(No Model.)

A. McGINTY & A. WAHLE.

ROLLER GRINDING MILL.

No. 250,564. Patented Dec. 6, 1881.

Fig. 1.

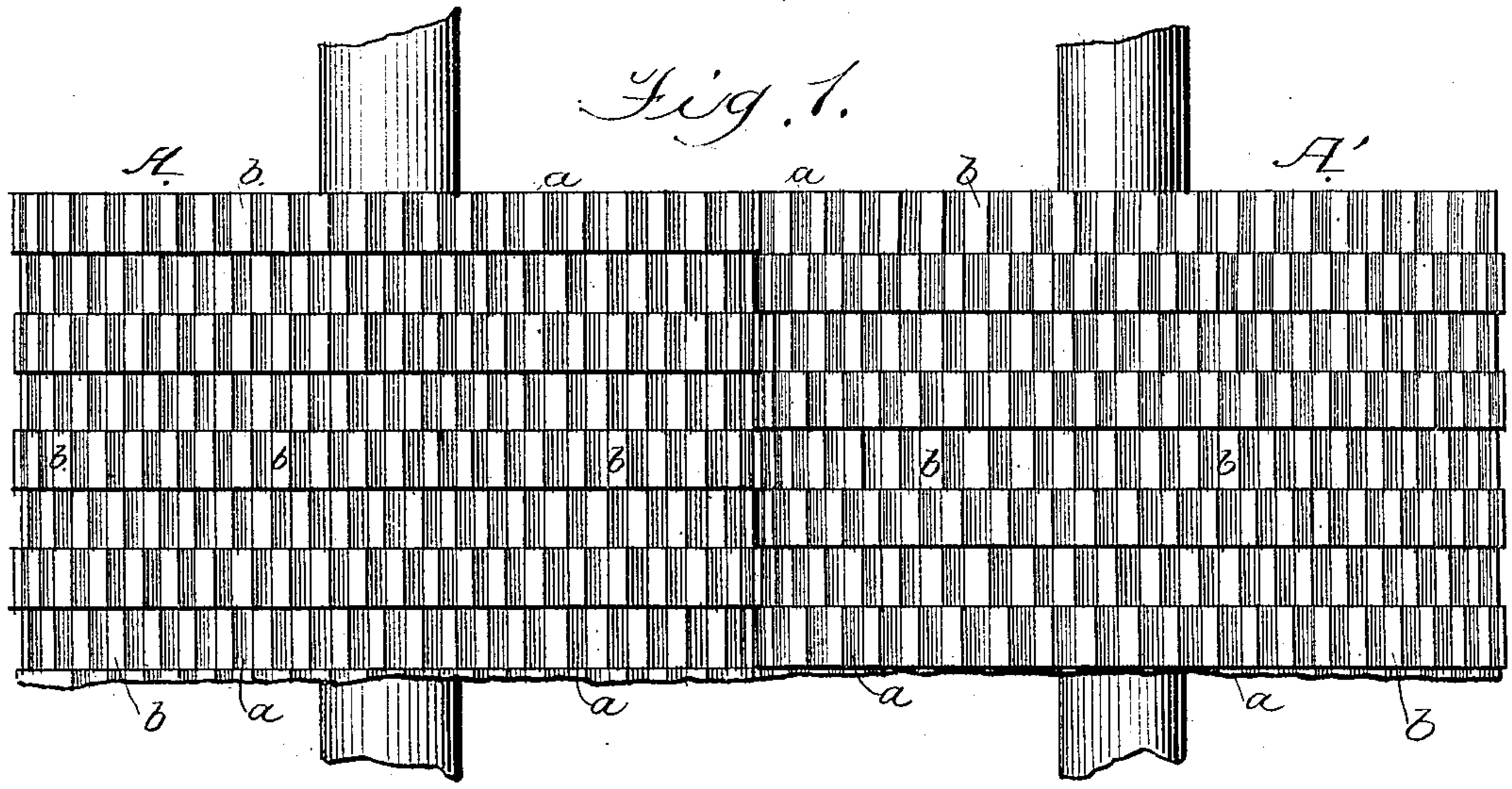
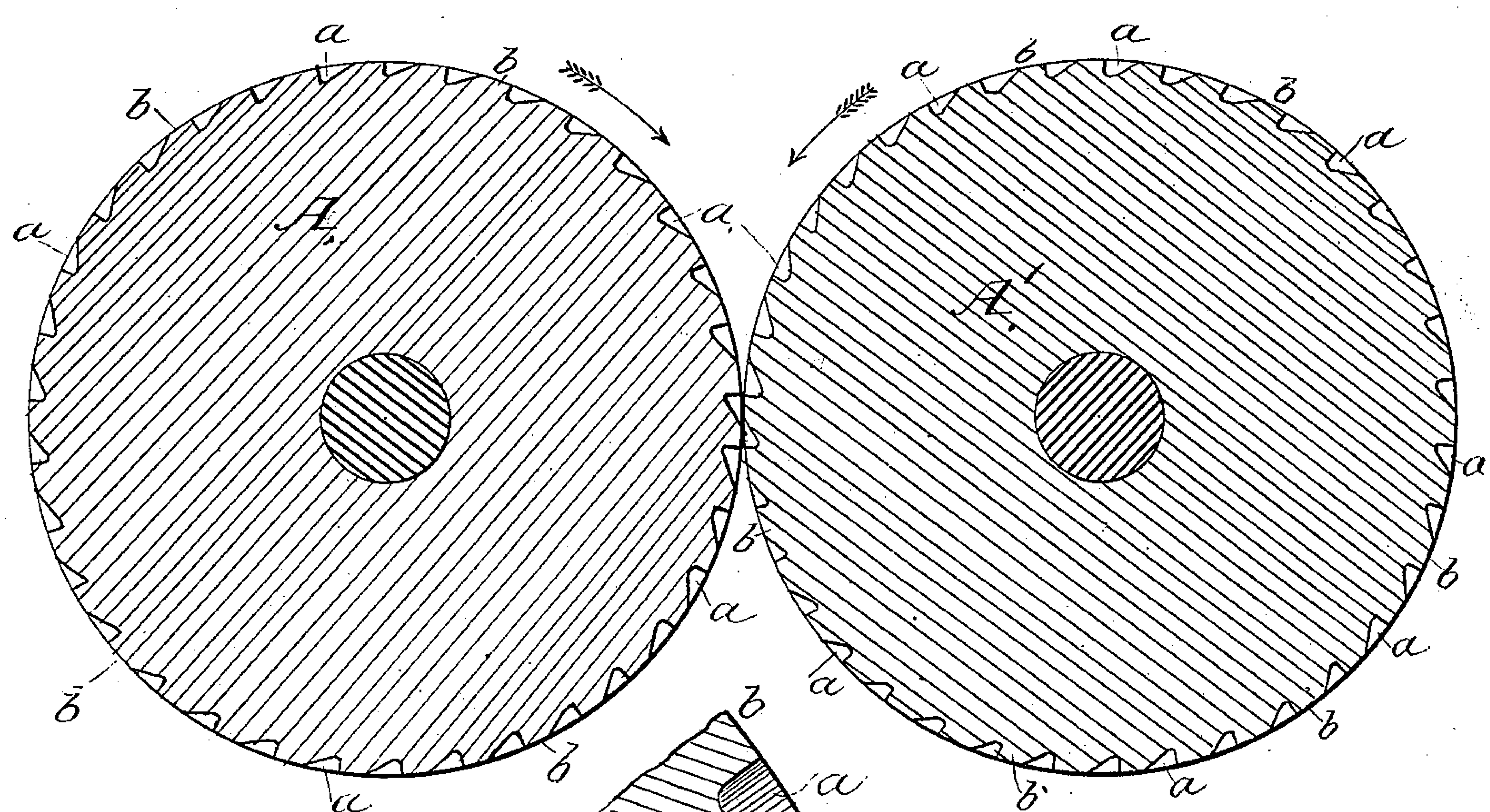


Fig. 2.



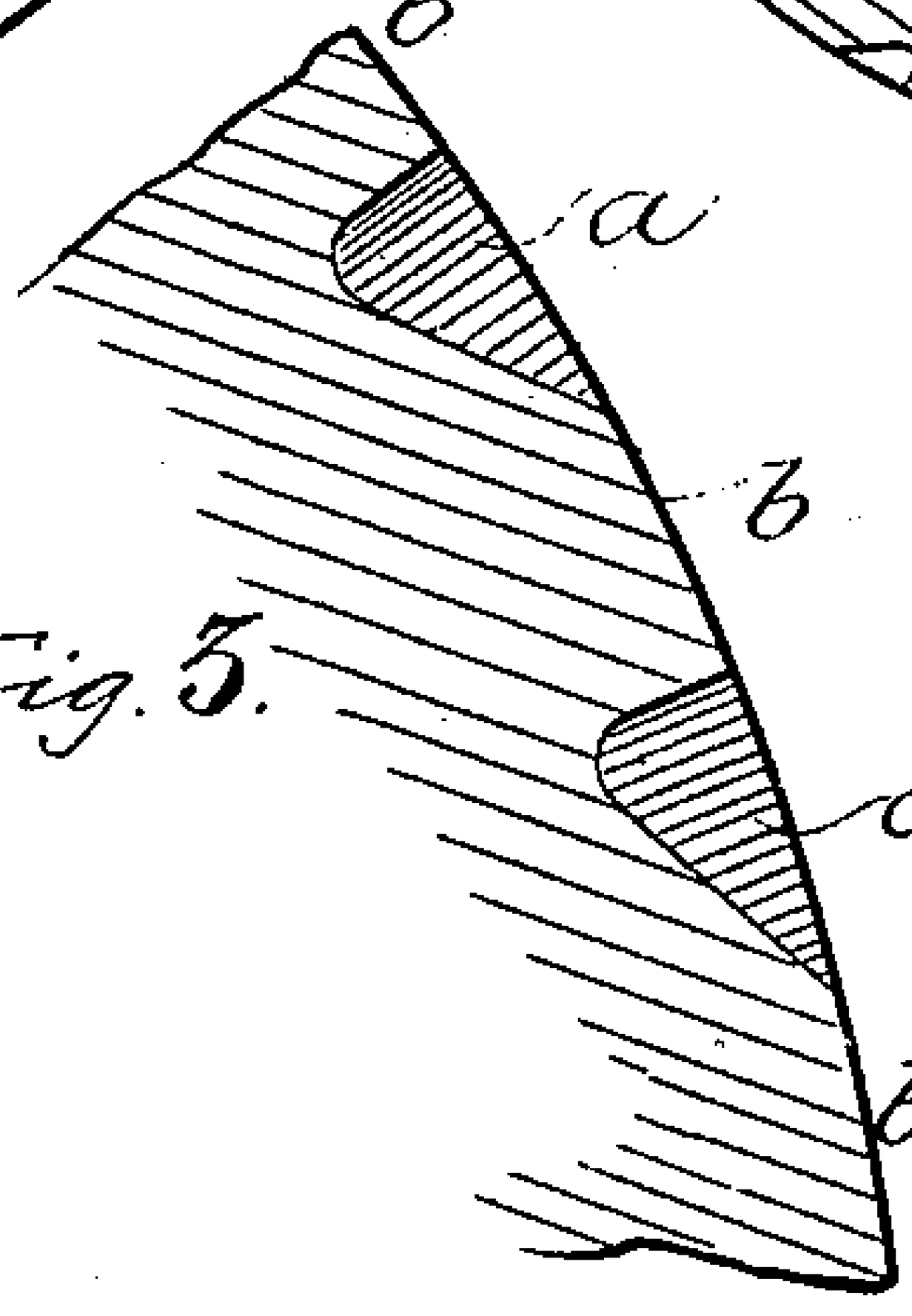


Fig. 3.

Witnesses;

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their attys.

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UNITED STATES PATENT OFFICE.

ALEXANDER McGINTY, OF NEENAH, AND ADOLPH WAHLE, OF MENASHA, WISCONSIN.

ROLLER GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 250,564, dated December 6, 1881.

Application filed July 20, 1881. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER McGINTY, of Neenah, Winnebago county, Wisconsin, and ADOLPH WAHLE, of Menasha, Winnebago county, Wisconsin, have invented certain Improvements in Roller Grinding-Mills for Cereals; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of the rollers. Fig. 2 is section through the rollers. Fig. 3 is an enlarged view of a section of the face of the rollers, showing the configuration of the depressions.

The object of our invention is to provide a roller-mill which will crush or granulate the grain so that the bran shall be left clean and large, the middlings evenly granulated, and more and better flour produced than is ordinarily produced by roller crushing-mills.

Our invention consists in a peculiar dress or surface we give the crushing-rollers, as will hereinafter be fully described and specifically claimed.

In the said drawings, A A′ represent two rollers, the faces of which are laid out in a series of alternating diagonal plane surfaces, *b*, concentric to the periphery of the rollers, and depressions *a*. The alternation of position on the roller of the depressions *a* and surfaces *b* is both longitudinal as well as circumferential. The surfaces *b* are in a plane with the circumference of the roller, while the depressions are cut as follows, being at the surface rectangular and elongated: The short sides of the indentations are started from the surface in a line about radial to the axis of the roller. The long side of the indentation is made on such a chord of the circumference that it would, if projected, intersect the short side about at a right angle and yet leave the indentation so shallow that grains of the cereal could not lie so far below the surface as to be unaffected by the abrasion caused by the rollers. As the lines of the two sides of the depression approach each other they are made in a gradual curve, leaving the bottom of the depression rounded or slightly curved, as seen in Fig. 3.

In gearing-rollers A A′ they are arranged so that as they approach the grinding-point the short side of the depressions of one roller move forward and the long sides of the opposite roller move forward, and the depressions in one wheel come opposite to the plane surfaces on the other wheel. One of the rollers is made to revolve with about three times the rapidity of the other, the long sides of the indentations of the slower roller at the point of contact being on the lower side, and the long sides of the indentations of the faster roller at the point of contact will be on the upper side.

The operation is as follows: The wheat enters between the rollers from the bin above, and as the rollers revolve the grain is taken up by the indentations and carried forward toward the point of contact of the rollers. The indentations being shallow, the kernel of the wheat protrudes beyond the surface of the roller. As the grain approaches the point of contact it is first bruised by coming in contact with the plane-surface sections, and as the point of contact is reached the upper and inclined portion of the indentations of the faster-revolving roller catches the kernels of wheat in the inclined side of the indentations of the slower-revolving rollers, crushes the kernel, opens the berry, and granulates the same.

It will be found that by our improved arrangement of diagonally-contiguous surface-sections alternating with depressions the granulated grain comes from the rollers with the hull little broken, the berry evenly crushed and in a perfect granulated condition, and the middlings exceedingly evenly granulated.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination of the crushing-rollers herein described, having their surfaces provided with alternating plane rectangular surface-sections *b* diagonally contiguous to each other, and alternating with the depressions *a*, said depressions having one side cut about on a radial line and the other side cut on a chord of the circumference and the two sides jointed in a short curve, substantially as set forth.

ALEXANDER McGINTY.
ADOLPH WAHLE.

Witnesses:
SILAS BULLARD,
JOHN PLANNER.