

J. ORFF, J. C. COOKSON & L. RASTETTER.

MILLSTONE DRESSING MACHINE.

No. 185,125.

Patented Dec. 5, 1876.

Fig 1.

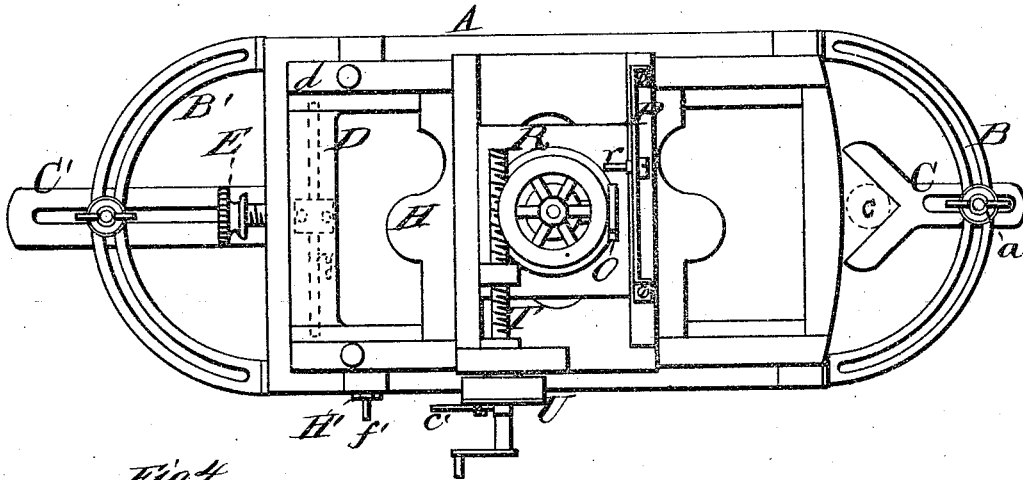


Fig 4.

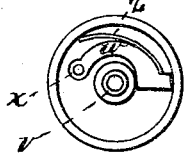


Fig 2.

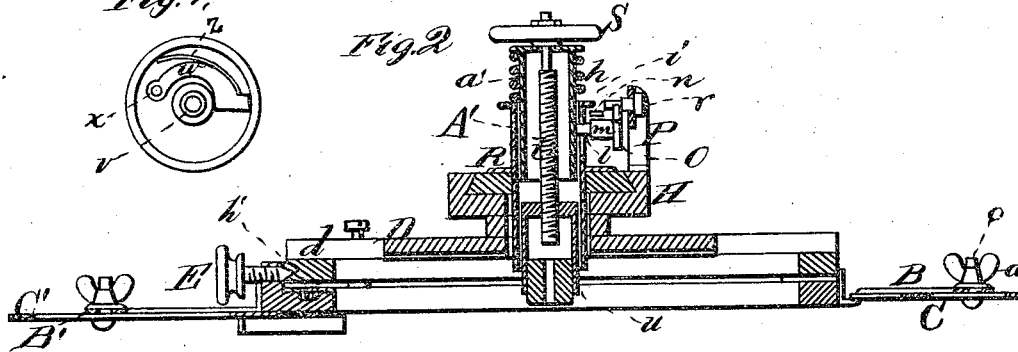


Fig 3.

Fig 5.

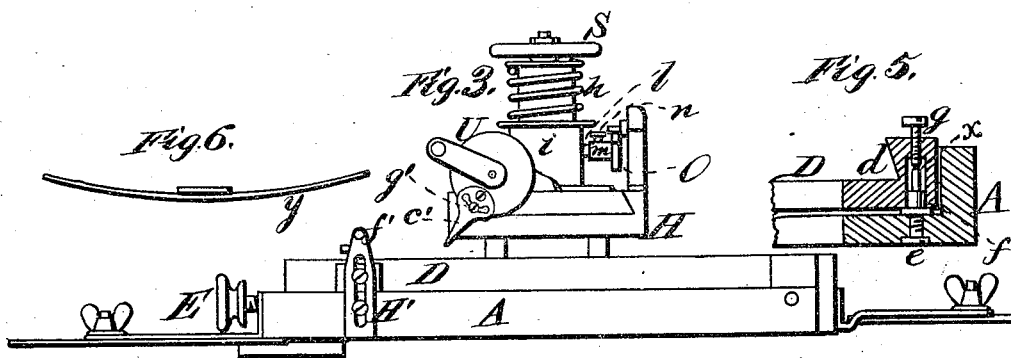
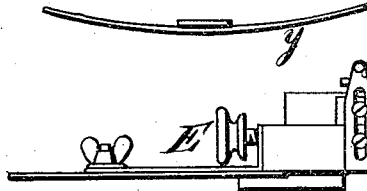


Fig 6.



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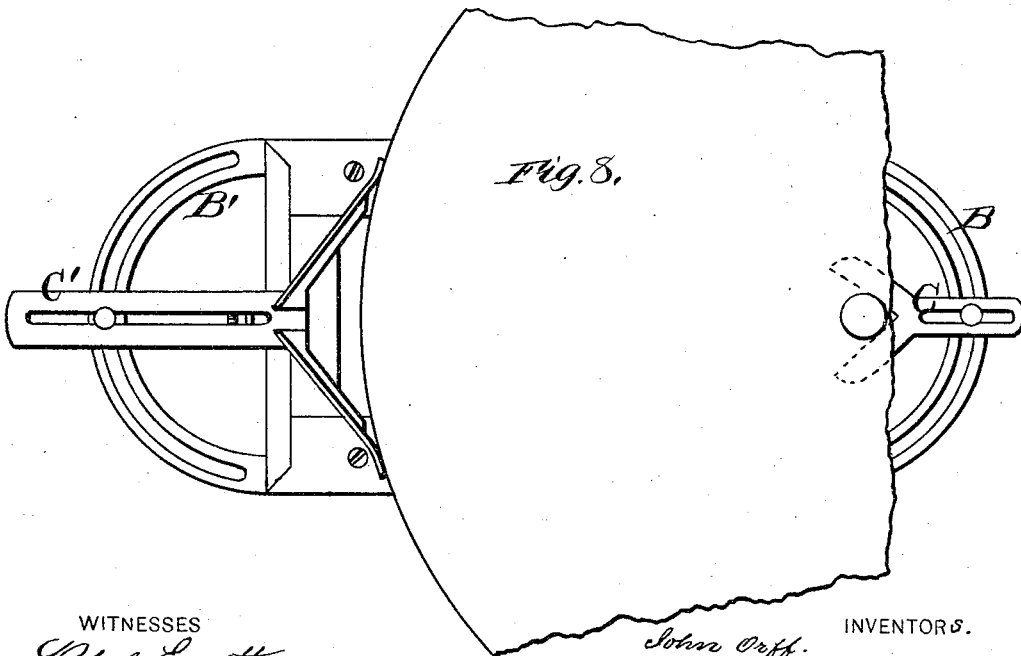
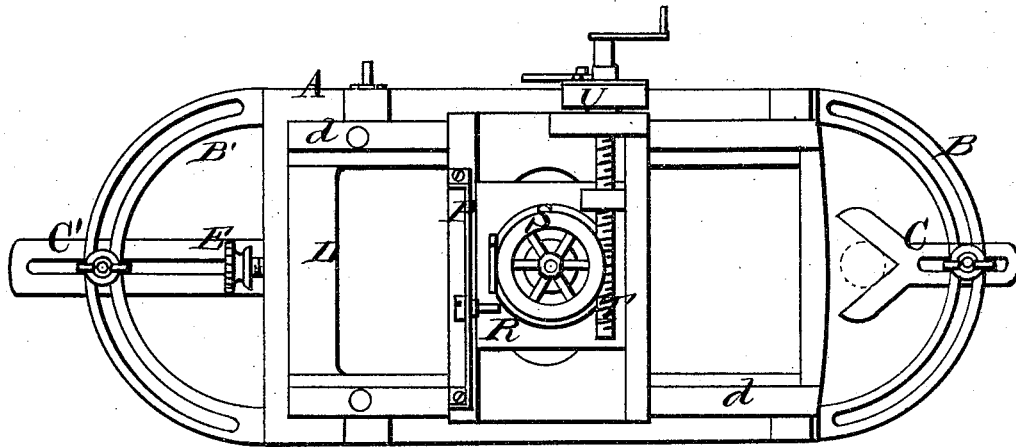
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Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN ORFF, JOHN C. COOKSON, AND LOUIS RASTETTER, OF FORT WAYNE, IND.; SAID COOKSON AND RASTETTER ASSIGNORS TO SAID JOHN ORFF.

IMPROVEMENT IN MILLSTONE-DRESSING MACHINES.

Specification forming part of Letters Patent No. 185,125, dated December 5, 1876; application filed November 18, 1876.

To all whom it may concern:

Be it known that we, JOHN ORFF, JOHN C. COOKSON, and LOUIS RASTETTER, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and valuable Improvement in Millstone-Dressing Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view, and Fig. 2 is a longitudinal central sectional view. Fig. 3 is a side elevation thereof, and Figs. 4 and 5 are detail views of the same. Fig. 6 is also a plan view of my millstone-dressing machine, showing it reversed; and Fig. 7 is a bottom view as applied to a stone.

This invention relates to machines for dressing millstones; and it consists, first, in novel means for attaching the machine to the stone to be dressed; second, in attaching to the carriage that carries the diamond an automatically-operating device, consisting of an adjustable bar, arm, and frame, as hereinafter described, to provide for dressing inclined furrows in the stone; third, in providing an automatically-feeding device, the usual fixed lower bar of which is removable and adapted for attachment to the opposite side of the frame, to the end that furrows inclined either to the right or left may receive the necessary treatment; fourth, in novel means for securing a close and perfect adjustment of the longitudinal-grooved frame carrying the operating cross-frame with the bed-plates; fifth, in novel means for adjusting the bed-plate upon the millstone; and, lastly, in details of construction specifically mentioned and claimed, all substantially as described in this specification.

A of the drawings represents the bed-plate of our machine. It consists in a rectangular frame, having radial and slotted arms B B' at its respective ends, as shown. The letter C represents a slotted and bifurcated clamping-bar, which is connected with the radial

arm B by means of the thumb-screw *a*. The bifurcated portion of this bar C, when on duty, receives and holds a bolt, *c*, which we secure in the eye of the millstone, when such stone is in process of being dressed. The letter C' represents a clamping-bar attached to the front or outer end of the bed-plate. It is slotted and united with the radial arm B' by a set-screw, as shown, and has a bifurcated inner end, which passes under the bed-plate, and when on duty is pressed firmly against the periphery of the millstone. By means of the clamping-bars C and C' the radial arms, set-screws, and bolt *c*, the operator is enabled to attach the bed-plate firmly to the millstone and to adjust its position thereon to the right or left at will. The letter D represents a rectangular frame pivoted at its rear end to the bed-plate, and provided with dove-tailed bars or grooves *d d*, within which the cross-frame hereinafter described is moved back and forth. Inasmuch as the pitch or inclination of this frame requires unusually nice and accurate adjustment to provide for cutting the face of the stone at or near its edge deeper than at or near its eye, to compensate for the increased wear upon its inner portion, we have invented the adjusting device between the bed-plate and frame D, shown on the detailed drawing, Fig. 5. This device consists in a screw, *e*, having a smooth point and passing upward through the bed-plate and into a recess, *x*, in the corner of the frame D. The point of this screw or pin is not threaded, and its middle portion within said recess is surrounded by a rubber packing-ring, *f*, the office of which is to close said recess against dust, which rises in considerable quantity when the apparatus is at work. The letter *g* represents a set-screw which passes through the corner of frame D, and has its point resting upon the point of screw or pin *e*, as shown in the drawing, Fig. 5. The letter E represents a set-screw of large size and strength, having a beveled point. This screw passes through the front cross-bar of the bed-plate, and its point rests in a beveled recess, *h'*, formed in the front cross-bar of frame D. It is obvious that by forcing the beveled point of said last-mentioned screw

into said beveled recess the frame D will be slowly raised, and that said frame will be gradually lowered as the point is withdrawn.

Fig. 6 of the drawings, and the dotted lines at *y* on Fig. 1, represent a curved spring attached to the front cross-bar of the bed plate, and sustaining upon its points or ends the front end of frame D. These set-screws *e*, *g*, and *E*, with the spring and recesses described, enable the operator to adjust the frame D upon the bed-plate with minute accuracy to the pitch or inclination desired, and obviates the necessity of using paper or other wedges for that purpose, as is usual in some dressing-machines.

The letter H represents our working-carriage arranged to be used back and forth in dovetails or grooves *d d* in the frame D. The working-frame is provided with an upright screw-threaded bar or cylinder above the diamond cutting-tool, as shown, and in addition thereto we have provided a spring, *h*, resting upon or within the sleeve *i*, and have slotted said sleeve in its side to provide for the movements and operation of the devices next mentioned. The letter *l* represents a pin rigidly attached to the case of the tool-holding bar or cylinder, and at right angles therewith. The letter *m* represents a sleeve, which incloses the pin *l*, and is secured and adjusted thereon by a set-screw, *n*. To the outer end of this sleeve, and at right angles therewith, is attached a bar, O. This bar is preferably constructed with said sleeve of a single piece of metal; but the desired result is attained in case it be formed of a separate piece of metal and rigidly connected. By means of the pin *l*, sleeve *m*, set-screw *n*, and bar O, the operator is enabled to adjust said bar in such position as may be required for the purpose hereinafter mentioned. The letter P represents a raised bar on a frame slotted longitudinally, as shown, and *r* designates a sliding pin adapted to be securely held within the slot of bar P, and to be moved therewith either to the right or left at will. The letter R shows a sliding frame, which holds the diamond tool. It is arranged for moving back and forth in grooves or dovetails formed in the working-frame, and has a turn-wheel, S, attached to screw-threaded shaft *t*, inclosed within the raised stationary tube A' and its sliding tube *a'*. The letter *u* represents a tubular holder for the diamond tool. This holder has a screw-thread formed in its top, which receives the thread of shaft *t*. The diamond is secured within a plug arranged in the open bottom of the holder. The letter T represents a screw-shaft, which passes through suitable nuts on frame R, and thereby adapted for moving the same in its grooved bed either back or forth, as may be required. To move said frame toward the front we have provided a crank at the front end of said shaft, and for a rearward movement we have provided the following automatic apparatus—that is to say, the letter U represents a drum, within which

we arrange the rigid central post *v* and the cam-lever *w*. A pin, *x*, passes through one end of said lever, as shown, and a spring, *z*, holds it to duty. We further arrange a slotted pendent lever or dog, *c'*, pivoted to the outer front wall of the drum, and having a bolt or stop, *g'*, which is secured to said wall and within the slot of said pendent lever. The slot in the head of said lever may be curved, as shown in the drawings, but the result desired can be obtained by making it in any other shape, provided sufficient space be secured for the movements of the dog. Upon the side of the bed-plate, and extending upward to the proper height, we arrange the adjustable and removable tripping-bar H', with its pin *f'*, which are designed to work in conjunction with the devices last enumerated to move the frame R toward the rear automatically. This result is accomplished as follows, namely: As the operator moves the working frame or carriage H to the front lower end of the pendent lever, it strikes against the pin *f'* of the tripping-bar H', and turns the drum and screw-shaft, thereby causing the frame R to move rearward upon said working-frame.

When the working-frame is moved rearward the pendent lever serves to lift the gripping portions of the cam from its shaft, and, by preventing engagement therewith, causes no movement of the screw-shaft. Hence, by the joint action of the devices named, the frame R, and, consequently, the diamond tool, are moved gradually and automatically rearward, thereby cutting or dressing that portion of a millstone which is beneath the working-frame with accuracy and precision.

Whenever it is desired to operate the machine from the opposite side, so as to cut a groove in the stone with a different inclination, we place the removable tripping-bar H' upon the opposite side of the bed-plate and reverse the frame R in its groove upon the working-frame. The frame R will then be automatically moved in the direction desired.

Channels or grooves in millstones are formed in such manner that their bases are always inclined either to the right or left. To reach and dress such grooves by the diamond implement, we have devised and arranged the apparatus hereinbefore described, and which is shown by letters *l*, *i*, *m*, *n*, O, P, and *r*.

The mode of operation is as follows, namely: By means of the set-screw *n* we adjust the bar O in such position and inclination as shall correspond with the base of the groove in the stone, and also adjust the sliding pin *r* to operate therewith. Now, as the frame R is moved rearward by the automatic devices above described, the inclined bar O is forced obliquely against the pin *r*, and the diamond tool correspondingly pressed downward, as represented on the drawings.

Our apparatus is arranged to dress a groove which is inclined from the left to the right. To dress a groove having an opposite inclination from the right to the left, we reverse the

frame R upon its sliding way, and place the removable trip H' to the left-hand side of the bed-plate. The apparatus will then be in position to dress the groove last above mentioned.

Changes in the details of construction and a variety of modifications may be employed without departing from the nature and scope of our invention.

What we claim as new, and desire to secure by Letters Patent, is—

1. The radial arms B B' and bifurcated clamping-bars C C', having set-screws, as described, substantially as and for the purpose specified.

2. In combination with the bed-plate A and frame D the spring y, substantially as and for the purpose specified.

3. In combination with the bed-plate A and frame D, the recess x, pin e, packing-ring f, and set-screw g, substantially as described.

4. In combination with the bed-plate A and frame D, the beveled pointed set-screw E and recess h', substantially as and for the purpose set forth.

5. In combination with the threaded tool-

holder u, the screw-shaft t, turn-wheel S, sliding tube a', spring h, and slotted sleeve i, substantially as described.

6. In millstone-dressing machines, the pin l, having adjustable sleeve m and adjustable cam or bar O, in combination with sliding pin r and slotted bar P, substantially as specified.

7. In combination with the bed-plate A and frames D and H, the removable transverse cross-frame R, carrying the diamond tool with the automatic feeding device, substantially as described.

8. In millstone-dressing machines, the combination of the cam-lever w, working on its shaft v, and having a spring, z, and dog g', with the adjustable and removable tripping-bar H', substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

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JOHN C. COOKSON.

LOUIS RASTETTER.

Witnesses:

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