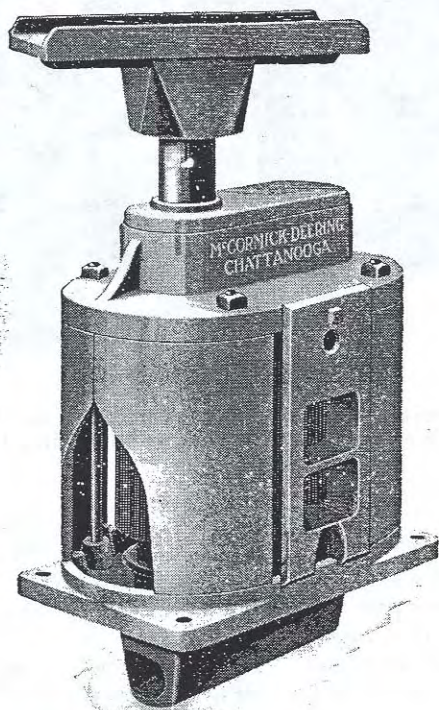
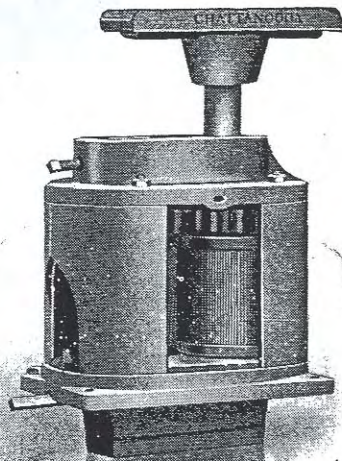


Chattanooga Animal-Power Cane Mills

Two-Roll Vertical



Illust. 1. Chattanooga No. 7 two-roll Cane Mill for use with animal power.



Illust. 2. No. 7 Cane Mill with feed box removed to show heavy gears and fine corrugations lengthwise of the roll which grip the cane and aid in feeding.

The No. 7 is the smallest of the Chattanooga cane mills and can be operated easily by one horse. Though simple in design, the No. 7 is strictly a high-grade mill. The rolls are corrugated vertically which causes them to grip the cane most effectively. The king roll is flanged at each end, the flanges extending over the other roll to keep the cane traveling straight.

The gears are separate from the rolls and are fitted with a clutch. Bearings are brass-lined and may be replaced at slight cost. The driven roll

can be adjusted by means of steel screws. The feed box may be attached to either side. The high walled bottom plate prevents loss of juice.

Regular Equipment

Feed box. Straight lever cap. Wrench. Oil can.

Special Equipment

Sloping lever cap instead of straight.

Specifications

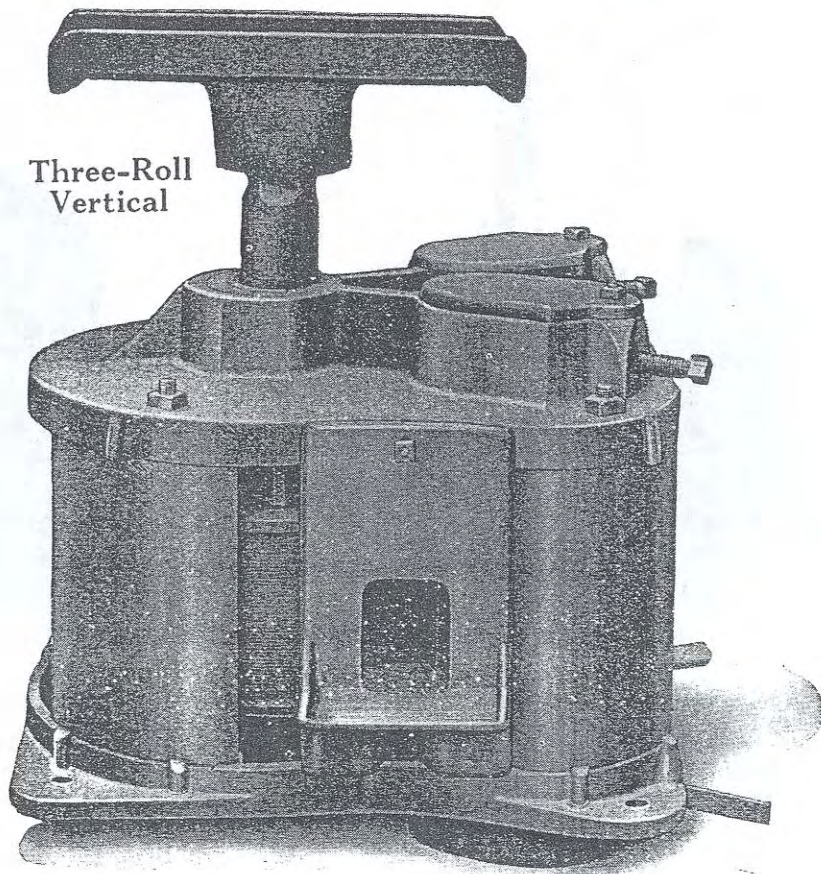
Mill No.	Power Required to Operate	Size of Roll		Capacity Juice Per Hour	Capacity Tons of Cane per 12 Hours	Net Weight
		Diameter	Length			
7	One Horse.....	7 in.	7 in.	25 to 40 gal.	1 3/4 to 3	498 lb.

All weights and measurements are approximate.



Chattanooga Cane Mills

Three-Roll
Vertical



Illust. 1. Chattanooga No. 122 3-roll animal-power Cane Mill with straight lever cap. Notice the heavy construction throughout.

The Nos. 11, 12, 13, 14, 111, 112, 113, and 114 Chattanooga cane mills are suitable for grinding sorghum and light to medium sugar cane. The Nos. 22, 23, 24, 122, 123, and 124 are heavy, powerful mills that will grind the heaviest tropical sugar cane and give a high rate of extraction. These two types of mills are very similar in construction, varying only in weight and strength.

For mills of their type, Chattanooga animal-power cane mills give high juice extraction. This is due to their rugged construction and design, which permits adjusting and *maintaining* the rolls at the desired distance apart to obtain the most effective

results. Steel set screws, readily adjustable from the outside of the mill, regulate the pressure.

Regular Equipment

Feed box. Wrench. Oil can. Straight lever cap on all but Nos. 24 and 124. Cross lever cap on No. 124. Fluted feed rolls on all mills.

Special Equipment

Plain feed rolls. Sloping lever cap on Nos. 22, 23, 122 and 123. Sloping or angle lever cap on Nos. 11, 12, 13, 14, 111, 112, 113, and 114. Belt power attachment on Nos. 22, 122, 23, and 123.

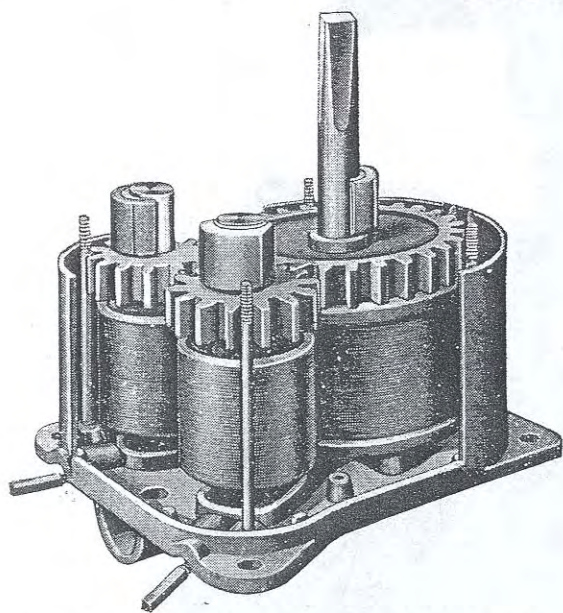
Specifications

Mill Number		Power Required To Operate	Size Large Roll		Size Small Rolls		Capacity Juice Per Hour	Capacity Tons of Cane Per 12 Hrs.	Net Weight
Plain Feed Roll	Fluted Feed Roll		Diameter	Length	Diameter	Length			
11	111	1-Horse.....	10 in.	5 in.	5 in.	5 in.	30-45 gal.	2-3	385 lb.
12	112	1-Horse, heavy.....	12 in.	6 in.	6 in.	6 in.	40-55 gal.	3-4	556 lb.
13	113	2-Horse.....	14 in.	7 in.	7 in.	7 in.	50-70 gal.	4-5	866 lb.
14	114	2-Horse, heavy.....	16 in.	8 in.	8 in.	8 in.	75-95 gal.	5-7	1158 lb.
22	122	1-Horse, heavy.....	12 in.	6 in.	6 in.	6 in.	45-60 gal.	3-4	690 lb.
23	123	2-Horse.....	14 in.	7 in.	7 in.	7 in.	60-75 gal.	4-5	959 lb.
24	124	2-Horse, heavy.....	16 in.	8 in.	8 in.	8 in.	75-100 gal.	5-7	1470 lb.

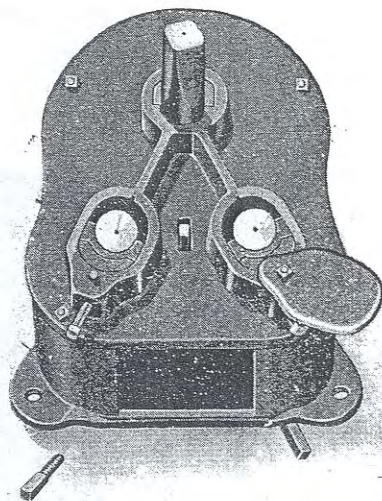
All weights and measurements are approximate.

Chattanooga Animal-Power Cane Mills

Three-Roll Vertical



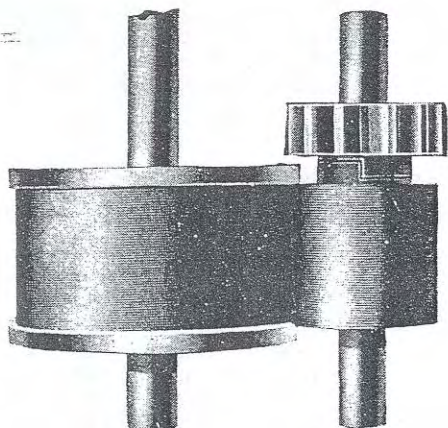
Illust. 2. View of the 3-roll Cane Mill with top and part of sides removed to show heavy gearing and rolls. The front feed roll on the "100" Series is fluted as shown on the front roll in the illustration above to assist in feeding the cane.



Illust. 4. Top view of the 3-roll Cane Mill with lever cap and one of the bearing caps removed. Note the construction of the bearings with their separate brass bushings which make the mill run smoothly and take the wear off the shafts.

Rolls

All rolls are made of the finest cast iron free from flaws of any kind. They are securely keyed to steel shafts. The main roll has flanges on both ends which project over the small rolls and keep the cane traveling straight through the mill. These mills are available with either plain or fluted feed rolls (see specification table on the previous page).



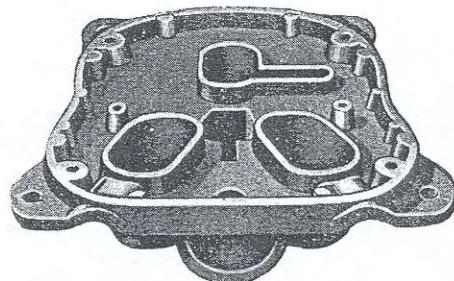
Illust. 3. Main roll and one of the small rolls. The flanges on the main roll project over the small roll. Note also the separate gear and solid clutch.

Bearings

The shaft bearings have separate brass bushings which can be replaced economically. Upper bearings are protected by bearing caps. The lower bearings are lubricated by the excess oil which flows from the upper bearings down the channels to the lower oil boxes.

Gears

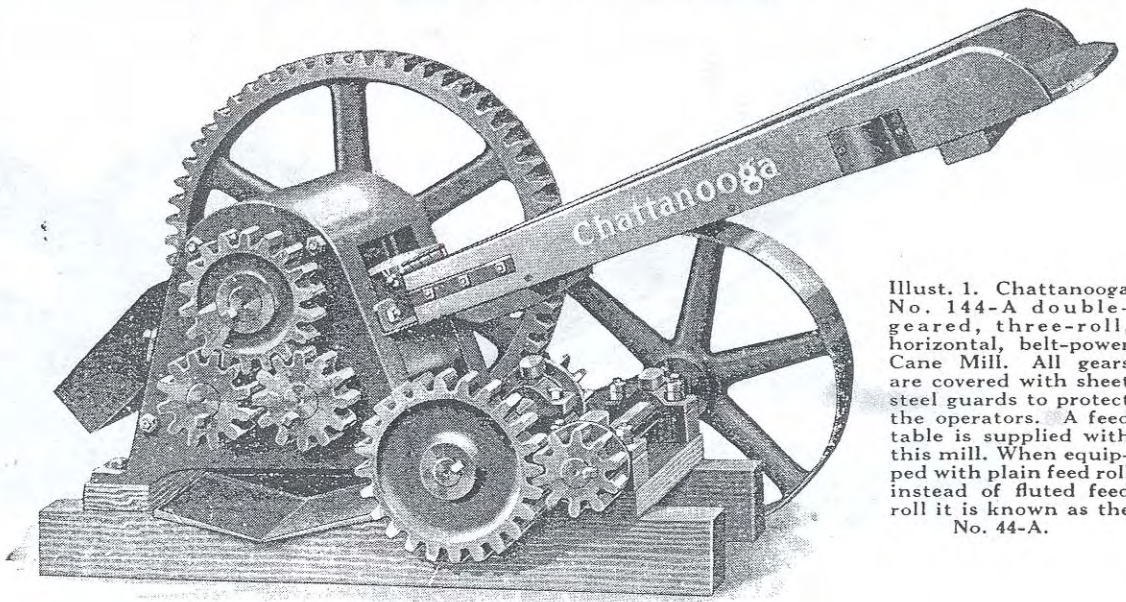
The gears are cast separately from the rolls, making it possible to replace them at little cost. Rolls and gears are connected by solid clutches.



Illust. 5. The bottom plate has a high wall around the outer edge and around the bearings. This prevents juice from wasting or getting into the oil boxes.

Chattanooga Cane Mills

Nos. 44-A, 144-A, and 144 Three-Roll Horizontal



Illust. 1. Chattanooga No. 144-A double-gear, three-roll, horizontal, belt-power Cane Mill. All gears are covered with sheet steel guards to protect the operators. A feed table is supplied with this mill. When equipped with plain feed roll instead of fluted feed roll it is known as the No. 44-A.

This is the smallest of the Chattanooga power cane mills. It can be operated either by belt or water power, depending on how the mill is equipped. It is very simple in design, but strong and of good capacity.

This is a double-gear mill, and can be belted to any engine. The pulleys on the mills should run 154 revolutions per minute for full capacity and best extraction.

The gears are made from machine-cut patterns, and are carefully meshed, insuring a smooth-running mill. They are fastened to the shafts by steel keys, and cannot work loose.

The gears on the feed side of the table are covered with steel safety covers.

The rolls are made of the finest cast iron, and are securely keyed to the shaft with steel keys. The king roll is flanged, the flanges projecting over the small rolls to keep the cane traveling straight through the mill. The roll shafts have double bearings with brass bushings which can be replaced without dismantling the mill.

The drive shaft and countershaft are accurately turned from high-quality steel, and set in babbitted boxes, supplied with oil by waste boxes on the bearing caps.

The mill is mounted on heavy skids. A juice pan discharges the juice from the side of the mill, and is so arranged that it may be easily removed for cleaning.

Regular Equipment

Feed table. Safety gear covers. 24-in. by 6-in. pulley on belt power mill.

Special Equipment

Clutch couplings and water wheel irons for water power as shown under "Cane Mill Water-Power Connections," on a following page.

Juice pump.

Pulleys in standard sizes, as required.

No bagasse carrier available for this mill.

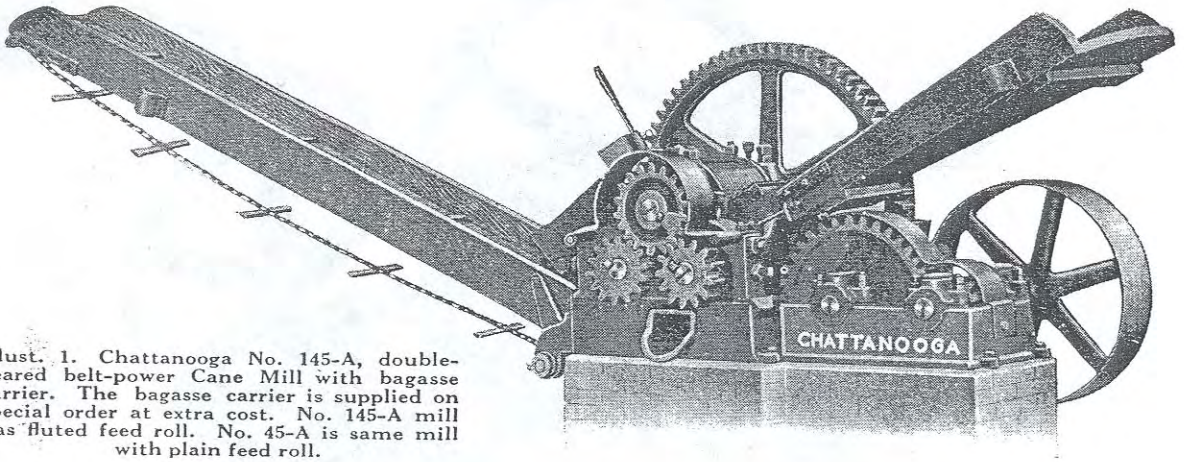
Specifications

Mill Number		Size Large Roll		Size Small Rolls		H.P. Required	Capacity Juice per Hour	Capacity Tons of Cane per 12 Hours	Net Weight
Plain Feed Roll	Fluted Feed Roll	Diameter	Length	Diameter	Length				
No. 44-A Belt Power	No. 144-A Belt Power	9 in.	9 in.	6 in.	9 in.	5.19	175 to 200 gal.	12 to 14	1287 lb.
	No. 144 Water Power	9 in.	9 in.	6 in.	9 in.		175 to 200 gal.		

All weights and measurements are approximate. Water-power mills are illustrated on a following page.

Chattanooga Cane Mills

Nos. 45-A, 145-A, 71, and 171 Three-Roll Horizontal



Illust. 1. Chattanooga No. 145-A, double-gear belt-power Cane Mill with bagasse carrier. The bagasse carrier is supplied on special order at extra cost. No. 145-A mill has fluted feed roll. No. 45-A is same mill with plain feed roll.

Chattanooga Nos. 45-A, 145-A, 71 and 171 cane mills are built along similar lines, with the Nos. 71 and 171 having a somewhat greater capacity due to the rolls being longer. The speed at which the gears and rolls of these mills operate is such that it is practically impossible to choke these mills by overfeeding.

They are horizontal, three-roll power mills built on heavy cast iron bed plates, which prevent friction by holding every shaft and shaft bearing in exact alignment under strain of the heaviest work. The housings are the same in design as those of regular sugar-house mills, and equally as strong. Joints are planed to exact fit.

The rolls are grooved to make them take hold of the cane. Any roll can be removed from the mill without disturbing the other rolls.

The bearing blocks can be adjusted by means of setscrews on the outside of the mill to permit opening or closing the rolls to suit the size of the cane, or to get less or greater extraction.

The roll-shaft bearings are fitted with brass bushings. The countershaft boxes are babbitted

and fitted with brass liners, or shims, of varying thicknesses to provide adjustment for wear.

Hard oilers are provided on all main bearings. All pinions in the counter gearing have bearings on both sides.

The gears are made from machine-cut patterns, and accurately meshed. They are keyed to the shafts with steel keys, tightly fitted to prevent working loose. Steel guards cover all gears to prevent injury to those working about the mill.

Easy means is provided for adjusting the guide knife to adapt it to any position of the rolls. The guide knife accelerates the flow of the juice from the mill. Juice splashers on the feed side of the mill protect the operator and prevent waste.

Regular Equipment

Feed table and wrench. 24-in. by 6-in. pulley.

Special Equipment

Bagasse carrier, 5, 6, 8, 10 or 12-ft.
Pulleys in standard sizes as required.
Juice pump.

Specifications

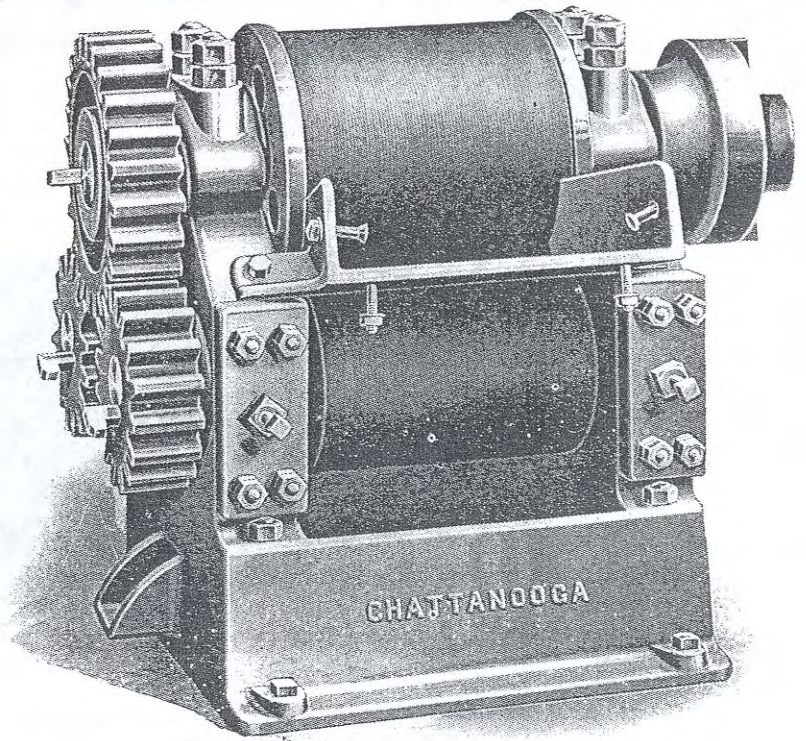
Mill Number		Size Large Roll		Size Small Rolls		H.P. Required	Capacity Juice per Hour	Capacity Tons of Cane per 12 Hours	Net Weight
Plain Feed Roll	Fluted Feed Roll	Diameter	Length	Diameter	Length				
45-A	145-A	9 in.	9 in.	6 in.	9 in.	4.53	175 to 200 gal.	12 to 14	1389 lb.
71	171	9 in.	12 in.	6 in.	12 in.	5.11	200 to 225 gal.	16 to 18	1803 lb.

NOTE: Five-foot bagasse carrier weighs about 42 pounds net. All weights and measurements are approximate.

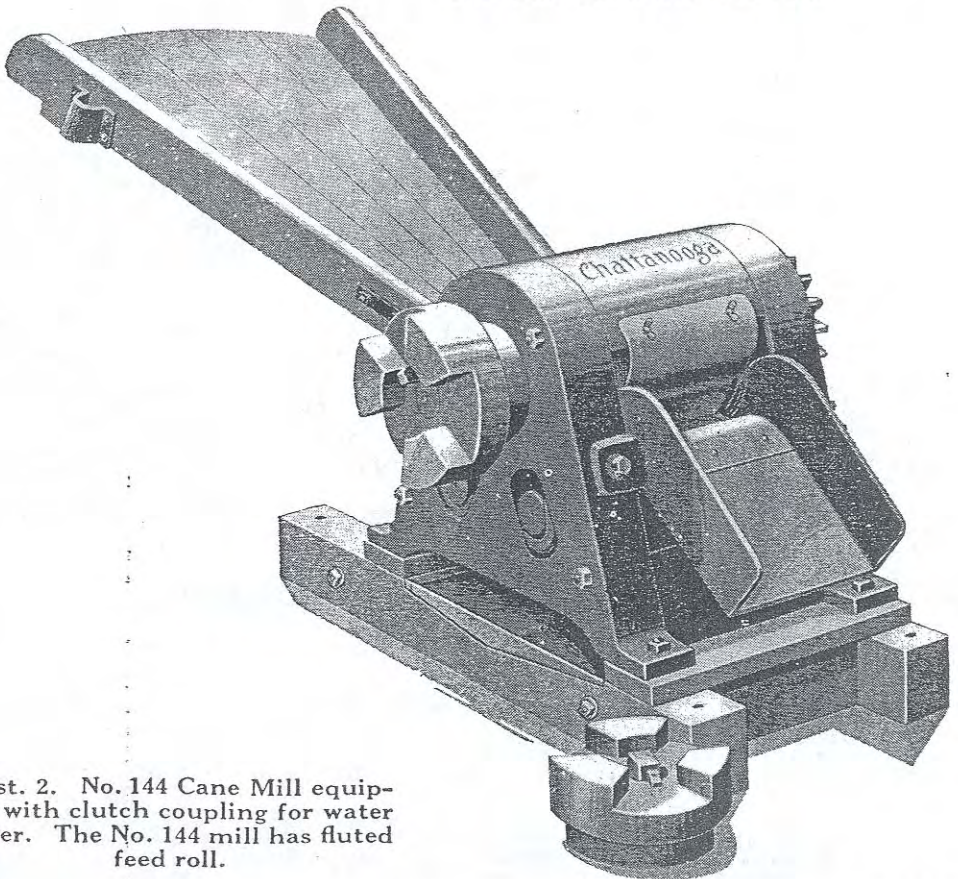


Chattanooga Water-Power Cane Mills

Complete specifications and descriptions of the water-power cane mills illustrated on this page are found on the foregoing and the following pages. This information appears under the corresponding model numbers.



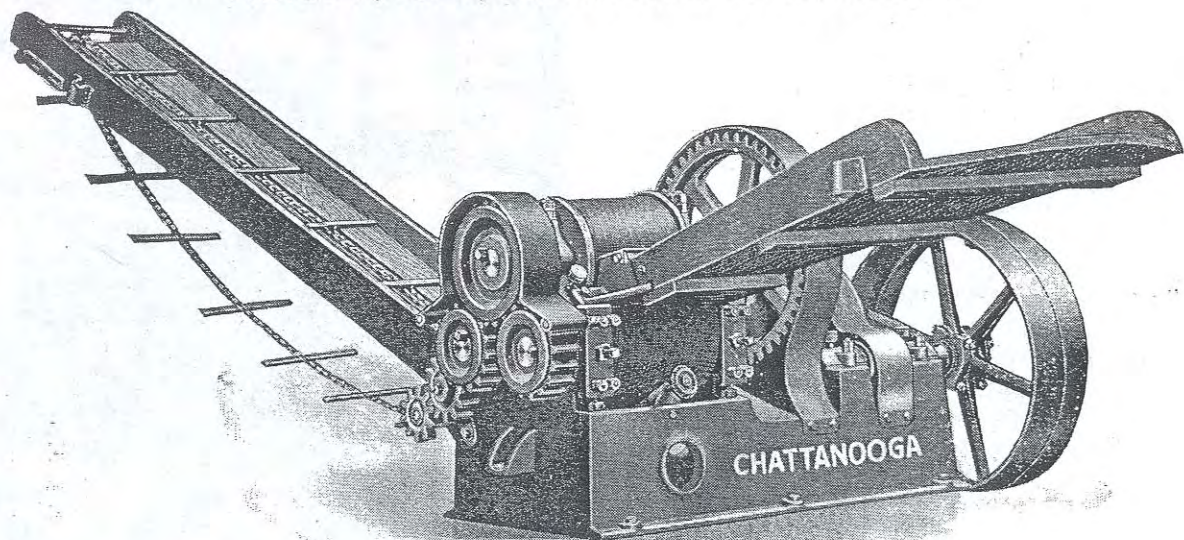
Illust. 1. Chattanooga No. 192 Cane Mill equipped with clutch coupling for water power. Feed table and safety gear covers, not shown in the above illustration, are also supplied with this mill. This mill has fluted feed roll.



Illust. 2. No. 144 Cane Mill equipped with clutch coupling for water power. The No. 144 mill has fluted feed roll.

Chattanooga Cane Mills

Nos. 92-A, 192-A, and 192 Three-Roll Horizontal



Illust. 1. Chattanooga No. 192-A fluted-feed Cane Mill equipped with bagasse carrier which costs extra. No. 92-A is same mill with plain feed roll.

This mill can be operated either by belt or water power, depending on how the mill is equipped. It is a heavily built mill intended for those who grow a comparatively large acreage of cane. It is built on a heavy, cast-iron bed plate which holds all the working parts in rigid relation with each other, thereby preventing friction and making a light-running mill.

The large roll and master gear shaft has three large bearings supplied with hard oil by compression grease cups.

The tops of the boxes are fitted with thin plates of brass. Wear is bound to occur after continued usage, and by removing one of these brass plates, or shims, at a time, the bearings can be kept tight to prevent looseness. The bottoms of the gear shaft bearings are babbitted.

The master roll is 12 inches in diameter with 12-inch face, and equipped with flanges which project over the edges of the small rolls. This feature and the grooving of the rolls insure the proper feeding of the cane to the mill. The small rolls can be adjusted to get the highest possible extraction. The roll-shaft bearings are equipped with removable brass bushings.

These mills are equipped with a malleable guide

knife which can be readily adjusted by means of a small hand wheel conveniently placed on the feed side of the mill. The guide knife is so constructed that it adapts itself to any position of the rolls and permits juice to flow freely from the mill. Juice splashers on the feed side of the mill protect the operator and save the juice.

The gears are accurately made from machine-cut patterns and are keyed to the shafts with steel keys. The mill is double-gearred with the counter gearing at the end of the mill, out of the way of the operator. All gears are covered with steel guards which can be quickly removed if necessary.

When ordering bagasse carrier or juice pump, specify mill for which wanted.

Regular Equipment

Feed table. Wrenches.
30-in. by 8-in. pulley on belt power.

Special Equipment

Bagasse carrier 5, 6, 8, 10 or 12 ft.
Juice pump. Pulleys in standard sizes as required.
Clutch couplings and water wheel irons for water power as shown under "Cane Mill Water-Power Connections," on a following page.

Specifications

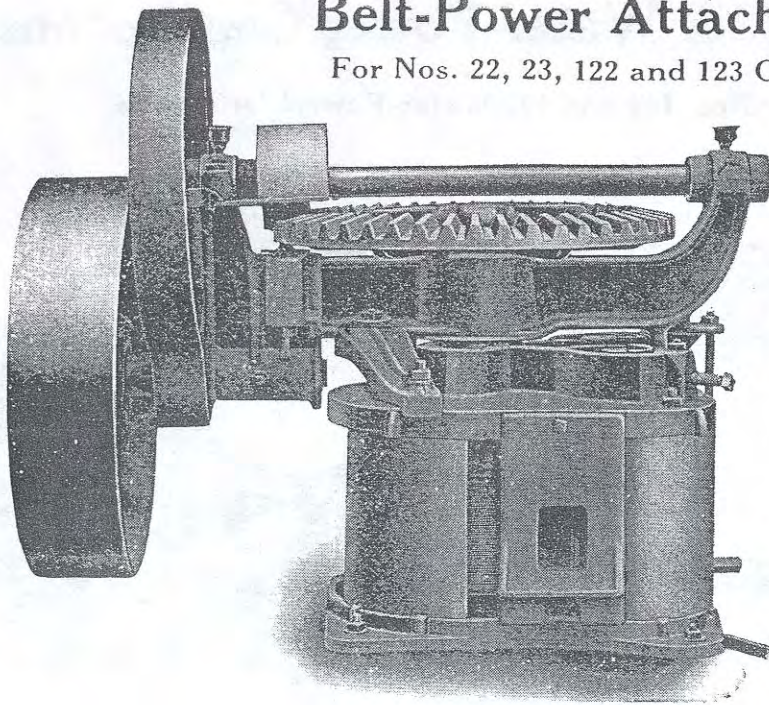
Mill Number		Size Large Roll		Size Small Rolls		H.P. Required	Capacity Juice per Hour	Capacity Tons of Cane per 12 Hours	Net Weight
Plain Feed Roll	Fluted Feed Roll	Diameter	Length	Diameter	Length				
92-A Belt Power	192-A Belt Power	12 in.	12 in.	8 in.	12 in.	7.65	250 to 285 gal.	18 to 20	2732 lb.
	192 Water Power	12 in.	12 in.	8 in.	12 in.	7.65	250 to 285 gal.	18 to 20	1682 lb.

NOTE: Five-foot bagasse carrier weighs about 62 pounds net. All weights and measurements are approximate. Water-power mills are illustrated on the preceding page.



Belt-Power Attachments

For Nos. 22, 23, 122 and 123 Cane Mills



Made in two sizes, for Nos. 22, 122, 23 and 123 cane mills. A 3 h.p. engine will operate either mill at full capacity unless the cane is very heavy, in which case a 5 h.p. engine is recommended for the No. 23, or 123 mill. Mechanical power for these mills results in steadier operation, giving uniformly high extraction and practically doubling their capacities.

The belt-power attachment replaces the lever cap and consists of a large bevel gear, reduction gears, 24-inch belt pulley, and necessary shafting, all held in proper alignment by a heavy bracket.

Specifications

Illust. 1. The No. 122 animal-power Cane Mill equipped with belt-power attachment. A 3 h.p. engine operates this mill and practically doubles its capacity.

No.	Description	Net Weight
22 and 122	Belt-power Attachment.....	419 lb.
23 and 123	Belt-power Attachment.....	426 lb.

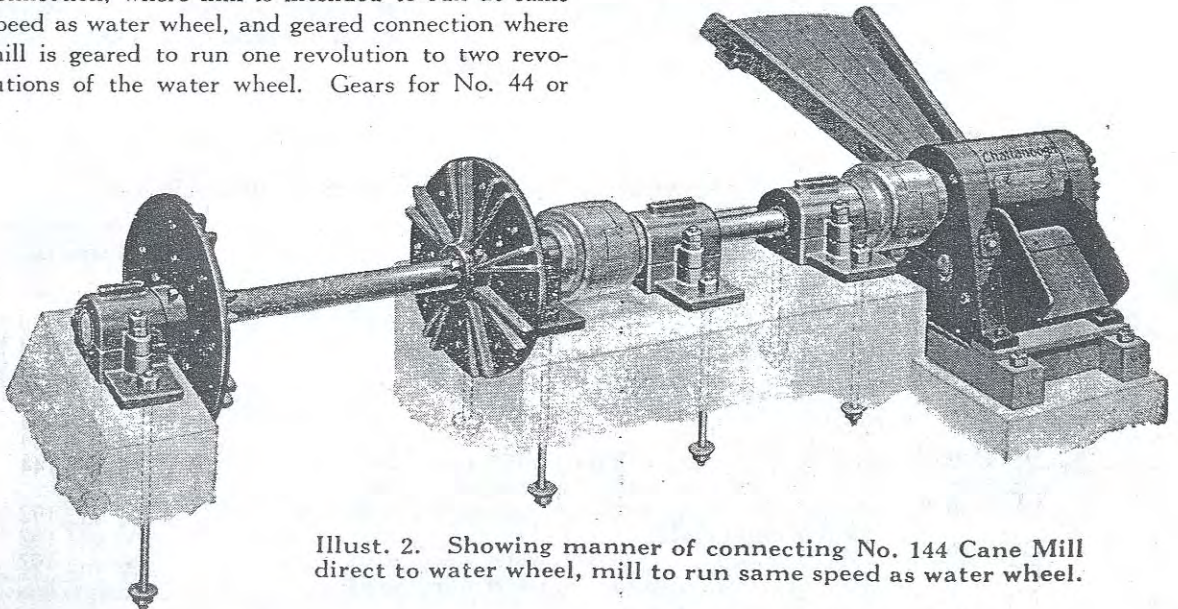
Water-Power Connections

For Nos. 144 and 192 Water-Power Cane Mills

Water-power connections can be supplied for Nos. 144 and 192 cane mills equipped for water power. They will also fit Nos. 44 and 92 Chattanooga cane mills so equipped already in use. Water-power connections are available in two styles—direct connection, where mill is intended to run at same speed as water wheel, and geared connection where mill is geared to run one revolution to two revolutions of the water wheel. Gears for No. 44 or

144 mill can be ordered specially bored for reversing their position so as to obtain two revolutions of the mill to one of the water wheel.

For specifications of water-power connections, see following page.



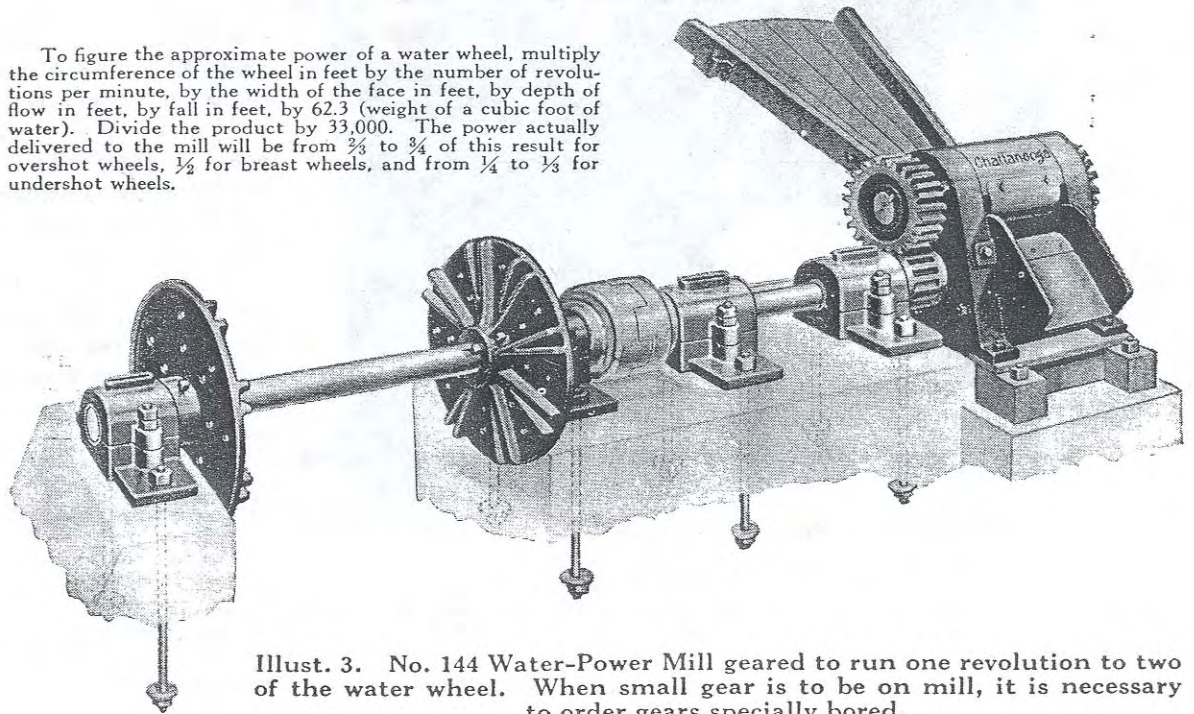
Illust. 2. Showing manner of connecting No. 144 Cane Mill direct to water wheel, mill to run same speed as water wheel.



Cane Mill Water-Power Connections

For Nos. 144 and 192 Water-Power Cane Mills

To figure the approximate power of a water wheel, multiply the circumference of the wheel in feet by the number of revolutions per minute, by the width of the face in feet, by depth of flow in feet, by fall in feet, by 62.3 (weight of a cubic foot of water). Divide the product by 33,000. The power actually delivered to the mill will be from $\frac{2}{3}$ to $\frac{3}{4}$ of this result for overshot wheels, $\frac{1}{2}$ for breast wheels, and from $\frac{1}{4}$ to $\frac{1}{3}$ for undershot wheels.



Illust. 3. No. 144 Water-Power Mill geared to run one revolution to two of the water wheel. When small gear is to be on mill, it is necessary to order gears specially bored.

The illustrations on this and the preceding page are intended to show only the equipment commonly required for connecting the Nos. 144 and 192 water-power cane mills. Any of the equipment shown in the illustrations can be supplied in any quantity ordered. It should be noted that one pair of clutch couplings is always supplied with each water-power mill. One set of water wheel irons includes the following: two flanges, with keys and

set screws, two set collars with set screws, two babbitted boxes, one pair of clutch couplings, 32 bolts for water wheel, one water wheel shaft (specify length required, see table below). If the mill is to be geared to the water wheel the additional equipment includes two gears (two-to-one ratio) with large gear regular on mill. Shafts longer than 12 feet may call for additional boxes.

Specifications—Water-Power Connections

No.	Description	For Mills Nos.	Net Weight
DC-44-4 $\frac{1}{2}$	Direct connection, with 6-ft. connecting shaft and 4 $\frac{1}{2}$ -ft. water wheel shaft.	44, 92, 144 and 192	831 lb.
DC-44-6	Same as above but with 6-ft. water wheel shaft.	44, 92, 144 and 192	891 lb.
DC-44-9	Same as above but with 9-ft. water wheel shaft.	44, 92, 144 and 192	936 lb.
GC-44-4 $\frac{1}{2}$	Geared connection, with 6-ft. connecting shaft and 4 $\frac{1}{2}$ -ft. water wheel shaft.	44 and 144	934 lb.
GC-44-6	Same as above but with 6-ft. water wheel shaft.	44 and 144	967 lb.
GC-44-9	Same as above but with 9-ft. water wheel shaft.	44 and 144	982 lb.
GC-92-4 $\frac{1}{2}$	Geared connection, with 6-ft. connecting shaft and 4 $\frac{1}{2}$ -ft. water wheel shaft.	92 and 192	934 lb.
GC-92-6	Same as above but with 6-ft. water wheel shaft.	92 and 192	967 lb.
GC-92-9	Same as above but with 9-ft. water wheel shaft.	92 and 192	982 lb.

All weights and measurements are approximate.



Cast Iron Kettles



Illust. 1. Chattanooga Cast Iron Kettles are made of good quality material.

Chattanooga cast iron kettles are made from the right quality of iron to stand the fire, and are of uniform thickness. They are made in a wide range of sizes, and if the purchaser desires to use them in "trains" he can select the proper sizes from the accompanying table. They are heavy, smooth, and of full capacity.

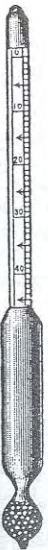
Specifications—Cast Iron Kettles

Capacity	Overall Diameter	Inside Diameter	Inside Depth	Thickness	Net Weight
20 gal.	37 in.	29 $\frac{3}{4}$ in.	11 $\frac{1}{8}$ in.	$\frac{3}{16}$ in.	95 lb.
25 gal.	38 in.	31 in.	12 in.	$\frac{1}{4}$ in.	112 lb.
30 gal.	39 $\frac{1}{4}$ in.	31 $\frac{3}{4}$ in.	13 $\frac{1}{2}$ in.	$\frac{9}{32}$ in.	130 lb.
40 gal.	41 in.	33 $\frac{1}{2}$ in.	15 $\frac{1}{4}$ in.	$\frac{5}{16}$ in.	176 lb.
50 gal.	48 $\frac{1}{2}$ in.	42 in.	14 $\frac{1}{2}$ in.	11 $\frac{1}{32}$ in.	247 lb.
60 gal.	51 $\frac{1}{4}$ in.	44 in.	15 $\frac{1}{2}$ in.	$\frac{3}{8}$ in.	317 lb.
80 gal.	55 $\frac{1}{2}$ in.	48 $\frac{1}{4}$ in.	17 $\frac{1}{8}$ in.	11 $\frac{1}{32}$ in.	434 lb.
100 gal.	59 $\frac{1}{4}$ in.	51 $\frac{1}{4}$ in.	18 $\frac{1}{4}$ in.	$\frac{3}{8}$ in.	516 lb.
150 gal.	67 $\frac{3}{4}$ in.	59 in.	21 in.	19 $\frac{1}{32}$ in.	844 lb.

All weights and measurements are approximate.

Saccharometer

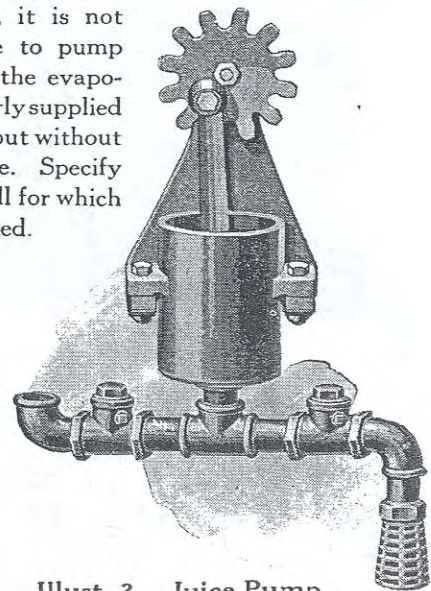
When syrup is too thin it sours; when too thick it tends to crystallize. By using a saccharometer you know exactly when the syrup is right. This is a delicate instrument, consisting of a weighted bulb and a stem 5 or 6 inches long, graduated according to the Baume scale so as to indicate in figures the strength and density of any solution. When dropped into a liquid it will sink to a certain point and there remain at rest. The number of degrees of the scale which appear above the surface of the fluid, mark the density. In soft water the saccharometer will sink to zero; in cane juice it will mark 5 to 10 degrees, according to the richness of the juice. The higher figures indicate the richer juice. In syrup, it will mark 6 to 40 degrees. Boiling hot juice will show from 2 to 3 degrees less than cold juice, and boiling hot syrup about 4 degrees less density than cold. The temperature for which the scale is graduated is 60 degrees.



Illust. 2. Saccharometer.

Juice Pump

Juice pumps can be supplied for Chattanooga Nos. 144, 144-A, 45, 45-A, 145, 145-A, 71, 171, 92, 92-A, 192, and 192-A power cane mills. They are easily attached to the mills and are a decided advantage, pumping the juice from the receptacle at the mill to the receptacle at the evaporator. Since the rate of evaporation varies with the fire, it is not good practice to pump directly into the evaporator. Regularly supplied with fittings but without discharge pipe. Specify number of mill for which pump is wanted.



Illust. 3. Juice Pump.