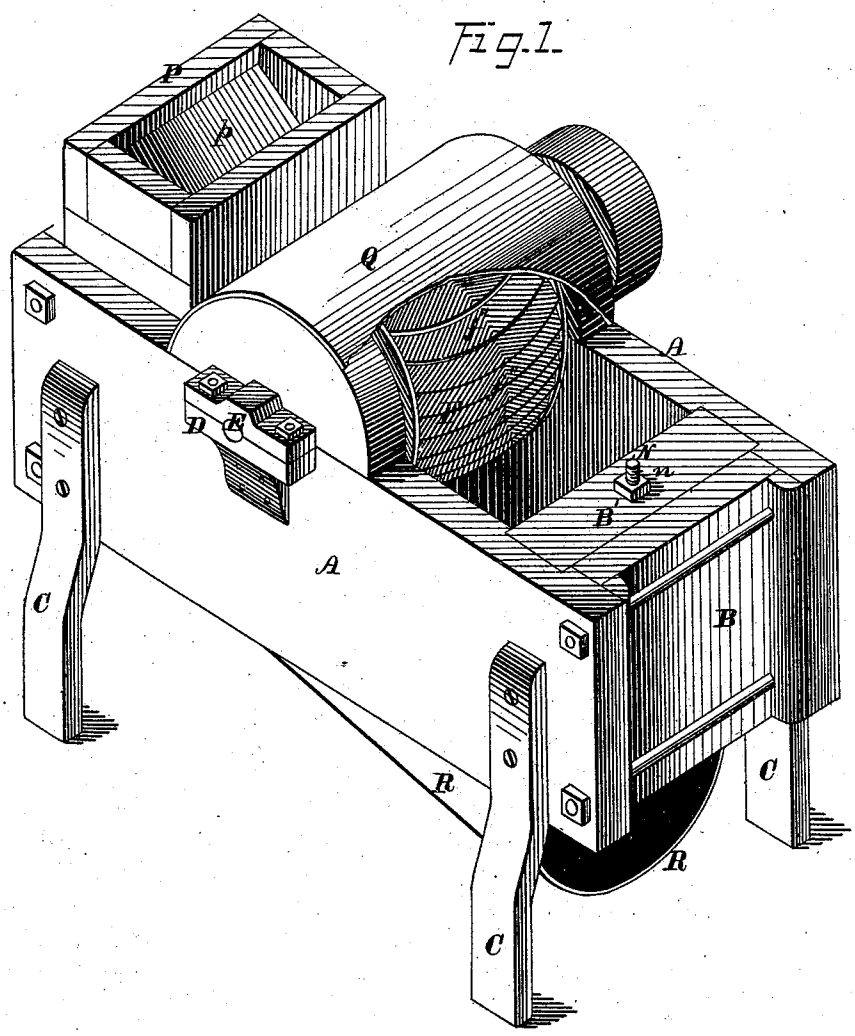
3 Sheets—Sheet 1.

R. P. GILLETT.

GRINDING-MILL.

No. 173,620. Patented Feb. 15, 1876.

Fig. 1.



WITNESSES:

Jas. E. Hutchinson

John R. Young

INVENTOR.

R. P. Gillett, by

Prindle and Co his attys

3 Sheets—Sheet 2.

R. P. GILLETT.

GRINDING-MILL.

No. 173,620. Patented Feb. 15, 1876.

Fig. 2.

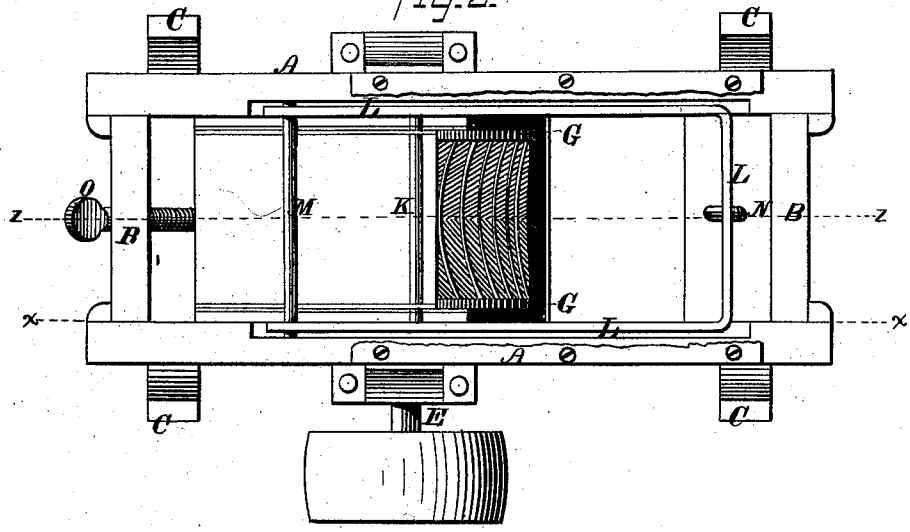
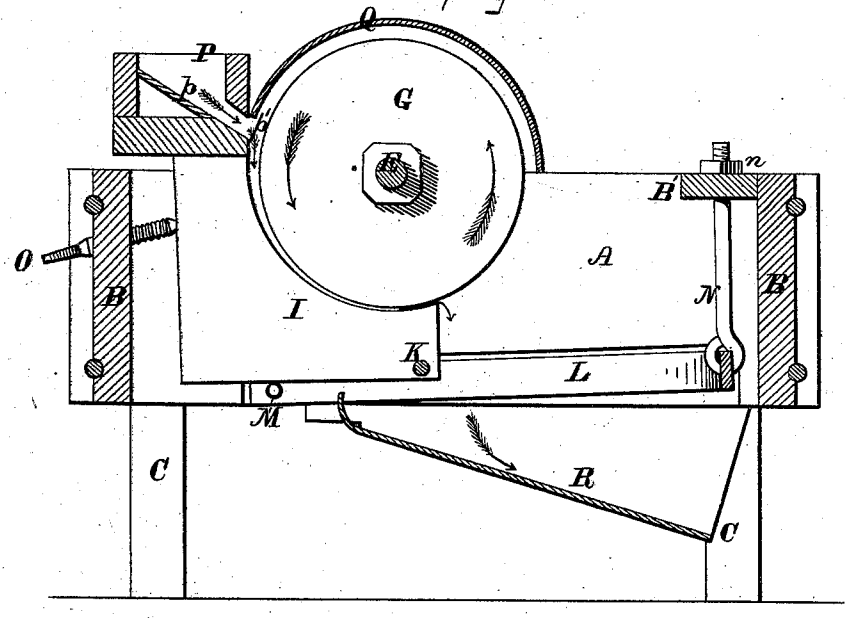


Fig. 3.



WITNESSES:

Jas. E. Hutchinson

John R. Young

INVENTOR.

R. P. Gillett, by

Pindle and Lothrie Attys.

3 Sheets—Sheet 3.

R. P. GILLETT.

GRINDING-MILL.

No. 173,620. Patented Feb. 15, 1876.

Fig. 4.

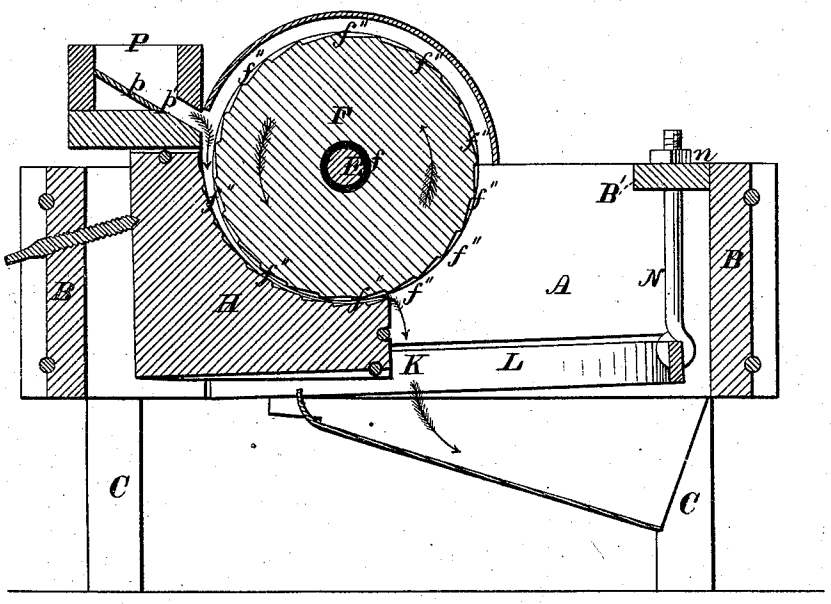


Fig. 5.

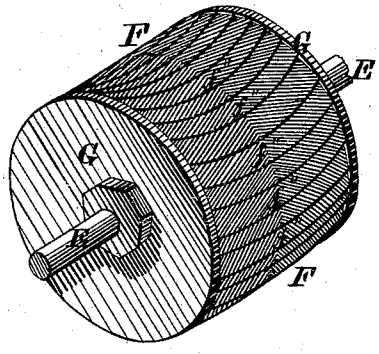


Fig. 6.

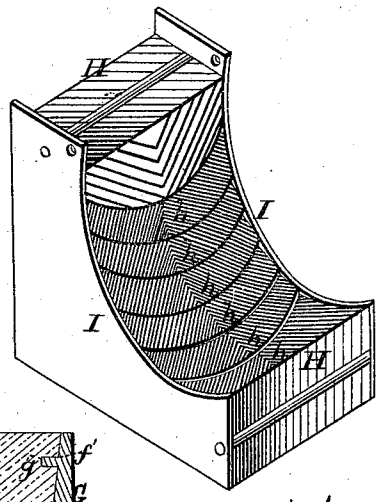
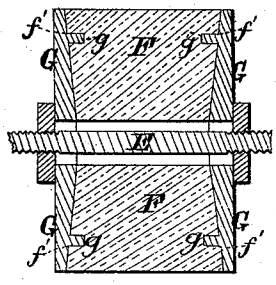


Fig. 7.



WITNESSES:

Jas. E. Hutchinson.

John R. Young

INVENTOR.

R. P. Gillett, by

Pindle and Poole Attys

UNITED STATES PATENT OFFICE.

RANSOM P. GILLETT, OF SPARTA, WISCONSIN, ASSIGNOR TO HIMSELF AND HERMAN GREVE, OF SAME PLACE.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **173,620**, dated February 15, 1876; application filed January 3, 1876.

To all whom it may concern:

Be it known that I, RANSOM P. GILLETT, of Sparta, in the county of Monroe and in the State of Wisconsin, have invented certain new and useful Improvements in Grinding-Mills; 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 mill, a portion of the casing being broken away in order to show the interior construction of parts. Fig. 2 is a plan view of the lower side of the same. Fig. 3 is a vertical section upon line *x x* of Fig. 2. Fig. 4 is a like view upon line *z z* of same figure. Fig. 5 is a perspective view of the grinding-cylinder. Fig. 6 is a like view of the concave, and Fig. 7 is a longitudinal central section of said cylinder.

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

The design of my invention is to increase the efficiency, ease of operation, and readiness of adjustment of a grinding-mill; and to this end it consists, principally, in the means employed for suspending the stone from and combining the same with its arbor, substantially as and for the purpose hereinafter shown. It consists, finally, in the means employed for adjusting either or both ends of the concave toward or from the stone, substantially as and for the purpose hereinafter set forth.

In the annexed drawings, A and A represent the sides, and B and B the ends, of the box or frame of my machine, which parts are secured together in a rectangular form, and are supported at a suitable height by means of four legs, C and C. Journaled within suitable boxes D and D at the upper edge, near the longitudinal center of the side pieces A and A, is a shaft, E, upon which, between said side pieces, is secured a cylindrical stone, F, said stone being held longitudinally between two metal disks, G and G, that embrace its ends, are attached at their centers to or upon said shaft, and are capable of being moved toward each other and secured in position. The axial openings *f* in the stone F, through which the shaft E passes, are considerably larger than the same, so as to permit of the expansion of said shaft without injury to said stone, while the radial position of the latter is insured by means of two or more studs, *g* and *g*, which project from the inner face of each disk G inward into corresponding recesses *f'* and *f'* in the ends of said stone. In order that the strength of the plates G and G may be caused to correspond to the strain thrown upon each portion, and also that the radial position of the stone F may be insured, the inner face of each of said plates is made convex, and the contiguous end of said stone is made correspondingly concave, as seen in Fig. 7. Directly in rear of the cylinder F is a concave, H, which is also formed of stone, and is bound upon its sides with metal plates I and I, and at its lower side and forward end is pivoted to or upon a rod, K, that extends between the sides of a metal frame, L.

As seen in Fig. 2, the frame L has a general rectangular form, and loosely fits into the interior of the main frame at its lower side, and at its rear end is pivoted to or upon a rod, M, that passes horizontally and transversely across said main frame.

The pivotal rod K of the concave H being in front of the pivotal bearing M of the frame L, it will be seen that by raising or lowering the forward end of the latter, said concave will be correspondingly moved, while fore-and-aft adjustment of the latter may be effected by moving said concave upon its said pivotal bearing.

The adjustment of the frame L is effected by means of a rod, N, which is loosely connected to its forward end, and from thence passes upward through a cross-bar, B', that extends between the upper edges of the side pieces A and A, the upper end of said rod being threaded and provided with a nut, *n*, by the turning of which nut said rod and the forward end of said frame may be raised or lowered.

The fore-and-aft adjustment of the concave H is secured by means of a set-screw, O, which passes inward and upward through the rear end piece B, and bears against the rear side near the upper end of said concave. The con-

cave thus suspended may be adjusted toward or from the cylinder along its entire face, or at either its upper or lower portions, as may be deemed best for the grain being ground.

To or upon the upper end of the concave H is secured a rectangular box, P, which has a bottom, *p*, that inclines sharply downward and forward, and at its front side is provided with two narrow openings, *p'* and *p'*, which are placed in a line with said bottom, and each extends from the end of said box inward toward its center.

The box P forms the shoe of the hopper, and through it passes all grain that is operated upon by the stone. In consequence of the arrangement of the openings *p'* and *p'* the grain is discharged in two streams upon the stone, one stream impinging near each end of the same, for the purpose hereinafter named.

The periphery of the stone F is provided with a series of faces, *f''* and *f''*, each of which transversely inclines rearward and outward, while longitudinally said faces are curved, as seen in Fig. 1, said curves being arranged with their convex sides uppermost at the rear side of said stone contiguous to the concave H.

The concave H is in a like manner provided with inclined curved faces *h* and *h*; but the latter are arranged in a reverse direction from those, *f''* and *f''*, of the stone F, by which means grain entering the space between said concave and stone near their edges will be drawn toward and its grinding completed at their centers.

Each face, *f''* or *h*, is dressed in diagonal lines, as seen in Fig. 1, which furrows, like the curves of said faces, are the reverse of each other, so that, as grain passes between the stone F and concave H, their faces and furrows operate as shears, and easily and thoroughly pulverize each kernel.

A semi-cylindrical casing, Q, for the upper side of the stone F, and a concave sheet-metal bottom or spout, R, for the lower side of the frame, complete the device, the operation of which has been fully explained.

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

1. The means employed for combining the stone F with the shaft E, and for securing the relative radial and peripheral positions of said parts, consisting of the disks G and G, which are secured upon said shaft, made convex upon their inner faces, provided with studs *g* and *g*, and fit into the concave ends of said stone, provided with the recesses *f'* and *f'*, substantially as specified.

2. In combination with the concave H, the frame or bridle L, pivoted near its center to said concave and at its rear end to the main frame, and moved vertically at its front end by means of the rod N, provided with the nut *n*, and the set-screw O, passing through the rear end of said main frame, and impinging upon the rear upper portion of said concave, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of November, 1875.

RANSOM P. GILLETT.

Witnesses:

E. F. RING,

ANSEL OPPENHEIMER.