(No Model.) 2 Sheets—Sheet 1.

A. R. McGAHY.

MACHINE FOR SCOURING AND POLISHING STONE.

No. 274,509. Patented Mar. 27, 1883.

Fig. 1

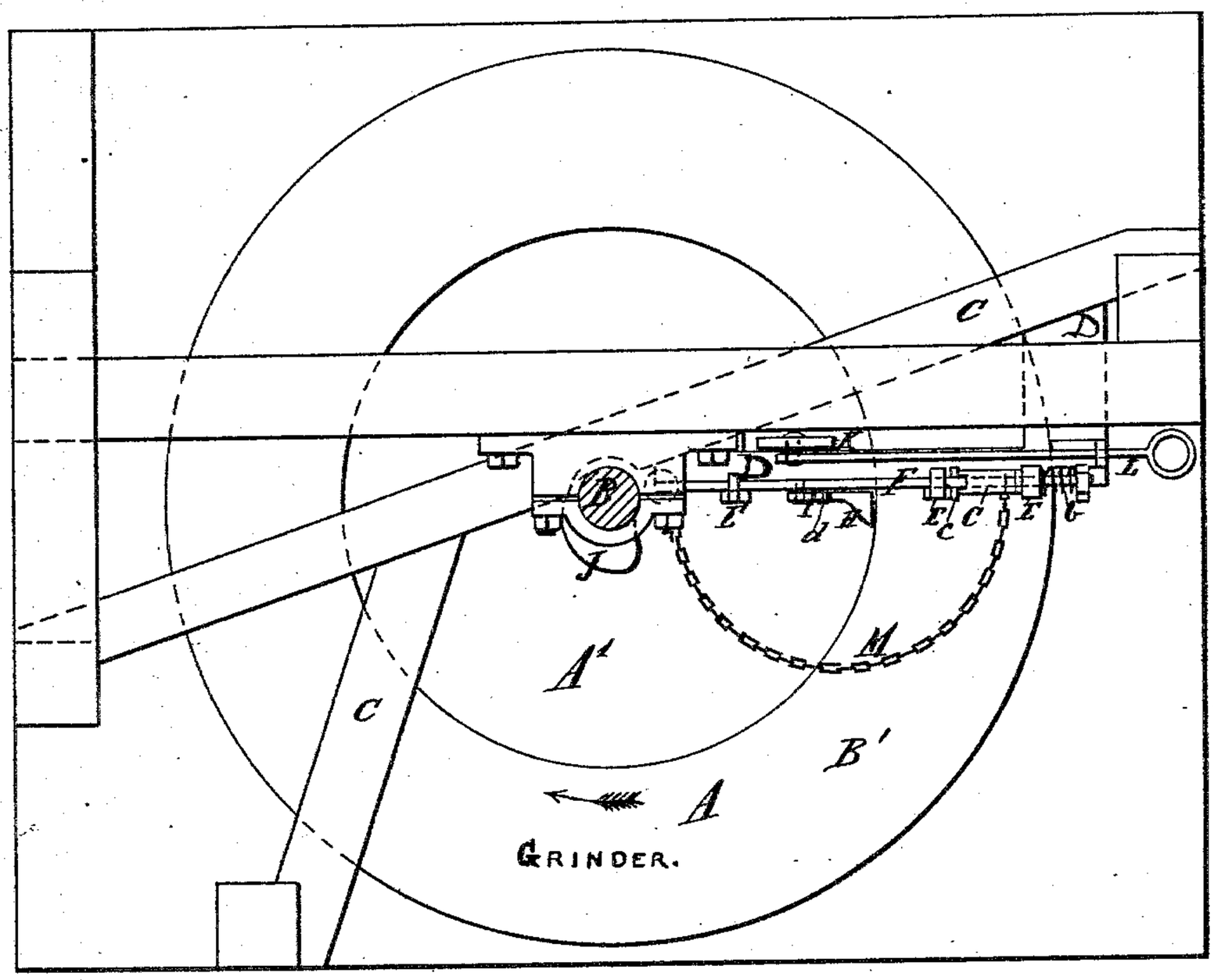
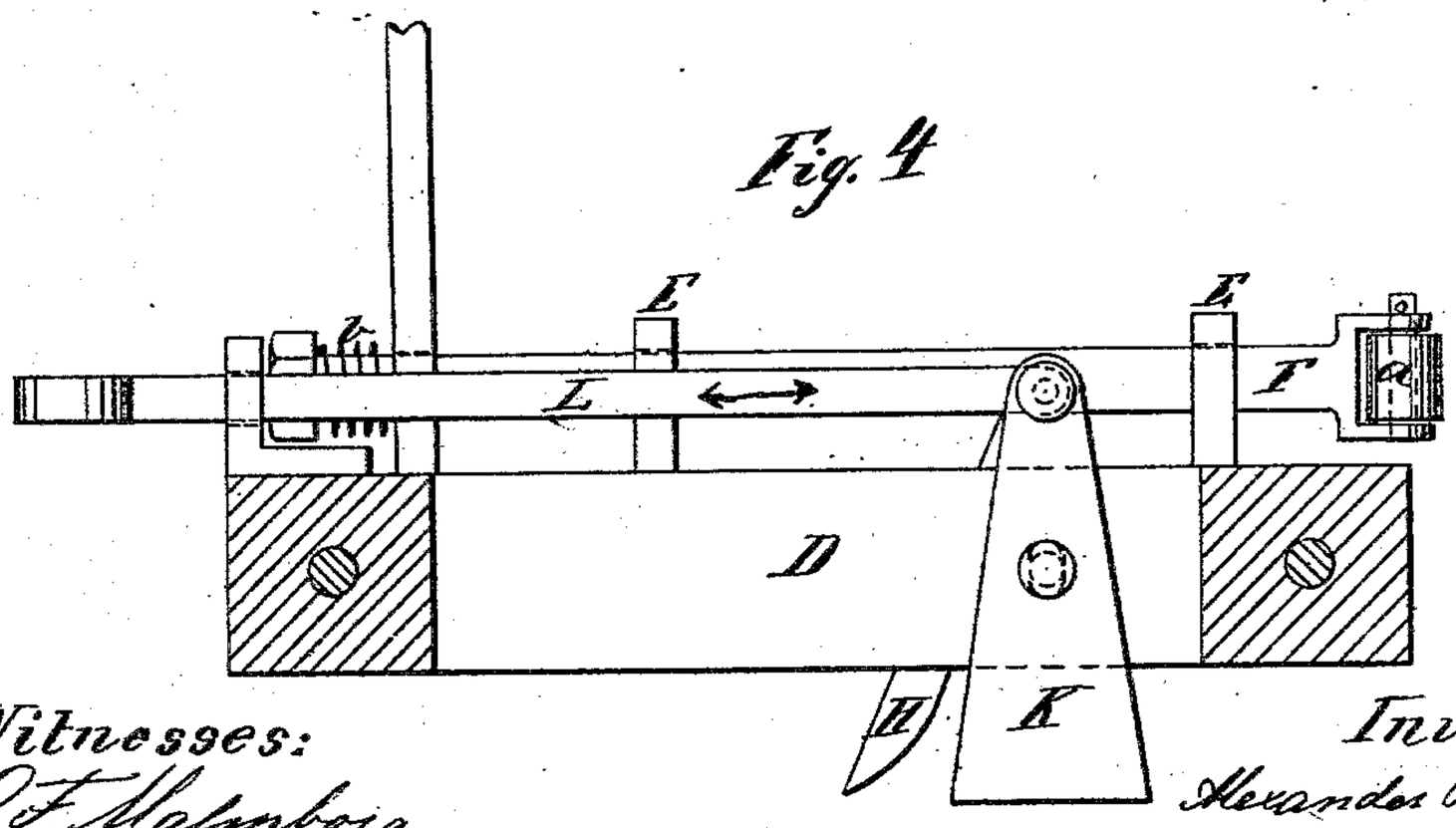


Fig. 4



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

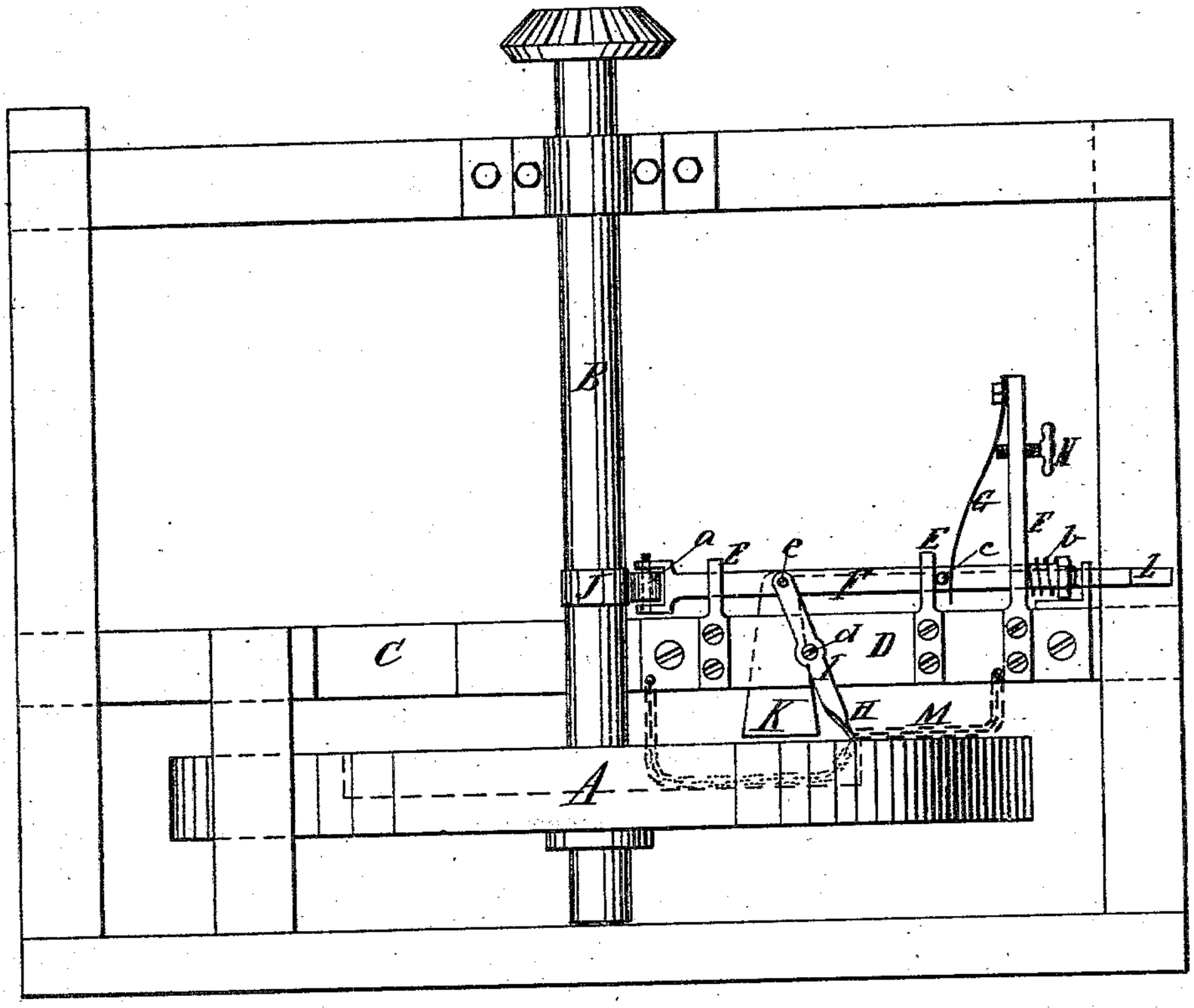
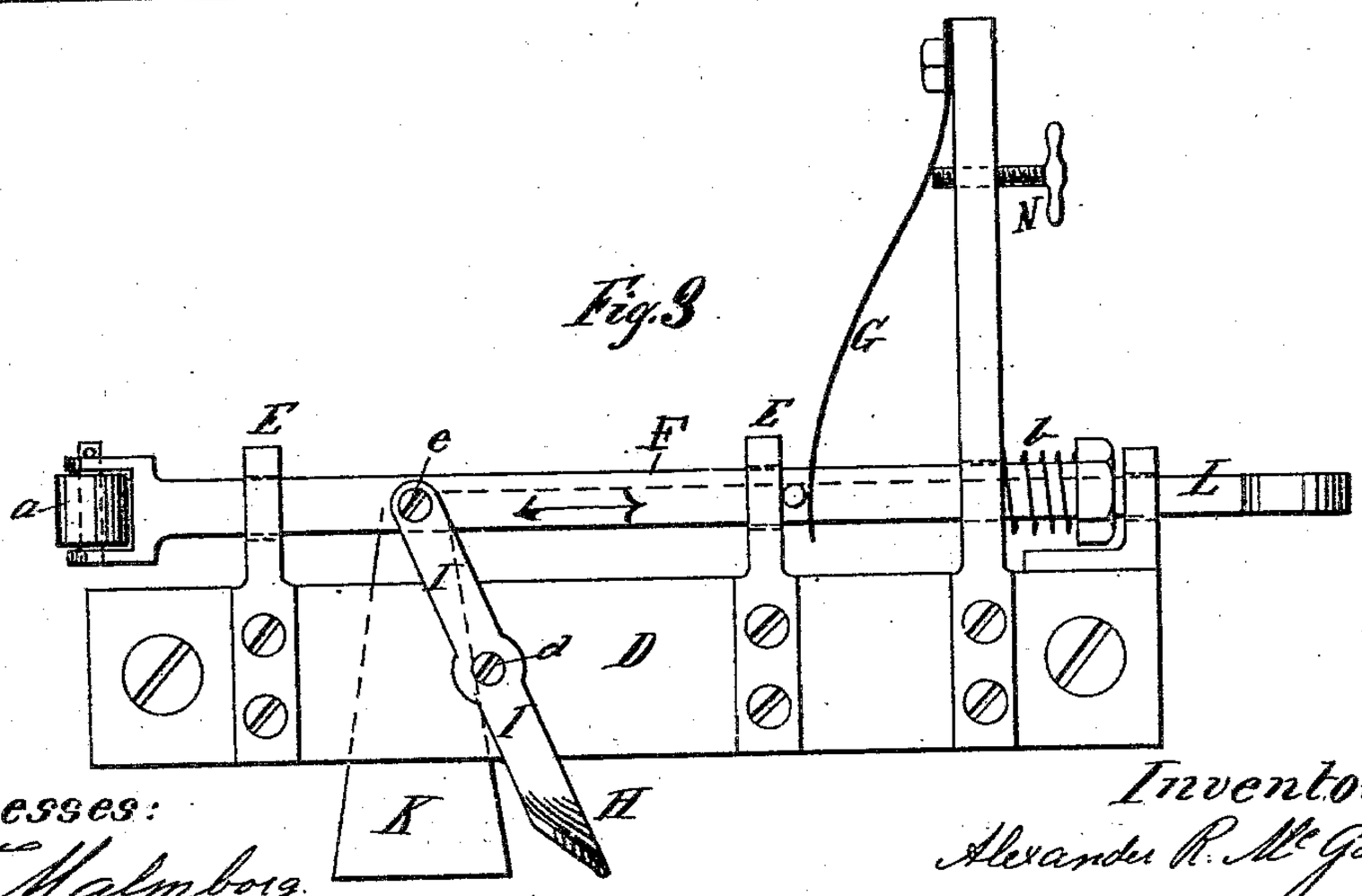


Fig. 3



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UNITED STATES PATENT OFFICE.

ALEXANDER R. McGAHY, OF BROOKLYN, N. Y.

MACHINE FOR SCOURING AND POLISHING STONE.

SPECIFICATION forming part of Letters Patent No. 274,509, dated March 27, 1883.

Application filed June 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER R. McGAHY, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Machines for Scouring and Polishing Stone, of which the following is a specification.

This invention relates to that class of stone scouring and polishing apparatus in which a rotating abrading or smoothing bed is caused to rotate in contact with the surface of the stone to be scoured or polished. Ordinarily each machine of this class requires the attendance of two operatives, and causes considerable waste of labor, power, and sand used for scouring, &c., owing to the comparative carelessness and inefficiency usually incident in the operation of the apparatus.

My invention comprises certain novel combinations of parts whereby these drawbacks to the economical use of this class of apparatus are effectually avoided.

Figure 1 is a plan view, and Fig. 2 a side elevation from the front, of an apparatus embracing my said invention. Figs. 3 and 4 are detail views from opposite sides, on a larger scale, of certain portions of said apparatus.

A is the usual circular rotating bed, having at its center a trough, A′, and supported upon a vertical shaft, B, to which a rotary motion in the direction indicated by the arrow in Fig. 1 is given by any of the usual or suitable means.

C C are the fixed shoulders or braces, against which bear the stones to be polished when the same are placed upon the flat scouring circumferential portions of the bed A. The arrangement of these shoulders or braces with reference to the bed and the manner in which the stones are placed on the bed and caused to bear against the shoulders do not differ materially from those of the ordinary apparatus, and consequently need no specific description here.

D is a horizontal fixed bar, which may be attached in any suitable manner to the framing of the machine, and which extends across one side of the bed, and substantially parallel with the upper surface thereof. This bar is provided with suitable guides, E, through which plays a sliding bar, F, which has at its inner end an anti-friction roller, *a*, and at its outer end a short buffer-spring, *b*, the purpose of which will hereinafter appear. This bar F has near its outer end a transverse pin or stud, *c*, against which bears a spring, G, which tends to press the bar longitudinally inward, and the tension of which is regulated by a set-screw, N.

H is a "shovel" or "scatterer," as it may be termed, which is provided upon the lower end of a lever or staff, I, which said lever or staff is pivoted to the fixed bar D, as shown at *d*. At its outer end is a short slot, through which passes a broad-headed pin or bolt, *e*, which connects it with the sliding bar F. When the sliding bar F is pushed inward the shovel or scatterer H is moved in an outward direction, and vice versa.

On the shaft B is a tappet or cam, J, so arranged that at each rotation of the bed the said tappet or cam will move the bar F outward, and consequently spring the shovel or scatterer inward until the tappet, having passed out of contact with the anti-friction roller, permits the sliding bar to be thrown inward with a sharp and sudden movement by means of the spring G, thereby throwing the shovel with a quick jerking movement radially outward. The spring *b*, at the outer end of the sliding bar, acts as a buffer in arresting the inward stroke of the sliding bar after the cam has passed out of contact with the anti-friction roller *a*.

Pivoted to the fixed bar D is a vertical plate, K, as shown in Fig. 4, the lower end of which projects somewhat downward into the trough A′, while the upper end has attached to it a horizontal lever, L, by which the said plate may be swung, so that its lower end will be at a greater or less distance from the inner periphery of the flat circumferential or scouring surface of the bed; in other words, at a greater or less distance from the circumference of the sand-trough A′.

M is a chain, one end of which is attached to the inner end of the fixed bar D—that is to say, contiguous to the shaft B—while the other end is placed adjacent to the outer end of said fixed bar in such manner that the chain forms a loop which extends and drags into the sand-trough A′.

In the operation of the apparatus the bed A

rotates, in the usual manner, underneath the stone. At each revolution the jerking outward motion of the shovel or scatterer H throws a sufficient quantity of sand—say, a gill, or thereabout—upon the flat circumferential surface B′ of the said bed, the movement being such as to scatter the sand entirely across the said bed in a substantially even and uniform manner, so that at each revolution the bed is supplied with a sufficient quantity of sand to enable it to exert its most effective grinding action upon the stone. The sand being thus automatically supplied, the attendance of the operatives, whose duty it is, with the apparatus hitherto in use, to supply the sand to the bed, is dispensed with. The drag-chain M serves to so disturb the sand within the sand-trough A′ that, instead of being scooped up in only one place, it is continually disturbed throughout the sand-trough, so that there is always a supply immediately underneath the scatterer. This is furthermore assisted by the action of the plate or blade K, which may be adjusted in such manner as to plough the sand continually outward toward the circumference of the sand-trough A′.

By my said invention, as I have found by actual trial, I not only dispense with one of the two operatives hitherto necessary in the operation of this class of stone-scouring apparatus, but I also save about twenty-five per cent. in the quantity of sand required for a given amount of work, inasmuch as by my said invention the sand is distributed with greater uniformity and regularity upon the bed. I also save about twenty-five per cent. in the power required to accomplish a given amount of work, inasmuch as when supplying the sand by hand to the bed it was impossible to avoid leaving some portions of the bed unsupplied, and when the surface of the bed itself comes in contact with the stone, without the intermediate action of the sand, there is immediately friction in lieu of scouring. Furthermore, this interference of the regular action of the apparatus, which arose from the use of the hand-method of supplying sand, caused a loss of time amounting to about twenty per cent., which by my said invention I save.

What I claim as my invention is—

1. The combination, with the rotary bed, of a shovel or scatterer, and mechanism for automatically actuating the shovel or scatterer to throw or scatter the scouring or polishing material upon the bed, substantially as herein described.

2. The combination, with the rotating bed A, of the shovel or scatterer H, and means, substantially as described, for automatically actuating the said shovel or scatterer to throw or scatter sand upon the scouring or polishing surface of the bed, all substantially as and for the purpose herein set forth.

3. The combination, with the rotatory bed A, of the plate or blade K, for causing the sand within the trough A′ of said bed to be brought against the circumference of the said trough, and in suitable relation with the inner edge of the scouring or polishing surface of the bed, and a shovel or scatterer, all substantially as and for the purpose herein set forth.

4. The combination of the looped or floating chain M with the sand-trough A′ of the rotating bed A, substantially as and for the purpose herein set forth.

5. The combination of the cam J, of the shaft B, of the bed A, the sliding-bar F, the shovel or scatterer H, and the spring G, all substantially as and for the purpose herein set forth.

6. The combination, for joint use and operation, of the rotating bed A, having the sand-trough A′, the shaft B, having the cam J, the looped or floating chain M, the plate or blade K, the sliding bar F, spring G, and shovel or scatterer H, all substantially as and for the purpose herein set forth.

ALEXANDER R. McGAHY.

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