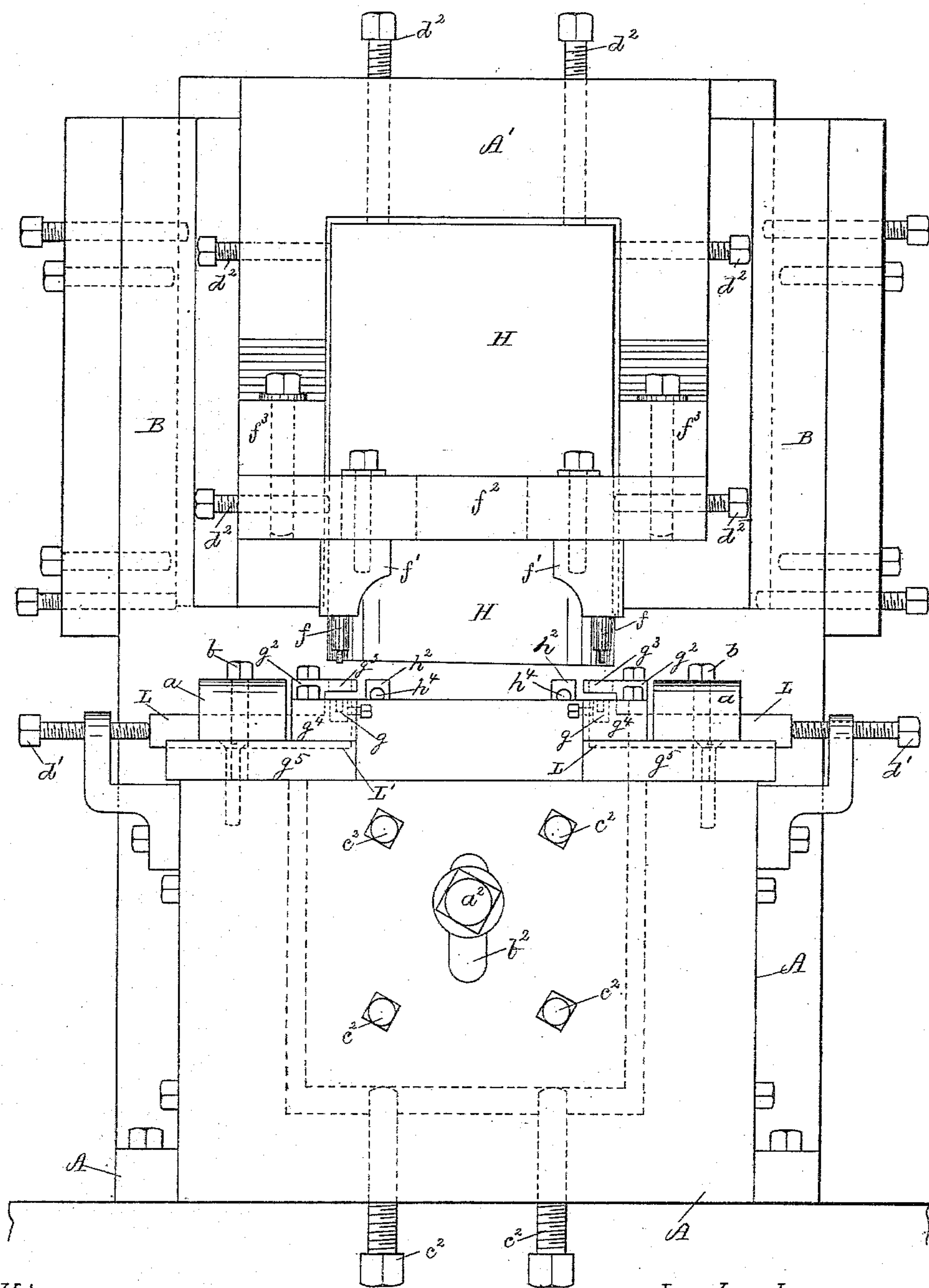


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MACHINERY FOR MAKING METALLIC SHANKS FOR BOOTS AND SHOES.

Patented Jan. 25, 1887.

Fig. 1.



Witnesses.

Robert Wallace.
M. M. Thompson.

Fig. 6.

Inventor

Charles T. Stetson,
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his atty

(No Model.)

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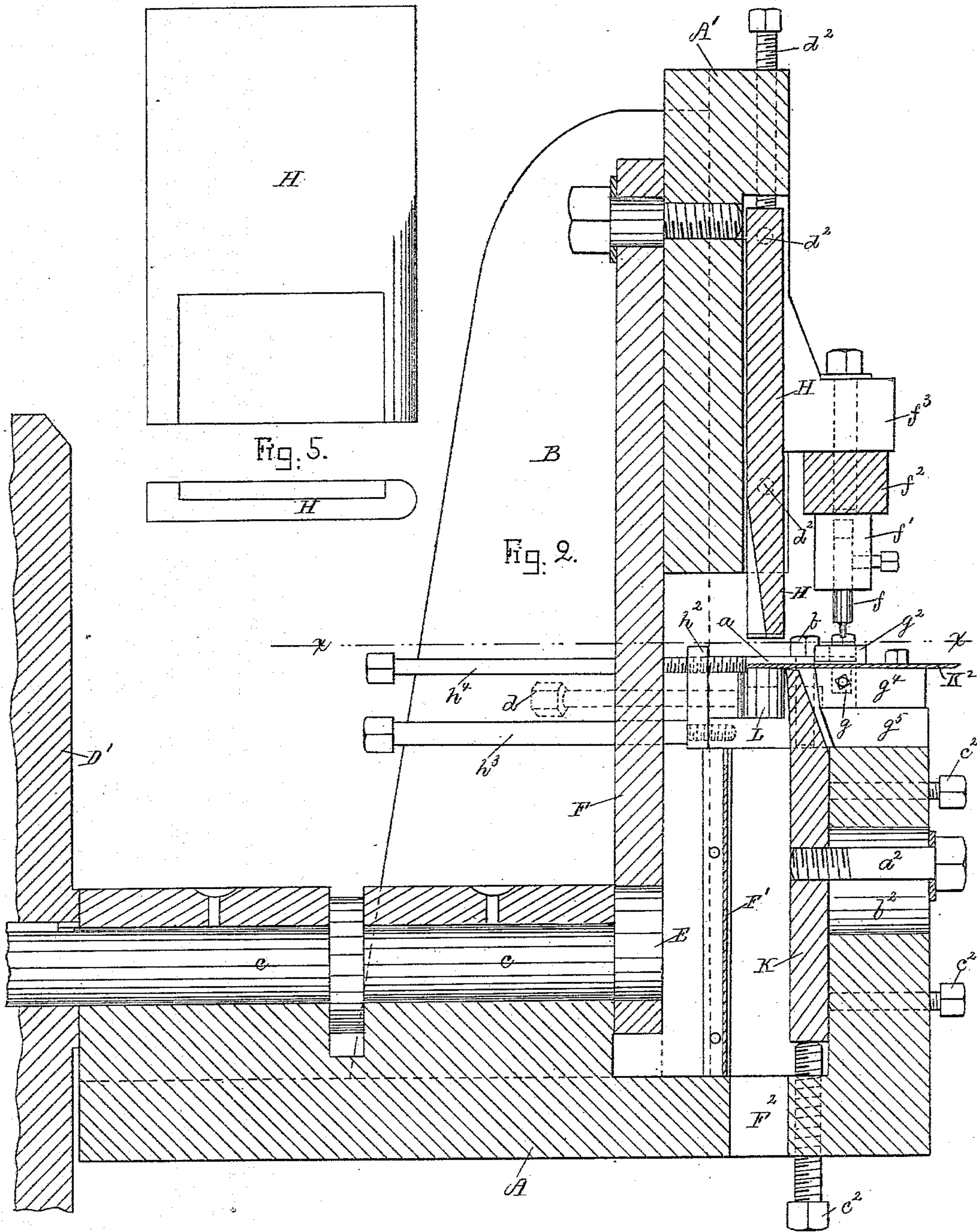
C. T. STETSON.

MACHINERY FOR MAKING METALLIC SHANKS FOR BOOTS AND SHOES.

No. 356,735.

Patented Jan. 25, 1887.

Fig. 4.



Witnesses.

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(No Model.)

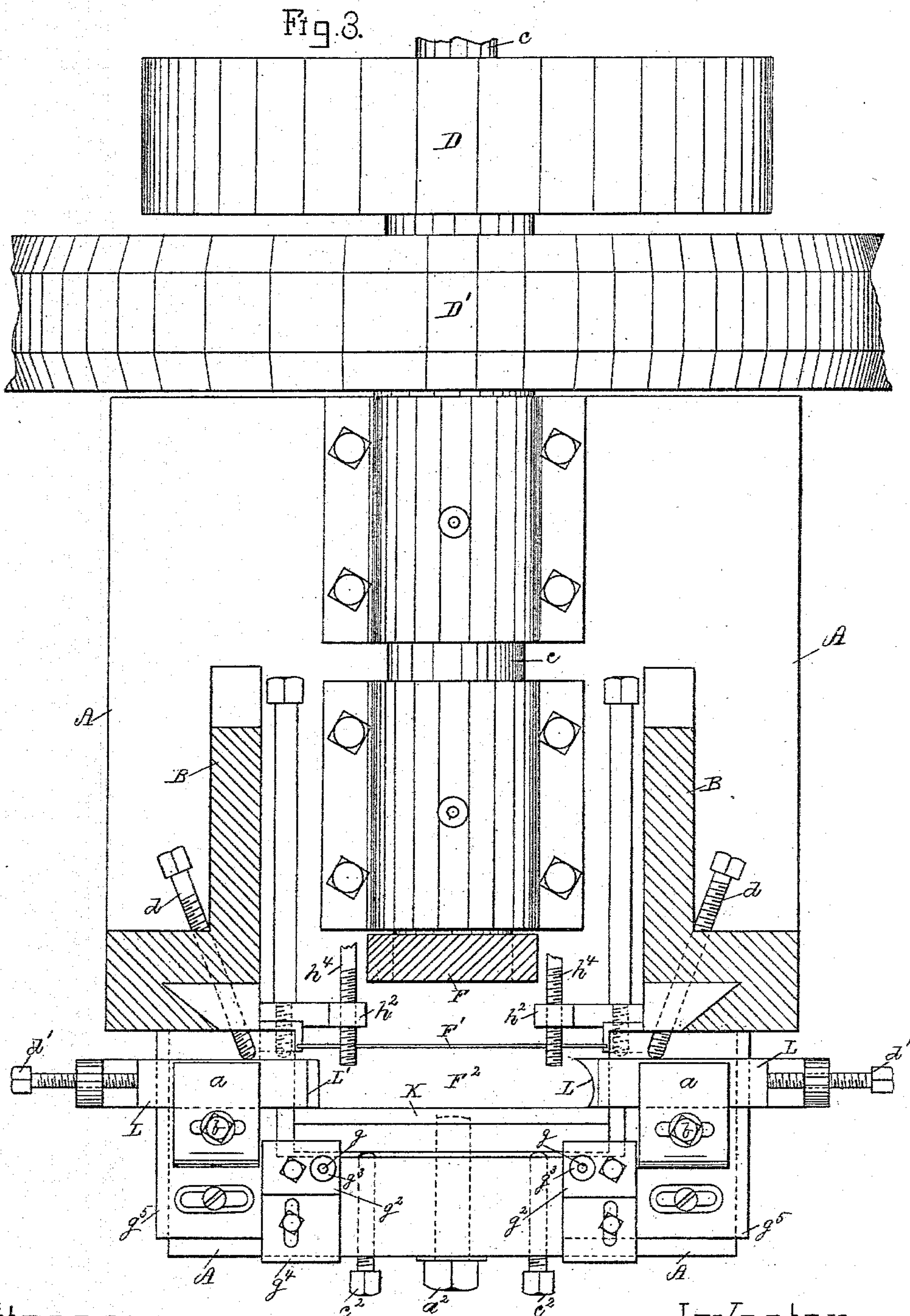
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UNITED STATES PATENT OFFICE.

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.

MACHINERY FOR MAKING METALLIC SHANKS FOR BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 356,735, dated January 25, 1887.

Application filed November 11, 1886. Serial No. 212,570. (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—

10 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 xx , Fig. 2. Figs. 4 and 5 are details of the upper die or plunger, adapted to coact with the dies shown in Fig. 2 and cut a shank with one end rounded. Fig. 6 is a top view of the lower dies, showing both end dies concave, whereby a shank rounded at both ends may be cut.

20 The object of my invention is the construction of a simple and effective machine for cutting from a piece of metal blanks for boot or shoe shanks, and at the same time punching the necessary holes therein, thereby forming the blank ready to be bent to the shape of a finished shank.

30 The invention consists, chiefly, in the employment of a die of the peculiar shape shown and hereinafter described, and constructed in two or more parts, and adapted to cut the side and one or both of the ends of the shank.

40 The metallic shanks now commonly used have square ends, which are objectionable in that they cut into and destroy the sole of the shoe, owing to the constant movement of the shank when the shoe is in use. I prefer for this reason a shank having one or both of its ends rounded, and particularly when the shanks are designed for use in a rubber shoe. For the purpose of cutting a shank having one or both of its ends rounded a die is required of a corresponding shape—viz., having a straight side and one or both sides curved or rounded. Such a die, if constructed of one piece of metal, is not only difficult of construction, but is of little practical use, because it dulls easily, is difficult to sharpen, and when sharpened is each time increased in size, thereby losing its shape, and, since it is 50 larger and does not fit the plunger or male die,

it leaves the edges of the shank ragged and uneven.

The following description, having reference to the accompanying drawings, of a machine embodying my invention will be sufficient to render it easy to be understood by those skilled in the art.

A is the bed of the machine, to which are secured the uprights B.

c is the driving-shaft, mounted in the bed and carrying the belt-pulleys D and fly-pulley D'.

E is an eccentric on the shaft c , the rod F of which is pivoted at its upper end to the vertically-sliding block A', which carries the upper die or plunger, H. The block A' is dovetailed between the uprights in the well-known manner. (See Fig. 3.) The plunger H is of a shape at its lower end to correspond with the shape of the lower die, and of a size to fit the lower die, into which it passes at the lowest point of its movement.

70 K is a part of the lower die, designed to cut the side of the shank. This die is mounted in a recess in the bed, 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.) The set-screws c^2 , set in the bed, bear against the die K at various points, and are for purposes of adjustment. As shown, Fig. 2, the cutting-edge of the die K overhangs the inner face thereof—a form of construction the advantages of which will be obvious to those familiar with dies for cutting metals.

85 In making the shanks a sheet of metal is employed of a width equal to the length of the shanks which it is desired to make, and a shank is cut at each downward movement of the plunger, the die K severing a shank from the sheet, and at the same time forming one side of the succeeding shank. If one end of the shank is to be square and the other rounded, a curved or concave die, L, is provided at the end of the die K, to form the rounded end of the shank, while at the other end of the die K a straight-faced die, L', (see Fig. 3,) is provided, or if the edge of the strip be straight no die will be required to form the square end of the shank. As will be obvious, if both ends of the shank are to be rounded, the die L' will 100

be curved or concaved in the same manner as the die L at the other end of the shank.

The dies L L' are secured in position in any suitable manner which will hold them securely and at the same time permit of their adjustment to suit shanks of different lengths. For the purpose of securing them I provide the angle-irons a , one end of each 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 on a screw-bolt, b , which passes through the iron into the block, as shown in Fig. 1. I provide also a set-screw, d , which passes through the web of the upright B and bears against the side of the die. (See Fig. 3.) While secured in this manner I have found the dies easy of adjustment, and not liable to slip and change their position when set for use. The screws d' are for the purpose of moving the dies when they require to be adjusted.

While the cutting-dies are cutting a shank the punching-dies are acting to punch the second shank back of the cutters. The punching apparatus consists of punches f , secured to blocks f' , set on a cross-piece, f^2 , and projecting so as to strike the sheet of metal two shanks ahead of the cutting-dies. The cross-piece f^2 is bolted to projections f^3 on the head A'. The punches pass through the shank-strip into recessed dies g , set directly beneath them in the blocks g^4 . To prevent the punches from carrying the sheet of metal upward on their return movement, the overhanging stops g^2 are provided, bolted to the blocks g^4 . The stops g^2 are cut away beneath, (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 stops g^2 , as also of the recessed dies g , 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. By shifting the position of the blocks g^5 the parts may be adjusted.

The plunger H is mounted in the head A', and it is desirable that it should be so mounted as to be adjustable. For this purpose I provide the set-screws d^2 , which pass through the head A and bear against the top and sides of the plunger H. (See Fig. 1.) As shown in the same figure, the lower or cutting edge of the plunger is slightly beveled, 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 the guide-bolts h^4 are set in the upper part, h^2 , and

in line with the upper edge of the die K, so that as the sheet of metal K² (see Fig. 2) is moved forward it comes in contact with the guide-bolts h^4 , and is held in the proper position to be cut. The position, therefore, of the guide-bolts h^4 governs the width of the shank.

F' represents a partition set behind the die to guide the shanks as they drop through the opening F², 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. If a shank rounded at both ends is desired, end dies, L L', both concaved to correspond to the round end desired, are used. If, however, a shank is desired having one end rounded and the other square, only one concaved end die is used, the other die being omitted entirely; or the other die may be straight. The operator feeds the strips forward the width of a shank at every cut, each downward movement of the plunger acting to cut a shank, and also to form one side of the succeeding shank.

If the sides of the shank which it is desired to cut are not straight, the die K will obviously require to be correspondingly changed, and if the sides are not parallel with each other a die corresponding to the die K, and adapted to cut the other side of the shank, will require to be used.

By reference to Figs. 2 and 6 it will be seen that the side piece, K, of the die is of greater length than the distance between the end pieces, L L', so that the latter are overlapped by the said side piece, and can therefore be adjusted from or toward each other, to vary the length of the shank to be cut or to compensate for wear without changing the side piece.

What I claim is—

1. In a shank-cutting machine, a die constructed in two or more parts, one or both of the end parts or pieces of the die being formed concave and arranged to be overlapped by the side piece of the die, substantially as set forth.

2. In a shank-cutting machine, a three-part die consisting of adjustable end pieces, one or both of which are concaved, and a side piece of greater length than the distance between the said end pieces, and thus overlapping the latter, substantially as set forth.

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Witnesses:

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ROBERT WALLACE.