F. M. HEMPHILL.

Grinding Mill.

No. 23,372. Patented March 29, 1859.

Fig. 3

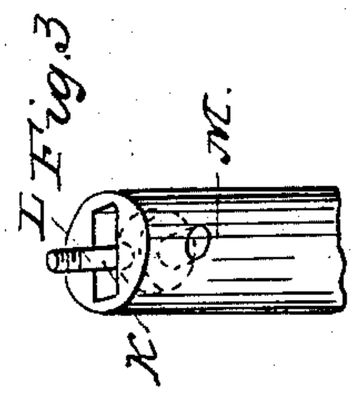


Fig. 4

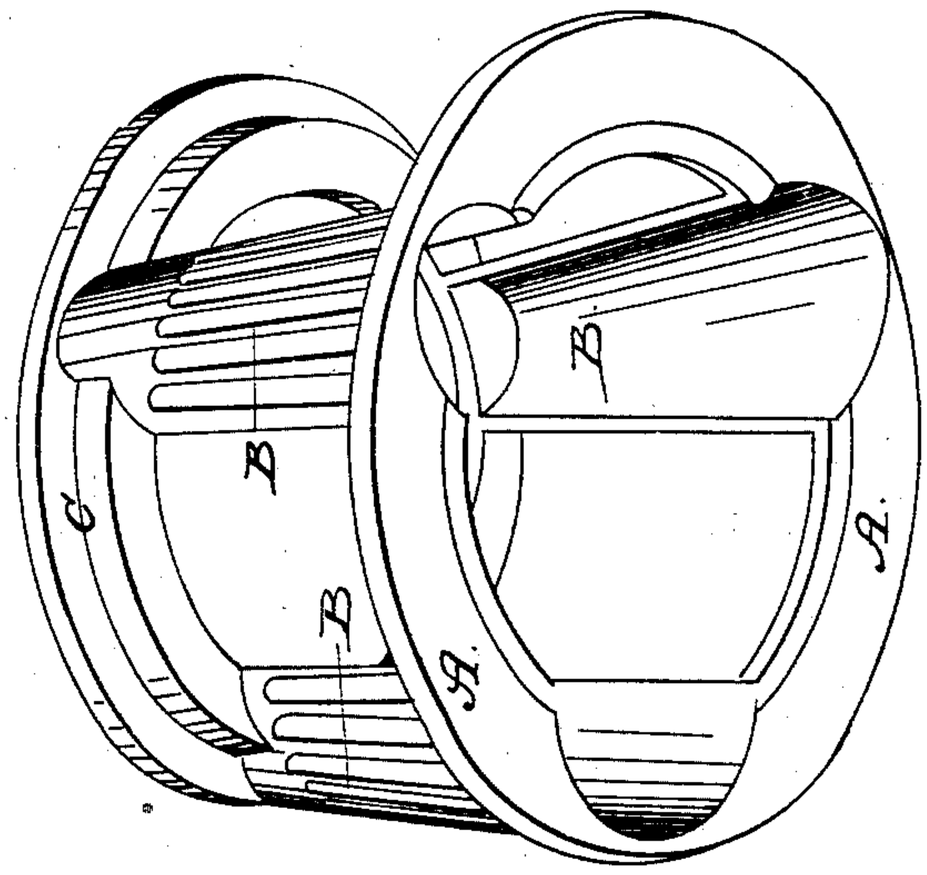


Fig. 2

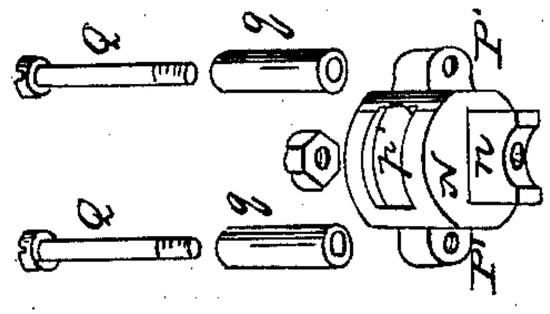
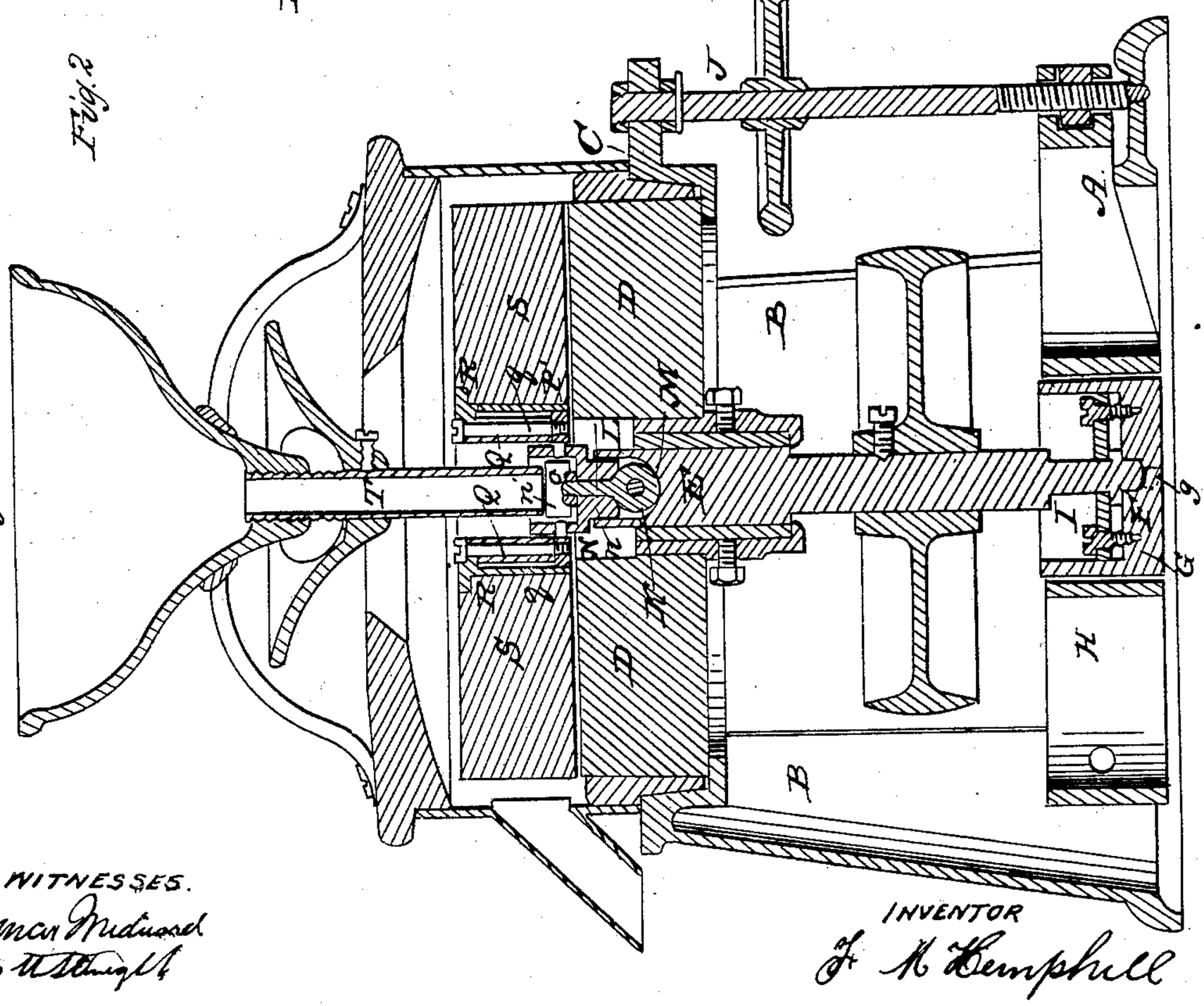


Fig. 1



WITNESSES.

Duncan McDonald

Geo. W. Stringfellow

INVENTOR

F. M. Hemphill

UNITED STATES PATENT OFFICE.

FRANCIS M. HEMPHILL, OF NEWPORT, KENTUCKY.

GRINDING-MILL.

Specification of Letters Patent No. 23,372, dated March 29, 1859.

To all whom it may concern:

Be it known that I, FRANCIS M. HEMPHILL, of Newport, Campbell county, Kentucky, have invented new and useful Improvements in Grinding-Mills, of which the following is substantially descriptive, reference being had to the annexed drawings, making part of this specification.

My invention is intended more particularly for the class known as "portable" grinding mills, being those in which the operating parts are within the compass of a single frame; and it consists in, 1st, a provision for increasing at will the stress or pressure of the grinding surfaces so as to dispense with a heavy runner; to relieve the toe of the spindle of undue stress; to preserve the tram of the runner; and to leave an open eye for the insertion of a stationary feed tube; 2nd, in connection with the above, an arrangement for the necessary freedom of the runner and for the due passage of the grain; 3rd, an improved construction of frame.

Figure 1 is an axial section of a mill embodying my improvements. Figs. 2 and 3 are detached views of the driving rynd and its appanages. Fig. 4 is a detached view of the frame.

The frame consists of a single casting, having a base ring or annular plate A, from which spring three half columns B, surmounted by an upper ring C. The half columns B, have their convex sides presented outward, their inner sides being cored out clear through the lower ring. Fixed in the upper part of this frame is the bed stone D within which a spindle E, is bushed and centered in the usual way. The lower end (toe) of the spindle E, has a collar F, which, being by means of a ring I, confined to a step or socket G, hinged at *g*, as represented in the bridge tree H, enables the miller, by operating the lighter screw J, to draw down the spindle—and with it the runner—with any force desired. The top of the spindle has an oblong mortise K, within which an eye headed bolt L, is retained (while permitted a slight vibration) by a pin M, which traverses the mortise K.

N is a cup formed driving rynd, having a tenon *n* depending centrally from its bottom. A perforation axially of the cup, and passing through the tenon, admits the bolt L, which, after its insertion, is made fast in the bottom of the rynd by a nut O. Opposite sides of the rynd, at right angles to the pin M, receive two gudgeons P P′, having eye heads which receive two vertical bolts Q Q made fast in the metallic eye R of the runner, S.

q, *q′*, are two sleeves, whose length determines the relative height and position of the rynd N and the runner S. This device enables a worn stone to be let down by simply shortening the sleeves *q q′*. Apertures *n′*, in the sides of the rynd N, permit the escape of the grain to the grinding surfaces.

The upper end of the feed tube T, screwing into the nozzle of the hopper enables its lower or discharging end to be brought nearer to or farther from the floor of the rynd according to the desired delivery of the feed.

By simply unscrewing the nut O, the runner may be removed at short notice for redressing or otherwise.

I claim herein as new and of my invention:

1. In the described combination with an adjustable bridge tree; the spindle E, confined below to the tree, and hinged above to the cup formed driving and feeding rynd N *n n′*, having a hinged attachment to the runner, and enabling a discretionary increase of the stress of the runner on the grain, by the lighter screw; operating wholly from below as set forth.

2. The described arrangement of the cup formed driving and feeding rynd N *n n′*, gudgeons P P′ bolts Q Q, sleeves *q q′*, and metallic eye R, having the described or equivalent connection with a runner and spindle respectively for the purposes set forth.

3. The cup formed driving and feeding rynd N *n n′* having the described or equivalent hinged attachments to the spindle and to the runner respectively, and operating as set forth.

4. The frame A B C, constructed substantially as and for the purpose set forth.

In testimony of which invention, I hereunto set my hand.

F. M. HEMPHILL.

Witnesses:

GEO. H. KNIGHT,

FRANCIS MILLWARD.