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or Machinery

Annual Illustrated Catalogue

OF

SUGAR MAKING APPARATUS,

FARM IMPLEMENTS, &C., &C..

Manufactured by

JAMES L. HAVEN & CO.,

SUCCESSORS TO

Hedges, Free & Co., Sechler & Porter and Sechler & Haven.

OFFICE, NOS. 173, 175 & 177 WEST SECOND ST.

CINCINNATI, OHIO.

Sold by

INTRODUCTORY.

The undersigned, on the 1st of January, succeeded to the Foundry business of the firm of Sechler & Porter and Sechler & Haven, who were the successors to Hedges, Free & Co., the pioneers in the manufacture of Sorghum Mills, &c.

We present in the following pages cuts and descriptions of machinery which have stood the test of years, and met with the heartiest and most cordial approval from the public. Moreover, the improvements from time to time adopted, instead of being crude and untried experiments, are the natural suggestions arising from actual and continued working of our machines.

During the season of their use, their operation has been carefully watched, and when susceptible of being rendered more reliable, convenient and efficient, have been improved.

Our "Pioneer" series of mills is the same as that originally manufactured by Hedges, Free & Co., with all the improvements suggested by ten years experience. We are confident this mill is unequalled by any manufactured elsewhere in the United States.

We still manufacture the "Excelsior" series (three plate mill) introduced by Messrs. Sechler & Porter, in 1863, and which has given universal satisfaction.

The attention of those desiring a cheap mill is called to our two-roll Mill, "THE ECONOMIST," No. O, introduced by our predecessors, in 1865, and which has been pronounced just the thing for working off a small crop.

We also continue the manufacture of Iron Amalgam Bells, Kitchen Mills, Grocer's Sugar Mills, "Little Giant," Corn and Cob Mill, all of which will be described under their appropriate heads.

We wish to call special attention to the fact, that as we have purchased the patterns, &c., of Sechler and Haven, they embrace all the patterns used by Scott & Hedges, Hedges, Free & Co., Sechler & Porter and Sechler & Haven, and that repairs or duplicates of machinery made by them, can only be obtained from us.

JAMES L. HAVEN & CO.

CINCINNATI, June, 1867.

CAUTION.

CINCINNATI, O., March 20th, 1866.

The undersigned, by mutual agreement and conveyance, have become the owners of Letters Patent, No. 22,802, granted to Isaac A. Hedges, February 1st, 1859, for improvements in Mills for crushing Cane, &c.

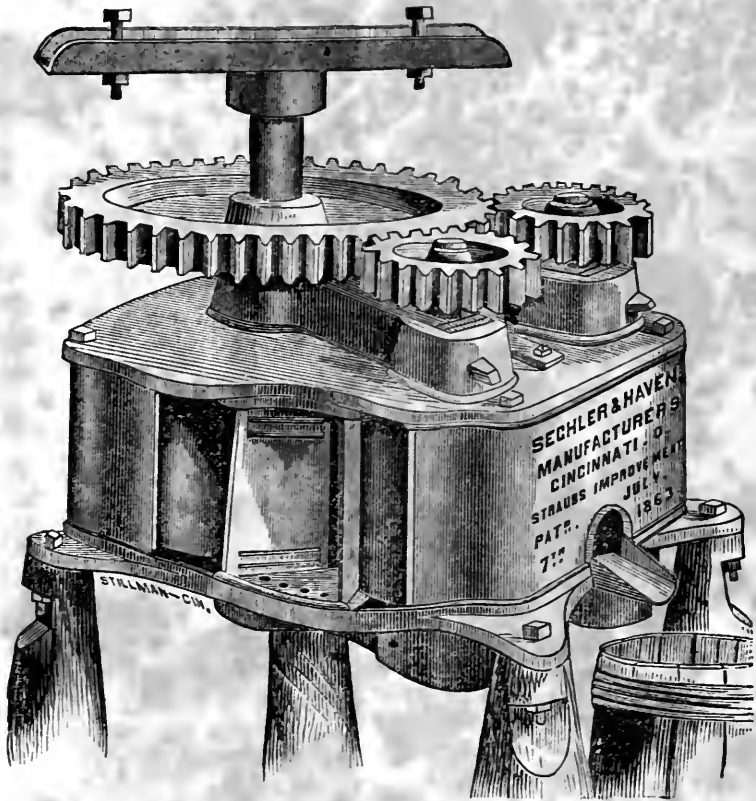
They are, therefore, the only persons who have the right to manufacture or authorize the use of Mills containing the improvements described and specified in said Letters Patent; some of which improvements they believe essential to every successful Mill for crushing Cane and expressing Juice.

Notice is hereby given, that Mills containing the patented improvements cannot be made by manufacturers, sold by dealers, or used by farmers, without liability to the undersigned, who are fully determined and prepared to punish infringers, and vindicate their rights.

Those who have made such Mills, are notified to make immediate settlement. Those who are now making them, are notified to cease their unlawful manufacture, and those who are intending to purchase, are warned that they will, by the use of an infringing Mill, become themselves liable for damages, from the payment of which, those who sell to them cannot relieve them.

CLARK SORGO MACHINE CO.
SECHLER & HAVEN.

Since the foregoing, Sechler & Haven have transferred their full and undivided one half interest in the above Patent, to James L. Haven & Co.



"PIONEER" SORGHUM MILL.

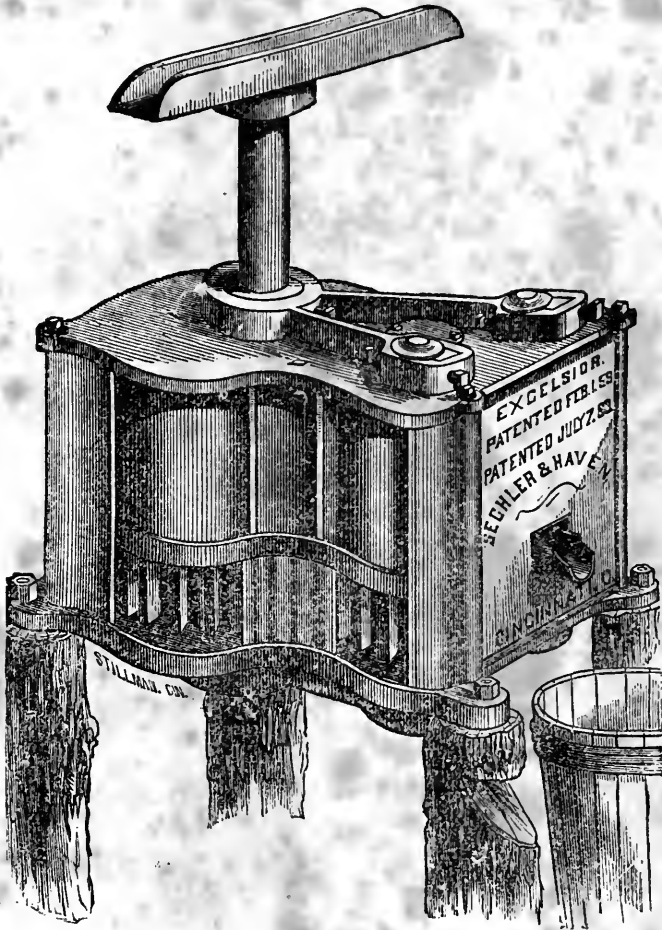
Pattern of 1860, with Improvements of 1863—4—5 and 6.

In the above cut we represent our series of 1860, which has been before the public five seasons, during which a very large number have been in operation; and although they have been put to the severest test, yet, from their great strength, durability, simplicity

and speed, under a limited amount of power, they have received the most unequivocal stamp of public approval.

Of this style mill, we make five sizes, as follows :

- No. O O, "PIONEER," has main roll *ten*, and feed and discharge rolls *six* inches diameter, and *six* inches long, and is capable of taking off a crop of from two to three acres.
- No. 1, PIONEER, has driving roll twelve, and feed and discharge rolls eight inches in diameter and seven inches long, and is capable of taking off a crop of from four to five acres.
- No. 2, PIONEER, has main roll sixteen, and feed and discharge rolls eight inches in diameter, eight inches long, and otherwise of extra strength and finish, and is capable of taking off a crop of from six to eight acres.
- No. 3, PIONEER, has rolls of same diameter as No. 2, twelve inches long, but of extra strength, and is capable of taking off a crop of from twelve to eighteen acres.
- No. 4, PIONEER, having main roll 19 inches, and feed and discharge rolls 11 inches diameter by 15 inches in length, capable of working off a crop of from twenty-five to thirty acres. Weighs 2,000 pounds.



“EXCELSIOR” SORGHUM MILL.

Pattern of 1863, with Improvements of 1864—5 and 6.

This series of Mill has been before the public for the past three seasons, and has given universal satisfaction; the only complaint ever made was, that it *expressed the juice too fast*, which we think is a *very good fault*.

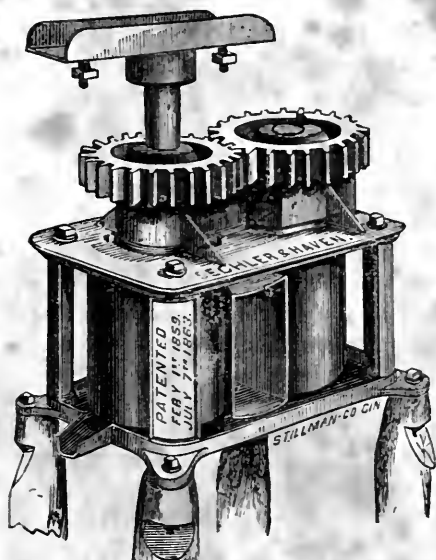
As will be observed by the cut, we use three plates, the gear working between the bottom and juice plates, and the journal bearings being below, thus admitting of the bottom of the openings being closed, preventing waste or loss of oil, and always insuring the lower journals being well lubricated, a point we desire to especially impress upon the minds of purchasers as being of peculiar importance, from the fact that the majority of failures result from this cause alone.

Again, the entire weight of the roll and gear wheel rests on a steel step under the end of the journals, thereby saving all the friction caused by the rolls resting on the hub, as is the case with all vertical mills made on any other plan.

Of these we make two sizes, viz: Nos. 5 and 6.

No. 5, EXCELSIOR, one-horse mill, has main rolls sixteen inches in diameter, feed and discharge roll eight inches, and eight and a half inches long, has extra heavy shafting, brass boxes, and is finished in every respect in the very best manner, is in perfect working order before it leaves the hands of the workmen, and is capable of working off a crop of from eight to ten acres.

No. 6, EXCELSIOR, two-horse mill, is made on precisely the same principle, has main roll sixteen inches, feed and discharge roll eight inches in diameter, with a height of thirteen inches, with extra heavy shafting, brass boxes, &c., all of the best style of workmanship, and is capable of working off a crop of from fifteen to twenty acres.



THE ECONOMIST.

There has existed ever since the commencement of the culture of Sorghum, the want of a cheap Cane Mill, one that would be in the reach of every farmer, that would enable him to raise and manufacture a small crop, without the trouble, delay and expense of hauling his cane a long distance to a large mill, and then have to wait *mill fashion* for his turn, often taking some three or four days, and at a season of the year when his time was particularly valuable.

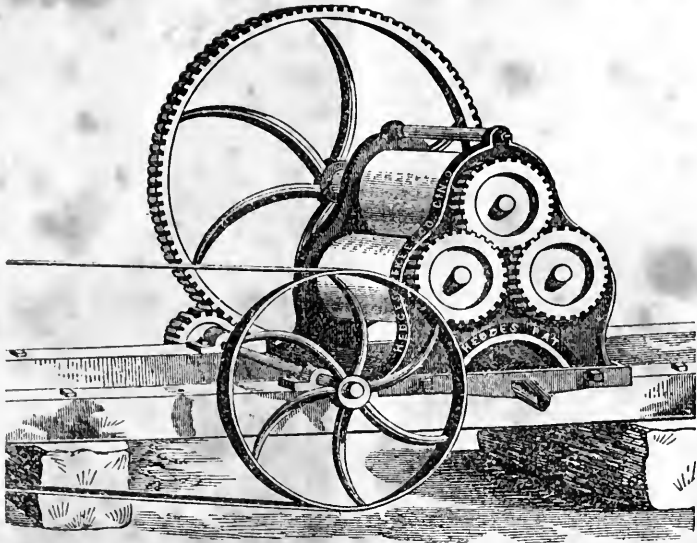
We think we are now able to fill that want in offering "THE ECONOMIST," a new TWO-ROLL MILL, which can be offered at a very low price. The capacity of this mill is only one-sixth less than of our No. 1 mills, and that difference is more than saved to the farmer by having his mill right where he wishes to do his work, and to be ready at such times as he can spare from other labor.

This mill was introduced by our predecessors at nearly the close of the season of 1866, and without any advertising or special effort on their part, nearly *one hundred* were sold, giving satisfaction in every instance.

The risk of breakage on this mill is very small; is easily set up and operated, and will, we think, entirely fill the vacuum that has so long existed in the want of a good and cheap Sorghum Mill.

Description of Mill.

Two Rolls, eight inches diameter, and nine inches high, is capable of working off a crop of three to four acres.



HORIZONTAL BACK-GEARED MILL.

Adapted to Steam, Water, or Horse Power.

Four-horse horizontal mill, finished with wrought shafts, brass boxes, etc., arranged with pulley for band, as shown in cut, or with coupling for attachment to tumbling shaft, and capable of working off a crop of from ten to eighteen acres of cane.

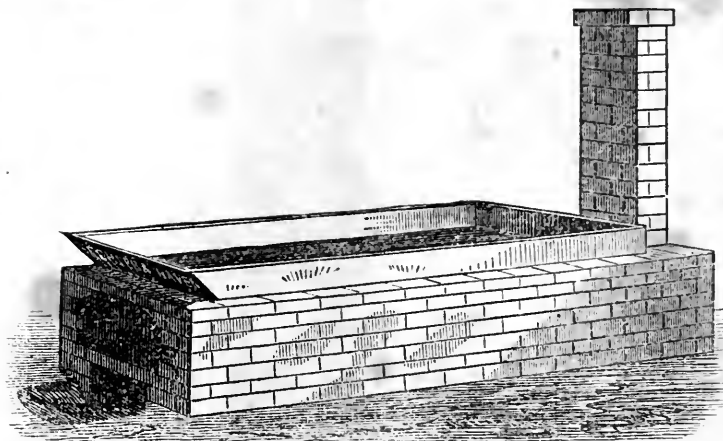
Six-horse horizontal mill, same finish, capable of working fifteen to twenty-five acres of cane.

Eight-horse horizontal mill; same finish, and capable of working twenty-five to forty acres of cane.

Ten-horse horizontal mill, capable of working a crop of forty to sixty acres.

Twelve-horse horizontal mill, capable of working a crop of fifty to seventy-five acres.

Larger sizes, with engines and outfits, as per special contract.



EVAPORATORS.

In no department connected with the cultivation and manufacture of Sorghum Sugar Cane has there been such a variety of opinion as upon Evaporators. Inventors have been numerous, and each claims his evaporator to be the *only* one of any value. We do not offer any of these, nor would we express any opinion as to the value of the numerous patented devices for reducing the cane juice to sirup.

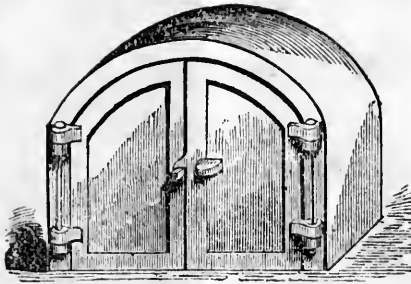
On one point, however, all seem to agree, viz: that cane juice should be reduced to sirup as soon and rapidly as possible after it is expressed. To attain this end, it is necessary to use broad, shallow pans, in order to present the largest surface to the fire at once.

We offer to the public a plain sheet iron pan with wooden sides and ends of shape above represented. This pan is offered at less than one-third the price of the cheapest of the multitude of "evaporators" and, we believe, is fully as efficient. The sizes we manufacture, and the prices of the same, are as follows:

Evaporator, 6 feet by $2\frac{1}{2}$ feet,	\$10	6 feet by 3 feet,	\$12
" 8 feet by $2\frac{1}{2}$ feet,	13	8 feet by 3 feet,	16
" 10 feet by $2\frac{1}{2}$ feet,	15	10 feet by 3 feet,	20

We will furnish sheet iron ready punched, as follows:

Sheets, $2\frac{1}{2}$ by 6 feet,	.....	\$6 00
" $2\frac{1}{2}$ by 8 feet,	.....	8 25
" $2\frac{1}{2}$ by 10 feet,	.....	10 00
" 3 by 6 feet,	.....	7 50
" 3 by 8 feet,	.....	10 50
" 3 by 10 feet,	.....	12 50



FURNACE DOOR & DOOR FRAME.

If to be set in brick, this should be strong and of sufficient weight to maintain its position firmly and assist in sustaining the wall about it, as the expansion and contraction caused by heating and cooling, as well as thumps from wood and coal thrown in, are likely to loosen any temporary fixture used as a door to a range.

Prices for the two sizes, \$6 and \$10.



GRATE BARS.

We furnish grate and bearing bars in sets, as follows .

Four 3-bar sections, 28 x 4 $\frac{1}{2}$ inches,.....	\$10 00
Four 3-bar sections, 31 x 4 $\frac{1}{2}$ inches,.....	11 00
Four 3-bar sections, 48 x 5 inches, extra heavy,.....	20 00
One 7-bar section, 18 x 33 inches, light,.....	4 00

HUNT'S PATENT Centrifugal Sugar Separators.



We have the pleasure of presenting to our customers a perfectly successful machine, patented March 27th, 1866, for the purpose of separating the sugar from sirup. Every one who has made sorghum sirup in any quantity, has found that some batches would granulate—becoming a mushy mass, which was considered rather a misfortune, as it lessens its value for table purposes. With the above simple machine you can take such mush sugar and separate the sirup, leaving the sugar as fair as common grades of Orleans sugar, and just as valuable for all family uses. There have been various secret and patented mixtures sold for the purpose of aiding the separation by the aid of presses, but with this machine, we require *no mixture or dilution at all*; the sirup being entirely unchanged, and better for the table than before.

A gallon of good sirup weighs twelve pounds, and five pounds is a moderate average quantity of sugar to separate from it, (much of it will turn out from 6 to 7 pounds to the gallon) which sugar, at any price the sirup can be estimated at, will always *more* than pay for the gallon of sirup and your labor, and you will have half the sirup left, in better shape than before.

Some parties are interested in making the public believe that there is a great mystery in making the sirup grain, whereas, there is no

difficulty whatever in granulating all Sorghum Sirups. It only requires proper management.

In boiling, commence with a slow fire until the first scum is taken off, after which, rush the fire very rapidly and continue skimming and boiling until the sirup has attained the proper density for granulating. This when determined by the saccharometer, or otherwise, is about 40 degrees. Next draw off the sirup into an open shallow pan or box, and stir while cooling. Then place the box or pan in a room where the temperature can be kept at about 90 degrees, and stir three or four times each day, until the sirup is thoroughly granulated into mush sugar.

Cold Molasses should be made thin with rain water, then boiled, skimmed, and treated as above directed.

We have been informed that impure molasses may be purified and grained by taking 40 gall. of rain water, 10 lbs. hickory wood ashes, 1 lb. of fullers' earth, 1 lb. of alum, 2 oz. of tannin, stir them all together until all are dissolved. Then settle and use the clear liquid, 1 pint to five gallons of molasses, first made very thin with rain water, then boil, skim and treat as above directed. Animal charcoal and gravel may be used as a filter successfully after other means fail.

List of prices furnished on application.



DIRECTIONS FOR CLARIFYING JUICE.

If you want to make very fair Sugar.

For fifty gallons of juice take one quart of the Bi-Sulphite of Lime, mingling it with the juice as the latter flows from the mill; add to this sufficient milk of Lime to change Litmus paper to straw color; next, add three well beaten eggs and then stir the mixture. Let stand half an hour to settle. Draw off with faucet, so as not to agitate the contents of the vessel at the bottom.

On receipt of ten cents, we will send, post paid, a sample of sugar made by one of these machines; and for twenty-five cents, will send you a pound of sugar by express; charges of carriage to be paid on delivery.

[From "Hutchinson's Trade Circular."]

GOOD WINE AND CIDER.

The Best and Most Simple Way of Making them.

So common is the business of making *Wine* or *Cider*, one would think no improvements could be made; that everybody ought to know how; yet it may, with truth, be said that three-fourths of all the *Domestic Wines* and *Cider* made are *spoiled in making*, and that not half is made that can be, when the right way is understood, and a *simple* and *cheap* mode introduced for doing it. An incredible amount of money has been spent in the way of experiments, and almost innumerable recipes have been offered for making wines and ciders. And yet nearly all fall short or overreach that simple and effectual way, in which they must be made. From the great diversity of soil and climate in the United States, and the almost endless variety of its *fruits*, it follows that great diversity of *taste* and *flavor* will be found in the wines and cider that are made from them.

In the manufacture of both wine and cider, much depends on the *crushing* of the *fruits*, and the time and mode of *extracting* the *juices*, and still more in removing from them the *pomace*, *lees* or *sediment*, which act as a *yeast*, and often produce too great fermentation, which will, by proceeding too far, terminate in acetous fermentation, when vinegar will be the result.

By the common careless modes of making wine and cider, they must and do contain a large percentage of impure and poisonous compounds. No care is taken in the *selection* of the *fruits*, nor the *cleansing* of the *mill* or *fixtures* about it, quantity per day, not quality, seeming to be the only desideratum; and the thousands who have a high appreciation of *choice fruits*, and may have been blessed with their *rich gifts*, lose altogether the *choice*, *cooling beverage* they can have, only for the want of a simple mode for *extracting* the *juices*.

The apples used for cider are often such as are not fit for the *market*, and not even suitable to *feed to the stock*. After all the good qualities have been selected, the most inferior kinds are used for cider.

All kinds of barrels and casks are used to put it in, and still the compound is called cider. It is said that all the dirt, bad taste, &c., will work out in fermentation, and so it will, but not until acetous fermentation has taken place, and the compound has become vinegar.

The mills formerly used for this purpose were so large, clumsy, complicated and costly, that they were not adapted for domestic use, and, therefore, the juice of the choice fruits, so abundant, has been almost entirely lost.

That most desired and long delayed remedy was fully appreciated by the writer, who has, at no small expense of money, time and perseverance, produced a *small*, *simple* and *cheap*, yet *strong*, *durable* and

efficient *Mill and Press*, properly called the *Family Wine and Cider Mill*, one that, in all respects, will fully meet *domestic wants*, and which must and will find its way to every *family* that appreciates the rich extracts of their choice fruits, enabling the amateur to experiment clearly, and reduce the selection and mixtures of fruits, and the whole business of cider making to a *science*, enabling the economist and dealer in perishable fruits, to save the rich and choice juices which would soon become valueless.

General Rules for Making Superior Cider.

Cider, when first made, is called *new, sweet*, and sometimes TEMPERANCE CIDER. The time it will remain so, depends much on the perfection of the *fruit*, and the quantities of *impurities* and *sediments* contained in it. If the juice or cider is expressed immediately after the fruit is ground, it will hold in solution, and carry with it a large quantity of *lees* or *sediment*, (appearing thick or muddy.) The *lees*, *sediment*, or any impurities, will act as a yeast to cause fermentation, and the larger the quantity the greater the stimulant. To avoid this, the juice must remain with the pomace from 12 to 24 hours, after the fruit is ground, allowing certain chemical changes, which will be sure to take place, when the juice will be separated from the pomace, or in other words, the pomace will gather or contract, forming small recesses or channels through the entire mass, into which the *pure juice* will be thrown, and by those channels escape, when allowed to do so, either from the vat or press. Cider thus made will be comparatively clear, and have a rich color, derived from the pomace by chemical action, when held with it. When, on the contrary, if the fruit is ground, and juice forced out hurriedly, the great agitation caused by grinding and forcing separation, the cider will carry with it a large amount of *lees* or *sediment*, which will early produce a *vinous fermentation*, so rapid as to pass into an *ascetic fermentation*, when vinegar is the result. A vinous fermentation is a mild movement, throwing the sediment down to the bottom, causing chemical action, giving life or effervescence; but if there is too much precipitant or sediment, it will cause reaction, when *ascetic fermentation* will commence, and all is *acid, rancid, sour* or *vinegar*.

To make *Good Cider* the following general, but important, rules should be attended to. They demand a little more trouble than the ordinary mode of collecting and mashing apples of all sorts, *rotten and sound, sweet and sour, dirty and clean*, withered and wormy, from the tree and the ground, and many more of the filthy and slovenly processes usually employed, but in return they produce you a wholesome, high flavored, sound and palatable beverage, that always commands an adequate price, and gives health and pleasure, instead of a solution of villainous compounds in a poisonous and acid wash, that no man, in his right reason will drink.

1st. Always chose perfectly *ripe* and *sound* fruit.

2d. Pick the apples from the tree by hand. Apples that have been on the ground any length of time, contract an earthy flavor, which will always be found in the cider.

3d. After sweating, and before being ground, wipe them dry, and if any are found bruised or rotten, put them in a heap by themselves, from which to make an imperfect cider for vinegar.

4th. As fast as the apples are ground, the pomace should be placed in a previously prepared open vat, of suitable size, and with a *false bottom, strainer or clean straw*, about it. Let the pomace remain about one day, then draw off, return the first, and continue to do so until it runs clear. Let the juice percolate or filter for one or more days. The cider thus extracted will compare closely with any clear rich *sirup*, and which is only deserving the name of *temperance cider* and may be drank or used for many purposes, as a choice and superior article. In this way about one-third of the cider will separate; the balance may then be expressed by the use of the *press*.

5th. To press out the juice, use a clean strainer cloth inside the curb, with some clean straw intermixed in thin layers, with the pomace, and apply the power moderately.

6th. As the cider runs from the vat or press, place it in a clean, sweet cask or open tub, which should be closely watched, and as soon as the little bubbles commence to rise at the bung-hole or top, it should be racked off by a spigot or faucet, placed about two inches from the bottom, so that the lees or sediment may be left quietly behind.

7th. The vinous fermentation will commence sooner or later, depending chiefly upon the temperature of the apartment where the cider is kept; in most cases during the first three or four days. If the fermentation begins early and proceeds rapidly, the liquor must be racked or drawn off and put into fresh casks, in one or two days; but if this does not take place at an early period, but proceeds slowly, three or four days may elapse before it is racked. In general, it is necessary to rack the liquor at least twice. If, notwithstanding, the fermentation continues briskly, the racking must be repeated, otherwise the vinous fermentation, by proceeding too far, may terminate in acetous fermentation, when vinegar will be the result. In racking off the liquor, it is necessary to keep it free from sediment, and the scum or yeast produced by the fermentation. When the fermentation is completely at an end, fill up the cask with cider in all respects that like contained in it, and bung it up tight, previous to which a tumbler of sweet oil may be poured into the bung-hole, which will exclude the oxygen and prevent the oxydation of the surface of the wine.

Sound, well made cider, that has been produced as *above directed*, and without any foreign mixtures, is a pleasant, cooling and wholesome beverage. While, on the contrary, the acids and dirty drugs, added to already impure liquor, retards fermentation, thus adding

poison to poison, producing colic, and not unfrequently incurable obstructions.

New, or Sweet Cider.

When a small quantity of sweet cider is wanted for immediate use, and there is not time to let it remain on the pomace for chemical changes, as before stated, the curb, with strainer cloth, and a little clean straw in it, may be placed in position for pressing, when the apples may be ground, and the pomace dropped directly into it. When about half full, lay a second thin layer of straw, and when full, still a third, and turn the projecting ends of the strainer cloth over all, when the follower may be placed on, and the force of the screw applied moderately. When all is forced down to about half, the screw may be run up, the follower removed, and the ends of the strainer cloth lifted, and more apples ground, until the curb is again full, when with a layer of straw and strainer cloth again cover all, replace the follower, and apply the force of screw as before. Be careful that the follower is kept level, and that the strainer cloth is relieved, if inclined to stick on the side of the curb. Cider thus made will not be as clear and brilliant as when allowed to remain with the pomace in the vat, filter through, and be drawn off, and balance pressed out, as heretofore considered.

Wines.

The United States is fast becoming a great **Wine producing country**. Its climate and soil compare favorably with the most productive of Europe. In speaking of a fertile and rich land, the orientals used the term, "It abounds with **oil and wine**." In those countries where it is used for a table drink, by all classes, in the same manner as we use tea or coffee, the people are never given to drunkenness, but use it with moderation, as a necessary of life. **Old fermented wine** (that which is called unfermented wine is not wine) is the most **healthy drink**. Hence, to obtain it of good quality, the wine which is made this year should not be used for three or four years more, but should be kept in casks in cellars, when the work of fermentation will proceed so slowly, that acetic acid will not be found. There are some wines sold for the pure juice of the grape, unfermented, which are not healthy; in fact, they are not true wines. By slow fermentation, the juice of the grape deposits on the side and bottom of the cask in which it is kept, quite a thick scale of dark brown substance, which is as hard as a stone, and named "**crude tartar**." In every case the juice of the grape should be deprived of this substance before it is used, and as time is the only effectual way, no further explanation is wanting for the increased value of old wines.

Grinding or Crushing the Fruits.

Grapes and all other **fruits** should be ground in such a manner as to completely tear them to pieces, so that the skins, pulps, and seeds are quite separated, when all parts of the fruit will be subjected evenly and perfectly to chemical action, so essential in fermentation. In the manufacture of wines, in the common but imperfect mode of half crushing the fruit, or crushing some parts, and others not at all, it will be easily seen that some parts of the fruit will be readily acted upon, when others cannot, until almost or quite decayed. The **Mills** herein described, will be found, in all respects, fitting evenly, and to thoroughly crush all kinds of fruits, apples, &c., and will not injure in the least the seeds of grapes, or any like fruits, but will readily crush the pits of cherries, which is very essential in making the best kind of cherry wine.

Among the following Cider Mills every purchaser can find one adapted to his wants, and we warrant each to be the best of its kind:

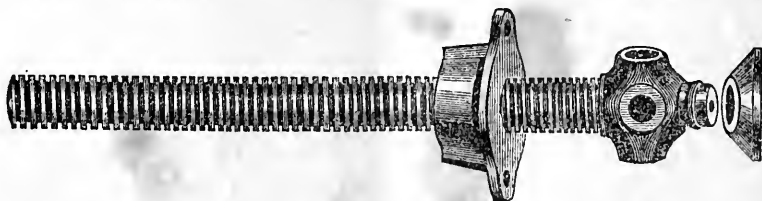
First. For those who want a mill, to make a small quantity of cider, compact, portable, small and handsome enough to place in any part of the house, and ready for instant use to manufacture a quart or a barrel of cider, we offer the well-known "**Hutchinson's Family Cider Mill.**"

For a large mill, to make cider rapidly, and extract it all out of the pomace, our "**American**" has no superior. We warrant them to save their cost in six day's work, over any other mill of which we have any knowledge.

For a farmer, who does not wish or cannot afford to have a separate machine for each purpose, our "**Convertible**" is unexcelled. It is as good a Cider Mill as any other, except the "**American**," and as a Corn Sheller, has no superior.

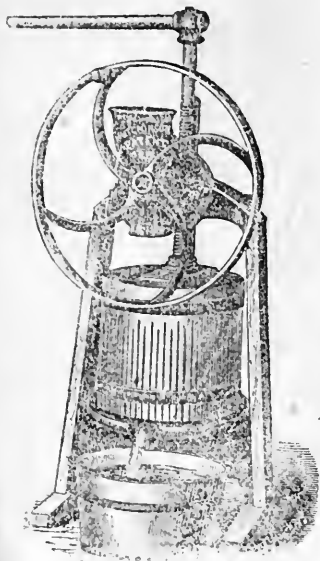
For description of each, see the following pages.

CAST IRON CIDER-MILL SCREWS.



We furnish the cheapest and best Cast Iron, Cider, Wine and Tobacco Press Screws in the world, strong and very powerful. We have two lengths, $4\frac{1}{2}$ and 5 feet. Length of thread, 4 and $4\frac{1}{2}$ feet. Diameter of screw, $4\frac{1}{2}$ inches. Weight, including nut, 150 to 200 lbs. each. We furnish them to order, of same diameter, but of any less length for Jack Screws, moving buildings, &c.

HUTCHINSON'S
PATENT CIDER AND WINE MILL,
 WITH PRESS COMBINED.



This cut represents the No. 1 or Family Wine and Cider Mill, of which sales of **twelve thousand** is sufficient assurance of its usefulness and great popularity. It has been improved for this year. It now grinds **finer, faster, and nearly one-half easier** than ever before.

This Mill can easily grind from **eight to ten bushels of Apples**, and from **ten to twelve bushels of Grapes, Currants, &c.**, per hour. It is now made with wood sides, 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, &c.

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 bucket of Cider, in a few minutes.

They are exceedingly compact, rendering transportation cheap, and with improved facilities, the workmanship will be excellent, and all the parts strong and durable, where the experience of former years may have shown any weakness. **Weight of Mill, 150 lbs.**

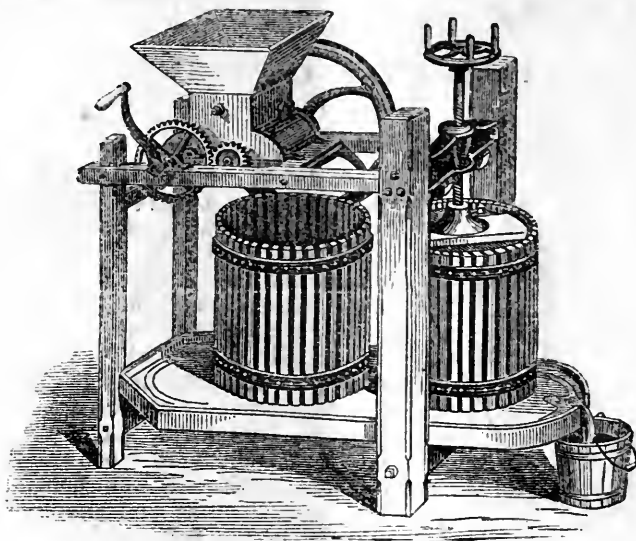
Should any part of these Mills be broken, a duplicate piece, sure to fit, can be procured from us.

This Mill being **very compact** and of light weight, can be shipped to **any part of the world, at a small expense.**

Having made arrangements for the exclusive control of this Mill in Cincinnati, we are enabled to supply dealers in any quantity, at manufacturers' prices, freight only added.

JAS. L. HAVEN & CO.

American Cider and Wine Mill.



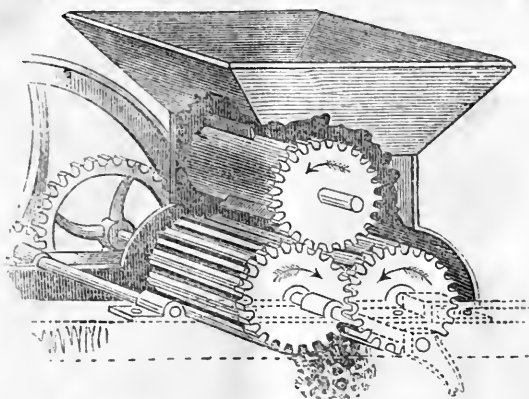
Patented February 13th, 1866.

The above cut represents a **New Cider Mill**, which we first introduced last year, and of which we sold a large number, without a single expression of dissatisfaction from any cause. We are so well satisfied, from actual experiment, that it will make one-fourth more cider from a given quantity of apples, with an expenditure of only three-fourths of the labor that

WE WARRANT

That in pressing three hundred bushels of apples, the saving in cider between it and the usual "grating" mills, will pay for the mill. As it will grind from 40 to 60 bushels of apples per hour, a very small additional yield of cider is sufficient to do this, and any one can gain the price of the mill in six days work.

American Cider and Wine Mill.

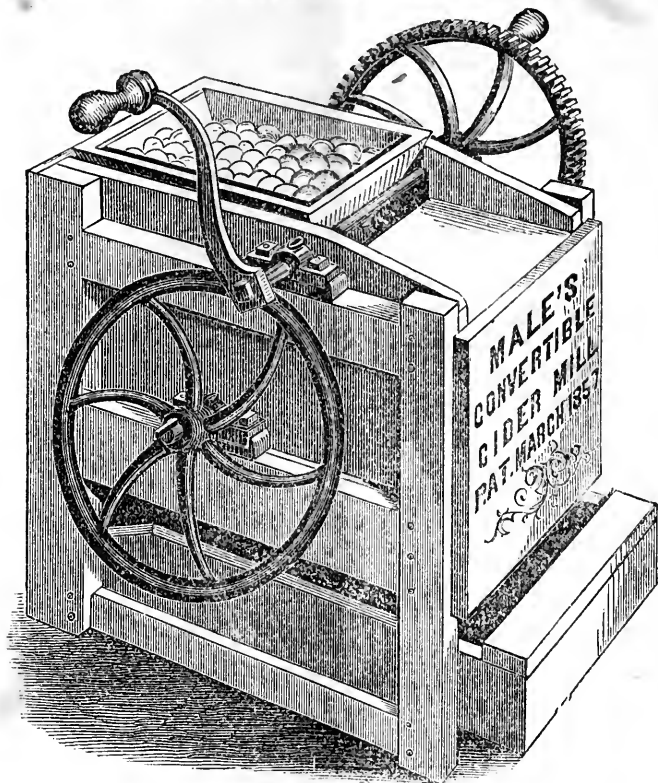


The above cut represents very clearly the construction of our mill, which is got up on a principle entirely different from other portable mills. Every farmer knows that no portable cider mill has hitherto been made to equal the old-fashioned power machine, formed of two upright grooved rolls, working into each other. All inventions have started out with the idea that it was necessary to grate the fruit, and most of the previous portable mills have been built on this mistaken notion. A moment's reflection will convince any one of the fallacy of this idea, and a very short trial will prove that our method is the best. The top roller, furnished with sharp projecting ribs, breaks and cuts the apples just sufficiently to allow the pieces to be drawn in between the two bottom or under rollers. These are cast with alternate grooves and ribs, run at the same speed, and interlocking with each other, by which means the fruit is mashed thoroughly, breaking all the cells and rendering the subsequent labor of pressing much lighter. In fact, if the pomace is allowed to drain awhile, a VERY LARGE PROPORTION of the cider will run off without any pressing, which should be saved separately, as it is the most delicious part of the product.

The **Lower Rollers** are adjustable, so that they can be set to mash grapes without crushing a seed. The **Hopper** can be removed at pleasure, for the purpose of cleaning, by merely turning a button, and they are, in every respect, a **FIRST CLASS Cider & Wine Mill.**

Convertible Cider Mill & Corn Sheller,

WITH PRESS FOR CIDER, WINE, OR LARD.

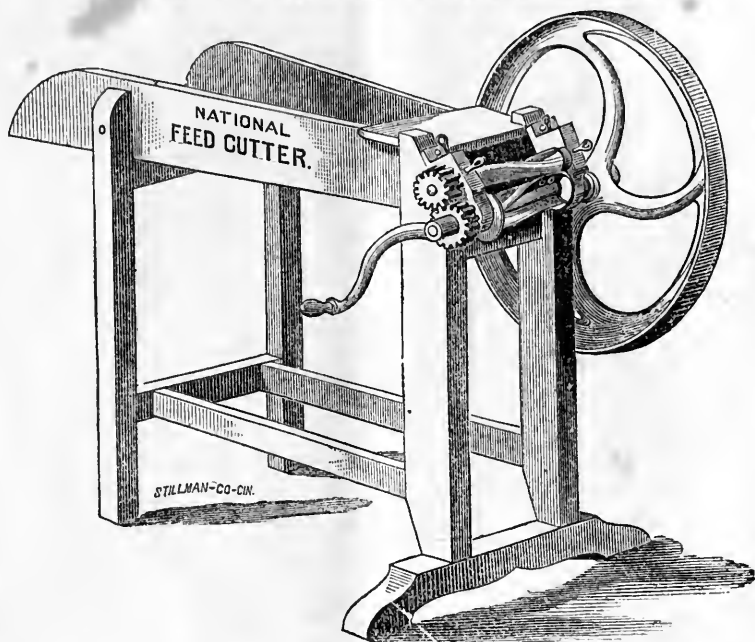


This Mill has been awarded 100 Premiums, is well known throughout the West, and is the only one of the kind. It is readily changed from a Cider Mill to a Corn Sheller, and *vice versa*, in one minute. As a Cider Mill none of the old style equal it, and as a Sheller, or Shucker and Sheller, it has no superior. It will separate the corn from the cob at the rate of one bushel per minute, or shuck and shell, and at the same time prepare the shuck for mattresses, which when done, is worth \$45 per tun. It is durable, simple of construction, and not liable to get out of order.

This gives the consumer three machines in one, and for as low a price as any good Cider Mill is sold. The Mill has been improved during the present year, and will be gotten up in good style.

Samples sent to Dealers at Wholesale Prices, and Warranted Satisfactory.

THE NATIONAL FEED CUTTER, FOR HAY, CORN AND STRAW STALKS.



No. 5, 10 inch. No. 1, 8 inch. No. 2, 7 inch. No. 3, 6 inch.

We have obtained the right to manufacture these well-known and popular Cutting Boxes, and confidently recommend them as the best and cheapest Cutter we have ever examined.

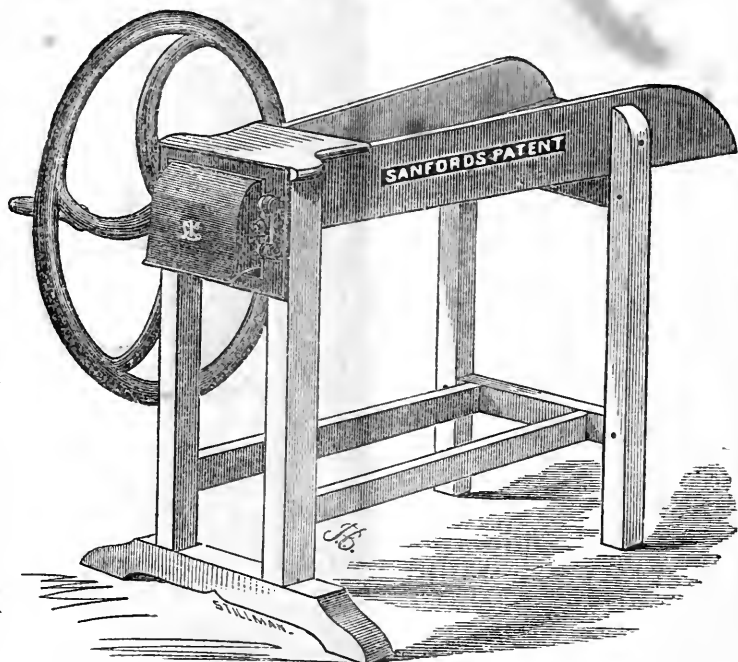
The principle is a SHEAR CUT between two cylinders revolving the same way, at different velocities—the knives feeding themselves without the aid of any complicated Feed Gear, to get out of order and increase the labor of cutting.

They cut Hay, Straw and Stalks equally well, and for this reason are preferable to "Sanford's."

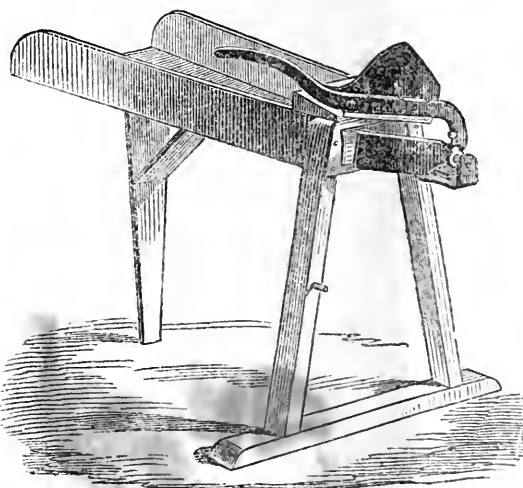
They are, besides, self-sharpening. By putting a little oil and fine emery on the knives, and turning the reverse way, for a few minutes, they will be brought to a perfectly sharp edge.

Sanford's Patent Straw-Cutters.

No. 1, with 40 Knives, No. 2, with 40 Knives, No. 3, with 30 knives.



THE BEST STRAW-CUTTERS MADE.



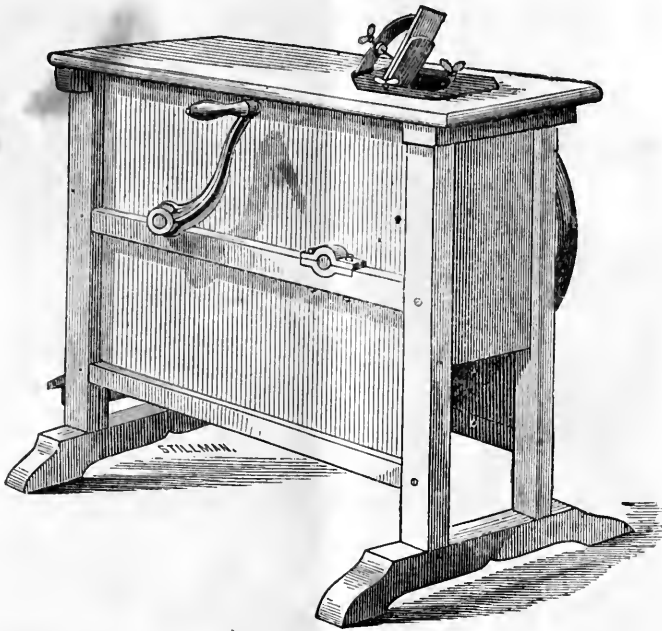
NATIONAL Lever Cutter!

A GOOD MACHINE
FOR

HAY, STRAW OR STALKS!

Strong, simple, and
not likely to get out
of repair.

We can safely re-
commend them to our
customers.



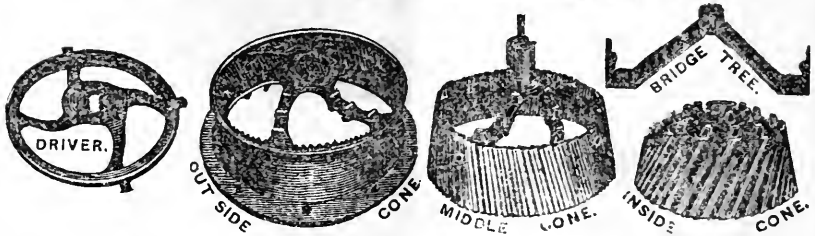
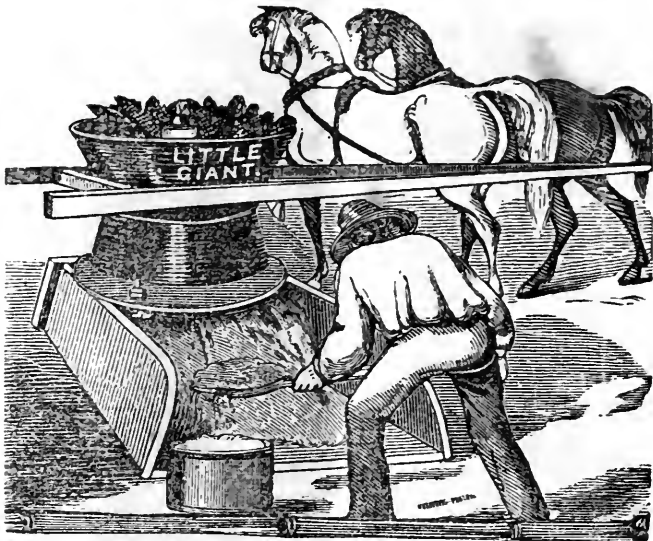
WESTERN CORN SHELLERS.

Of this well known corn sheller we make three sizes.

No. 1 is usually called the "Star" pattern, the cogs being cast on the shell wheel. We have, however, got up new and improved patterns, making a more perfect machine than any of that style we have ever seen. The iron work is *larger* and *stronger* than others use, though the whole machine looks smaller, being made as compact as possible. We have arranged them so that the fly-wheel, though outside, is protected by the cover, and they are never broken in shipping.

No. 2 has separate gear, not cast on the shell-wheel, but partitioned off from it, so that corn can never cause trouble by getting in the teeth. Fly-wheel inside of the frame—two cranks.

No. 3 is a large, double machine, with two feed-tubes, two fly-wheels and two cranks.



LITTLE GIANT CORN CRUSHERS.

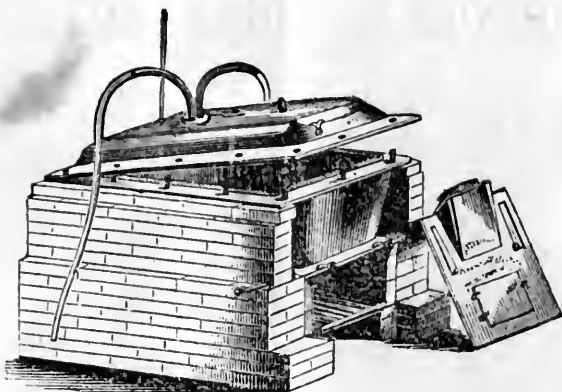
We manufacture of the above well known implements, both the single and double—two and three coned—the one having two grinding surfaces, the other THREE, the latter of course being preferable.

Complete, with Box, Hopper and Sweep.

- No. 1, 2 cone, 1 horse, 5 to 8 bushels per hour.....
- " 2, 2 " light 2 horse, 7 to 10 bush. per hour.....
- " 3, 3 " 2 horse, 8 to 12 bush. per hour.....
- " 3, 8 " 3 horse, 12 to 20 bush. per hour.....

We give also cuts of the various parts, which can be replaced, at small cost, when worn out from long usage

To those who are not informed as to the economy of grinding food for cattle, we will mail, free, a treatise on the subject, to all applicants.



Agricultural Steam Boilers.

The above cut represents a valuable apparatus for heating water or cooking stock feed by steam, and is most admirably adapted to the use of farmers, hotel keepers, tanners, stock feeders, etc. It consists of an oblong cauldron with tight fitting cover, swelled upward, as seen in the cut, for retaining the steam as generated. Attached to this are gum-elastic pipes, for conveying the steam into the barrel, vat, or whatever vessel the water to be heated, or grain or vegetables to be cooked in, is placed. It is so constructed that an explosion is impossible, even if left entirely without attendance, and is so simple in arrangement that a child may be safely intrusted with its management.

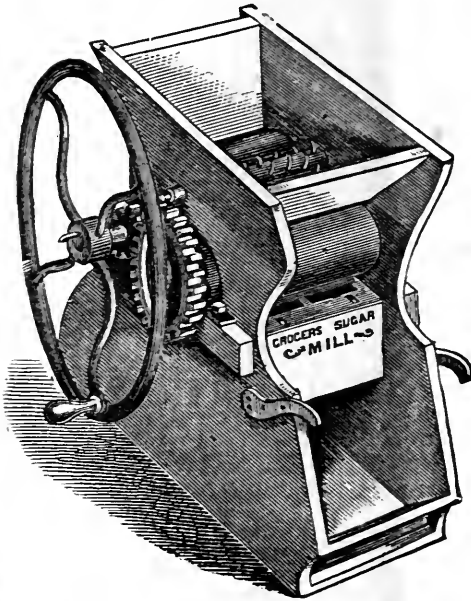
We make three sizes, as follows :

- No. 0, or 30 gallon size, weighs 350 lbs., and boils water in tubs at the rate of 60 gallons per hour.....
- No. 1, or 60 gallon size, weighs 500 lbs., and boils at the rate of 150 gallons per hour.....
- No. 2, or 90 gallon size, weighs 675 lbs., and does 30 per cent. more work than No. 1, with same fuel.....

This size is suited to the use of tanners, steamers, dyers, slaughterers, or extensive stock feeders.

We think it a matter abundantly demonstrated that from 33 to 50 per cent. of grain is saved by grinding and cooking it before feeding. It is, moreover, not less a fact that there is a large saving in the time usually required to put stock in marketable condition, by cooking their feed. And we know of no two implements which will sooner repay their cost, in grain saved, than our Little Giant Crushers and Steam Boilers, when used either separately or in combination.

GROCERS SUGAR MILLS.



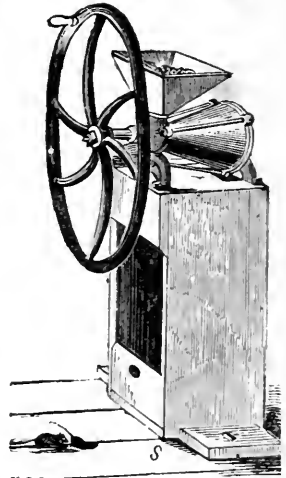
We represent annexed an improved mill for crushing or lightening heavy lumpy sugar. This is a most valuable machine for wholesale grocers' use, in preparing sugar for barreling, on removal from the original packages, or for retailers who desire to mix different grades together or enliven and disintegrate the particles of such as they are offering for sale daily to their customers.

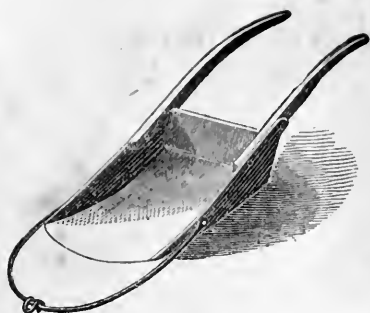
KITCHEN MILL.

For Coffee, Corn Meal, Flour or Spices.

This useful little machine is adapted to a variety of purposes, and being "a handy thing to have in the house," should be possessed by every family in the country. Its use a few minutes daily enables one to prepare fresh corn meal, hominy, grits, Graham flour, etc., in the best possible manner. It is also a superior coffee and spice mill, and as such merits the attention of hotel keepers and grocers. It will grind meal fine enough for mush, at about one pound per minute, and that which is coarser, or suited for hominy, considerably faster.

We also make a larger size, same general appearance, called the **Tom Thumb Grist Mill**, to run with a belt, requiring about two horse power, which will grind from 3 to 5 bushels per hour, in proportion to the power and the fineness required





Road Scrapers.

This Road Scraper has been found much superior to the old fashioned wooden ones shod with iron, and the variety of purposes to which they can be applied, renders them a valuable acquisition to every farm.



Trowel Handle Sheep Shears.

No. 1 Polished Handles,
 " 2 " Blades,
 " 3 Japanned,



Straight Handle Sheep Shears.

No. 1 Polished Handles,
 " 2 " Blades,
 " 3 Japanned,



MULE SHEARS.

Japanned,



PRUNING SHEARS.

No. 1 10 inches long,
 " 2 9 " "



GARDEN RAKES.

MALLEABLE.

10, 12, 14 and 16 teeth, handled and unhandled.



Garden Hoes.

All Malleable and
 with Steel Blades.

Brown's Universal Broom-Head,

UTILITY & ECONOMY.

Patented



Oct. 24, 1865.

MAKE YOUR OWN BROOMS.

This Broom-Head or Clamp is made of the best malleable iron, and is **warranted** not to break or wear out, and we will exchange, free of charge, any that become useless from any cause.

It is formed of two pieces only, and the handle, which is pointed, fastens the whole together beyond the possibility of becoming loose.

In making a broom no tools are required, except a knife, and the same handle will last indefinitely, unless accidentally broken.

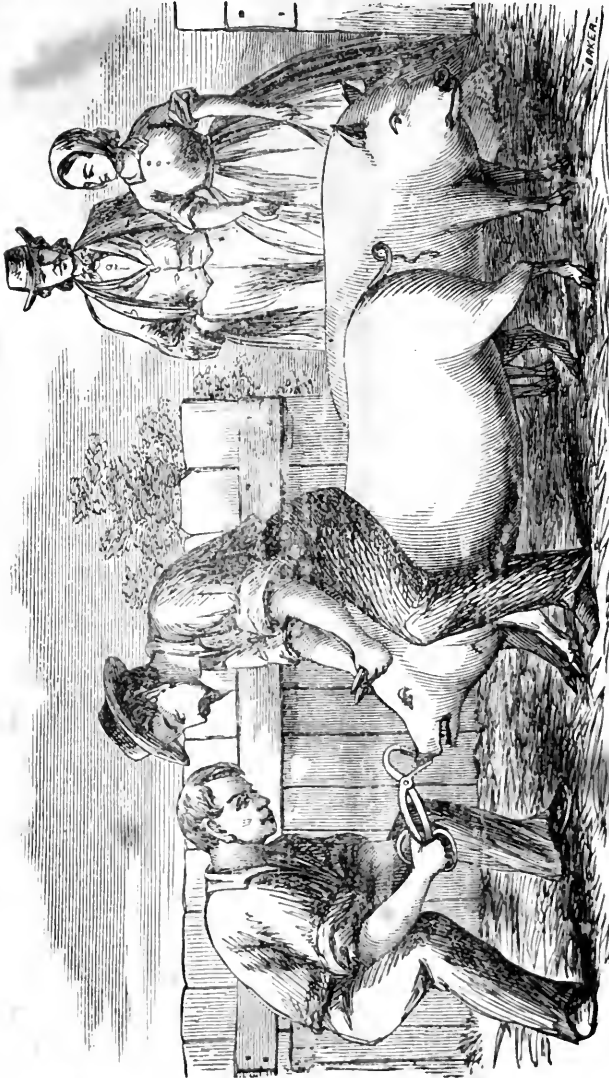
While they are particularly adapted to the use of farmers, all classes can use them profitably, as broom corn can be purchased in most towns and villages, and the price of one broom will buy enough to make half a dozen better and more durable ones than can be usually purchased. The birch and willow, commonly used for stable brooms, can be used to advantage with this head; it also makes a good head for **mops**.

Active, energetic men are wanted to sell them in every township in the Union, and the great demand for Broom-Heads insured for these, (universally admitted to be far superior to any ever introduced,) an unlimited sale; and the arrangements made for manufacturing them, enables us to offer to agents better terms than most others.

To those wishing to engage in the business a sample Broom-Head will be sent by express on the receipt of \$1, with further particulars and terms to agents.

JAMES L. HAVEN & CO.

Hurd's Patent Hog Tamer.



The above cut represents fully the method of applying this now well known implement. We regret that space, not words, fail us in which to describe its manifold virtues, though the happy faces of all the figures in the cut, from the venerable Renben down to Patrick who handles the shears, also the pigs, is sufficient evidence of the utility of the article.

We moreover warrant them to effectually prevent the rooting of swine, and thereby enable them to be kept in clover and fatten, at far less expense than if permitted to run wild.

IRON



BELLS.

Commonly known as

Iron Amalgam Bells,
AMALGAM BELLS,
Steel Composition Bells, &c., &c.,
For Farms, Schools, Hotels, Factories and Churches.

We take pleasure in directing attention to the annexed price list of our cheap and superior church, school, steamboat and farm bells, which are offered at about one-third as much as is charged for those of like weights of brass composition, and less than half the price of steel.

They are cast of iron, very carefully selected for the purpose, off of patterns which have been used for years; thousands of them having been cast and sold to the universal satisfaction of the purchasers.

We do not claim that they are equal or superior to brass (bell metal) bells, at *four* times the price per pound; but, *for the money*, we can furnish you a more satisfactory bell than the same amount will purchase of *any material* of any body else.

We make the following seven sizes :

No. 0, 13 inches diameter, weight, 53 lbs. ; No. 1, 16 in. diameter, weight, 67 lbs. ; No. 2, 18 in. diameter, weight, 95 lbs. ; No. 3, 20 in. diameter, weight, 137 lbs. ; No. 4, 23 in. diameter, weight, 201 lbs. ; No. 5, 28 in. diameter, weight, 297 lbs. ; No. 6, 32 in. diameter, weight, 621 lbs. All warranted for one year. New ones given in case of breakage by ordinary ringing.

Send for price list, mailed free to all.



CANADAY'S PORTABLE HAY PRESS.

The undersigned have the pleasure of announcing that the manufacture of this celebrated press will hereafter be carried on under their exclusive auspices.

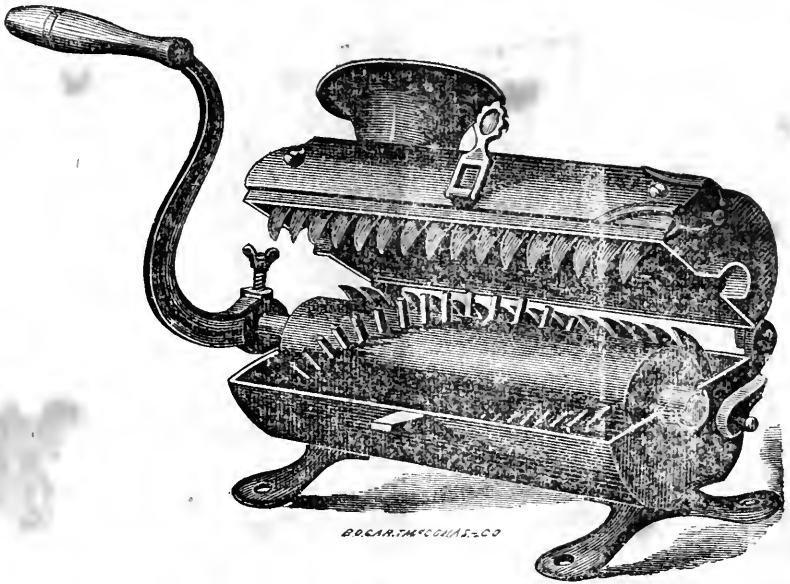
In baling hay or cotton in localities remote from markets, the advantages of producing a snug, compact bale are too apparent to admit of argument. One serious objection to hand presses, hitherto, has been that they did not successfully accomplish this; the bales, in fact, usually produced measuring full size—that is, 30 x 30 x 50 inches, but weighing no more than 250 instead of 300 to 350 lbs.

The proprietors of Canaday's press have caused mathematical calculations to be made of the relative power exerted by the various hand presses in use. The result is as follows, viz: Ingersoll's patent exerts a force on either end of a bale under pressure of 14,000 lbs.; Davis', 28,000; Canaday's, 40,000! an advantage in favor of the latter of near 200 per cent. in one, and of 50 in the other case.

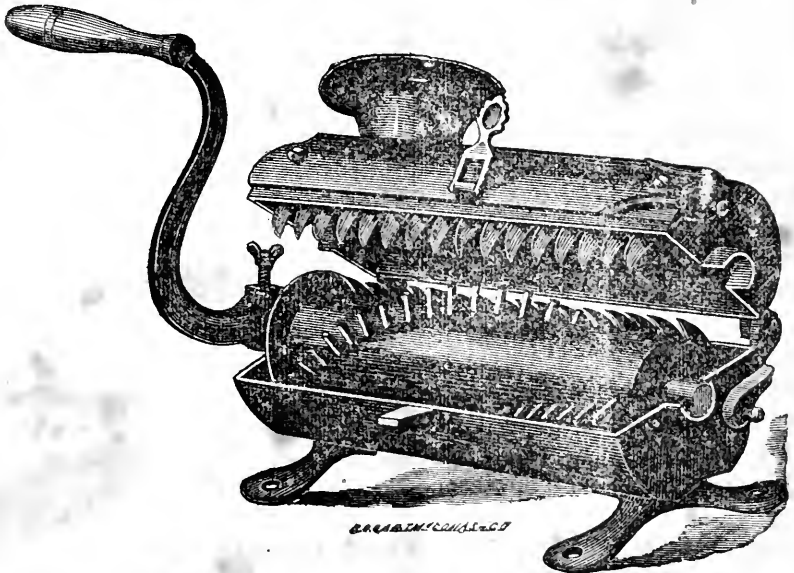
Two men only are required, in practical use, to operate the machine with success, and from the convenience of its application, no difficulty is ever experienced in controlling the immense power which it possesses. Capacity, 20 to 25 bales per day.

No. 3 press, when set up, is 8 feet high, and occupies 4 x 6 feet, will produce bales weighing 250 to 300 lbs.

EACH MACHINE FULLY GUARANTEED.



Nos. 01, 02, 03, 04.



Nos. 2X, 3X, 4X.

SAUSAGE MEAT CUTTERS.

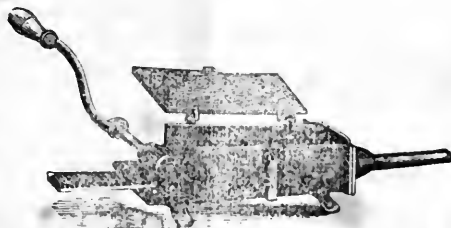
The cuts on preceding page show clearly the style of our sausage cutters. The difference in the qualities lies in the KNIVES and rollers.

Nos. 01, 02, 03, 04, are made like others in the market, with steel knives, but with plain rollers.

Nos. 2X, 3X and 4X have heavier knives, properly tempered, and the rollers are supplied with a flange at the crank end, which works the meat on to the knives, thereby cutting more rapidly and easily.

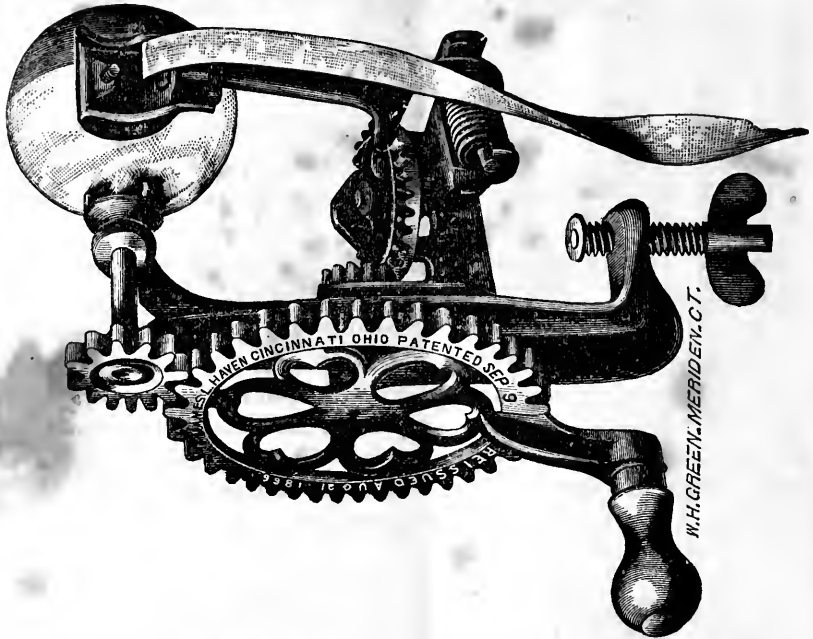
Both sorts have a most perfect arrangement for taking out the knives for cleansing or sharpening. By loosening three screws, the cap slides a trifle endwise, and every knife can be taken out and replaced in a few minutes. The crank is also fixed by a set screw, and can be put on or taken off at pleasure. The knives are all alike, and can be replaced when worn out, either by us or almost any mechanic who can work steel.

WE WARRANT THEM SATISFACTORY.




SAUSAGE STUFFERS.

This is too well known to need description. We make only the one size, for family use.

BROWNE'S PATENT**GOLD MEDAL APPLE PARER.**

This is an ENTIRELY DIFFERENT article from those formerly made by us. The knife has a loose (moveable) head, and we warrant them to pare any fruit as well and as rapidly as any other parer. If not found satisfactory, they can be returned at our expense.

 We sell Parers at the same price of similar goods in New York. No FREIGHT ADDED.

MONROE'S PATENT
ONE MINUTE EGG BEATER.

We are the Western Agents for the sale of this indispensable (where known) implement, and sell at New York prices—freight added.

JAMES L. HAVEN & CO.



Patented June 11th, 1867.

This is the **best** and **quickest** freezer made, and as cheap as any other. Hundreds have been sold already, though just introduced, without a word of complaint. The material to be frozen is *thoroughly* mixed, and invariably produces the pure, smooth article desired.

Sizes: 2, 3, 4, 6, 8, 14, 18 and 23 quarts.

RECIPES.

No. 1.—Two quarts of rich good milk: four fresh eggs; three-quarters pound of white sugar; six tea-spoons of Bermuda Arrow Root or corn starch, rub smooth in a little cold milk; beat the eggs and sugar together; bring the milk to the boiling point; then stir in the arrow root or corn starch, remove it from the fire, and immediately add the eggs and sugar, stirring briskly to keep the eggs from cooking; then set aside to cool. If flavored with extracts, let it be done *just before* putting it in the Freezer. If the Vanilla bean is used, it must be boiled in the milk.

Very fine cream can be made from this receipt, for 18 cents per quart.

No. 2.—Cost increased slightly over No. 1. Boil together a quart of rich cream, and a quart of rich milk: as soon as it comes to boil, stir in two table spoonfuls of arrow root powder, or corn starch, which has previously been rubbed smooth in a little cold milk; then add three-quarters of a pound of white sugar, being careful to stir the mixture constantly to keep it from scorching. Flavor with any of the many extracts, to suit the taste.

No. 3.—This will make a very rich article. Two quarts pure cream, one pound powdered white sugar,—the white of four eggs, flavor to taste.

No. 4.—PINE APPLE OR ORANGE CREAM.—Cut in small pieces nice ripe pine apples or sweet Havana oranges, into a china bowl; cover with powdered white sugar; let them stand several hours; draw off the syrup, and use as a flavoring for the preceding recipes. The flavor from any other fruit can be obtained for flavoring Ice Cream or Water Ices. For Roman Punch, add to any of the above, a little rum or Jamaica Spirits.

No. 5.—LEMONADE ICE.—With a quart of rich Lemonade, (made very sweet) add the white of six fresh eggs, and freeze it.



Davies' Self-Operating Swing.

A glance at the cut, will give an intelligent idea of the principle on which it acts. A gentle pressure on the footboard, requiring no more effort than to move a rocking chair, will cause it to vibrate ten feet, whilst a little more pressure to send you on a level with the points of suspension.

Swinging is a pleasure to almost every one, but heretofore it has been enjoyed at the expense of another's muscle. This invention enables the "isolated" individual to enjoy the luxury. The Swing is adapted for all sizes, and can be changed in a few seconds to suit any one, and can be operated by a child three years old.

It is substantially made, the working parts being iron, consequently is very durable, with less liability to accident than with a rope swing.

They are suitable for all places, Parlor, Nursery, Portico, Yard or Lawn. They can be most conveniently attached to ceilings of Porches, but with the addition of one post, about four or five inches square can be attached to the side of a house or alongside a tree, whilst in a clear space it will require a frame similar to the cut. Outside frames are not furnished unless specially ordered, and then at additional cost.

The subscribers have concluded an arrangement with the inventor, by which they have secured the exclusive control of this Patent in the Western and South-western States, and are now prepared to fill orders and negotiate with parties for their sale. We offer a liberal discount to those who purchase to sell again; and to an enterprising person, each neighborhood offers a field for fair profit at a very small outlay.

We have the utmost confidence in this improvement, and will guarantee complete satisfaction in every case, or will refund the price paid.

Price of Swing, neatly finished, \$18.00.

In ordering, give the exact height between floor and ceiling—will furnish one to fit.

The usual length of swings will be 12 feet, unless ordered otherwise.

County or State Rights for sale on reasonable terms.

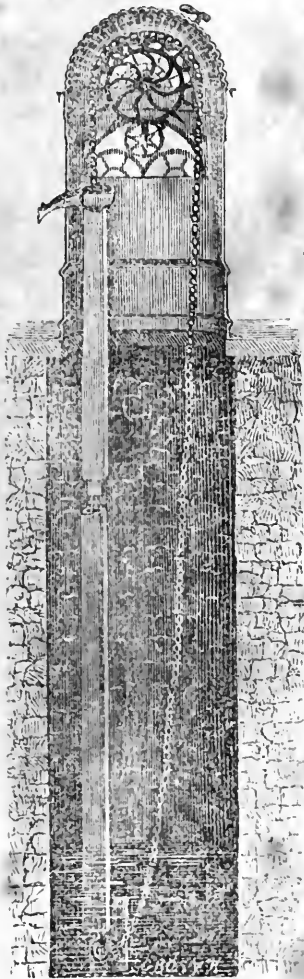
Orders addressed to the undersigned, or J. L. HAVEN & CO., will meet with prompt attention.

AMERICAN SWING CO.

BORED TUBING

FOR

Chain Pumps and other Purposes.



WE desire to call the attention of Farmers to our Bored Tubing, which, though sold most extensively for Chain Pumps, has been found invaluable wherever water is required to be led to any distance for family, barn, or railroad use. The $1\frac{1}{4}$ inch pipe, three and a half inches square will sustain the pressure of at least thirty-five feet head, and $1\frac{1}{2}$ inch, twenty-five feet; and, if made out of larger scantling, a much greater pressure.

Nearly all farms have a running spring of water on some part of them, which could be brought to the house and barn in pipes.

With a living stream of water in the barn yard, a stock of cattle may be said to be one-quarter wintered, and actual experience has demonstrated that there is more than that difference.

It is less work to plow and dig a trench and lay down these pipes to a spring fifty or one hundred rods, than it would be to go the same distance twice a day and water a span of horses during the winter.

It is needless to urge the advantages of running water in a dwelling—its promotion of cleanliness, its healthfulness, and convenience.

And to sum up, what greater luxury could a Farmer have, for the same money, than a running stream of water in house or barn? In many cases it would not exceed the cost of a sofa, or watch, or one-quarter the cost of a piano.

These pipes can be laid on a six degree curve or at right angles without alteration, and by giving special orders the circle can be made much less.

They are put up in bundles, convenient for shipping, and their weight is about two-thirds that of the same amount of lumber.

It is a well-known fact that iron pipes, unless of large bore, become stopped up sooner or later, according to the impurities of the water, with the oxide of iron; and lead pipes are liable to flatten—to become leaky and poison the water; and both are more liable to freeze up in cold weather than wooden—at the same time it is confidently believed that wooden pipes, when laid in the ground, will far outlast either.

From the cut, any man of common mechanical ingenuity can see how to set up a chain pump, which, when honestly put up, is the cheapest and best in use. We have known them to be in daily and continual use for eight years without any repairs whatever. We make all the parts, curbs, chain, castings, etc.

GENTLEMEN :

In addition to the articles illustrated and described, we manufacture a very large assortment of goods adapted to the wants of various trades, and, therefore, unnecessary to notice at any length in this book, which is particularly intended for the agricultural part of the community.

We warrant every article to be as represented when sold, and if it does not prove so, stand ready at all times to make it satisfactory, and solicit your orders, either directly or through the Hardware dealers in your neighborhood, for any article named. For most articles, however, it will be no disadvantage to you to purchase through a merchant, though, if you, for any reason, prefer to do so, write to us direct and you will receive attention, and your orders be filled.

The capacity of our works, in our peculiar line, is second to none in the West, and we are therefore prepared to fill orders on short notice.

We mail to all dealers a Wholesale Price List, and to others who may apply for it, a retail list, which is the price at our works, and by the time freight, &c., is paid on a single article, the farmer will see that it is to his interest (and ours) to order through the merchant with whom he deals.

Yours, &c.,

JAMES L. HAVEN & CO.

CINCINNATI, July 1st, 1867.

