E. WOODWARD & M. BROCK.

Dies for Serrating the Edge of Uppers.

No. 211,612. Patented Jan. 21, 1879.

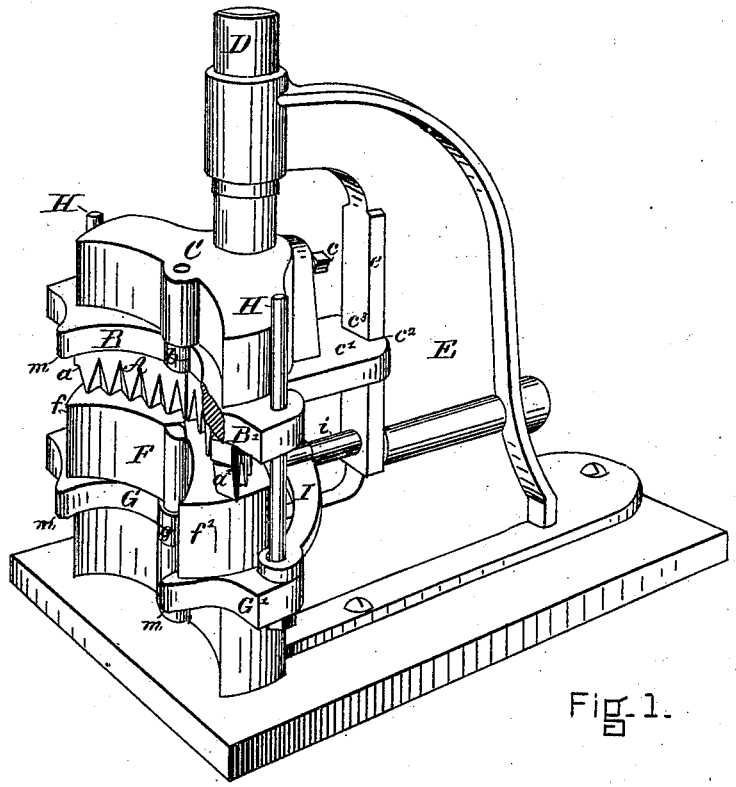


Fig. 1.

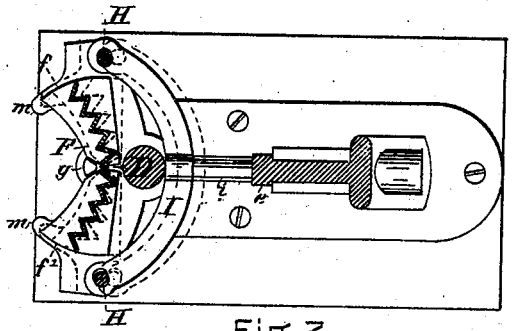


Fig. 3.

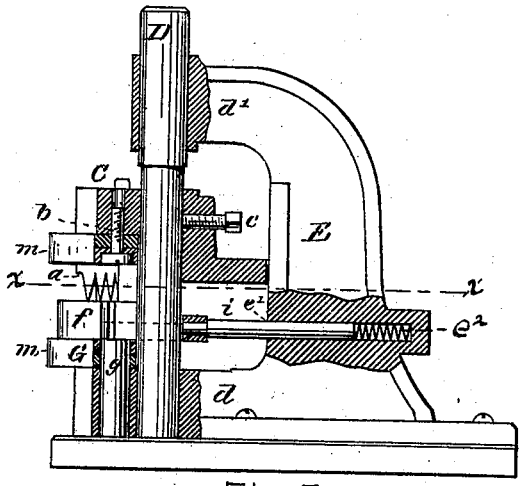


Fig. 2.

WITNESSES.

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ERASTUS WOODWARD AND MATTHIAS BROCK, OF BOSTON, MASS.

## IMPROVEMENT IN DIES FOR SERRATING THE EDGES OF UPPERS.

Specification forming part of Letters Patent No. **211,612**, dated January 21, 1879; application filed November 27, 1878.

*To all whom it may concern:*

Be it known that we, ERASTUS WOODWARD and MATTHIAS BROCK, both of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented an Improvement in Dies for Serrating the Edges of an Upper, &c., of which the following is a specification:

This invention has for its object the following-described improvement in mechanism for serrating edges which require portions of their fullness removed, and is herein shown and described in a machine for serrating the edge of an upper.

Reference is made to the accompanying drawings, forming a part of this application in explaining the nature of our invention, in which—

Figure 1 is a perspective of a machine containing our invention. Fig. 2 is a view, part in elevation and part in section, to illustrate the construction and operation; and Fig. 3 is a horizontal section on the line *x x*, Fig. 2.

It is very important in preparing an upper for the lasting process to remove portions of its edge to relieve the same from fullness, in order that it may be folded upon the surface of the insole in regular and uniform manner without plaiting, and this preparation of the upper edge is particularly desirable at the toe. Various means have been employed to remove these portions, among which may be mentioned the employment of V-shaped knives attached to the lasting-machine to operate during the lasting process, and the use of dies for dinking vamps and quarters, which shall remove said portions in the dinking.

The employment of V-shaped knives upon the lasting-machine used during the lasting process is somewhat objectionable, as it complicates the operative mechanism of the machine. The shaping of the dinking-die to also remove portions from the edge is likewise objectionable, as it requires that every die should be especially formed for that purpose.

We herein describe means by which a die can be adjusted to uppers of varying widths, so that one die only is necessary for serrating the edges of uppers of every size and shape in this preparation for the lasting process.

The die A is made in two parts, *a a'*, which project downwardly from the plates B B'. These plates are hinged or pivoted at *b* to the block C to move horizontally. This block is fastened, by the set-screw *c*, to the reciprocating bar D, which is provided with the bearings *d d'* in the frame E. The block C is further provided with the projecting portion $c^1$, which is furnished with the guides $c^2$ on either side of the recess $c^3$, which slide upon the surfaces *e* of the frame E. The bed F is also formed in two parts, *f f'*, is arranged immediately below the die, and supported by the plates G G', which are pivoted to the frame E at *g* to move horizontally.

The plates carrying the bed and the plates carrying the die are connected with each other by the rods H, upon which the die-carrying plates reciprocate.

The yoke I is arranged to lay hold of the connecting-rods H, as shown, and is furnished with the extension *i*, which moves horizontally in the guide $e^1$ in the frame E against the stress of spring $e^2$.

The bar carrying the die-supporting block may be reciprocated in any desirable manner. The bed in which the die closes may be made of wood or any suitable material. The plates B B' and G G' may be provided with the projecting portions *m*.

We do not confine ourselves in the use of this mechanism to serrating the edge of an upper, but may adopt it for any purpose where it is desirable to remove a portion or portions of the edge of an article for any purpose whatsoever.

By providing the two parts of the die and of the bed with horizontal movements from a fixed center, an adjustment is obtained which enables the dies and bed to correspond to that curvature of the upper's edge from which it is desirable to remove portions.

The mechanism, although shown as applied for removing portions at the toe and heel edges of the upper, can be modified to remove any other parts.

The yoke I and its guide so operate in relation to the bed and die-supporting plates that all parts thereof are moved simultaneously in adjusting them to the width of the work.

When the upper is adjusted upon the last, before the edge is serrated, the die is set to the proper curvature by introducing the toe or heel of the last, as the case may be, between

the projections *m*, so that the sides of the last act in connection with said projections to automatically set the die to the requisite gage. The edge of the upper is then inserted under the die and the portions removed. The die is set for uppers of the smallest size and automatically resumes that position upon the withdrawal of the last from between the projections *m*, the spring $e^2$ acting to so relieve the die and bed.

Of course, the bed may be a flat immovable table, in which case the die alone would be given the adjustment mentioned.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a machine for serrating edges, the combination of a horizontally-adjustable bed with a reciprocating horizontally-adjustable die, all arranged to operate substantially as described.

2. In a machine for serrating edges, the combination of a bed or support with a reciprocating horizontally-adjustable die, all arranged to operate substantially as described.

3. In a machine for serrating edges, a die in two or more parts, provided with means for horizontal adjustment about a common center, substantially as and for the purposes described.

4. The combination of a bed in two or more portions horizontally adjustable, a reciprocating die in two or more parts horizontally adjustable, and suitable connecting mechanism whereby the bed and die may be simultaneously and uniformly adjusted, substantially as and for the purposes described.

5. In combination with a horizontally-adjustable bed and a reciprocating die horizontally adjustable, the projections or guides *m*, for automatically setting the said bed and die to the requisite gage, substantially as and for the purposes described.

6. The combination of a die in two parts horizontally adjustable, a bed in two parts horizontally adjustable, or either, with means whereby the same may be automatically returned to a given position, substantially as and for the purposes described.

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Witnesses:
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