(Model.)

2 Sheets—Sheet 1.

S. S. DAVIS.

AX MAKING MACHINE.

No. 262,933. Patented Aug. 22, 1882.

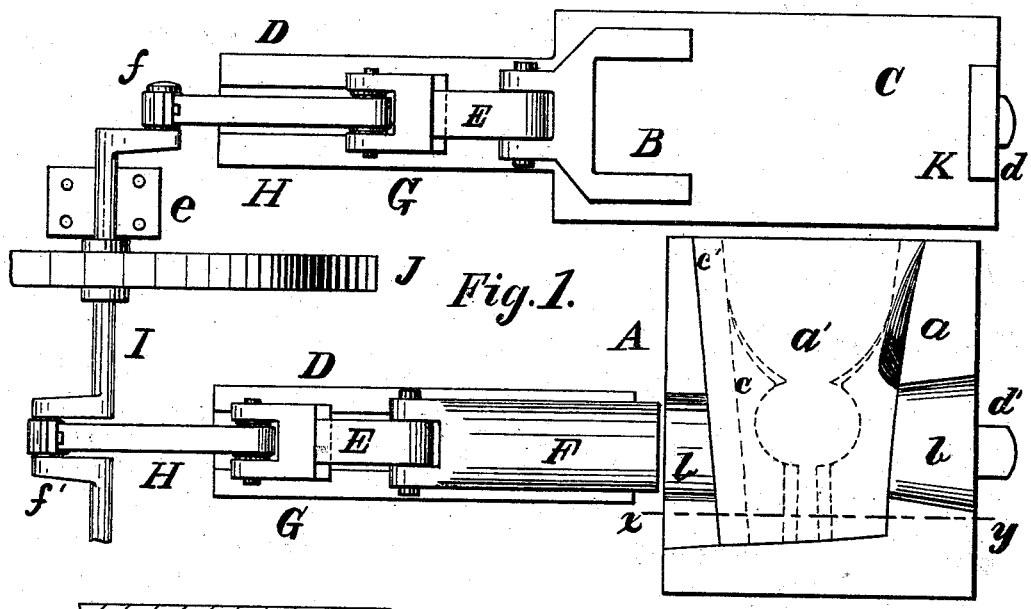

Fig. 1.

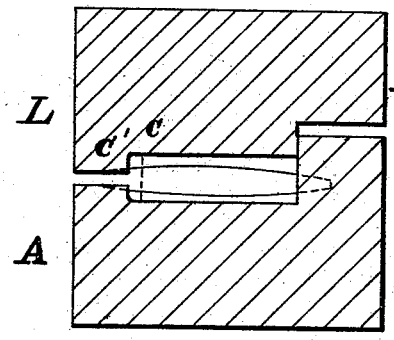

Fig. 2.

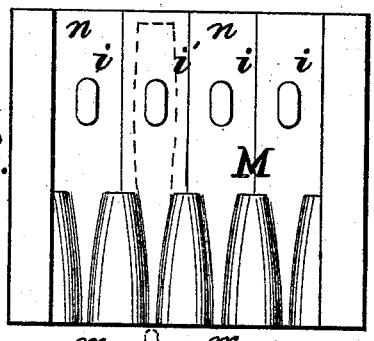

Fig. 3.

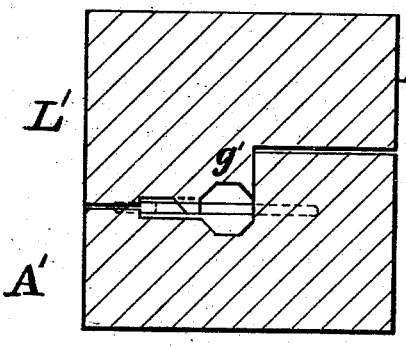

Fig. 4.

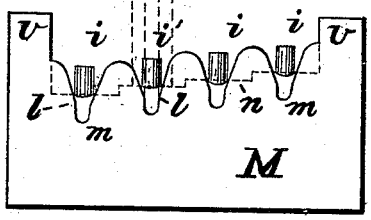

Fig. 5.

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(Model.)

2 Sheets—Sheet 2.

S. S. DAVIS.

AX MAKING MACHINE.

No. 262,933. Patented Aug. 22, 1882.

Fig. 6.

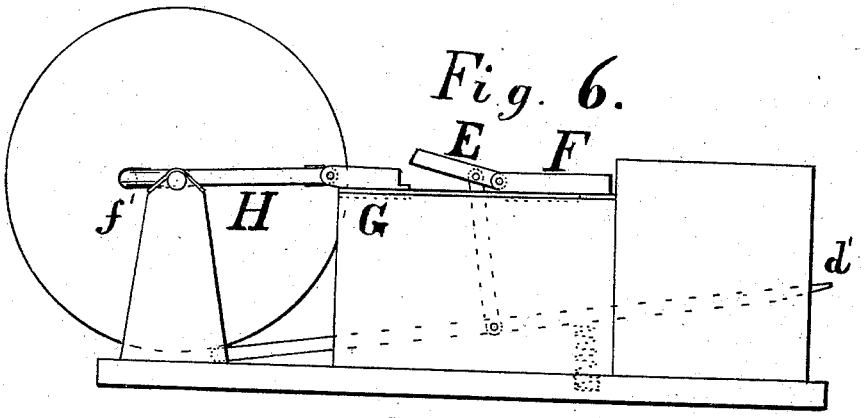
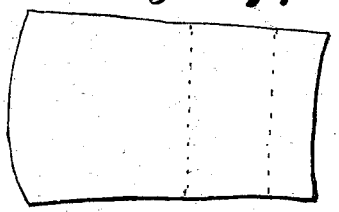


Fig. 7.



Witnesses;
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J. Greene

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UNITED STATES PATENT OFFICE.

SOLOMON S. DAVIS, OF DOUGLASS, MASSACHUSETTS.

AX-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,933, dated August 22, 1882.

Application filed March 20, 1882. (Model.)

To all whom it may concern:

Be it known that I, SOLOMON S. DAVIS, residing in Douglass, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Press-Dies for Hammering and Finishing Axes, Hatchets, and Similar Articles, of which the following is a specification.

My invention relates more particularly to dies for drop-presses, though applicable to others. It consists in so making the dies that the work may be finished in them without making the "fins" so common with dies as heretofore used, and also in connecting therewith a peculiar apparatus arranged to drive the work onto the mandrels and drive out the mandrels when desired.

In the accompanying drawings, which illustrate my invention, Figure 1 is a plan of a lower die for the flat side of an ax or hatchet, with the apparatus for driving on and out the mandrels. Fig. 2 is a cross-section on the line *x y* of Fig. 1, showing the upper die as slightly raised. Figs. 3 and 5 show two views of a lower die for the edges, to be used on the same work as A, Fig. 1, the latter, Fig. 5, showing the edge or side *m m* of Fig. 3, and illustrating how the ends *v v* of the die M are brought up for stops, the upper die being similarly made, but without the studs *i i*, which serve as guides to set the work by, the eye of the ax being put over them. Fig. 4 shows a section, similar to Fig. 2, of a pair of dies adapted to the form of hatchet shown at *a'*, Fig. 1. Fig. 6, Sheet 2, shows a side view of Fig. 1 as seen from the side G *x;* and Fig. 7 shows the rough blank or ax as partly made and ready for the dies, having a hole or eye made in it by welding or punching, ready for the mandrel.

A is the lower die for the flat side, made in the form desired, but broader, that various widths may be finished in it. Fig. 2 shows how its side *a y* is brought up and the upper die formed to slide by it, the work being held close to this side, and yet make no fin, as the opposite edge or side is free, allowing the surplus metal, if any, to be forced that way.

Behind the die A is placed the shaft I, having two cranks, *f f'*, and balance-wheel J, the cranks being connected to the slides G G in line with the slides F and B, which are provided with spring-dogs E E, arranged to allow the slides G G to pass under them when they are not depressed by their treadles *d d'*, to which they are connected, so that in operation by depressing a treadle its dog is brought down in front of the slide G, which then drives the corresponding slide, as F, to force the mandrel out of the finished work, or B, which is forked, to force the work onto the mandrel, which is laid on the table C and against the stop H, with the work in front of the slide for that purpose. When the mandrel is out of the work it (the work) is held with tongs in the edging-dies, Fig. 3, the operator putting it in exact position by the stud *i*, over which the eye of the ax is put, (selecting the right one for its width,) the edging-die M being made for four widths, as shown, with its ends brought up for stops, the upper die being similarly formed, but without the studs *i i i i*, which are only used in the lower one, the sizes made in these dies being all finished on the sides in the die A, Fig. 1, the broadest not quite filling to its back edge, *c'*.

At *a'* is shown in broken lines the form of the die A as adapted to hatchets, Fig. 4 showing a section of the same at the line *x y*, the edge-die to be used with it to be made with the desired form to fit the edge and its bevels.

It will be seen that the edge-dies do not come together on the side of the work, and the side dies finish up to corners, so that no fin is made on any part.

The work for the dies may be prepared by the usual modes of welding or punching and forging to the shape shown in Fig. 7, or nearly that, generally known as "unfinished blanks."

Having thus fully described my invention, what I claim therein as new, and desire to patent, is—

1. The ax and hatchet dies described, fitting the two sides or edges precisely, but leaving one or more surfaces free, so that no fin is

made, when constructed and operating as and for the purposes described.

2. The combination of the side and edge dies, as described, whereby several sizes may be made in the same, substantially in the manner and for the purposes above set forth.

3. The combination, with the side dies described, of the mechanism for putting the work on the mandrel and removing it therefrom, substantially as described.

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