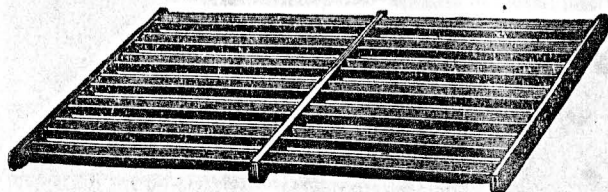
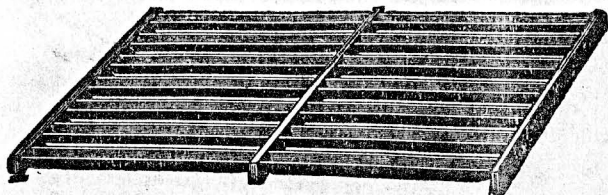


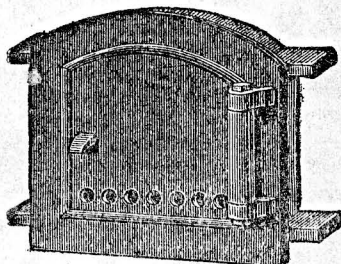
COOK'S FURNACE IRONS  
FOR BRICK ARCHES



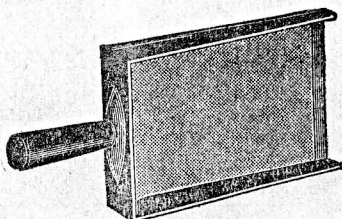
No. 1 Grate



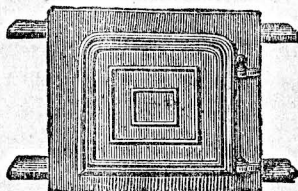
No. 2 Grate



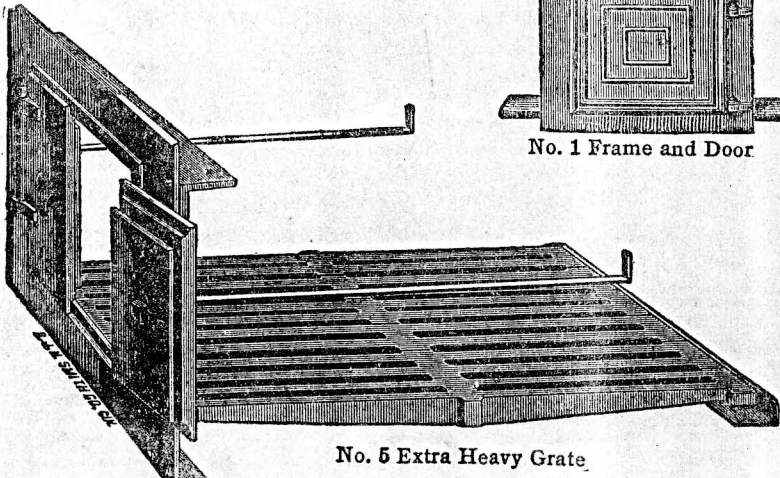
No. 2 Frame and Door



Skimmer



No. 1 Frame and Door



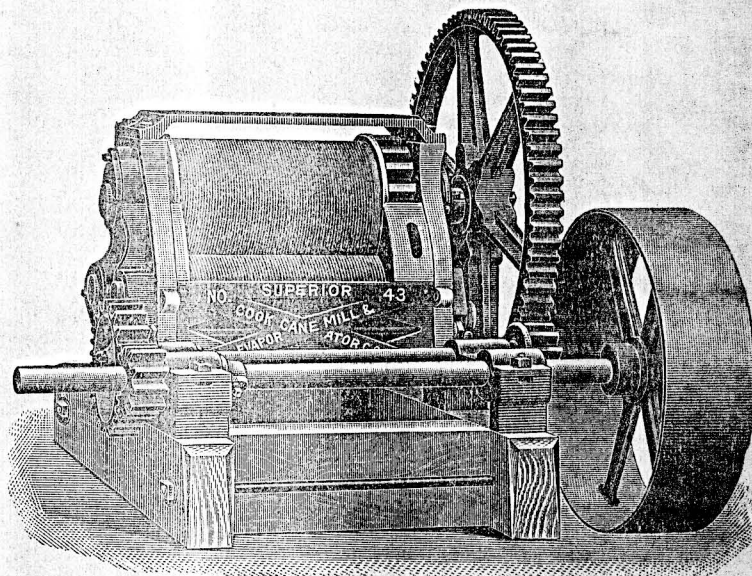
No. 5 Extra Heavy Grate

# Cook Cane Mills

and

# Evaporators

CATALOG NO. 45



Cook Cane Mill and Evaporator Co.

St. Louis, Mo.

## GENERAL INFORMATION

**GUARANTEE.**—Our Cane Mills and Evaporators are warranted to be well made, of best materials, and to work well when properly handled. Should defects exist in any part of the Mill or Evaporator, new parts will be sent free of charge, providing the parts proving defective are returned to us. In ordering parts to replace defective ones, order must so state, otherwise no allowance will be made. This Guarantee applies for a period of one season's use.

**CAPACITIES.**—The capacity of Cane Mills and Evaporators is estimated but not guaranteed, because the results that can be obtained from a cane mill or evaporator are governed by: (1) Size, quality and condition of the cane; (2) speed of the Mill or heat of the Evaporator; (3) skill and industry of the operator.

**REPAIRS.**—In ordering repairs, be sure to mention the numbers on the old parts (each part is numbered), or tell when and from whom the mill was purchased. On mills purchased before 1904, also give the number of front plate or top plate.

**DELIVERIES.**—When goods are delivered by us to the transportation company and receipt taken showing the shipment to be in good condition, our responsibility ceases. We cannot assume responsibility for breakage or overcharge occasioned by the transportation company. However, if you will advise us promptly and send us paid freight or express bill showing the shortage or overcharge, we will make every effort to recover for your account.

**SERVICE.**—Our reputation has been built on SERVICE; the Service that we render to our customers—and the Service that Cook Cane Mills and Evaporators render to their owners. We endeavor at all times to carry a large stock of cane mills, evaporators and furnaces, so that we can give our customers prompt service; however, when cane begins to ripen and everybody orders mills and pans at once, this stock quickly disappears and then shipments cannot always be made so promptly. For your own benefit, we urge you to co-operate with us by placing your order as far in advance of the season as practical.

Copyrighted 1919 by Cook Cane Mill and Evaporator Co.

## Quality Tells

Imitation is the sincerest form of flattery. Every successful article is imitated by people who try to sell something not as good for less money, mainly on the reflected glory of the imitated article. You will find COOK Cane Mills and Evaporators imitated, yet the man who wants his money's worth is going to buy our goods because he knows that we have been in business for many years, that our goods are giving entire satisfaction to thousands of users, and that he gets the BEST when he buys a Cook Cane Mill and Evaporator.

### SUGGESTIONS FOR ORDERING

SHOWING

CORRESPONDING SIZES

OF

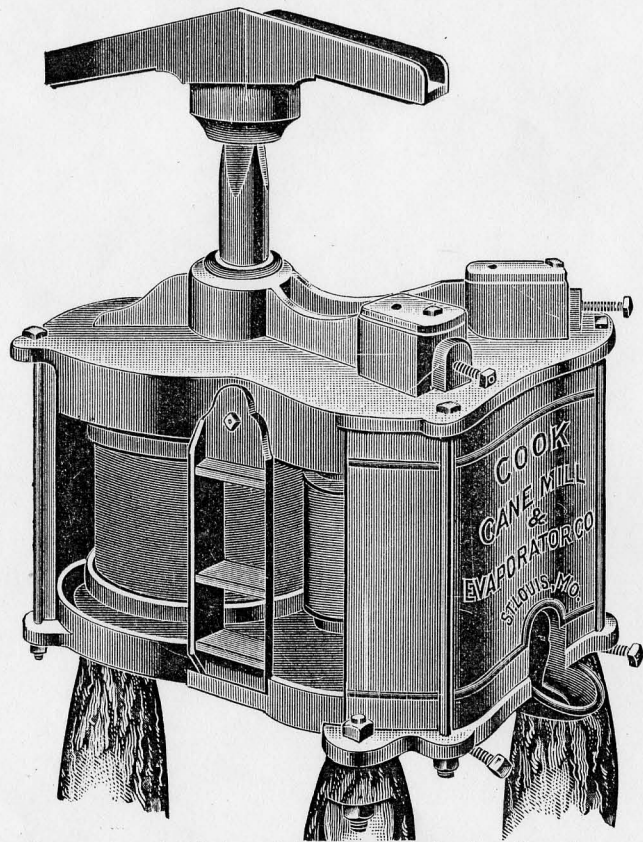
## CANE MILLS and EVAPORATORS

Size and Style of Mill.		Size of Evaporators.
No. 9	Southern Queen.....	No. 2 or 3
No. 10	Southern Queen.....	No. 2 or 3
No. 11	Southern Queen.....	No. 3 or 4
No. 12	Southern Queen.....	No. 4 or 5
No. 13	Southern Queen.....	No. 5 or 6
No. 0	Cook .....	No. 2 or 3
No. 1	Cook .....	No. 3 or 4
No. 2	Cook .....	No. 3 or 4
No. 3	Cook .....	No. 4 or 5
No. 4	Cook .....	No. 4 or 5
No. 5	Cook .....	No. 5 or 6
No. 30	"Cook's Superior".....	No. 4 or 5
No. 31	"Cook's Superior".....	No. 5 or 6
No. 39	"Cook's Superior".....	No. 4 or 5
No. 40	"Cook's Superior".....	No. 5 or 6
No. 41	"Cook's Superior".....	No. 6 or 7
No. 42	"Cook's Superior".....	No. 6 or 7
No. 43	"Cook's Superior".....	No. 6 or 7
No. 42a	"Cook's Superior".....	No. 6 or 7
No. 43a	"Cook's Superior".....	No. 6 or 7
No. 44	"Cook's Superior".....	No. 7
No. 45	"Cook's Superior".....	No. 7
No. 50	"Cook's Superior".....	Use Two No. 7

Your Mill should always be of a greater capacity than the Evaporator, as the Mill can be stopped if producing syrup in excess, whereas the Evaporator should be kept constantly at work.

# The "New Improved Cook" Cane Mill

FOR SORGHUM OR RIBBON CANE



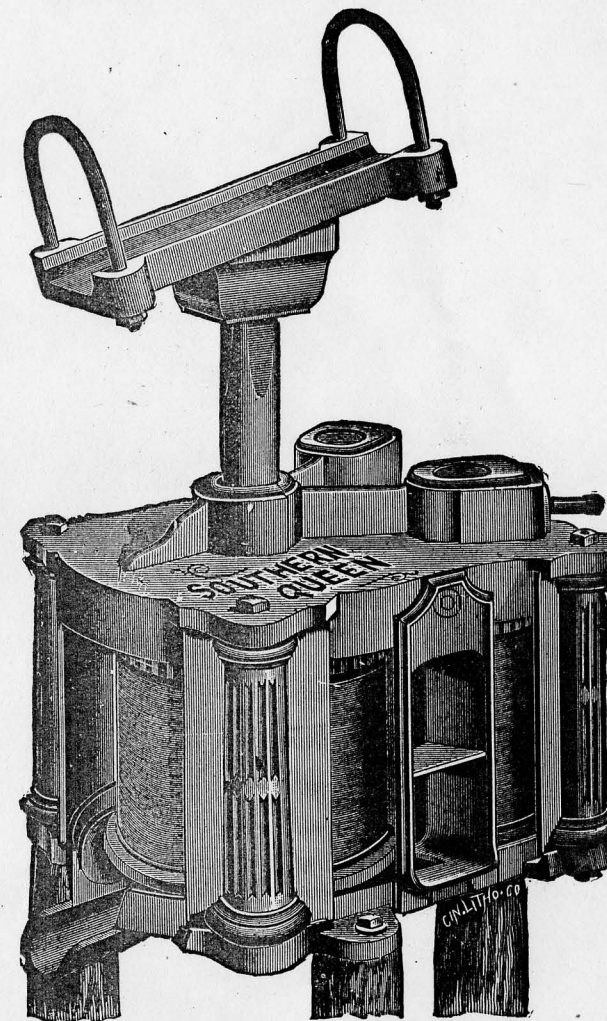
**Strong and Light of Draft; Made for Service**

The new Improved Cook Mill now has several added advantages. The front plate is made in one solid piece, thereby strengthening the mill and making it more durable. This Mill has steel shafts, brass bearings and 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 clutches cast on the gears which fit into corresponding clutches cast on the top of the rollers (see illustrations Nos. 4, 7, 8 and 9, Page 14); therefore, by removing four bolts any gear can be easily lifted out of place and a new one put in without disturbing the roll. The gearing is encased, preventing clogging and also insuring the safety of the operator. **THE MAIN ROLLERS ARE FLANGED** at top and bottom, preventing the cane from passing either up or down.

No.	Power	Size of Rolls			Estimated Capacity per Hour	Weight	List Price
		Diam. Large	Diam. Small	Length			
0	Light 1 Horse.....	8½	5½	5¾	30 to 45 Gal.	435 Lbs.	\$ 46.00
1	Regular 1 Horse.....	10	6	6½	45 to 60 Gal.	550 Lbs.	58.00
2	Heavy 1 Horse.....	11½	6¼	6¾	60 to 75 Gal.	635 Lbs.	69.00
3	Light 2 Horse.....	13½	7½	7½	75 to 90 Gal.	900 Lbs.	90.00
4	Regular 2 Horse.....	13½	7½	8½	90 to 100 Gal.	950 Lbs.	95.00
5	Heavy 2 Horse.....	13¾	7½	9	100 to 120 Gal.	1035 Lbs.	112.50

Read Our Warranty on Page 2.

# Southern Queen Cane Mill



Cold  
Rolled  
Steel  
Shafts

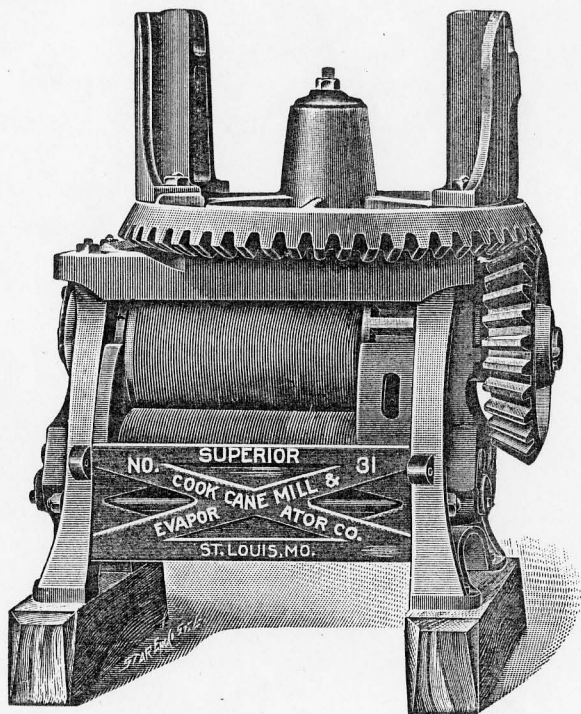
Brass  
Journals  
Both Top  
and Bottom

The Southern Queen Mill is a four-bolt mill. The extra main bolt makes this mill strong and rugged. Gear wheels are cast separate from the rolls and are very heavy. There are three clutches on each gear wheel and these fit into corresponding ones on each roll—a great improvement over the old method of using keys. (See illustrations No. 21 and No. 23, No. 20 and No. 24, Page 15.) Should a cog ever break or wear out, it can be replaced at small expense and without difficulty by merely getting a new one. 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.

No.	Power	Diam. Large Roll	Diam. Small Rolls	Length	Estimated Capacity per Hour	Weight	Price
9	Light 1 Horse.....	8¼	5½	5½	40 to 50 Gal.	450	\$ 48.00
10	Regular 1 Horse.....	9½	6	6¾	40 to 60 Gal.	575	60.00
11	Heavy 1 Horse.....	11½	6¾	6¾	60 to 75 Gal.	650	72.50
12	Regular 2 Horse.....	13	7½	7¾	75 to 90 Gal.	925	95.00
13	Heavy 2 Horse.....	14	8¾	9¼	90 to 100 Gal.	1050	116.00

## "Cook Superior" Cane Mills

Size of  
Shafts in  
Rolls.  
No. 30,  
Large Roll,  
2 7-16  
Small Rolls,  
2 3-16



Size of  
Shafts in  
Rolls.  
No. 31,  
Large Roll,  
2 11-16  
Small Rolls,  
2 7-16

Horizontal Sweep Power Cane Mill for Ribbon or Sorgo Cane.

This is the strongest and best Horizontal Sweep Power Cane Mill made. It has all of the late improvements, and has many features of advantage that will not be found in any other make. It is a style of Mill that has been used for years, has given the best of satisfaction, and with the improvements that we have made it is classed at the head of the Cane Mill line.

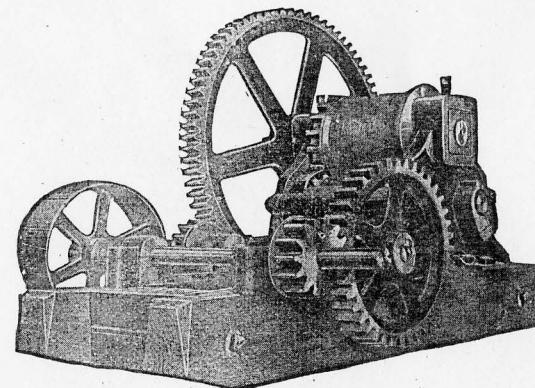
The driving wheel is twice as large as the pinion, giving two revolutions of the rolls to one of the team, making the capacity of the Mill equal to that of a vertical mill with rolls double the size of these. It has steel shafts, lathe-turned rolls, bronze lined boxes, elastic bearings. Is made of the best materials, extra heavy and strong throughout.

### COMPARE WEIGHT AND SIZE OF SHAFTING WITH OTHER MILLS.

No.	Power.	Three Rolls.	Estimated Capacity.	Weight.	Price.
30	1 or 2 Horse.	{ Main Roll, 10x10 } { Small Roll, 7x10 }	¾ ton per hour.	1150 lbs.	\$138.00
31	2 or 4 Horse.	{ Main Roll, 10x16 } { Small Roll, 7x16 }	1 ton per hour.	1375 lbs.	175.00

## Cook's Little Wonder

We received hundreds of inquiries for a small power mill to be operated by any small gasoline engine, such as is owned by most up-to-date farmers, so in 1913 we designed our No. 39 SUPERIOR Mill to fill these requirements. Hundreds of these mills are now in use and they are giving excellent satisfaction.



No. 39 Superior Mill

It is of the same design as our Nos. 44 and 45 Mills, is very strong, thoroughly well made and strictly high grade in both material and construction. The small rolls are both adjustable, all the roll boxes have bronze bearings. Shaft in large roll is 2 3/16" cold rolled steel, in small rolls 1 15/16". Pulley is 12"x4", and should turn about 350 R. P. M.

No.	Estimated Capacity	Diameter Large Roll	Diameter Small Roll	Length of Rolls	Weight of Mill	Price
39	¾ ton per hr.....	8-in.	5½-in.	8-in.	650 lbs.	\$110.00

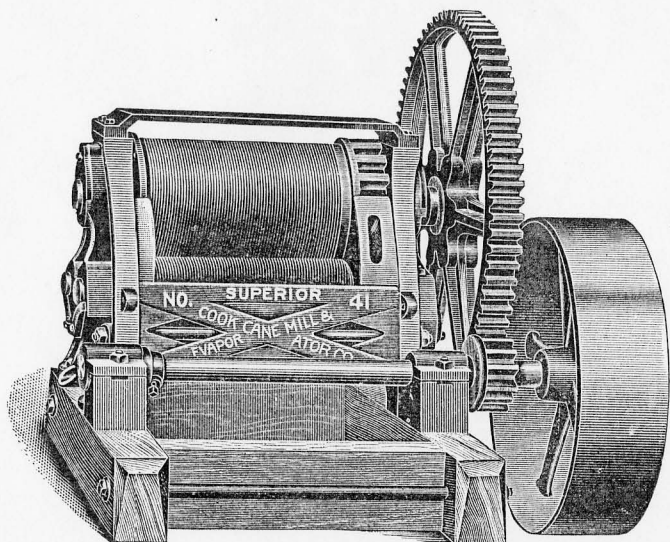
All Cook Power Mills are supported on heavy wooden timbers, which are furnished without extra charge. Pulley 24"x6" is furnished with all Cook's Power Mills except No. 39. Further details furnished on request.

### WHY COOK MILLS ARE THE BEST.

Cold rolled steel shafts.  
Large rolls flanged at both ends.  
Small rolls adjustable for cane of various sizes.  
All rolls and shafts lathe-turned.

Read Our Warranty on Page 2.

# Cook's "Superior" Horizontal Power Cane Mill



Single Back Gear

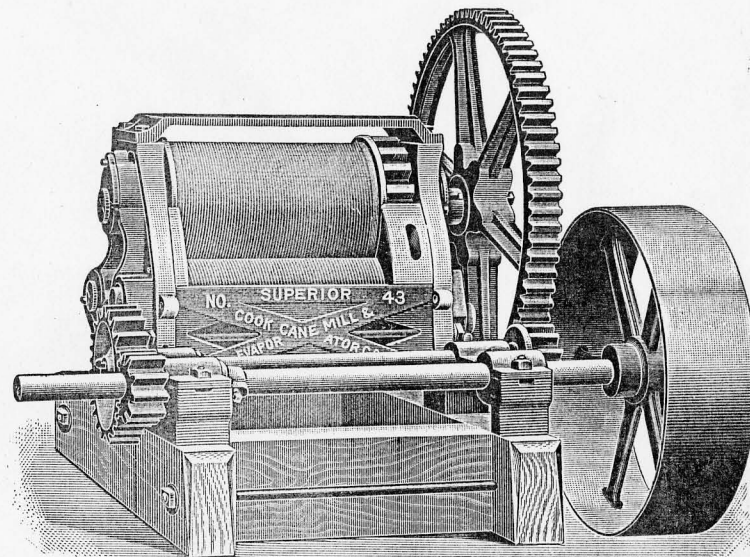
Cook's Superior Horizontal Power Mills are made to be operated by gasoline, steam, water, or electric power. The pulley shafts on the single back gear mills should turn seventy-five revolutions per minute. Superior horizontal mills are made of the best material throughout, all shafts being cold rolled steel, rolls flanged, lathe turned; roll boxes have bronze bearings. The small rolls are adjustable to accommodate the different sizes of cane.

No.	Horse Power	Length	Size of Rolls in Inches		Estimated Capacity per Hour		Weight	Price
			Dia. Large	Dia. Small	Gals.	Tons		
40	4-Horse.....	10	10	7	150 to 200	1	1200	\$165.00
41	6-Horse.....	16	10	7	200 to 250	1½	1350	187.50

Bagasse Carrier, \$82.50. Feed Table, \$7.50 for No. 40.  
 Bagasse Carrier, \$85.50. Feed Table, \$9.75 for No. 41.

Read Our Warranty on Page 2.

# Cook's "Superior" Horizontal Power Cane Mill



Double Back Gear

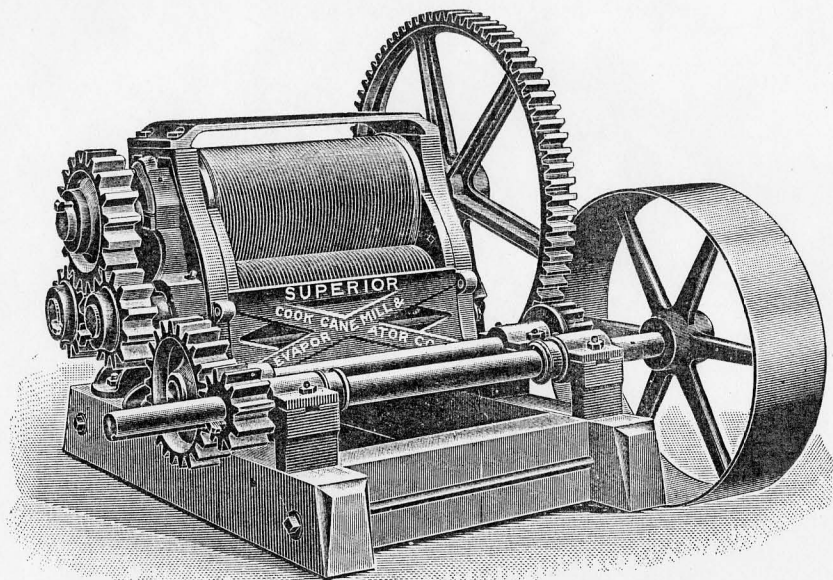
The above illustration shows our Superior Double Back Gear Mill. This mill is the same as the one shown on opposite page, except it has double gears in place of single, and is therefore more powerful. The pulley shaft on this mill should have 150 revolutions per minute. All roll boxes have bronze bearings.

We recommend this mill to those desiring to use a gasoline or kerosene engine for operation.

No.	Horse Power	Length	Size of Rolls in Inches		Estimated Capacity per Hour		Weight	Price
			Dia. Large	Dia. Small	Gals.	Tons		
42	4-Horse.....	10	10	7	200 to 250	1½	1250	\$190.00
43	6-Horse.....	13	10	7	250 to 300	2	1450	253.00

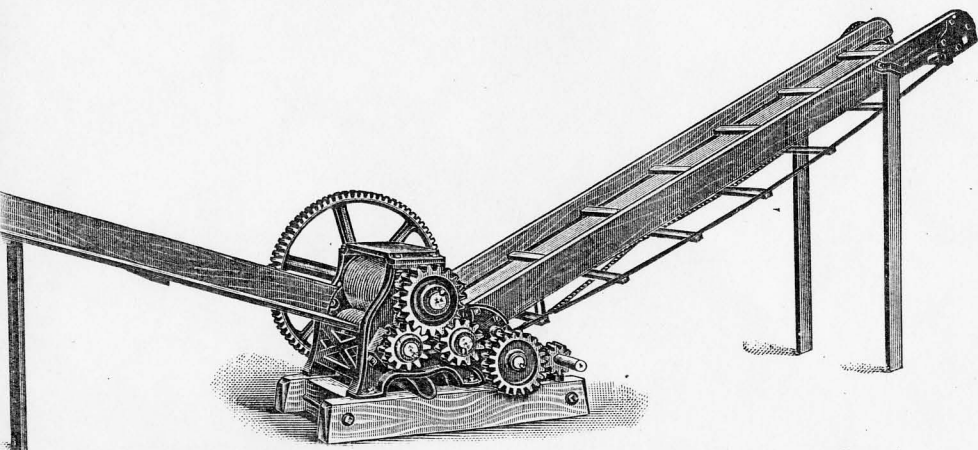
Bagasse Carrier, \$82.50. Feed Table, \$7.50 for Nos. 42 or 42A.  
 Bagasse Carrier, \$85.00. Feed Table, \$9.75 for Nos 43 or 43A.

# "New Superior" Cane Mill



The "New Superior" Mill is the same as the Nos. 42 and 43 with the exception that the gears are keyed to the rolls (outside of the side plates) instead of being cast onto 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 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 pulley is 24"x6". All roll boxes have bronze bearings.

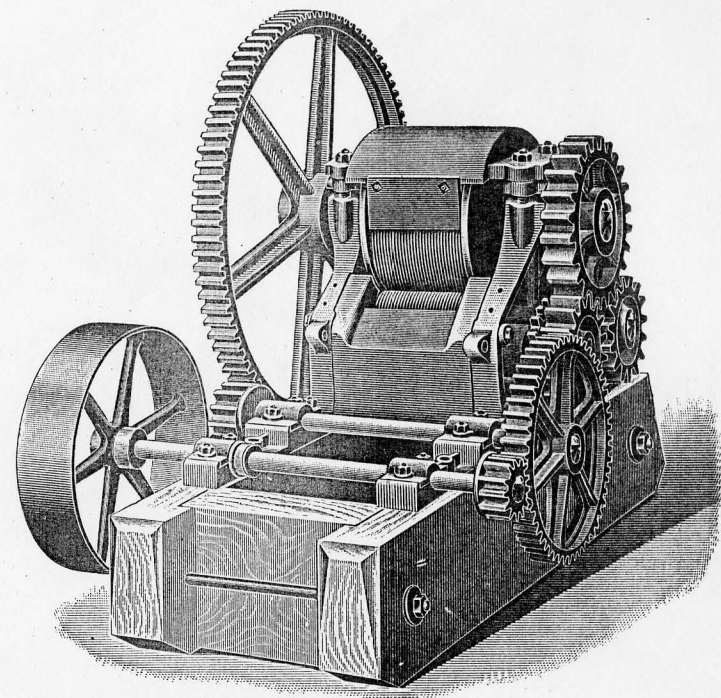
No.	Estimated Capacity	Diameter Large Roll	Diameter Small Roll	Length of Rolls	Weight	Price
42A	2-ton per hr....	10-inch	7-inch	12½ -inch	1350 Lbs.	\$225.00
43A	2½-ton per hr..	10-inch	7-inch	18½ -inch	1500 Lbs.	290.00



Showing Bagasse Carrier and Feed Table. Suitable for any of our Superior Horizontal Power Mills.

# Cook's Superior Cane Mill

VERY HEAVY AND POWERFUL



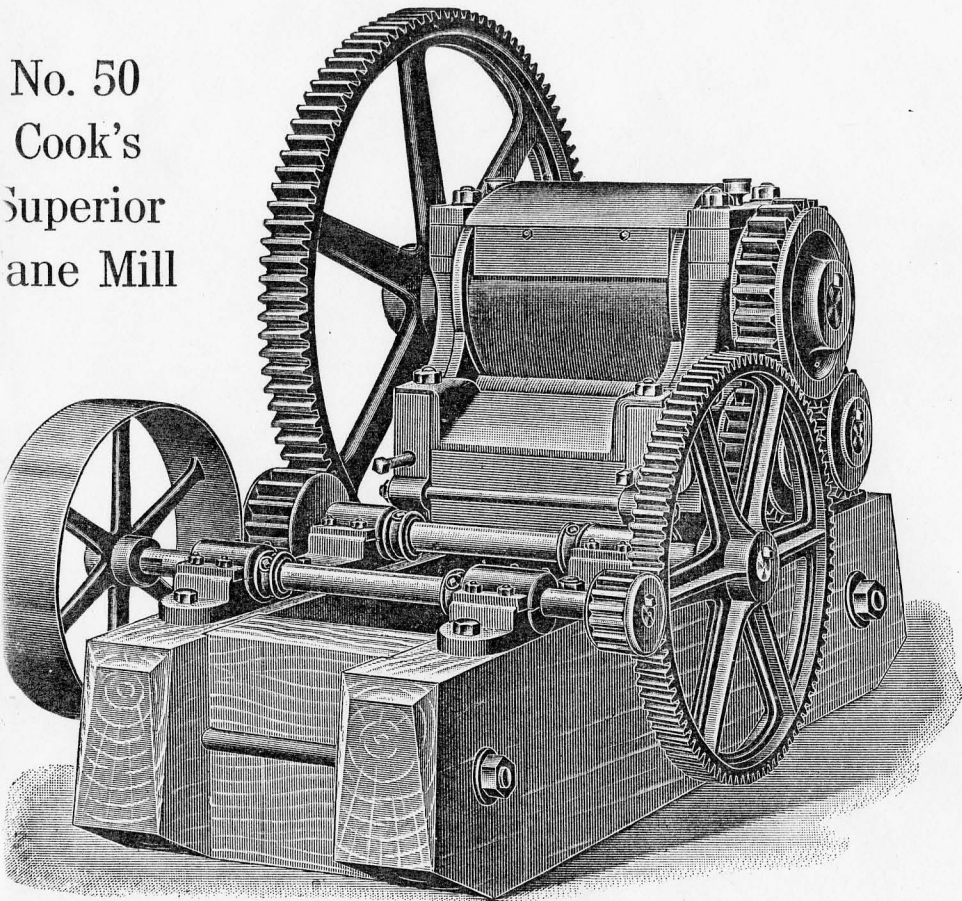
This cut represents our No. 44 and No. 45 Superior Cane Mills; both have been made stronger and heavier and are adapted to the requirements of those needing mills to be run by gasoline, steam, water, or electric power. No. 44 weighs 2,800 pounds; length of rollers, 12 inches diameter of main roller, 16 inches; diameter of lower rollers, 10 inches; 10 to 12 horse power. Capacity, two tons of cane per hour. All roll boxes have bronze bearings.

No. 45 weighs 3,200 pounds; length of rollers, 18 inches; diameter of main roller, 16 inches; lower rollers, 10 inches; 12 to 15 horse power. Speed of driving pulley, 450 R. P. M. Capacity 3 tons of cane per hour.

No. 44, including 24"x6" driving pulley.....\$430.00  
 No. 45, including 24"x6" driving pulley..... 490.00

Bagasse Carrier, \$120.00 Feed Table, \$10.50 for No. 44.  
 Bagasse Carrier, 123.00. Feed Table, 13.50 for No. 45.  
 Bagasse Carrier, 125.00. Feed Table, 15.00 for No. 50.  
**Read Our Warranty on Page 2.**

# No. 50 Cook's Superior Cane Mill



This Mill is extra heavy and is designed somewhat on the lines of large Mills used in sugar manufacturing plants; it has every feature of value found in the largest Cane Mills now manufactured.

Rolls are cast from special iron that gives a hard surface.

Shafts are made of open hearth heavy steel, and are secured in the rolls by three heavy steel keys cast in to the inner hub of the rolls, absolutely preventing the rolls from turning on shafts.

Bearings are all of solid bronze.

Main Spur Gears are of extra wide face, and heavy pitch, accurately bored and fitted on shafts with keys.

Pinions are made very heavy and strong, and the teeth are shrouded up to pitch line.

To prevent the bagasse from clogging the rolls we have invented a device which is attached over the main roll; this attachment will save the time ordinarily spent cleaning.

No.	Horse Power	Three Rolls	Estimated Capacity	Size of Shaft	Pulley	Weight	Price
50	12 to 18.....	Large, 16x15 Small, 10x15	4-ton per hour	Large, 3 7/8 Small, 3 3/8	24x6 450 R.P.M.	4500 lb.	\$720.00

Read Our Warranty on Page 2.

## Directions and Hints for Operating Cane Mills

In order to successfully operate a Cane Mill, *it must be rigidly secured in position, properly adjusted, oiled freely, bolts kept tight, and fed regularly.*

1. *The Mill must be rigid and level.* To secure it in position, posts six feet long, set three feet in the ground, thoroughly braced, and the earth rammed very hard around them, or a heavy frame of timber properly joined together and staked to the ground offers a good support. Whatever the means, *the Mill must be level and rigid.*

2. *To secure a proper adjustment.* Adjust the rolls parallel to each other, the feed roll from one-quarter to one-half inch from the main roll; the other should slightly touch the main roll when empty; after trial, the proper adjustment can be made. Do not try to force the set screws up when there is cane in the Mill.

3. *Oil regularly and freely. Use fluid lard oil. Never use mineral oils on a Cane Mill.*

4. *Feed evenly and constantly.* Regular feeding is necessary in order to get the best results; when all the space of the rolls is properly filled with cane, a greater per cent of the juice is extracted than when there are unfilled spaces, or spaces only partially filled. Use the feed box, and in addition place a board about three feet long on a level with the bottom plate, to rest the cane on as it enters the Mill; feed butts foremost.

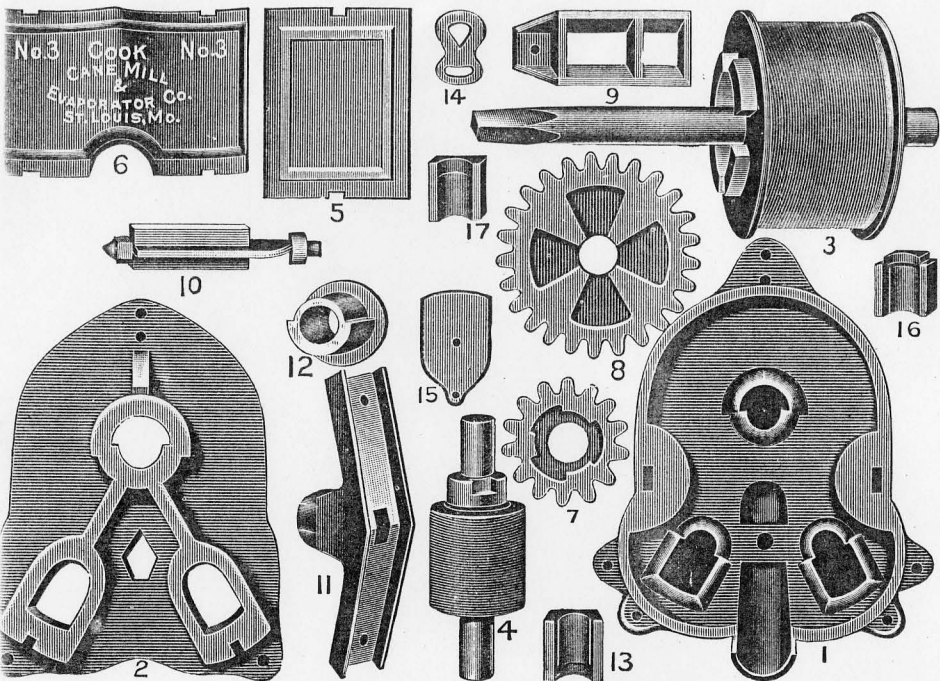
5. *Keep all the bolts screwed up tight.* Owing to the constant wrenching of the Mill the stay bolts are liable to become loosened, and this throws the Mill out of line, and the cogs begin to cut and the Mill run hard. One hour's use in this way is more destructive than a whole season's use if properly cared for; therefore *see to it that the bolts are kept tightened up all the time.*

6. The circle where the horse walks should be level, the sweep 12 to 13 feet from the center of the Mill and extend beyond to partially balance.

At the close of the season take the Mill apart and thoroughly clean every part; see that the oil tubes in rolls are open, oil the journals and place all together properly and bolt together tightly.

If this is neglected, the accumulated fibers will form solid cakes and give trouble when starting up. This care will also prevent rust and preserve the Mill.

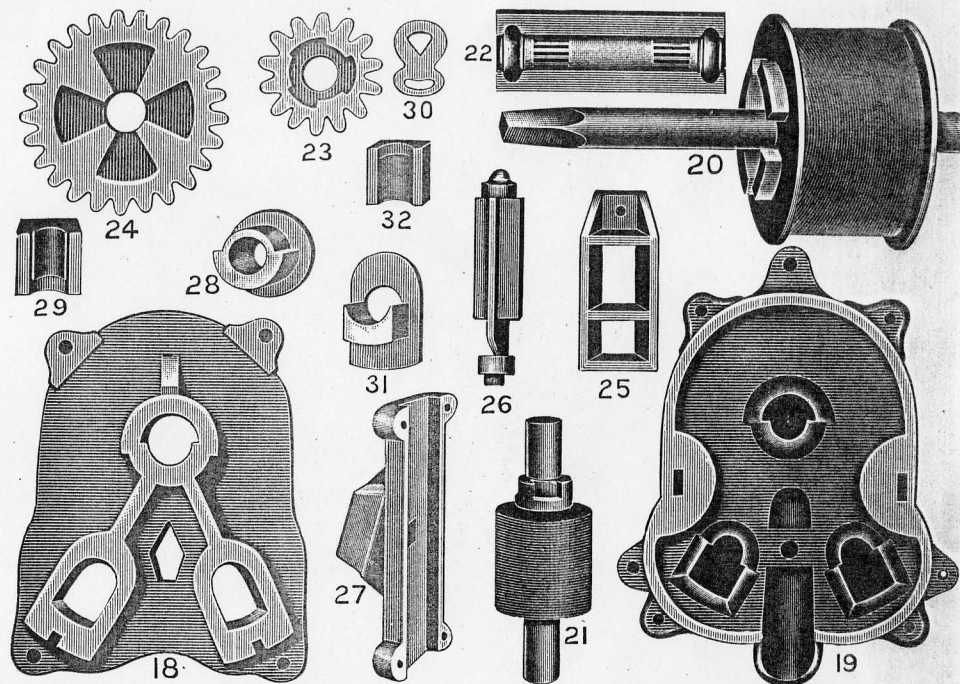
# Parts for "Cook's" Improved Cane Mills



No. of Cut	Name of Casting	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5
1	Bottom Plate.....	\$10.00	10.00	12.00	24.00	24.00	25.00
2	Top Plate.....	10.00	10.00	12.00	20.00	20.00	22.50
3	Large Roll.....	15.00	16.00	19.00	34.00	35.00	40.00
4	Small Roll.....	7.00	8.00	10.00	10.50	12.00	14.00
5	Back Plate.....	1.75	3.00	3.00	3.50	3.50	3.75
6	Front Plate.....	3.00	3.50	4.50	4.50	5.00	5.00
7	Small Cog Wheel.....	3.00	3.50	3.50	4.00	4.50	4.75
8	Large Cog Wheel.....	6.00	6.50	6.50	7.50	8.50	9.50
9	Feed Guide.....	1.50	2.25	2.50	2.50	3.00	3.00
10	Scraper.....	1.50	2.00	2.00	2.50	3.00	3.50
11	Sweep Cap.....	6.00	6.50	6.50	8.50	8.50	9.50
12	Top box (large roll) with brass.....	2.00	2.00	2.50	3.00	3.00	3.25
13	Bottom Box (large roll) with brass.....	1.75	1.75	2.25	2.75	2.75	3.00
14	Scraper Cap.....	.60	.60	.65	.65	.75	.75
15	Top Cap.....	.60	.60	.65	.65	.75	.75
16	Top Box (small roll) with brass.....	1.75	1.75	2.00	2.25	2.25	2.50
17	Bottom Box (small roll) with brass.....	1.75	1.75	2.00	2.25	2.25	2.50

Read our Warranty on Page 2

# Parts for Southern Queen Mill



No. of Cut	Name of Casting	No. 9	No. 10	No. 11	No. 12	No. 13
18	Top Plate.....	\$10.00	\$10.00	\$12.00	\$20.00	\$24.00
19	Bottom Plate.....	12.50	12.50	13.50	25.00	26.00
20	Large Roll.....	15.00	18.00	20.00	32.00	38.00
21	Small Roll.....	7.50	9.50	10.50	12.00	14.00
22	Corner Post.....	2.00	2.25	2.50	2.50	3.00
23	Small Cog Wheel.....	3.25	3.25	3.50	4.50	4.50
24	Large Cog Wheel.....	5.50	6.00	6.50	8.50	9.50
25	Feed Guide.....	1.50	2.25	2.50	2.50	3.00
26	Scraper.....	1.50	2.00	2.25	3.00	3.50
27	Sweep Cap.....	6.00	6.50	7.00	8.00	9.00
28	Top Box (large roll) with brass.....	2.00	2.00	2.50	3.00	3.50
29	Bottom Box (large roll) with brass.....	1.75	1.75	2.25	2.75	3.25
30	Scraper Cap.....	.60	.60	.65	.75	.75
31	Top Box (small roll) with brass.....	1.75	2.00	2.25	2.50	2.50
32	Bottom Box (small roll) with brass.....	1.75	2.00	2.25	2.50	2.50

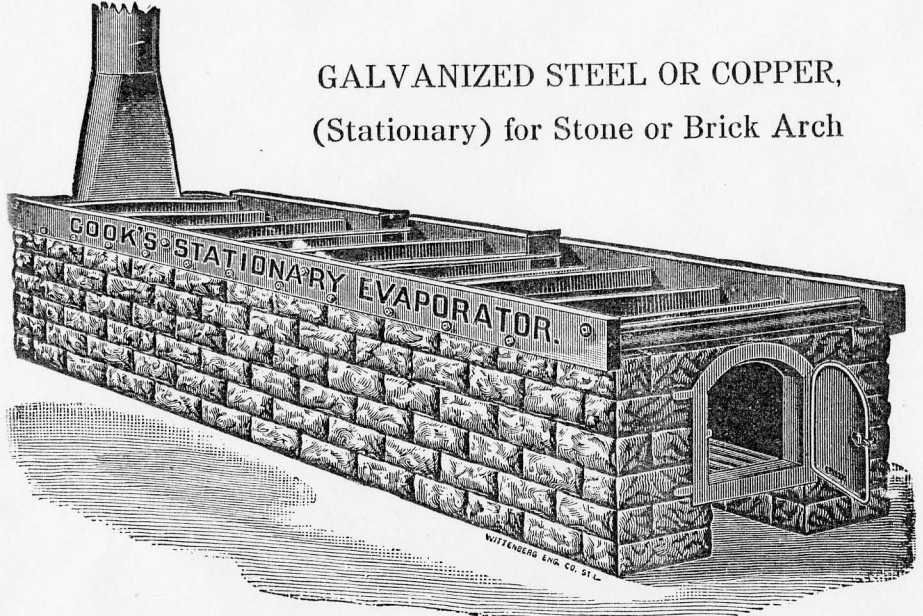
Please Note Carefully

The numbers given above are only to help you in finding the picture and name of the part wanted, and should not be used for ordering parts. When ordering repairs, give number or marks on old or broken part, also year mill was shipped by us and to whom shipped. Be careful in ordering; we will not be responsible for your errors.



# The Improved "Cook" Evaporator Pan

GALVANIZED STEEL OR COPPER,  
(Stationary) for Stone or Brick Arch



Cook's Evaporator Pans are constructed of the best quality galvanized steel (or cold rolled copper as ordered) with heavy red cypress sides. Built for long life and hard service. Every third ledge high. Gates used to regulate the flow of juice in all sizes except No. 2.

**Capacity, Weights and Prices.**

No.	Size of Pan	Estimated Capacity per Day	Actual Weight	Price Galvanized Steel	Price Copper
2	44x 72 inches.....	30 to 40 gal.	70 lbs.	\$12.00	\$30.00
3	44x 90 inches.....	40 to 50 gal.	90 lbs.	15.00	37.50
4	44x108 inches.....	50 to 80 gal.	110 lbs.	18.00	45.00
5	44x126 inches.....	80 to 120 gal.	125 lbs.	21.00	52.50
6	44x144 inches.....	100 to 140 gal.	140 lbs.	24.00	60.00
7	44x180 inches.....	120 to 180 gal.	180 lbs.	30.00	75.00

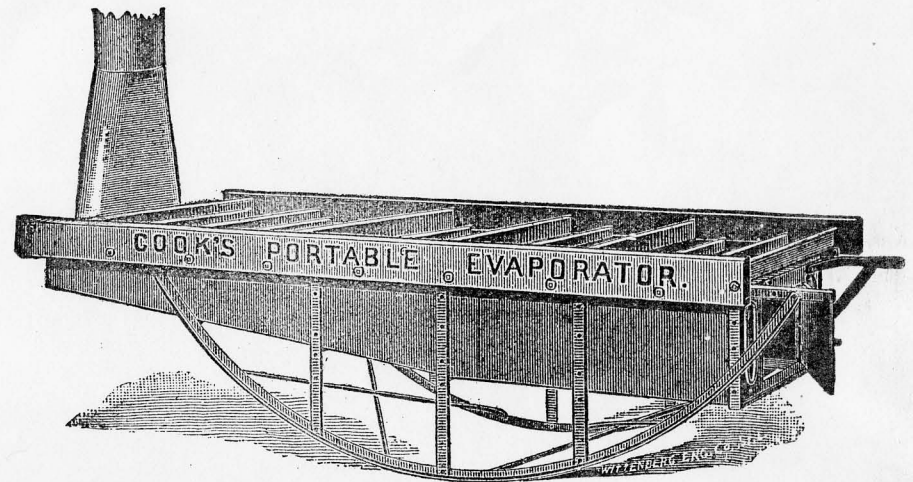
The capacity of an evaporator pan depends upon the quality of the juice and the skill and industry of the operator. Whenever ordering, state kind of pan wanted, galvanized steel or copper. Two skimmers are furnished with each pan.

**EXTRA PARTS.**

No.	Description	Size of Door	Extreme Size	Weight	Price
1	Light Frame and Door.....	11½ x 11¼ in.	14½ x 16 in.	35 lbs.	\$ 6.00
1	Furnace Grate.....		18 x 30 in.	35 lbs.	5.75
2	Heavy Frame and Door.....	12 x 15 in.	16 x 19 in.	55 lbs.	9.00
2	Furnace Grate.....		18 x 36 in.	40 lbs.	6.00
5	Extra Heavy Double Door & Frame	9½ x 21 in.	16½ x 36 in.	100 lbs.	15.00
5	Extra Heavy Grate, 6 pieces & Bearing Bar.....		27 x 35 in.	100 lbs.	15.00
	Skimmers.....			each,	\$0.30
	Furnace Pipe, 3 joints.....			"	4.00
	Furnace Grate.....			"	6.00
	Furnace Front and Door.....			"	5.25
	Furnace Door only.....			"	2.25
	Cast Collar or Flue Plate for Pipe.....			"	3.00

The Cook's Evaporator Pan is the standard of the world.  
Read our Warranty on Page 2.

# The Improved "Cook" Portable Evaporator Pan and Rocker Furnace



The Cook's Improved Portable Rocker Furnace is built to withstand rough handling and abuse. The frame is made of heavy angle steel, the sides, bottom and pipe are of heavy sheet steel. The front plate, end plate and flue plate are heavy casting; the grate is full size and strong. Pipe and grate are furnished with each furnace.

**THE IMPROVED "COOK'S" PORTABLE EVAPORATOR.**

All-steel furnace, galvanized steel or copper pan. Complete with 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. x 72 in.....	30 to 40 gal.	240 lbs.	\$40.00	\$60.00
3	44 in. x 90 in.....	40 to 50 gal.	275 lbs.	46.00	70.00
4	44 in. x 108 in.....	50 to 80 gal.	315 lbs.	52.00	80.00
5	44 in. x 126 in.....	80 to 120 gal.	345 lbs.	58.00	90.00
6	44 in. x 144 in.....	100 to 140 gal.	380 lbs.	65.00	100.00

With a portable evaporator 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.....	170 lbs.	\$28.00
3	44 inches by 90 inches.....	185 lbs.	31.00
4	44 inches by 108 inches.....	205 lbs.	34.00
5	44 inches by 126 inches.....	220 lbs.	37.00
6	44 inches by 144 inches.....	240 lbs.	40.00

See Directions for operating on page 19. If you want information about sorghum growing or further information about sorghum syrup making, write to the United States Department of Agriculture, Washington, D. C., for free "Farmer's Bulletin No. 1389."

## 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 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 for 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 may cause 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 on next page.

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

## "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 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.