

(No Model.)

J. C. WOODCOCK.
GRINDING MILL.

No. 546,869.

Patented Sept. 24, 1895.

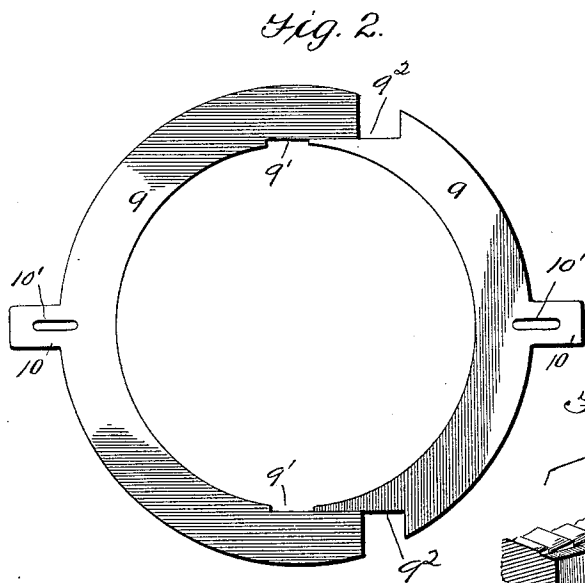
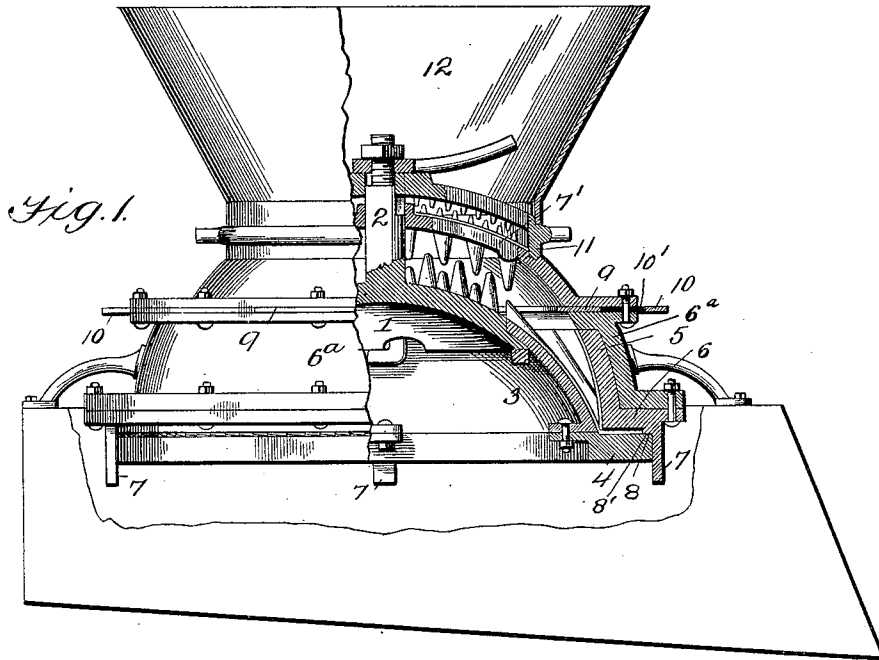


Fig. 3.

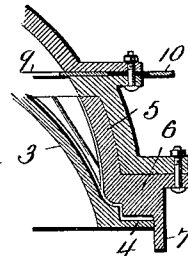
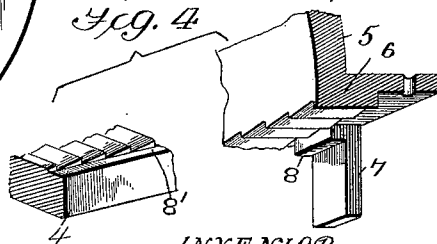


Fig. 4.



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JOHN C. WOODCOCK, OF UPPER SANDUSKY, OHIO.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 546,869, dated September 24, 1895.

Application filed May 13, 1895. Serial No. 549,041. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WOODCOCK, a citizen of the United States, residing at Upper Sandusky, in the county of Wyandot and State of Ohio, have invented certain new and useful Improvements in Grinding-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 object of my invention is to make improvements in the details of construction of mills for grinding corn, whether on the cob or not, and other grains.

The details of my improvements are described in the following description and pointed out in the claims at the end thereof.

In the annexed drawings, Figure 1 is a central vertical sectional view of one half and an elevation of the remaining half of a mill embodying my improvements. Fig. 2 is a detail view of the feed-regulator. Fig. 3 illustrates a sectional view of a modification. Fig. 4 is a detail view of the lower rabbeted edge of the inner grinding-ring, and also showing one of the guides or projections at the lower edge of the outer grinding-ring.

1 designates the cone, having coarse crushing knobs or spurs on its upper surface and a stem 2 at its apex. Removably secured by any suitable connection to the lower edge of the cone, and forming a downward continuation thereof, is a coarse grinding or crushing ring 3, and to the lower edge of this ring 3 is the horizontally-extending fine-grinding ring 4.

5 designates a coarse-grinding ring which stands in opposition to the ring 3, and formed upon or secured to the lower edge of this ring is a horizontally-extending ring 6, having its under surface serrated or otherwise roughened to afford a fine-grinding surface in opposition to the corresponding surface of the ring 4. The outer edge of the ring 5 has a number of downward projections or guides, which have shoulders 8 to act in conjunction with a smooth-surfaced rabbet 8' on the outer edge of the ring 4, to prevent contact and destruction of the grinding-surfaces of the rings, as well as to guide and maintain the rings in proper position with respect to each other.

6^a designates the outer cylinder or casing which surrounds the coarse-grinding ring or cylinder-section 5. This outer cylinder is made in two parts, which are to be bolted together, as shown. The upper section of the cylinder contains the breaking-arms 7', on the under side of which are knobs or spurs which, in connection with knobs or spurs on the cone, grind the cobs, thus preparing them for the finer-grinding surfaces. Between the adjacent edges of the two parts of this outer cylinder or casing I place a cut-off or feed-regulator, which I make of two substantially semicircular pieces 9 9 of sheet steel or iron, and the ends of these semicircular pieces are cut away, as at 9' and 9², or formed so as to slide one within the other to form an opening, which may be increased or diminished to permit a rapid or slow feeding of the grain, &c., to the grinding-rings. The outer edges of the parts of the feed-regulator are provided with extensions 10, having elongated slots 10', through which the bolts for fastening the parts of the cylinder may be passed, and thus the same bolts used to fix the feed-regulator in any desired position, so as to regulate the passage of the coarsely-ground material or grain to the fine-grinding surfaces. The cuts 9' are made shallow and the tongue of the cut 9² narrow, so as to obtain a uniform feed-space around the grinding-rings when the regulator is adjusted.

The outer cylinder or casing is bolted to the outer grinding-ring 5 and supported upon legs or upon a suitable frame, a trough being secured below to catch the meal as it issues from the mill.

On the stem of the cone above the crusher-arms of the upper section of the cylinder is a ring 11, also having arms which when the ring is revolved cut, crush, or break the cobs. The stem of the cone passes freely through the center of the crusher-arms 7', and the hub of the ring 11 is mounted upon the stem of the cone, so as to be movable vertically but not horizontally upon said stem. By means of a nut on the upper end of the stem above the ring 10 the inner burr may be secured in different positions vertically with respect to the outer burr, and so regulate the proximity of the grinding and crushing surfaces and con-

sequently the fineness of the meal to be produced. An ordinary hopper 12 is removably secured upon the ring 11.

When the mill is to be operated by horse-
5 power, a lever is secured horizontally to the ring 11, which is furnished with suitable lugs for the purpose. The revolution of the ring 11 imparts rotary motion to the inner burr, which includes the cone and the rings 3 and 4,
10 while the outer burr remains stationary.

While the form shown in Fig. 1 is the preferred one, in Fig. 3 I have shown the inner and outer coarse-grinding rings 3 and 5, having their lower edges rounded, and in this
15 form the guides or projections may be provided in substantially the same way as in Fig. 1.

What I claim, and desire to secure by Letters Patent, is—

20 1. In a grinding mill, the cone, the coarse grinding ring, and a fine grinding ring extending horizontally from the lower edge of the coarse grinding ring, a rabbet around its outer edge combined with the outer coarse grind-
25 ing ring 5 having a horizontally extending fine grinding surface and downward projections 7 with shoulders 8 which in connection with the rabbeted edge of the ring 3 prevents contact of the grinding surfaces and retains
30 the grinding ring in horizontal position, substantially as described.

2. In a grinding mill, the grinding ring 3 having an exterior grinding surface, its lower

edge being rounded outwardly, and a fine grinding ring 5 having an interior grinding 35 surface in opposition to the grinding surfaces of the first named ring, the lower edges of the grinding surfaces of the ring 5 being rounded to correspond with the rounded lower edge of the ring 3, substantially as shown. 40

3. In a grinding mill, the cylinder or casing made in two parts, and the feed regulator interposed between said parts composed of two pieces 9 9 cut away at 9' 9² so as to slide one within the other in the same plane, the said 45 pieces also having the elongated slots 10' 10' located so as to be engaged by the bolts that secure the parts of the cylinder or casing together, substantially as described.

4. In a grinding mill, the cylinder or casing 50 made in two parts, and the feed regulator composed of two pieces 9 9 cut away at 9' 9² so as to be movable one within the other in the same plane, the cut 9' being shallow and the tongue of cut 9² being narrow, the said 55 pieces 9 9 also having the elongated slots 10' 10' located so as to be engaged by the bolts that secure the parts of the cylinder together, substantially as shown and described.

In testimony whereof I affix my signature 60 in presence of two witnesses.

JOHN C. WOODCOCK.

Witnesses:

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THOS. M. ARMSTRONG.