T. WOODS.

STONE-DRESSING MACHINE.

No. 176,569. Patented April 25, 1876.

Fig. 1.

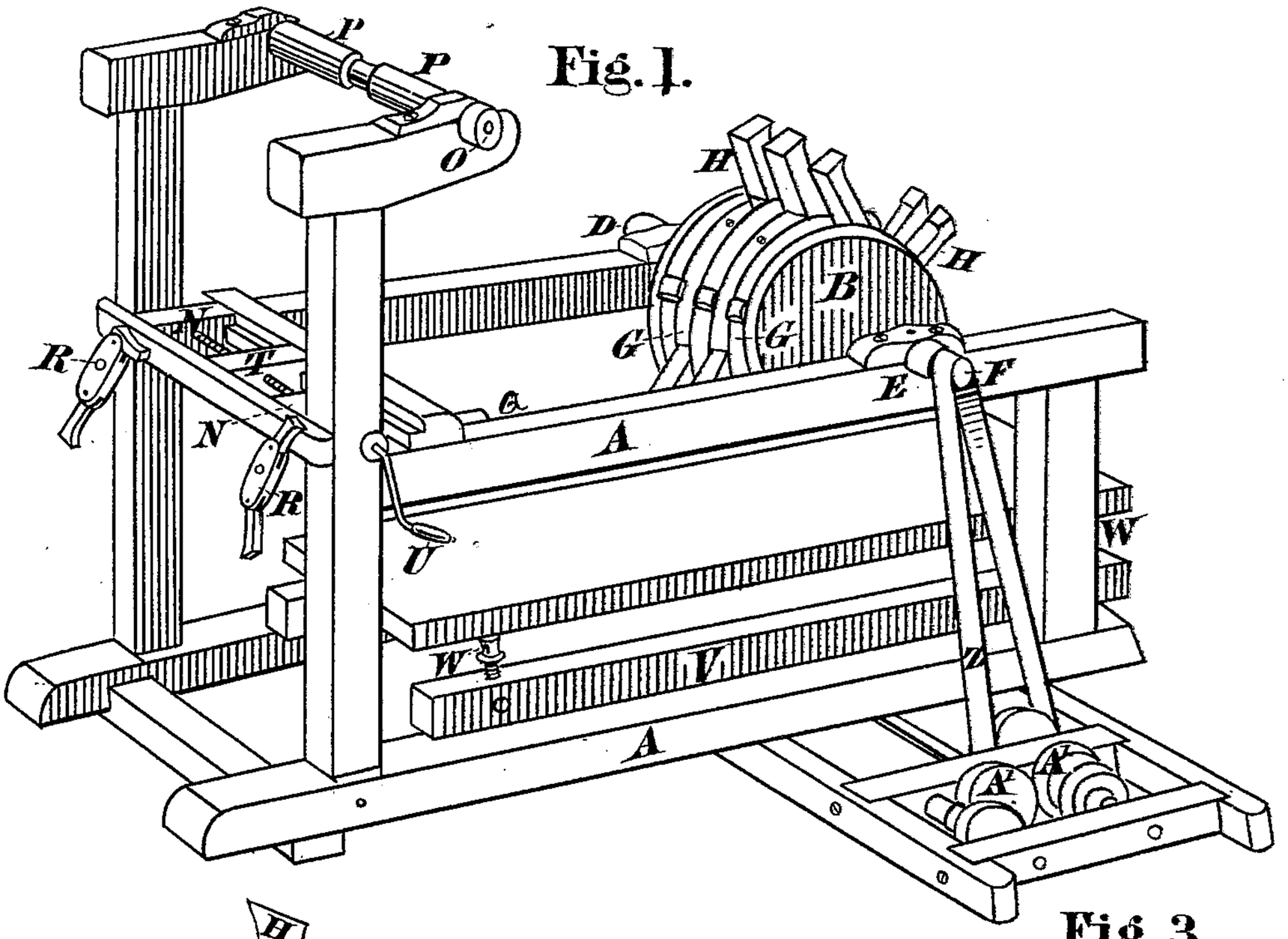


Fig. 2.

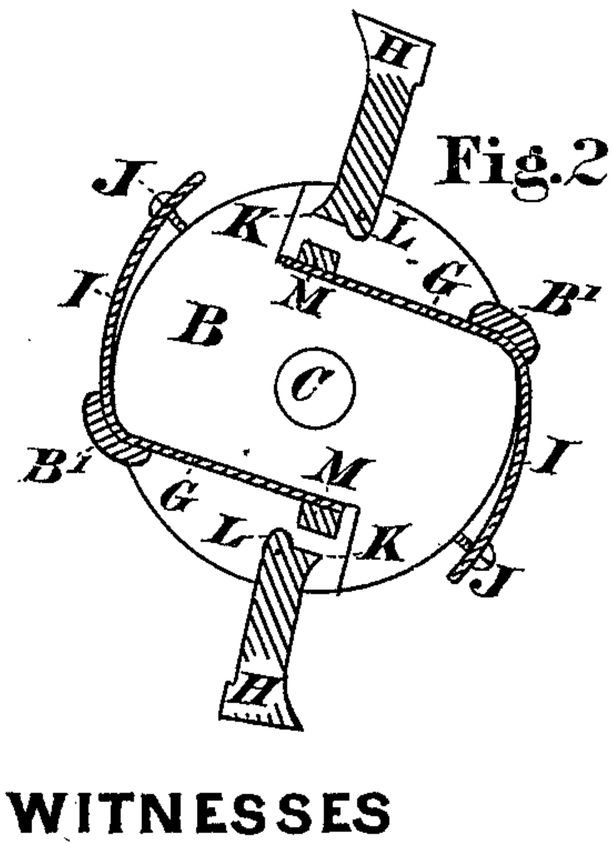
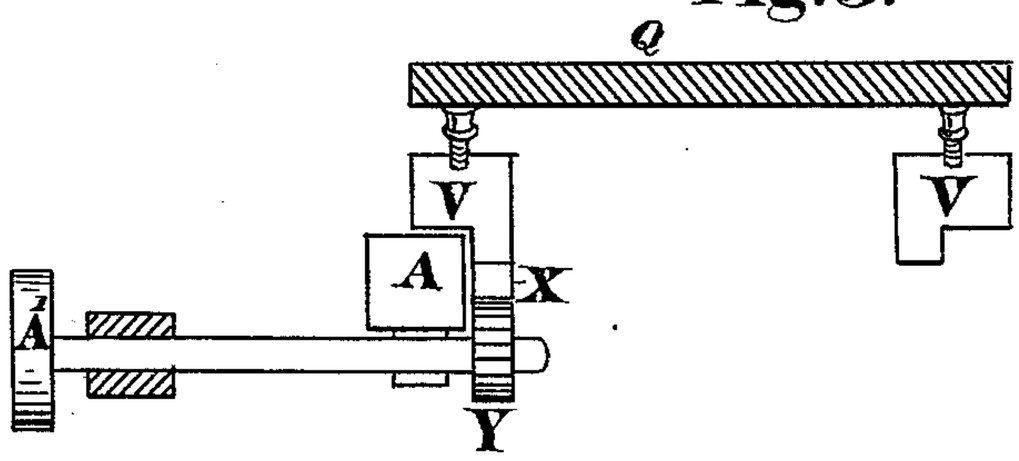


Fig. 3.



WITNESSES

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THOMAS WOODS, OF NICHOLASVILLE, KENTUCKY.

IMPROVEMENT IN STONE-DRESSING MACHINES.

Specification forming part of Letters Patent No. **176,569**, dated April 25, 1876; application filed September 17, 1875.

To all whom it may concern:

Be it known that I, THOMAS WOODS, of Nicholasville, in the county of Jessamine, and State of Kentucky, have invented a certain new and useful Improvement in Stone-Dressing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of the machine, showing its general construction. Fig. 2 is a sectional view of one of the cutter's heads, showing the cutters with spring-brakes, and the cushion for the cutters. Fig. 3 is a sectional view of the carriage and shifting-gear by which it is operated.

Similar letters of reference indicate corresponding parts.

This invention is in the nature of an improvement in stone-dressing machines; and the invention consists in a machine for dressing stone, provided with a cutter-cylinder for dressing the face of the stone, adjustable cutters for dressing its edges, so as to prevent spawling, and an adjustable carriage or stone-bed, all constructed and operating as herein after specified.

In the drawings hereinbefore referred to, A A represent a rectangular frame-work of suitable construction, in bearings, in which is fixed a cylinder, B, made with a number of rows of recesses, alternating horizontally with intermediate spaces, and circumferentially with each other, so that any two of such rows shall present recesses across the entire surface of the cylinder embraced between said rows. B is a cast-iron cylinder, with recesses on its surface for the cutters. C is the cylinder-shaft, and D and E are its driving-pulleys. F is the pulley for operating the carriage. G G are the recesses in the cylinder for receiving the cutters. H H are the cutters, all of which are made of iron, with steel edges, and in form as shown in the drawing, and hinged to the cylinder by means of pins through the entire length. I I I are metal spring-brakes under the cutters, for retarding both the backward and forward motion of the cutters. B′ B′ are the cushions. J J J are set-screws for adjusting the pressure of the spring brakes. K K are projections on the cutters, and L L are round heels on which the brakes work. M M are pieces of wood or other suitable material, on which the projections of the cutters strike when thrown forward by the centrifugal force, and serving to keep the edges of the cutters in line, and in rear of the radial, through the pivots on which they work, and are made adjustable by placing thin pieces of leather under their inner ends. N N are two sliding blocks, each carrying a cutter-head for dressing both edges of the stone, and also the hinder or finishing end. O O are pulleys for operating the last-named cutter-heads, which receive their motion through the belt on the broad pulley P P, which in turn receives motion from the cylinder-shaft through the pulleys D and E. The object in having this pulley so broad is to allow the driving-belt that drives the cutter-heads to be moved back and forth with them. R R are these cutter-heads, which are made in form as shown in the drawing, and secured to movable blocks working in the frame, and fed up by means of screws through the center of the frame and blocks N N. T is the stationary cross-piece of the frame. U U are the feed-screws. The last named heads and cutters are constructed in the same manner as those used on the main cylinder, the sliding blocks being adjustable to suit the width of the stone, and the cutters being arranged so as to operate at right angles with the cylinder. They strike off the stone to a uniform depth, and thereby prevent spawling by the main cutters in finishing. V is the carriage on which the stone is placed, all of which may be made of either wood or iron, and in form as shown in the drawing, and operated somewhat similar to an ordinary iron-planer. W W are screws for adjusting the height of the carriage-platform Q. X is a cog-rack on the under side of the carriage. Y is the pinion working into it. Z is the driving-belt, and A′ are the friction-pulleys by which the carriage is operated.

The mode of operating this machine is simply this: The shaft and cylinder is put in rapid motion in the direction designed, when

each cutter is thrown in a line of a radius of the circle of the cylinder by centrifugal force, and in this manner approaches the stone and expends upon it either a part or the whole of its momentum, according to the amount of resistance in the way. If it expends the whole, it is thrown back, and then is dragged forward by its rivet until it is thrown again into its radial position by centrifugal force, ready for another blow the next revolution, and so on throughout its operation. One result of this construction and operation is, that the force of the blow of each cutter is regulated by its size, form, and weight, in connection with the speed of the cylinder, and if the cutters be equally distributed around the cylinder the force required to turn it will be nearly uniform, and the pressure of the brakes, being properly adjusted to the centrifugal force, will retard the forward and backward motion of the cutters, and, in connection with the pins, will prevent the jarring and danger of breakage thereof.

To operate the edgers, the cutter-heads must be adjusted to the width of the stone, and, rapidly revolved, they will dress the edges as the carriage passes along; but when the end is to be dressed the carriage is stopped and the cutters fed to the stone by the screws. When the sides are to be dressed vertically the cutter-heads are reversed, and the belts changed so as to reverse the motion of the cutters, (the stone being fed to the cutters by raising the platform.)

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

1. The cylinder B, constructed with alternating recesses G, in combination with the cushioned cutters H and their brakes I, substantially as described.

2. In a stone-dressing machine, the edgers R, in combination with their bearing-blocks N and the set-screws U, whereby said edgers are adjustable in the main frame relatively to the stone to be dressed, the mechanism being constructed, arranged, and operated substantially as shown and described.

3. In a stone-dressing machine, the stone bed or platform Q, mounted on the carriage V, and adjustable thereon at any height and angle by set-screws W, substantially as shown and described.

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Witnesses:
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