

(No Model.)

J. L. HATCH.

MACHINE FOR THE MANUFACTURE OF HEEL OR COUNTER STIFFENERS.

No. 309,223.

Patented Dec. 16, 1884.

Fig: 1.

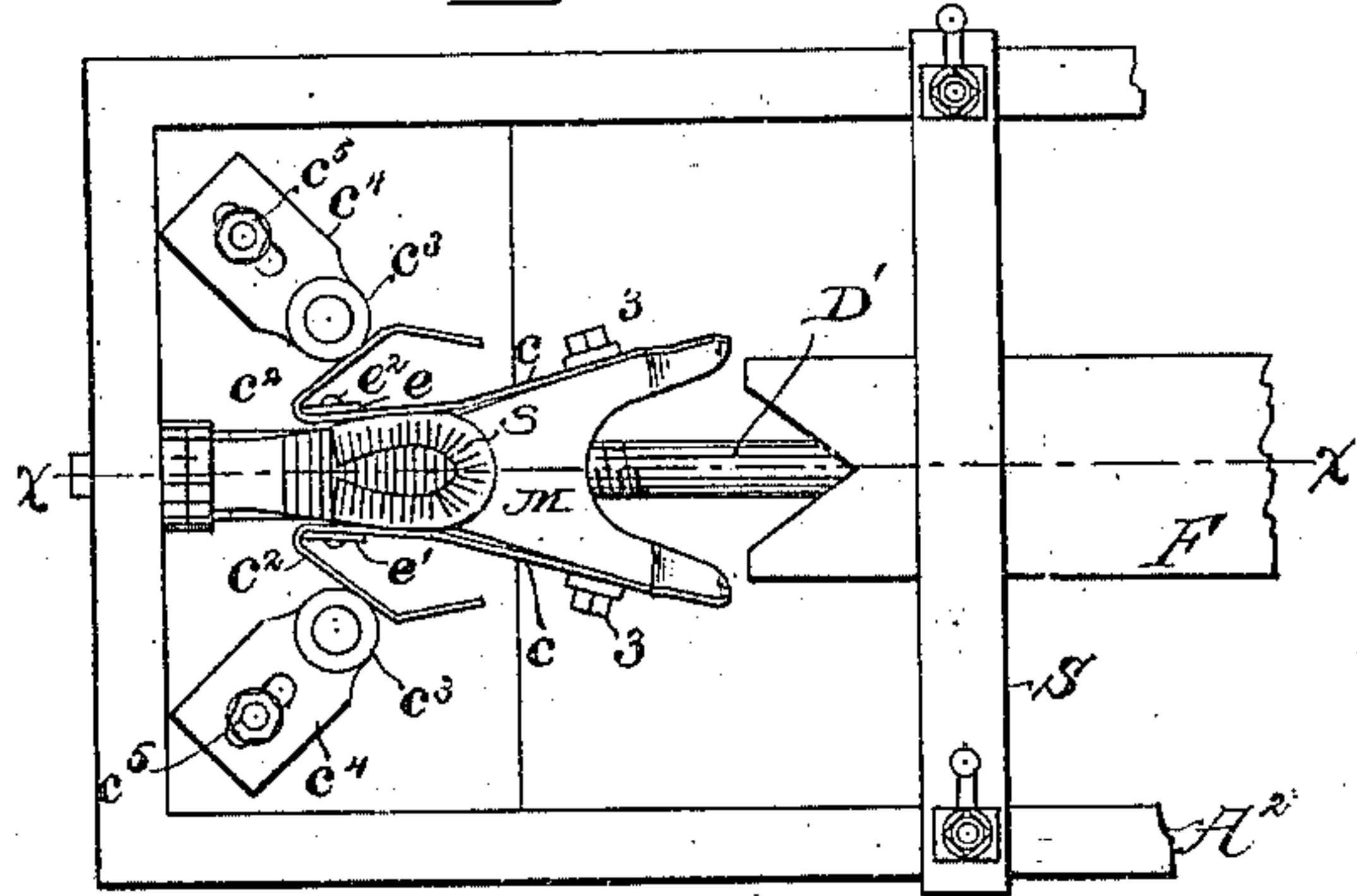


Fig: 6.

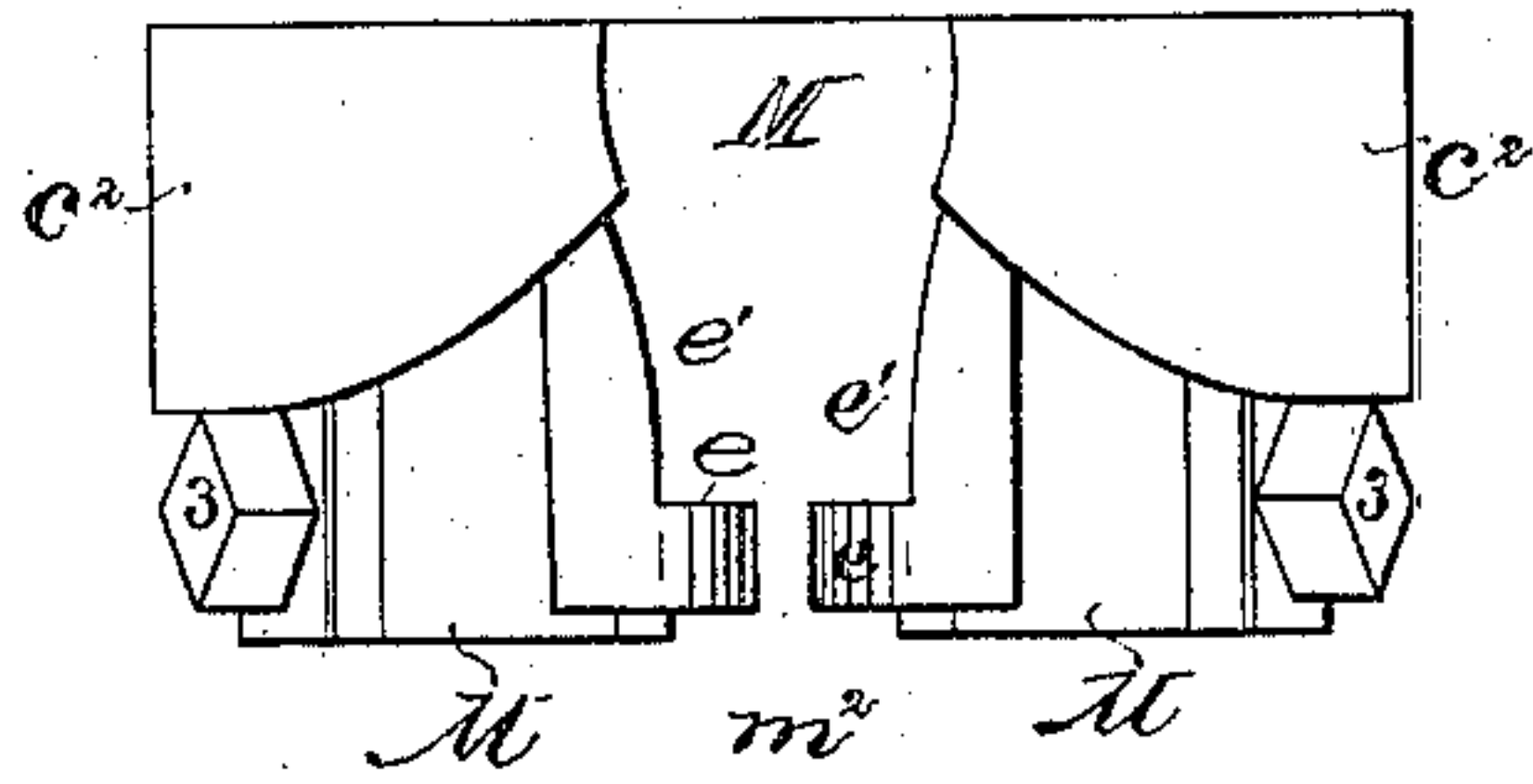


Fig: 3.

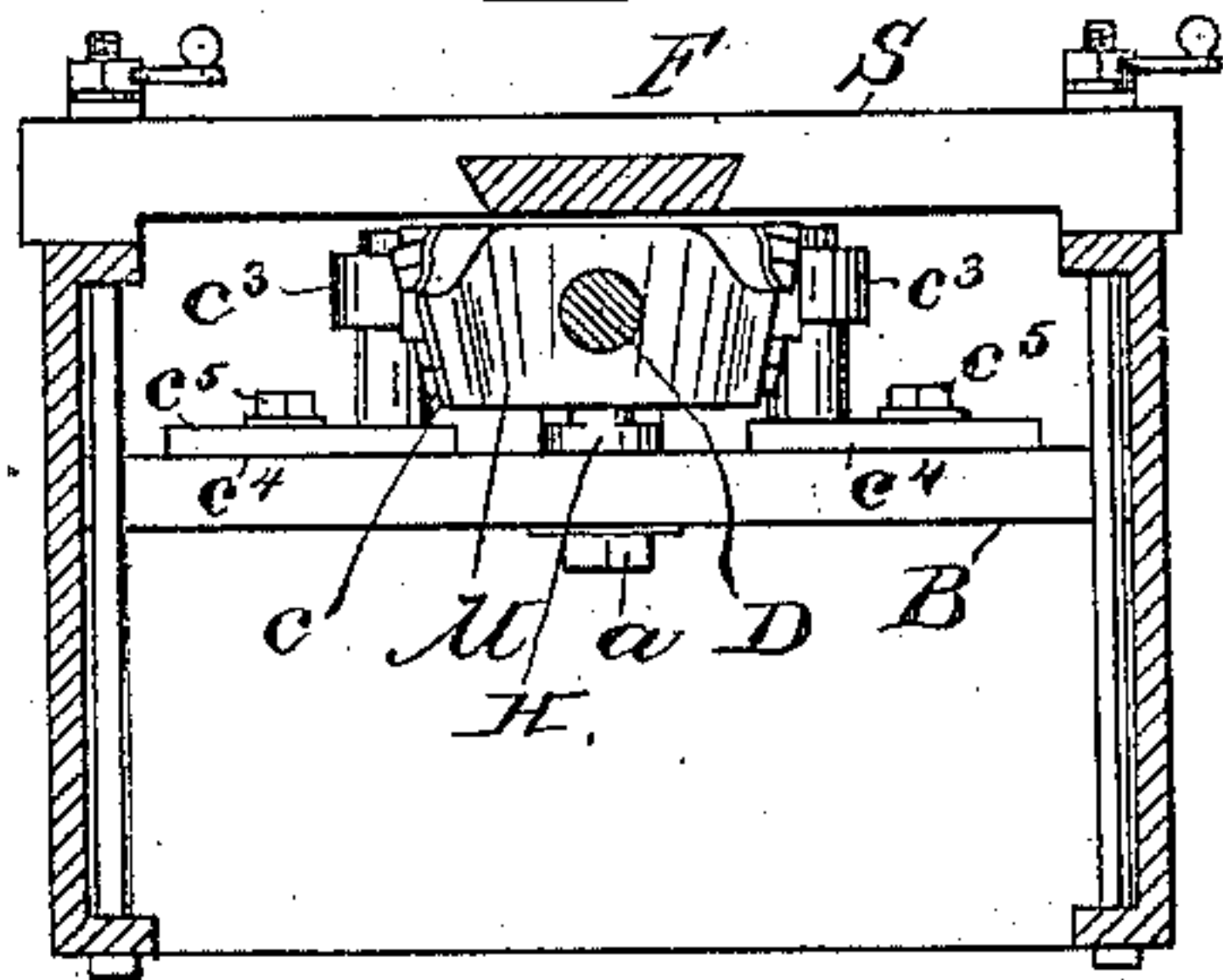


Fig: 4.

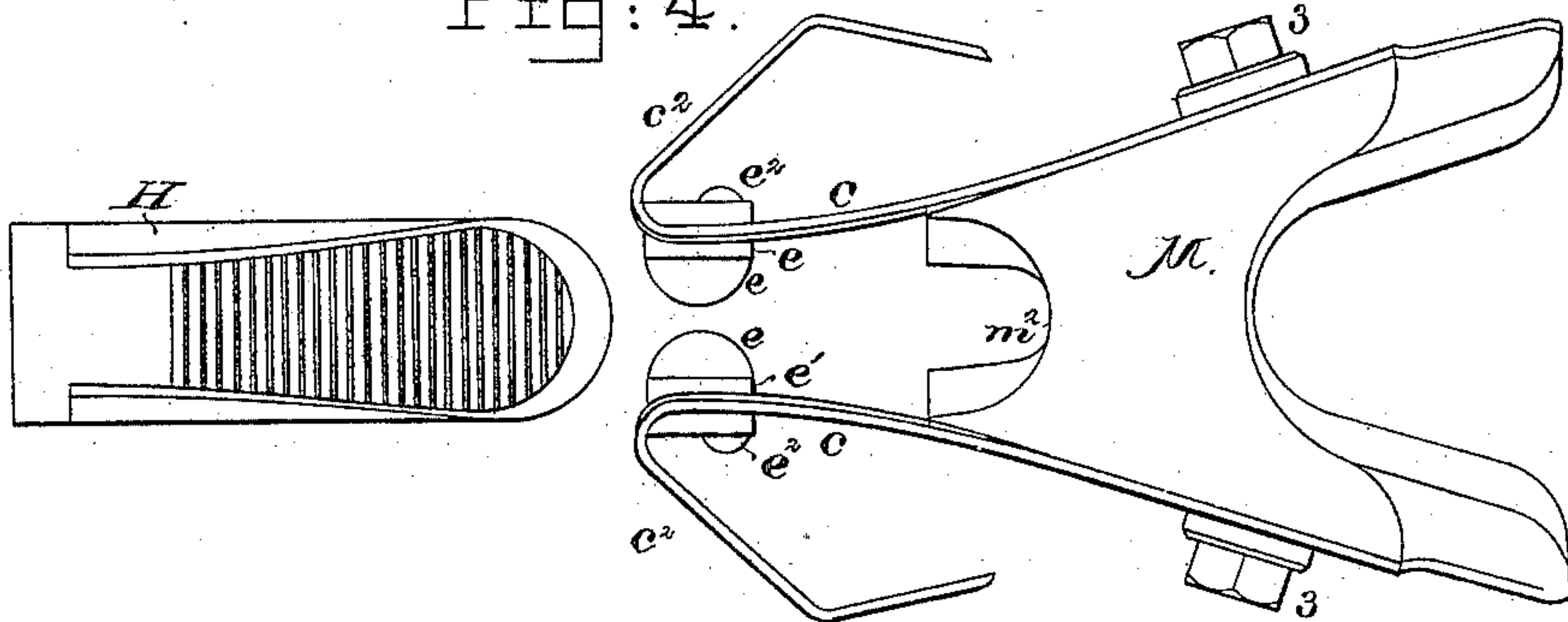


Fig: 5.

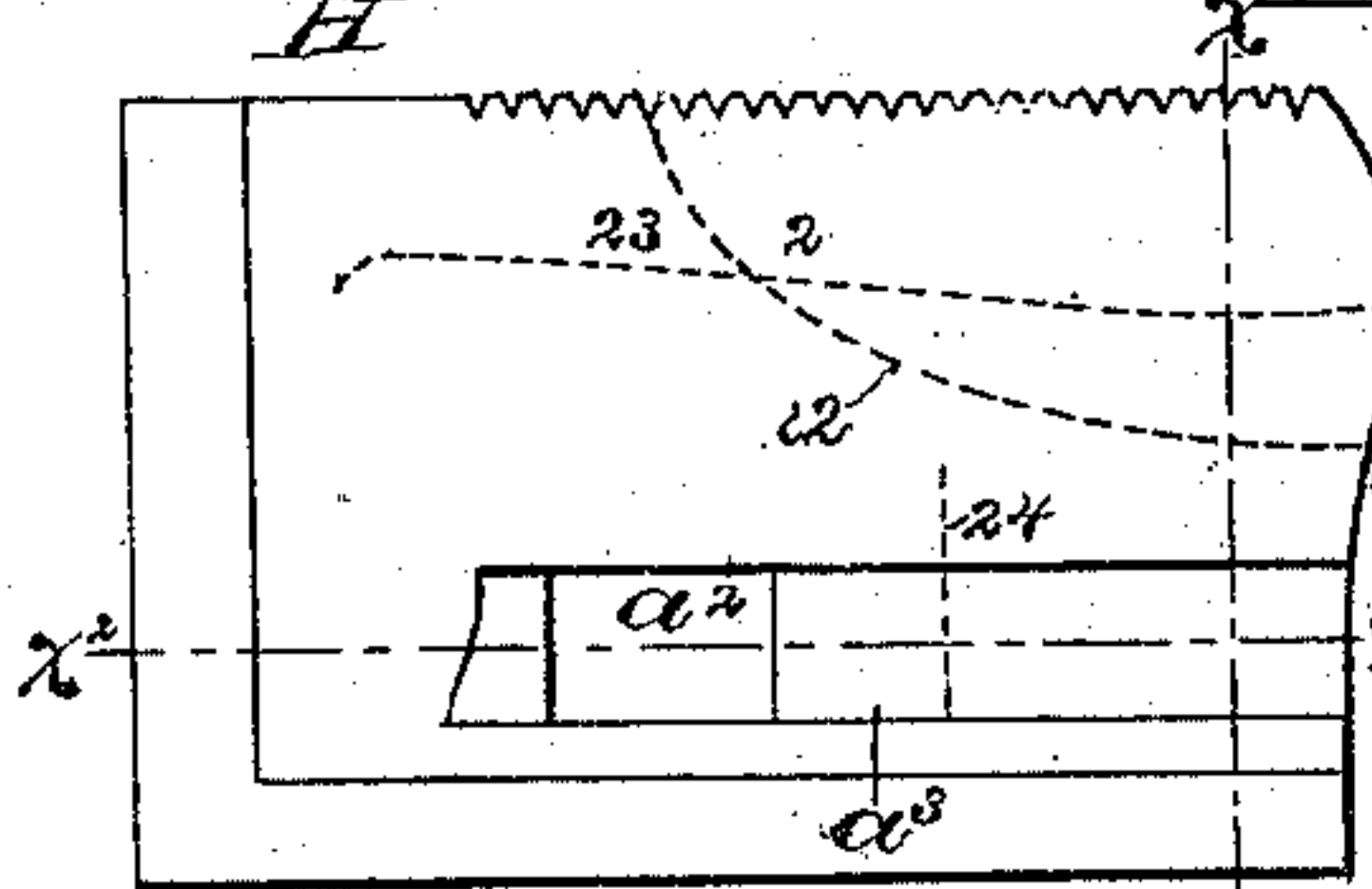


Fig: 8.

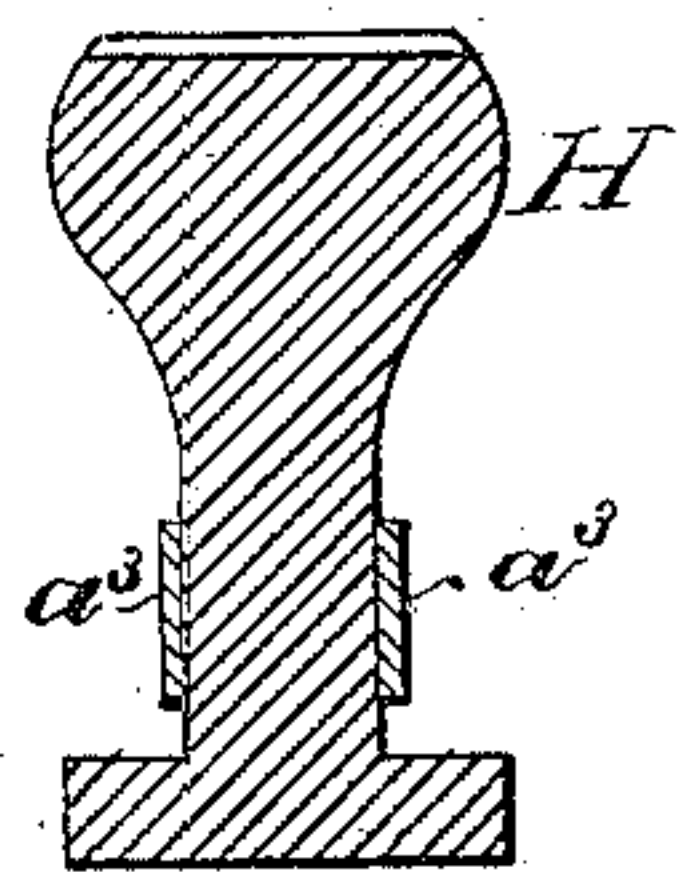
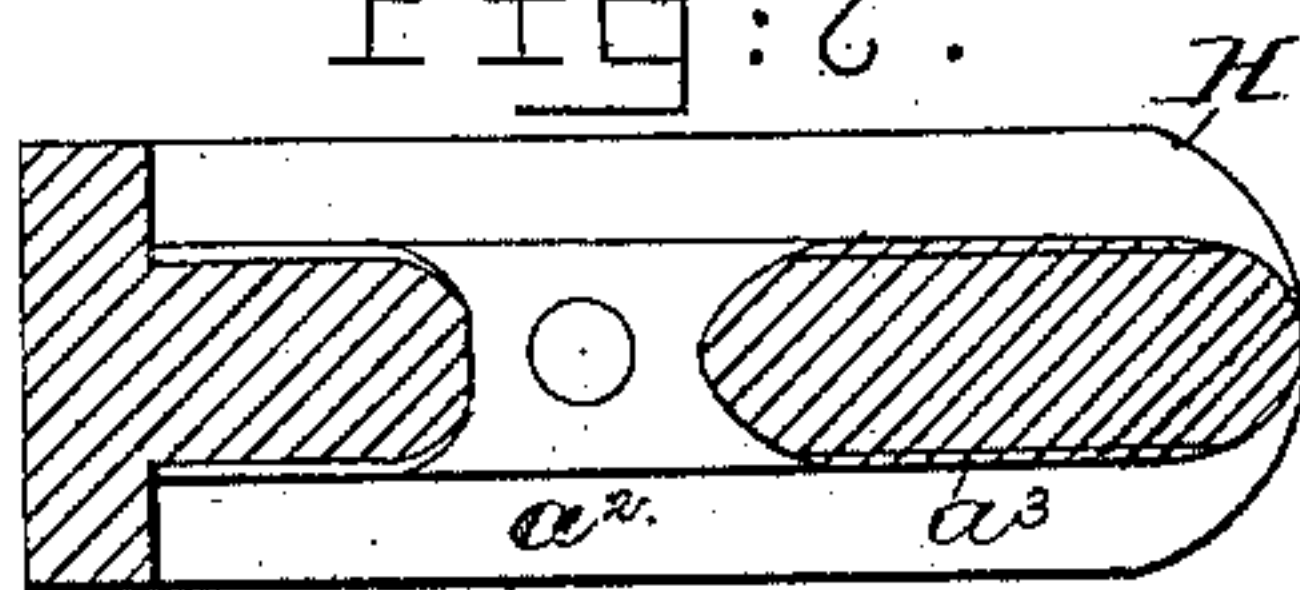


Fig: 7.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES L. HATCH, OF ROCHESTER, NEW YORK.

MACHINE FOR THE MANUFACTURE OF HEEL OR COUNTER STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 309,223, dated December 16, 1884.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. HATCH, of Rochester, county of Monroe, State of New York, have invented an Improvement in Machines for the Manufacture of Heel or Counter Stiffeners for Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The counter-stiffeners to be finished in my machine, they being composed in whole or in part of so-called "leather board," or of leather or other suitable material, are first rolled, drawn, and flanged by being passed between a roller and a concaved surface or die, and thereafter the rolled and flanged stiffeners are placed upon a heel-shaped form or last, which I shall call a "heel-form," against which latter the stiffeners are held closely by a solid sliding head-piece having a concaved face corresponding with the convexity of the heel-form. The depth of the concavity in the head-piece is sufficient to enable the sides of the head-piece to extend forward along the sides of the heel-form to the point where the same begins to decrease in diameter, the said head-piece forcing the stiffener against and compelling it to assume and retain the shape of the outer portion of the heel-form and holding the stiffener firmly while its flange is being set. While the rear part of the stiffener is held between the head-piece and heel-form, spring-arms located at the sides of the heel-form and extended along the sides of the stiffener are moved inwardly toward the stiffener and heel-form, so as to effectually clamp that part of the body of the stiffener at or near the flanged part of the stiffener, the said arm being of such shape as to firmly hold the said stiffener at or near the base of its flange in place on the heel-form, so as to insure the maintenance of the front end of the stiffener immovably in place against the upper portion of the sides of the heel-form, so that the front end of the stiffener, where it crosses the upper edge of the heel-form, cannot slip or move vertically with relation to the said heel-form, while the usual flange-laying device, preferably a slide or "shovel," as it is called, is moved forward to rub down and elongate the flange

and set the stiffener into shape to conform to that of the heel-form. The spring-arms, which bear upon and clamp the stiffener against the heel-form near the base of the flange while the flange-laying device is moved forward, are not desired to rub against and stretch the stiffener as they are moved forward along the sides of the same by the forwardly-moving head-block, for during such forward movement of the head-block to impinge against the stiffener on the heel-form the said arms are, as herein shown, kept from the stiffener by means of legs having feet, the latter co-operating with a cam and suitable recesses, to be described, the said cam acting to spread the spring-arms, while the recesses permit them to be closed upon the stiffener at the termination of the forward movement of the head-block, the effective pressure or force of the said spring-arms being augmented by reason of wings thereon, which co-operate with spring-closers, shown as rollers or studs, which serve to cause the spring-arms to be thrown in against and to lock and hold the stiffener in place against the edges of the heel-shaped form.

Figure 1 is a top view of a sufficient part of a machine for finishing counter or heel stiffeners to enable my invention to be understood; Fig. 2, a section of Fig. 1 in the dotted line $x x$; Fig. 3, a section in the dotted line $x' x'$; Fig. 4, an enlarged top view of the heel-form and head-piece separated; Fig. 5, a side elevation of Fig. 4; Fig. 6, a front end view of the head-piece and its attached spring arms and legs; Fig. 7, a section in Fig. 5 in the line $x^2 x^2$, and Fig. 8 a section of Fig. 5 in the line $x^4 x^4$.

The frame-work A^2 , the plate S , slide or shovel F , to lay the flange, slide-rod D' , bed-plate B , bolt b^2 , and india-rubber springs b' are all substantially as in my Patent No. 286,432, dated October 9, 1883, wherein the said parts are designated by like letters, and in my present invention the said shovel F and rod D' may be reciprocated by means substantially such as thereon provided, or in other usual manner, and instead of the slide and shovel I may employ any other usual flange-laying device, or a roller.

In the invention herein described the heel

form or last H, attached to the bed-plate by the bolt a , is provided near its base with openings a^2 , located at the ends of the cam a^3 , thrown out from the heel-form at a point below the curved edge of the stiffener s , the said cam acting to separate the spring-arms c , attached to the sliding head M by bolts 3 3, the inner sides or faces of the said spring-arms being prevented from rubbing against and stretching or molding the stiffener as the concaved inner portion, m^2 , of the head is moved forward to come in contact with the stiffener, as shown in Figs. 1 and 2, at the end of the heel form or last; but as soon as the heel-stiffener has been caught between the end of the heel-form and the inner portion of the head-piece the feet e of the legs e' slip into the openings a^2 , referred to, letting the spring-arms drop upon the stiffener at or near its flanged part. Just as or during the time that the said feet enter the said openings a^2 to let the springs contact with the corners of the stiffener the pressure of the said spring-arms upon the stiffener is augmented by the inclined wings or portions c^2 of the widened ends thereof striking against the spring-closing devices, shown as rolls or studs c^3 , rising from the plates c^4 , adjustably connected by screws c^5 with the bed-plate B. The spring-arms c , next the heel form or last and stiffener and beyond the end of the head-piece M, and between the end of the latter and the legs e , may be made quite narrow, as shown by full and dotted lines in Fig. 5, it being only necessary, however, that the said arms be of a width sufficient to come against and hold the stiffener at that part of it next its flange so firmly that the advancing flange-laying device F, preferably made as a slide or shovel, will not displace the body of the stiffener when it rests against the heel-form. These arms d do not act to stretch or mold the stiffener, nor do they slide longitudinally in contact therewith. The head-piece having been moved forward with its spring-arms held open or expanded by the cam a^2 until the stiffener has been firmly clamped between the head-piece and the end of the heel-form, and the springs having been thrown in against the stiffener at its corners and along the base of the flange, as stated, to lock the same against the sides of the heel-form, the flange-laying device will be moved forward, and, striking the part of the stiffener above the head-piece and heel-form, will wipe the said part called the "flange" closely down upon and about the heel-form, stretching and elongating the said flange and the stiffener adjacent to the bend therein, giving the stiffener the proper curvature, set, and finish.

The dotted line 22 in Fig. 5 shows the position of the stiffener on the heel-form, the dotted line 23 the position and width of the spring-arm where it contacts with the stiffener, and the dotted line 24 shows the position of the forward end of the head-piece.

In this my improved machine, with count-

ers as now shaped, the solid head-piece covers about two-thirds of the stiffener when the same is forced against the heel-form to cause that part of the stiffener acted upon by the head-piece and between it and the heel-form to assume the contour of the latter.

I claim—

1. In a machine for finishing counter-stiffeners, the concaved sliding solid head-piece and its attached spring-arms, combined with the heel-form and a cam or projection to cause the separation of the spring-arms, and prevent them from rubbing against and stretching the stiffeners as the stiffener is being clamped between the head-piece and heel-form, substantially as described.

2. In a machine for finishing counter-stiffeners, the concaved sliding head-piece, its attached spring c , having projections c^2 , and the arms, legs, and feet, and the heel-form provided with a cam-surface at its base, against which the said feet bear as the spring-arms are moved forward over the stiffener, and with an opening, a^2 , to receive the said feet, combined with the rollers or studs against which the spring-arms strike to augment their pressure against the corners of the stiffener and lock the said spring-arms in place as the feet enter the said openings, substantially as described.

3. In a machine for finishing counter-stiffeners, a heel-form to receive the rolled or flanged stiffener, a solid reciprocating head-piece concaved at its front end to hold the central or head part of the stiffener upon the heel-form, and spring-arms connected with the head-piece and provided with legs or projections, combined with means, substantially as described, to separate the said spring-arms and prevent them from rubbing and stretching the stiffener as the head-piece is moved forward to clamp the stiffener between itself and the last-form, and with a U-shaped slide or shovel to act upon the flanged part of the stiffener while the said spring-arms hold the front edge of the stiffener near the base of the flange to the heel-form, substantially as set forth.

4. In a machine for finishing stiffeners, the heel-form, the concaved sliding solid head, its attached spring-arms, and a cam or projection to separate the same as the spring-arms are moved forward to embrace the stiffener on the heel-form, combined with means, substantially as described, to augment the pressure of the spring-arms against the stiffener, to hold or lock the same at or near its flange to the heel-form while the flange is being set, substantially as described.

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

JAMES L. HATCH.

Witnesses:

ALBERT J. GOOH,

ANDREW J. HATCH.