No. 812,250. PATENTED FEB. 13, 1906.

J. S. WOODCOCK.

GRINDING MILL.

APPLICATION FILED JULY 13, 1905.

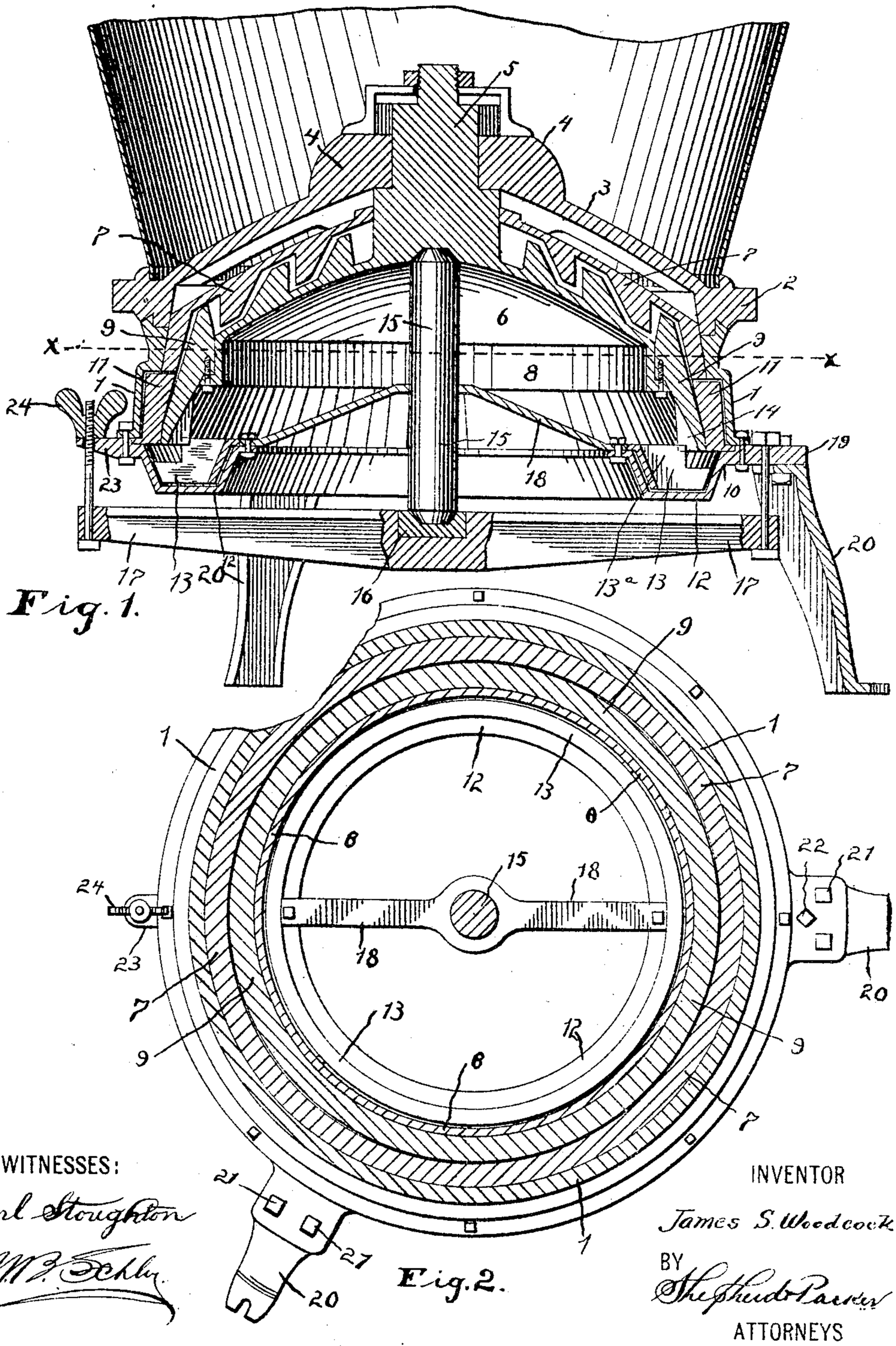

Fig. 1.

Fig. 2.

WITNESSES:

Carl Stoughton

W. B. Tebby

INVENTOR

James S. Woodcock

BY

Shepherd & Parker

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES S. WOODCOCK, OF NEW LEXINGTON, OHIO.

GRINDING-MILL.

No. 812,250. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed July 13, 1905. Serial No. 269,487.

To all whom it may concern:

Be it known that I, JAMES S. WOODCOCK, a citizen of the United States, residing at New Lexington, in the county of Perry and State of Ohio, have invented certain new and useful Improvements in Grinding-Mills, of which the following is a specification.

My invention relates to new and useful improvements in grinding-mills.

The object of the invention is to provide certain improvements in the construction of the grinding-mill patented by me May 1, 1888, and numbered 382,202, the more essential improvements relating to the simplification of certain parts of the mill whereby the same may be more readily and expeditiously taken apart and assembled. Among these improvements are the brace for supporting the spindle and the leg-attaching means.

Finally, the object of the invention is to provide a device of the character described that will be strong, durable, and efficient and simple and comparatively inexpensive to produce.

With the above and other objects in view the invention consists of the novel details of construction and operation, a preferable embodiment of which is described in the specification and illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical sectional view of my improved mill, a portion of the hopper being broken away; and Fig. 2 is a horizontal cross-sectional view taken on the line *x x* of Fig. 1.

In general appearance my improved mill is quite similar to the one shown in the patent hereinbefore mentioned, the more marked differences residing in the specific construction of certain parts.

In the drawings the numeral 1 designates the outer casing having a grooved upper end, on which rests the usual sweep or breaker ring 2, which supports the inwardly and upwardly curved arms 3. The arms 3, of which there may be any number, merge into and support at the center of the mill a hub or clutch member 4, through which extends a bearing-boss 5, connected to the hub 4, so as to be turned thereby when motion is imparted to the sweep-ring. The boss 5 is formed at the center of the grinding-cone 6, which is disposed beneath a corresponding grinding-cone 7, surrounding the boss. The cone 6 is formed with an annular flanged ring 8, on the flanged portion of which rests an inner annular bur member 9 in such a position as to be readily lifted off the ring-support. The casing 1 is supported on a trough or base ring 10, which also supports an outer annular bur member 11 in juxtaposition to the inner bur member 9, as clearly shown in Fig. 1. The trough-ring 10 is formed with an annular trough 12, in which is arranged a conveyer 13 of the usual construction. On the inner lower portion of the inner bur member 9 oppositely-disposed projections or webs 14 are provided and engaged with the wings 13^a of the conveyer 13, so as to move the same in the trough. The cone 6 is supported on the upper end of the spindle 15, which at its lower end is supported in a suitable bearing-box 16, arranged in the central portion of the usual bridge-tree 17. The spindle is held in position by an upwardly-bent brace 18, secured at its ends to the trough-ring 10. This brace not only serves to keep the spindle in place when the parts are assembled, but acts as a means for positioning the spindle when the mill is being put together, it being apparent that the entire upper structure may be lifted off or placed on the ring 10 without displacing the spindle.

For supporting the mill lugs 19 are extended laterally from the ring 10 and suitable legs 20 are secured to the under sides of the legs by bolts 21. Through one of the lugs a bolt 22 is passed, supporting at its lower end one end of the bridge-tree 17, while a lug 23, extended from the opposite side of the ring, supports a bolt and wing nut 24, connected to the opposite end of the bridge-tree, by which the same may be adjusted in the usual manner.

It will be observed that by disconnecting the casing 1 from the base or trough ring 10 the outer and upper parts of the mill may be readily lifted off and access to the interior had and this accomplished without disturbing the spindle 15, which is supported in position by the bracket 18. In my former patent it is necessery to invert the mill in order to obtain access to most of the parts.

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

1. In a grinding-mill, the combination with the base-ring, its supports, the bridge-tree and the spindle, of means fixedly supported at each end by the base-ring and engaging with the spindle for holding the same in place.

2. In a grinding-mill, a base-ring having a trough formed therein provided with leg-en-

gaging lugs, and legs secured to the lugs, and a detachable outer casing secured to the base-ring independently of the lugs and the legs.

3. In a grinding-mill, a base-ring formed with a trough provided with laterally-projecting lugs, and a bridge-tree supported from the lugs and having adjustable connection with one of said lugs.

4. In a grinding-mill, the combination with a base-ring formed with a trough, supports for the ring and a spindle supported within the ring, of bracing means for the spindle engaging about the same and extending across the base-ring.

5. In a grinding-mill, the combination with a base-ring formed with a trough, a conveyer mounted in the trough and a spindle supported within the ring, of a grinding member rotatably mounted on the upper end of the spindle and provided with a projecting flange, and an inner annular bur member fitting about the grinding member and resting on the flange thereof and provided with projections adapted to engage the conveyer to impart motion thereto.

6. In a grinding-mill, a base-ring having laterally-extending lugs, an outer casing detachably supported on the upper side of the base-ring and independently of the lugs, and legs detachably secured to the lugs independently of the casing, in combination with a spindle supported within the base-ring, and a grinding-cone supported on the upper end of the spindle.

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

JAMES S. WOODCOCK.

Witnesses:

J. O. NEWLON,

H. F. ACKER.