2 Sheets—Sheet 1.

J. WEIMER.

Double Vertical Mill.

No. 201,854. Patented March 26, 1878.

Fig. 1.

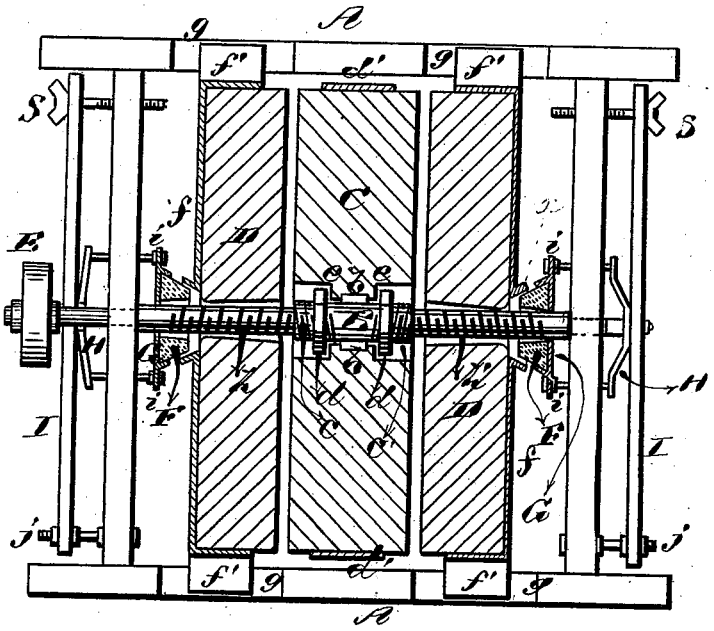
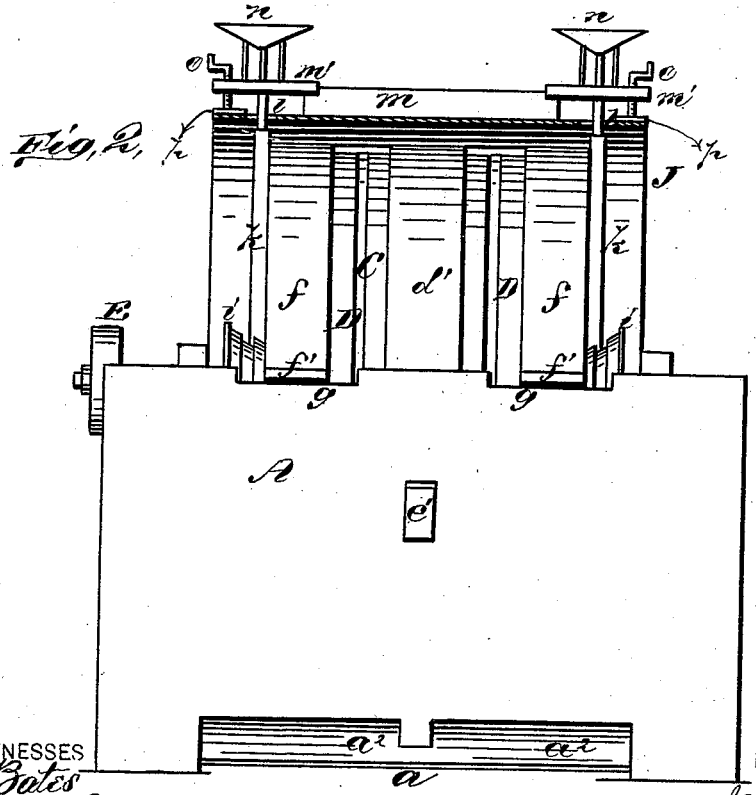


Fig. 2.



WITNESSES

E. H. Bates

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INVENTOR

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by E. W. Anderson.

ATTORNEY

2 Sheets—Sheet 2

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Fig. 3.

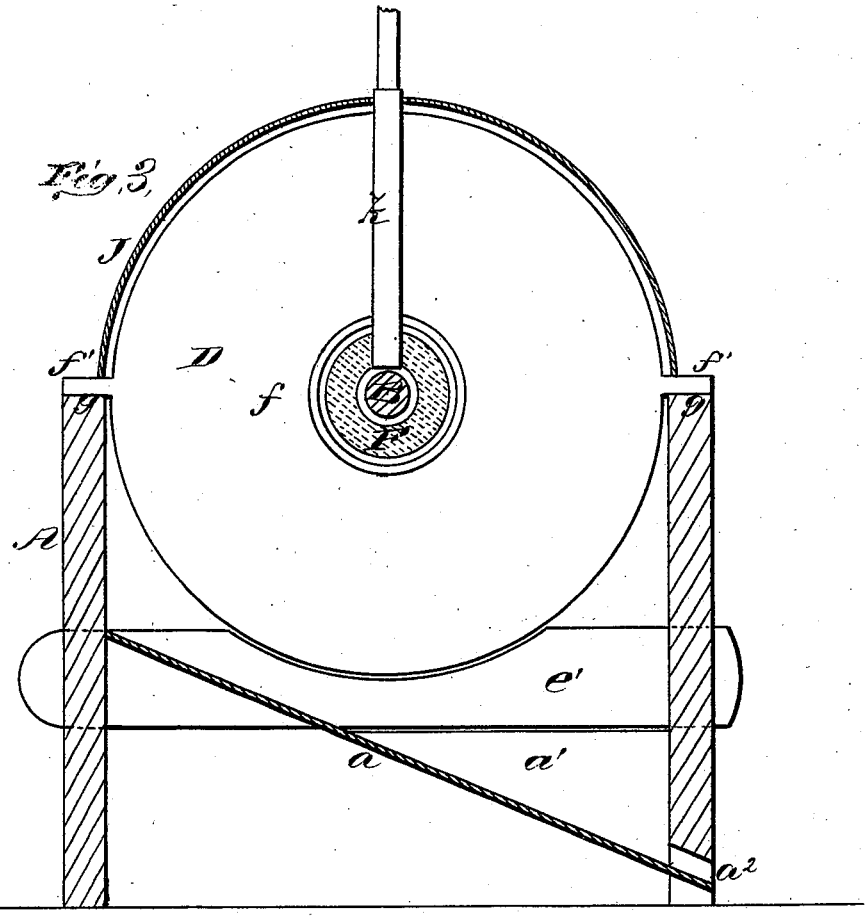
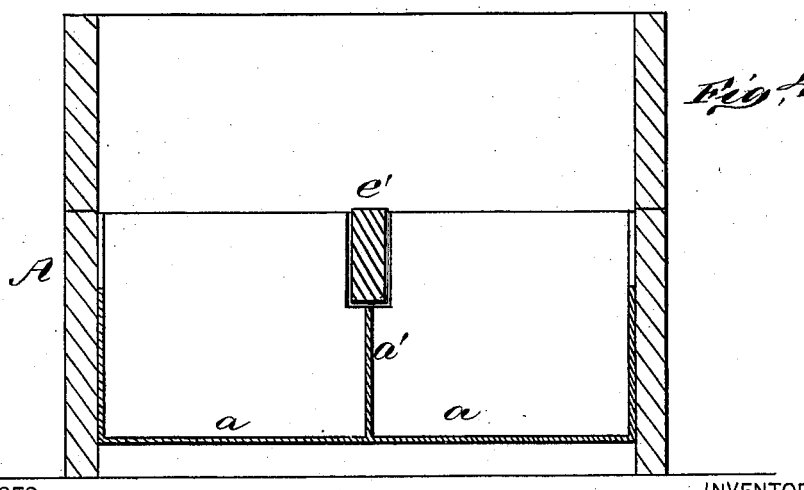


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JACOB WEIMER, OF WEST ALEXANDRIA, OHIO.

IMPROVEMENT IN DOUBLE VERTICAL MILLS.

Specification forming part of Letters Patent No. **201,854**, dated March 26, 1878; application filed January 8, 1878.

To all whom it may concern:

Be it known that I, JACOB WEIMER, of West Alexandria, in the county of Preble and State of Ohio, have invented a new and valuable Improvement in Double Vertical Mills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a horizontal section of this invention. Fig. 2 is a side view of the same, partly in section. Fig. 3 is a transverse vertical section, and Fig. 4 is a longitudinal vertical section, of the casing.

This invention has relation to improvements in vertical grinding-mills.

The nature of the invention consists in certain novel combinations of parts, whereby very useful results are attained, as will be hereinafter fully described and claimed.

In the annexed drawings, the letter A designates a rectangular casing, having an inclined bottom, *a*, and divided into two compartments by a vertical partition, a^1.

B represents a driving-shaft, having its bearings in the case, and provided at the middle of its length with the opposite lugs or splines *b*, that are engaged in grooves or seats in the eye of the running stone C, and prevent it from rotating independently of the said shaft. At each end of the ears *b* the shaft B is oppositely screw-threaded, as shown at *c c'*, to receive the nuts *d*, which, being set up until they abut against the bottoms of the recesses *e* at each side of said stone, effectually secure the latter against lateral displacement. The stone C is provided with a metal band, *d'*, which prevents it from splitting, and, in the event of the breaking of shaft B, is prevented from falling through the bottom of the case by the concave bed *e'*, extending across the case at the upper edge of the partition a^1 aforesaid. The shaft B extends through the bed-stones D, arranged at each side of the stone C. The stones D are inclosed within a cast-iron casing, *f*, embracing the outsides and part of the perimeters thereof, but leaving the faces contiguous to the running stone exposed, and the said casings are provided with diametrical lugs *f'*, that extend through oblong slots *g* in the sides of case A. By this means the bed-stones D are prevented from rotating, but are readily adjustable to or from the running stone, for the purpose of grinding finely or coarsely.

The shaft B is provided upon its end with a driving-pulley, E, and from its bearings in the ends of the case to the threads *c c'*, above mentioned, is oppositely threaded, as shown at *h h'*, so that when the grain is fed to the mill and the running stone is operated in a proper direction, the grain will be carried or conveyed through the eyes of the bed-stones to the dressed surfaces of the latter and of the running-stone, and, being thoroughly ground, will fall upon the inclined bottom *a* of the casing at each side of the partition a^1, whence the ground material gravitates to the separate delivery-apertures a^2.

F represents springs, of rubber, of the form of a conical frustum, that are passed upon the driving-shaft B, and secured in any suitable manner to the flaring inducts *x* of the casings of the bed-stones D, forming a receptacle for the grain as it falls from the hopper. These springs, upon their outer surfaces, are provided each with a metal cap, G, having edge lugs *i*, to which are secured, by means of suitable nuts, the free ends of a U-shaped bridge, H. These bridges are each connected, by means of suitable pivots, to a horizontal lever, I, having its fulcrum upon a rod, *j*, projecting out from the ends of the casing A.

By thrusting the ends of the levers I inward toward the casing the stones D are approximated to the running stone C. Levers I are actuated for the adjustment of the stones D by means of the screws S, extending through the power end of the levers I into the ends of the casing A.

The grain is fed to the stones D by means of pipes *k*, extending up through slots *l* in the top of the casing and opening at their lower ends at the shaft B, being carried through the conical rubber springs at the outside of the stones.

The top J, between the slots *l*, has a raised rest, *m*, upon which one end of the bases *m'* of the hoppers *n* are supported, the other end thereof being supported by an adjustable screw-leg, *o*, the lower ends of which are re-

ceived in a longitudinal groove, *p*, in the top J of the casing. The hoppers move with the bed-stones, the former being guided during their movements by downturned flanges upon the edges of the rest *m'*, that embrace the rest *m*, and by the legs *o*, that engage the raised grooves *p* in the casing-top.

The stones D having each a separate induct and educt, grain may be ground finely on one side of the running stone and coarsely upon the other, or of equal fineness upon both sides. I may also use one side of the stone C to the exclusion of the other, and grind different grains or different qualities of grain upon each side thereof.

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

1. The combination, with the casing A, having an inclined bottom, *a*, the transverse partition a^1, and the distinct delivery-apertures a^2, of the running stone C, arranged over said partition, and the fixed supported stones D at each side thereof, substantially as specified.

2. The combination, with a running-stone, C, having the side recesses *e e*, of the driving-shaft B, having the ears *b* and the opposite screw-threads *c c'*, and the nuts *d d*, substantially as specified.

3. The combination, with the running stone C and the non-rotating bed-stones D, having casing *f*, with flaring induct *x*, of the conical rubber springs F, closing said inducts and forming receptacles for the grain, the bridges H secured to said springs, the vibrating levers I, and the adjusting-screws S, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACOB his × mark. WEIMER.

Witnesses:
SAM. G. CAIN,
W. J. WHITEHURST.