

(No Model.)

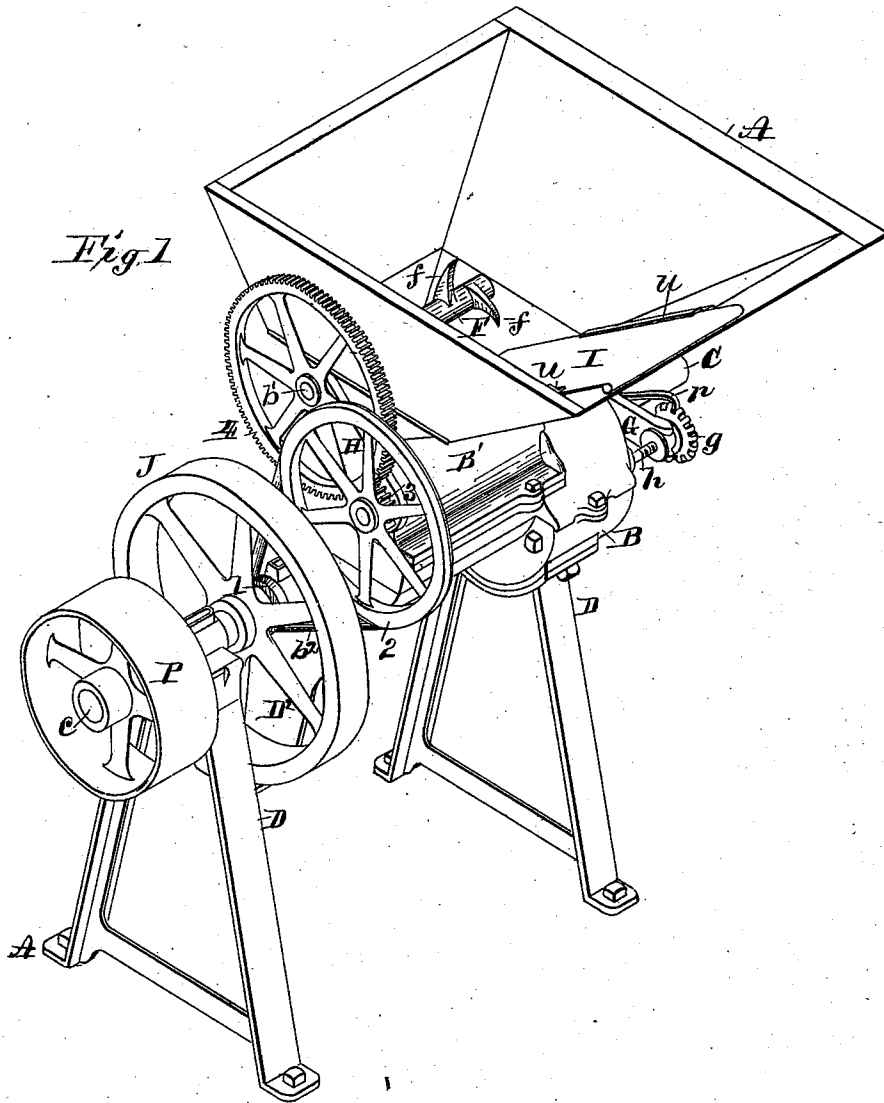
T. C. CADWGAN.

2 Sheets—Sheet 1.

FEED MILL.

No. 380,180.

Patented Mar. 27, 1888.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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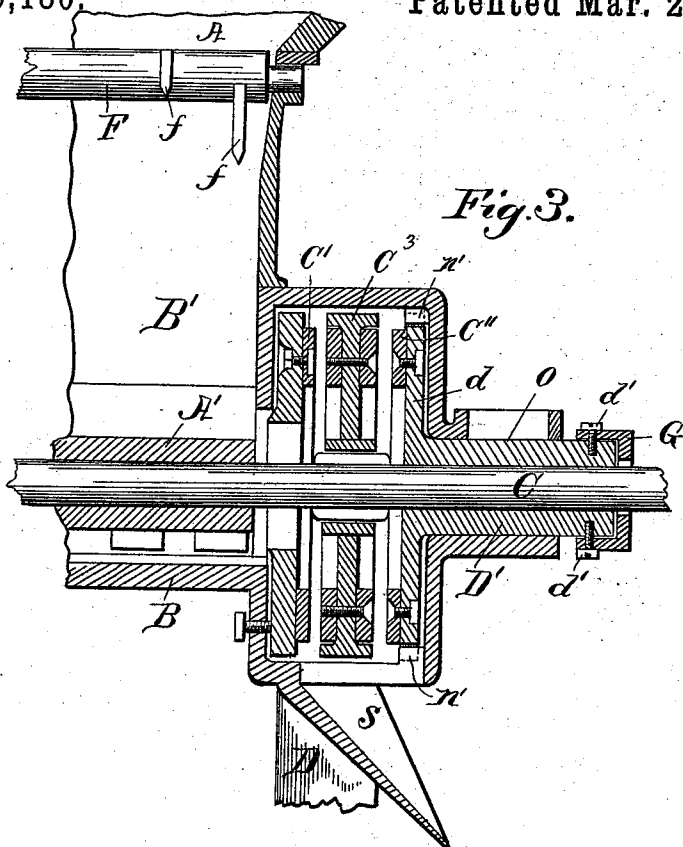


Fig. 3.

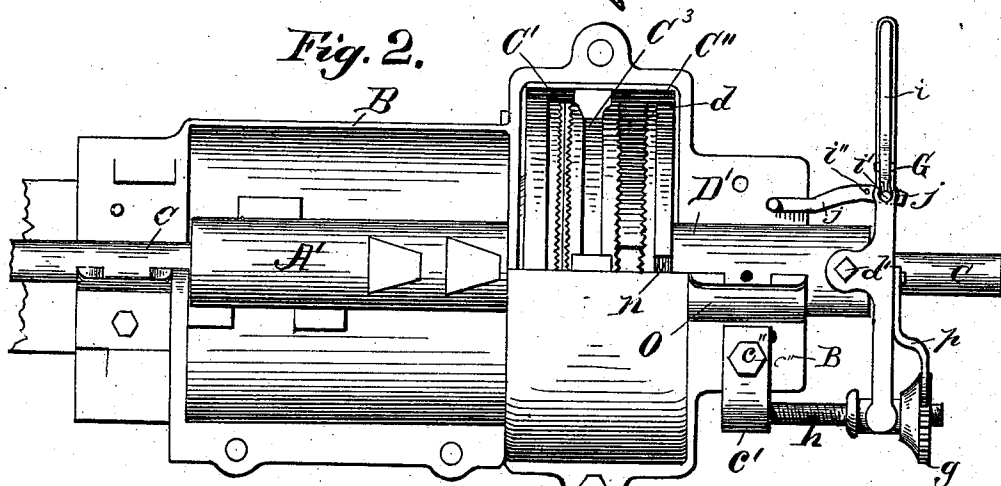


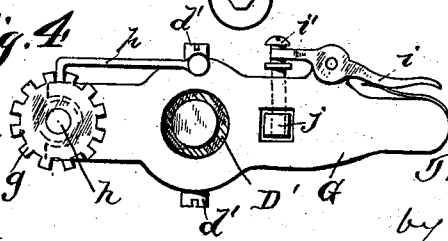
Fig. 2.

Fig. 4.

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UNITED STATES PATENT OFFICE.

THOMAS C. CADWGAN, OF SPRINGFIELD, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE SPRINGFIELD ENGINE AND THRESHER COMPANY, OF SAME PLACE.

FEED-MILL.

SPECIFICATION forming part of Letters Patent No. 380,180, dated March 27, 1888.

Application filed August 22, 1886. Serial No. 212,125. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. CADWGAN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Feed-Mills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates especially to the means for regulating the distance from each other of the grinding-surfaces; and it consists in the novel construction and combinations of parts hereinafter described, and particularly pointed out in the claims.

In order to make my invention more clearly understood, I have shown in the accompanying drawings a means for carrying the same into effect.

In said drawings, Figure 1 is a perspective view of a feed-mill embodying my invention. Fig. 2 is a plan view of a portion of the same, the hopper and a part of the casing being removed. Fig. 3 is a vertical longitudinal section of a portion of the mill, showing the grinding devices. Fig. 4 is an elevation of the adjusting-lever for the latter.

My present invention is in the nature of an improvement upon the feed-mill for which Letters Patent were granted to me August 4, 1885, No. 323,561, and some of the features of the construction illustrated in this application need not be herein described in detail.

Referring to the drawings, A indicates the feed-hopper; B, the casing of the crushing and grinding devices, of substantially cylindrical form, and enlarged at that part which contains the grinding rings and wheel; and B', the lower extension of the hopper, which is mounted upon the case B over the crusher.

F is the feeder-shaft, mounted in the upper part of extension B' parallel with the main shaft C of the mill, and armed with cutting-teeth *f*, adapted to draw the material from the hopper and partially reduce the same before

it is delivered to the crusher. A slide, I, mounted in ways *u* in the hopper, serves to regulate the quantity fed.

Power is applied to the mill, which may be mounted, as shown, upon an iron frame, D D², through a band-wheel, P, upon the shaft C, which is also provided with a balance-wheel, J. From pulley 1 on shaft C power is transmitted to the feeder-shaft through belt *b*², band-wheel 2, pinion 3, and gear-wheel 4, the latter being mounted upon the journal *b*' of the feeder-shaft. The stud, on which is mounted said parts 2 and 3, is carried by a link, H, hung upon journal *b*', and adapted to be fixed in such position as to properly tighten belt *b*².

That part of the mill embraced in the crushing and grinding devices does not differ materially from the same parts described in my patent before referred to, these devices consisting, essentially, of two grinding-rings, one, C', being fixed and the other adjustable, and a vertical grinding-wheel, C², rotating between said grinding-rings and automatically adjustable between said grinding-rings, said grinding devices being inclosed in a case with a crusher, the latter and the grinding-wheel being mounted upon the same horizontal shaft.

C' is the movable grinding-ring, which is attached directly to the end of sleeve D' by bolts or otherwise, said sleeve being formed with a disk-shaped head, *d*, for this purpose. O is a box which has a bearing for the sleeve D'.

n' are ribs cast on the inside of each section of case B, and serve by their engagement with notches in part *d* to prevent sleeve D' from rotation.

The adjustment of the sleeve D' is effected by a spring-latched lever, G, extending transversely across the end of the sleeve, and pivoted to the latter by the screw-bolts *d*', passing through lugs on the lever. The end of lever G opposite the handle has a fork or notch in it, which straddles the neck of the pinion-headed nut *g* on the screw-bolt *h*. A rack, *j*, extends from the end of the case B through a hole in the lever, and has a series of holes therein for retaining the lever G in adjustment. The position of the lever is determined by screwing up or unscrewing the nut *g* on bolt

h, thus giving the lever an adjustable fulcrum. The nut is held in its adjusted position by a pawl, p, pivoted on the lever and engaging the notched periphery of the nut. In adjusting
 5 the grinding-ring C' lever G is thrown toward or from the grinding-case, as desired, latch i being pressed down to raise pin i', which latter engages with holes i'' in the rack j, and the sleeve D' is withdrawn or pushed
 10 in, as the case may be. At the desired point the spring-latch i is released, and the pin i', to which its front end is pivoted by a fork, is dropped into any one of the holes i'' in the rack j. Screw-bolt h, which regulates the
 15 throw of lever G by means of its nut g, is secured at the opposite end in a lug or dip, c', bolted by bolt c'' to the edge flanges of the case B.

When ring C'' is adjusted to a different distance from ring C', as already described, the wheel C' automatically changes its position to correspond.

The operation of my mill has been sufficiently set forth in the above description of
 25 its construction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a grinding-mill, the combination of
 30 the rotating shaft, a grinding-wheel mounted thereon and turning therewith, a movable non-rotating grinding-ring adjustable longitudi-

nally upon the shaft, an adjusting-lever connected with the non-rotating ring, and an adjustable fulcrum for the end of the lever. 35

2. In a grinding-mill, the combination of the rotating shaft, a grinding-wheel mounted thereon and turning therewith, a movable non-rotating grinding-ring, the latter having a sleeve and being adjustable on the line of the
 40 shaft, a transverse lever pivotally attached to said sleeve, the adjustable toothed nut, to which said lever is fulcrumed, and the adjusting devices for retaining said lever in a fixed position when adjusted, substantially as set
 45 forth.

3. In a grinding-mill, the combination of the rotating shaft of a fixed grinding disk or ring, C', a movable non-rotating grinding-ring adjustable longitudinally upon the shaft, a
 50 movable self-adjusting grinding-wheel situated between said grinding-rings longitudinally movable upon the shaft and rotating therewith, an adjusting-lever connected with the second non-rotating grinding-ring, and a
 55 fulcrum for said lever adjustable toward or from the ring, substantially as set forth.

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

THOMAS C. CADWGAN.

Witnesses:

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 B. C. CONVERSE.