of fifty feet.

FIG. 299.—GREENHOUSE ENGINE.

This is used for the same purposes as the Aquarius, but the working apparatus is set in a pail of galvanized iron, with a projecting piece on which the operator places his foot to hold the engine steady.

It will hold four gallons, and weighs twenty pounds.

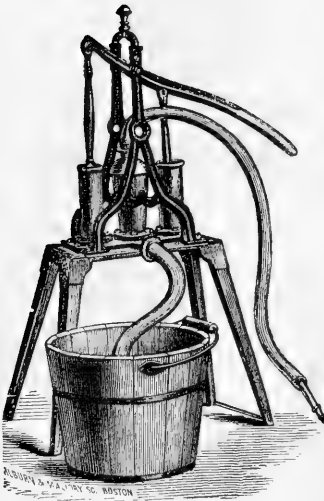


FIG. 300.—CEPHYDRION.

a tub to hold the water, though extra jets or hose can be furnished if desired.

It weighs twenty-five pounds, and occupies a space two feet square by three feet high.

This is a small double-acting Water Engine, of recent invention, useful for the same purposes as the Aquarius and Greenhouse Engine.

It will throw eight gallons of water per minute, perpendicularly, thirty-five feet, or fifty feet horizontally, and can be used with any length of hose.

The working parts are of copper and composition metal. The cylinders are one and three quarter inches in diameter, with five inches of stroke. The plungers are constructed with due regard to expansion, and may be easily adjusted if worn.

Each machine is supplied with a sprinkler and hose, to be used with

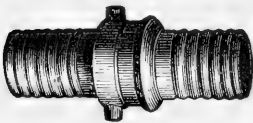


FIG. 301.—HOSE COUPLING.

We have all varieties of Coupling for India-Rubber and for Leather Hose.

The cut shows the ribbed coupling for India-Rubber hose, which we have of sixteen sizes, from one half to six inches.

Plain Hose Coupling is usually made of twelve sizes, up to three inches diameter. Suction Hose Coupling is usually made of eleven sizes, up to six inches diameter.

Strainers for the bottom of a suction hose are of four sizes.

The above sizes are those usually kept in stock, though any other size can be made that may be ordered.

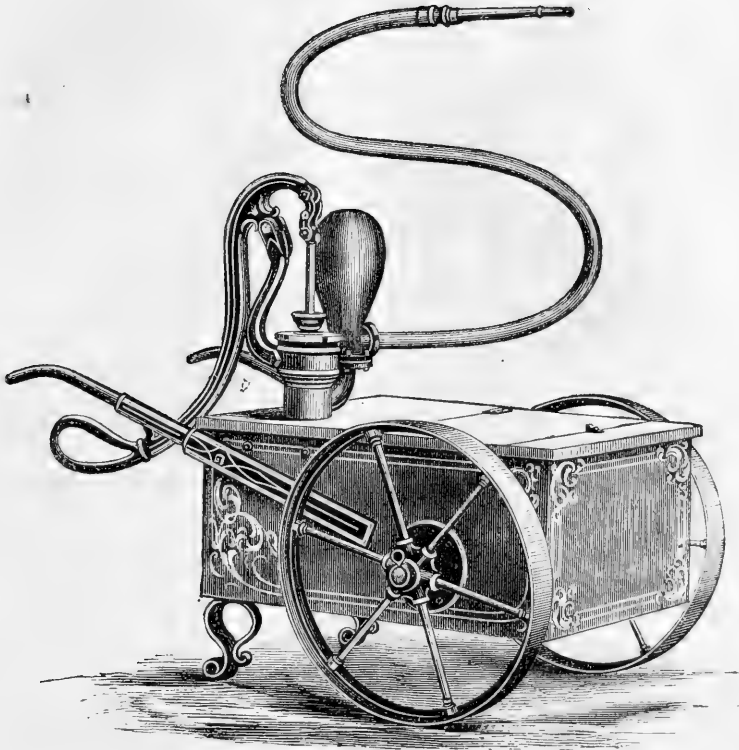


FIG. 302.—PLAIN GARDEN ENGINE

This Engine draws the water from the box, which must be filled as often as emptied.

It will throw a steady stream to a height of fifty feet.

It can be fitted with the usual plain jet, or with a sprinkler.

The box contains about thirty gallons of water, and the whole engine measures, in shipping order, about nine cubic feet, weighing one hundred and eighty pounds.

The cut shows the wood-handle Engine, though it is also made with iron handles.

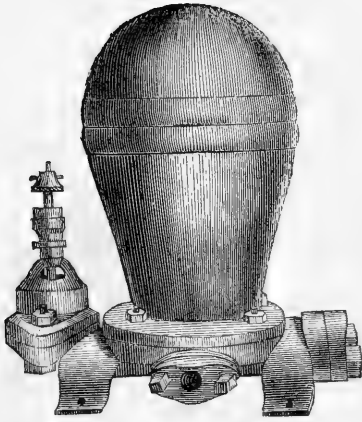


FIG. 307.—WATER RAM.

This is a very simple, efficient, and durable machine for raising water to almost any height, or carrying it any distance, provided a sufficient fall can be obtained. It furnishes a constant and regular supply without any care or attention. It is perfectly applicable where no more than eighteen inches fall can be had, yet the greater the fall applied, the more powerful the operation of the machine, and the higher the water may be conveyed. The relative proportions between the water raised and wasted are dependent entirely upon the relative height of the spring or source of supply above the Ram, and the elevation to which it is required to be raised. The distance to which the water has to be conveyed, and consequent length of pipe, have some bearing on the quantity discharged by the Ram, as the longer the pipe through which the water has to be forced by the machine, the greater the friction to be overcome, and the more the power consumed in the operation. It is common, however, to apply the ram for conveying the water distances of one and two hundred rods, and up elevations of one and two hundred feet. Ten feet fall from the spring or brook to the ram is abundantly sufficient for forcing the water to any elevation less than one hundred and fifty feet in height above the level of the point where the ram is located, and the same ten feet fall will raise the water to a much higher point than the above last named, although in a diminished quantity in proportion as the height is increased. More than ten feet fall is not desirable, the wear on the Ram being too great.

We have seven sizes of this Ram, varying in weight from twenty to seven hundred pounds, and in shipping measurement, from one to eighteen cubic feet.

WATER DRAWERS.

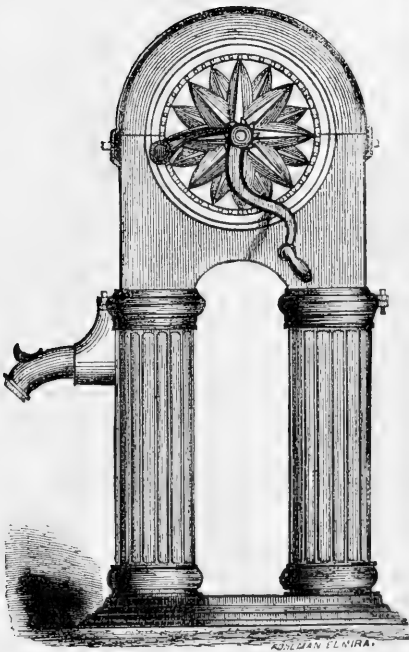


FIG. 308. CHAIN PUMP.

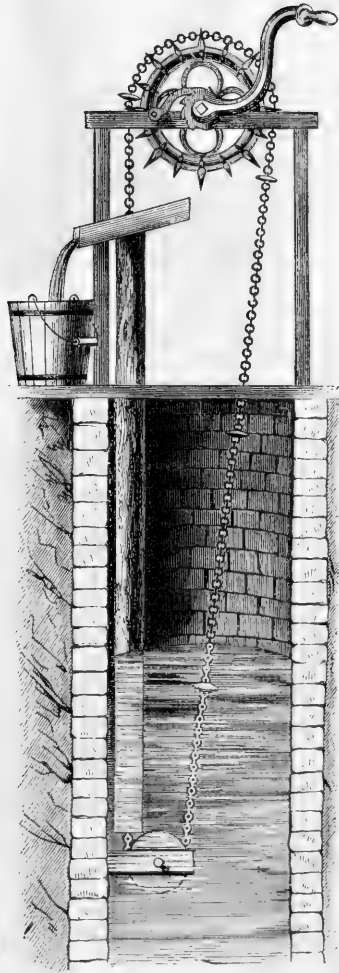


FIG. 309.

The cut fully shows the operation of this very simple and efficient Pump. The lower end of the tubing is placed a short distance above the bottom of the well, and the water is drawn up by the flat discs, or buckets attached at intervals to the chain.

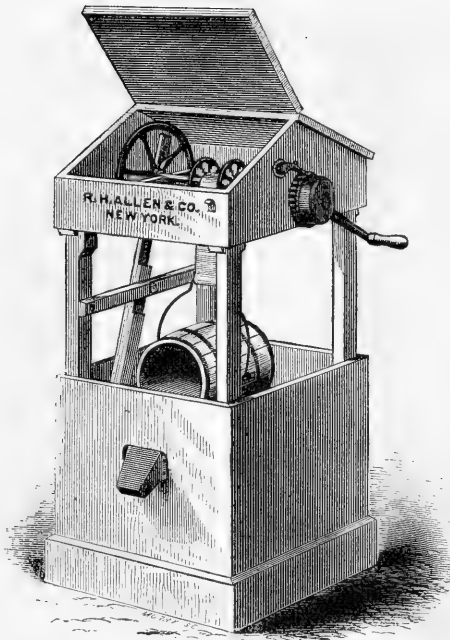


FIG. 313.—WATER DRAWER.

The operation of this Curb is entirely independent of any springs whatever, and not liable to get out of order.

It is about four feet high, and weighs about one hundred pounds.

This is a pattern of Water Drawer recently introduced, and the best on our list.

It combines some features not found in others, and is, in every respect, a valuable fixture for wells.

The special points of superiority are the perfect control, by the balance-wheel and lever, of the descending motion of the bucket, whether filled or empty; while, by giving the crank a quarter turn, the shaft revolves and the bucket descends into the well independent of the crank. The latter can never turn to strike a person while the bucket descends.

LADDERS.



FIG. 318.—FOLDING LADDER.

This is so constructed that it can be folded when not in use. The cut shows a ladder open and when closed. The rungs are fastened by pivots at both ends, on which they freely turn; and when the ladder is folded, they are admitted into the side pieces by means of grooves. They may be made of any length, but beyond twelve feet are not considered safe.

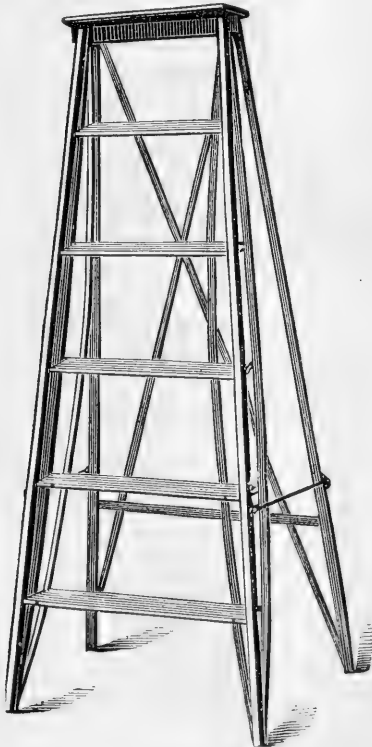


FIG. 320.—PATENT STEP LADDER.

Various sizes are made, of pine, varying from three to ten feet, and weighing from ten to thirty pounds.

Four sizes are made of black walnut, from three to seven feet long, and a small size is made particularly for library use, with and without carpeting on the steps.



FIG. 319.—FRUIT LADDER.

This style is made at our own works, and intended solely for use in gardens, vineyards, or orchards.

Four sizes are made, of six, eight, ten, and twelve feet length.

PATENT STEP LADDER.

This is a light yet strong Step Ladder for the household and library, or for the garden and orchard.

BAROMETERS, ETC.

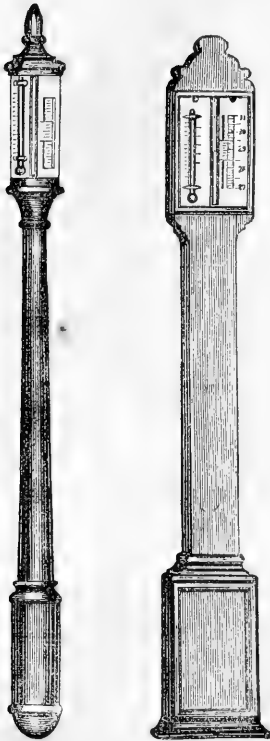


FIG. 325.—No. 2. FIG. 326—No. 1.

PORTABLE BAROMETERS.

The cuts show two simple and inexpensive Barometers, though we can furnish any other style that may be required.

They are made of fine woods, highly finished, about three feet in length, mounted with metallic plates and glass doors over the faces. They weigh from four to six pounds each.

No. 2 is put in a neatly-turned maple or cherry-wood case, handsomely varnished, with a semi-circular glass face, and is mounted with Vernier scale and thermometer.

No. 1 Plain has a highly-polished black walnut case, Vernier scale, thermometer, and index.

No. 1 Ornamental is similar to No. 1 Plain, but with extra ornaments, and is cased in oak.

No. 0 is similar to No. 1 Ornamental, but made with a rosewood case and extra fittings throughout.

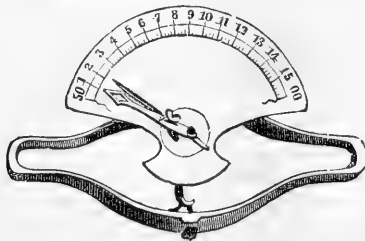


FIG. 327.—DYNAMOMETER, FOR TESTING THE DRAFT OF PLOWS, HARVESTING MACHINES, ETC.

The above cut represents the best cheap American Dynamometer. It is equally reliable with the imported instruments; is more simple and costs but half as much. By means of its double index, the draft is easily and accurately determined.

YOKES, CHAINS, ETC.

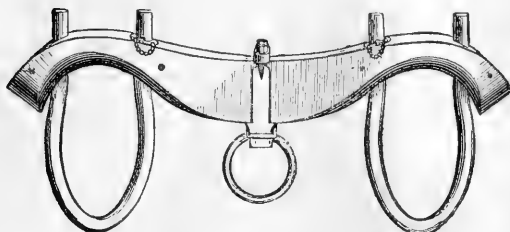


FIG. 329.—OX YOKE.

The cut shows the usual pattern, though we have others, and can make yokes of any shape desired.

Five different sizes are made, of the dimensions given below :

No. 1,	7 in.	on the neck,	by 19 in.	between the bows.
“ 2,	7½	“ “	20	“ “
“ 3,	8	“ “	21	“ “
“ 4,	8½	“ “	22	“ “
“ 5,	9	“ “	23	“ “



FIG. 330.—SPANISH OX YOKE.

This is made for one or for two animals, and generally of the pattern shown in the cut, though other forms can be had if specially ordered.



FIG. 331.—TRACE CHAIN, WITH RING.

We have these Chains of three different sizes or weights—light, medium, and heavy, and with straight or with twisted links. They are about nine feet long, and are made with rings or with hooks, the latter being the more usual style.

OX CHAINS.

These are nine feet long and of three weights—light, medium, and heavy. Chains of any other length will be furnished to order.

LOG OR ROCK CHAIN.

These are about sixteen feet long, with a short heavy link, particularly adapted for drawing timber or rocks by oxen.



FIG. 333.

PIPE BOXES.



FIG. 334.

The smaller cut shows the ordinary style, for iron axles. The large ones are made to order, and are generally used for large carts with wooden axles.

In ordering, specify the dimensions of the wheel-hub.

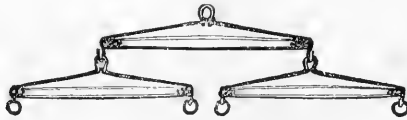


FIG. 335.—WHIFFLETREES.

These are single and double, and of various sizes and materials, varying in length from twenty-eight to thirty-six inches



FIG. 336.—HALTER SNAP.



FIG. 337.—CATTLE TIE.

FIG. 336.—HALTER OR REIN SNAP.

We have these of various sizes and patterns, made of heavy iron wire or of malleable iron, with round or oval rings.

In ordering, the use for which they are designed should be specified, that a suitable size may be sent.

FIG. 337.—CATTLE TIE.

For fastening cattle in their stalls. The large ring goes over a stationary round post set up by the manger, and the chain is fastened to the horns.

The ring slides up and down the post as the animal moves its head in feeding or otherwise, or when getting up and lying down.

COLLAR AND HAIMES.

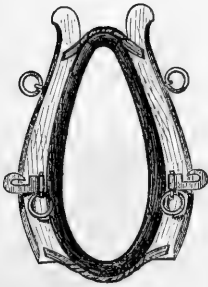


FIG. 341.

These are for ordinary farm or plantation use, of different sizes for horses or mules.

They vary in cost according to their material and finish, but all are strong and well made.

In ordering, specify the quality desired and the purpose for which they are intended.

WIRE FENCING.

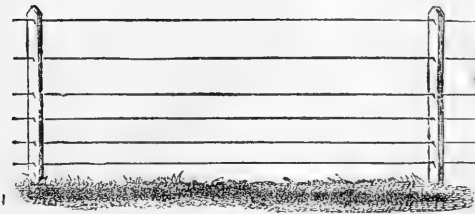


FIG. 342.—WIRE FENCING.

These possess several prominent advantages—economy of room, economy in expense, economy in repair, durability, and tastefulness. Wherever timber is not absolutely without value,

a wire fence is cheaper than the commonest zig-zag or Virginia-worm fence. It costs less than laying a stone wall. The expense of keeping in repair is less than that of any hedges, fence, or wall, unless the latter is of the most massive kind, and it occupies no room.

To answer the numerous inquiries for the weight and sizes of wire, annealed and properly prepared for fences, we append the following table. All the sizes are sold in bundles of sixty-three pounds each.

Class of Wire.	Diameter in hundredths of an inch.	Weight per lineal rod.	Weight per lineal mile.
No. 1,	0.32	4 lbs. 2 oz.	1321 lbs.
" 2,	0.30	3 " 10 "	1166 "
" 3,	0.27	2 " 15 "	944 "
" 4,	0.25	2 " 8 "	809 "
" 5,	0.24	2 " 5 "	746 "
" 6,	0.22	1 " 15 "	627 "
" 7,	0.20	1 " 9 "	518 "
" 8,	0.18	1 " 4 "	419 "
" 9,	0.16	1 " 0 "	331 "
" 10,	0.15	0 " 14 "	291 "
" 11,	0.13	0 " 10 "	219 "
" 12,	0.12	0 " 9 "	186 "
" 13,	0.10	0 " 6 "	129 "

VANES AND CARDINAL POINTS.

These Vanes are all of copper, heavily gilt. They will not corrode, but preserve their lustre for years, and are perfect indicators of the wind.

The designs shown are but a small portion of such as we keep constantly on hand, special illustrated lists of which will be furnished on application.



FIG. 346.—COCK.

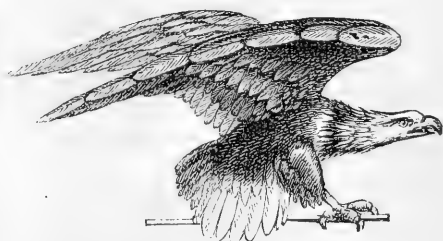


FIG. 347.—EAGLE.

Fig. 346 is made of four sizes—No. 16, which is sixteen by eighteen inches; No. 17, nineteen by twenty-four inches; No. 17½, twenty-six by twenty-eight inches; and No. 18, thirty-two by thirty inches.

Fig. 347 is made of eight sizes, from twelve inches to six feet spread.

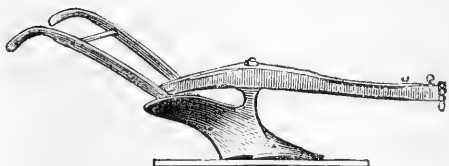


FIG. 348.—PLOW.

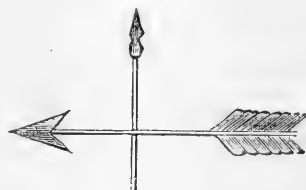


FIG. 349.—ARROW.

The usual size of Fig. 348 is No. 19, thirty-two by fifty-seven inches.

The Dart Vane, Fig. 349, is made of twelve sizes, from one foot to eight feet long.

POINTS OF THE COMPASS.

These are made with the usual letters, or with those used in any other language than English, as may be specified.

The letters and balls are of a composition metal, heavily gilt, and will not rust. The spires on which the vanes turn are of wrought iron, with steel points.

DRAIN TILE, TOOLS, ETC.



FIG. 350.—ROUND TILE.



FIG. 351.—HORSE-SHOE TILE.



FIG. 352.—SOLE TILE.

Drain Tiles are made of various patterns, though the cuts represent the most usual styles.

The Round Tile is made of four different diameters—one and a half, two, two and a half, and three inches.

The Sole Tile is made of five different calibres—two, three, four, five, and six inches; while the Horse-Shoe Tile is made of six sizes, from two and a half to seven and a half inches in diameter respectively.

All of the above are thirteen inches long. We have also large tile or pipe of from four to fifteen inches diameter, for house-drains, sewers, etc.

DRAIN-TILE MACHINE.

For those who use large quantities of Tile we furnish a machine, easily managed by two men, that will turn out in one day four thousand pieces of two-inch Round Tile, and in that proportion of other sizes.

With this machine we also furnish the necessary mill for grinding the clay, easily worked by one horse with a man to manage it. These two machines and the moulds constitute all that is requisite for the manufacture of drain tile.

DRAINING TOOLS.

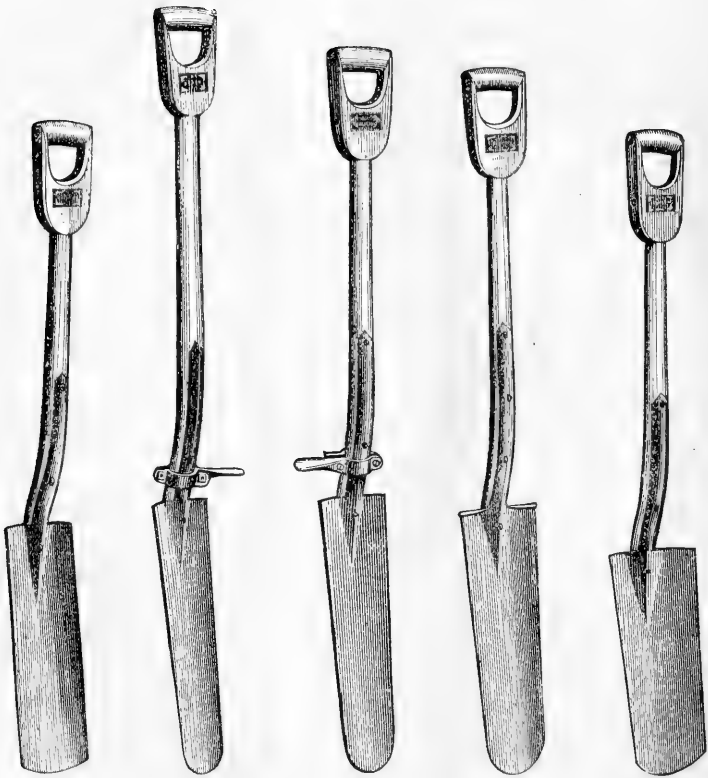


FIG. 354.

FIG. 355.

FIG. 356.

FIG. 357.

FIG. 358.

These are strong, and especially intended for digging and clearing out drains and ditches.

There are five sizes of Spades, with blades varying from fifteen and a half inches to twenty inches long, and from two and a half to six inches wide at the end.

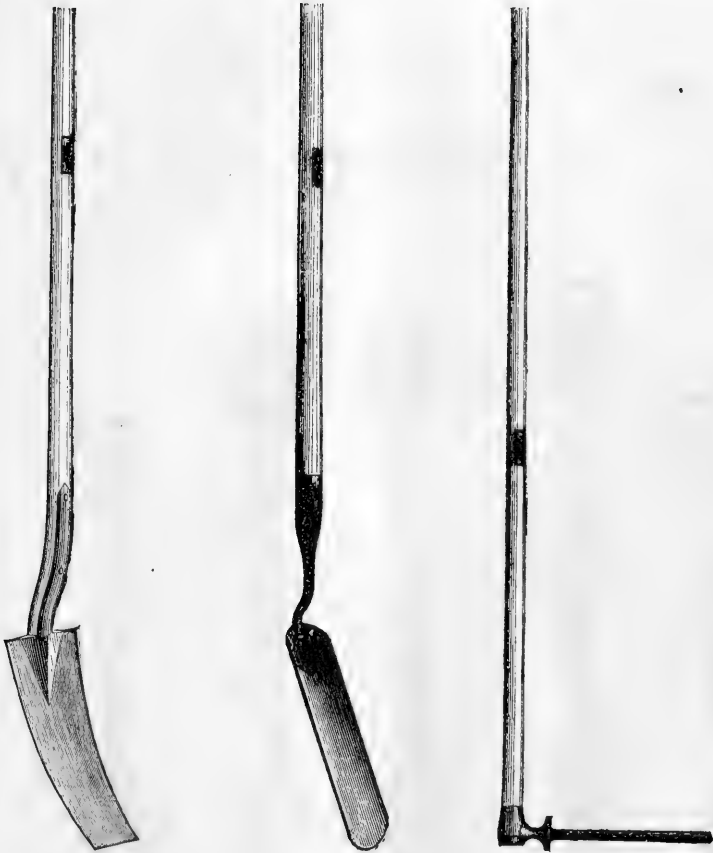


FIG. 359. DRAIN SCOOPS. FIG. 360.

FIG. 361.—TILE LAYER.

FIG. 359 AND 360.—DRAIN SCOOPS.

The Scoops are concave or flat, as may be desired, fifteen inches long by three inches wide, and of two patterns, one to draw and the other to push. The cuts show the latter.

We sell all the above either in sets or by the single piece.

FIG. 361.—TILE LAYER.

This is of steel, with a wooden handle, for laying the tile in place in the drain.

Its use renders the labor of draining much less, besides insuring greater comfort to the laborer in cold weather.

TOOL CHESTS.

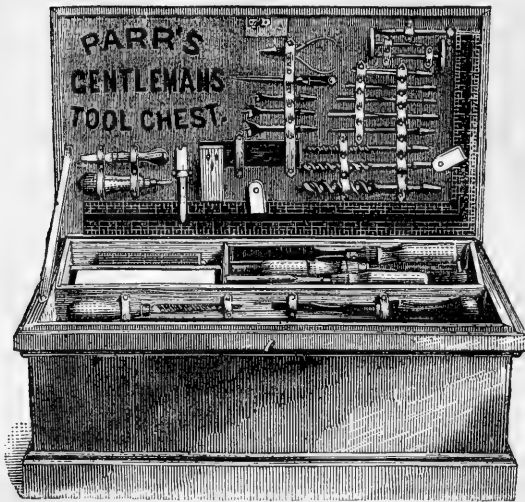


FIG. 363.—CARPENTER'S TOOL CHEST.

We have these Chests of five sizes, all highly polished, with brass trimmings and lifting handles, with partitions and drawers to contain each article.

The Tools vary in number from forty-four in the Boy's chest to one hundred and twenty-eight in the Mechanic's chest. They are all of the best quality, and are sharpened for immediate use.

When complete and ready for shipment, they weigh from forty to two hundred and sixty pounds, according to size, and measure from one to twelve cubic feet.

In addition to the above, we have four different sizes of what are called Juvenile Tool Chests for Children, containing from eight to twenty Tools, put up in neatly varnished boxes, with hinges, lifting handles, and locks.

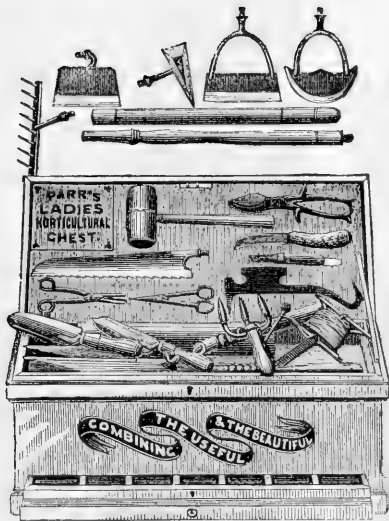


FIG. 364.

This size contains drawers, with partitions for seeds, garden gloves, etc. The smaller, or Garden Chest, contains sixteen tools and weighs thirty pounds.

HORTICULTURAL TOOL CHEST.

We have two sizes of these, both made from the best materials throughout and highly polished, with brass trimmings and lifting handles, with partitions and drawers to contain each article.

The tools requiring a long handle are all made to fit with screws into an improved screw-jointed handle, jointed in lengths to fit the Chest.

The Horticultural Chest, as the larger size is called, is two cubic feet in measurement, contains twenty-one Tools, and weighs fifty pounds.

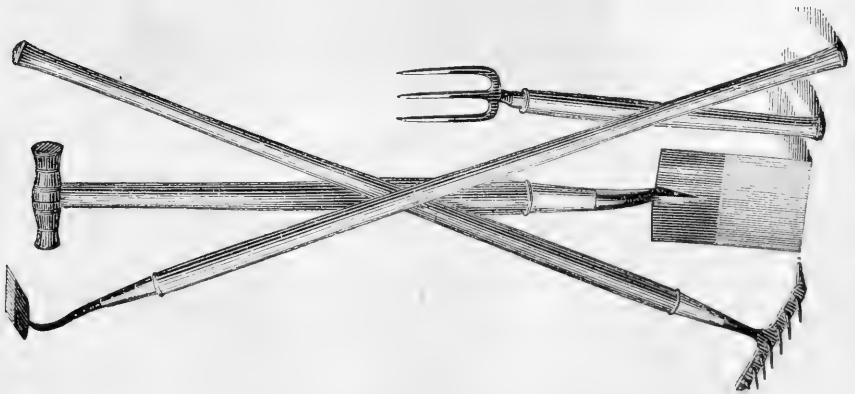


FIG. 365.—LADIES' AND CHILDREN'S GARDEN SET.

These are small and cheap Tools, but sufficiently strong for light work. They are either japanned or polished.

ICE TOOLS.

The Tools represented below comprise nearly all those now used by the large Ice companies of our Northern States, and where much ice is to be gathered all will be found useful. For Farmers, or others who gather only for their own use, the Marker, Plane, and large Plow can be dispensed with, though even these will save their cost in a single winter if purchased by a Farmers' club, and used in turn by the different members.

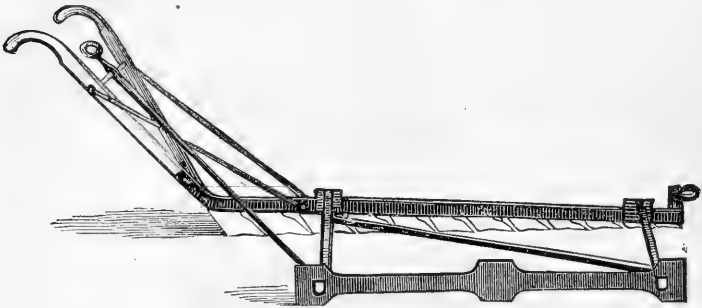


FIG. 367.—ICE MARKER.

This is a modification of the Plow, and is intended for laying off the surface of ice preparatory to its being cut by the Plow.

It is five and a half feet long, cutting grooves two and three quarter inches deep. Its weight is one hundred and twenty-five pounds.

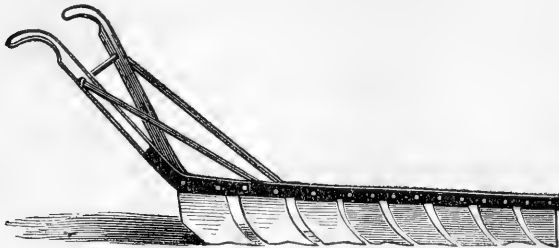


FIG. 368.—ICE PLOW.

This follows the Marker, is five feet long, cuts two inches at each furrow, and is drawn by one horse.

Five sizes are made—six, seven, eight, ten, and twelve inches—weighing from sixty to one hundred pounds.

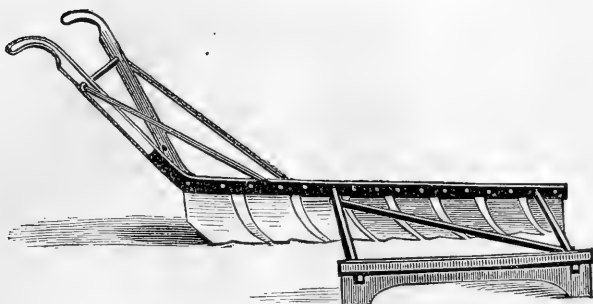


FIG. 369.—PLOW WITH GUIDE.

This is a Marker and Plow combined, and is used where the amount of work to be done will not justify the use of both instruments.

Three sizes are made—six, seven, and eight inches.

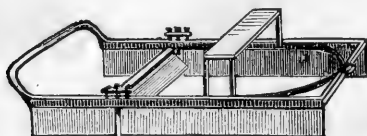


FIG. 370.—SNOW PLANE.

For planing off the surface snow and dirty ice, the sides running in the grooves made by the Marker.

It is three and a half feet long, has a twenty-two inch planing knife, which is raised or lowered by screws, and has a seat for the driver.

It weighs eighty pounds.

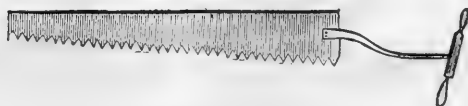


FIG. 371.—ICE SAW.

To make an opening and cut out the ice where the striking-under bar cannot be used.

It varies in length from four feet to six feet.

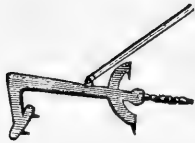


FIG. 372.—GRAPPLE.



FIG. 373.—HATCHET.



FIG. 374.—HAND TONGS.

FIG. 372.—GRAPPLE.

To take the ice from the water for loading.

FIG. 373.—HATCHET. For Carriers' use.

FIG. 374.—HAND TONGS.

These are for Ice Carriers, and made of various sizes.



FIG. 375.—HAND PLOW.



FIG. 376.—HOISTING TONGS.

FIG. 375.—HAND PLOW.

This is two feet in length, and is used for cutting large cakes or thin ice.

FIG. 376.—HOISTING TONGS.

To raise ice for packing in the ice-house. They weigh twenty pounds.



FIG. 377.—STRIKING-OFF BAR.



FIG. 378.—CHISEL BAR.

FIG. 377.—STRIKING-OFF BAR.

For separating the ice after being grooved.

FIG. 378.—CHISEL BAR.

To be used in packing away in the ice-house, and for general use in the field.



FIG. 379.—STRIKING-UNDER BAR.



FIG. 380.—HOOK CHISEL.

FIG. 379.—STRIKING-UNDER BAR.

For separating the cakes by striking from below.

FIG. 380.—HOOK CHISEL.

For splitting and handling ice-cakes.



FIG. 381.—SPLITTING CHISEL.



FIG. 382.—ICE HOOK.

FIG. 381.—SPLITTING CHISEL.

A light bar for general use in the ice field.

FIG. 382.—ICE HOOK. For handling ice.

AXES AND HATCHETS.



FIG. 402.

"OHIO," No. 201.

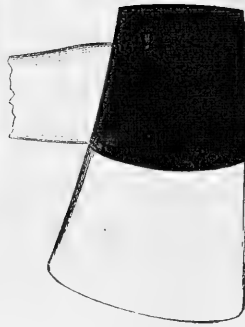


FIG. 403.

Boys', No. 214



FIG. 404.

TURPENTINE, No. 208.

FIG. 402.—"OHIO," No. 201.

Weights vary from two and a half to six and three quarter pounds.

FIG. 403.—Boys', No. 214.

We have two sizes only of this pattern for Boys' use.

FIG. 404.—TURPENTINE, No. 208.

Weights vary from four and a half to six and a half pounds.

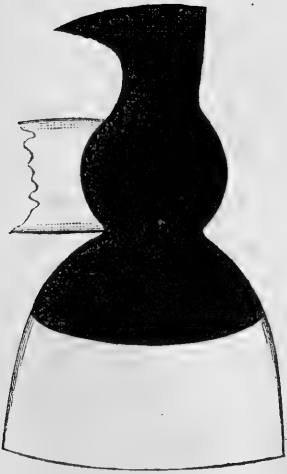


FIG. 414.

CLAW HATCHET.



FIG. 415.

LATHING HATCHET.



FIG. 416.

SHINGLING HATCHET.

All the above three patterns are made of three sizes, and are packed in cases of from two to four dozen each.

PICK MATTOCKS.

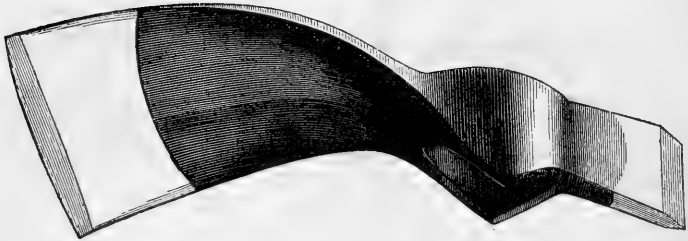


FIG. 419.—SHORT CUTTER MATTOCK, No. 215.

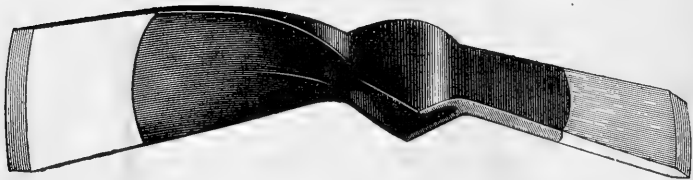


FIG. 420.—LONG CUTTER MATTOCK, No. 216.

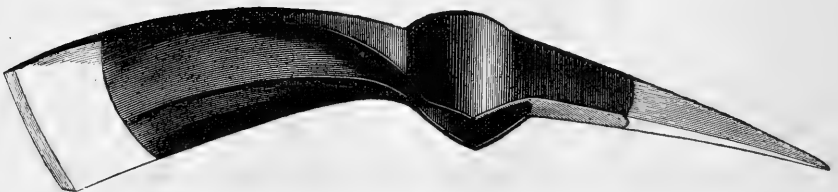


FIG. 421.—PICK MATTOCK, No. 224.

All the above are made of one size only, and weighing four, six, and six and a half pounds respectively.

FORKS.

The Forks, of which cuts are given below, constitute only a small portion of our stock, but are the patterns in most general use.

They are made of various qualities, with short handles generally, though for light work, such as handling loose hay or straw litter, the four-tined forks are generally made with a straight handle four and a half to five feet in length.

HAY AND GRAIN FORKS.

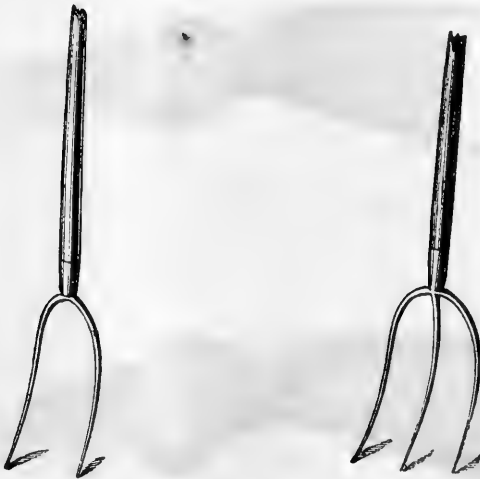


FIG. 426.—TWO-TINED HAY FORK. FIG. 427.—THREE-TINED HAY FORK.

These are of the best tempered steel, round or eel tined, with strap or plain ferrules and ash handles, five, six, and seven feet long.

MANURE FORKS.



FIG. 432.



FIG. 433.



FIG. 434.

ROUND-TINED OR EEL-TINED MANURE FORKS.

The cuts represent equally well the round and the eel-tined Forks, the latter deriving their name from their being compressed laterally like the lower part of an eel's body.

They are made of the best spring steel, as light as possible consistent with strength, with four, five, or six tines, either plain or strap ferruled, Figs. 433 and 434 showing the plain ferrule, and Fig. 432 the strap ferrule.

They are all made with short "D" handles, or with long, straight handles.

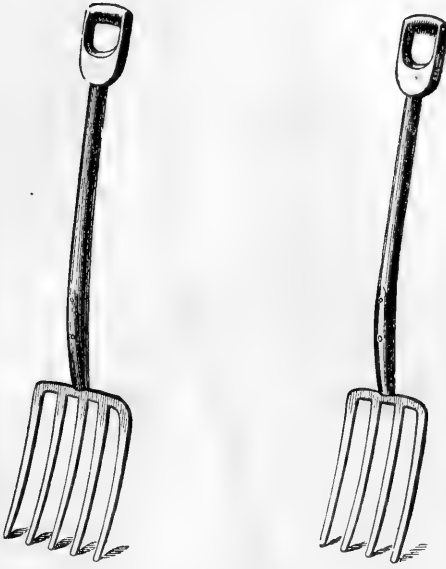


FIG. 438. DIGGING FORKS. FIG. 439.

These are made with four, five, and six tines, and heavily strapped up the handles.

The tines are flat on the face and ribbed at the back, and thus made much stronger than the usual style.

SHOVELS AND SPADES.

The cuts which we give below, although taken from our stock of Ames' goods, represent also those of the Old Colony, Rowland, and other works. It would be well, therefore, to specify, in ordering, what particular brand is desired, and if there be no choice the selection may be left to our discretion. The latter method we prefer, as it occasionally saves delay in executing our friends' orders, should any particular brand be temporarily out of the market.



FIG. 442.

FIG. 443.

FIG. 444.

FIG. 445.

FIGS. 442 AND 443.—STEEL-EDGE ROUND-POINT SHOVELS.

Six sizes made with D handles, and four with long handles, as shown by the cuts.

The handle in Fig. 443 is reduced for the convenience of our Catalogue. It is in reality four and a half feet long, the D handle in Fig. 442 being about two and a quarter feet.

FIGS. 444 AND 445.—BACK-STRAPPED CAST-STEEL ROUND-POINT SHOVEL.

These are stronger than the shovels in ordinary use, of cast steel throughout and highly polished. Three sizes are made.

Fig. 445 is identical with Fig. 444 in form, except in having the new patent handle, which is by many thought superior to the ordinary D handle.

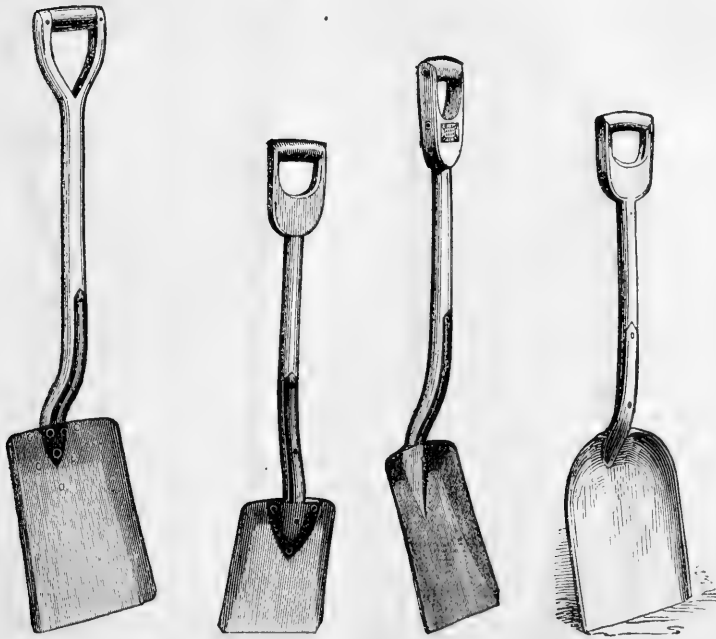


FIG. 446.

FIG. 447.

FIG. 448.

FIG. 449.

FIG. 446.—BACK-STRAPPED SHOVEL, WITH PATENT HANDLE AND SQUARE POINT.

Similar in all respects to Fig. 445, except in the shape of the point. Nine sizes are made of this style.

FIG. 447.—BOYS' CAST-STEEL SHOVEL.

Of one size, similar in pattern and quality to Figs. 446 and 448, but with the ordinary D handle.



FIG. 453.—POST SCOOP OR SPOON.

For raising earth from a post-hole or other similar excavation. It is of wrought iron, with a steel edge, made of four sizes—four, six, eight, and ten inches in diameter.

SPADES.

Our stock of Spades is made in the same variety of styles and qualities as our Shovels, and if any particular pattern does not appear on our list, we can make it to order on receipt of the necessary specifications.

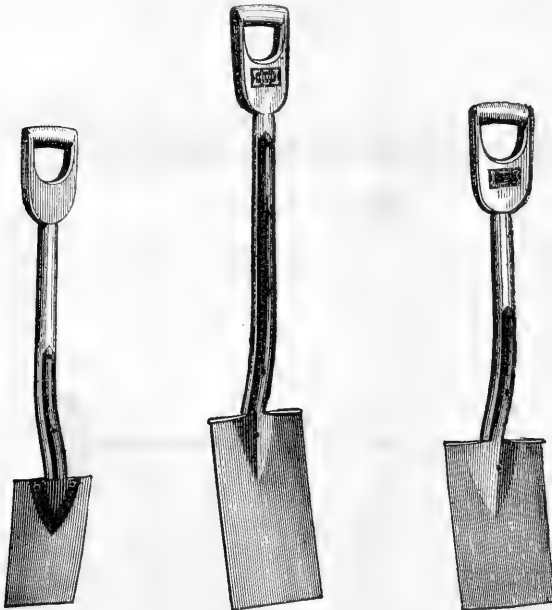


FIG. 454.

FIG. 455.

FIG. 456.

FIG. 454.—BOYS' OR LADIES' GARDEN SPADE.

Very light, and intended only for the lightest work.

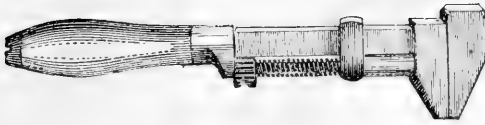


FIG. 468.—SCREW WRENCH.

These are of seven sizes—six, eight, ten, twelve, fifteen, eighteen, and twenty-one inches in length—and of two styles, plain black and highly polished.



FIG. 469.—PIPE WRENCH.

This is a patented Wrench for the use of Plumbers, Gasfitters, and Machinists.

Three sizes are made—twelve, eighteen, and twenty-four inches in length.



FIG. 470.—BOX CHISEL.

Of wrought iron, with a steel point, for opening boxes and packing cases. Different sizes are made, varying from six to twenty-four inches in length.



FIG. 471.—BRAND.

This is very convenient for branding tools or implements.

The head or framework is made to receive metal letters, which can be furnished to order, and when heated is pressed against the article to be branded.

We have two sizes of this article.

The usual sizes of lettering are quarter and half inch, though others can be used.

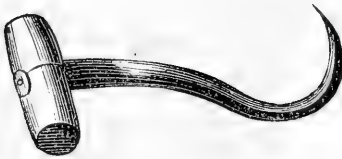


FIG. 472.—BOX OR BALE HOOK.

For loading, unloading, and moving bales, boxes, and packages of all kinds.

We have various sizes and styles, all made of steel, with heavy wooden handles.

HOES.



FIG. 473.

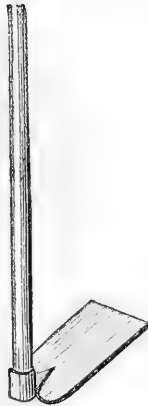


FIG. 474.



FIG. 475.

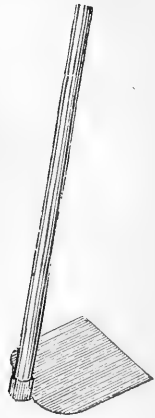


FIG. 476.

FIG. 473.—GARDEN OR FIELD HOE.

This is the ordinary steel Hoe for general use in the Garden or Field. It is made of steel, and of three sizes—Nos. 1, 2, and 3.

FIG. 474.—BOG HOE.

For Bogs, and Peat or Muck Swamps. This is a heavy steel Hoe, made of several sizes. .

FIG. 475.—DUTCH, OR SHOVEL HOE.

Used for weeding and stirring the earth in Garden-walks, Carriage-roads, etc. It is pushed before the operator.

We have two patterns—one of solid steel, six, seven, eight, ten, and twelve inches wide, and one with a steel blade riveted to the iron shank, cheaper and not so strong as the first. This is six, seven, eight, nine, and ten inches wide.



FIG. 477.—POINTED GARDEN HOE.

This is a light Garden Hoe combined with the Bayonet Hoe.

It is very useful in weeding among rows of small vegetables, flower-beds, etc. But one size is made.

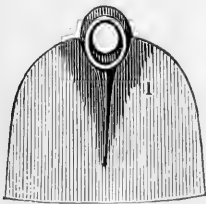


FIG. 478.

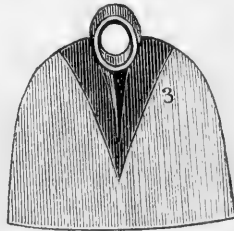


FIG. 479.



FIG. 480.



FIG. 481.

FIGS. 476, 478, 479, 480, AND 481.—PLANTERS' HOES.

These are of steel, made of six different sizes and patterns, and much heavier than the common Field Hoe. They are used for Cotton, Corn, Sugar-cane, etc., etc., in our Southern States.

RAKES.



FIG. 487.—GARDEN HOE RAKE.

This implement unites the Weeding Hoe and Garden Rake, and for light work is very convenient.

It is of wrought iron and steel, and made with from three to six teeth, as may be desired.



FIG. 488.—FLORAL HOE RAKE.

This is the ordinary Hoe Rake described above, with a short handle for use with one hand. It is particularly intended for ladies' use.



FIG. 489.



FIG. 490.

POTATO HOOKS.

These are made with four, five, and six teeth, of steel and of wrought iron.

They are used for digging Potatoes, and for loosening the soil between rows in the garden.



FIG. 491.—GARDEN RAKE.

These vary in the length and strength of their teeth, as well as in their number. They are used for covering seed, raking off weeds or cut grass, smoothing and pulverizing garden-beds, etc.

They are made with from six to eighteen teeth, of cast-steel, wrought iron, and malleable iron.

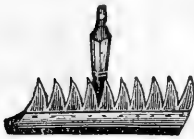


FIG. 492.

GRASS LAWN RAKE.

This Rake has steel teeth, sharpened on both edges, and is used for raking the grass in order to tear off the flower-heads or buds of daisies, dandelions, and other plants in grass lawns. Three sizes are made, with eighteen, twenty, and twenty-two teeth.



FIG. 493.—FLOWER STICKS.

These are of hard wood, handsomely turned and painted.

Five sizes are made—two, three, four, five, and six feet in length.

PRUNING TOOLS, SHEARS, ETC.



FIG. 497.—PRUNING SAW AND CHISEL.

The blade of the Saw is twelve inches long, attached to the blade of the Chisel at one end, and to the socket of the chisel-handle at the other end. The Chisel is three inches wide by three and a half inches long, made thin, and of the best cast steel. A wooden handle, of convenient length, is inserted in the socket-handle, enabling a person to stand on the ground and trim his trees. Only one size is made.



FIG. 498.—TREE SCRAPER.



FIG. 499.—GRAFTING CHISEL.

FIG. 498.—TREE SCRAPER.

This is made of heavy plate steel, with a long jointed handle for scraping upper branches, or a short one for the trunks.

We have only one size.

FIG. 499.—GRAFTING CHISEL.

This the most approved form of Grafting Chisel. The wide knife is for splitting the stock, while the pointed end is used to open it to receive the grafts. We have but one size.



FIG. 500.—VINE SCISSORS.



FIG. 501.—FLOWER GATHERER.

FIG. 500.—VINE SCISSORS.

These are for thinning out grapes when they have grown too closely on the bunch; also for removing superfluous leaves, twigs, etc.

Three sizes are made—five, six, and seven inches long.

FIG. 501.—FLOWER GATHERER.

This is a pair of Scissors combining Tweezers or Pincers. They are of great advantage in gathering roses and other flowers which have thorny stems, as the flower cut by the Scissors is held fast by that part which acts as Pincers.



FIG. 502.

PRUNING SCISSORS.



FIG. 503.

Fig. 502 is very handsomely made with sliding centre and spring, and is fitted with sheaths. These Scissors cut as smoothly as a pruning knife, and are especially adapted for ladies' use for pruning roses, etc.

Two sizes are made, six and eight inches long.

Fig. 503 is designed for pruning small twigs, cutting flowers, etc., and is a very useful article for ladies.

Three sizes are made, five, six and eight inches long.



FIG. 504.

WISS SHEARS.



FIG. 505.

These are very efficient instruments, and leave the branch which has been cut as smooth as if a knife had been used. They are for light work only, as they will not cut branches of greater diameter than one inch.

Five sizes are made.

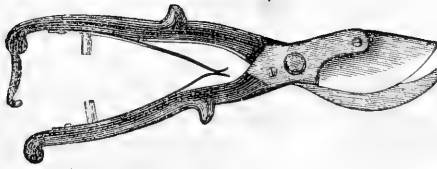


FIG. 506.—WOODING'S SHEARS.

This pattern of Shears is similar, in many respects, to those shown on the preceding page, but is made only of one size.

It is a strong and useful article.

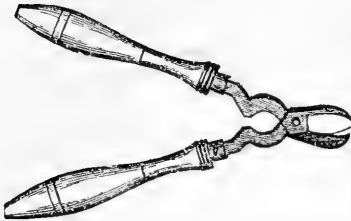


FIG. 507.

LADIES' PRUNING SHEARS.

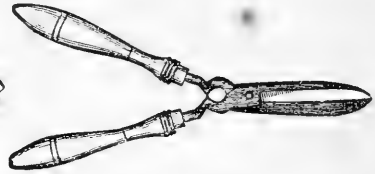


FIG. 508.

LADIES' GARDEN SHEARS.

FIG. 507.—LADIES' PRUNING SHEARS.

These are handsomely and lightly made, and very useful in trimming shrubbery, etc., which is too large to be cut by the hand shears.

There are two sizes of this style.

FIG. 508.—LADIES' GARDEN SHEARS.

Fig. 508 is small, light, and neatly finished, and is very useful for trimming trees and bushes, as well as for many other purposes.

The blades are five inches in length.

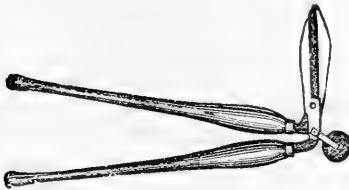


FIG. 509.

GRASS-EDGING OR BORDER SHEARS.

Fig. 509 is chiefly used for trimming the sides of box and grass edgings, and made quite long, so that the operator may stand upright while using it.

Four sizes are made, with blades eight, nine, ten, and twelve inches long, and all are made with and without the wheel.

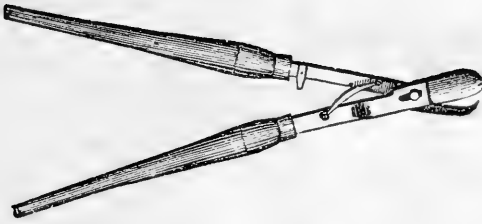


FIG. 510.—SLIDING PRUNING SHEARS.

ing the section of the part attached to the tree or shrub smooth as if cut with a knife. It is also much lighter than the Lopping Shears.

Three sizes are made of this pattern.

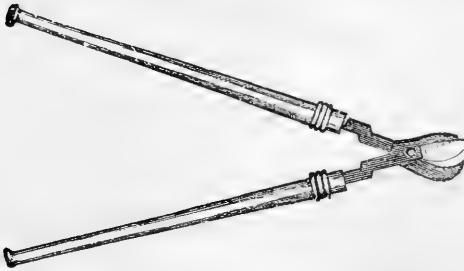


FIG. 511.—LOPPING OR BRANCH SHEARS.

This instrument differs from the Lopping or Branch Shears, in having a movable centre for the motion of one of the blades, by which means, instead of a crushing cut, it makes a draw cut, leav-

This is very strongly made, with long wooden handles, and is used for cutting thick branches from trees, shrubbery, hedges, etc.

Three sizes are made.

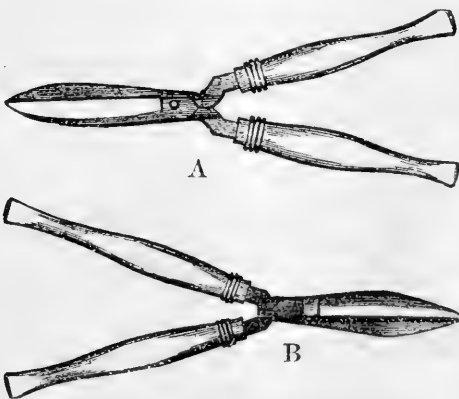


FIG. 512.—GARDEN OR HEDGE SHEARS.

A represents this article without the Pruning Notch. B has the Pruning Notch, which is of advantage when used for trimming hedges or shrubbery, as it enables the operator to cut much larger twigs than could be cut by the plain shears. Four sizes are made, with blades eight, nine, ten, and twelve inches long.

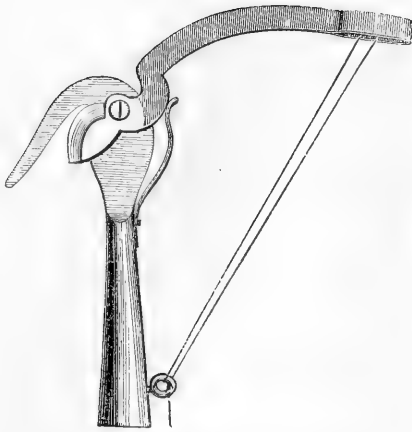


FIG. 514.—POLE PRUNING SHEARS.

These Shears are attached to a pole, and operated by means of a lever moved by a cord and pulley. It enables a person standing on the ground to prune trees some of the branches of which could not, perhaps, be as well pruned by any other instrument.

Branches of one inch and a half in diameter may be easily cut off with this instrument.

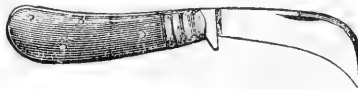


FIG. 515.—PRUNING KNIFE.

This is made in two styles—one, as shown in the cut, having the blade fixed fast in the handle and protected by a sheath; the other with a blade that shuts as in the ordinary pocket-knife. Both are very strong.



FIG. 516.—BUDDING KNIFE.

This is one of several forms of Pocket-knives for Budding, the points of the blades being rounded on one or on both sides, and the handle terminating in a flattened ivory lifter, with which the bark is loosened and raised after being cut to receive the bud.

In some patterns, the handle is all of ivory, properly shaped at the end to effect the desired object.



FIG. 517.—FRUIT KNIFE.

A light yet strong pocket-knife for pruning and general use by a gardener or nurseryman.

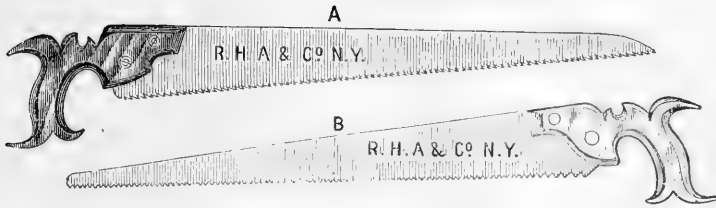


FIG. 518.—PRUNING SAWS.

Pruning Saws are of various styles, but our cuts represent the usual and best patterns.

They are made of several sizes, from fourteen to twenty-four inches long, though the ordinary sizes are eighteen and twenty inches.

BUSH HOOKS.



FIG. 519.—LONG-HANDLE BUSH HOOK.



FIG. 520.—SHORT-HANDLE BUSH HOOK.

These are strong and useful instruments for cutting brush or brambles about fences, or in clearing the underbrush from woods.

They are made with long or with short handles, as shown by the cuts, though we have but a single size of each.

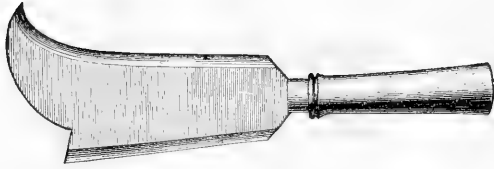


FIG. 522.—BRIER OR BILL HOOK, WESTMORELAND PATTERN.

These are of various forms, though the one represented here is the kind most approved. They are used with either long or short handles, as circumstances may require, and are very useful for trimming hedges, cutting brush, brambles, etc. We have three sizes.

The Yorkshire Bill Hook resembles the above, but is somewhat larger and heavily strapped with iron on the handle.

GARDEN TOOLS.

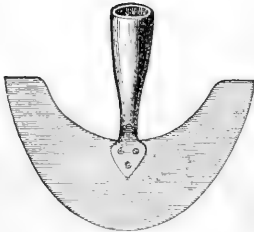


FIG. 523.

We have two patterns—light and heavy.

GRASS-EDGING KNIFE.

This is fitted to a straight handle, and used for paring the edges of grass borders, walks, etc.; also for cutting the outlines of sods, which may then be readily raised by the spade.

Three sizes are made, with blades eight, nine, and ten inches long.

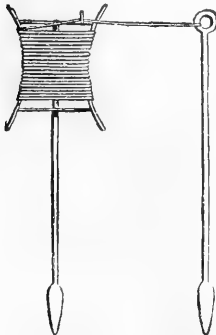


FIG. 524.

GARDEN REEL AND LINE.

This is made of two sizes, differing in weight only, for use in laying out walks and beds in gardens.

The lines are sixty and one hundred and twenty feet in length, as may be ordered.



525.—GARDEN TROWEL.

Six sizes are made, of from five to ten inches long.

This is used to plant, or take up for re-planting, plants, roots, etc., as well as for stirring the soil among tender plants in confined situations, and loosening the roots.



FIG. 526.

FRUIT GATHERERS.

These are small bags attached to light iron frames, at each end of which are small knives for cutting the stems of the fruit.

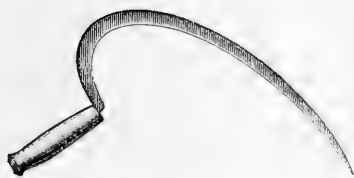


FIG. 527.—GRAIN SICKLE.

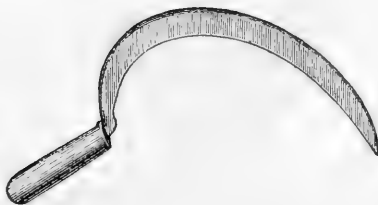


FIG. 528.—GRASS HOOK.

Sickles for cutting grain are of six sizes.

Grass Hooks, for trimming grass borders and for cutting grass near trees or fences, when the lawn mower or scythe cannot be used, are made of six sizes.

We have also the Lenniker Grass Hook, of several sizes, but lighter than the English pattern which our cut represents.

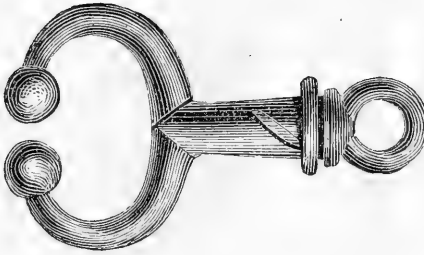


FIG. 544.—CATTLE LEADER.



FIG. 545.—BULL RING.

FIG. 544.—CATTLE LEADER.

This is made of two sizes, and is intended for leading bulls or any cattle by the nose.

FIG. 545.—BULL RING.

Bull Rings are made of two, two and a half, and three inches in diameter, and of steel and of copper. The copper rings are made both heavy and light.

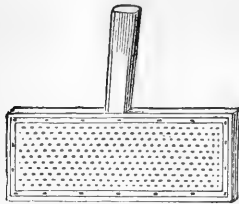


FIG. 546.—CARD.



FIG. 547.—Bow PIN.

FIG. 546.—CARDS.

Our Horse and Cattle Cards are made of the best coppered wire.

The former are eight and a quarter by four inches; the latter, five and three quarters by four inches.

FIG. 547.—Bow PIN.

We have two sizes of these—No. 1, for one and three quarter inch bows, and No. 2 for two-inch bows.



FIG. 548.

OX BALLS.

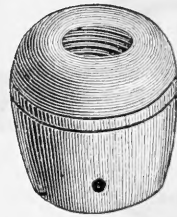


FIG. 549.

These are of solid brass, made in five sizes, of an octagon shape or round.

We have also Wrenches for putting these on.

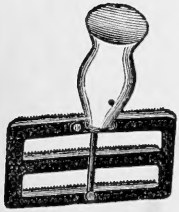


FIG. 550.—No. 00.

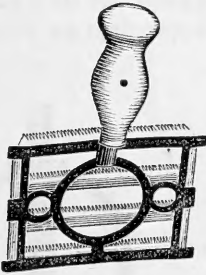


FIG. 551.—No. 22.

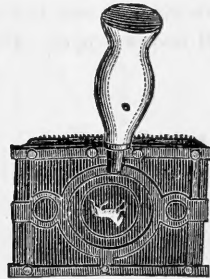


FIG. 552.—No. 44.

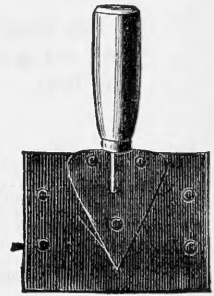


FIG. 553.—No. 160.

FIGS. 550, 551, 552, AND 553.—CURRY-COMBS.

No. 00 is a light and very cheap instrument of iron.

No. 22 is a heavy and more expensive comb.

No. 33 is the same as No. 22, tinned to prevent rust, and, consequently, somewhat more expensive.

No. 44 is the same as No. 22, with a solid back.

No. 66 is the same as No. 44, tinned to prevent rust.

No. 160 is the heavy English plain Curry-Comb.

Books for Farmers and Others.

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Warder 3 00 American Rose Culturist 30 American Weeds and Useful Plants. 1 75 Architecture, by Cummings and Miller. 10 00 Art of Saw-Filing (Holly). 75 Barry's Fruit Garden 1 75 Bement's Rabbit Fancier. 30 Bement's Poulterer's Companion 2 00 Bommer's Method of Making Manures. 25 Boussingault's Rural Economy 1 60 Breck's New Book of Flowers. 1 75 Bridgeman's Young Gardener's Assistant. 2 50 Brandt's Age of Horses (English or German). 50 Buist's Flower-Garden Directory. 1 50 Buist's Family Kitchen Gardener. 1 00 Burr's Vegetables of America. 5 00 Carpenter's and Joiner's Hand Book (Holly). 75 Chorlton's Grape-Grower's Guide. 75 Cobbett's American Gardener 75 Cole's (S. W.) American Fruit Book. 75 Cole's Veterinarian. 75 Cotton Planter's Manual (Turner). 1 50 Cotton Culture, by J. B. Lyman 1 50 Country Life, by R. M. Copeland. 5 00 Dadd's (Geo. H.) Modern Horse Doctor. 1 50 Dadd's American Cattle Doctor. 1 50 Dana's Muck Manual 1 25 Dead Shot; or, Sportsman's Complete Guide. 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Mohr 1 00 Gray's How Plants Grow. 1 25 Gray's Manual of Botany, and Lessons, in 1 vol., 4 00 Gregory on Squashes (paper) 30 Guenon on Milch Cows. 75</p>	<p>Haraztly's Grape Culture and Wine Making \$5 00 Harris's Insects Injurious to Vegetation, plain, 4 00 Hatfield's American House Carpenter. 3 50 Herbert's Hints to Horsekeepers 1 75 Hop Culture 40 Husmann's Grapes and Wine. 1 50 Jennings's Horse Training Made Easy. 1 25 Jennings on Cattle 1 75 Jennings on Sheep, Swine, and Poultry. 1 75 Jennings on the Horse and his Diseases 1 75 Johnson's (Prof. S. W.) 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