

J. J. NEWSOM.
ROTARY STAMPING AND GRINDING MILL.

No. 549,812.

Patented Nov. 12, 1895.

Fig. 1.

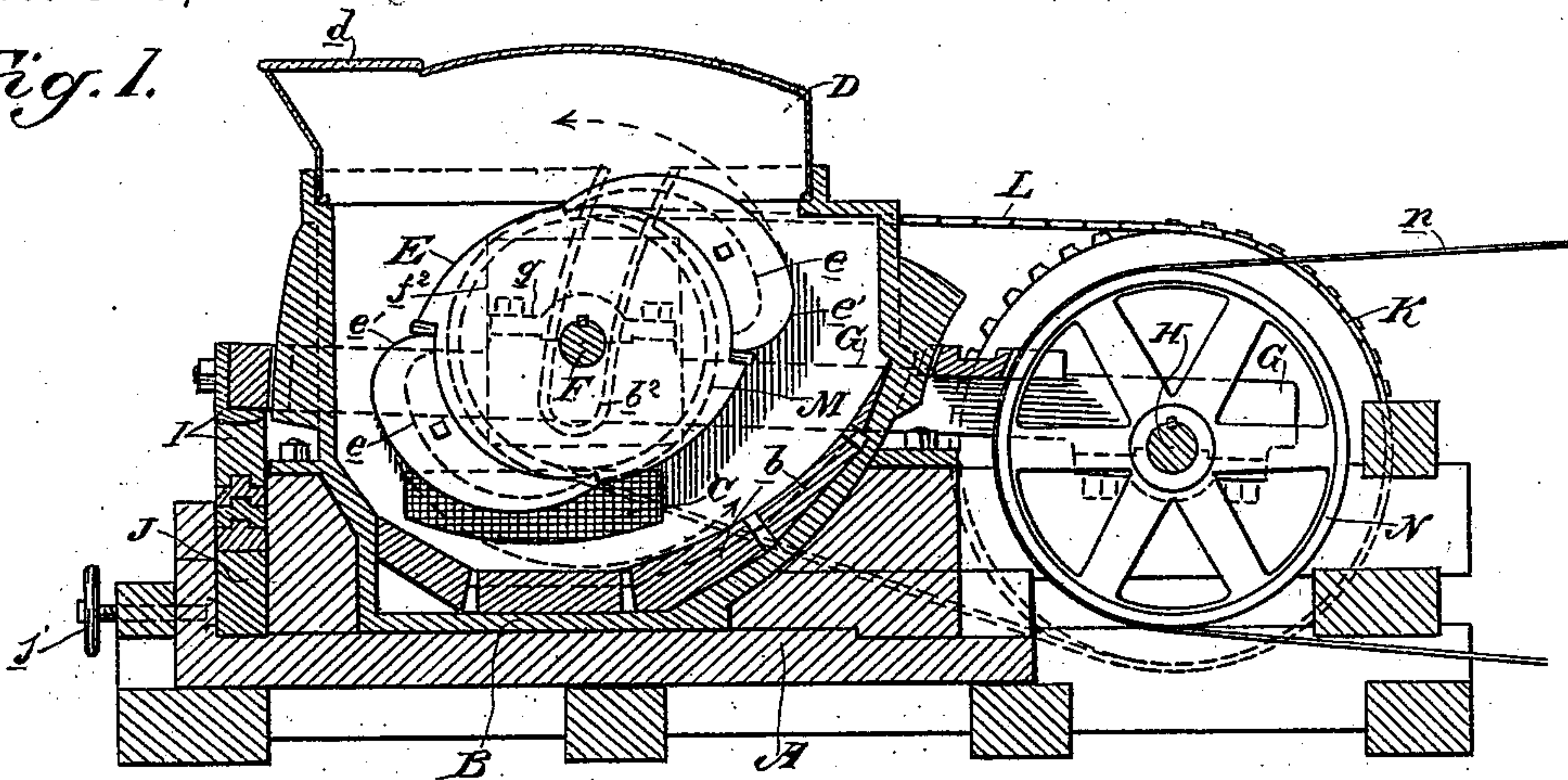


Fig. 2.

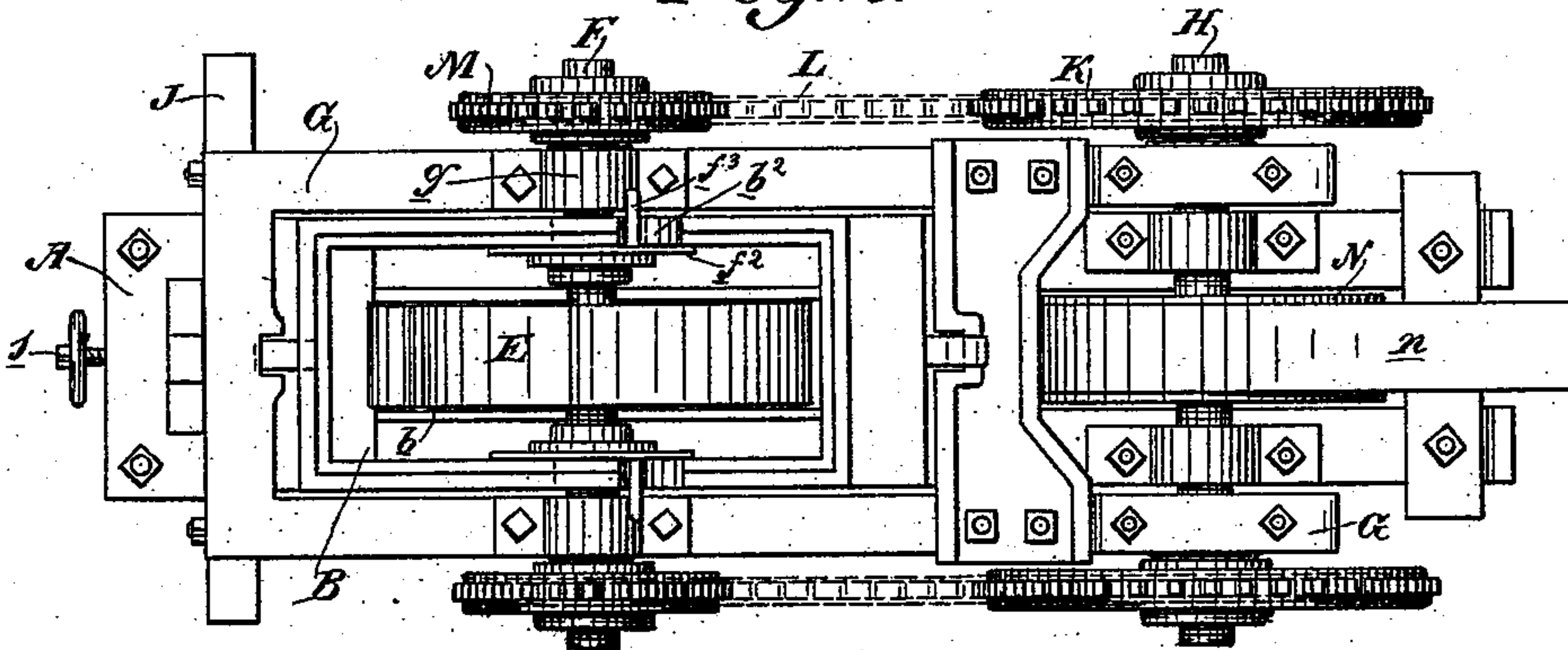
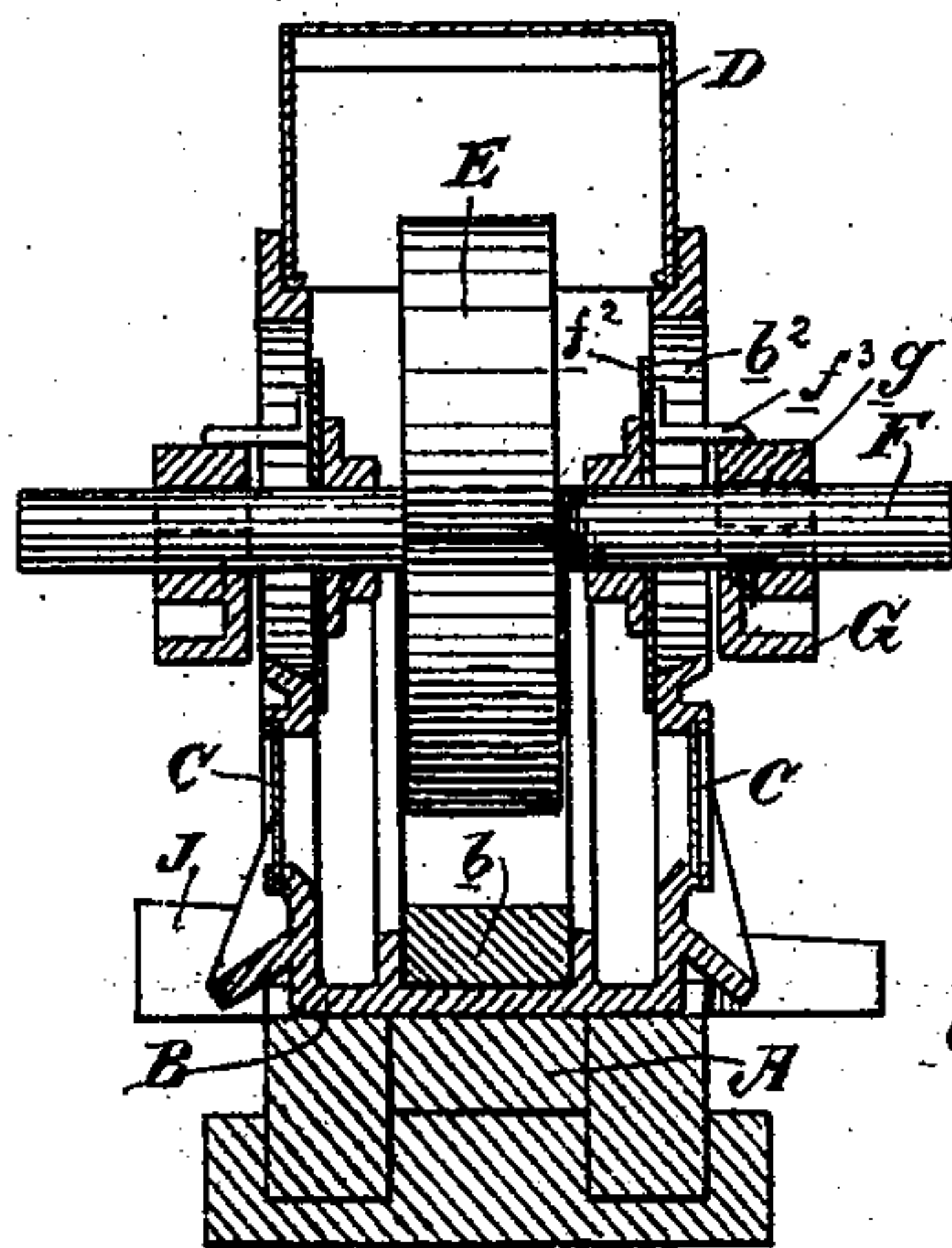


Fig. 3.



Witnesses,
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J. F. Aschbeck

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(No Model.)

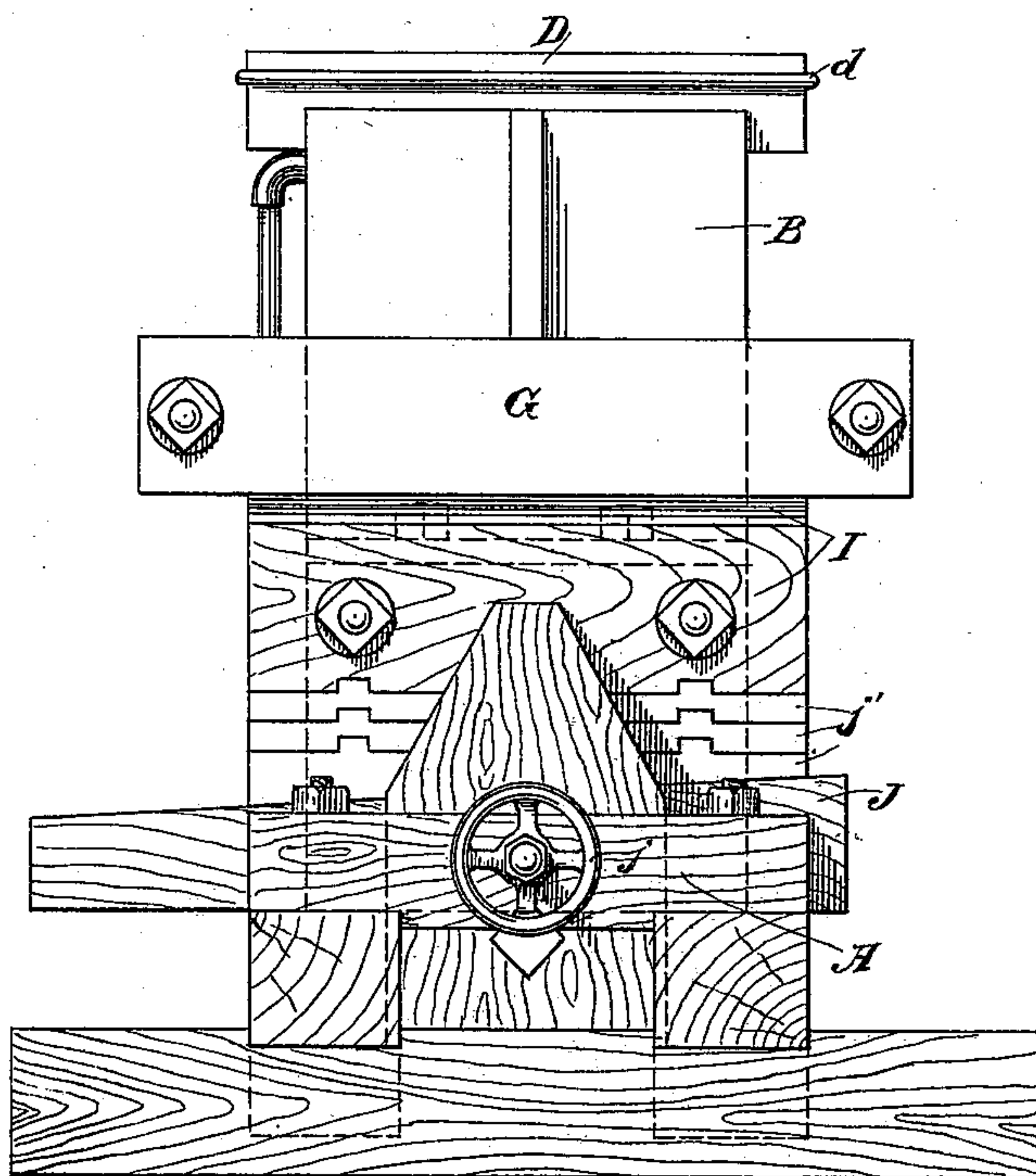
2 Sheets—Sheet 2.

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Fig. 4.



Witnesses,
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UNITED STATES PATENT OFFICE.

JOHN J. NEWSOM, OF OAKLAND, CALIFORNIA, ASSIGNOR OF THREE-FOURTHS TO THOMAS R. BASSETT AND THOMAS D. NEWSOM, OF SAME PLACE.

ROTARY STAMPING AND GRINDING MILL.

SPECIFICATION forming part of Letters Patent No. 549,812, dated November 12, 1895.

Application filed August 29, 1892. Serial No. 444,446. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. NEWSOM, a citizen of the United States, residing in Oakland, county of Alameda, State of California, have
5 invented an Improvement in Rotary Stamping and Grinding Mills; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of crushing-mills in which a roller is rotated within a mortar.

My invention consists, essentially, in a rotating cam-roller carried by a hinged frame which supports it clear of the material in the
15 mortar between the successive actions of its cam, thereby allowing it to acquire momentum for successive blows and grindings, said frame by its drop and rise permitting the successive stamping and grinding effects of the
20 cam and enabling said cam to pass over unyielding and obstructing material.

It also consists, in connection with said cam-roller and hinged carrying frame, of mechanism for rotating said roller, driven
25 from the pivotal center of the hinged frame, whereby the frame can rise and fall without interfering with the transmission of the power to the roller.

It also consists of the novel constructions, arrangements, and combinations hereinafter
30 fully described, and specifically pointed out in the claim.

The object of my invention is to provide a crushing-mill of this class in which the roller,
35 by reason of its cam shape and the manner in which it is mounted, shall have both a stamping and grinding action whereby the material is effectually crushed and pulverized.

Referring to the accompanying drawings
40 for a more complete explanation of my invention, Figure 1 is a longitudinal section of my mill. Fig. 2 is a plan, the cover being removed. Fig. 3 is a cross-section. Fig. 4 is an end view showing the means for adjusting the buffer-
45 block I.

A is a suitable bed-frame in which is mounted the stationary mortar B, having within it suitable dies *b*. One or both of its sides or ends may have screen-discharges C,
50 and its top has a cover D with the feed-hopper

d. Within the mortar is the crushing-roller E. This is a cam-roller and may consist of a circular roller mounted eccentrically or a centrally-journaled roller having its periphery formed or provided with a cam. I have here
55 shown the latter form with two oppositely-located cams *e*, having suitable shoes *e'*. These cams may be of any proper shape, and they are here shown with curved peripheries, beginning with a long incline and terminating
60 in an abrupt one. The roller is mounted upon a horizontal cross-shaft F, which projects on each side through suitably-curved openings or slots *b²* in the sides of the mortar B, whereby
65 the shaft is permitted to rise and fall with the roller. Plates or disks may cover these slots or openings *b²*. These plates may be on the shaft F, but they are preferably fixed ones *f²*, carried by arms *f³*, secured to the frame G
70 without and extending inwardly through the slots or openings. The shaft is mounted in boxes *g* on each side upon a frame G, the rear end of which is pivoted upon the main power-shaft H.

The forward end of frame G rests upon a
75 buffer-block I at the end of frame A, said block being rendered vertically adjustable to compensate for the wear of the shoes and dies by any suitable means, here shown as wedge
J, which is held in place by a set-screw *j*.
80 The wedge passes in under a series of shims *j'* between it and the buffer-block, and by inserting or removing one or more of these shims the general position of the buffer-block may
85 be determined and then its particular adjustment regulated by the wedge J.

The operation is as follows: The roller being rotated first strikes the material with the beginning of its cam and then grinds along upon it, the frame G yielding upwardly.
90 When the end of the cam is reached, the frame drops back to the buffer-block I and then the roller is supported wholly by the frame and clear of the material in the mortar, but is in position to have its cam again strike
95 the material. During this support between blows it acquires momentum for the next blow of the cam. Thus between successive blows the roller revolves freely and the action of the cams is that of stamping and grinding.
100

Upon the ends of the driving shaft H are sprocket-wheels K, from which endless chains L extend to sprocket-wheels M on the ends of the roller-shaft F.

5 N is the driving-pulley upon the middle of shaft H, and n is the driving-belt to said pulley. The roller E is thus driven from each side, and the frame G, upon which it is carried, has its pivotal center the same as that from
10 which the power is derived. It therefore results that said frame may rise and fall about its center without interfering with the power-transmitting mechanism. The rotation of the cam-roller is preferably in the direction
15 shown by the arrow, so that the pull or strain of the driving mechanism tends to depress the frame G and its roller, thus assisting in the force and speed of the fall thereof. The position of the roller is limited by the contact of
20 the frame G with the buffer-block I, so that it can be accurately regulated.

It is preferable to mount the roller-shaft

upon the frame G in such position that the contact of its cams with the material shall be to one side of the center of the bottom of the 25 mortar.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A rotary crushing mill consisting of the 30 mortar, the cam roller therein, the shaft of the roller, the frame on which said shaft is mounted, the driving shaft on which one end of the frame is pivoted, the power connections from the driving to the roller shaft, the 35 buffer block under the other end of the frame and the wedge for vertically adjusting said block, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN J. NEWSOM.

Witnesses:

S. H. NOURSE,
GEO. H. STRONG.