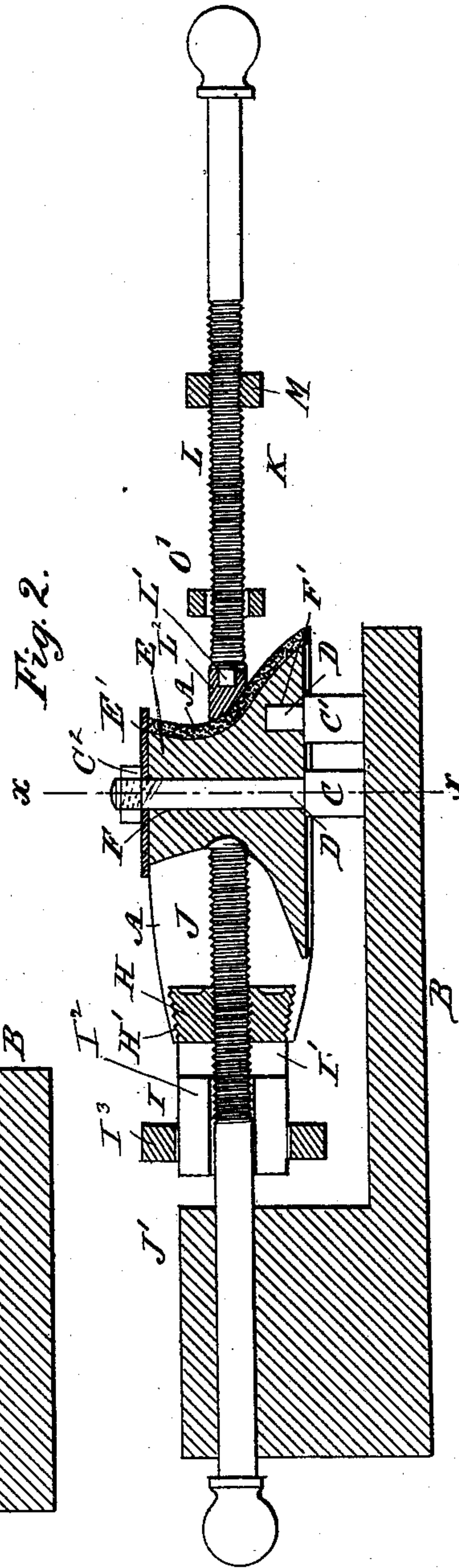
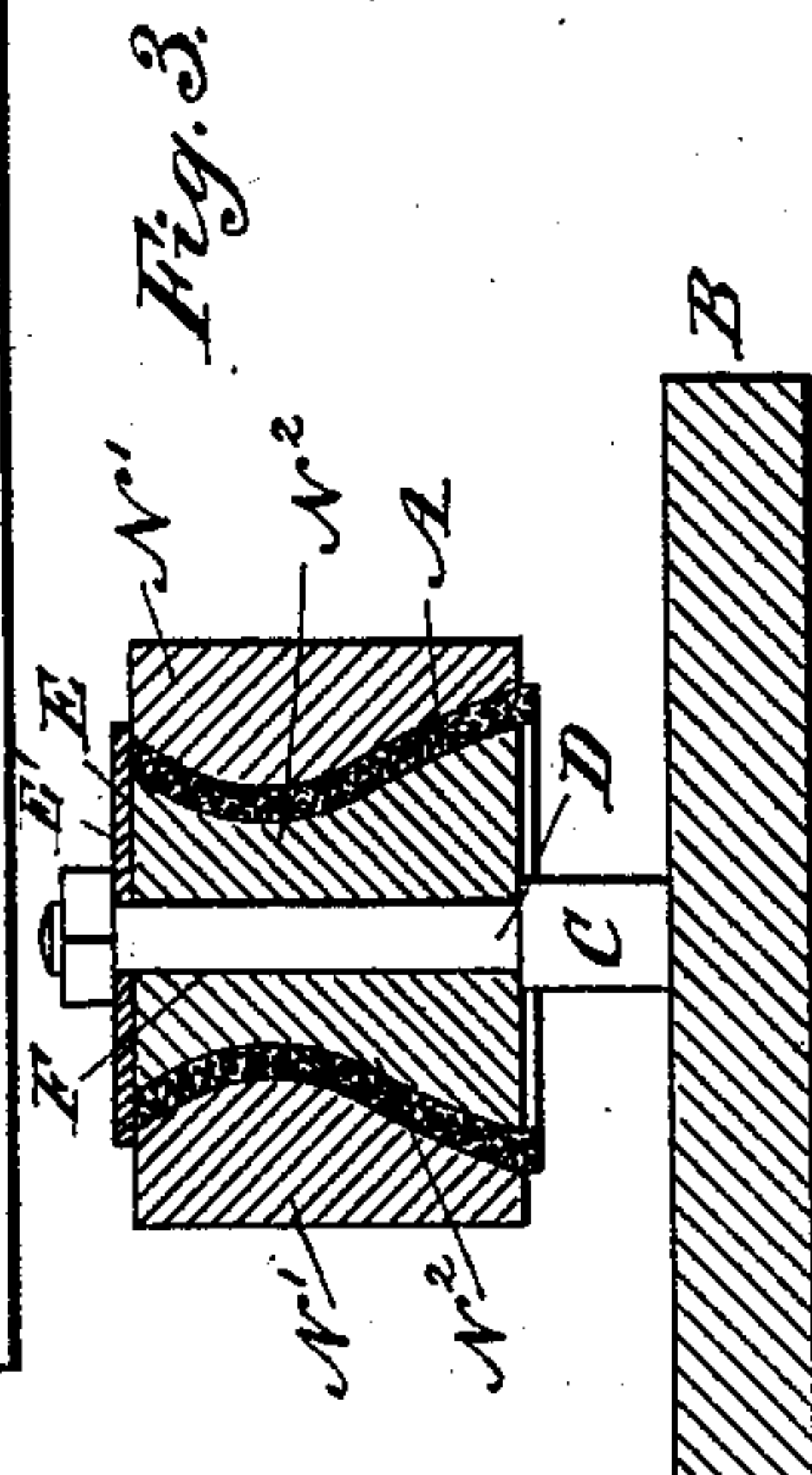
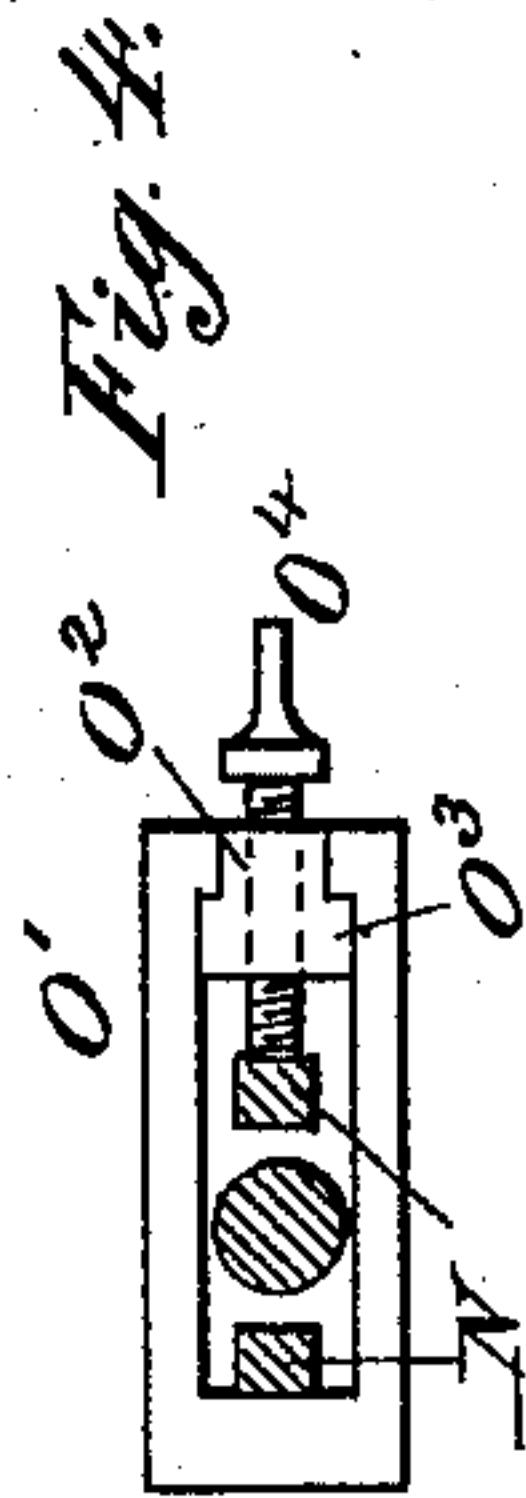
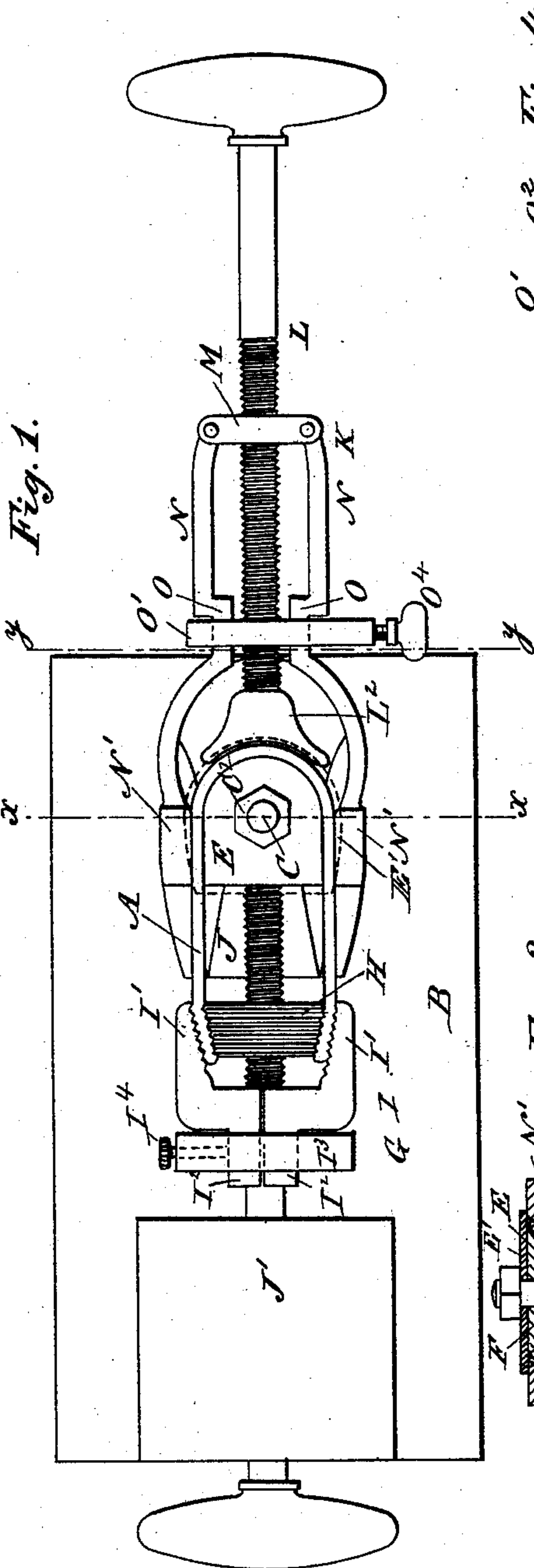


A. FARINA.

APPARATUS FOR MAKING BOOT OR SHOE HEELS.

No. 393,892.

Patented Dec. 4, 1888.



WITNESSES:
D. C. Reusch.
C. Sedgwick.

INVENTOR:
A. Farina.
BY Munn & Co.

ATTORNEYS.

A. FARINA.

APPARATUS FOR MAKING BOOT OR SHOE HEELS.

No. 393,892.

Patented Dec. 4, 1888.

Fig. 5.

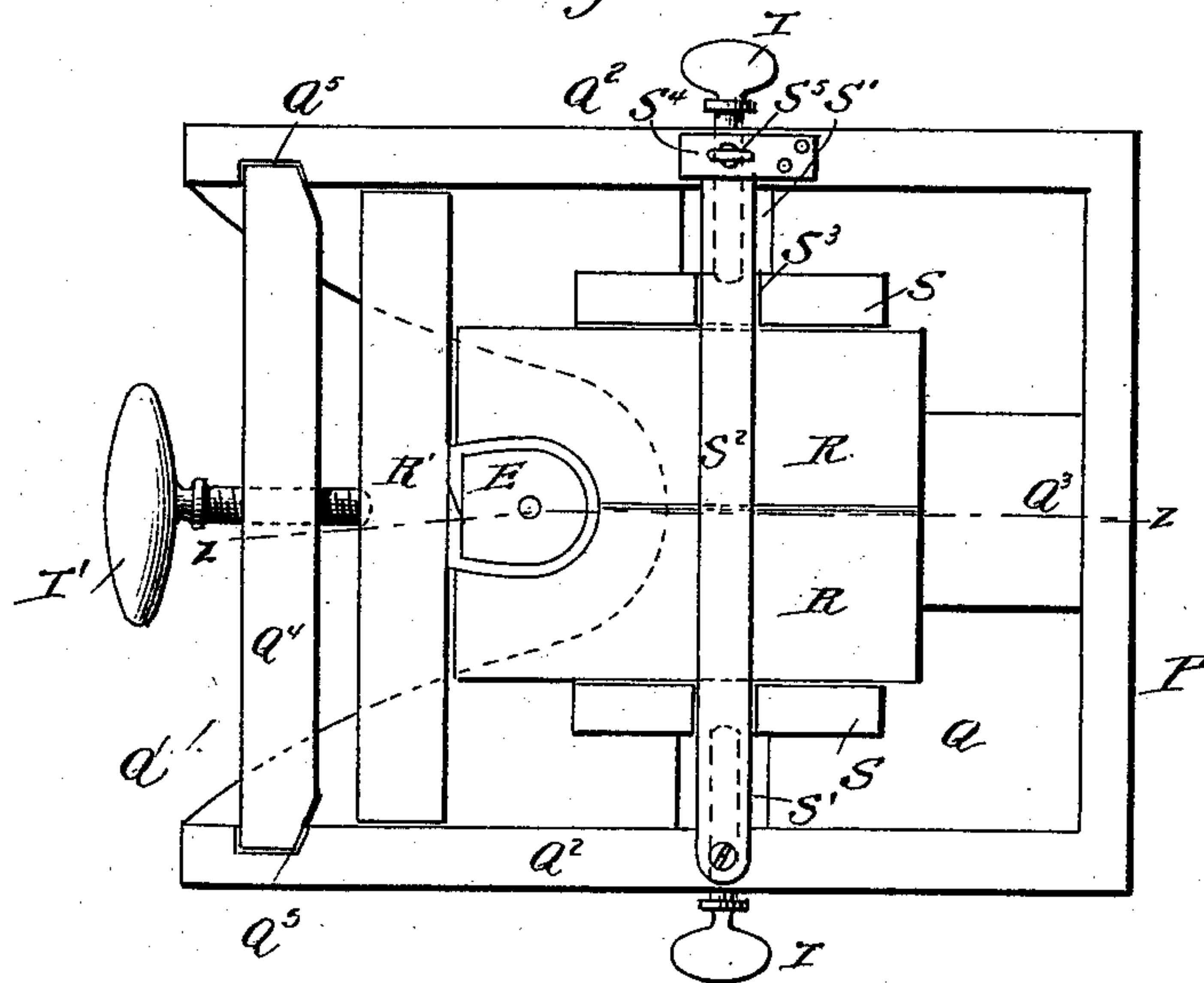
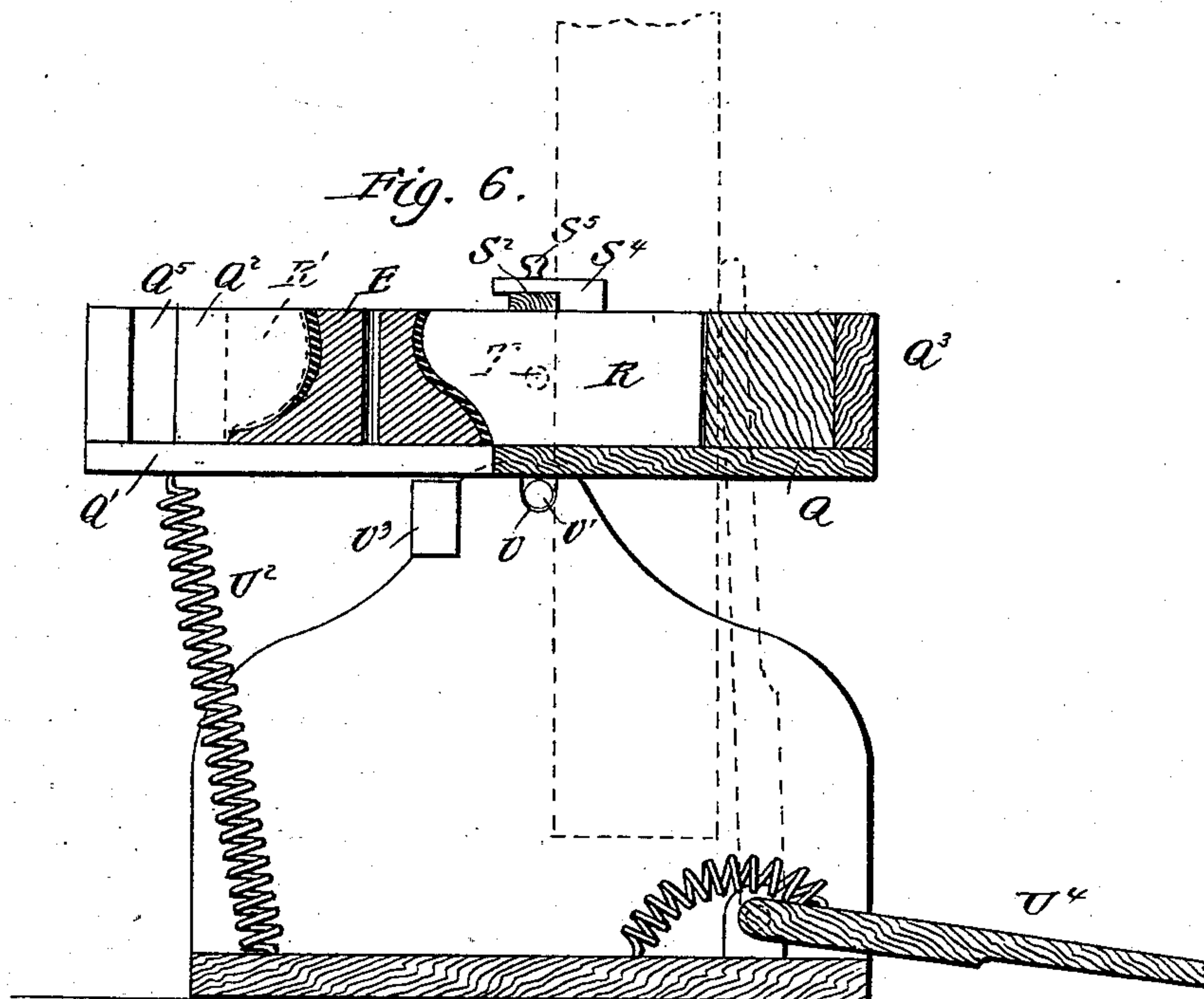


Fig. 6.



WITNESSES:
C. Sedgwick.
J. M. Ritter.

INVENTOR,
A. Farina,
BY
Munn & Co.
ATTORNEY.

UNITED STATES PATENT OFFICE.

ANTONINUS FARINA, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO PETRINA FARINA, OF SAME PLACE.

APPARATUS FOR MAKING BOOT OR SHOE HEELS.

SPECIFICATION forming part of Letters Patent No. 393,892, dated December 4, 1888.

Application filed April 5, 1888. Serial No. 269,653. (No model.)

To all whom it may concern:

Be it known that I, ANTONINUS FARINA, of the city, county, and State of New York, have invented a new and useful Improvement in
5 Apparatus for Making Boot or Shoe Heels, of which the following is a full, clear, and exact description.

This invention relates to an improvement in means for making heels for boots or shoes
10 by forming a heel-shaped leather shell and filling the shell with a solid body. The shell has been heretofore generally made by pressing a moistened piece of leather into shape in a mold of appropriate form; but it is extremely difficult in this way to produce an
15 outwardly-concave heel-shell—as for the heels of women's shoes—when leather of any great thickness is used.

My invention consists of novel devices, substantially such as those hereinafter described and as claimed, for stretching and pressing the leather into the approximate form of the finished shell preparatory to molding it, and also for molding and working the leather into the
25 final shape thereafter.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

30 Figure 1 is a plan view of my improved devices for stretching and working the leather preparatory to molding it. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a cross-sectional elevation of the same on the line *x x*, Fig. 2. Fig. 4 is a cross-sectional
35 elevation of a part of the same, taken on the line *y y*, Fig. 1. Fig. 5 is a plan view of the improved finishing-mold. Fig. 6 is a longitudinal sectional elevation of the same on the
40 line *z z*, Fig. 5, and its mounting for finishing the shell-joint.

For first stretching the piece A of leather, a base, B, is provided with two rigid posts, C C', each formed with a shoulder, D, at a short
45 and the same distance from the base, and of which the post C is much higher than the post C' and has a threaded upper end.

A metallic or other solid core, E, conforming exteriorly to but slightly smaller than the
50 finished heel, is formed with a vertical hole, F, extending therethrough adapted to fit and

receive the part of the post C above the shoulder D, and with a socket, F', in its bottom to receive the corresponding part of the post C', and on the threaded end of the post C, projecting
55 above the core, a nut, C², is screwed down tightly, so as to hold the core immovable on but slightly elevated from the base B.

The strip of leather A to be worked is cut of a somewhat greater width than the depth
60 of the core E, and when moistened is wrapped around the curved back and sides of the core, so as to project slightly beyond the lower edge thereof, which edge will bite into the leather and prevent it from slipping when being
65 stretched. A cover-plate, E', is adapted to be held down upon the top of the core by the nut C² and to project beyond the core, so as to prevent the leather from working upward.

The free ends of the leather strip projecting
70 beyond the breast of the heel are adapted to be seized by a grip, G, consisting of an outwardly-tapering rectangular nut, H, having series of transverse corrugated teeth H' on each of its four sides, forming jaws, a U-
75 shaped head, I, having the inner faces of its arms I' tapered and transversely corrugated to form jaws corresponding to and adapted to engage with those on opposite sides of the nut H, and a handled screw-bar, J, threaded
80 to work lengthwise in the correspondingly-threaded nut H, but adapted to slide loosely in the jaw-carrying head I. The head I is made in two longitudinal sections, each carrying one of the jaws, I' and formed with opposite neck-sections I², around which is placed
85 a collar, I³, carrying a set-screw, I⁴, for binding the two neck-sections I², and hence the head-sections, together as a united whole.

The screw-bar J is mounted to turn and
90 slide freely in a tubular boss, J', raised on the base B to allow the free ends of the leather strip to be readily placed, respectively, between the corrugated jaws on opposite sides of the nut H and the corresponding jaws on the head
95 I, and on screwing the bar J against the core as a bearing the nut H will be retracted, first gripping the leather firmly between the jaws on the same and the head I and then drawing
100 on the leather so as to stretch it tightly around the core and cause it to take the form of the back and sides thereof. The ends of

the leather strip can be readily detached from the grip G on loosening the set-screw I¹, withdrawing the collar I³ from the neck-sections and separating the jaws I' from the nut. As it then becomes necessary to bend and join the ends of the leather strip over the flat breast of the heel-core, a clamp, K, is provided for binding the leather to the back and sides of the core, so that the stretcher can meanwhile be removed and the core E taken off the base B by removing the fastening-nut C², leaving the ends of the strip A free.

The clamp K is formed mainly of a threaded handle-bar, L, a threaded nut, N, working on the threaded handle-bar, and laterally-swinging jaws N, pivoted to opposite sides of the nut M. The inner end of the bar L is formed with a neck, L', mounted to turn loosely in the socket of a bearing, L², which is formed with a bearing-face conforming to the back of the core to adapt it to be pressed against the leather on the back of the core E without marring the leather.

The swinging jaws N have presser-heads N', the inner faces, N², of which are shaped conversely to the side of the core E to adapt them to bear with uniform pressure on the leather on each side of the same, but have their rear edges slightly beveled to avoid marring the leather.

The jaws N are formed medially with corresponding inset necks O, around which a yoke, O', having an end slot, O², and T-shaped locking-piece O³ therefor, is adapted to be passed to lock the jaws together, the locking-piece O³ being provided with an adjusting-screw, O⁴, working therethrough against the neck O of the adjacent jaw N for drawing the jaws together and clamping the leather tightly upon opposite sides of the core.

The screw-bar L is adapted to be then screwed forward in the nut M to press the bearing L² firmly against the leather on the back of the core. The grip G can then be disengaged from the free ends of the leather strip, the core carrying the leather and clamp K detached from the base B, and, the clamp serving as a handle, the free ends of the leather trimmed off, bent over the breast of the core by hammering, and scarfed or otherwise prepared for joining without removing the core. The leather shell having been in this way brought to an approximately-finished shape, the clamp K is removed and the leather shell with the inclosed core placed in a mold, P. (Shown in Figs. 5 and 6.)

The mold P is constructed of a bottom, Q, having a recess, Q', extending inward from its front edge, erect parallel bearings Q², fixed to opposite sides of the bottom, an erect bearing, Q³, fixed to the rear of the bottom, and a removable front bearing, Q⁴, to receive and hold the ends of which vertical grooves Q⁵ are formed in the inner faces of the side bearings, Q².

Mold-sections R, conforming interiorly to

the sides and back of the heel, are adapted to slide loosely on the bottom Q of the mold toward and from each other, and a mold-section, R', conforming interiorly to the breast of the heel, as indicated in dotted lines in Fig. 6, is also placed loosely on the bottom Q in front of the side mold-sections, R, the arrangement being such that the leather shell with its core E will exactly fit within the inner faces of the mold-sections when brought together, as in Fig. 5.

Followers S are mounted to slide in transverse grooves S', formed in the bottom Q, against and with the side mold-sections, R, a guide-bar, S², being pivoted to the top of one side bearing, Q², and adapted to swing across to the opposite side bearing, so as to lie in grooves S³, formed in the tops of the followers S, and hold the same against lateral or vertical displacement. An L-shaped catch-plate, S⁴, is secured to the latter bearing Q² to engage the free end of the swinging guide-bar, and a set-screw, S⁵, is mounted in said catch-plate for locking the said guide-bar in place.

Adjusting-screws T are mounted to work lengthwise in the opposite side bearings, Q², against the respective followers S, and an adjusting-screw, T', in the removable front bearing, Q⁴, against the breast mold-section R', so that by properly turning said screws and blocking the rear ends of the side mold-sections, as shown, the heel-shell can be pressed evenly and tightly upon the core by means of the embracing mold-sections. When such pressure has been applied for the required length of time, the front adjusting-screw, T', is loosened and the bearing Q⁴, with the breast mold-section, removed from the mold, thereby exposing the joint in the breast of the shell.

A mounting, as that shown in Fig. 6, is provided, having open side bearings, U, to receive removable trunnions U', which are formed on opposite sides of the mold P, so that the said mold can be swung to the vertical position shown in dotted lines in Fig. 6 to bring the shell-joint at the top in convenient position for working and finishing.

A spring or springs, U², are connected with the front of the mold and with the base of the mounting to normally hold the mold in a horizontal position, a rest, U³, being arranged to stop the mold in turning to such position. A spring-actuated lever, U⁴, is pivoted also to the base of the mounting in position to engage and lock the mold P when in its vertical position, as indicated in dotted lines. The adhesive substance for uniting the ends of the shell, if scarfed, or an interior U-shaped fastening-tack may be then applied, and the filling, which may be of wood, leather, or other appropriate substance, having been introduced, the pressure of the mold is again applied to complete the heel in the usual way.

This application has reference particularly to the apparatus herein shown and described for carrying out the process set forth;

but I hereby reserve the right to at some proper time hereafter apply for a patent on the said process.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described apparatus for making heels, the same consisting of a rigid core conforming to the finished heel, a stretcher for drawing the leather tightly about the core, a clamp having jaws conforming to the sides of the core for binding the leather thereto, and a finishing-mold, substantially as described.

2. In a heel-making apparatus, the combination, with a base, of a rigid heel-core fixed at an elevation above the base and a leather stretcher, substantially as described.

3. In a heel-making apparatus, the combination, with a base carrying fixed shouldered posts, one of which is threaded, of a rigid heel-core having a vertical hole for the threaded post, a socket for the other post, and a fastening-nut adapted to the threaded post, substantially as described.

4. In a heel-making apparatus, the combination, with a support and a heel-core thereon, of a screw-bar having its inner end resting against the heel-core, a tapering and corrugated nut on the screw-rod, and a head through which the screw-rod works freely, provided with corrugated jaws, substantially as herein shown and described.

5. In a heel-making apparatus, the combination, with a support and a heel-core mounted thereon, of a screw-bar mounted to slide in a projection of the said support, a tapering and corrugated nut on the screw-bar, a sectional head through which the screw works loosely, provided with corrugated jaws, a collar on the neck of the said frame, and a set-screw passing through the collar and engaging the said neck, substantially as herein shown and described.

6. In a heel-making apparatus, the combination, with a heel-core, of a threaded handle-bar provided with a bearing-block on its end, a nut on the said bar, jaws pivoted to the nut, and means for drawing the jaws together, substantially as described.

7. In a heel-making apparatus, the combination, with a heel-core, of a threaded handle-bar, a nut on the said handle-bar, jaws pivoted to the nut and provided with inset necks, a yoke having end slot, a T-shaped locking-piece, and an adjusting-screw, substantially as herein shown and described.

8. The combination herein described, with a rigid heel-core, of a clamp consisting of movable jaws adapted to opposite sides of the core, means for drawing the jaws toward each other, an adjustable bearing adapted to press against the back of the core, and devices connecting the said bearing to the jaws, substantially as described.

9. In a heel-mold, the heel-clamp consisting of a bar, laterally-working jaws pivotally connected thereto, adapted to the sides of a heel and formed with opposite inset necks, and an adjustable yoke adapted to embrace the necks, substantially as described.

10. In a heel-clamp, the combination, with oppositely-working jaws adapted to the sides of a heel, of a yoke having an end slot, a T-shaped locking-piece for closing the end slot, and an adjusting-screw for contracting the jaws within the yoke, substantially as described.

11. In a heel-mold, the combination of a mold-bottom having erect side and rear bearings fixed thereto and an erect removable front bearing, of loose side mold-sections, a loose breast-mold section, followers mounted to slide on the bottom against the side mold-sections, and pressure-adjusting screws working in the side bearings and in the removable front bearing against the followers and breast-mold section, respectively, substantially as described.

12. In a heel-mold, the combination of a bottom, erect side bearings fixed thereto formed with inner vertical grooves, and a removable front bearing adapted to slide in said grooves, substantially as described.

13. In a heel-mold, the combination of a mold-bottom having erect side bearings, loose side mold-sections, followers adapted to slide on the mold-bottom against the side mold-sections and formed with top grooves, a releasable guide-bar connected to the side bearings and adapted to the grooves in the followers, and means for locking the guide-bar in position, substantially as described.

14. The combination, with a heel-mold adapted to be opened in front to expose the breast of the contained heel and having side gudgeons, of open bearings to receive said gudgeons and means for holding the mounted mold in position, substantially as described.

ANTONINUS FARINA.

Witnesses:

CLARENCE L. BURGER,
C. SEDGWICK.