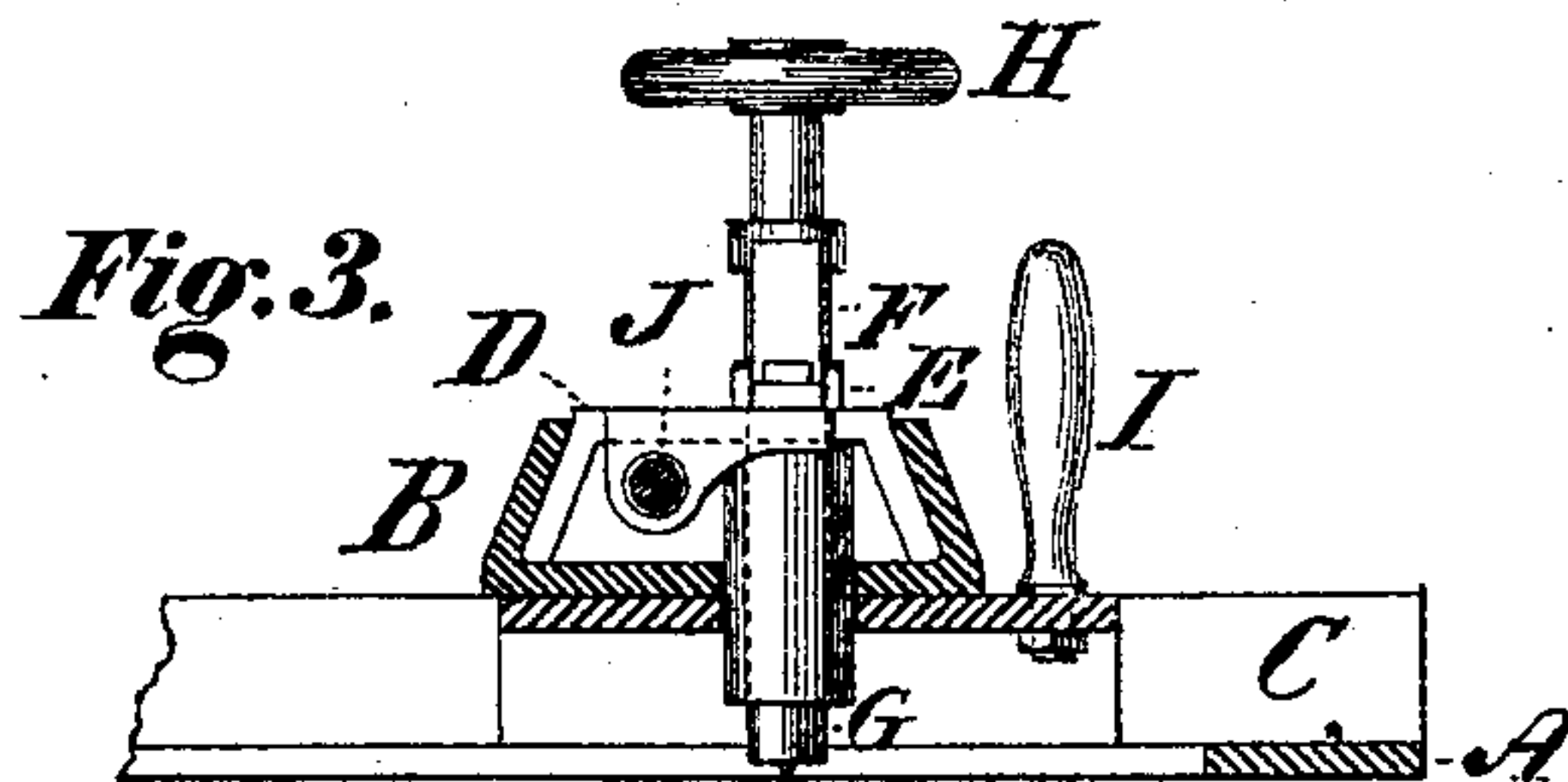
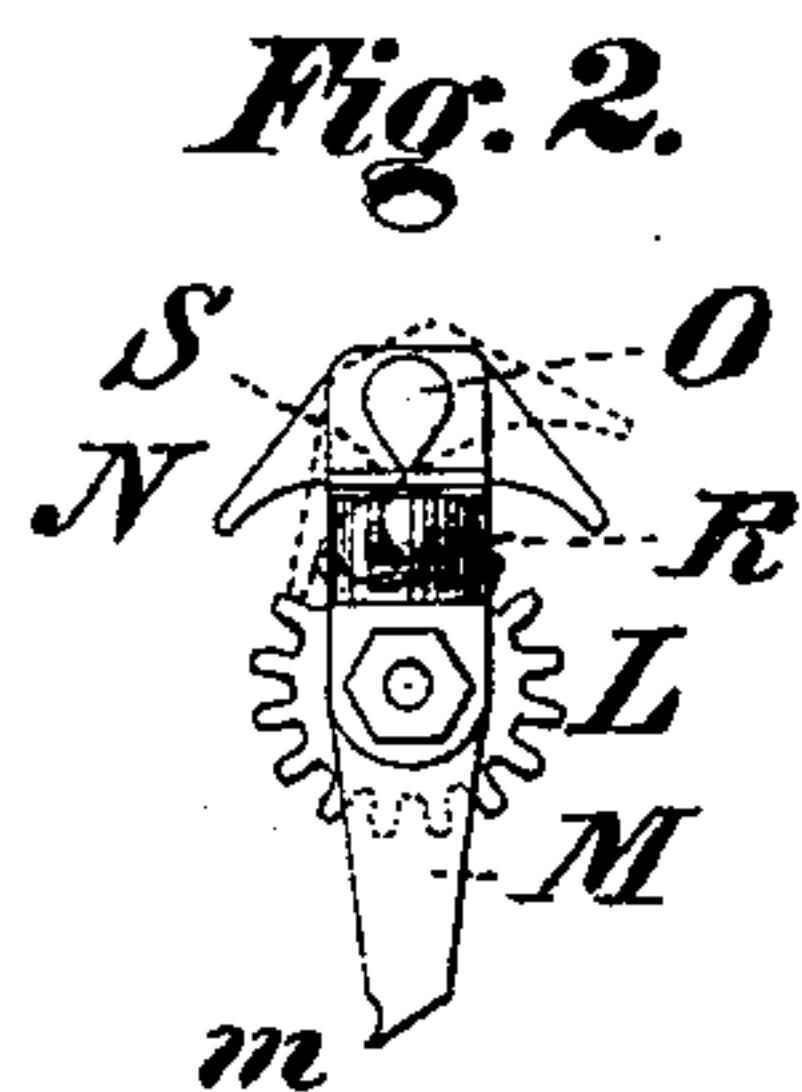
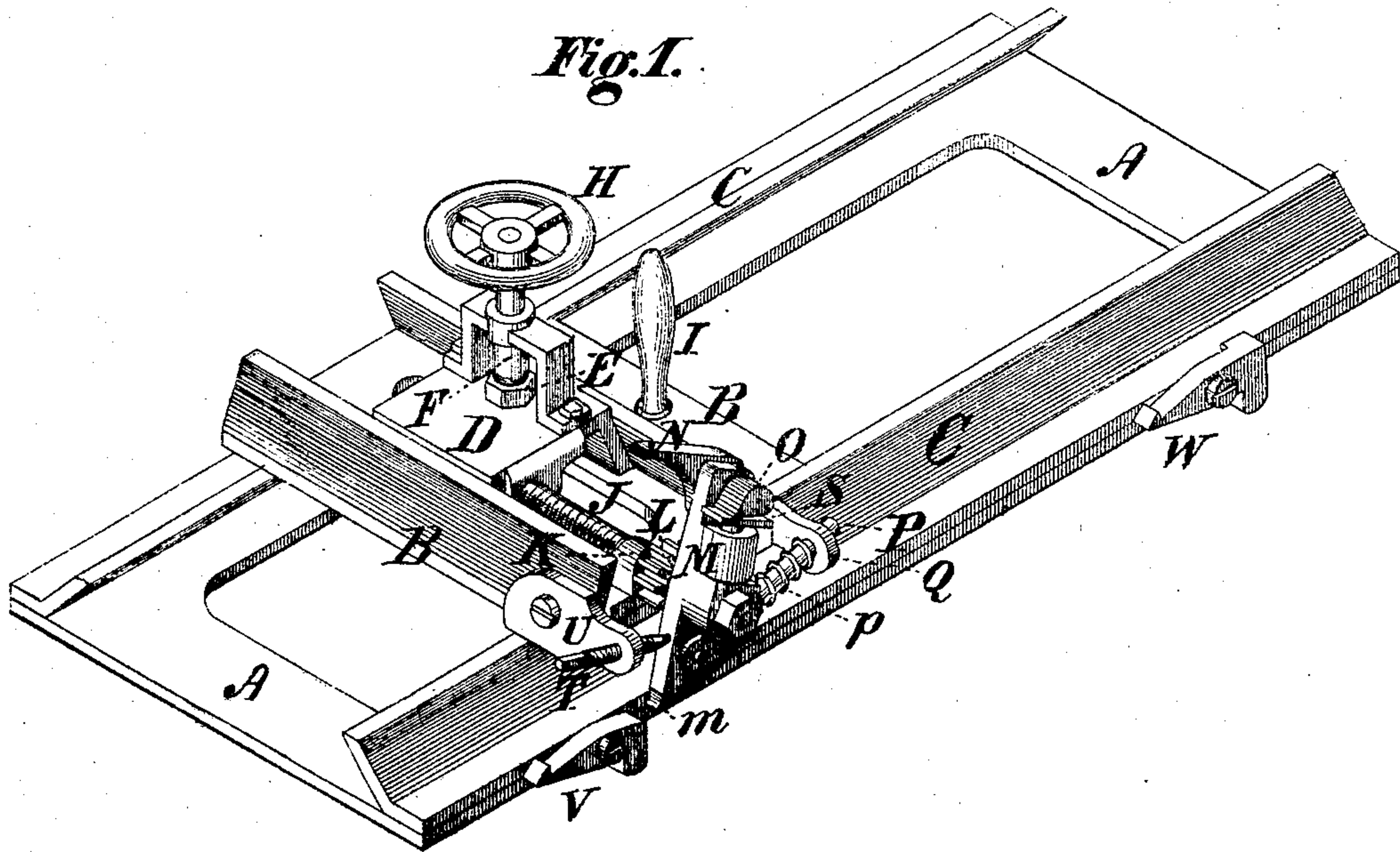


D. LARER.

Diamond Mill-Stone Dressing Machines.

No. 144,851.

Patented Nov. 25, 1873.



Witnesses.

J. Snowden Bell.
Geo. Goering

Inventor.

Daniel Larer,
by his Atty,
Horace Binney, 3rd.

UNITED STATES PATENT OFFICE.

DANIEL LARER, OF POTTSVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD HIS RIGHT TO SAMUEL E. GRISCOM, OF SAME PLACE.

IMPROVEMENT IN DIAMOND MILLSTONE-DRESSING MACHINES.

Specification forming part of Letters Patent No. 144,851, dated November 25, 1873; application filed October 4, 1873.

To all whom it may concern:

Be it known that I, DANIEL LARER, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in Diamond Millstone-Dressing Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the said improvement, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a perspective view of my invention; Fig. 2, a detached view of a portion of the feeding-gear; Fig. 3, a partial longitudinal section on a line between the carriage and the outer bearing of its feed-screw.

The same parts are denoted by the same letters in all the figures.

This invention consists in the combination of a bed-plate; a frame sliding longitudinally thereon; another frame sliding transversely on said longitudinally-sliding frame, and carrying a diamond-holder; a feed-screw, whose rotation imparts to said last-mentioned frame a transverse movement; a rocker, pawl, and ratchet to rotate said feed-screw; latches to engage with said rocker; and a set-screw to adjust the throw of said rocker at the moment of its disengagement from said latches, all as hereinafter described.

A in the drawing represents the bed of the machine, the bottom of which should be perfectly true. B is a longitudinally-sliding frame, which moves on A in grooves or guides C C. D is a carriage sliding on B in transverse grooves or guides. E is a sleeve, secured rigidly to carriage D, within which sleeve is a female screw fitting a male screw on the vertical spindle F, which carries the diamond-holder G at its lower and the hand-wheel H at its upper end. I is a handle firmly attached to slide B. J is the transverse feed-screw, whose thread is preferably double, and fits a female screw in the carriage D. On its journal, which revolves in a bearing, K, on slide B, the ratchet-wheel L is keyed fast, and the rocker M mounted so as to move freely. In the upper end of M turns a pin, to which are secured the pawl N on the inner and the dog O on the outer side

of said rocker. Its lower end forms a toe, *m*, as shown in Figs. 1 and 2, which engages with the latches V W, as hereinafter described. To its lower arm is pivoted one end of the rod P, the other end of which passes through a bearing, Q, on slide B. A spiral spring, *p*, surrounds the rod P, and presses against Q and the lower arm of rocker M, so as to keep the rocker in the position shown in Fig. 1. The pawl N may be set so that either end shall engage with the ratchet L; or it may be set entirely out of gear with said ratchet, being retained in either position by the spiral spring R, which rests in a recess in a lug on rocker M, and supports a plate, S, which bears against the dog O. T is a set-screw working in a bearing, U, on slide B, and acting as a stop to limit the movement of the rocker. V W are weighted latches pivoted to the bed-plate.

The operation of this machine is as follows: The slide B being at that end of the bed-plate which is shown at the left hand in the drawing, and the pawl N being in the position shown in Fig. 1, the operator slides B, by means of the handle I, to the opposite end of the bed-plate, adjusting the wheel H so as to regulate the depth of the cut made by the diamond, the toe *m* passing over the latches V W without catching in them. As the operator begins the return stroke, the toe engages with latch W, which holds and turns the rocker as the slide B advances, the pawl slipping over the teeth of the ratchet until the rocker has turned far enough to disengage the toe. The rocker is then instantly returned to its former position by the spring *p*, which movement causes the pawl to rotate the ratchet and feed-screw, thereby moving the carriage D transversely, so that the cut made by the diamond during this stroke is parallel to the previous cut. The latch V gives the carriage a similar transverse movement at the completion of this stroke, and the operator continues to reciprocate the slide, cutting a groove at each stroke, until the diamond has gone over the whole width of the field. The pawl is then changed to the opposite position, the bed placed over the next field, and the operation repeated, the pawl turning the ratchet while the latch turns the rocker, and slipping over the teeth as the spring *p*

brings the rocker back, so that the feed is now in the opposite direction, and the carriage D moves gradually to its former position. The operation is thus continued, changing the pawl whenever the machine is shifted to a new field, until the whole stone has been dressed. The distance between the cuts may be varied by means of the screw T, which limits the throw of the rocker, and consequently the rotation of the ratchet. By shortening the stroke, the cuts may be made as short as desired. In this case, as only one latch operates, the diamond makes two strokes for each cut. To level the bottom of a furrow, the pawl is thrown out of gear, the machine placed so as to bring the diamond into the furrow, and the slide recip-

rocated, as above described. For this work I prefer to change the diamond-holder, putting in one with a larger diamond.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The combination of the bed-plate A, longitudinally-sliding frame B, transversely-sliding diamond-carrier D, feed-screw J, ratchet L, rocker M, pawl N, latches V W, and set-screw T.

DANIEL LARER.

Witnesses:

THOS. BOHANNAN,
A. J. MEDLAR.