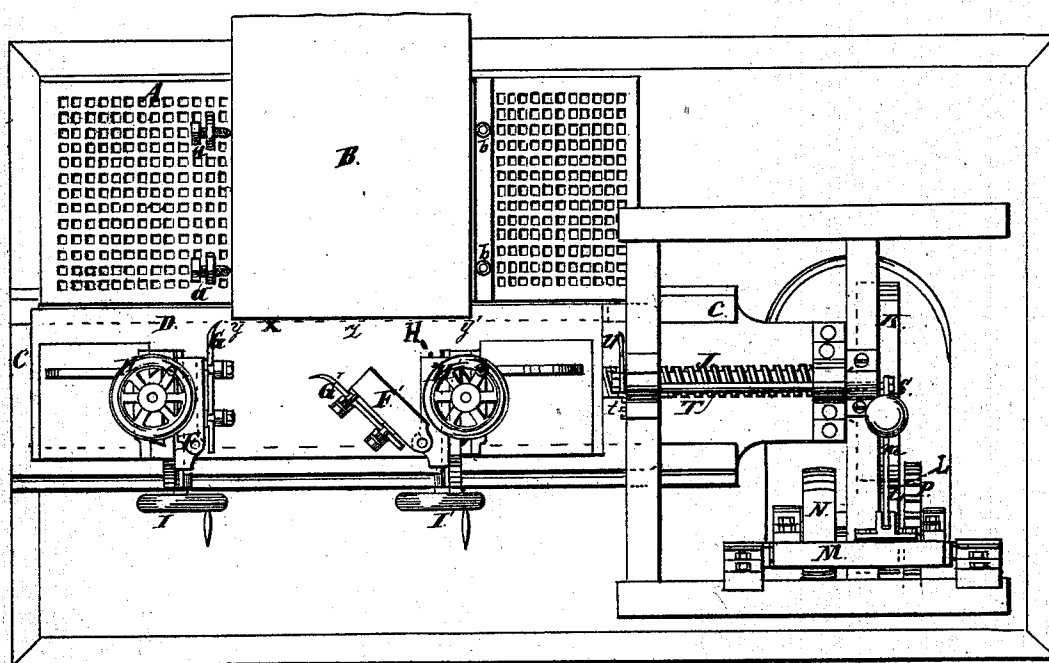
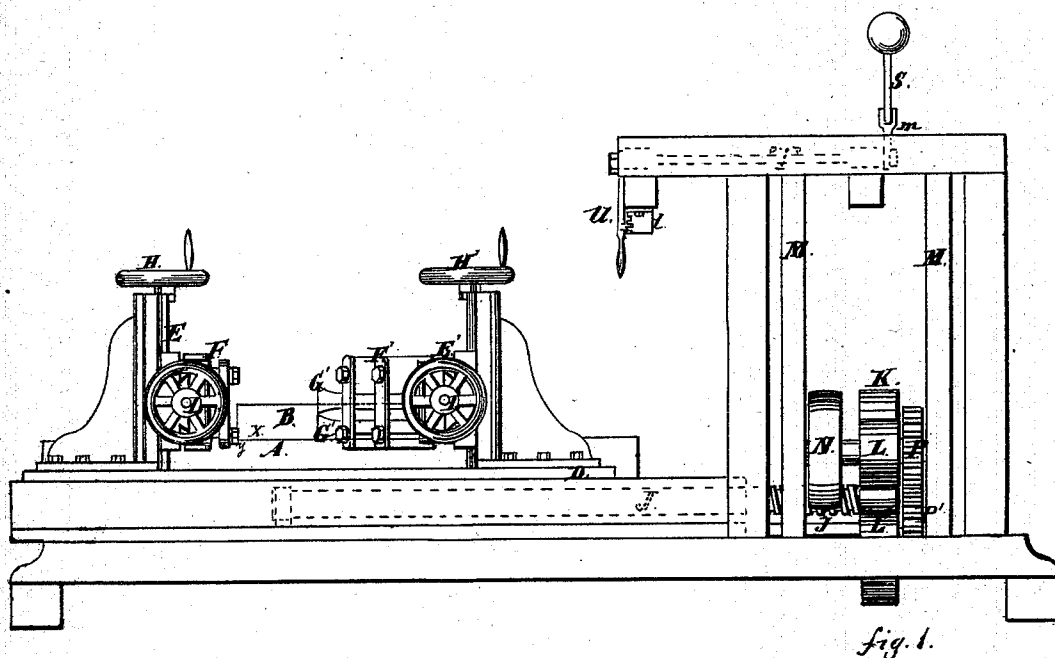


A. T. MERRIMAN.
Machines for Planing Stone.

No. 139,409.

Patented May 27, 1873.



Witnesses:
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Inventor:
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his attys

2 Sheets--Sheet 2.

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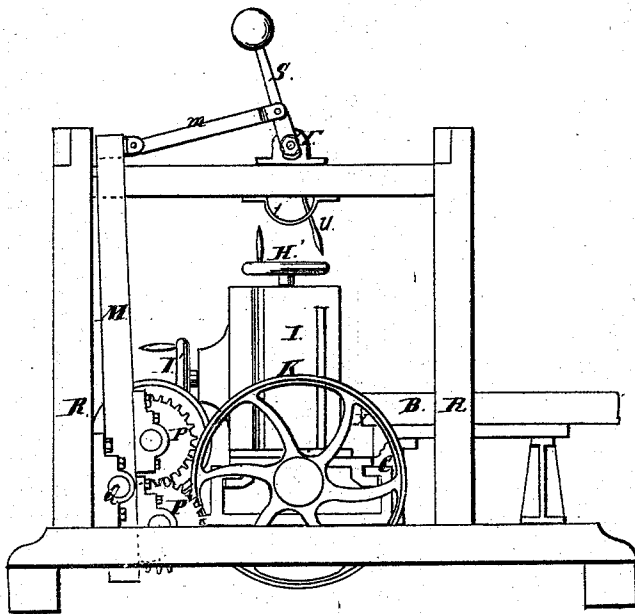


fig. 3.

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UNITED STATES PATENT OFFICE.

ANDREWS T. MERRIMAN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MACHINES FOR PLANING STONE.

Specification forming part of Letters Patent No. **139,409**, dated May 27, 1873; application filed April 30, 1873.

Be it known that I, ANDREWS T. MERRIMAN, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Machines for Dressing Stone, of which the following is a specification:

This invention relates to a machine for dressing or planing the surface of stone.

One of the great difficulties heretofore experienced in dressing stone by the planing process has been the chipping or breaking of the edge of the stone at the end where the tool emerges, and an allowance has always been made, in dressing stone to a given size, for this loss by breaking away of the corner. For this same reason it is almost impossible with the common planer to produce a sharp square-cut corner. So long as the advancing tool has plenty of stone before it the cut is smooth and perfect, because the body of the stone in front is strong enough to prevent the diagonal thrust of the tool from producing a fracture; but as the tool nears the end of the stone or edge, or corner, the body of stone before it in the direction of its force becomes less and less until it is no longer sufficient to withstand the power, and a diagonal chipping or fracture at the edge ensues.

To prevent this loss of stone by fracture at the edge, and to enable the machine to plane a square-cut corner is the object of this invention; and the invention consists of a stone-planing machine so constructed and arranged with a pair of tools, arranged to cut in opposite directions, that the tool enters at the edge each time and cuts toward, and to, the center of the surface to be dressed, the tools alternating in the cut, one cutting while the other is being drawn back to its starting place, all of which will more fully hereinafter appear; and the invention further consists in the mechanism employed in connection to command and produce the reverse of motion, as will be explained.

In the drawings accompanying this, and which form a part hereof—

Figure 1 is a front view of my improved machine. Fig. 2 is a top or plan view of the same, and Fig. 3 is an end view of the same from the right hand.

Like letters of reference made use of in the several figures indicate like parts.

To enable those skilled in the art to make and use my invention, I will proceed to describe the same with particularity.

In the said drawings, A represents a bed-plate or platform, upon which the stone B to be dressed is placed, and secured by the movable screw-clamps *a b*. Immediately in front of this bed-plate is a slide-way, C, upon which moves the sliding carriage D, bearing two upright tool-supporting frames, E E', to which are hinged the folding-gates F F' which bear the tools G G'. These gates are swung upon the sides of the frames E E', which are adjacent, and swing in opposite directions. They are hinged to a universal-slide contrivance so that the tool may be adjusted vertically and horizontally, vertically by the screw-wheels H H', and horizontally to and from the stone by the screw-wheels I I'. The carriage D is moved along the slide-way C by means of a large revolving-screw, J, which forms the axis of the large wheel K. This wheel K is operated by either one of the two friction-wheels L L', which revolve in opposite directions. The two friction-wheels L L' are borne one above the other in a movable frame, M; the upper wheel L carries upon its shaft the driving-pulley N which is connected by a belt to the power, and upon the other side, the cog-wheel P which meshes into the cog-wheel P' borne upon the shaft of the wheel L' below, so that the two friction-wheels are caused to revolve constantly in opposite directions. The frame-work M which bears this set of gearing is pivoted by trunnions Q in the frame-work R of the machine, and the upper part of the movable frame M is connected by the pivoted bar *m* to a weighted lever S, which is attached to the rock-shaft T, to which is rigidly connected the hand-lever U which plays over a notched segment, *t*. By moving this hand-lever U the frame M is vibrated, and one or the other of the friction-wheels L L' brought into contact with the great wheel K, moving it in either direction at pleasure.

The operation of planing is as follows: The stone is placed upon the bed-plate and secured properly as shown in the drawing, in which X is the surface to be operated upon. The machine is started, revolving the screw in the proper direction to bring the tool G against

the stone at the corner Y. This motion is continued until the tool G has reached the center Z, the other tool G' has now passed beyond the corner Y. The motion is now reversed, bringing the tool G' into operation, cutting with it to the center Z in the opposite direction. This is continued until the planing of the surface has been completed. During the operation the operator has complete control of the tool by means of the screw-setting wheels, and can stop or start, or reverse the motion of the driving-screw, instantly, by the hand-lever U, which, when standing centrally in the notched segment indicates that the friction-wheels are both out of contact, and as it stands at one or the other side indicates more or less power applied in one or the other direction, as the case may be.

Having thus fully described the construction and operation of my invention, that

which I deem new, and desire to secure by Letters Patent, is—

1. The stone planing-machine, consisting of two or two series of cutting-tools, moving in the same plane, and arranged to cut from the corners, alternately, in opposite directions to the center, substantially as specified.

2. The combination of the movable frame M, carrying the friction-wheels L L' geared to revolve in opposite directions, and the large friction-wheel K, substantially as specified.

3. The combination and arrangement of the sliding carriage D, tools G G', screw J, wheel K, wheels L L', gearing P P', trunnioned frame M, weighted rock-shaft T, lever U, and segment t, substantially as specified.

ANDREWS T. MERRIMAN.

Witnesses:

JOHN W. MUNDAY,
HEINR. F. BRUNS.