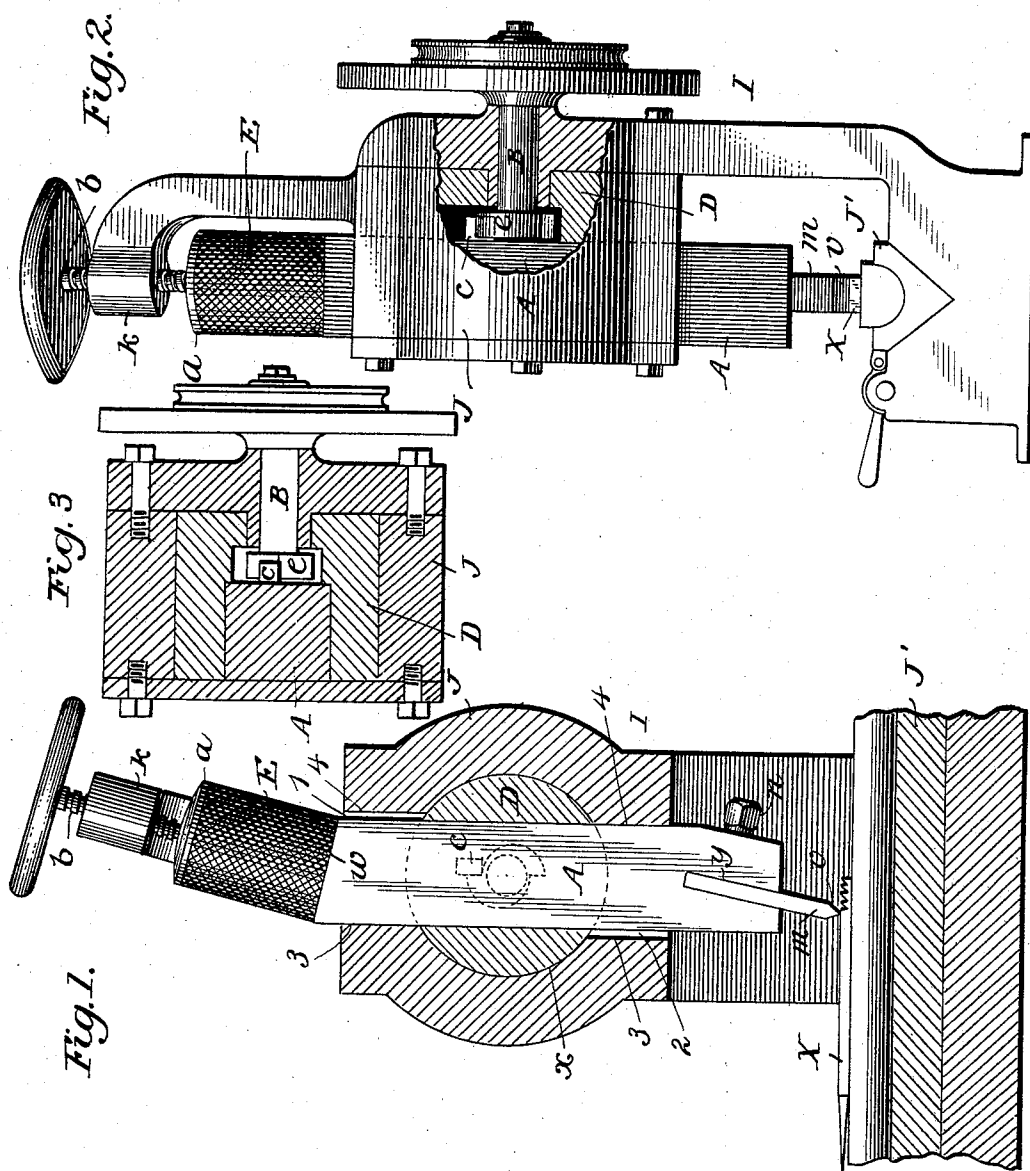


(No Model.)

A. WEED.
MACHINE FOR CUTTING FILES OR RASPS.

No. 578,379.

Patented Mar. 9, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

ALFRED WEED, OF ANDERSON, INDIANA.

MACHINE FOR CUTTING FILES OR RASPS.

SPECIFICATION forming part of Letters Patent No. 578,379, dated March 9, 1897.

Application filed April 4, 1896. Serial No. 586,218. (No model.)

To all whom it may concern:

Be it known that I, ALFRED WEED, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Machines for Cutting Files or Rasps, of which the following is a specification.

Attempts have been made from time to time to produce by machinery the effect in cutting files and rasps of the best character of hand-cutting, but in most instances with only partial success. In some cases the apparatus has been of such a character as to permit a certain play of the cutting-tool as it enters the file-blank; but this has generally been secured by a loss of the positive guiding of the tool-holder under the action of the spring or hammer. I have discovered that it is possible to produce a machine-cut file or rasp having a regularity, uniformity, and efficiency greater than that of the best hand-cut article with a tool-holder moving in a positive guide, which guide has, however, a capacity to move to a slight extent, and these features I have embodied in the improved mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a file-cutter embodying my improvements. Fig. 2 is a front elevation, and Fig. 3 is a cross-sectional view.

I designates the frame of the machine, having a bed-plate J, which is movable to carry the file or rasp blank X in a manner which it is not necessary to describe. Formed integral with or connected to the frame I in any suitable manner is a head J, which is above and overhangs the bed-plate. This head is provided with a circular chamber which serves as a seat for a correspondingly-shaped guide-block D, and channels 1 2 are formed in the head to extend from the chamber thereon to the top and bottom of the head, respectively. The guide-block D is provided with a passage through which and through the channels 1 2 passes the plunger or tool-holder A, which extends above the head J and has an upper inclined face w. The said plunger also extends below the head and is preferably provided with an inclined socket for reception of a cutting-tool m, which has a beveled cutting edge v and is secured in position by a set-

screw n. The plunger A fits closely the passage in the guide-blank to prevent its lateral movement in said passage, but the channels are each formed slightly wider than the plunger in order that the plunger may be moved laterally therein when the guide-block is oscillated. The channels 1 2 are slightly out of alinement, and the sides of each constitute bearings 3 4.

A gum spring E is confined between the upper and lower inclined end w of the plunger A and a washer a within a bracket or yoke k. The tendency of this spring, resulting from its position with respect to the plunger, is to throw the plunger downwardly toward the bed-plate, and also to keep the plunger in contact with the bearings 3 4 of the channels 1 2, which is the normal position of the plunger.

A screw b extends through the cross-piece of the bracket k and bears upon the washer a, whereby the gum spring may be compressed to any desired degree to regulate the force of the blow of the cutting-tool.

Lug c extends from the side of the plunger A, through recesses in the end of the guide-block D, into a recess in the head, and against this lug acts eccentric cam e, within the recess of the head and supported upon a shaft B, projecting into the interior of said recess from the exterior of the head. This cam is arranged to make contact with the lug c and gradually lift the plunger against the action of the spring E and then pass from beneath the lug and permit the plunger to descend suddenly under the action of the spring to bring the cutting-tool m into contact with the blank X. As the tool is thus brought against the face of the file-blank it is not only forced downward into the blank, but owing to its bevel-face v it tends to move forward at the same time, such forward movement being accomplished by the rocking or oscillation of the guide-block D and limited by the bearings 4 3 of the channels 1 2, respectively.

It will be seen from the above that while the plunger is allowed to swing forward there is absolutely no play of the plunger in its guide-block, and consequently there can be no irregular or uncertain motion and the file is cut with great regularity and uniformity.

It will be evident that the guide-block D

may be supported in different ways, so as to have a movement in permitting the proper action of the plunger A, and that it is not absolutely necessary that the tool *m* shall be in an inclined position providing the end of the tool and its inclined face *v* occupies the same position as is necessary to give the required movement. It will also be evident that any suitable kind of spring E may be employed and that any of the usual means may be employed instead of the spring for causing the downward movement of the plunger.

What I claim is—

1. In a file-cutting machine, the combination with the frame, of a guide free to oscillate upon the frame, a plunger carrying a beveled-edge cutting-tool and adapted to reciprocate in the guide, means for reciprocating the plunger, mechanism for moving the guide in one direction when the plunger is being elevated, and devices for limiting the oscillation of the guide, substantially as described.
2. In a file-cutting machine, the combination with the frame, of a guide free to oscil-

late upon the frame, devices for limiting the oscillation of the guide, a plunger carrying a beveled-edge cutting-tool and adapted to reciprocate in the guide, a compression-spring set at an angle with respect to the plunger for moving it in one direction, substantially as described.

3. In a file-cutting machine, the combination with the frame, of a guide free to oscillate upon the frame, bearings for limiting the oscillation of the guide, a plunger provided with an inclined socket and adapted to reciprocate in the guide without lateral play, a beveled-face cutting-tool secured in the socket of the plunger, means for reciprocating the plunger, and devices for maintaining the plunger in contact with one of its bearings when it is elevated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED WEED.

Witnesses:

MARCELLUS A. CHIPMAN,
C. M. KELTNER.