T. P. BENTON.

Diamond Millstone-Dressing Machine.

No. 214,872. Patented April 29, 1879.

Fig. 1.

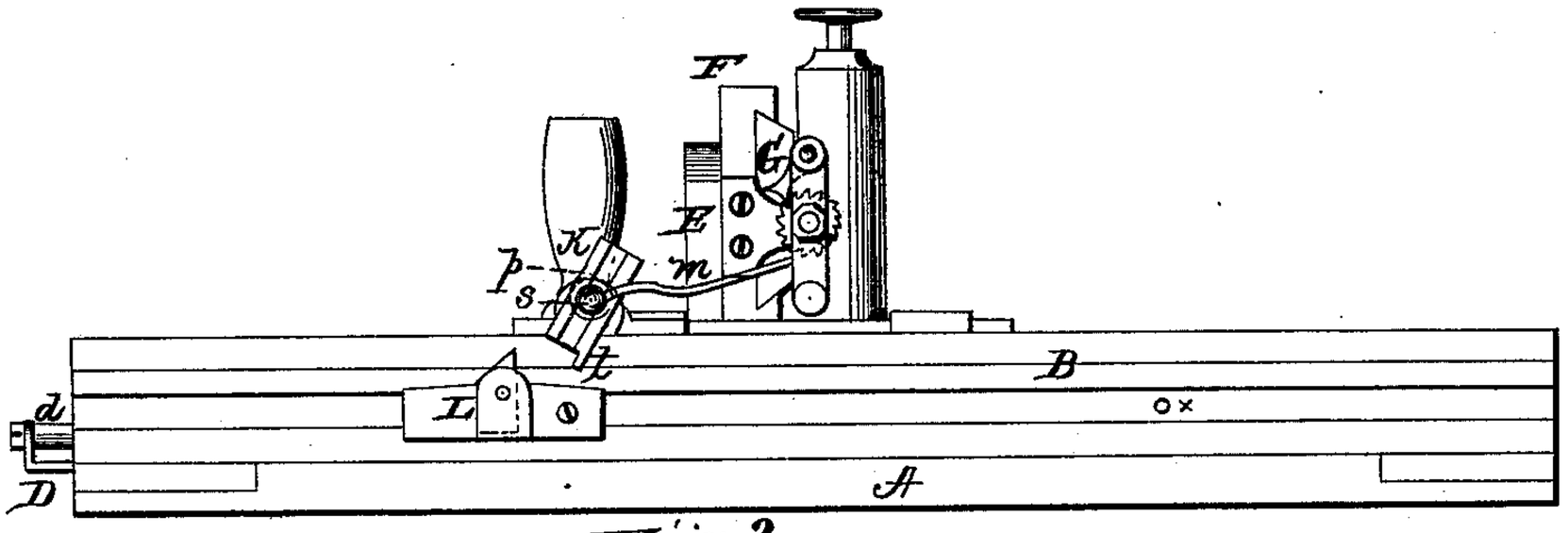


Fig. 2.

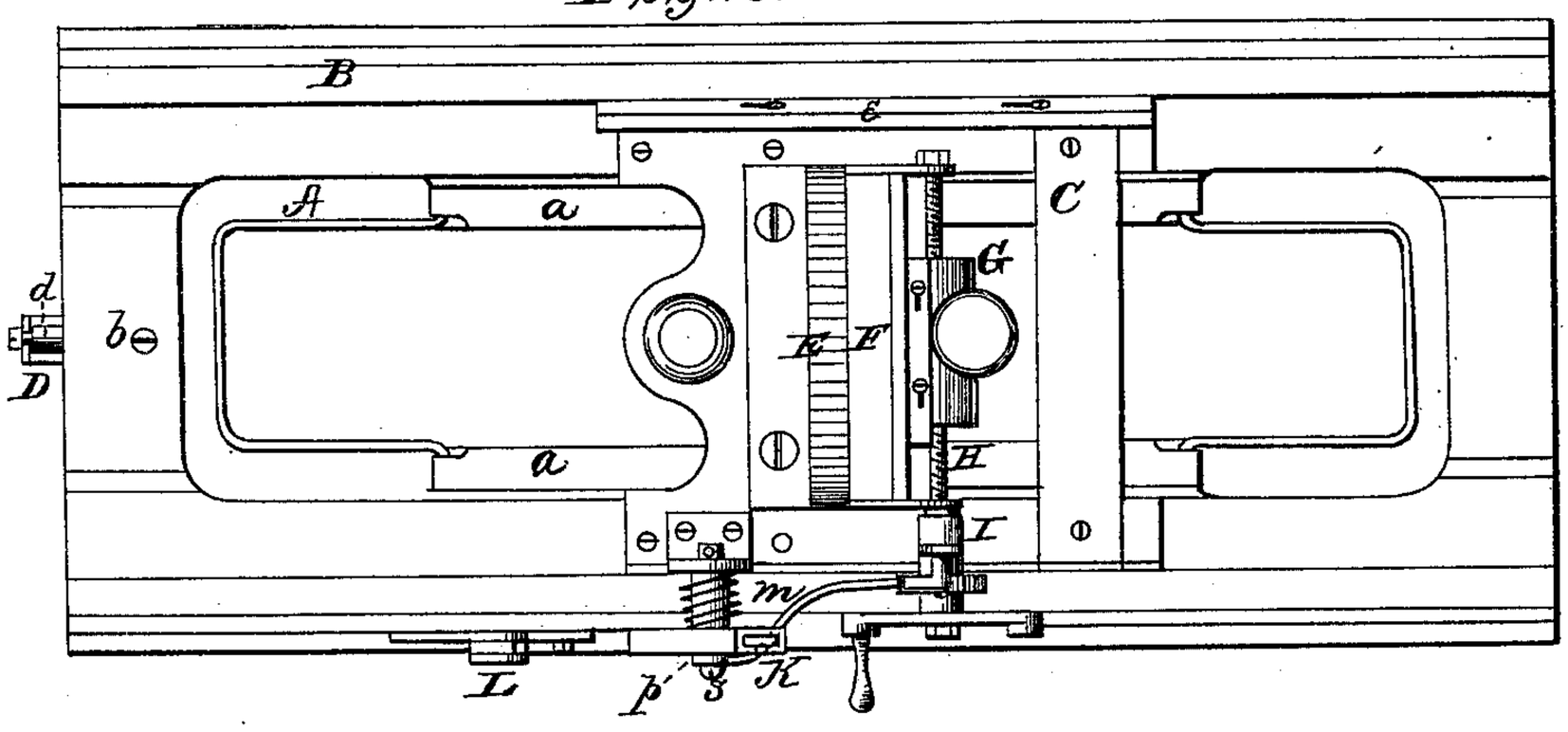
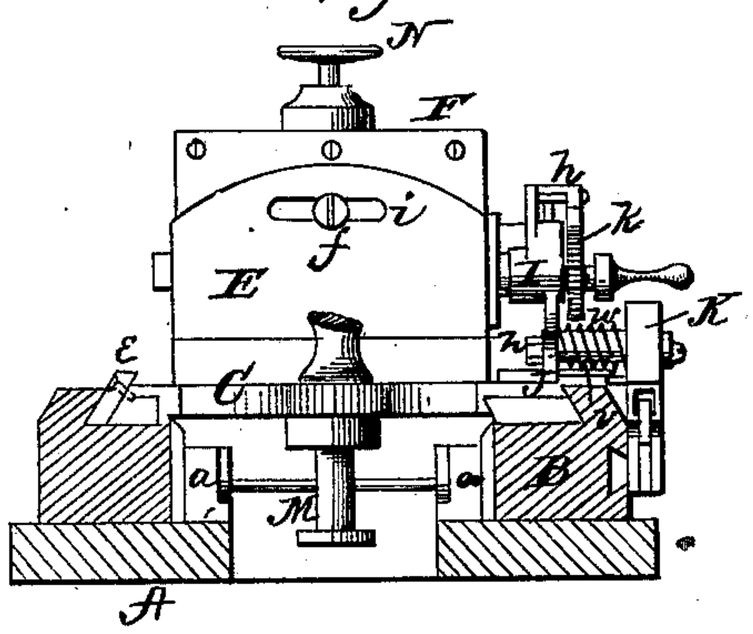


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS P. BENTON, OF LA CROSSE, WISCONSIN.

IMPROVEMENT IN DIAMOND MILLSTONE-DRESSING MACHINES.

Specification forming part of Letters Patent No. **214,872**, dated April 29, 1879; application filed January 30, 1879.

To all whom it may concern:

Be it known that I, THOMAS P. BENTON, of La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Diamond Millstone-Dressing Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a millstone-dressing machine, as will be hereinafter more fully set forth.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a side elevation of my machine. Fig. 2 is a plan view of the same. Fig. 3 is a transverse vertical section thereof, showing a rear elevation of the carriage.

A represents the staff-bed or bed-plate, and B the frame forming the ways upon which the carriage C is moved backward and forward. Upon the inner edge of the staff-bed A are cast lugs *a a*, and over these the frame B is closely fitted and pivoted at *x*, at about one-third of its length from the end. Between the frame and staff-bed, at one end, is inserted a wedge, D, adjusted by means of a screw, *d*, passing into the end of the frame. Passing down through the frame into the staff-bed is a binding-screw, *b*. By releasing this screw *b* the wedge can be moved by its adjusting-screw *d*, and the frame or ways B can thus be adjusted to the staffing, or made to cut deeper at the eye of the stone.

The carriage C is provided with gibs *e* to adjust it to the ways. To the carriage, in its center, is bolted an upright plate, E, and to the lower edge of this plate is pivoted a cross-frame, F, at its lower edge, and near the upper edge of said frame a screw, *f*, passes through a slot, *i*, in the plate. This admits of the cross-frame being inclined to the right or left, for the purpose of furrowing right or left millstones, and to adjust the cut of the diamond across the lands.

In the cross-frame F is fitted a cross-head, G, provided with suitable gibs to adjust it to the ways formed in the cross-frame, and this cross-head is moved laterally by means of a screw-shaft, H. This screw may be turned by hand or worked automatically to move the cross-head to the right or left by means hereinafter described.

Upon the screw H is a lever, I, hung loose at its center, and on its upper end is attached a pawl, *h*, which takes into a ratchet-wheel, *k*, made fast onto the screw. The pawl *h* is arranged to work on both sides of the ratchet-wheel and turn the screw in either direction. At the lower end of the lever I is attached one end of a connecting-rod, *m*.

On the side of the carriage is fastened a box, J, in which a rock-shaft, *n*, works; and forming part of or attached to the rock-shaft is a head, K, that is grooved longitudinally to receive a slide, *p*, which is adjustable and held by a bolt or screw, *s*, above or below the center of the rock-shaft; and to this slide is attached the other end of the connecting-rod *m* from the lever I on the screw-shaft.

The head K has a projection, *t*, at its lower end, to come in contact with the trip L on the side of the frame B. Around the box J is coiled a spring, *w*, that holds the head K against a stop, *v*, provided on the box. The trip L is fastened in a groove on the side of the frame by means of a screw and nut, and is adjustable along the side of the frame.

As the carriage is moved along the ways the projection *t* at the lower end of the head K strikes the trip, and, by means of the rod *m*, lever I, pawl *h*, and ratchet-wheel *k*, the screw is made to turn in either direction, according as the slide *p* is set above or below the center of the rock-shaft, the pawl being placed to work on corresponding side of the ratchet-wheel, and thus move the cross-head a certain distance, the distance being regulated by the adjustment of the slide *p* above or below the center of the rock-shaft.

In the cross-head G is a vertically-adjustable holder, M, worked by a set-screw and hand-wheel, N. This holder is kept firmly in its sheath by a set-screw in the cross-head below the carriage. On the end of the holder is to be placed a nut or chuck with clamp, in which the diamond is to be set.

I am aware that an eccentric has been used with a pivoted frame in a millstone-dressing machine, also that adjustable base-plates have been used, and do not, therefore, broadly claim such as my invention; but,

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

1. The combination of the bed A, pivoted frame B, wedge D, with adjusting-screw *d*, and the fastening-screw *b*, substantially as and for the purposes herein set forth.

2. The combination, with the lever I, pawl, ratchet, and screw-shaft, of the rod *m* and the slide *p*, adjustable in the head K, for the purposes herein set forth.

3. The combination of the box J, rock-shaft *n*, with grooved head K, spring *w*, and adjustable slide *p*, with the rod *m*, connecting with the lever I, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

THOMAS P. BENTON.

Witnesses:

ALEX. W. THORNELY,

MINNIE E. JENKS.