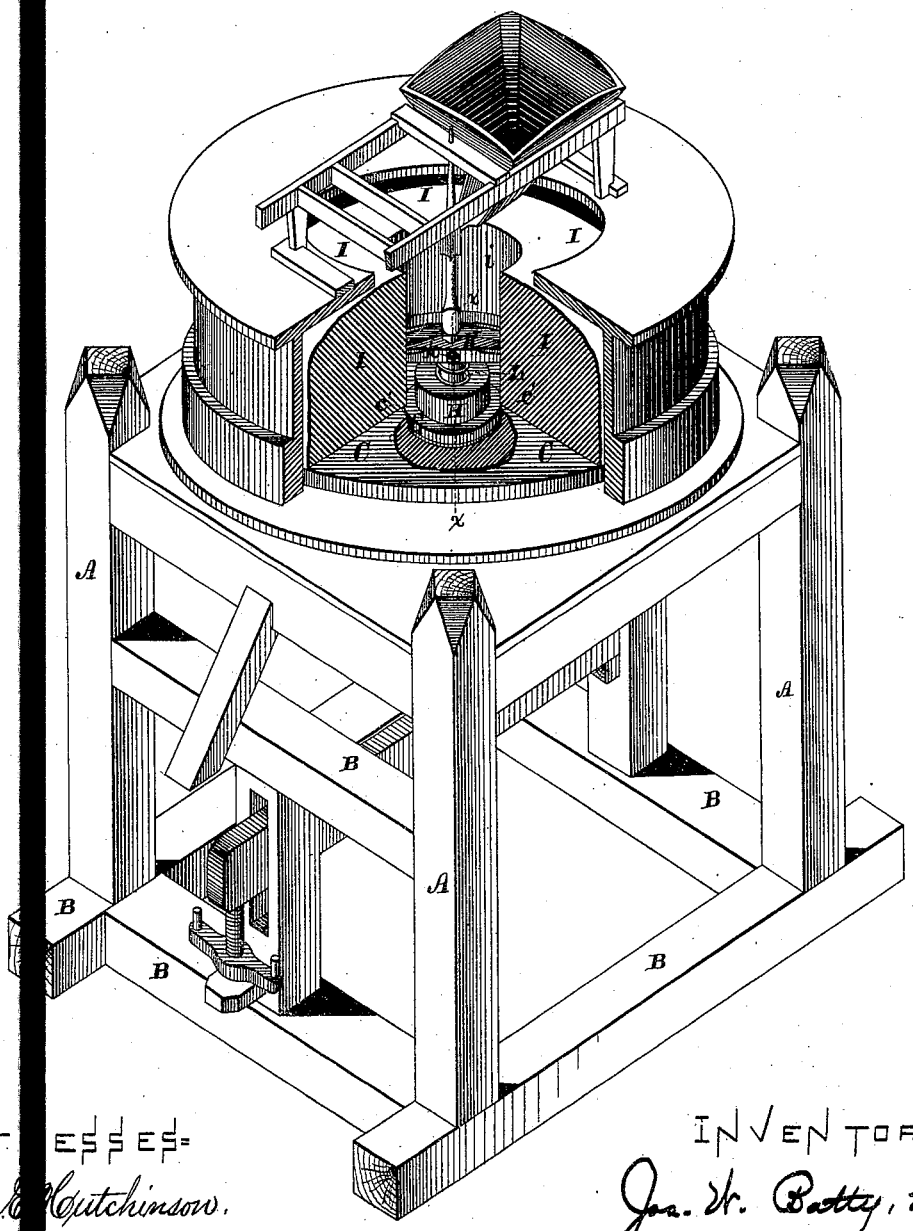
2 Sheets—Sheet 1.

J. W. BATTY.

Lubricating Bearing for Millstones.

No. 202,218. **Patented April 9, 1878.**

Fig. 1.



WITNESSES:

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Henry C. Hazard.

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2 Sheets—Sheet 2.

J. W. BATTY.

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Fig. 2.

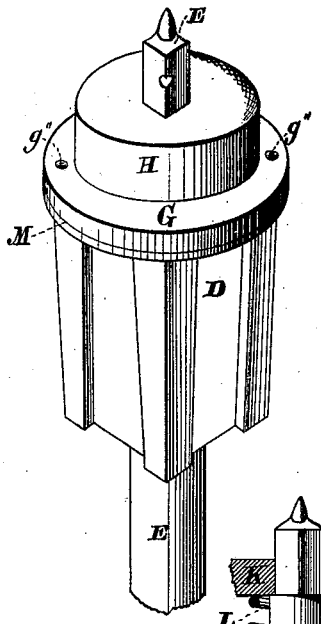


Fig. 3.

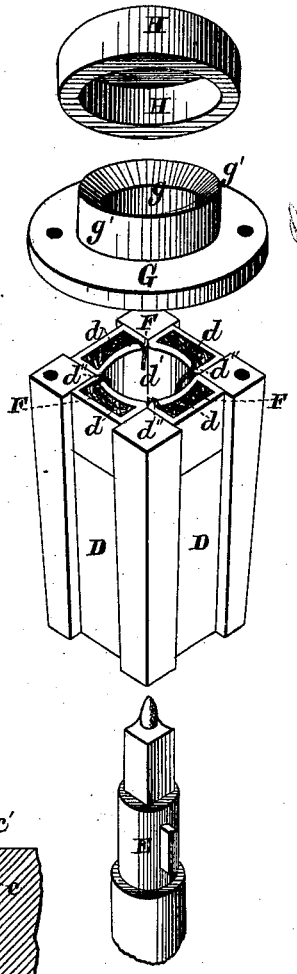
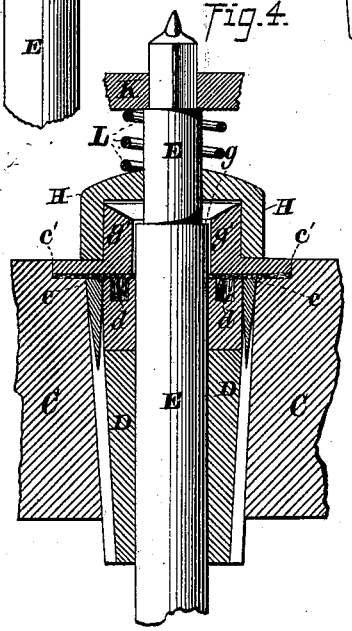


Fig. 4.



WITNESSES:

Jas. D. Hutchinson.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

JOSEPH W. BATTY, OF BALTIMORE, MARYLAND, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO G. H. DAVISON, OF SAME PLACE.

IMPROVEMENT IN LUBRICATING BEARINGS FOR MILLSTONES.

Specification forming part of Letters Patent No. **202,218**, dated April 9, 1878; application filed February 13, 1878.

To all whom it may concern:

Be it known that I, JOSEPH W. BATTY, of Baltimore, in the county of Baltimore, and in the State of Maryland, have invented certain new and useful Improvements in Lubricating Bearings for Millstones; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved device as applied to a mill, a portion of the upper stone being removed to show the construction of parts. Fig. 2 is a like view of the oiling devices and spindle separated from the stones. Fig. 3 is a perspective view of said oiling devices separated from each other and from the spindle and stones; and Fig. 4 is a vertical central section on line *x x* of Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

In the use of grinding-mills which have vertical spindles great difficulty has heretofore been experienced in properly lubricating the spindle within the stationary stone, and in preventing dust from getting into the bearing.

To remedy these difficulties is the main object of my invention, which consists, principally in the peculiar construction of the oil-cup, substantially as and for the purpose hereinafter specified.

It consists, further, in the peculiar construction of the grease-collar and grease-cap, and their combination with each other, the stones, and the spindle, substantially as and for the purpose hereinafter shown.

It consists, further, in the means employed for holding the grease-cap upon the grease-cup, and compensating for the wear of parts, substantially as and for the purpose hereinafter set forth.

It consists, further, in the means employed for feeding oil from the oil-cup to the spindle, substantially as and for the purpose hereinafter shown and described.

It consists, finally, in the device as a whole, its several parts being constructed and combined with each other and with the stones and spindle, in the manner and for the purpose substantially as hereinafter specified.

In the annexed drawings, A and A represent the vertical posts, and B and B the horizontal rails, of the frame of a grinding-mill, which sustains and supports a fixed lower stone, C, all of usual construction. At the center of the stone C is provided a square vertical opening, *c*, and at the upper end of such opening is formed a circular recess, *c'*, which just equals in diameter the longest horizontal dimensions of said opening.

Fitted within the opening *c* is a metal bushing, D, which closely fills the same and has its upper end flush with the bottom of the recess *c'*. At four equidistant points within the upper end of said bushing are formed recesses *d*, which are adjacent to a central opening, *d'*, that is intended for the reception of a spindle, E. At one corner of each recess *d*, upon the side next to the opening *d'*, is provided a notch, *d''*, through which passes one end of a wick, F, the body of said wick being contained within said recess, together with oil for lubricating the spindle E, said oil being fed to said spindle by said wick.

Fitted within the recess *c'* of the stone C is a collar, G, which closely fills the same and has its upper surface flush with the upper surface of said stone. At its center said collar is provided with an opening, *g*, that is somewhat larger than the spindle E, and at such point said collar is extended upward, and at its upper edge inclines downward and inward, as shown.

Above the collar G the spindle E is somewhat reduced in diameter, and upon such reduced portion is closely fitted a cap, H, which is keyed to and revolves with said spindle, and extends downward over the vertically-extended central portion *g'* of said collar G, with its lower end bearing upon the upper horizontal face of the latter. The interior of said cap H is fitted closely upon the periphery of said part *g'*, and forms an additional bearing for the said spindle.

The upper stone or runner I is suspended from the upper end of the spindle E in the usual manner, and is caused to revolve by the

latter by means of a driver, K, which fits over a squared portion of said spindle, and has its ends contained within recesses that are formed within opposite sides of the central opening *i* of said stone.

Between the driver K and cap H is placed a spring, L, which operates to hold the latter down upon the collar G, and prevents dust and dirt from passing between into the grease-cup *g'*, while, to prevent the upward pressure of said spring from raising said driver, a set-screw or pin, *k*, passes through the latter and into or through the spindle E.

Between the lower end of the collar G and the bottom of the recess *c'* is fitted a gasket, M, of suitable elastic material, after which said collar is secured in place by means of bolts or pins *g''*, that pass downward through the latter into the bushing D.

The device is now complete, and operates as follows: The bearing of the spindle E within the bushing D is lubricated by means of oil that is fed by the wicks F, as rapidly only as is necessary, and such bearing is prevented from being fouled by dust or dirt by the packing-gasket M, while the bearing-surfaces of the collar G and cap H are lubricated by means of oil or grease placed within the grease-cup *g'*, the last-named bearings being kept free from dust and dirt by the peculiar construction of parts, as before named.

By this construction of lubricating devices the mill is enabled to run many times longer without attention than has heretofore been possible.

In consequence of the additional bearing for the upper portion of the spindle which is afforded by the collar and cap, the runner has greater steadiness of motion than has heretofore been obtainable, and not only does better work but will run longer without dressing than would otherwise be practicable.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the stone C and with the spindle E, the bushing D, provided with a central opening, *d*, and within its upper end with oil recesses *d'* and notches *d''*, that extend between the latter and said opening, and the collar G fitting around said spindle and over said bushing, substantially as and for the purpose specified.

2. In combination with the oil-recesses *d'* of the bushing D and with the spindle E, the wicks F, extending from said recesses through the notches *d''* to said spindle, substantially as and for the purpose shown.

3. In combination with the stone C and spindle E, the collar G, provided with the grease-cup *g'*, and secured to said stone, and the cap H attached to and revolving with said spindle and fitting over said grease-cup, substantially as and for the purpose set forth.

4. In combination with the stone C and spindle E, the bushing D, provided with the oil-recesses *d'*, the wicks F, the collar G having the grease-cup *g'*, the gasket M, and the cap H, said parts being constructed and arranged to operate in the manner and for the purpose substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of February, 1878.

JOSEPH W. BATTY.

Witnesses:

F. LIEDERE,

G. H. DAVISON.