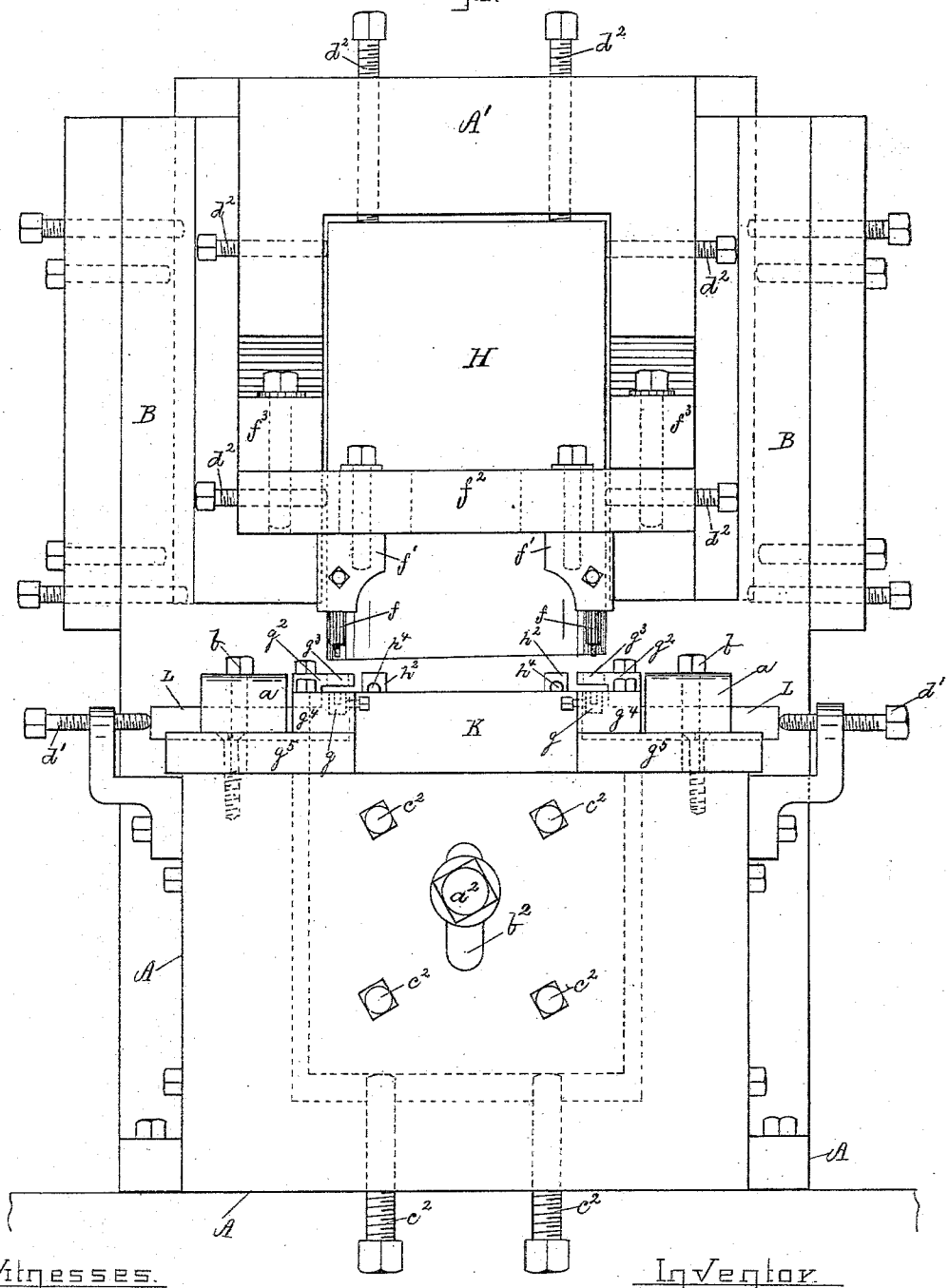
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C. T. STETSON.

MACHINE FOR MAKING METALLIC SHANKS FOR BOOTS.

No. 356,734. Patented Jan. 25, 1887.

Fig. 1.



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W. W. Horner.

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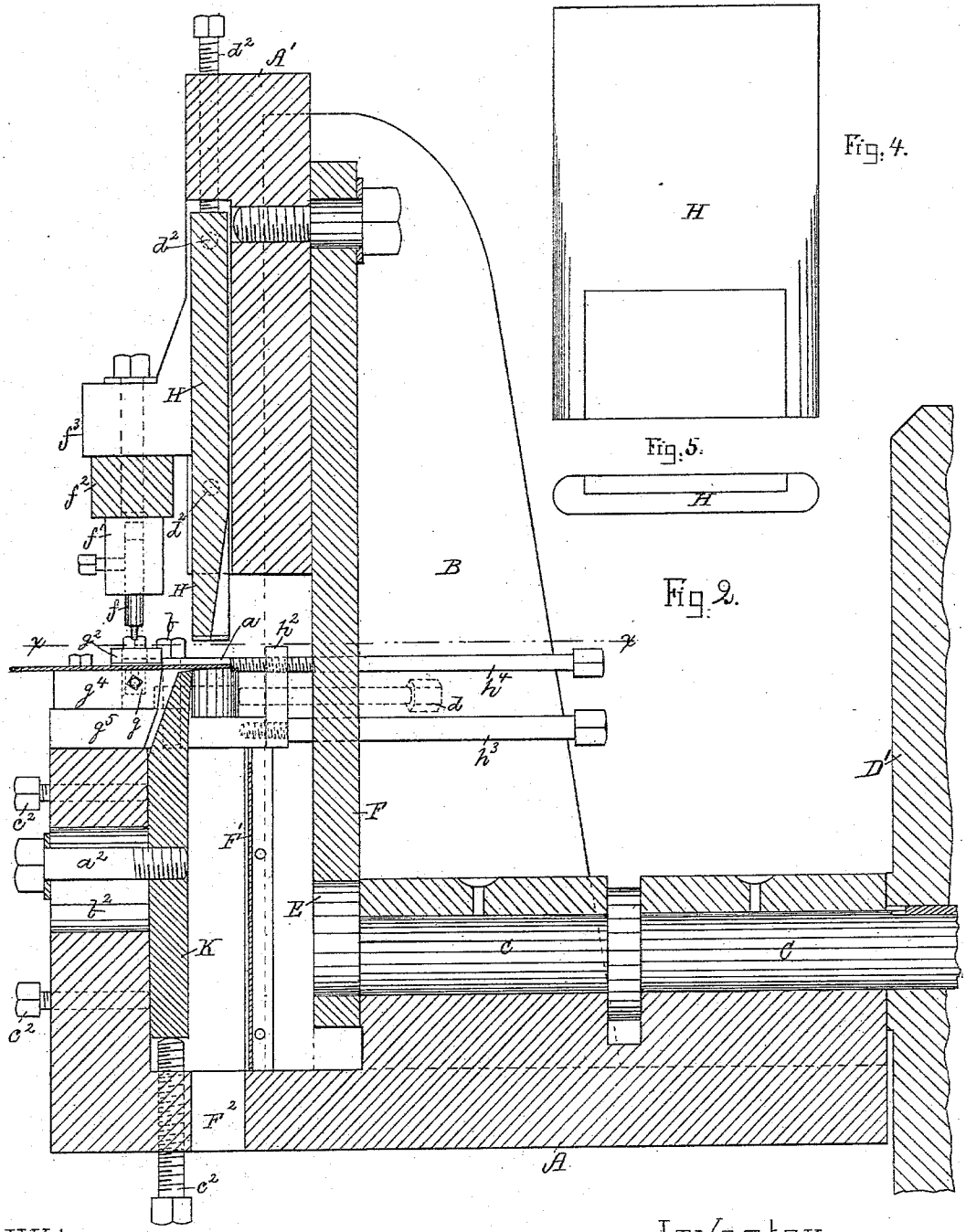


Fig. 4.

Fig. 5.

Fig. 2.

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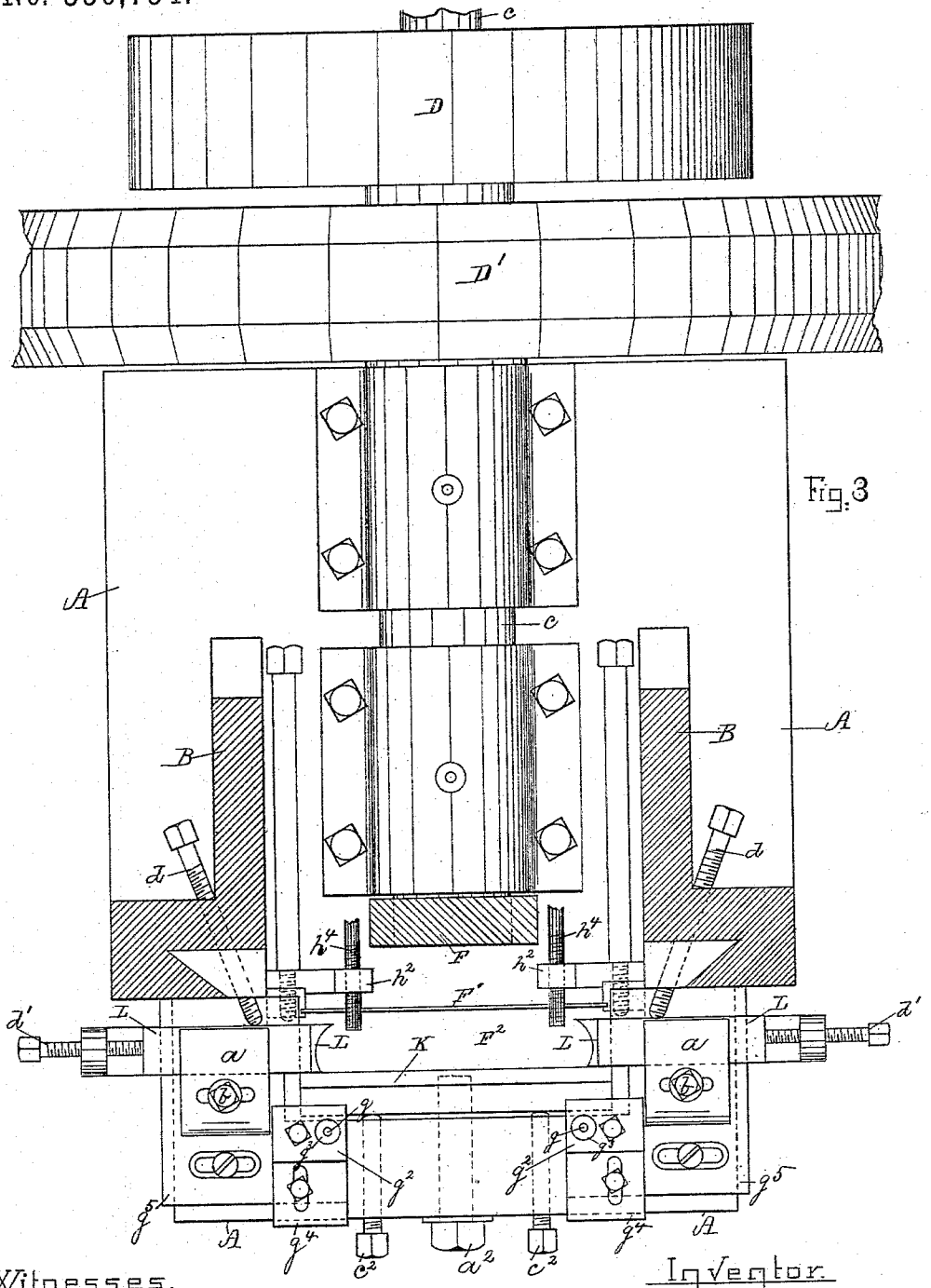


Fig. 3

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UNITED STATES PATENT OFFICE.

CHARLES T. STETSON, OF ROCKLAND, ASSIGNOR OF ONE-HALF TO OSCAR W. WHITCHER, OF HYDE PARK, FRANK W. WHITCHER, OF BOSTON, AND J. HENRY EMERY, OF QUINCY, MASSACHUSETTS.

MACHINE FOR MAKING METALLIC SHANKS FOR BOOTS.

SPECIFICATION forming part of Letters Patent No. 356,734, dated January 25, 1887.

Application filed September 13, 1886. Serial No. 213,391. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. STETSON, of Rockland, county of Plymouth, State of Massachusetts, have invented certain new and useful Improvements in Machinery for Making Metallic Shanks for Boots and Shoes, of which the following is a specification, taken in connection with the drawings accompanying and forming a part hereof, in which—

Figure 1 is a front elevation. Fig. 2 is a longitudinal section. Fig. 3 is a plan view with the uprights and movable die removed from line *x x*, Fig. 2. Figs. 4 and 5 are details of the upper die.

The object of my invention is the construction of an economical and efficient machine for cutting and punching a sheet of metal to form boot or shoe shanks; and it consists, chiefly, in the employment of a die of the peculiar shape shown and hereinafter described, and constructed in three parts, one of which cuts the side of the shank while the other two cut the ends. The machine is particularly useful in cutting shanks having rounded ends, although obviously its use is not restricted to shanks of any special shape.

The greater part of the metallic shanks now in use have square ends, and I have found these shanks objectionable in that the square ends will cut into and destroy the sole of the shoe owing to the movement of the ends consequent upon the wear of the shoe. To avoid this I prefer to construct the shanks with a round end, and in order to do this I have found it necessary to provide a die of the same shape as the shank—that is, a straight side and rounded ends. Such a die, when constructed of one piece of metal in the ordinary manner, is difficult of construction, and in practical use dulls easily, is very difficult to sharpen, and after being sharpened several times is apt to lose its shape and efficiency. A three-part die constructed as shown and hereinafter described is free from these objections.

My invention will be readily understood from the following description of a machine embodying it, which is shown in the accompanying drawings, in which like letters of reference indicate like parts.

A represents the bed of the machine, which is provided with uprights B. In the bed is mounted the driving-shaft C, which carries the belt-pulleys D and fly-wheel D'. On the shaft C is an eccentric, E, carrying a rod, F, the upper end of which is pivoted to a vertically-sliding block, A', which carries the upper die or plunger, H. The block A' slides in dovetails in the uprights. (See Fig. 3.) The die H is of a shape at the lower end corresponding to the shape of the lower die, and of such a size as to pass into the same at the lowest point of its movement.

In the bed of the machine a die, K, is set in a recess made to receive it, and is held in position by a screw-bolt, a^2, passing through a slot, b^2, in the front of the bed. (See Fig. 1.) For purposes of adjustment the set-screws c^2 are provided, which are mounted in the bed and bear at various points on the die. This die has a straight cutting-edge, and is therefore adapted to cut the side of the shank from the sheet. The cutting-edge projects over the inner face of the die, as shown in Fig. 2, and this form of construction enables the edge to be easily ground without danger of grinding it too far back and off from the inner face, as might happen if the inner face were straight and flat. At either end of the straight die K are placed concave dies L L, forming the compound die K L L, the concavities in which form curved cutting-edges corresponding to the round ends of the shank. These dies are set at either end of the straight die K on the bed, as shown in Fig. 3, and are secured in position by an angle-iron, *a*, one end of which rests on the top of the die, which is cut away to receive it, while the other end rests on the block g^5, the angle-iron being secured by a screw-bolt, *b*, which passes through the iron and into the block, as shown in Fig. 1. A set-screw, *d*, is also provided, which passes through the web of the upright B and bears against the side of the die L. (See Fig. 3.) By this means the dies may be adjusted so as to cut a longer or shorter shank by moving the end dies farther from or nearer to each other by means of the adjusting-screws *d'*.

The apparatus provided for punching the shanks is very simple, and consists of punches *f*, secured to blocks *f'*, set on the cross-piece f^2 and projecting so as to strike the strip from

which the shanks are cut two shanks ahead of the cutting-dies. The cross-piece f^2 is bolted to projections f^3 on the head A′. To enable the punches to pass through the shanks without injury, the recessed dies g are set in the blocks g^4 a proper distance in front of the die K. To prevent the punches from carrying the sheet of metal upward in their upward movement, the overhanging stops g^2 are provided, bolted to the blocks g^4. These stops g^2 are cut away underneath (see Fig. 1) to receive the sheet of metal, and have holes g^3 through them to allow of the downward movement of the punches.

To permit of the adjustment of the stop g^2, as also of the dies g, which receive the punches, to suit shanks of different sizes, the blocks g^5, which carry the blocks g^4, (see Fig. 3,) are slotted, as shown, and secured to the bed by bolts passing through the slots. This arrangement enables an adjustment to be made by shifting the position of blocks g^5.

The upper die, H, is mounted in the head A′, and for the purpose of holding it securely and also of adjusting it set-screws d^2 are provided, which pass through the head A′ and bear against the top and sides of the die H. (See Fig. 1.)

The lower cutting-edge of the die H is slightly beveled (see Fig. 1) so as to enter the lower die with a shearing-cut. Behind the die K blocks h^2 are secured by bolts h^3 to the web of the upright, and in the upper part of the blocks h^2 guide-bolts h^4 are set in line with the upper edge of the die K, and so as to receive the edge of the sheet of metal K^2, Fig. 2, as it is fed forward and hold it in the proper position to be cut. The position of the guide-bolts h^4 governs the width of the shank.

A partition, F, is set behind the die to prevent the shanks as they are cut from getting into the machine, and to guide them through the opening F^2, which allows them to fall clear of the machine.

The operation of the machine is as follows: A strip of metal is used of a width equal to the extreme length of the shanks. The operator feeds this strip forward the width of a shank at each movement of the plunger, and the downward movement of the plunger cuts the ends and one side of the shank, the other side having been cut by the preceding movement of the plunger in cutting the preceding shank.

What I claim is—

1. In a shank-machine, the combination, with a plunger, of a three-part die having its end parts, as L L, concaved, whereby a blank with rounded ends may be cut, substantially as set forth.

2. In a shank-machine, the combination, with the head A′ and plunger H, of the die K L L and guide-bolts h, substantially as set forth.

CHARLES T. STETSON.

Witnesses:
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ARTHUR H. LORING.