

CATALOG



CATALOG

OF

Excelsior, Favorite  
and St. Louis  
CANE MILLS

Evaporators and Furnaces  
Roll Mills for Sugar and Power

Manufactured by

Excelsior Fdy. Co.  
BEE NEVILLE, ILL.



CATALOG

of

# EXCELSIOR

Favorite and St. Louis  
Cane Mills



Evaporators and Furnaces

FEED MILLS FOR SWEEP  
AND POWER



Manufactured by

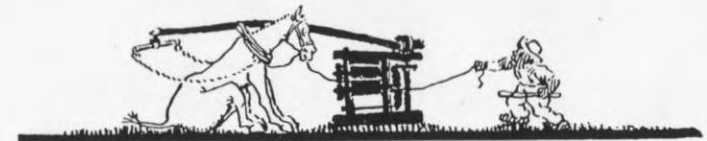
**Excelsior Foundry Co.**

BELLEVILLE, ILL.

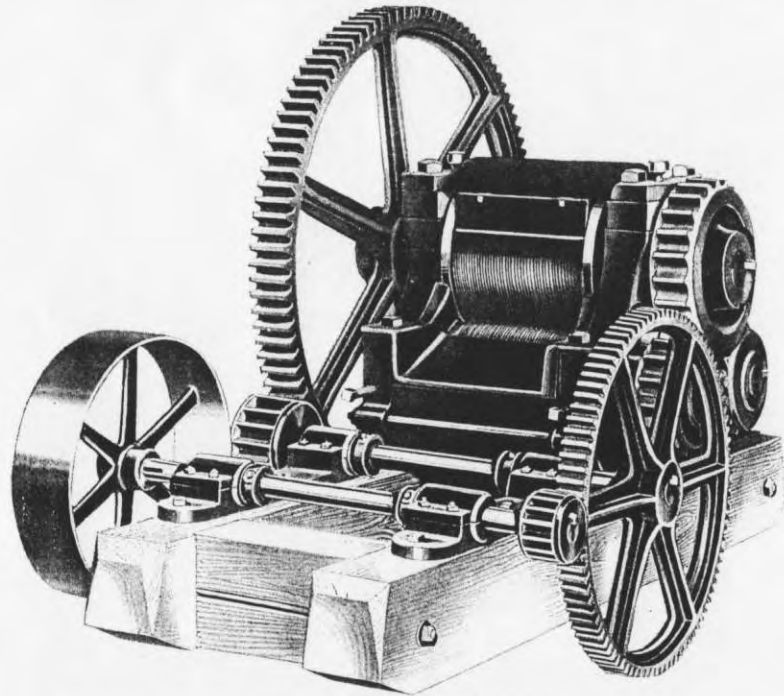
- ¶ All of our Mills are made of the best material throughout.
- ¶ All shafts being cold rolled steel.
- ¶ Large rolls flanged both ends.
- ¶ Small rolls adjustable to accommodate the different sizes of cane.
- ¶ All rolls and shafts lathe turned.

## A Plantation Idyl

Git up hyar, mule! Ya's shoh a case!  
 Yo' gwine 'a mek me lose mah place,  
 Yo' good for nothin' on'ry cuss—  
 Wid you l'se gwine 'a raise a fuss!  
 Why doan' yo' pull dis mill aroun'  
 Twell I kin git dis cane all groun'!  
 'Stid o' dat yo's allus stoppin'—  
 Keeps me busy jes' a' whoppin'  
 Yo' on yoh no-count stubbo'n haid,  
 An' I mought's well jes' beat de daid.  
 De Boss is tired o' yoh fool balkin';  
 Dat drummer man is hyar a' talkin',  
 An' ef dey buys a gas ingin—  
 I lak t' know whar we gwine come in!  
 Git up hyar, mule! Yo' better pull  
 'F yo' wants to keep yoh stummick full!



EXCELSIOR HORIZONTAL POWER CANE MILL.



VERY HEAVY AND POWERFUL.

The above illustration shows our No. 59 Excelsior Cane Mill and speaks for itself. Showing perfect construction, strength and finish. The adjustable rolls are made of extra hard cast iron with shells of more than ordinary thickness. The shafts are of very heavy steel, and are secured in the roll by having three (3) heavy steel keys, cast into the inner hub of roll, absolutely preventing the roll from turning on shaft. The bearings are of solid bronze. All bolts and screws are extra large. The spur wheels are heavy with ribbed arms. The pinions are made very strong, and the teeth are shrouded up to pitch line.

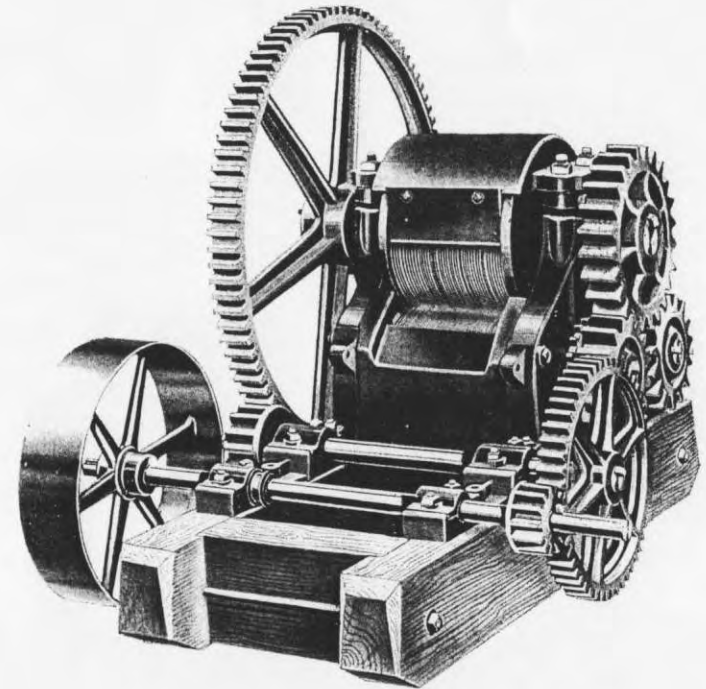
To prevent the baggasse from clogging we have invented a device which is attached to the top plate over the main roll which keeps this roll perfectly clean at all times, saving a great deal of time spent cleaning your mill. This is a double back geared mill and very powerful.

Pulley 24x10

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
50	12 to 15	Large roll 16x15 Small roll 10x15	4½ Tons	Large roll 3 7/8 Small roll 3 3/8	4500 lbs.	\$675 00

No. 50 Baggasse Carrier ..... \$123.25  
 No. 50 Feed Table ..... 14.00

EXCELSIOR HORIZONTAL POWER CANE MILL.



HEAVY DOUBLE BACK GEAR.

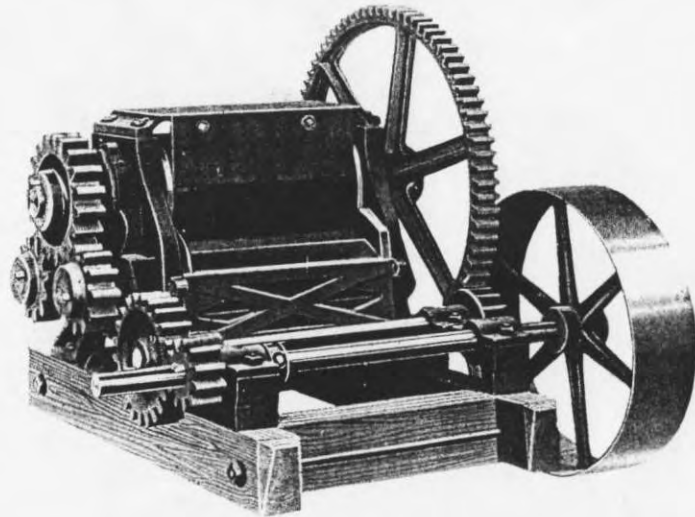
The above illustration represents our No. 44 and No. 45 Excelsior Cane Mill. Both have been made heavier and are better adapted to the requirements of those needing mills to be run by steam, water or gasoline Powers. The bearings are all babbitted. Extra heavy shafting in rolls, and erected with every possible care to insure an easy running mill. The above mill is equipped with our new device for cleaning the main roll, preventing clogging.

Pulley 24x6

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
44	10 to 12	Main roll 16x12 Small roll 10x12	3½ Tons	Large roll 3 7/16 Small roll 2 15/16	2800 lbs.	\$420 00
45	10 to 12	Main roll 16x18 Small roll 10x18	4 Tons	Large roll 3 7/16 Small roll 2 15/16	3200 lbs.	\$480 00

No. 44 Baggasse Carriers ..... \$104.50  
 No. 45 Baggasse Carriers ..... 109.75  
 No. 44 Feed Table ..... 9.00  
 No. 45 Feed Table ..... 12.25

EXCELSIOR HORIZONTAL POWER CANE MILL.



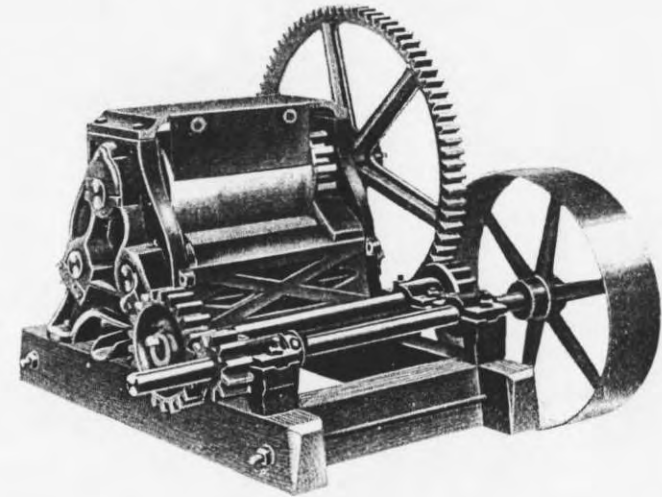
The New Excelsior Mill is in every respect the same as the No. 42 and No. 43 with the exception that the gears are keyed on to the rolls (outside of the side plates) instead of being cast on them, making the squeezing surface of the rolls 2½ inches longer, thereby increasing the capacity of the mill. The breaking of a cog is remedied at a very small expense by simply replacing a gear wheel. This mill is suitable for any ordinary farm engine. The driving shaft should run 150 revolutions. The above mill is equipped with our new device for cleaning the main roll, preventing clogging.

Pulley 24x6

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
42A	4 Horse	Large roll 10x12½ Small roll 7x12½	2½ Tons	Large roll 2 7/16 Small roll 2 3/16	1350 lbs.	\$203.00
43A	6 Horse	Large roll 10x18½ Small roll 7x18½	3 Tons	Large roll 2 11/16 Small roll 2 7/16	1500 lbs.	\$225.00

No. 42A	Baggasse Carrier	\$73.25
No. 43A	Baggasse Carrier	76.65
No. 42A	Feed Table	6.00
No. 43A	Feed Table	8.50

EXCELSIOR HORIZONTAL POWER CANE MILL.



DOUBLE BACK GEAR.

The above illustration shows our Excelsior Double Back Gear Mill. This mill is the same as the single back except it has double gears in place of single, and is therefore more powerful. The pulley shafts on this mill should have 150 revolutions per minute.

We recommend this mill to anyone desiring to use a gasoline engine for operation.

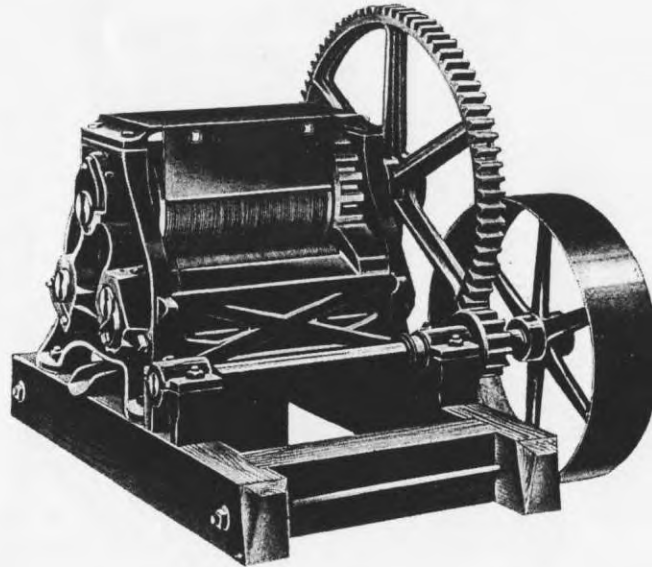
The above mill is equipped with our new device for cleaning the main roll, preventing clogging.

Pulley 24x6

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
42	4 Horse	Large roll 10x10 Small roll 7x10	1½ Tons	Large roll 2 7/16 Small roll 2 3/16	1250 lbs.	\$179.00
43	6 Horse	Large roll 10x16 Small roll 7x16	2 Tons	Large roll 2 11/16 Small roll 2 7/16	1450 lbs.	\$207.00

No. 42	Baggasse Carrier	\$73.25
No. 43	Baggasse Carrier	76.65
No. 42	Feed Table	6.00
No. 43	Feed Table	8.50

**EXCELSIOR HORIZONTAL POWER CANE MILL.**



**SINGLE BACK GEAR.**

Our Excelsior Horizontal Power Mills are made to be operated by water, steam gasoline, or heavy horse power. The pulley shafts on the single back gear Mills should have 75 revolutions per minute.

Our Excelsior Horizontal Mills are made of the best material throughout, all shafts being cold rolled steel, rolls flanged, lathe turned, boxes babbitted. The main roll is stationary, small rolls adjustable, to accommodate the different sizes of cane.

The above mill is equipped with our new device for cleaning the main roll, preventing clogging.

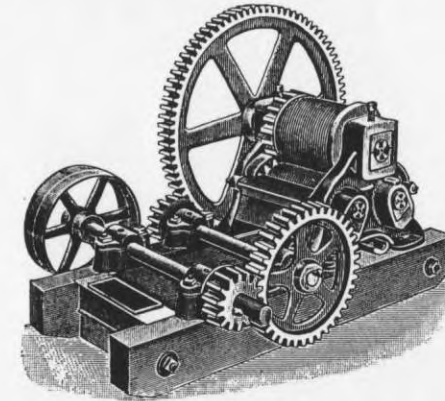
**Pulley 24x6**

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
40	2 to 4	Large roll 10x10 Small roll 7x10	1/2 Tons	Large roll 2 7/16 Small roll 2 3/16	1200 lbs.	\$171.00
41	4 to 6	Large roll 10x16 Small roll 7x16	1 Ton	Large roll 2 11/16 Small roll 2 7/16	1350 lbs.	\$193.00

No. 40	Baggasse Carrier .....	\$73.25
No. 41	Baggasse Carrier .....	76.65
No. 40	Feed Table .....	6.00
No. 41	Feed Table .....	8.50

**WONDERFUL PONY MILL.**

EXCELSIOR HORIZONTAL POWER CANE MILL



We have received hundreds of inquiries for a small power mill to be operated by any small gasoline engine, such as is owned by every up-to-date farmer, and have designed a mill which we are confident will meet the requirements.

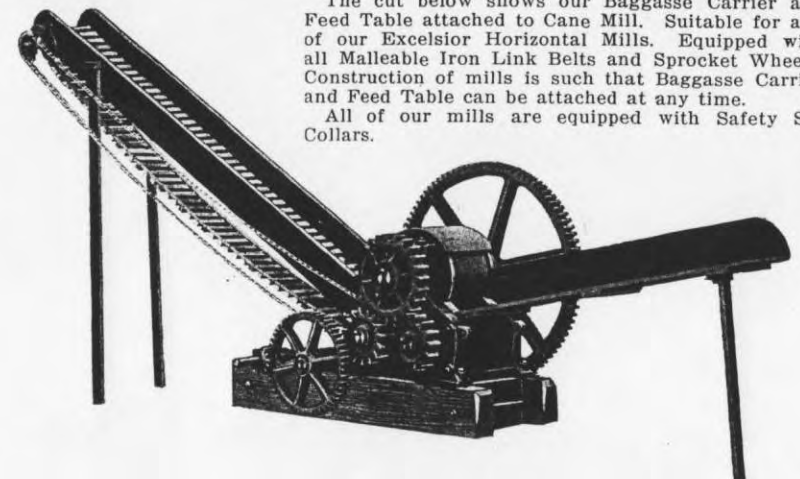
It is the same design as our large Excelsior Mills, is very strong, thoroughly well made, and strictly high grade in material and construction. The small rolls are both adjustable, all the boxes are babbitted to fit the shaft perfectly.

**Pulley 10x4**

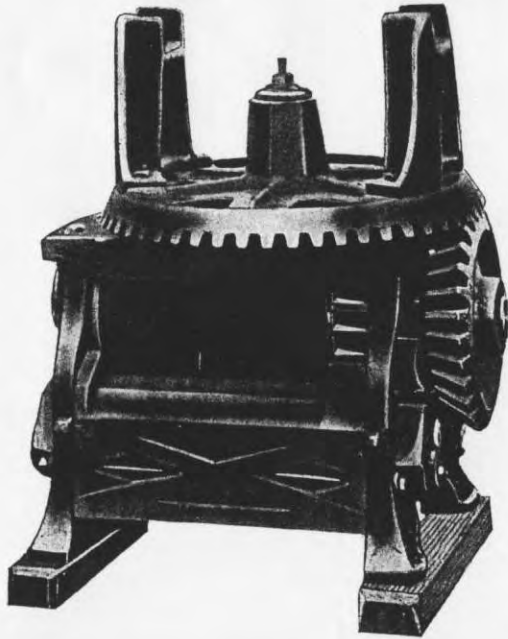
No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shaft	Weight	Price
39	2 1/2 Horse	Large roll 8x8 Small roll 5 1/2x8	1/4 Tons	Large roll 2 3/16 Small roll 1 15/16	650 lbs.	\$93.00

The cut below shows our Baggasse Carrier and Feed Table attached to Cane Mill. Suitable for any of our Excelsior Horizontal Mills. Equipped with all Malleable Iron Link Belts and Sprocket Wheels. Construction of mills is such that Baggasse Carrier and Feed Table can be attached at any time.

All of our mills are equipped with Safety Set Collars.



EXCELSIOR HORIZONTAL SWEEP CANE MILL.



The Excelsior Cane Mill is without any exception the strongest and best Horizontal Sweep Power Cane Mill in the market. It has been improved with all the modern features, which gives it the advantage over any other mill of this style. It is a style of mill which has been in use for years, giving the very best of satisfaction.

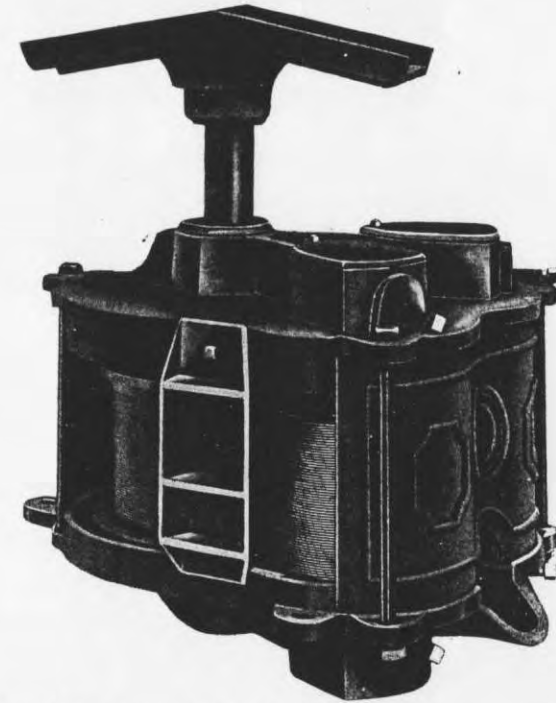
The shafts in these mills are larger, the bearings larger and heavily babbitted. It will weigh more than any other mill of the same size.

Our Sweep Top Geared Mills are no higher priced than the same size Vertical Mill, with the top gear. The rolls make two revolutions to one of the horse, making the capacity twice that of a vertical mill. The shafts are of the best steel, rolls are lathe turned; large rolls being flanged on both ends, preventing the cane from passing beyond the end of the roll. It is made of the very best material throughout.

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shafts	Weight	Price
30	2 Horse	Main roll 10x10 Small roll 7x10	1/2 Ton	Large roll 2 7/16 Small roll 2 3/16	1150 lbs.	\$138.00
31	4 Horse	Main roll 10x16 Small roll 7x16	1 Ton	Large roll 2 11/16 Small roll 2 7/16	1375 lbs.	\$165.00

No. 30	Baggasse Carrier	.....	\$73.25
No. 31	Baggasse Carrier	.....	76.65
No. 30	Feed Table	.....	6.00
No. 31	Feed Table	.....	8.50

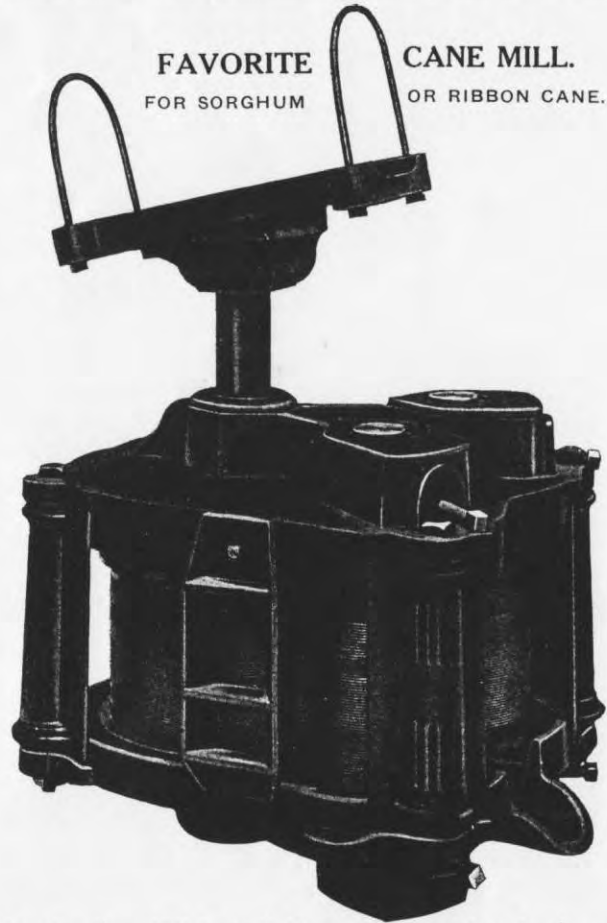
ST. LOUIS CANE MILL.  
FOR SORGHUM OR RIBBON CANE.



The St. Louis Mills have steel shafts, brass bearings, cog wheels, cast separate from the rolls; so when a gear wears out or breaks, it can be quickly and cheaply replaced. The gears are not keyed on the shafts, but are held in position by a clutch cast on the gear to intersect with a corresponding clutch cast on the top of the roller; therefore by removing four bolts the gear can be easily lifted out of place and a new one put in. The gearing is encased, preventing it from being clogged, or harm to the operator. The main rollers are flanged at top and bottom, preventing the cane from either passing up or down. These Mills are made strong and light of draft. Be sure to investigate the merits of the "St Louis" before buying.

SIZE, CAPACITY, WEIGHT AND PRICE.

No.	Power	Size of Rolls.			Estimated Capacity	Weights	Price
		Diam. Large	Diam. Small	Length			
0	Light One Horse	8 1/2	5 1/2	5 1/2	30 to 45 Gal. per hour	435	\$43.00
1	One Horse	10	6	6 1/2	45 to 60 Gal. per hour	550	54.00
2	One Horse	11 1/2	6 1/2	6 1/2	60 to 75 Gal. per hour	635	62.00
3	Two Horse	13 1/2	7 1/2	7 1/2	75 to 90 Gal. per hour	900	88.00
4	Two Horse	13 1/2	7 1/2	8 1/2	90 to 100 Gal. per hour	950	92.00
5	Two Horse	13 1/2	7 1/2	9	100 to 120 Gal. per hour	1035	101.00
6	Heavy Two Horse	13 1/2	7 1/2	12	120 to 145 Gal. per hour	1125	110.00



FAVORITE  
FOR SORGHUM

CANE MILL.  
OR RIBBON CANE.

Our "Favorite Cane Mills" are held together with four heavy main bolts, in place of three, as used in many other Mills. This gives strength to the structure and prevents the friction caused by the gear getting out of line. The gear wheels are cast separately from the rolls, and are made extra heavy, with two clutches on each wheel, which fit into two corresponding ones in each roller. These clutches enable us to do away with the old method of using keys.

The breaking of a cog is remedied at very small expense by simply replacing a gear wheel. The gearing is encased, preventing it from being clogged. The main rollers are flanged at top and bottom, preventing the cane from passing either up or down.

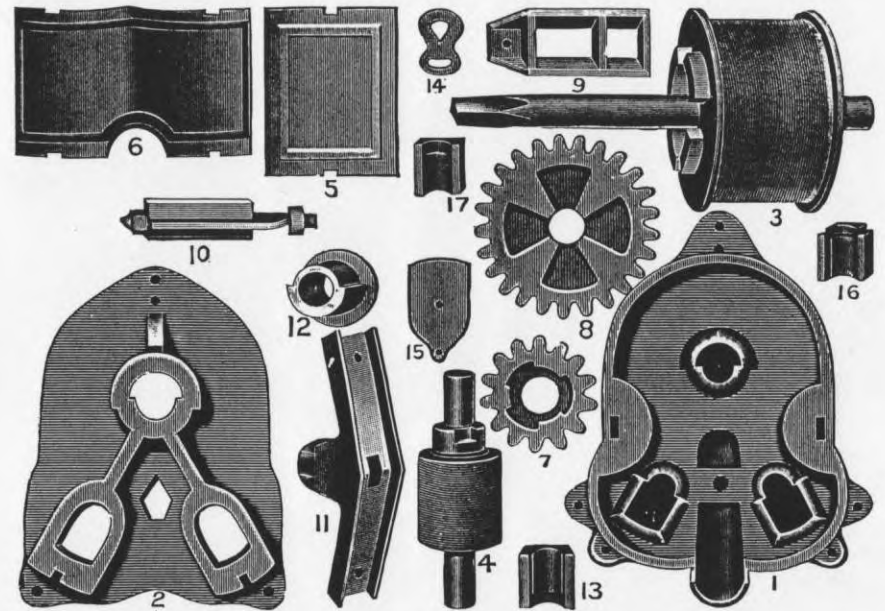
We furnish a feed guide with each Mill, and it is made so that the full length of the roller can be used.

Our shafts are made of the very best quality of steel, and will stand three times the strain that they will ordinarily receive in a Cane Mill.

Both top and bottom journals run in brass boxes, making the Mill work smooth and easy and saving the annoying delays and expense which often occur in other Mills, when chilled or babbitted boxes are used.

No.	Power	Diam. Large	Diam. Small	Length	Estimated Capacity	Weight	Price
9	One Horse	8½	5½	51	40 to 50 gal. per hour	450	\$44 00
10	One Horse	9½	6	61	40 to 60 gal. per hour	575	56 00
11	One Horse	11½	6½	61	60 to 75 gal. per hour	650	64 00
12	Two Horse	13	7½	71	75 to 90 gal. per hour	825	91 00
13	Heavy Two Horse	14	8½	9½	90 to 100 gal. per hour	1050	103 00

PARTS FOR ST. LOUIS CANE MILL.

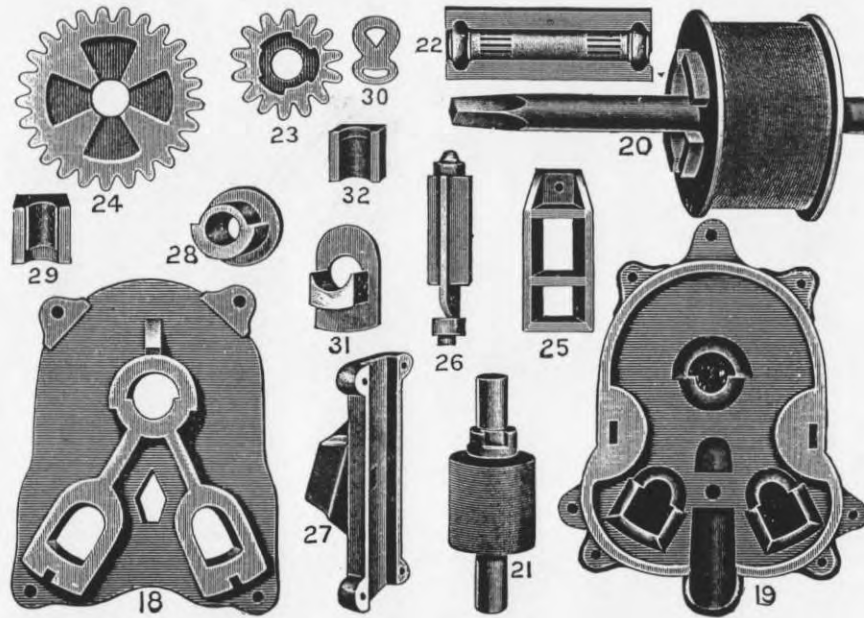


No. of Cut	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
1 Bottom Plate	\$ 7.00	\$ 8.00	\$ 9.00	\$10.00	\$11.00	\$12.00	\$12.00
2 Top Plate	8.00	9.00	10.00	12.00	15.00	20.00	20.00
3 Large Roll	11.00	14.00	18.00	23.00	24.00	28.00	32.00
4 Small Roll	6.00	7.00	8.00	11.00	12.00	15.00	18.00
5 Back Plate	1.00	1.25	1.75	2.00	2.25	2.75	3.00
6 Front Plate	3.00	4.40	4.80	5.00	5.25	5.50	7.00
7 Small Cog Wheel	1.50	1.75	2.00	2.50	2.75	3.25	3.50
8 Large Cog Wheel	2.50	3.00	4.00	5.00	5.25	5.50	6.00
9 Feed Guide	.75	1.00	1.50	1.75	2.00	2.25	2.50
10 Scraper	.65	.80	1.00	1.20	1.40	1.50	1.75
11 Sweep Cap	3.50	4.50	5.00	6.00	6.50	7.00	7.50
12 Top Box (large roll) with brass	1.00	1.20	1.50	1.60	1.75	2.00	2.00
13 Bot. Box (large roll) with brass	.90	1.10	1.40	1.50	1.60	1.80	1.80
14 Scraper Cap	.25	.30	.30	.30	.30	.50	.50
15 Top Cap	.25	.25	.25	.25	.25	.50	.50
16 Top Box (small roll) with brass	.75	1.00	1.10	1.25	1.25	1.60	1.60
17 Bot. Box (small roll) with brass	.75	1.00	1.10	1.25	1.25	1.60	1.60

In ordering parts give description and number on cut above, also number and letter cast on each part and year mill was purchased and from whom.

Be careful in ordering, we will not be responsible for your errors.

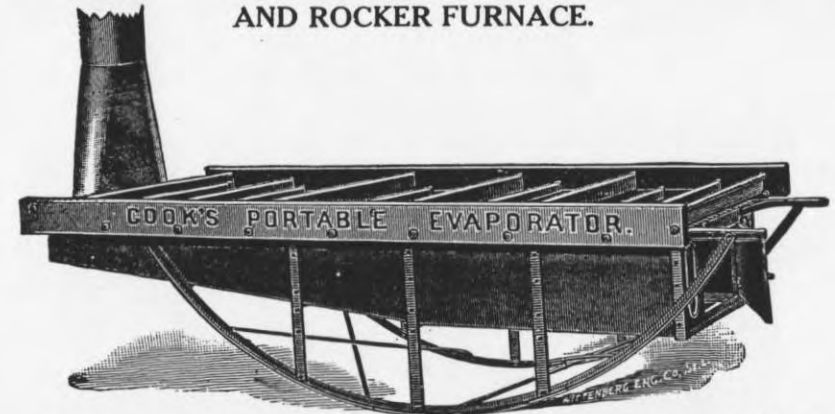
PARTS FOR FAVORITE MILL.



No. of Cut		No. 9	No. 10	No. 11	No. 12	No. 13
18	Top Plate	\$ 7.50	\$ 8.50	\$ 9.50	\$11.50	\$13.50
19	Bottom Plate	8.50	9.50	10.50	12.50	14.50
20	Large Roll	11.00	14.00	18.00	23.00	28.00
21	Small Roll	6.00	7.50	8.50	11.00	15.00
22	Corner Post	1.00	1.20	1.40	1.60	1.80
23	Small Cog Wheel	1.50	1.75	2.00	2.50	3.50
24	Large Cog Wheel	2.50	3.00	4.00	5.00	6.00
25	Feed Guide	.75	1.00	1.50	2.00	2.50
26	Scraper	.65	.80	1.00	1.40	1.75
27	Sweep Cap	3.50	4.50	5.50	6.00	7.50
28	Top Box (large roll) with brass	1.00	1.20	1.50	1.60	2.00
29	Bottom Box (large roll) with brass	.90	1.10	1.40	1.50	1.80
30	Scraper Cap	.25	.30	.30	.30	.50
31	Top Box (small roll) with brass	.75	1.00	1.10	1.25	1.60
32	Bottom Box (small roll) with brass	.75	1.00	1.10	1.25	1.60

In ordering parts give description and number on cut above, also number and letter cast on each part and year mill was purchased and from whom. Be careful in ordering, we will not be responsible for your errors.

THE IMPROVED "COOK'S" PORTABLE EVAPORATOR PAN AND ROCKER FURNACE.



For full description of our Cook's Evaporator Pan see pages 19-20. Our Improved Cook's Portable Rocker Furnace is improved over the old pattern in many respects, one special feature is that the furnace will not lose its shape by rough handling or use; to overcome this we use heavy angle steel in making our furnace frames. The sides, bottom and pipe are made of heavy sheet steel; the front plate, end plate and flue plate are made of heavy casting. The grate is full size and strong. Each furnace is furnished complete with pipe and grate.

THE IMPROVED "COOKS" PORTABLE EVAPORATOR.  
(Furnace and Pan.)

All Steel Furnace—Galvanized Steel or Copper Pan. Complete with Pan, two Skimmers, Furnace, Grate and Pipe.

No.	Size of Pan.	Estimated Capacity per day.	Actual Weight	Price with Galvanized Steel Pan.	Price with Copper Pan.
2	44 in. by 72 in.	30 to 40 gal.	210 lbs.	\$50 00	\$75 00
3	44 in. by 90 in.	40 to 50 gal.	265 lbs.	60 00	90 00
4	44 in. by 108 in.	50 to 80 gal.	290 lbs.	75 00	115 00
5	44 in. by 126 in.	80 to 120 gal.	315 lbs.	90 00	140 00
6	44 in. by 144 in.	100 to 144 gal.	350 lbs.	110 00	175 00

The advantage of a portable Evaporator is well known; with it the operator can move from farm to farm and thus avoid the labor and expense of hauling cane.

THE IMPROVED "COOK'S" STEEL PORTABLE ROCKER FURNACE.  
(No. Pan.)

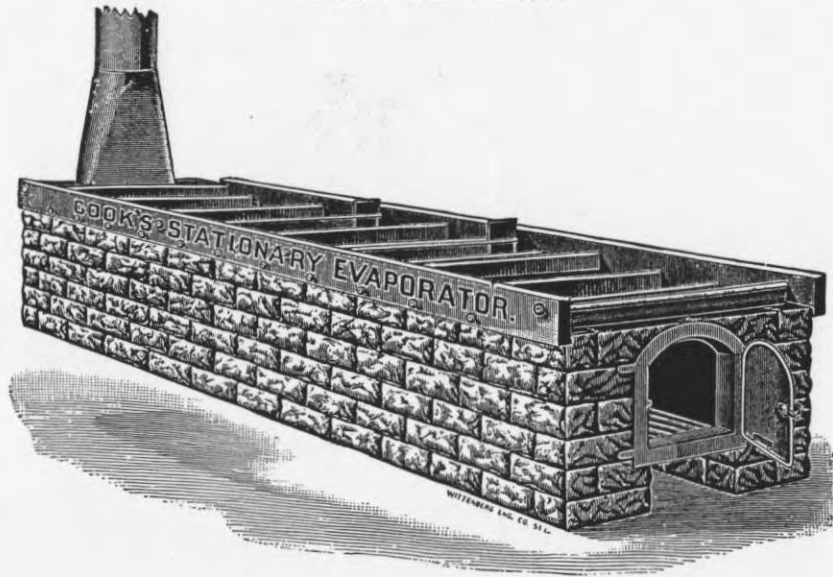
No.	For Pan.	Actual Weight	Price
2	44 inches by 72 inches.	150 lbs.	\$25 00
3	44 inches by 90 inches.	190 lbs.	30 00
4	44 inches by 108 inches.	200 lbs.	35 00
5	44 inches by 126 inches.	215 lbs.	40 00
8	44 inches by 144 inches.	240 lbs.	45 00

See Directions for Operating on Page 20.

THE IMPROVED "COOK'S" EVAPORATOR PAN (Stationary)

FOR STONE OR BRICK ARCH.

Galvanized Steel or Copper.



Made of the best quality Galvanized Steel, Heavy sides. Every third Ledge high. Gates used to regulate the flow of juice, in all sizes except No. 2.

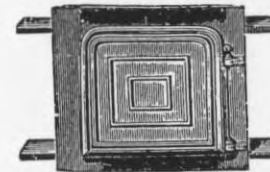
No.	Size of Pan	Estimated Capacity Per Day.	Actual Weight	Price Galvanized Steel	Price Copper
2	44x 72 inches	30 to 40 gal.	60 lbs.	\$25 00	\$ 50 00
3	44x 90 inches	40 to 50 gal.	75 lbs.	30 00	60 00
4	44x108 inches	50 to 80 gal.	90 lbs.	40 00	80 00
5	44x126 inches	80 to 120 gal.	100 lbs.	50 00	100 00
6	44x144 inches	100 to 140 gal.	110 lbs.	65 00	130 00
7	44x180 inches	120 to 180 gal.	150 lbs.	80 00	160 00

The capacity of an Evaporator Pan depends upon the quality of the juice and the skill and industry of the operator.

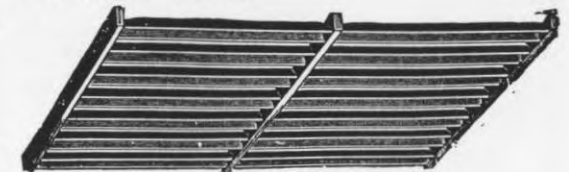
State in orders kind of Pan wanted, Galvanized Steel or Copper. We send Galvanized Steel unless Copper is ordered.

See directions for operating on Page 20.

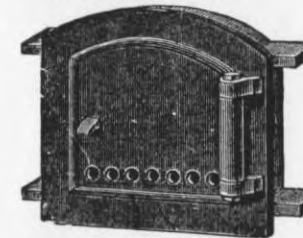
COOK'S FURNACE IRONS.  
FOR BRICK ARCHES.



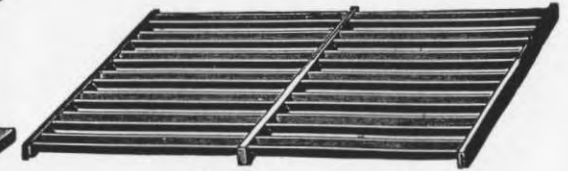
No. 1 Frame and Door



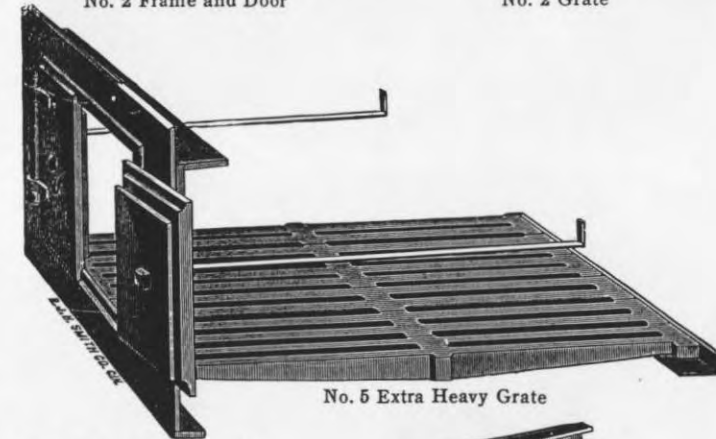
No. 1 Grate



No. 2 Frame and Door

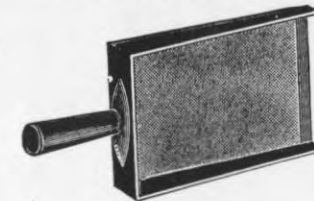


No. 2 Grate



No. 5 Extra Heavy Grate

No. 5 Extra Heavy Double Door and Frame



Skimmer

EXTRA PARTS.

No.	Description.	Size of Door	Extreme Size	Weight	Price
1	Light Frame and Door.....	11½x11½ in.	14½x16 in.	35 lbs.	\$3 00
1	Furnace Grate.....		18x30 in.	35 lbs.	3 00
2	Heavy Frame and Door.....	12x15 in.	16x14 in.	55 lbs.	6 00
2	Furnace Grate.....		18x36 in.	40 lbs.	4 00
5	Extra Heavy Double Door and Frame.....	9½x21 in.	16½x36 in.	100 lbs.	8 00
5	Extra Heavy Grate, 6 pieces & Bearing bar.....		27x35 in.	100 lbs.	9 00
	Skimmers.....				Each \$0 40
	Furnace Pipe, 3 joints.....				" 3 00
	Furnace Grate.....				" 5 00
	Furnace Front and Door.....				" 1 00
	Furnace Door only.....				" 2 50
	Cast Collar or Flue Plate for Pipe.....				" 2 50

FAVORITE CORN AND COB MILL.



The above cut represents Nos. 1 and 2 Mills, which for durability and strength are unequalled. They are adapted to crushing corn and cob, and when supplied with a pair of fine grinders will grind shelled corn and oats mixed.

The capacities given are in bushels of meal ground coarse, about like hominy from old dry corn, team making four circuits per minute. New or soft corn will be one-third less. We also make these mills with iron legs and platform, instead of wood feed box.

We make two sizes:

No. 1—One-horse, weight 340 lbs., capacity 8 to 10 bus. per hour.....	\$33 00
No. 2—Two-horse, weight 400 lbs., capacity 10 to 12 bus. per hour.....	39 00
No. 1—One-horse, weight 375 lbs., capacity 8 to 10 bus. per hour, with legs....	36 00
No. 2—Two-horse, weight 440 lbs., capacity 10 to 12 bus. per hour, with legs....	42 00

DIRECTIONS FOR BUILDING ARCHES AND USING IMPROVED "COOK'S" STATIONARY PANS.

1. In building Stationary Furnaces for the Cook Sorgo Pans, Nos. 2, 3, 4, 5, 6 and 7, lay out the foundation (so that the mouth of the furnace will face the prevailing wind), 40 inches wide and as long as necessary for the pan and chimney and also for an allowance of not less than 12 inches between the after-end of the pan and the chimney. Start the walls at the front end of the furnace, which form the sides of the ash pit, 12 inches thick, leaving a space for the ash pit 16 inches wide. Continue these 12 inch walls, and also a cross wall to support the after-end of the grate, up to the height of 16 inches. The side walls back of the ash-pit, and the portion above the level of the grate, need not be more than 8 inches thick.

Carry the 8-inch walls up to 12 inches; draw in 4 inches on the inside, and build up 6 inches more making the tops of the walls 18 inches above the level of the grate, or 34 inches from the ground.

As the walls go up, set the fire door in front, and provide for an opening in the chimney, at the after-end.

2. Place the grate with hollows up, and fill with clay, first removing the ground beneath for an ash-pit. For the inner arrangement of the furnace, for Nos. 2, 3, 4 and 5, fill in back of the grate with earth, and cover with a floor of brick so inclined as to leave a space of four inches in depth under the after-end of the pan.

3. For Nos. 6 and 7, build a cross wall 6 feet from the door to within 8 inches of the top of the walls. Fill in in front, so as to form a regular slope, from the end of the grate to the top of this wall. At the end of the pan build a second cross wall, the inside of the wall being even with the end of the pan to within 4 inches of the pan; and commencing midway between the cross walls, fill in so as to make a slope to the top of this second wall.

The side walls should extend beyond the end of the pan far enough to give ample room for the chimney.

4. From the last cross wall the flue should slope downward under the mouth of the chimney, so as to allow ample space for the draught. Cover over between the pan and chimney. If brick is used, build the mouth of the chimney flat, and as nearly the width of the furnace as possible. Three feet above the pan contract the flue to 9 by 18 inches (inside measurement), which will require a course of 8 bricks, and build up to a height exceeding the length of the pan by a half.

5. Invert the pan and fill the openings or crimps, that will be on and outside the walls with clay, leaving those between the walls open. Place the pan on the walls, and level from side to side with water. The receiving end should be over the fire. The finishing end next the chimney. Adjust the pitch of the pan by wedges placed under the end. The smaller pan should be about level and the larger have a slight inclination toward the finishing end. The pitch thus being determined, remove the pan, and using the wedges as guides, spread mortar on the wall and set permanently.

6. Before commencing, provide juice tanks having a faucet with straw or hay filtering. Cover the plug of the outlet of the pan with cloth. Provide good, dry wood, three feet long. For the larger pans, troughs or pipes for conveying the juice to the tanks will save labor. A supply of clean water should be kept near the works.

7. To secure a continuous process, let in enough water to protect the pan from burning until boiling shall commence all over the pan. Then partly open the faucet at the tank and plug in the pan, and let the juice slowly follow the water through the channels, so equalize the flow with evaporation that the syrup, on arriving at the outlet, may be finished. The juice should be kept below the tops of the ledges in the front end, and as shallow as possible at the finishing end. As the juice becomes more dense, the foam will rise so as to cover the ledges and fill the pan, but the mass of the liquid, in an undercurrent and unmixed, continues its regular onward flow through the channels. If a regular heat is kept up and the flow of the juice is properly regulated, no change of gates, faucet or plug need be made during the day, and the syrup may be made to flow off uniformly at any density desired.

8. Use the gates to regulate the flow of the juice, so that in the finishing departments, there may be the smallest quantity possible. Let the supply from the faucet and gates be equal to evaporation, and no more. In using this process be careful not to change the gates suddenly and guard against flooding in any of the departments, as it causes a mixture of juices and requires a longer exposure to heat, thereby rendering the syrup dark in color and impure.

9. In drawing off the syrup, care should be taken not to allow the last channel to become exhausted suddenly without a supply to follow. Regulate the supply by the gates and faucets, keeping up hot, regular fire. Aim constantly to have the operation continuous. As long as boiling is kept up through the center of the pan, there can be no mixture of scum and juices. Foam and bubbles may be thrown over the crimps through the center, but if a high heat be kept up they will remain on the sides until taken off. In closing for the day, let water follow the juice, until all the latter is reduced to syrup; then wash the pan, and filling it with clean water, let it stand over night and used to commence next day's operations.

10. The use of a shallow body of juice with a high heat will insure the greatest speed and purest sugar and syrup. High heat keeps up boiling through the center of the pan, removes the impurities from the center to the sides, and if kept up, will hold the scum for removal. Impurities should be taken off only as they form at the sides of the pan. Prevent the wind from blowing on the pan, else evaporation will be retarded. Ashes accumulated under any part of the pan endanger burning. Clean pan, tubs and skimmers, and renew straw in the juice tank every evening. Keep the ash pit filled with water. For using pans with the Portable Furnace, see directions for working the evaporator.

11. To insure success, it is very necessary that the above rules be followed. If you should fail in obtaining the best results, let us know the fact and we will assist you with pleasure. Study the principles of the pan and post yourself thoroughly.

DIRECTIONS FOR USING  
OUR "COOK'S" EVAPORATOR PAN,  
WITH COOK'S PORTABLE FURNACE.

1. Place the furnace on a firm and level foundation, with the mouth toward the prevailing winds. Set the grate in its place, with the hollows up, and fill the hollows with clay. Fill the spaces between the grate and sides of the furnace, and for a distance of six inches back of the after-end of the grate with brick and mortar tapering to a row of brick laid on edge at the top, the remaining length of furnace line up with clay tapering to the top. Cover the bottom of the furnace smoothly and thinly with ashes or sand.

2. Invert the pan, and if there are any indentations or uneven places in the bottom, hammer them out with a wooden mallet, then fill the openings and crimps outside the fire-guards with clay, letting the crimps between the fire-guards remain open. Place the pan on the furnace, with finishing end at the chimney. By springing the sides of the furnace out a little the fire-guards will drop into the space between the sides and the brick lining; stop the outlet with a cloth-covered plug, and level from side to side with water.

3. Dig an ash-pit under the grate and fill with water. See that the furnace be true and not in a twist. Protect your pan from the wind, as by so doing you will increase evaporation.

4. Provide a juice-tank with a faucet for regulating the flow of juice into the pan. Provide plenty of good dry wood, three feet long, within easy reach. Finally adjust the rockers so that the pan may be nearly level.

5. Being now ready to commence operations, fill the channels of the pan half full of water; build a hot fire, and keep it hot; and when the water begins to boil freely, let on a small stream of juice from the tank at the same time partly opening the plug at the outlet of the pan and as the water disappears through the outlet and by evaporation, so adjust the rockers that, when the first channel is two-thirds full, the last or finishing channel may be but barely covered—that is to say have the pan lowest at the forward end where the juice enters. So equalize, with the aid of the faucet and plug, the flow of the juice through the pan, that it may be reduced on its arrival at the outlet to the right consistency. Never allow the channels, except at the front end of the pan, to be more than half full of juice—a less quantity is better—since a shallow body of juice will evaporate more rapidly, securing more perfect freedom from impurities and a syrup of a lighter color.

6. Avoid changing the inclination of the pan or exhausting the finishing channel by raising the plug too suddenly, since flooding, in any of the apartments, produces a mixture of juice, which retards evaporation and darkens the color of the syrup. Do not let the partitions be covered at the sides, as they hold the scum. Be careful to keep up a regular high heat, and never let boiling cease through the center of the pan. Regular heat saves changes of pan and much trouble.

7. When the operation is perfect the green scum will form in the first channels, and gradually becomes lighter in color and less in quantity as the juice flows through the channels until it disappears entirely. Impurities should be skimmed off as they collect at the sides of the pan, and not from the center. Do not skim until the scum becomes thick. In closing for the day, let water follow the juice until all the latter is reduced to syrup. Finally, wash the pan, and filling it with clear water, let it stand over night, and commence in the morning as before.

8. Clean your juice tank, receiver, skimmer, and pan thoroughly every evening. Change the straw in the tank as often. It is essential to the successful working of the pan that **cleanliness and regularity be observed throughout**. The rapidity of the evaporating process necessitates careful attention on the part of the operator.

9. The above directions are explicit, and if carefully followed will insure success. The evaporator is simple as well as scientific in construction, and is not difficult to manage. If you do not succeed at first, review the directions, and you will find that you have neglected part of them. To secure the best results you must have good juice; sour juice may be worked, but not to advantage. It is especially important that you use a shallow body of juice, and keep up **constantly** a high heat. A hot fire will keep the juice in the center of the pan agitated, and prevent the scum from passing from one side to the other. A shallow body will boil more rapidly; consequently, more work will be done, and free the impurities more perfectly, and the syrup, being a less time over the fire, will be of a lighter color. (Great depth of juice prevents impurities from rising from the bottom, and retards evaporation). Scum and bubbles may flow over the ledges, yet the current follows the channels, impurities are thrown to the side in a straight line, and **not** towards the outlet over the ledges. (Throw a light substance on the pan and try it.) Endeavor to have the heat as regular as possible. If your pan is too hot in the center you will find a pile of coals underneath. If the syrup finishes before reaching the last channel, it is because you have not properly regulated the flow of the juice, too much heat under the center of the pan, or you have given the pan an inclination contrary to directions 5. If green scum follows the syrup through the pan, it is caused either by changing the inclination of the pan too suddenly, or want of a hot and regular fire. If the back end of the pan should flood, close the faucet and lower the front end, so that you have but little juice in the last channel, and get up a hot fire; as soon as the difficulty is removed, adjust your furnace as before.