R T WILSON.

CIDER MILL.

APPLICATION FILED AUG. 31, 1908. RENEWED FEB. 19, 1912.

1,022,286. Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

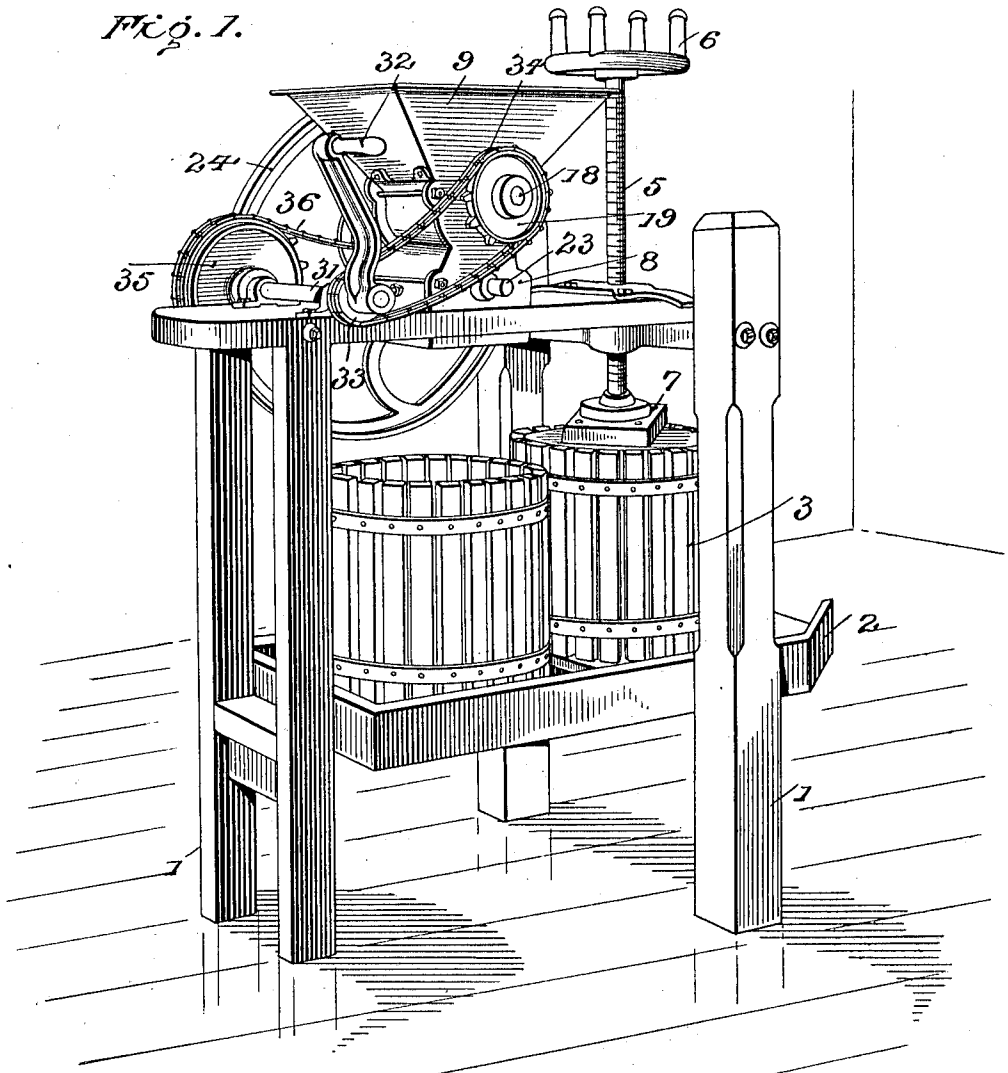
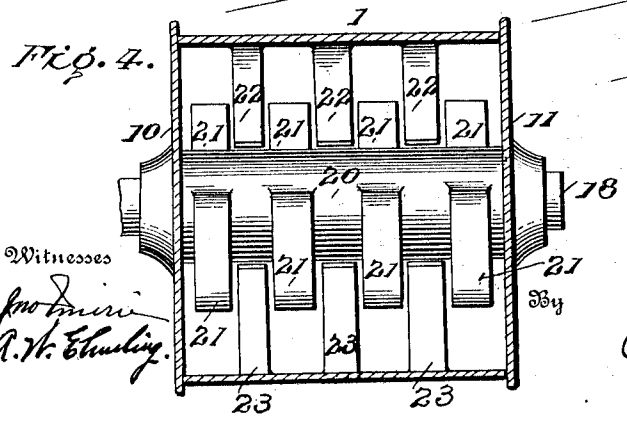


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 3.

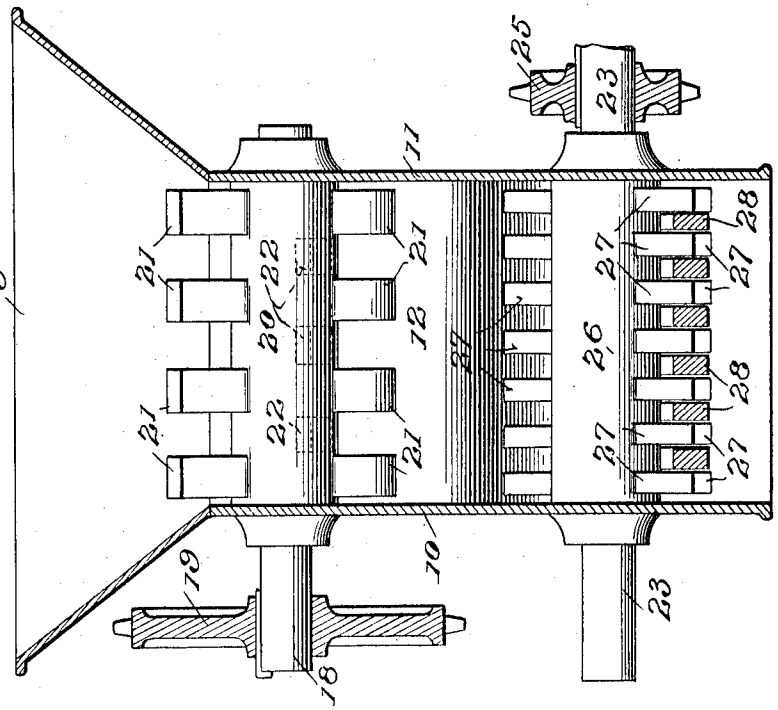
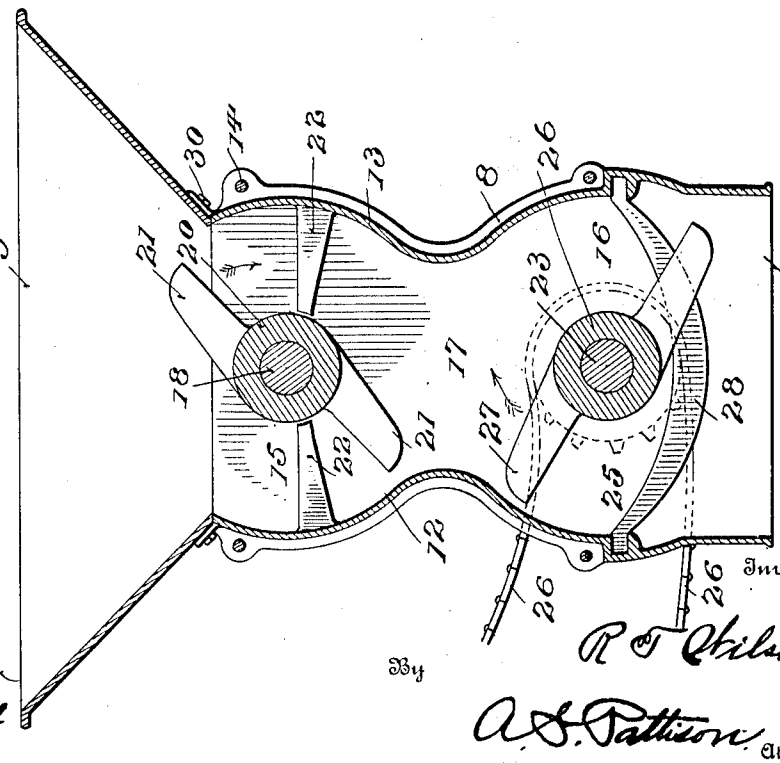


Fig. 2.



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CIDER-MILL.

1,022,286. Specification of Letters Patent. Patented Apr. 2, 1912.

Application filed August 31, 1908, Serial No. 451,124. Renewed February 19, 1912. Serial No. 678,746.

To all whom it may concern:

Be it known that I, R T WILSON, citizen of the United States, residing at Greenville, in the county of Montcalm and State of Michigan, have invented certain new and useful Improvements in Cider-Mills, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in cider mills.

The object of my invention is to provide a cider mill in which two cutters are arranged one above the other and so constructed and rotated that the apples or other fruit passing through the mill are thoroughly cut and mashed.

Another object of my invention is to provide a more simple cheap and effective mill of this character.

In the accompanying drawings, Figure 1 is a perspective view of a complete cider mill embodying my invention. Fig. 2 is a longitudinal vertical sectional view of the hopper and the cutting cylinders. Fig. 3 is a vertical sectional view taken at right angles to Fig. 2, and Fig. 4 is a horizontal sectional view of the hopper above the upper cylinder.

Referring now to the drawings 1 represents rectangular frame having a shelf 2 intermediate its top and bottom upon which is carried the presses 3 and 4. Carried by the upper end of the frame is the screw 5 having the operating wheel 6 at its upper end and the plunger 7 at its lower end adapted to enter the presses 3 and 4. Carried by the upper end of the frame is a housing 8 having at its upper end the hopper 9. The said housing 8 is composed of side plates 10 and 11 clamping the end plates 12 and 13 between the same by means of bolts 14. The end plates 12 and 13 forming two circular chambers 15 and 16 in communication with each other through the contracting portion 17. Extending transversely through the upper chamber 15 is a shaft 18 which has one end extending beyond the side plate and provided with a sprocket wheel 19. Carried by the shaft 18 within the chamber 15 is a cylinder 20 which has cast thereon a series of outwardly extending cutting and crushing blades 21. These blades as shown extend from opposite sides of the cylinder and are of a broad flat form, and are of a length to extend out adjacent to the end plates 12 and 13.

The end plates 12 and 13 are provided with inwardly extending blades 22 arranged in a horizontal line and extending inwardly to a point not quite touching the cylinder. These blades 22 are cast with the end plates and are arranged in two series and are of a width slightly less than the distance between the cutters 21 carried by the cylinder.

Passing transversely through the lower chamber 16 is a shaft 23 which has its end extending beyond the side plate 11 and provided with a fly-wheel 24, and the said shaft between the fly-wheel and the side plate 11 is provided with a sprocket wheel 25 which will be hereinafter more fully described. Carried by the shaft 23 is a drum 26 which is provided with the outwardly extending cutting teeth 27 arranged in two series on opposite sides of the cylinder. These cutting teeth 27 are of a thickness considerably less than the cutter knives 21, and in order to have the knives extend from one side plate to the other I provide a greater number of knives. Carried by the end plates 12 and 13 are the cutter bars 28 which as shown are of a semi-circular form and are of a thickness to pass between the cutters 27 and thus allow the cutters 27 to freely pass between said cutter bars. The chamber 16 has an open lower end 29 through which the crushed apples pass to the presses. The upper end of the chamber 15 has the hopper 9 bolted thereto by means of bolts 30.

By the construction herein set forth it will be seen that the side and end plates can be readily removed for replacing any of the cutters or cutter-bars should they become broken or otherwise injured. Mounted upon the upper end of the frame 1 is a horizontal shaft 31 carrying at its outer end the crank 32 by means of which it is rotated. Adjacent the crank 32 the shaft is provided with a sprocket wheel 33 which is in alinement with the sprocket wheel 19 and passing around the sprocket wheel is a chain 34 by means of which the upper cutters or crushers 21 are rotated. The opposite end of the shaft 31 is provided with a large sprocket wheel 35 which is in alinement with the sprocket wheel 25 and passing around these

sprockets is chain 36. The relative sizes of the sprocket wheels 33 and 19 are such that it takes two revolutions of the shaft 31 to rotate the shaft 18 once. The relative sizes of the sprocket wheels 35 and 25 are such that one rotation of the shaft 31 causes the shaft 23 to rotate three times. By this arrangement of the sprocket wheel it will be seen that the upper cylinder 20 will rotate once to every sixth of a revolution of the lower cylinder 26.

The apples or other fruit are placed in the hopper 9 and the crank rotated to the right as usual, the upper cutters or crushers 21 rotate in the direction indicated by the arrow Fig. 2 and crushes the fruit between the same and the blades or fingers 22 below the arrow. The fingers or blades 22 on the opposite sides of the cylinder 20 prevent the fruit from being carried upwardly within the hopper. The fruit thus being crushed drops upon the cutter bars 28 and are thoroughly cut and mashed by the series of cutters 27 rotating in the direction indicated by the arrow. These cutters 27 rotating six times as fast as the cutters 21 will cut the fruit into very small pieces.

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

A mill of the character described, comprising a housing having an upper and lower cylindrical portion, a cylinder within the upper cylindrical portion, outwardly extending broad crushing teeth carried by opposite sides of the cylinder, inwardly extending crushing blades carried by the cylindrical portion and extending close to the cylinder and a little below the center thereof, and between which the crushing teeth pass, a cutting cylinder within the lower cylindrical portion cutting blades carried by the cylinder, and circular cutting bars secured to the cylindrical portion in approximately a horizontal line with the cylinder and extending down around the cylinder and between which the cutting teeth pass and means for rotating the cutting cylinder at a greater rate of speed than the crushing cylinder.

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

R T WILSON.

ROBERT B. DAWSON,
FRANZ R. MCELWAIN.