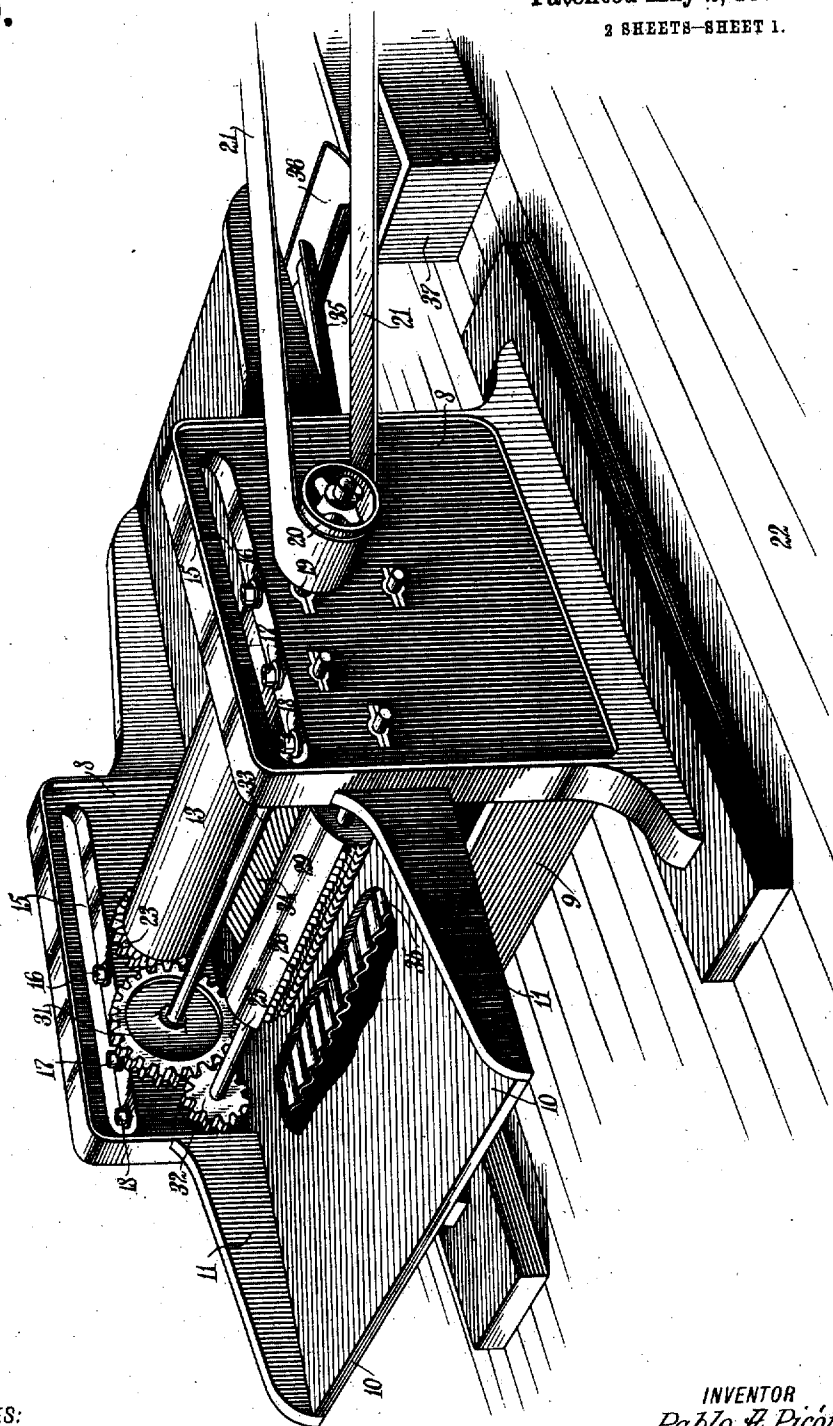


P. A. PICÓN.
SUGAR CANE CUTTING AND CRUSHING MACHINE.
APPLICATION FILED JULY 11, 1910.

991,360.

Patented May 2, 1911.
2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

Wm. H. Long
Edw. J. Murdock

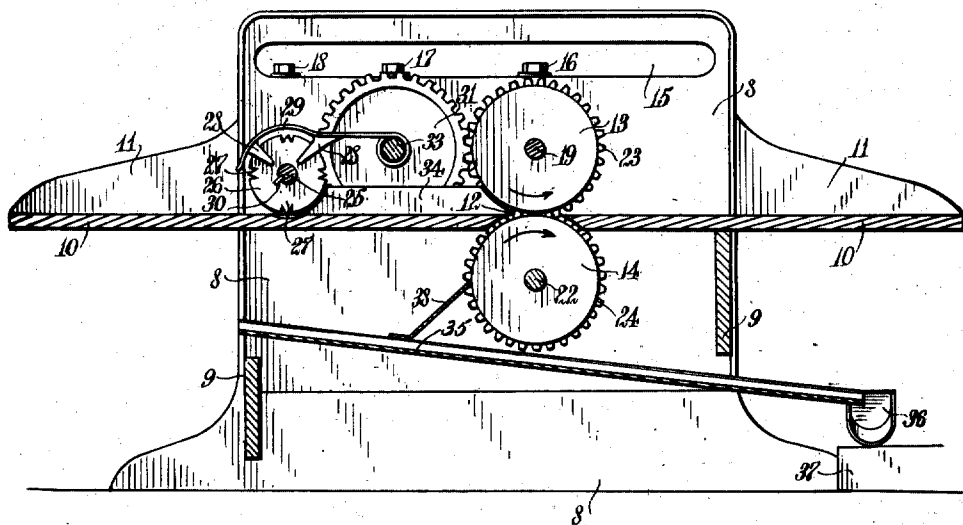
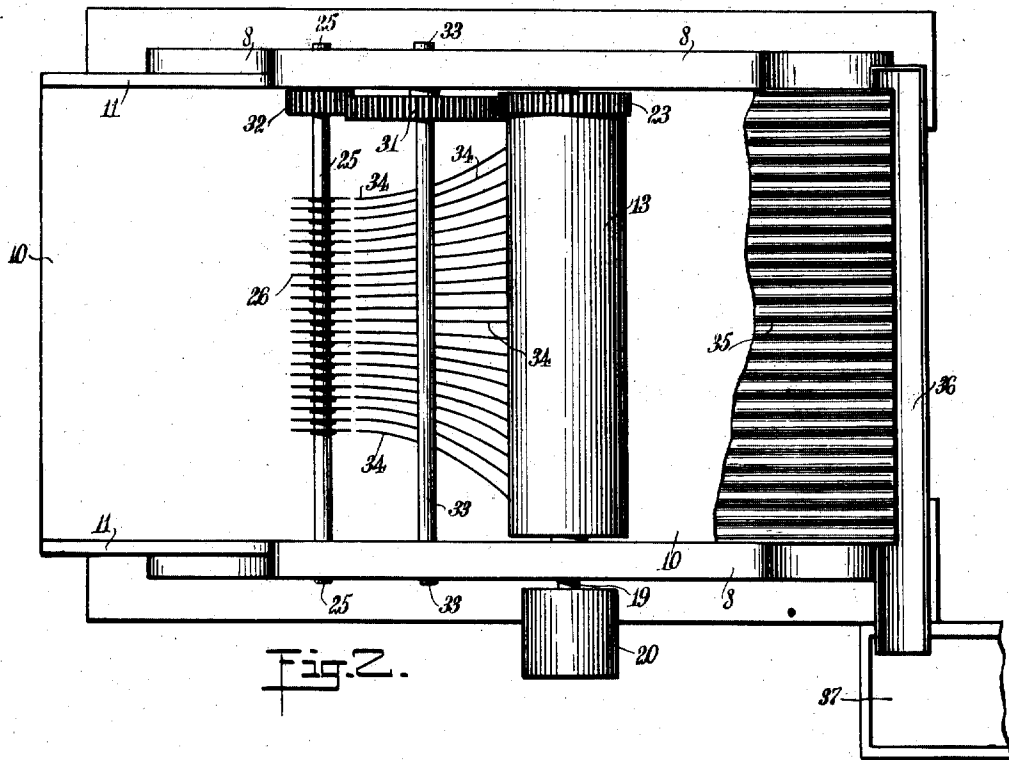
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WITNESSES:

[Signature]
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UNITED STATES PATENT OFFICE.

PABLO A. PICÓN, OF MÉRIDA, VENEZUELA.

SUGAR-CANE CUTTING AND CRUSHING MACHINE.

991,360.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed July 11, 1910. Serial No. 571,378.

To all whom it may concern:

Be it known that I, PABLO A. PICÓN, a citizen of the Republic of Venezuela, and a resident of Mérida, Venezuela, South America, have invented a new and Improved Sugar-Cane Cutting and Crushing Machine, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide means for severing cane into strips preliminary to introducing the same between crushing rolls; to provide a machine of the character described with means for separating the said strips to deliver the same between the crushing rolls in a flat position to present the pith in position to be crushed, the skin or shell being presented edgewise to the rolls to offer the minimum resistance to the crushing strain; and to provide means for capturing the juices of the cane as expressed therefrom by the crushing rolls.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a machine constructed and arranged in accordance with the present invention, a portion of the feed table being cut away to disclose the delivery plates for the juices; Fig. 2 is a plan view of the same; and Fig. 3 is a vertical longitudinal section of the same.

The rotary elements of the present machine are mounted between cheek plates 8, 8. The cheek plates 8, 8 are properly cross braced by braces 9, 9 and a table 10. The table 10 is provided with elevated sides 11, 11 and with a slot 12 disposed between the crushing rolls 13 and 14. The upper edges of the cheek plates 8, 8 are provided with slots 15, 15, the upper sections whereof are provided as a housing for bolts 16, 17 and 18. The roll 13 is mounted upon a shaft 19, which is extended beyond one of the said cheek plates 8 and is provided with a driven pulley 20 fixedly mounted thereon. The pulley 20 is connected by means of a belt 21 with any suitable source of power. The roll 14 is mounted on a shaft 22 and disposed directly below the roll 13. The two rolls 13 and 14 are separated the desired distance to permit the wood of the cane to pass therebetween as the juice is expressed from the said cane. The shaft 22 is driven by the

shaft 19. The shaft 19 is provided with a gear wheel 23, which is meshed with a gear wheel 24 mounted on the said shaft 22. By this means the two rolls are driven at the same peripheral speed.

Disposed in advance of the rolls 13 and 14 is a shaft 25 upon which is fixedly mounted a series of cutter knives 26. The cutter knives 26 are preferably quadrifoil, being divided by points 27, 27. Each foil is preferably formed with relatively pointed ends disposed at the forward edge thereof to constitute a means for feeding or dragging into the cutters the cane being handled. The knives 26, 26 are disposed in separated relation, and are maintained in such relation by projections 28, 28 carried by a shield 29 and extended between the said knives. The knives are slidably mounted upon the shaft 25 and held to rotate therewith by a feather 30.

The shaft 25 is driven by a transmission gear 31 which is meshed with the gear 23 on the shaft 19 and with a small pinion 32. The relative diameters of the pinion 32 and the wheel 23 are such as to increase the speed of rotation of the pinion 32 above that of the wheel 23. The wheel 31 is fixedly mounted upon a shaft 33, which is suitably mounted in bearings provided therefor in the cheek pieces 8, 8.

The bearings for the shafts 19, 25 and 33 are of the separable Babbitted type, the bolts 16, 17 and 18 being provided to force the cap of the said bearings upon the shaft contained therein to take up the wear incident to the operation of the machine under high pressures.

The shaft 33 is disposed intermediate the shafts 19 and 25 and above the guide plates 34. The guide plates 34 are flared in the manner shown, particularly in Fig. 2 of the drawings. The forward edge of each of the said plates is disposed in accurate alignment with each of the knives 26. The rear ends of the said plates are converged to extend between the rolls 13 and 14, thereby constituting a guide for the strips of cane as delivered from the knives after being sliced thereby. The spread of the plates 34 prior to the introduction of the cane between the rolls 13 and 14 is sufficient to permit the slices of cane to fall upon their sides. The cane as thus delivered will present the bark or shell edgewise as the same passes between the rolls 13 and 14. In this

position the gritty substance of the bark or shell offers the least resistance to the compression of the said rolls, while the pith bearing the sap is presented to the crushing influence of the rolls in the position most advantageous to the expression therefrom of the juices or sap.

Below the roll 14 extends a corrugated plate 35. The plate 35 is inclined substantially as shown in the drawings, and is extended at the delivery end above a gutter 36. The gutter 36 is provided to receive the juices from the corrugations of the plate 35 and to deliver the same into a receptacle 37.

To remove the adhering juices from the roll 14, I have provided the wiping blade 38 (see Fig. 3 of the drawings). I preferably construct the blade 38 of resilient metal which will accommodate in uncalculated thicknesses the gummy material which may accumulate on the surface of the roll, or any inaccuracies in the turning of the said roll.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a sugar cane cutting and crushing machine, means for separating the cane in

thin longitudinal slices; and a plurality of guide plates arranged to spread the said slices as delivered.

2. A sugar cane cutting and crushing machine, comprising an operating table; a plurality of separated parallel knives mounted above said table and arranged to sever the cane in strips; and means mounted on said table for spreading the said strips after being formed by the said knives.

3. A sugar cane cutting and crushing machine, comprising an operating table; a plurality of separated parallel knives mounted above said table and arranged to sever the cane in strips; and vertical plates mounted on said table at the delivery side of said knives and in line therewith, said plates being flared at the ends removed from said knives.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PABLO A. PICÓN.

Witnesses:

E. F. MURDOCK,
A. M. MOLINA.