

2 Sheets-Sheet 1.
Whitely, Fassler, & Kelly.

Cider Mill.

No. 40,987.

Patented Dec. 15, 1863.

Fig 1

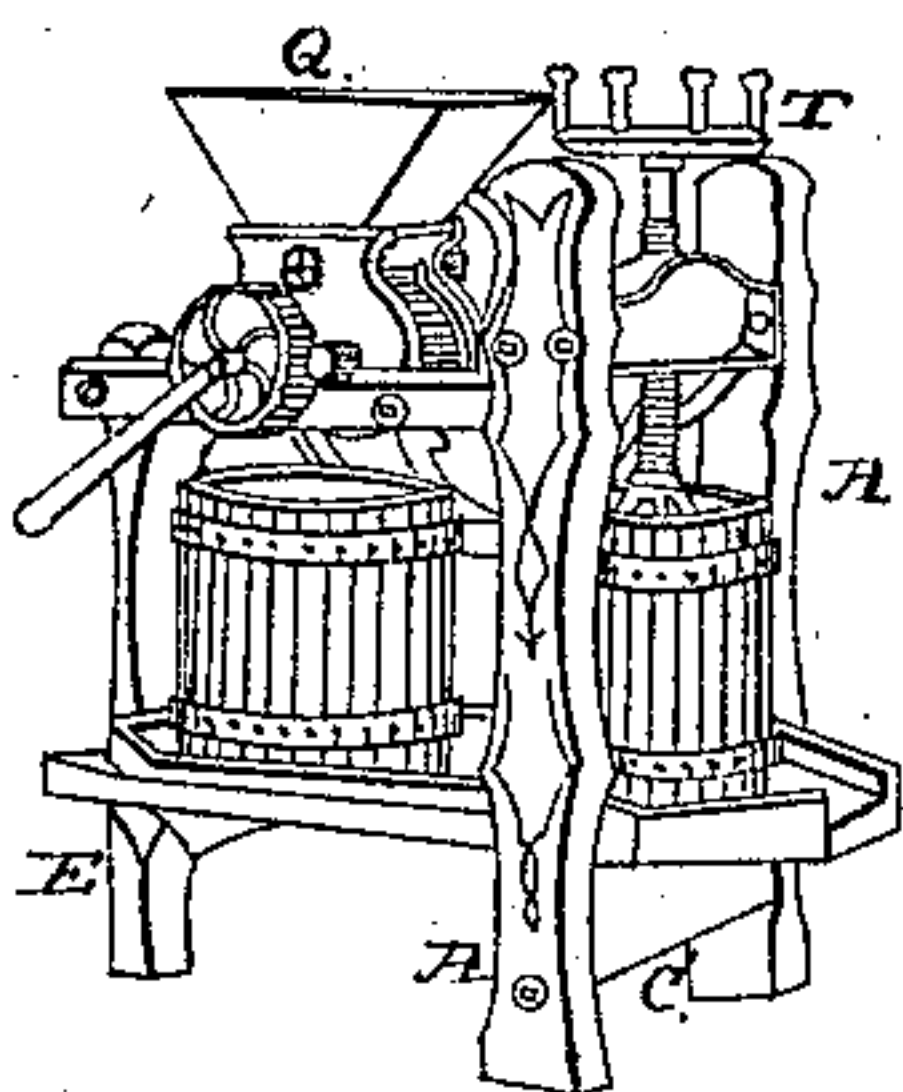


Fig 2.

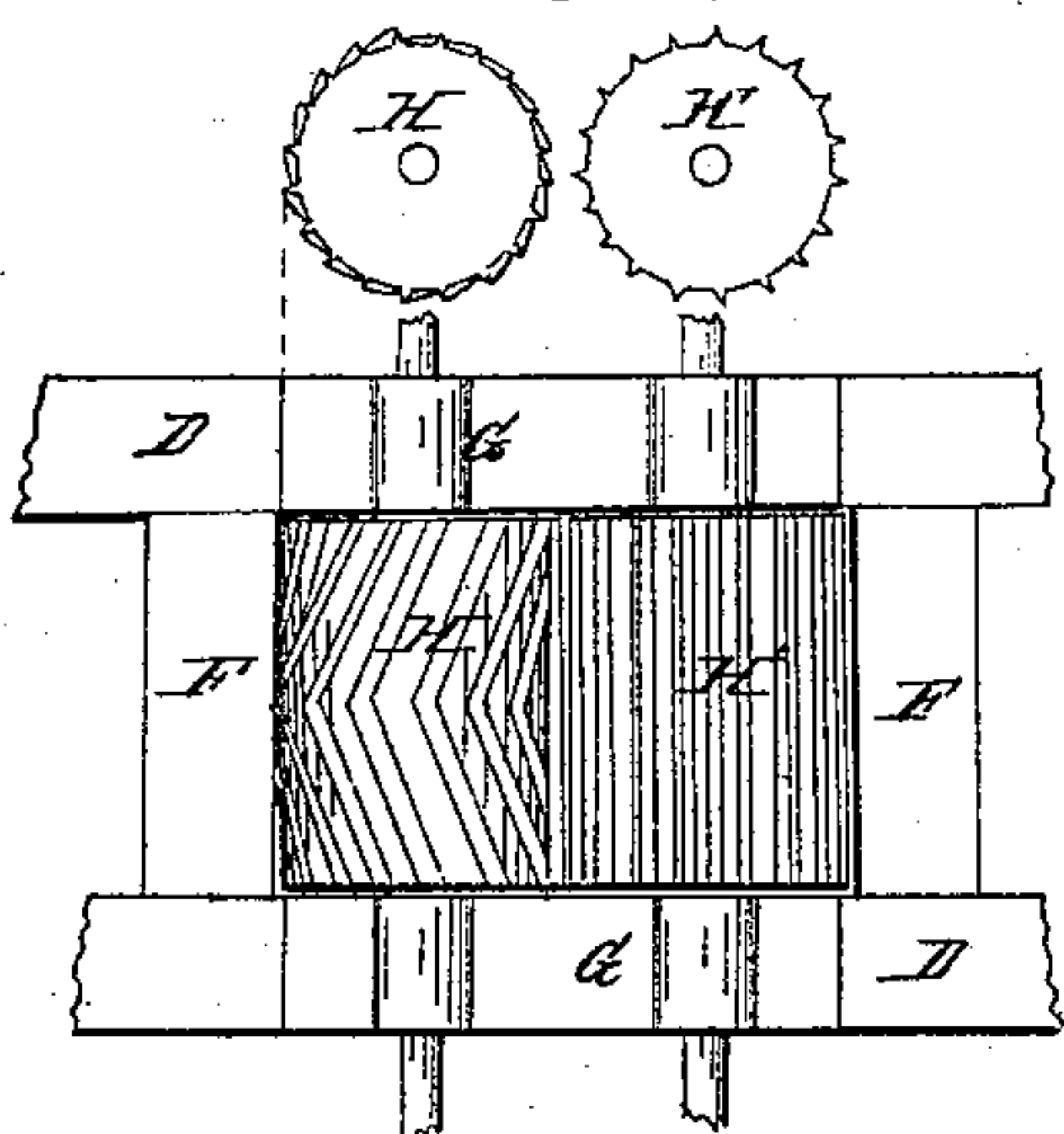


Fig 4.

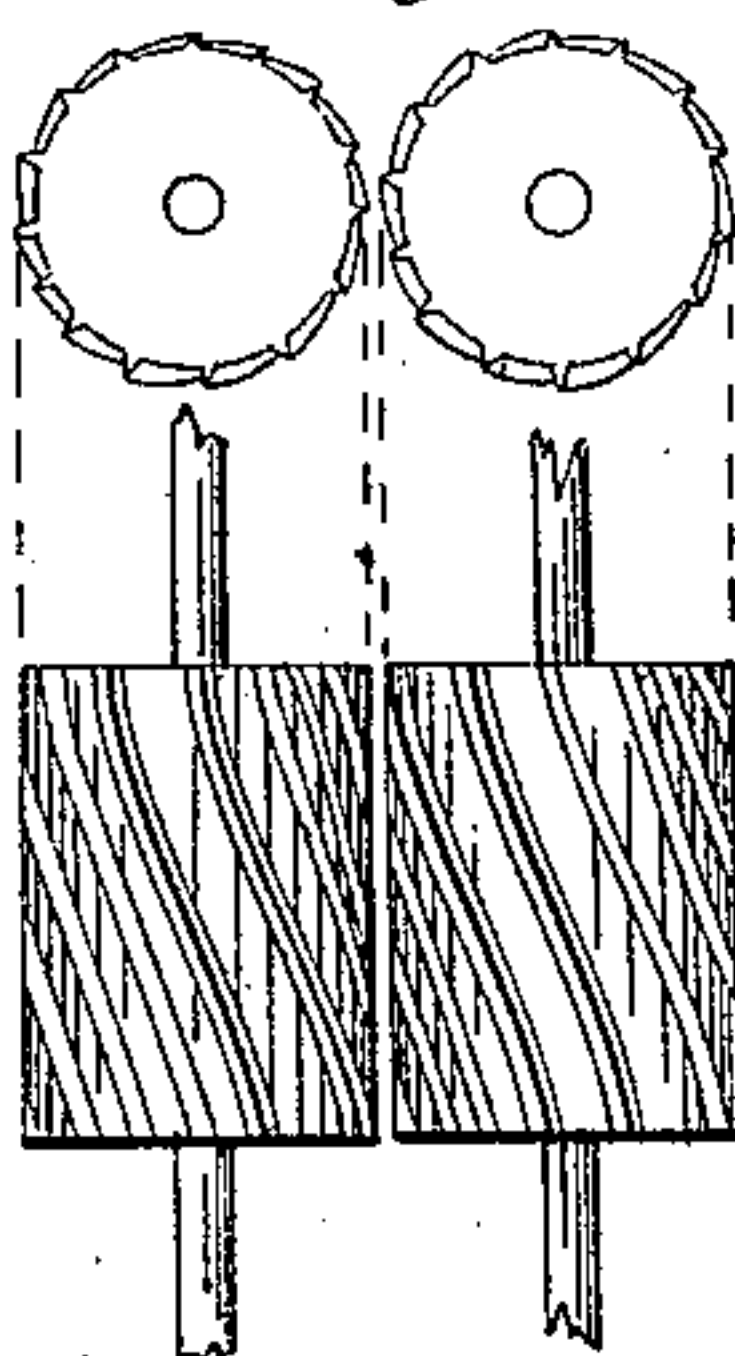


Fig 5.

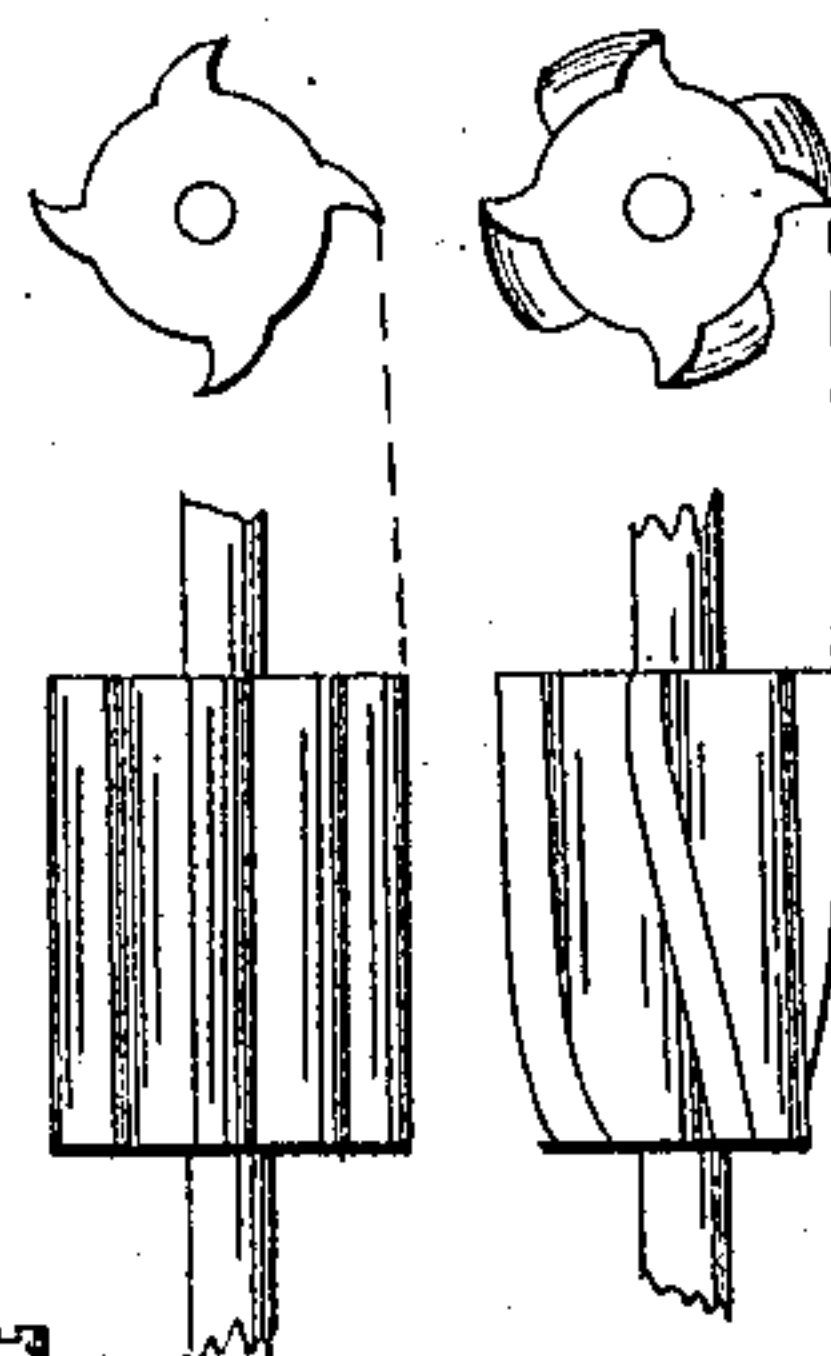
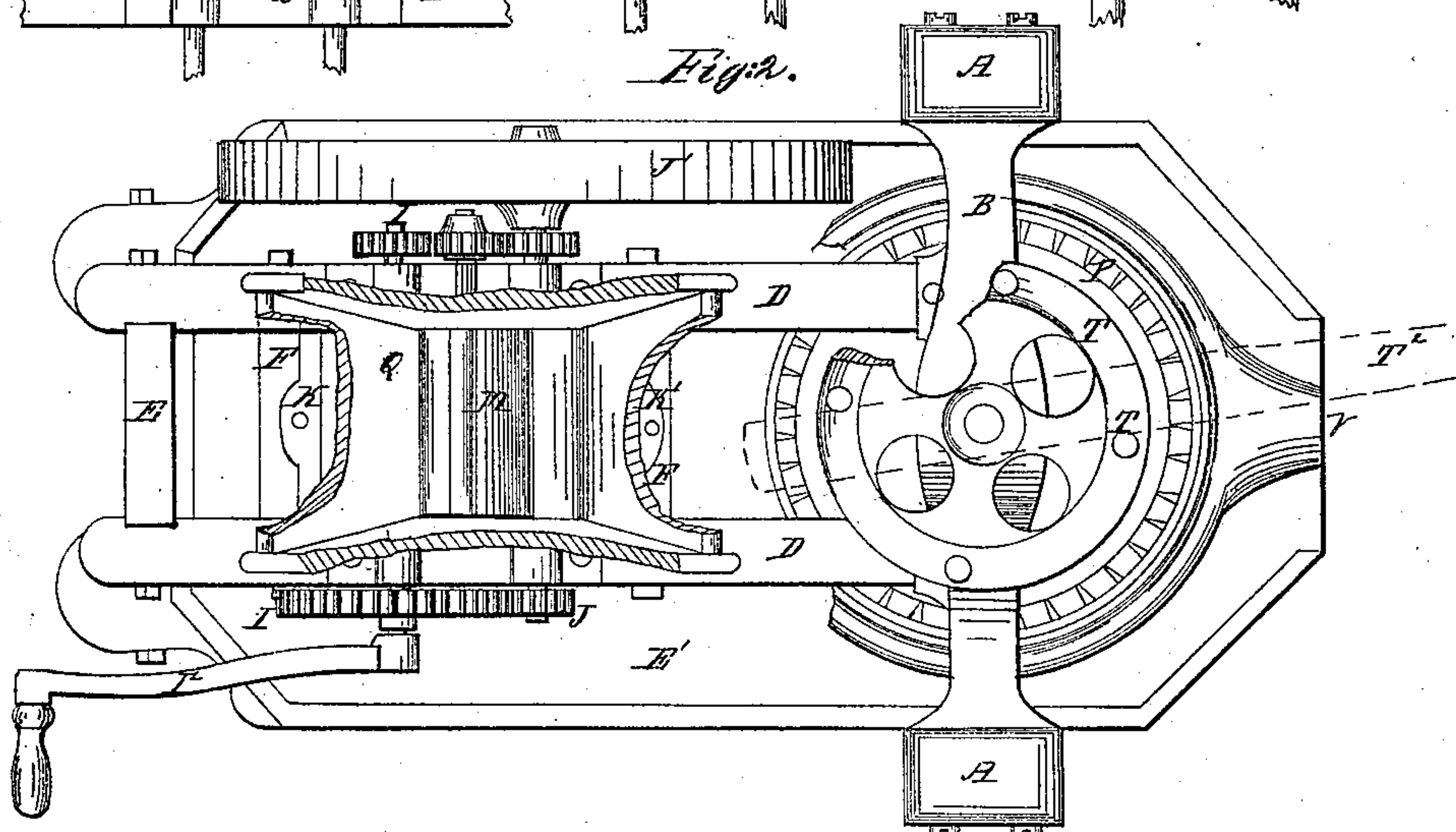


Fig 3.



Witnesses.

*R. D. O. Smith
 Andrew Hately.*

Inventors.

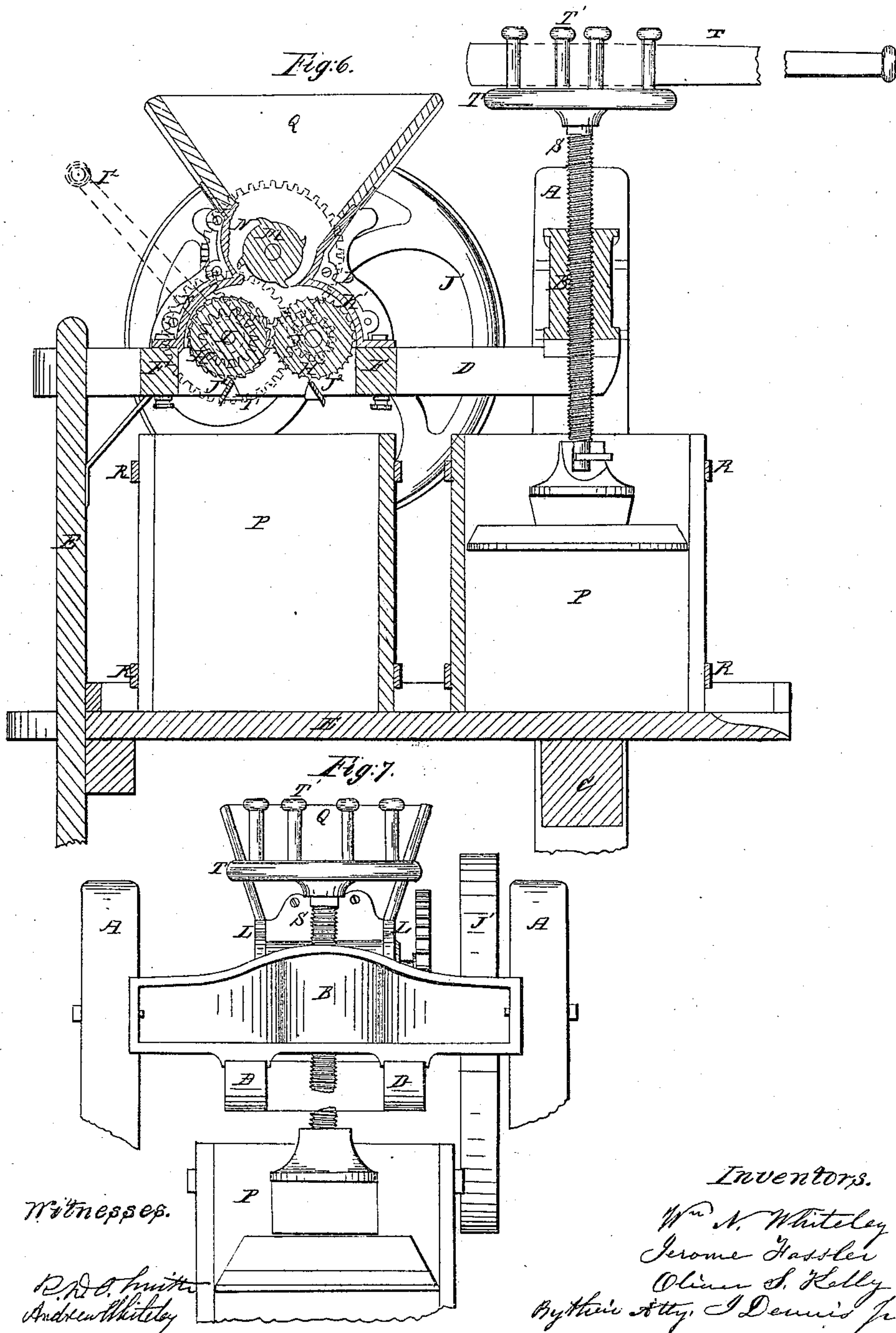
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 Jerome Fassler
 Oliver S. Kelly
 By their atty J. Demas Jr.*

2 Sheets-Sheet 2.

Whitely Fassler & Kelly, Cider Mill.

No 40,987.

Patented Dec. 15, 1863.



UNITED STATES PATENT OFFICE.

WILLIAM N. WHITELEY, JEROME FASSLER, AND OLIVER S. KELLY, OF
SPRINGFIELD, OHIO.

IMPROVEMENT IN MILLS FOR GRINDING FRUIT, GRAIN, & .

Specification forming part of Letters Patent No. **40,987**, dated December 15, 1863.

To all whom it may concern:

Be it known that we, WM. N. WHITELEY, JEROME FASSLER, and OLIVER S. KELLY, doing business under the firm of WHITLEY, FASSLER, & KELLY, in Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Mills for Grinding Fruit, Vegetables, Grain, &c., and Pressing the Juice Therefrom; and we do hereby declare that the same are described and represented in the following specification and drawings.

The object of this invention is to make a cheap portable combined mill and press for grinding and pressing fruit, vegetables, &c.

The nature of our invention consists in the following improvements, to wit: First, in combining with the three grinding-rollers some metal segments to form the grinding-box; second, in arranging the gearing which communicates motion to or between the rollers on the ends of the shafts outside of the journal-boxes and frame; third, in a spiral crushing and feeding roller arranged over the grinding-rollers to crush and feed the fruit uniformly to the grinding-rollers; fourth, in arranging two spiral-ribbed grinding-rollers to run together at different velocities, with the ribs on one roller crossing the ribs on the other at an angle where the grinding is effected, and combining with them a crushing and feeding roller; fifth, in combining the hopper-segments and sides of the crushing-box with the crushing-roller, so that they can be readily removed from the grinding-rollers and frame to facilitate the washing and cleaning of the mill.

To enable others skilled in the art to make and use our improvements, we will proceed to describe their construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a perspective view of our combined mill and press. Fig. 2 is a plan or top view of the same. Figs. 3 and 4 represent different forms of grinding-rollers. Fig. 5 shows straight and spiral-ribbed crushing-rollers. Fig. 6 is a vertical section showing our combined mill and press cut lengthwise through the center. Fig. 7 is an elevation of the upper portion of the front of the press.

In the accompanying drawings, A A are

posts connected by the press-beam B and girder C, the whole constituting the press-frame. D D are rails fastened to the press-beam B and to the single post E. This post E supports one end of the bottom or pressing board, E', the opposite end of which board lies across the girder C, and is fastened to it. The bars F F connect the rails D, as shown in the drawings, and form the frame for the grinding-mill, which we term the "grinding-frame." The boxes G G are fastened to the rails D D for the journals of the grinding-rollers H H' to turn in. These grinding-rollers are ribbed on the surface. The ribs of the roller H' are straight from end to end, parallel with its axis. The ribs on the roller H are spiral half the length of the roller in one direction, and the other half in the opposite direction, meeting in the middle at an angle, as shown in the drawings. The shafts of these rollers extend beyond the journals. On one end of the shaft I of the roller H the gear I' and crank I² are fastened to turn the mill by hand. The gear I' drives the pinion J, and turns the roller H' about four times as fast as the roller H. On the opposite end of the shaft from the pinion J the fly-wheel J' is fastened, to which a belt may be applied to turn the mill by power. The scrapers J² are fastened to under sides of the rails D D, to scrape the pomace ground from the grinding-rollers, and let it fall into the pressing-hoop. The metal segments K K' are made in the form shown, and provided with flanges for the bolts, which fasten them to the bars F F, and also to the sides L L, which form the sides of the grinding box. These sides are perforated and provided with metal boxes for the journals of the crushing and feeding roller M, which is turned by the pinion on the shaft I, working into a gear on the shaft of the roller M, and turning it about one-third as fast as the roller H. This crushing-roller M is provided with ribs on its surface parallel with its axis, and crushes the fruit against the ribbed portion N of the segment K, (shown in Fig. 6,) and feeds the crushed fruit to the grinding-rollers H H'. The segment K is curved to fit the roller H, and the segment K' is curved to fit the roller H' and crushing-roller M, and the curves which fit the two rollers terminate in a sharp edge,

which takes the crushed fruit from the roller M and feeds it to the roller H', which carries it to the roller H and grinds it to pomace, and drops it into the hoop P, ready to be pressed. The hopper Q is made in the form shown in the drawings and fastened to the segments K K'. The pressing hoops P P are made with staves, set a little distance apart to allow the juice to escape between them, and fastened to the hoops R R, and when one hoop P is filled with the pomace ground by the mill it is moved under the pressing-beam and the other hoop is put under the mill, to be filled while the first is pressed. The screw S passes down through the pressing-beam B, and is provided with a metal collar. At the lower end, under this collar and on the top of the pomace in the hoop, the follower is placed to press the pomace. The hand-wheel T is fastened to the top of the screw S to turn it. This wheel is provided with a series of pins, T', which may be seized by hand, or the lever T² may be applied between them to work the screw in pressing the pomace. The bottom board has a raised edge with an opening at V for the juice pressed from the pomace to run out.

Fig. 5 represents a spiral-ribbed crushing-roller, which may be substituted for the roller M, and Fig. 4 represents a pair of spiral-ribbed grinding-rollers, which may be substituted for the rollers H and H'. These spiral-ribbed rollers are so constructed that the ribs on one roller cross the ribs on the other roller at an angle where the grinding is effected.

We believe we have described and represented our improvements in mills for grinding and pressing fruit, vegetables, &c., so as to enable any person skilled in the art to make and use it without further invention or experiment. We will now state what we desire to secure by Letters Patent.

We claim—

1. The three grinding-rollers, in combination with the metal segments K K', constructed substantially as described, for the purposes set forth.

2. In combination with the frame and grinding-rollers, arranged substantially as described, arranging the gearing which communicates motion to or between the rollers on the ends of the shafts outside of the journal-boxes and frame, substantially as described.

3. In combination with the ribbed segment N, the spiral crushing and feeding roller arranged over the grinding-rollers H and H', substantially as described and shown, to crush and feed the apples uniformly to the grinding-rollers.

4. Two spiral-ribbed grinding-rollers, running together at different velocities, with the ribs of one roller crossing the ribs on the other at an angle where the grinding is effected, in combination with the crushing and feeding roller arranged above them.

5. The combination of the hopper Q, ribbed segment N, segments K K', and sides L L, with the roller M, forming the crushing-box, constructed so as to be readily removed, as described, for washing and cleaning the mill.

In testimony whereof we have signed our names.

WM. N. WHITELEY.
JEROME FASSLER.
OLIVER S. KELLY.

Witnesses to the signature of Wm. N. Whiteley:

ANDREW WHITELEY,
J. DENNIS, Jr.

Witnesses to the signatures of Jerome Fassler and Oliver S. Kelly:

GEO. W. DALIE,
H. S. SHOWERS.