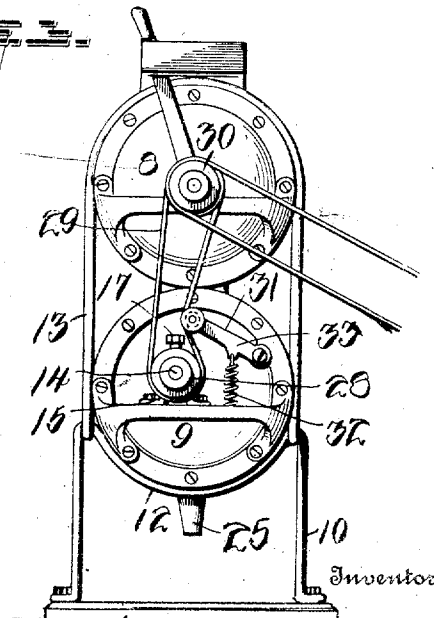
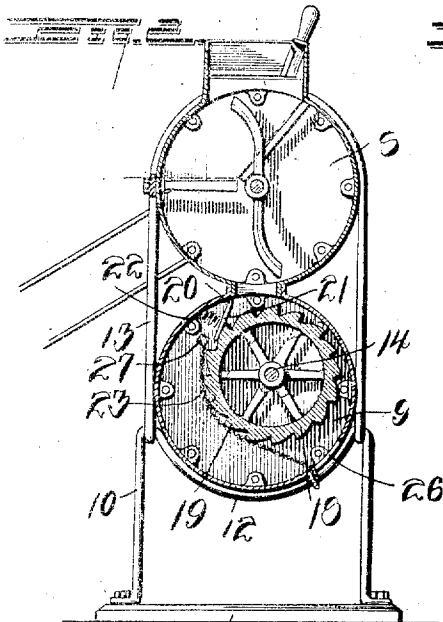
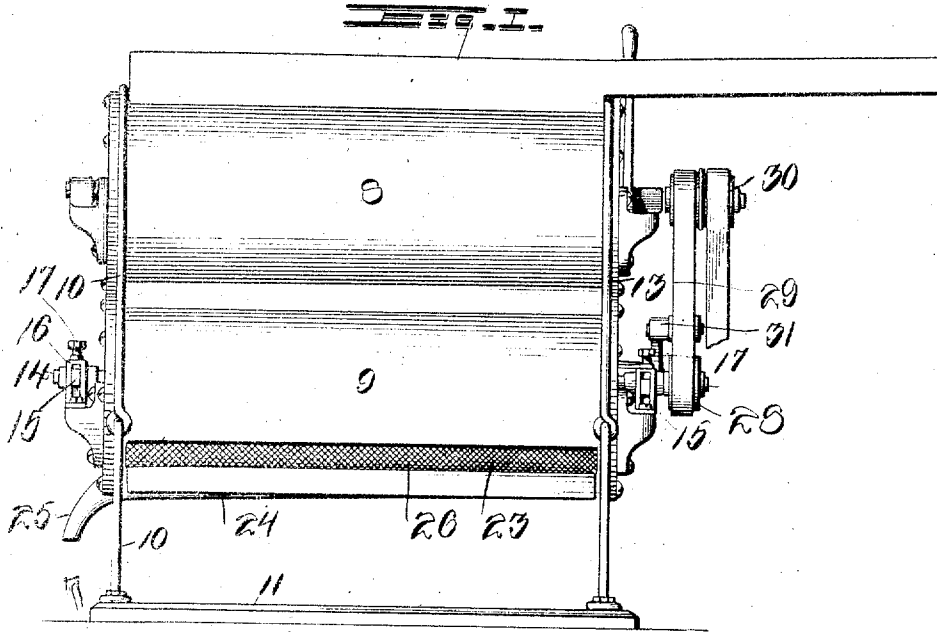


J. WILLIAMS.
CRUSHER MILL.
APPLICATION FILED DEC. 4, 1909.

973,327.

Patented Oct. 18, 1910.

2 SHEETS-SHEET 1.



Witnesses
Gerald H. Hunsy.

A. O. Anderson

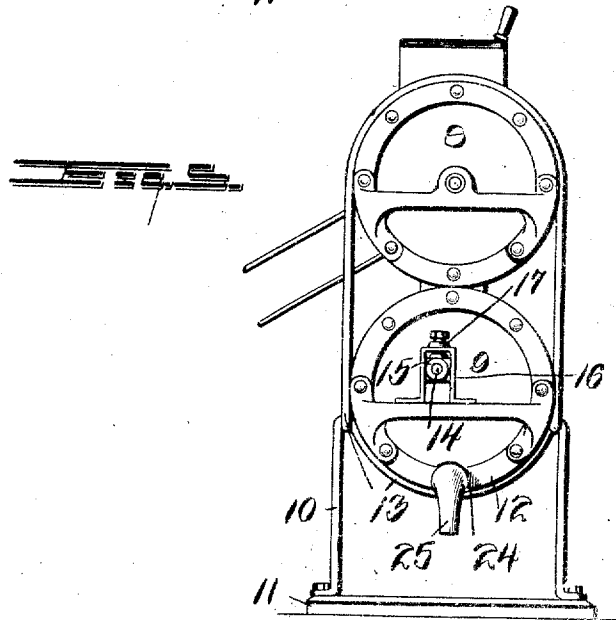
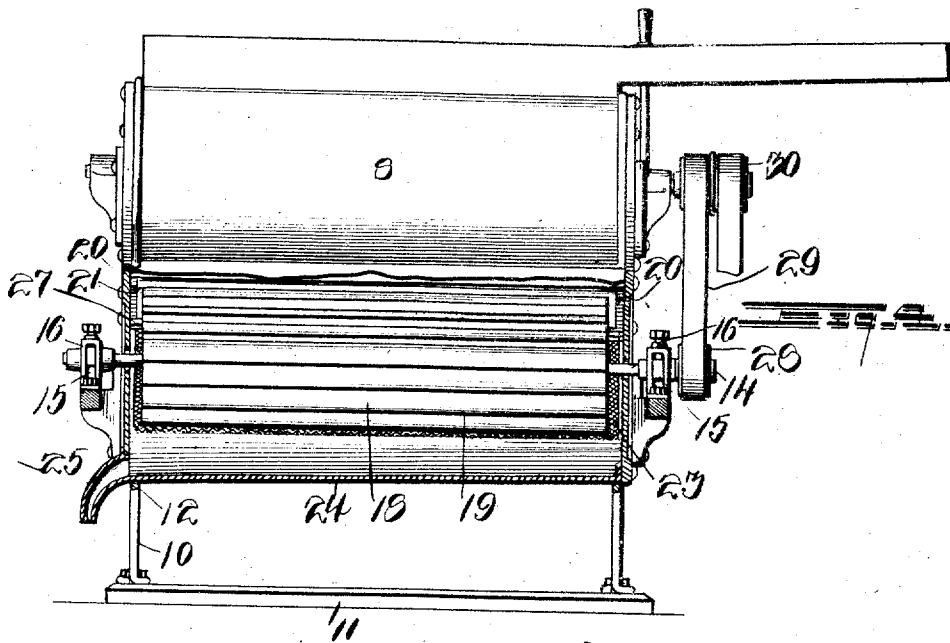
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN WILLIAMS, OF COLT, ARKANSAS.

CRUSHER-MILL.

973,327.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Original application filed June 9, 1909, Serial No. 501,068. Divided and this application filed December 4, 1909. Serial No. 531,326.

To all whom it may concern:

Be it known that I, JOHN WILLIAMS, a citizen of the United States, residing at Colt, in the county of St. Francis, State of Arkansas, have invented certain new and useful Improvements in Crusher-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to sorghum mills and more particularly to the class of crusher machines for mashing sugar cane or the like.

The primary object of the invention is the provision of a machine of this character in which shredded material is fed thereinto and mashed to completely extract the saccharine juice from the cane.

Another object of the invention is the provision of a machine of this character in which material introduced therein will be acted upon by a rotatable crushing roller to extract juice therefrom which will be separated from the mashed or crushed material and delivered from one end of the machine, while the mashed or crushed material will be delivered from one side of the machine.

A further object of the invention is the provision of a machine of this character which is simple in construction, thoroughly reliable and efficient in operation and inexpensive in the manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred form of embodiment of the invention to enable those skilled in the art to practice the same, and as pointed out in the claims hereunto appended.

In the drawings:—Figure 1 is a side elevation of a machine constructed in accordance with the invention. Fig. 2 is a vertical transverse sectional view through the same. Fig. 3 is one end elevation of the machine. Fig. 4 is a longitudinal sectional view through the machine. Fig. 5 is an opposite end elevation of the machine.

Similar reference characters indicate cor-

responding parts throughout the several views in the drawings.

Referring to the drawings by numerals, 8 designates generally a shredding cylinder, the detail description of which is set forth in my co-pending application Serial No. 501,068, filed June 9, 1909, this application being a division thereof.

Immediately below the shredding cylinder 8, and in communication therewith, is a crushing cylinder 9, the same being of approximately the size of the shredding cylinder 8, which latter is superimposed thereon and both of these cylinders are supported by vertical uprights 10, rising from a base 11, the uprights 10, being united by concaved cross connecting pieces 12, in which rests the crushing roller 9, and to the cross connecting pieces 12, are connected swinging yoke members 13, which latter serve to securely mount the said cylinders in proper working relation to each other.

Eccentrically disposed within the crushing cylinder 9, is a rotatable shaft 14, the latter having its bearings in adjustable journal blocks 15, slidably fitted in bearing brackets 16, mounted exteriorly at opposite ends of the crusher cylinder and in this manner the shaft 14, is capable of vertical adjustment at the will of an operator by manipulating set screws 17, engaging the journal blocks, and these set screws 17, are threaded in the bearing brackets.

Fixed to the rotatable shaft 14, is a crusher roller 18, having a ribbed or corrugated outer surface 19, which is adapted to act upon shredded material such as sugar cane or the like introduced into the cylinder 9, in the manner as will be hereinafter more fully described.

Within the crusher cylinder 9, at one side of its communication with the cylinder 8, is hinged by a pivot rod 20, a presser rod or plate 21, the latter being held by expansion springs 22, against the corrugated surface of the crusher roller 18, so as to act upon the shredded material between the latter and the plate 21, to extract juice therefrom and this juice passes through a wire mesh strainer or reticulated plate 23, so as to separate the mashed material from the juice which is delivered to an inclined bottom 24, of the crusher cylinder 9, and discharged

therefrom through a spout 25, at one end of the said cylinder 9; while the crushed material passes through a discharge opening 26, in one side of the crusher cylinder.

5 It is of course to be understood that the expansion spring 22, will be of sufficient strength to retain the presser wing or plate 21, constantly in close relation to the crusher roller 18, so as to effect a complete extraction
10 of the juice from the shredded material delivered from the shredding cylinder 8, to the crusher cylinder. This strainer or reticulated plate 23, lies in close relation to the crusher roller 18, and extends partially
15 about its circumference, one edge being connected to a supporting bar 27, mounted in the cylinder 9, and its opposite edge being connected to the inner face of the cylinder in proximity to its discharge opening 26,
20 therein will effect the discharge of mashed material through said opening from the cylinder.

Fixed to the shaft 14, exteriorly of the cylinder 9, is a belt pulley 28, over which is
25 trained a driven band or belt 29, which latter is also trained over a pulley 30, supported by a shaft mounted centrally in the shredding cylinder 8, and this belt or band is held taut upon the pulleys by a belt tightener 31, controlled by a spring 32, fixed to a
30 pivotal arm 33, of the tightener and to the cylinder 9, and through the medium of this belt motion will be imparted simultaneously to the roller 18, and the shredding mechanism of the machine.
35

What is claimed is:—

1. The combination with communicating cylinders, of a crusher roller eccentrically mounted in one cylinder, spring pressed means acting upon said crusher roller, a
40 flexible foraminous plate partly surrounding and contacting with the crusher roller, said plates being fixed within the last mentioned cylinder to separate fluid and solid matter from each other, and means detach-
45 ably supporting the cylinders within working relation to each other.

2. In a machine of the class described, a cylinder, a flexible concaved foraminous plate within the cylinder for dividing the
50 same into independent compartments, the said cylinder being provided with side and end outlets communicating with said compartments respectively, a rotatable crusher roller eccentrically mounted in one compart-
55 ment contiguous the foraminous plate whereby solid and juicy substances may be acted upon for their separation and delivery independently of each other to the compart-
60 ments, and presser means disposed within the cylinder adjacent to said crusher roller to force the material against the crusher roller.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN WILLIAMS.

Witnesses:

EDWARD GRAY,
JAMES L. GRAY.