

(No Model.)

W. H. BROWNE.

GRINDING MILL.

No. 326,264.

Patented Sept. 15, 1885.

Fig. 1.

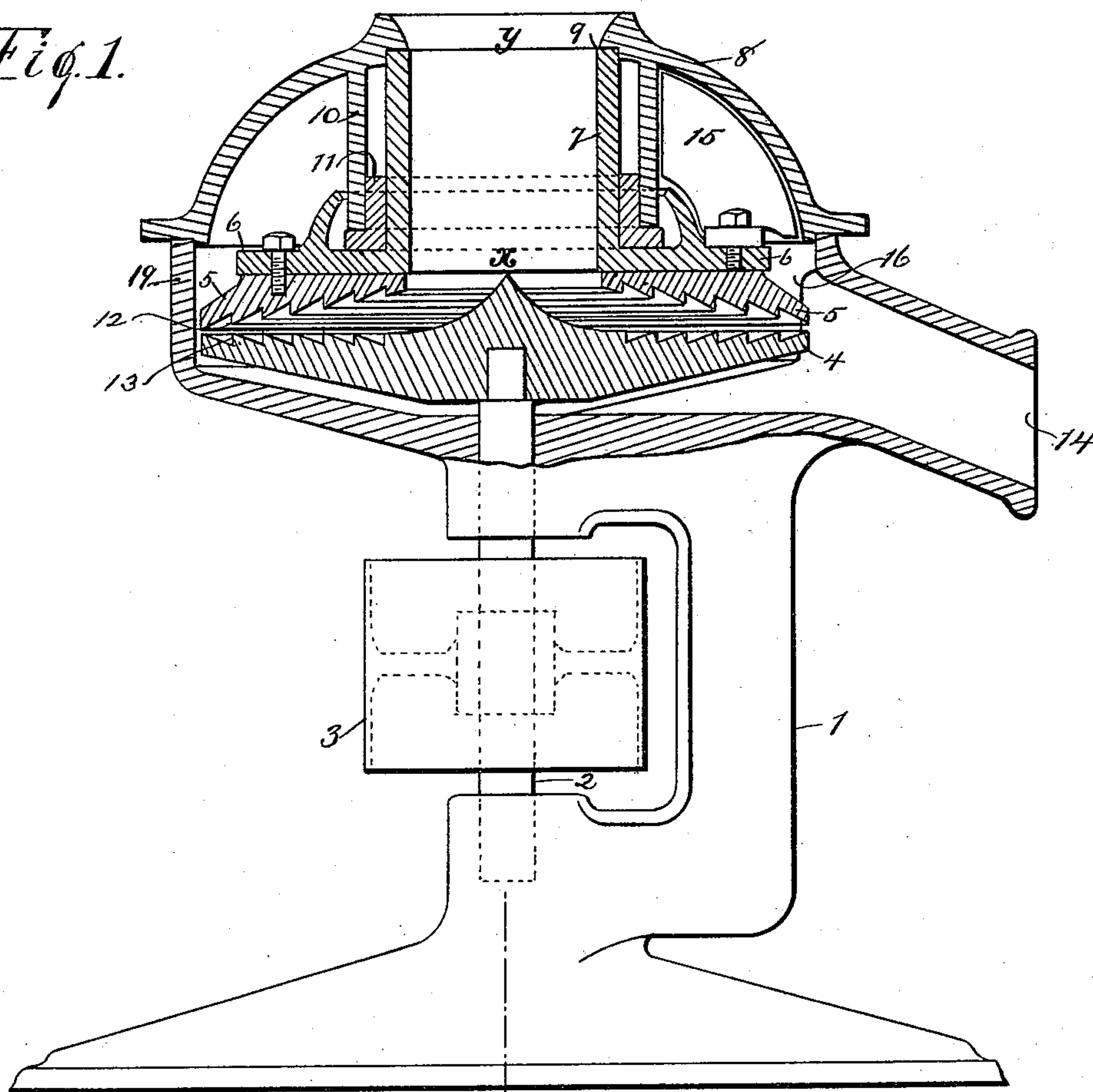
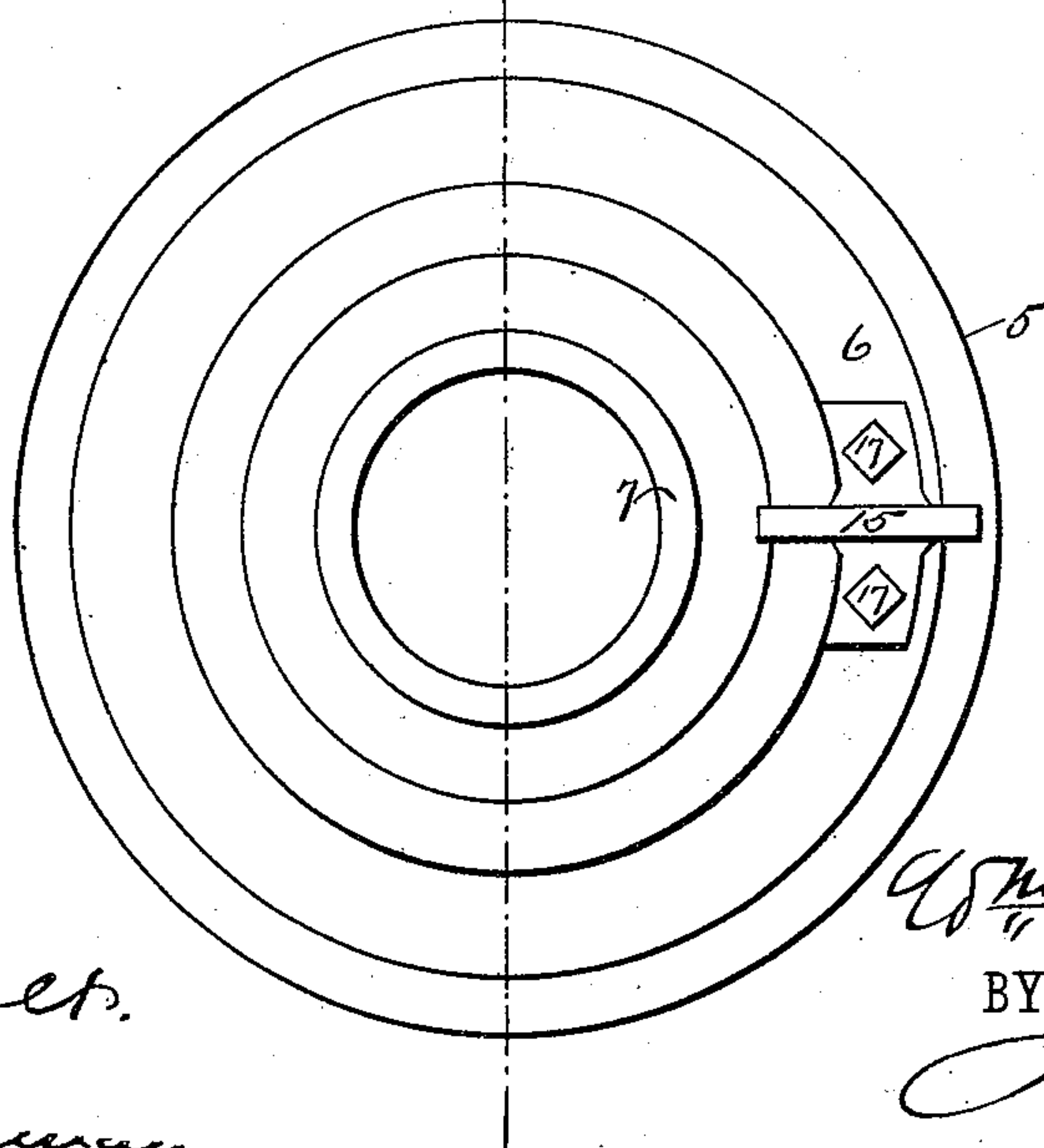


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM H. BROWNE, OF BROOKLYN, NEW YORK.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 326,264, dated September 15, 1885.

Application filed June 11, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BROWNE, of Brooklyn, Kings county, and State of New York, have invented certain new and useful
5 Improvements in Grinding-Mills, of which the following is a specification.

My invention relates to grinding-mills, particularly to that class commercially known as the "Bogardus Universal Eccentric Mill."

10 The object of my invention is to cause the mill to properly and continuously grind substances which have been found impracticable to grind heretofore.

In the drawings, Figure 1 is an elevation, in
15 partial section, of a mill embodying my invention; and Fig. 2 is a detached plan view of the upper mill-plate and ring-plate.

The arrangement and operation of the mill, as shown in the drawings, are as follows: In the
20 frame 1 is arranged a vertical shaft, 2, carrying a pulley, 3, whereby the machine is driven. The upper part of the frame is formed into a case, 19, with a lateral chute, 14. Fixedly secured to the upper extension of the shaft is
25 the lower mill plate or burr, 4. The upper mill plate or burr, 5, is secured to the ring-plate 6, which has a central opening, *x*, and from the latter extends upward a sleeve or flange, its end 7 fitting closely an opening, *y*,
30 in a dome-like casing, 8 and 9. From the casing projects downward a hollow cylindrical flange, 10, and between this flange and the sleeve is a loosely-fitted collar, 11. The mill-plates have suitable dress or ribs, 12 13.

35 It will be observed that the mill-plates are not in contact, nor are they connected in any way. Each plate is caused to rotate on a center slightly eccentric to the other. Now, upon imparting motion to the driving or lower
40 plate, and feeding through the hollow sleeve the material desired to be ground, the material first impinges upon the lower plate, and is thrown by centrifugal force outward until the accumulation is sufficient to cause the up-
45 per plate to also rotate in consequence of the friction thereby developed, when the two plates revolve with a somewhat differential speed, and with a constant shearing action of

the ribs 12 and 13 each upon the other. The material is gradually forced from between the
50 plates and into the spout 14, and thence out; but in attempting to grind such substances as, say, moistened ashes, or material analogous thereto, there is a strong tendency of the pulverized material to fly upward and to gather
55 upon the crown of the casing, where it collects rapidly and soon clogs the upper mill-plate and ring-plate, fills the space between the plates and casing, heats the bearing, and finally stops the machine entirely, necessitat-
60 ing the removal of the casing and upper mill-plate. These objections I have completely obviated by using a wing or scraper, 15, formed to approximately fill the space within the casing, and which rotates with the mill-
65 plate. The consequence of this is, that the material is dislodged from the crown of the casing as fast as it accumulates, and being constantly acted upon by the wing, the swiftly-rotating air-currents developed thereby, and by
70 the centrifugal force imparted to the particles, the material finally finds egress by gravitating to the space 16, and thence to the spout. The wing is attached to the ring-plate by screws or bolts 17, as shown, as in this wise
75 the device is applicable to and much increases the value of mills of this class already in use.

I claim—

In a grinding-mill of the class herein described, the combination, with the lower power-
80 driven mill-plate, the upper mill-plate driven thereby, and a ring-plate secured to the upper mill-plate, of a wing, as 15, attached to the ring-plate and rotating therewith, the said wing being of such form as to dislodge any accumu-
85 lation of material from the dome of the casing, the dislodged material finding egress by gravity, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two sub-
90 scribing witnesses.

WM. H. BROWNE.

Witnesses:

JAMES A. BRANEGAN,
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