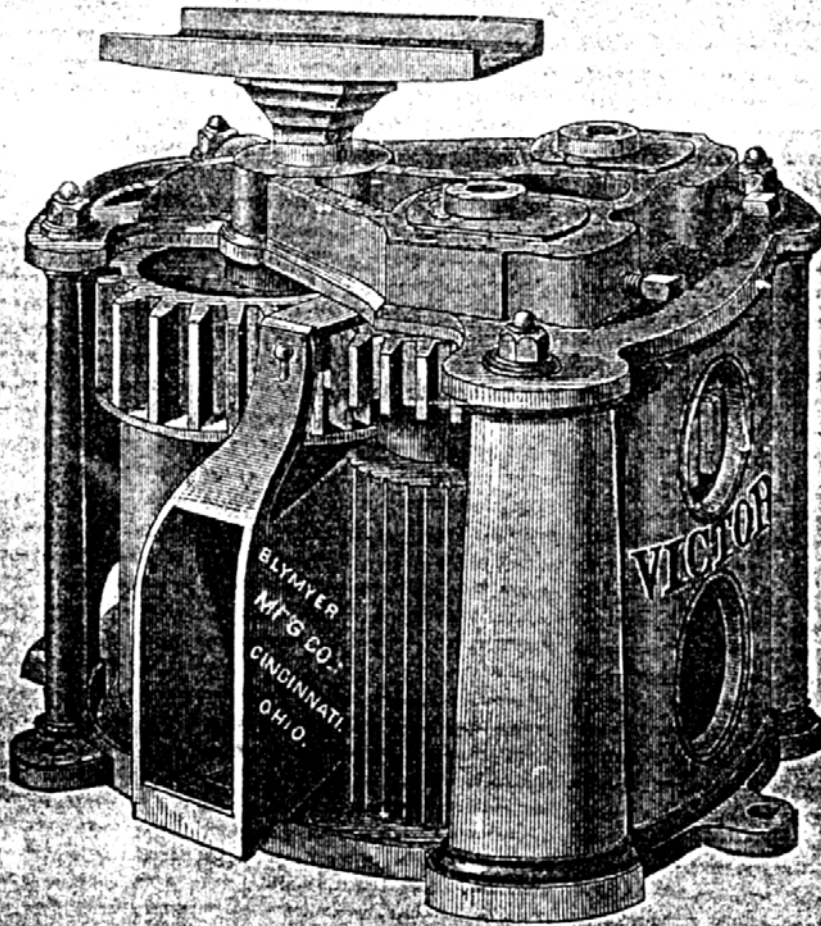


32ND ANNUAL EDITION.

CATALOGUE
OF
Sorghum and Sugar Cane
MILLS AND EVAPORATORS, &c.



MANUFACTURED BY

The Blymyer Iron Works Co.

(Successors to The Blymyer Manufacturing Co.)

CINCINNATI, OHIO, U. S. A.

APRIL 1st, 1891.

OUR SUGAR CANE MACHINERY

HAS BEEN GIVEN MORE AWARDS NATIONAL AND STATE, THAN ALL OTHERS
COMBINED. IT HAS BEEN SUCCESSFUL AT ALL COMPETITIVE TRIALS.

MEDAL AWARDED

BLYMYER MANUFACTURING CO.

MEDAL AWARDED
BLYMYER MANUFACTURING CO.



ON THEIR
SUGAR CANE MACHINERY.

BY THE CENTENNIAL EXHIBITION,

PHILADELPHIA, 1876.

OUR MACHINERY

IS NOT GOTTEN UP TO COMPETE IN PRICE WITH INFERIOR, CHEAPLY CON-
STRUCTED MACHINERY, BUT IS STRICTLY FIRST-CLASS IN
EVERY RESPECT, EQUAL TO THE BEST.

AND IN SOME FEATURES SUPERIOR TO ANY.

D. W. BLYMYER, PRES'T.

S. W. SKINNER, VICE-PRES'T.

R. BAHMANN, SEC'Y

THE BLYMYER IRON WORKS CO.

(SUCCESSORS TO THE BLYMYER MANUFACTURING CO.)

CORNER HARRIET, RICHMOND AND COURT STREETS,

CINCINNATI, OHIO, U. S. A.

SOLE MANUFACTURERS OF THE CELEBRATED

VICTOR CANE MILLS,

For Animal Power, Steam and Water Power;

GREAT WESTERN CANE MILLS,

FOR ANIMAL POWER;

NILES CANE MILLS,

FOR STEAM AND WATER POWER;

GENUINE COOK EVAPORATOR,

AND THE

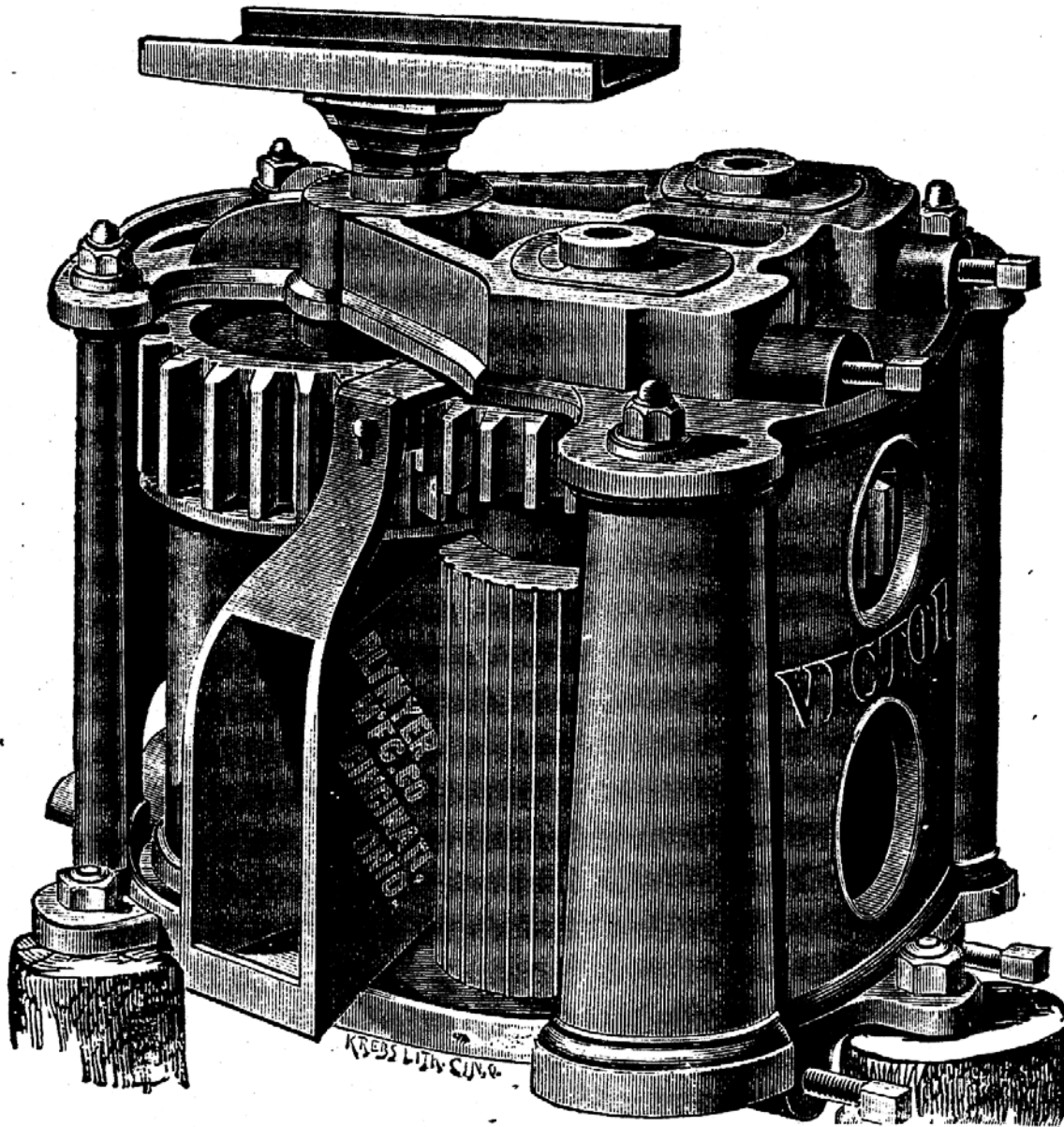
Automatic Cook Evaporator.

THE SORGHUM HAND-BOOK.

A valuable Treatise on the Sorghum and Imphee Sugar Canes, their Culture and Manufacture into Syrup and Sugar, and Value for Fodder.

SENT FREE ON APPLICATION.

Victor Cane Mill.



The above engraving illustrates the **Victor Cane Mill**, the leading Mill for Animal Power in all States where either Sorghum or Sugar Cane are grown. It has been awarded the **First Premium** over all competitors at **Fifty-one State Fairs**, and was awarded the **Grand Medal** at the **Centennial Exhibition**. It has met every mill of any character in all the country at every Working Trial, and has taken the Premium over all. The number sold exceeds **Twenty-four Thousand**.

1. It has **Great Strength**. This is secured by the *amount* of metal, the Victor being from 15 to 40 per cent. heavier than other mills of the same horse-power; by its *quality*; and by the *exact adjustment of all its parts*. The shafts are wrought iron; the boxes are lined; the *shafts and rolls are all turned off true*.

2. It **Presses the Cane Dry**. Only a strong mill can do this. Wooden mills, or iron ones with *Cast Shafts*, or shafts resting on *Rubber Cushions*, break or yield when the pressure is heavy.

3. **It cannot Choke.** The clogging and choking, so troublesome in other mills, is caused by the "Knife," or "Guide," between the rolls. This Guide is *necessary in all other mills*, and hence they choke. By means of the Lapped Gearing this Knife is dispensed with in the Victor, and as there is nothing between the rolls to obstruct the cane, it passes through as easily as it enters.

4. **It Works Easy.** Being freed from all clogging between the rolls, and the rolls themselves being lifted from the bottom plate, so as to touch only at the ends of the shafts, it is freed from most of the friction common to other mills.

5. **Oiling and Wear.** There is protection against wear in the perfect arrangement for oiling the journals.

6. **It Feeds Easy.** The feed box for regulating the entrance of the cane is the best made; and the *fluted feed roll* is of great advantage.

7. **It does Clean Work.** *Flanges* keep the cane from working over or under the rolls; *wipers* clean the faces of the rolls; and the *channel in the bottom plate* receives the juice as it comes from the rolls.

8. **Its Work is Even and Regular.** It has *Screws* for regulating the position of the rolls. These don't get loose as *Keys* do, but hold the rolls to their exact position, no matter how hard the pressure may be.

Our Mill Patents include *Three Rolls arranged to dispense with "return plate," Diagonal Braces, Oil Tight Boxes, Movable Sweep Cap, Cleaning Scrapers, Juice Channel in Bottom Plate, Juice Plate, Fastening the Gearing to Vertical Rolls with Clutches.*

Size.	Weight.	Gals. Juice per hour.	Tons Cane in 12 hours.	Acres Cane per season.	Price.
No. 0. Light One-horse, . . .	400 lbs.	40	2 to 2½	6 to 8	\$ 40 00
No. 1, Jr. One-horse, . . .	600 lbs.	50	2½ to 3	7 to 10	55 00
No. 1. Heavy One-horse, . . .	775 lbs.	60	3 to 3½	8 to 12	70 00
No. 2. Two-horse, . . .	875 lbs.	80	4 to 5	12 to 18	80 00
No. 3. Heavy Two-horse, . . .	1250 lbs.	100	6 to 7	20 to 30	110 00
No. 4. Large Two-horse, . . .	1350 lbs.	120	8 to 9	25 to 35	125 00
No. 6. Four-horse, . . .	1850 lbs.	170	11 to 13	35 to 45	160 00

The No. 6 Mill is substituted for No. 5. See description on page 5.

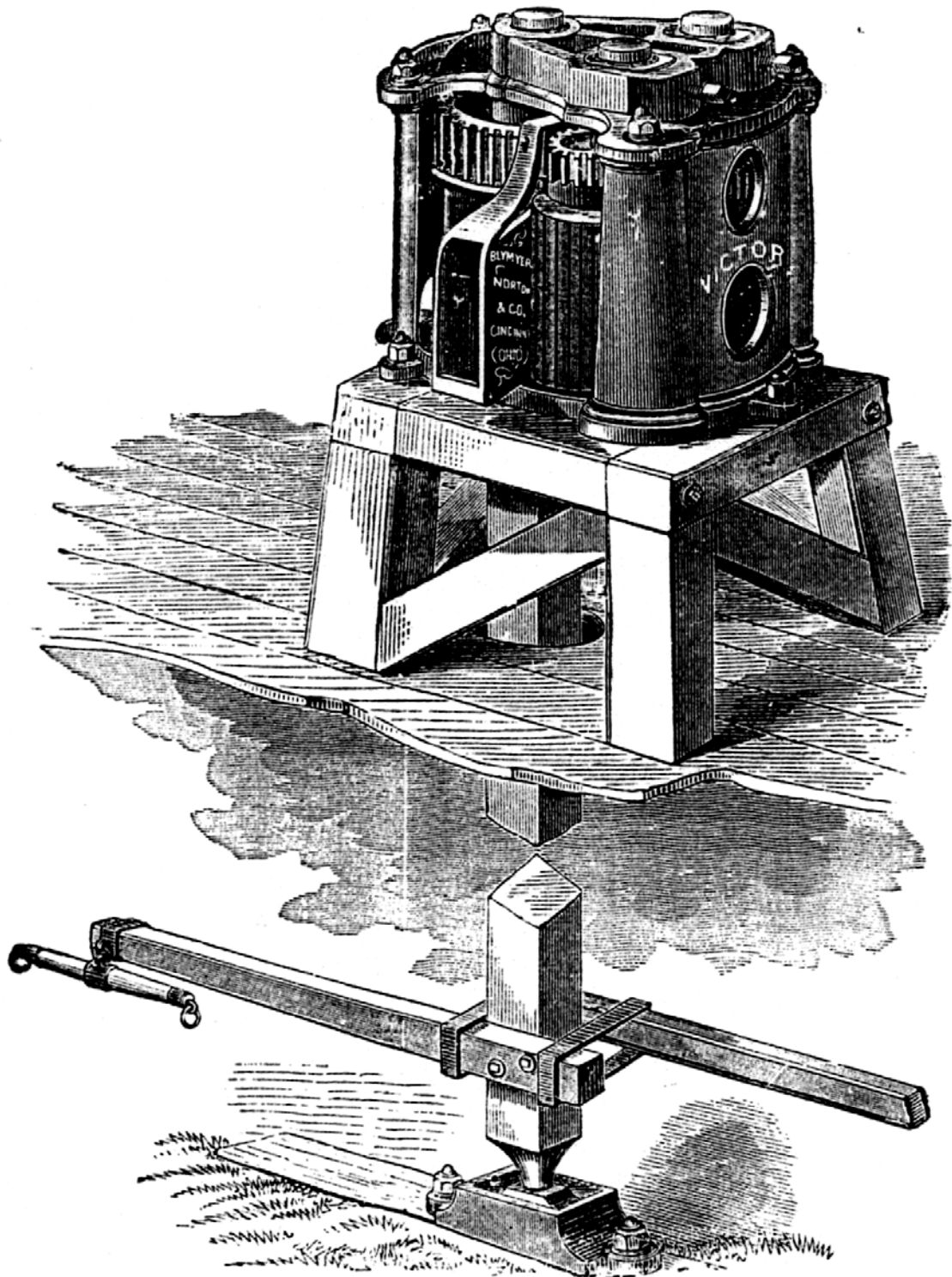
These numbers relate only to the Victor. The numbers of one manufacturer are no measure of the weights and sizes of another. Don't be deceived by numbers.

The capacity of our mills, as given above, is understated, rather than overstated. It is designed as a perfectly *safe* guide for the purchaser. This capacity is based on rigid adjustment of rolls, and *pressing the cane dry*. If the rolls are set loose so as to press out only the free juice, as is the case with mills whose rolls give under heavy strain, the capacity will be greatly increased, but with *great waste of juice*.

The capacity of a cane mill depends not only on the size, strength, and construction of the mill, but also on the power that drives it, and the way in which it is fed. A small horse will not do the work of a large one, nor will light or irregular feeding produce the same result as full and steady feeding. The capacity in acres per season, of course, depends on the tonnage of cane and the length of the season.

The Victor Mill.

SWEEP BELOW.

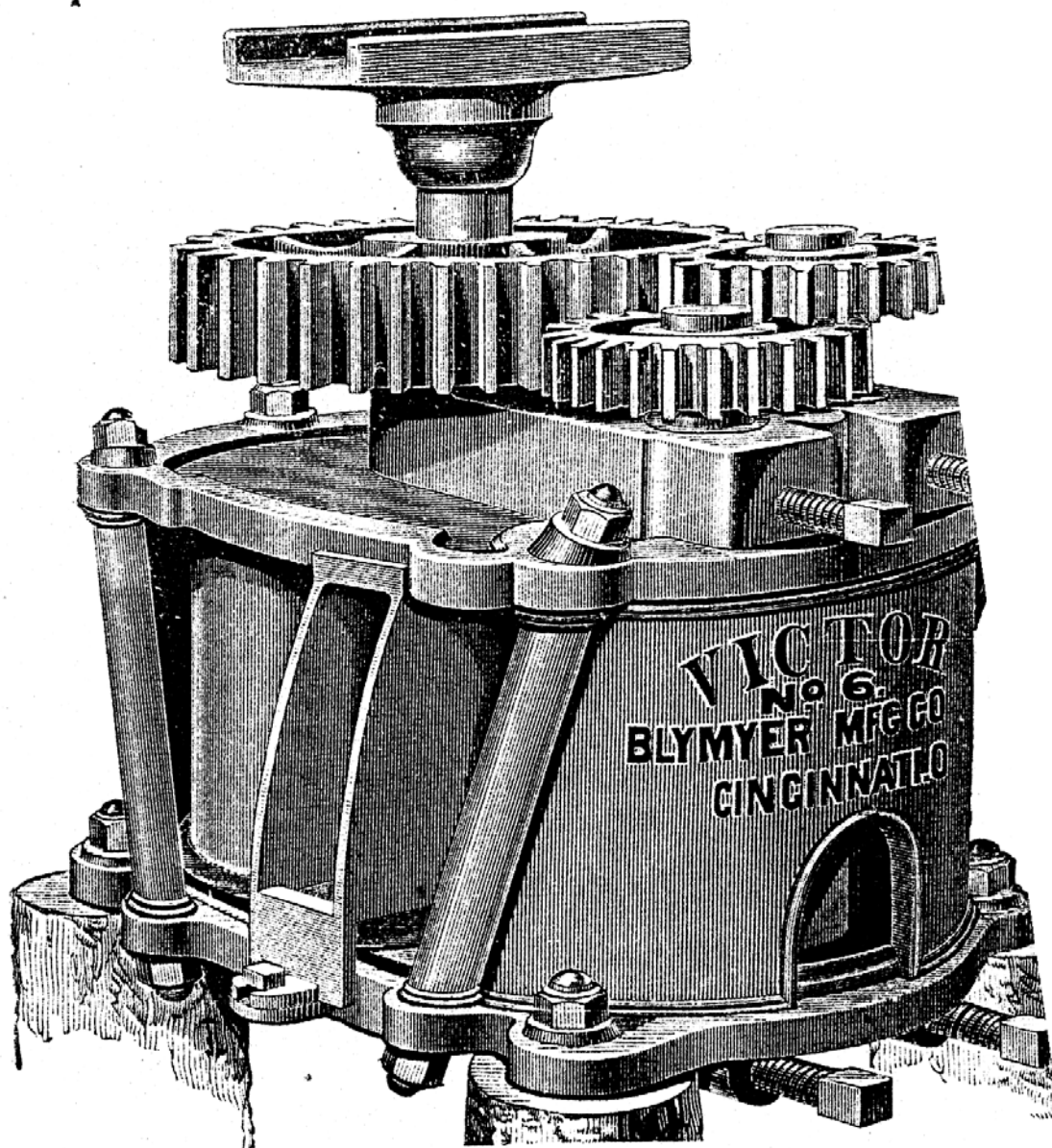


The Mill, with sweep below, presents these advantages: 1. The Mill is more steady. 2. Horses and cane do not interfere with each other. 3. Bagasse is more easily removed. 4. Juice can flow down to the Evaporator.

Prices: No. 1, \$75.00; No. 2, \$85.00; No. 3, \$120.00; No. 4, \$135.00; No. 6, \$175.00.

The Victor Mill.

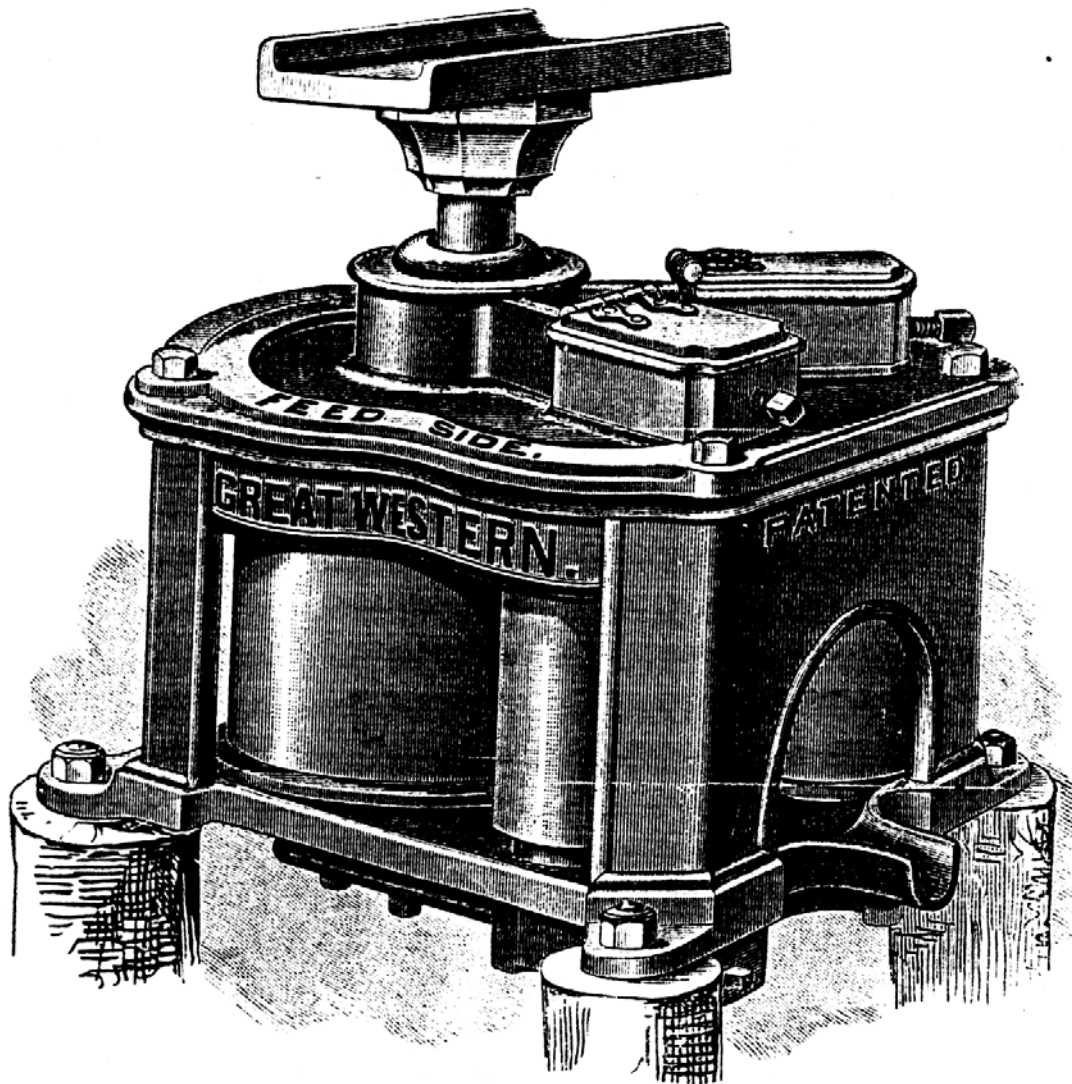
No. 6.



The above engraving illustrates our Victor Mill, No. 6. It is the same as the other sizes in all respects, except that the gear is separate from the rolls. This is a very powerful mill, and the *best large horse-power mill made* in all respects. The main roll is 20 inches in diameter, and the weight of the mill is 1,850 lbs. To work this mill to its full capacity requires four large horses. When the horses or mules are small, it will require six to work the mill to its full capacity. This mill will do as much work as any eight-horse horizontal horse-power mill made. The No. 6 Victor may be worked with two horses, but, of course, not up to its full capacity.

Capacity, 170 gallons of juice per hour, 35 to 40 acres cane per season.
Weight, 1,850 lbs. Price, \$160.00.

Great Western Cane Mill.



The above engraving is an accurate illustration of the Great Western Cane Mill. In this mill the *cog wheels*, which are separate from the rolls, have each *two clutches which fasten into corresponding clutches on the rolls*.

This makes a simple, strong fastening, which *does away with keys*, and enables the mill to be readily and quickly taken apart. This valuable feature is possessed only by the Great Western Mill.

The step boxes are provided with oil chambers which hold nearly half a pint, and are so constructed as to prevent any oil from getting into the juice.

All journal boxes are made with brass bearings.

The shafts are wrought iron. The rolls all carefully turned.

For many years the **Great Western** has been one of the two leading mills of the country, standing second to the Victor everywhere—in the salesroom, in its working reputation, and in contests at State Fairs.

The important features of the Great Western Mill are fully covered by Letters Patent, and infringements will be prosecuted to the extent of the law.

To those who prefer the *cog wheels* separate from the rolls, we cannot too strongly recommend the Great Western Mill. It is altogether superior to any other Mill of this class.

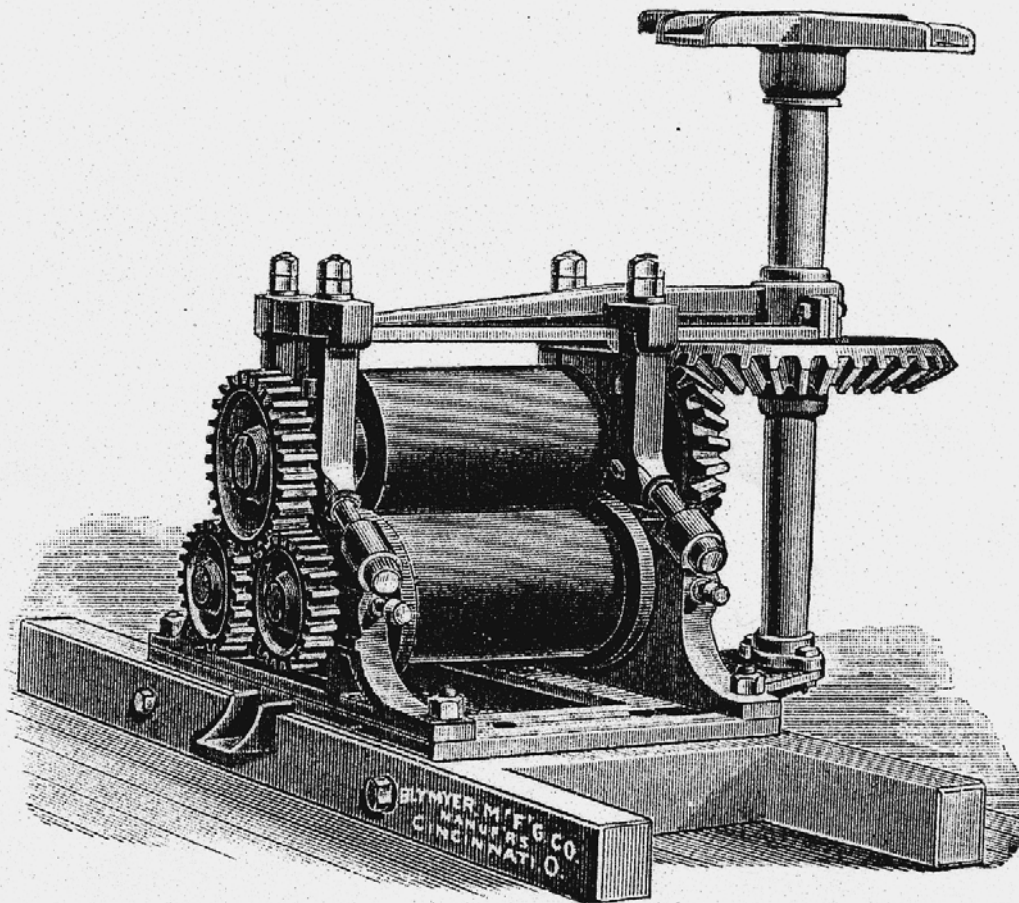
Great Western Cane Mill.

PRICES, ETC.

Size.	Gals. Juice per hour.	Acres Cane per season.	Tons Cane in 12 hours.	Weight.	Price.
No. 0. Light One-horse, . . .	40 galls.	5 to 7	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$	370 lbs.	\$35 00
No. 1. One-horse,	50 galls.	6 to 9	2 to 2 $\frac{1}{4}$	470 lbs.	45 00
No. 2. Heavy One-horse, . . .	60 galls.	8 to 12	3 to 3 $\frac{1}{2}$	570 lbs.	55 00
No. 3. Two-horse,	80 galls.	12 to 18	3 to 5	875 lbs.	80 00
No. 4. Heavy Two-horse, . . .	100 galls.	20 to 30	6 to 7	975 lbs.	90 00

Horizontal Mill.

FOR HORSE POWER.



The *extra gearing* required in horizontal mills for horse power increases the weight and cost. On account of the extra gearing horizontal mills require more power than vertical mills to do the same work.

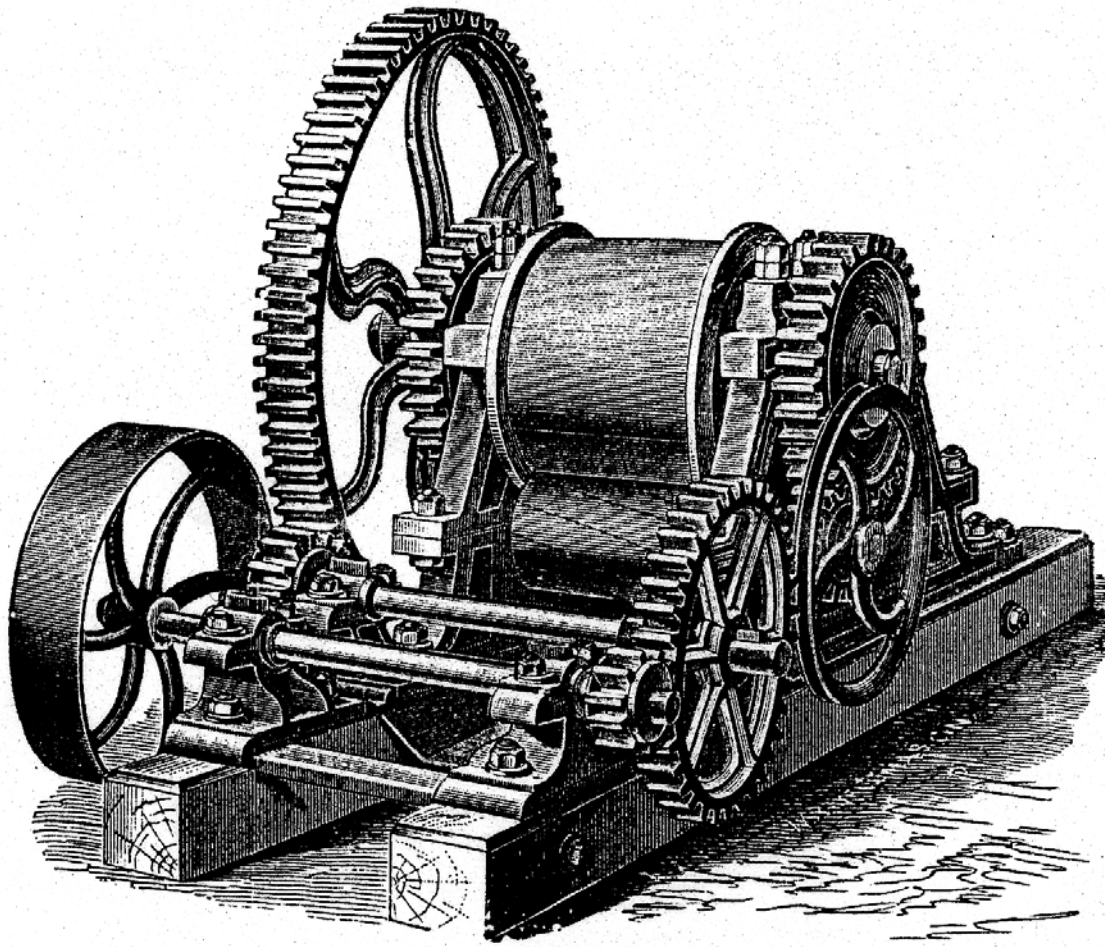
Horizontal mills, if strong enough to do any work corresponding with their cost, must be heavier than the vertical, on account of the weight of the extra gear.

We make two sizes of these mills, and they are entirely reliable. We call especial attention to the weights, in connection with the prices of these mills.

Power.	Size of Rollers.	Weight.	Price.
No. 1. Two to Four-horse, . . .	1—15x12, 2—15x9,	2,200 lbs.	\$200 00
No. 2. Four to Six-horse, . . .	1—20x12 $\frac{1}{2}$, 2—20x9 $\frac{1}{2}$,	2,800 lbs.	250 00

Horizontal Victor Cane Mill.

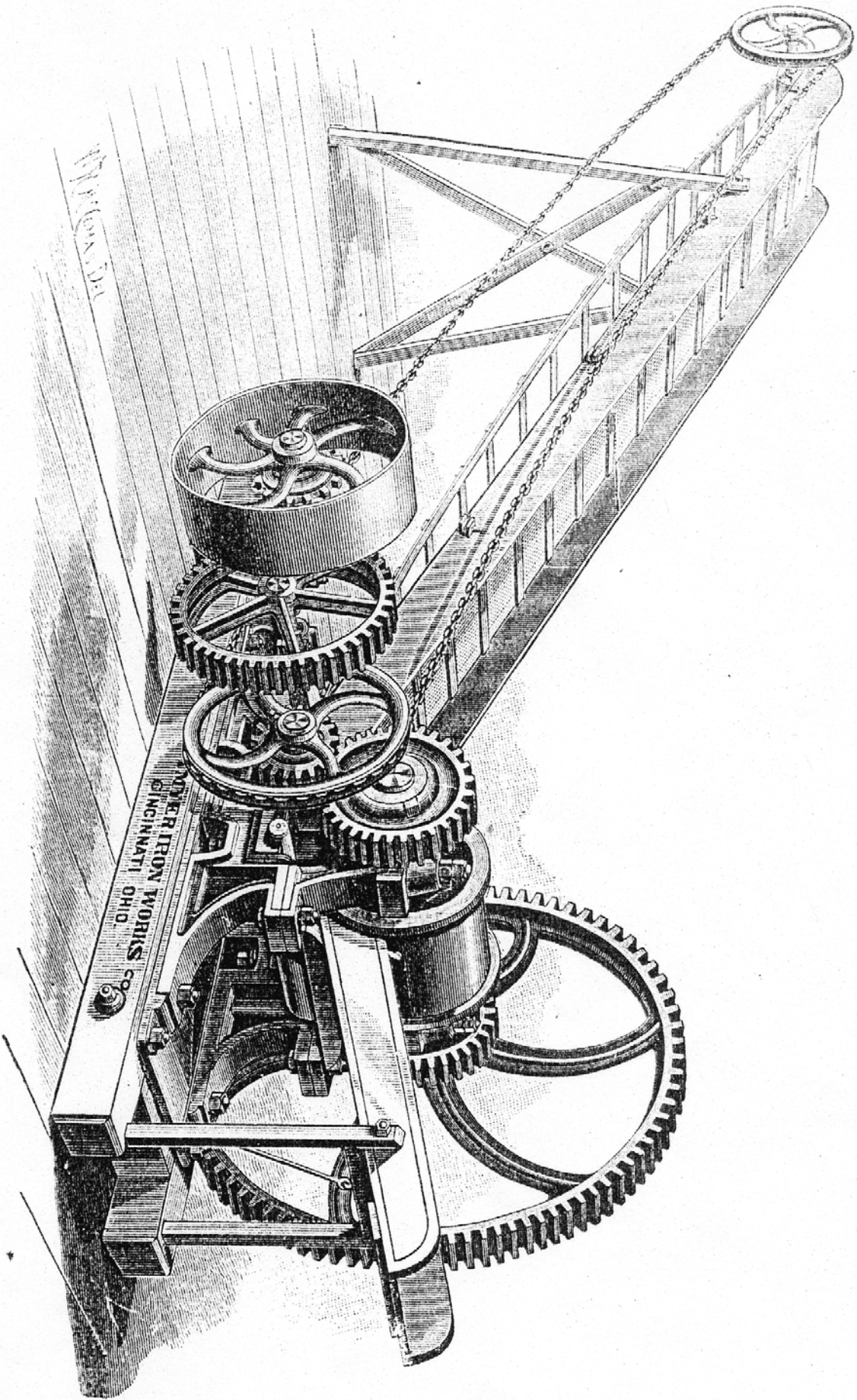
FOR STEAM OR WATER POWER.



The Horizontal Victor, illustrated in above cut, has the same plan of dispensing with the return plate between the rolls, which has given such a celebrity to the Vertical Victor. These mills have three rolls, and are made extra heavy and strong, and of as good workmanship as our Niles Mills. A Bagasse Carrier, 10 to 15 feet long, is furnished, and is included in the prices given of the mills. If longer Bagasse Carriers are wanted, they will be charged extra per foot. A feed box is also furnished. If preferred, and so ordered, we will change the pulley to other side of mill. For illustration of the Horizontal Victor complete, including Bagasse Carrier and chain, feed box, etc., see opposite page.

Size.	Weight.	Juice per hour.	Cane in 12 hours.	Cane per Season.	Price.
No. 0. 4 H. P.,	2,350 lbs.	140 galls.	8 to 10 tons.	40 to 50 acres.	\$250 00
No. 1. 6 H. P.,	3,350 lbs.	180 galls.	12 to 15 tons.	50 to 60 acres.	325 00
No. 2. 8 H. P.,	3,700 lbs.	230 galls.	15 to 20 tons.	60 to 70 acres.	400 00
No. 3. 10 H. P.,	4,000 lbs.	280 galls.	20 to 25 tons.	70 to 90 acres.	475 00

The capacity of a cane mill depends not only upon the dimensions of the rolls, the construction and strength of the mill, and the per cent. of juice extracted, but also upon the number of revolutions the main roll makes in a given time. Some manufacturers, for the purpose of increasing the capacity of their mills, gear them to run too fast. This causes great waste, inasmuch as such mills fail to press the cane dry and throw the juice off the rolls. The capacity given above is based on a rigid adjustment of the rolls, and pressing out all the juice that can be extracted by pressure.



HORIZONTAL VICTOR.—For Steam or Water Power.

For description see opposite page.

Niles Cane Mills.

THREE ROLLS. DOUBLE GEARED.

No Mills equal the Niles in *construction, strength, and finish*. . Of the character, work, and reputation of these mills it seems superfluous to say a word. The name suggests to planters more than we could say. For over 50 years they have been the leading mills of their class.

Probably *three-fourths of all the plantations of Louisiana* have been supplied with *Niles sugar outfits*. On many plantations the mills that are now the dependence for taking of the crops were at work before the present occupants of the plantations were born.

In the original construction of these mills, the highest scientific knowledge and greatest mechanical skill and experience attainable were called into requisition. These secured a correct proportion in all parts of the mill, so that every pound of metal, whether in gear, or frame, or roll, or shaft, is made to do its appropriate work, and is subjected only to its appropriate strain.

The Niles Mills were first introduced in 1836, and have ever since been the standard mills of Louisiana. After they had been in operation eighteen years, under the closest observation, they were overhauled and a new and improved set of patterns built. These patterns have been in use *thirty-three years*, and are by far the most perfect, thoroughly tested, and reliable of any of the large steam mills.

This work was completed under the direction of one of the most intelligent and skillful mechanical engineers of the time, who constructed the first mill for our predecessors in 1836, and in 1880 closed his successful career in our employ.

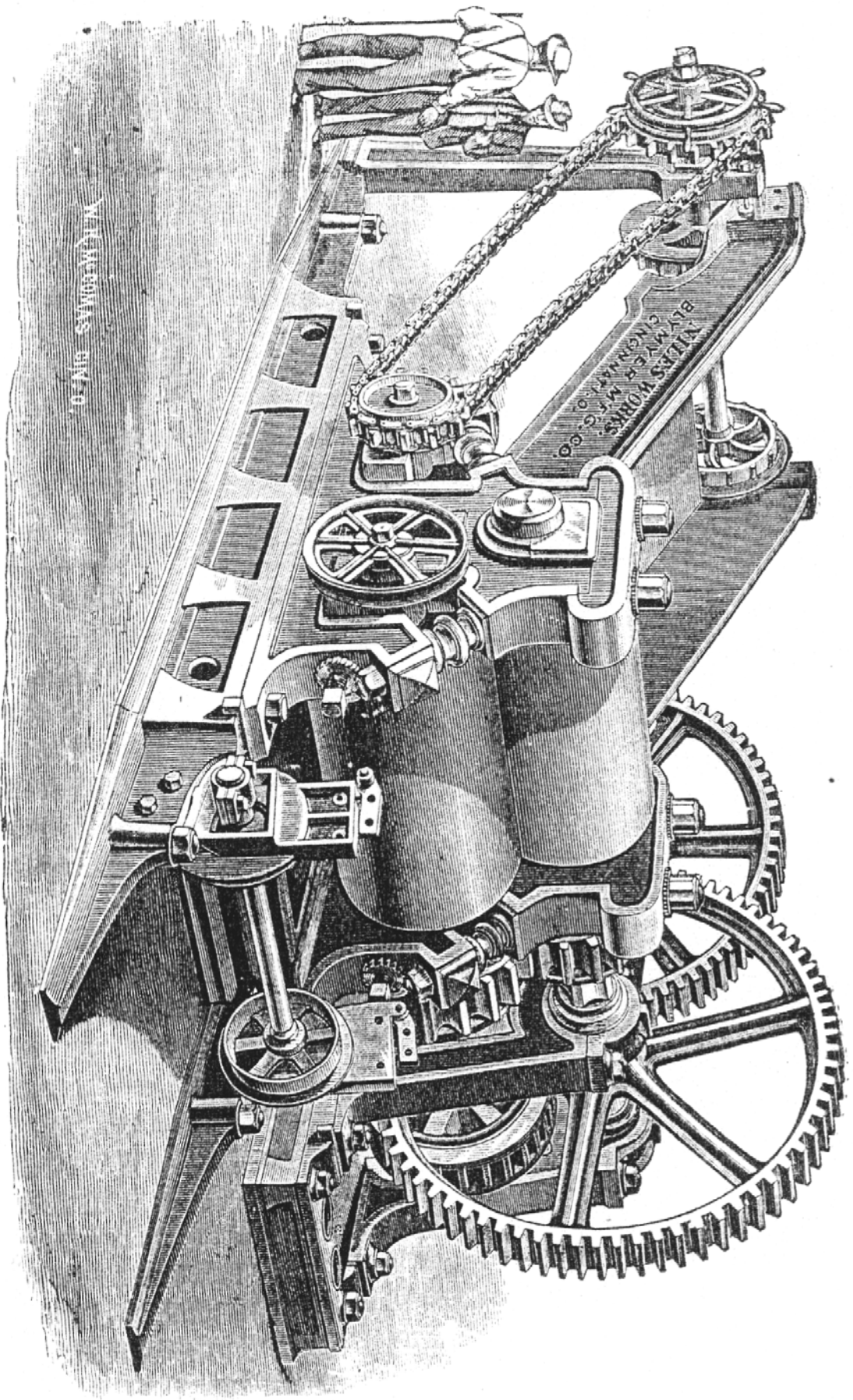
Of the Niles steam mills over **500 have been sold** in Louisiana alone. In one year were sold *fifty-six Niles Mills*, varying in size from *four-foot rolls to six-foot rolls*, the total weight of which mills was 2,700,000 lbs., or 1,335 tons. In Louisiana, where the Niles Mill has been for forty years in competition with mills from the best foundries in the world, it has proven vastly superior to all of its rivals.

DIMENSIONS, Etc.

Size Number.	Length and Diameter of Rolls.	Weight.	Size.	Length and Diameter of Rolls.	Weight.
3	16 in. x 16 in.	7,500 lbs.	13	54 in. x 26 in.	54,000 lbs.
4	20 in. x 16 in.	9,000 lbs.	14	54 in. x 28 in.	58,000 lbs.
5	24 in. x 16 in.	11,000 lbs.	15	60 in. x 28 in.	65,000 lbs.
6	24 in. x 20 in.	20,500 lbs.	16	54 in. x 30 in.
7	30 in. x 20 in.	23,000 lbs.	17	60 in. x 30 in.
8	36 in. x 20 in.	31,000 lbs.	18	66 in. x 30 in.
9	36 in. x 24 in.	36,000 lbs.	19	72 in. x 30 in.
10	42 in. x 24 in.	39,000 lbs.	20	60 in. x 34 in.
11	48 in. x 24 in.	42,000 lbs.	21	66 in. x 34 in.
12	48 in. x 26 in.	48,000 lbs.	22	72 in. x 34 in.

Compare these weights with those of other mills of the same size rolls. These mills are heavy and strong, as cane mills should be. They are none too heavy. Lighter mills are unsafe and unreliable.

The weights of our mills, as given in this circular, are approximate only, since no two mills of the same pattern will weigh exactly alike. We give the average weights.

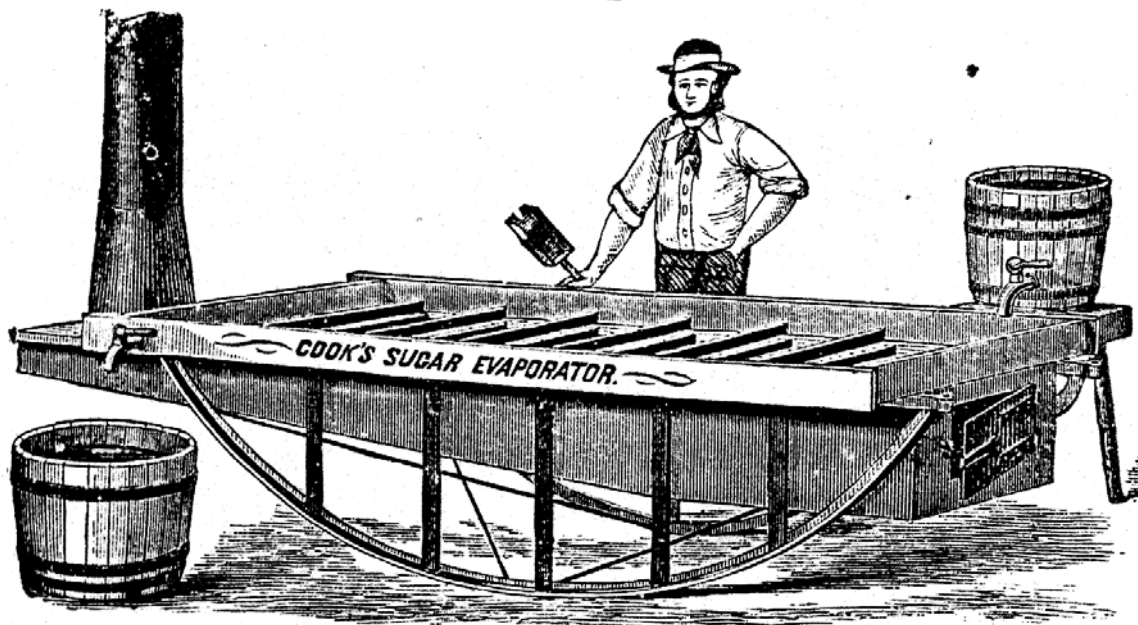


NILES MILL—DOUBLE GEARED.

W. K. CROOKER

NILES WORKS,
CHICAGO, ILL.

Cook Evaporator.



PORTABLE EVAPORATOR—FURNACE AND PAN.

For the smaller pans, Nos. 2, 3, 4 and 5, portable furnaces are provided. These are made of cast iron and sheet iron, heavily bound and riveted, strongly made, and the whole mounted upon rockers of angle iron—thus furnishing a complete portable furnace of iron and brick, combined in one, with all the advantages of both, and yet so light that it can be easily handled by two men. This is the most convenient arrangement for small home operations, and for custom work it is well-nigh indispensable. With it the operator can move from field to field, or from farm to farm, and thus avoid the labor and expense of hauling the cane. Full and plain directions for lining the furnace with brick and clay, and for working the Evaporator, sent to each purchaser.

Size.	Gallons Syrup in 12 Hours.	Acres Cane per Season.	With Galvan- ized Pan.	With Copper Pan.
No. 2. 44 x 72 inches, . .	30 to 40	6 to 8	\$50 00	\$ 85 00
No. 3. 44 x 90 inches, . .	40 to 50	9 to 12	60 00	100 00
No. 4. 44 x 108 inches, . .	50 to 70	12 to 18	70 00	120 00
No. 5. 44 x 126 inches, . .	70 to 100	20 to 30	85 00	150 00

Material. The Evaporating Pan is made of Sheet Metal—Galvanized Iron or Copper—of thickness proportionate to the length of the pan. This sheet metal is made EXPRESSLY FOR OUR OWN USE, and is of the BEST QUALITY, and of UNIFORM THICKNESS. Inferior grades of metal, such as are used with ordinary evaporators, cannot be used in the Cook, on account of the *heavy strain* to which it is subjected in crimping the ledges or partitions. This is done by *pressing the solid sheet with heavy machinery* especially constructed for the purpose. Only the *toughest of metals will stand the strain*, and so only the best of Juniata galvanized iron, and the purest copper, are used. Hence our Pans LAST LONGER BY SOME YEARS than others, and neither buckle, bag, nor warp, nor incur expense for repairs.

On account of its EXTRA QUALITY and GREATER WEIGHT, the metal used in our Evaporators COSTS ABOUT TWICE AS MUCH as does that commonly used in evaporators. On account of superiority in material and construction, our Evaporators are cheaper at what we ask for them than others at one-half the price.

Construction. At regular intervals, ledges or partitions are made to project upward across the bottom of the pan, the alternate ends being open so as to form a continuous channel from one end of the pan to the other. The sides of the pan extend beyond the fire line of the furnace, and NO SEAMS ARE EXPOSED TO THE FIRE. The ledges or partitions are *open* at the bottom, being crimped or pressed, as explained above, out of the solid metal. This gives about *one-half more heating surface* than other pans of same length, and requires about *one-half more metal*.

HEATING SURFACE OF COOK PAN.

FIG. 1.

FIG. 2.

The above cut represents the proportionate length of the sheet used in making the No. 2 Pan, and the length of the pan itself. The sheet is nine feet in length, and the pan six feet in length.

A Cook Pan has, therefore, $\frac{1}{2}$ more heating surface and capacity than other pans of equal length. But its proportionate capacity is still further increased by the Process of Evaporation—the use of a shallow flowing body of juice.

We could make the Cook Pan at less cost by riveting or soldering the ledges to the pan, instead of crimping them in the solid sheets as we now do. We could then use an inferior grade of metal and a smaller sheet to make the same size pan.

But in doing this, not only would the capacity of the pan be greatly lessened, but the pan itself would be inferior in every way. It would not do nearly as much work and would not last half as long. It would be liable to give continual trouble by leakage, resulting in the discoloring and burning of the syrup.

Operation. The juice is received into the front end of the pan in a constant stream. The first ledge preventing a forward movement it flows across the pan,—turns round the open end of the ledge—back to the side upon which it entered,—then round the second ledge,—thence back again to the opposite side,—and so on until it reaches the outlet at the finishing end of the pan, whence it flows off in a constant stream at any density desired.

Skimming. The constant influx of the cold raw juice keeps the liquid in the front end of the pan at a comparatively low temperature while it is passing around the first few ledges, and thus gives time for the heat to throw up the more crude impurities, and the operator to remove them. And, as a matter of fact, most of the skimming is confined to a small space at this end of the pan. As the current passes on over the more intensely heated portions of the pan, new impurities are evolved and borne by the current to the cooling sides, where they remain in the form of scum, to be removed at the pleasure of the operator.

Results. There being but a small amount of juice in the pan, and that being spread over a broad extent of evaporating surface, every portion is subject to the direct and intense action of the heat, and consequently the *Evaporation is more rapid* and the *Defecation and Clarification more thorough* than is possible in any arrangement where the liquid is boiled in deep, narrow masses, and for a long time exposed to the heat. As the results, there is a *better quality of syrup and of a lighter color.*

Economy. While the Cook Evaporator in its purchase-price costs more than common Evaporators, and by comparison seems high, still, in the end, it is the *cheapest pan* in the market. *It saves labor, fuel, and makes more and better syrup and sugar.*

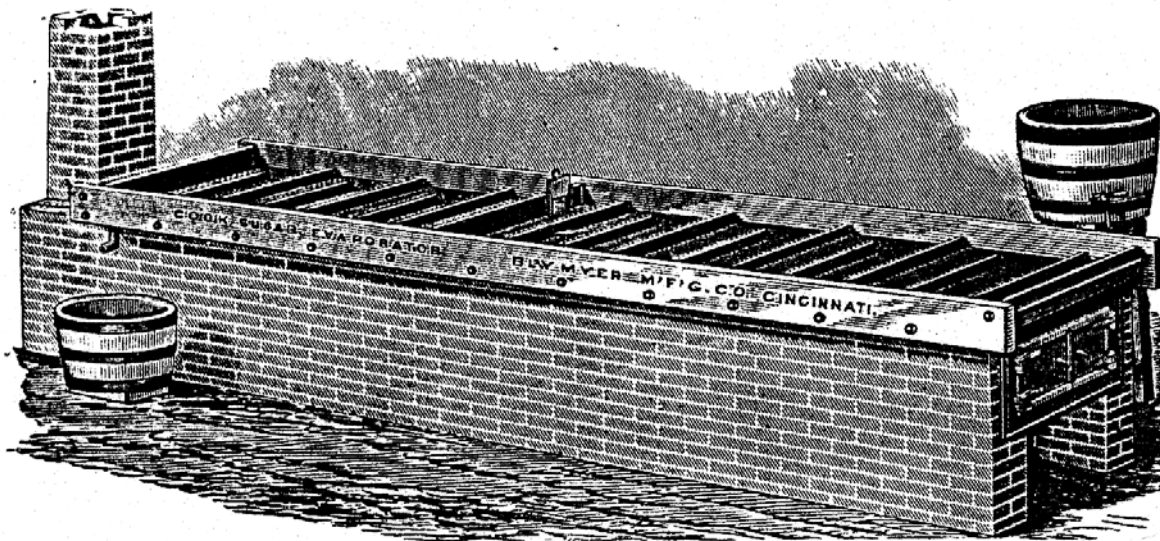
The Cook Evaporator has taken the **First Premium at every National Fair, and as Seventy State Fairs, and the Grand Medal at the Centennial Exhibition.** In this country alone over **Twenty-eight Thousand are in use.** It is in use in Mexico, South and Central America, and all countries where sugar cane is grown.

PORTABLE OUTFIT.

In working the Victor Mill and Cook's Evaporator, the Evaporator should be one or two numbers higher than the Mill. The Cook and Victor are the only Mill and Evaporator that are adapted to each other in capacity. This is a matter of much moment to the operator. The Victor Mill can be bolted to a frame placed upon any common farm wagon, and be worked there all the season. When done at one place the operator has only to transfer the team from the sweep of the mill to the tongue of the wagon—load the Evaporator upon it—move off to another—change the horses back to the sweep—go to grinding—and by the time he has juice enough for a start the Evaporator is ready for operation again.

Stationary Cook Evaporator.

COOK PAN FOR BRICK ARCH—Nos. 3, 4 and 5.



For stationary work on brick or stone arches, the pans are made with High Ledges or Divisions, with Gates, as represented in the cuts herewith presented, and the flow is regulated by the gates. No. 2 has no high ledges or gates. Nos. 3, 4 and 5 have one high ledge and gate, and Nos. 6 and 7 have two high ledges and gates.

All sizes of these Pans are made either of galvanized iron or copper. Full directions for building arch and working Pan sent with each Pan.

Sizes and Dimensions.	Gallons Syrup in 12 hours.	Acres Cane per Season.	Iron Galvanized.	Heavy Copper.
No. 2, 44x 72 inches.	30 to 40	6 to 8	\$ 25 00	\$ 60 00
No. 3, 44x 90 "	40 to 50	8 to 12	30 00	75 00
No. 4, 44x108 "	50 to 70	12 to 18	35 00	85 00
No. 5, 44x126 "	70 to 100	20 to 30	45 00	110 00
No. 6, 44x144 "	100 to 130	25 to 35	55 00	130 00
No. 7, 44x180 "	130 to 170	35 to 45	65 00	150 00
No. 8, 54x180 "	150 to 200	45 to 60	100 00	200 00
No. 9, 54x240 "	200 to 250	60 to 80	125 00	250 00
No. 10, 54x360 "	300 to 400	90 to 120	200 00	400 00

The No. 10 is in two sections, 4½ feet by 15 feet each.

Prices of Cook Evaporator for Steam sent on application.

Furnace Irons for Cook Pans for Brick Arch.

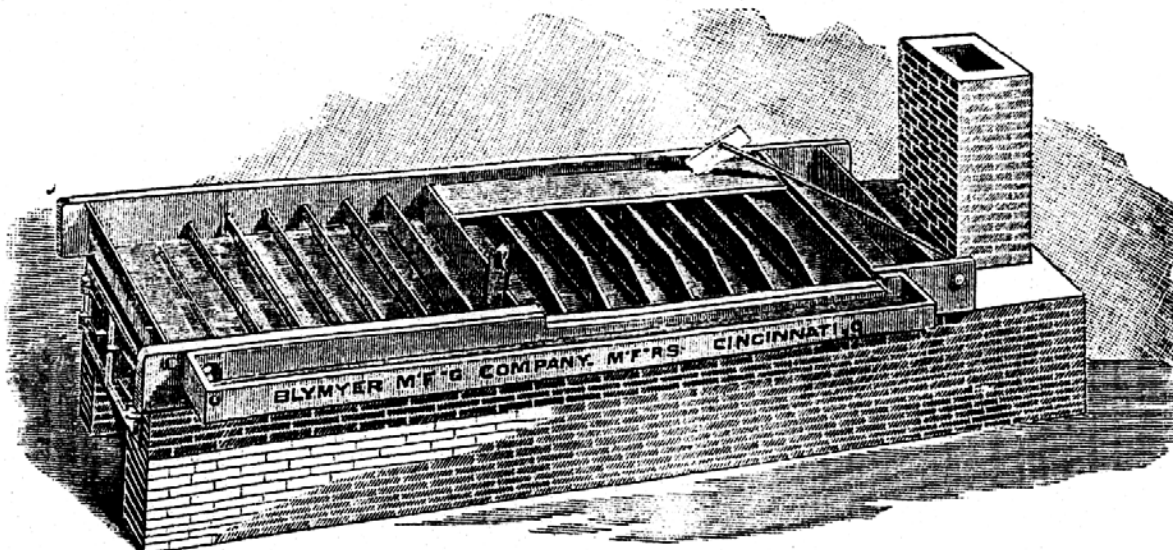
Furnace Front and Door	\$ 5 00
Grate	4 00
Heavy Furnace Front and Door	8 00
Heavy Grate Bars and Bearing Bar	8 00
Nos. 8 and 9 { Heavy Furnace Front and Door	25 00
{ Heavy Grate Bars and Bearing Bar	15 00

Furnace Irons for Automatic Cook Pans.

Nos. 4 and 5 { Heavy Furnace Front and Door	\$ 8 00
{ Heavy Grate Bars and Bearing Bar	8 00
Nos. 6 and 7 { Heavy Furnace Front and Door	12 00
{ Heavy Grate Bars and Bearing Bar	10 00
Nos. 8 and 9 { Heavy Furnace Front and Door	25 00
{ Heavy Grate Bars and Bearing Bar	15 00

The Evaporators we offer are the **Genuine** and **Original Cook Evaporators**, as made by ourselves for so many years, and all have our name on as makers. They are the **only properly made and reliable working Cook Evaporators**. The so-called "Improved" Cook Evaporators are imitations, inferior in material and construction. Purchasers should be protected against such imposition.

Automatic Cook Evaporator.



This Evaporator preserves the good qualities of its favorite forerunner, but *saves* most of the labor of *skimming*, makes *more syrup* with the same fuel, increases the yield of syrup from a given quantity by securing a *re-separation*, and improves the quality. It is unquestionably the most perfect pan ever devised. It accomplishes all that is possible in a single fire Evaporator.

The *Automatic Cook Pan* has three divisions, each performing separate offices, and all connected by high ledges and gates under the full control of the operator. The processes of defecation, clarification, and finishing are systematically carried on without interruption to the end.

The *first division* frees the juice from its crude impurities, whilst passing through the channels, by the automatic action of the skimming device, which throws the scum in an opposite direction from the moving juice.

In the *second division* the juice is freed from its remaining impurities and reduced to semi-syrup. This division is provided with high ledges to prevent the mixing of the juice, and is so constructed that the scum is thrown to the opposite side, or into the trough, to be returned to the first division for *re-separation*. This saves a *considerable percentage of syrup*.

The semi-syrup is taken by the *third division* and finished as rapidly as possible to the sugar point, and drawn into coolers.

The Automatic Cook Pan *secures thorough defecation*, saves a *large percentage of juice* that would otherwise be wasted, and *saves labor in skimming and fuel*.

Full directions for building Arch and working Pan sent with each Pan.

The Automatic Cook Evaporator Patents include :

(A). A serpentine flow of the juice, discharging the scum at the sides, and returning to the head of the pan.

(B). A single pan, so constructed as to produce the three separate, essential results in one continuous, uninterrupted operation, to-wit: cleanse the juice, rapid evaporation, slow finish.

(C). To separate from the raw juice the impurities, and reduce the purified juice by one uninterrupted operation.

The Capacity is same as that of Cook Pan of same size.

No. 4,	44x 96 inches,	Galv'd Iron Pan,	\$ 50 00	Copper Pan,	\$100 00
No. 5,	44x120	" "	60 00	" "	125 00
No. 6,	44x144	" "	75 00	" "	150 00
No. 7,	44x180	" "	90 00	" "	180 00
No. 8,	54x180	" "	130 00	" "	250 00
No. 9,	54x240	" "	160 00	" "	300 00
No. 10,	54x360	" "	260 00	" "	500 00

The No. 10 is in two sections, 4½ feet by 15 feet each.

Description and Prices of the Automatic Cook Evaporator for Steam sent on application.

Adaptation, Mills and Evaporators.

No. 0 Victor Mill,
Or No. 1 Great Western Mill,
No. 2 Cook Evaporator or Pan.
No. 1 or No. 1 Jr. Victor Mill,
Or No. 2 Great Western Mill,
No. 2 or 3 Cook Evaporator or Pan.
No. 2 Victor Mill,
Or No. 3 Great Western Mill,
No. 3 or 4 Cook Evaporator or Pan.
No. 3 Victor Mill,
Or No. 4 Great Western Mill,
No. 4 or 5 Cook Evaporator or Pan.

No. 4 Victor Mill,
No. 5 or 6 Cook Evaporator or Pan.
No. 6 Victor Mill,
No. 7 Cook Evaporator (Pan).
No. 0 Victor Steam Mill,
No. 7 Cook Evaporator (Pan).
No. 1 Victor Steam Mill,
No. 8 Cook Evaporator (Pan).
No. 2 Victor Steam Mill,
No. 9 Cook Evaporator (Pan).
No. 3 Victor Steam Mill,
No. 10 Cook Evaporator (Pan).

If the Evaporator is worked to its full capacity, one size larger than the Mill is enough. If the Evaporator is not worked up to its capacity the same Mill will supply a larger Evaporator. Ordinarily it is best to get the Cook Evaporator two sizes larger than the Victor Mill.

Hints on Mills and Evaporators.

Buy None but the Best. They only are safe, and are cheapest in the end. Inferior machinery is not only expensive and wasteful, but often disastrous. *You cannot afford to risk the loss of crops* with light, weak, unfinished mills, or with evaporators that make syrup unfit for the market.

Buy Mills Strong Enough for all Emergencies. Sufficient strength can not be had without weight and quality of metal, and the best construction and finish. *Mills with cast shafts* or unturned rolls, mills with rolls in wooden frames, *mills with weights to regulate pressure*, thus wasting juice, and two-roll mills, are all mere make-shifts.

A Good Mill Must Not Run Too Fast. Some mills are geared to run rolls fast to increase capacity. This carries juice off with bagasse, and throws it from the rolls.

A Good Cane Mill will press out the largest possible percentage of juice. Only a very powerful, rigid mill will do this. **A flexible mill, or one with rolls arranged to yield, wastes the juice.** The loss of juice from the *best* flexible mill over a good, rigid mill is not less than **fifteen per cent.** Any one can figure how long it will take such a mill to waste more than its price. In general, the waste is from 20 to 30 per cent.

Don't Buy Common Pans or Evaporators. They will cost you more for fuel and labor, and make a poor article of syrup.

Don't Allow Numbers to Confuse You. Manufacturers number differently; the numbers of one are no measure of the sizes and weights of another.

Buy Large Enough. In nine cases out of ten purchasers buy too small. It costs but little more to run a No. 4 Mill and No. 6 Pan than a No. 1 Mill and No. 2 Pan, whilst with the larger you make more than twice as much syrup per day.

Vertical Mills (mills with upright rolls) are best for horse power. On account of the extra gearing required, horizontal mills are heavier, higher-priced, and require more power to do the same work.

Order Your Sugar Machinery Early. Too much importance can not be attached to this. *Many valuable crops of cane have been lost on account of the delay in ordering machinery.* A wide margin should be allowed for delays. The terms of the order may not be satisfactory or well understood, and further correspondence must ensue; or there may be delays on the way through accident or carelessness of the transportation agents.

Remember that the Blymyer Iron Works Co. are the sole manufacturers of the Victor, Niles, and Great Western Cane Mills, and of the original and genuine Cook Evaporator and the Automatic Cook Evaporator.

Full and Plain Directions for setting up and working our Cane Mills and Evaporators are sent to each purchaser.

IMPORTANT.

IN our Cane Mills we use the best quality of **charcoal** iron. The iron commonly used is **stone coal** iron or **coke** iron, either of which, in comparison with the best charcoal iron, is **rotten** and **weak**. The iron we use **costs 20 to 30 per cent. more** than that ordinarily used in Cane Mills. Our superior facilities enable us to make Mills and Evaporators for less money than other manufacturers, and our prices are as low as we can afford. If, therefore, you find Mills offered at lower prices, you may be certain that **THEY ARE INFERIOR IN MATERIAL AND CONSTRUCTION**. You cannot afford a poor Cane Mill at any price. To make cane-growing profitable to all concerned, it is of vital importance to **save all the product**. A poor Cane Mill will waste enough juice to seriously impair, if not wholly destroy, the margin of profit, and in any case will waste more juice in a single season than would pay for a good mill.

In cane machinery it is especially true that the **best is the cheapest**.

The Evaporators we offer are the **genuine and original** Cook Evaporators, as made by ourselves for so many years, and all have **our name** on as makers. They are the **only properly made and reliable working** Cook Evaporators. The so-called "Improved" Cook Evaporators are imitations, inferior in material and construction.

Our Evaporators are made **fully up to our old standard** in dimensions, and weight and quality of metal. Most of the **imitations** are made **smaller** (a little shorter, or a little narrower, or both, just as much as the makers think will pass without attracting attention), and of **lighter weight and inferior quality** of metal.

When new, the difference in the weight and quality of galvanized iron or copper is not apt to be detected, and so inferior machines are sold under the cover of a good name. The purchaser, however, especially if he has used or is acquainted with the Cook Evaporator, (as we make it,) soon finds that he has been imposed upon.

Our Evaporators, being made of the **best quality of Juniata galvanized iron** or the **best quality of cold rolled copper**, made especially for ourselves of **sufficient weight** (at a cost to us of **fifty per cent. more** than the light weight and inferior iron and copper in other pans,) do not buckle, bag, or warp, nor incur expenses for repairs, but will last for many years in good condition, if properly cared for; whilst the imitation machines are generally used up the first season, or, at best, last but two or three seasons.

THE BLYMYER IRON WORKS CO.

CINCINNATI, April 1st, 1891



HONDURAS SORGHUM.