2 Sheets—Sheet 1.

J. McD. McINTYRE.

MILLSTONE-DRESSER.

No. 192,179. Patented June 19, 1877

Fig. 1.

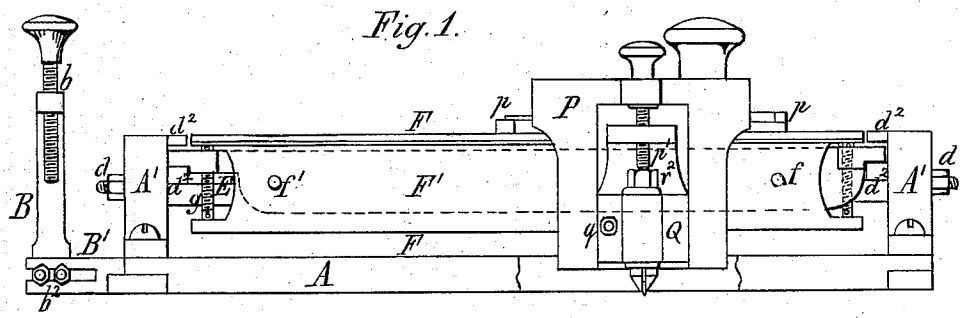


Fig. 2.

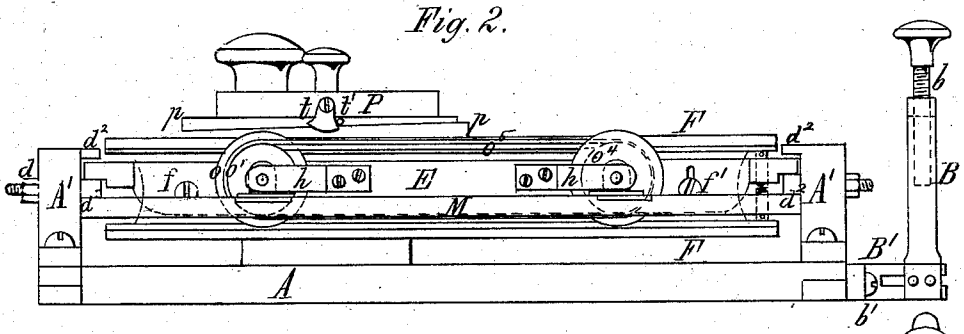
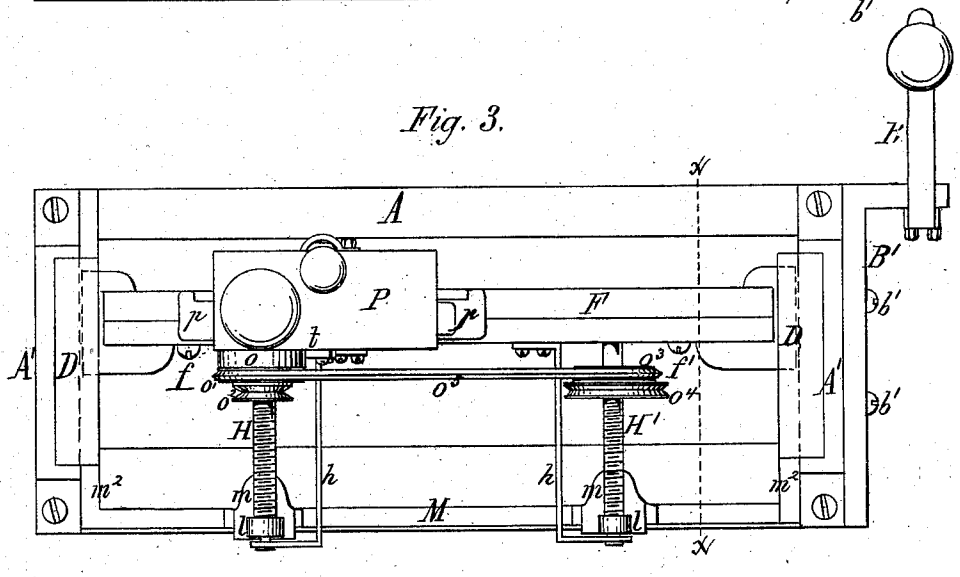


Fig. 3.



Witnesses

Chas. J. Buchheit

George H. Sykes.

John McDonald McIntyre Inventor

by Edward Wilkelow

Attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

J. McD. McINTYRE.

MILLSTONE-DRESSER.

No. 192,179. Patented June 19, 1877.

Fig. 4.

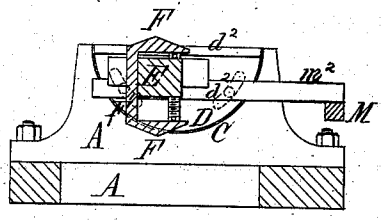


Fig. 5.

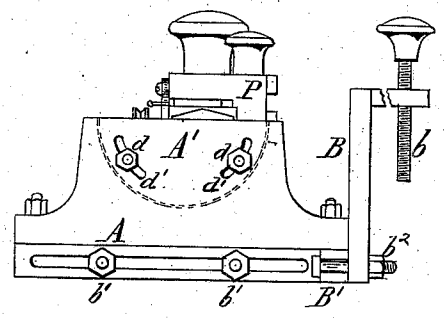


Fig. 6.

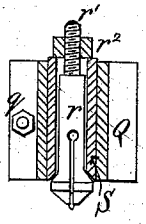


Fig. 7.

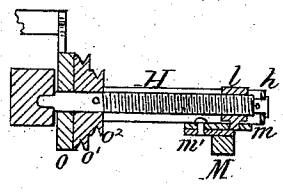


Fig. 8.

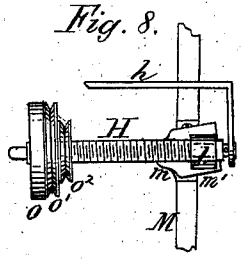
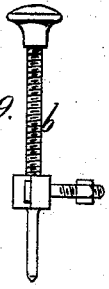


Fig. 9.



Witnesses.

Chas. J. Buchheit.

George H. Sykes.

John McDonald McIntyre Inventor

By Edward Wilhelm

Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN McDONALD McINTYRE, OF LOCKPORT, NEW YORK, ASSIGNOR OF ONE-THIRD HIS RIGHT TO WILLIAM DUNCAN, OF SAME PLACE.

IMPROVEMENT IN MILLSTONE-DRESSERS.

Specification forming part of Letters Patent No. **192,179**, dated June 19, 1877; application filed April 10, 1877.

To all whom it may concern:

Be it known that I, JOHN MCDONALD MCINTYRE, of the city of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Millstone-Dressers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawing.

My invention relates to an apparatus designed for dressing and furrowing millstones, and which is so constructed that the carbon-point is readily secured in the tool-stock, and the latter so mounted as to enable the point to operate at any desired angle and inclination.

The nature of my invention will be fully understood from the following description.

In the accompanying drawings, consisting of two sheets, Figure 1 is a front elevation of my improved apparatus. Fig. 2 is a rear elevation, and Fig. 3 a top-plan view, thereof. Fig. 4 is a cross-section in line *x x*, Fig. 3. Fig. 5 is an end view of the apparatus. Fig. 6 is a detached view, on an enlarged scale, of the carbon-point holder. Fig. 7 is a sectional elevation of one of the feed-screws and connecting parts. Fig. 8 is a top-plan view thereof. Fig. 9 is a detached view of one of the centering-screws.

Like letters of reference designate like parts in each of the figures.

A represents the rectangular bed-frame of the machine, provided with raised end pieces A′, and having arranged at its inner end a bracket, B, in which the centering-screw *b* works. The bracket B is connected with the frame A by an angle-piece, B′, made laterally adjustable on the end piece A′ of the frame by bolts b^1 passing through slotted holes. The bracket B is made longitudinally adjustable on the angle-piece B′ by bolts b^2 passing through slotted holes, as shown in Figs. 1 and 2. These two adjustments at right angles to each other enable the position of the centering-screw *b* to be so regulated that the position of the frame A conforms with the draft of the furrow to be operated upon.

The end pieces A′ of the frame are each provided on their inner side with a curved recess or bearing, C, having the form of a circular arc, as shown in Fig. 5. D is a block, of corresponding form, fitted into each of the recesses C, so as to readily turn therein, and adjustably secured to the end pieces A′ by one or more bolts, *d*, passing through curved slots d^1, as shown in Fig. 5. Each of the blocks D is provided on its inner side with parallel guides d^2, so arranged that they will be horizontal when the blocks are in their normal position, as shown in Fig. 4. E represents a longitudinal bar arranged between the two blocks D D, so as to slide with its ends between the guards d^2 thereof. F F represent the two longitudinal guide-bars of the tool-stock, arranged, respectively, on the upper and lower side of the bar E, and rigidly connected together at the front thereof by a plate F′, so as to form a channel or U-beam, as clearly shown in Fig. 4. The outer faces of the bars F F are made convex or roof-shaped, so as to properly hold the tool-stock.

The guide-bars F F are secured to the bar E near its outer end by a pivot-bolt, *f*, and near its inner end by a bolt, *f′*, passing through a slotted hole in the bar E, and into the back-plate F′, so as to enable the inner ends of the bars F F to be adjusted vertically on the bar E. *g* is a vertical set-screw, working in the bar E near its inner end, and engaging against both the upper and lower bars F, so that by raising or lowering the screw *g* the inner ends of the guide-bars F F can be raised or lowered, the bars turning on the pivot-bolt *f* while being so adjusted.

H H′ represent the horizontal feed-screws arranged in the rear of the bar E, and bearing against the same with their inner ends, while their outer ends bear against pieces *h* secured to the rear side of the bar E, thereby compelling the latter to follow the movements of the feed-screws in either direction. The feed-screws work through-threaded bearings *l* pivoted to the upper side of a plate, *m*, which latter is hung at its forward end by a pivot to a stationary plate, m^1, secured to a longitudinal

bar, M, which is attached, by means of cross-pieces m^2, to the segmental blocks D.

The cross-pieces m^2 may, at the same time, form the lower guide-bar d^2 of said blocks, as shown at Fig. 4.

o o^1 o^2 are three pulleys mounted on the outer feed-screw H, and o^3 o^4 two pulleys secured to the inner feed-screw H′. The first pulley, o, upon the outer feed-screw is the feed-pulley, by means of which the feed-screw is turned every time the tool-stock passes over the same in an outward direction, while the other two pulleys, o^1 o^2, as well as the pulleys o^3 o^4 upon the screw H′, are band-pulleys, designed to communicate the motion of the screw H to the screw H′, by means of an endless band, o^5. The pulleys o^1 o^3 are made of the same size, while the pulley o^2 is smaller, and the pulley o^4 correspondingly larger, than the pulleys o^1 o^3, so that when the endless band o^5 is placed upon the equal pulleys o^1 o^3 both feed-screws will be turned with the same speed, while, when the band is placed upon the unequal pulleys o^2 o^4, the inner feed-screw H′ will be turned slower than the outer screw H, thereby changing the angle of the tool-stock guides every time the feed-screws are turned.

By this means the outer end of the bar E can be moved forward faster than the inner end, which movement will cause the bar and the feed-screw moving the same to assume a position of more or less inclination toward the guides d^2 and connecting-bar M, which position the feed-screws are enabled to assume by pivoting their bearings l to the pivoted plates m, as above described.

P represents the reciprocating tool-stock mounted upon the bars F F, so as to slide thereon, and held in place on the same by one or more keys, p. Q is the clamp in which the carbon-point holder is secured. It is arranged between vertical dovetail ways in the tool-stock P, so as to be readily raised and lowered by means of a screw, p'.

The carbon-point holder is composed of a hollow sleeve, r, split at its lower end, which latter is conically enlarged, while its upper end is provided with a screw-shank and nut, r^1 r^2. S is a tube or hollow cylinder inclosing the sleeve r, and having its lower end beveled, so that as the nut r^2, (which bears against the upper end of the tube S) is tightened the enlarged lower end of the split sleeve r is drawn against the end of the tube S, thereby compressing the two jaws of the split sleeve r, and firmly clamping the carbon-point placed between the same.

The clamp Q is provided with a vertical bore for the reception of the holder S, and, if desired, the cap of the clamp Q may be formed in one piece therewith, so that it can be closed or released by a single screw, q, the slit severing the cap from the body of the clamp being arranged only on one side of the bore of the clamp.

t represents a pawl or dog arranged on the rear side of the tool-stock P, so as to turn the friction-pulley o every time the tool-stock moves over the same outwardly, the pawl striking against a fixed stop, t, during its forward movement, while during the return movement the pawl will be raised, and ride over the pulley without moving the same.

The centering-screw b (shown in Figs. 1, 2, and 5) is designed to be engaged with the end of the spindle in dressing the bed stone, or its end is engaged in the recess of a temporary center-piece in dressing stones not yet provided with a spindle or bail. The screw b provided with a long neck, as shown in Fig. 9, is designed to be engaged with the center of the bail in dressing the runner.

By adjusting the bracket B carrying the centering-screw b toward or from the guide-bars E F of the tool-stock by means of the bolts b^1 b^2, the position of the guide-bars F is readily made to conform to the draft of the furrows intended to be operated upon. Upon loosening the bolts d the bearing-blocks D D, on which the guide-bar E slides, can be partially turned in their bearings, so as to incline the bars E F and the tool-stock sliding thereon to correspond with the bevel of the furrows.

Upon raising or lowering the inner ends of the guide-bars E F of the tool-stock by means of the screw g, the depth of the cut is decreased or increased toward the eye of the stone, as may be desired.

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

1. In a millstone-dresser, the combination, with the frame A and centering-screw b, of the angle-piece B′, made laterally adjustable on the frame, and bracket or screw-bearing B, made longitudinally adjustable on the angle-piece, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the frame A and tool-stock bar E, of the end pieces A′, provided with segmental recesses C, and adjustable segmental blocks D, provided with ways d^2 for adjusting the inclination of the tool, substantially as hereinbefore set forth.

3. The combination, with the bar E, of the guide-bars F F F′, pivoted near their outer ends to the bar E at f, and made vertically adjustable at their inner ends by the set-screw g and bolt f', passing through the slotted hole in the bar E, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the frame A, provided with ways d^2, and bar E sliding therein, of the feed-screws H H′, provided, respectively, with pulleys o^1 o^2 and o^3 o^4, constructed as described, and endless band o^5 for feeding both ends of the bar E, either with the same speed or with different speeds, substantially as hereinbefore set forth.

5. The combination, with the feed-screws

H H′ and cross-piece M, of the pivoted bearings *l* and pivoted plates *m*, substantially as and for the purpose hereinbefore set forth.

6. In a millstone-dresser, the combination, with the tool-stock P, of the carbon-point holder composed of the split sleeve *r*, provided with a conically enlarged lower end, and screw and nut r^1 r^2, and inclosing-cylinder S, substantially as and for the purpose hereinbefore set forth.

JOHN McDONALD McINTYRE.

Witnesses:

JOHN D. PAYNE,

CHAS. H. ASHFORD.