

**No. 629,810.**

**Patented Aug. 1, 1899.**

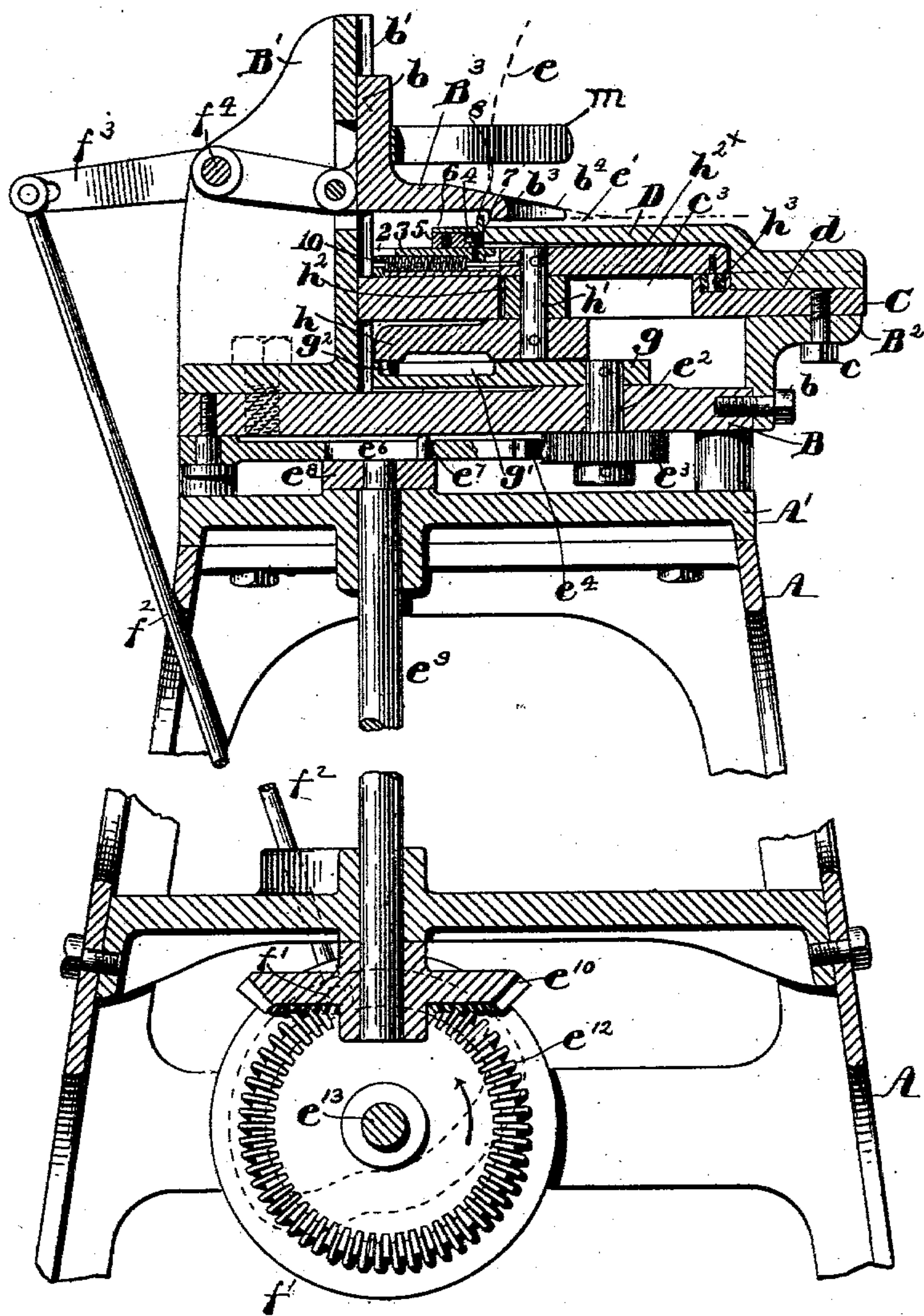
**O. PAQUETTE.**  
**HEEL SEAT ROUNDING MACHINE.**

(Application filed Apr. 18, 1898.)

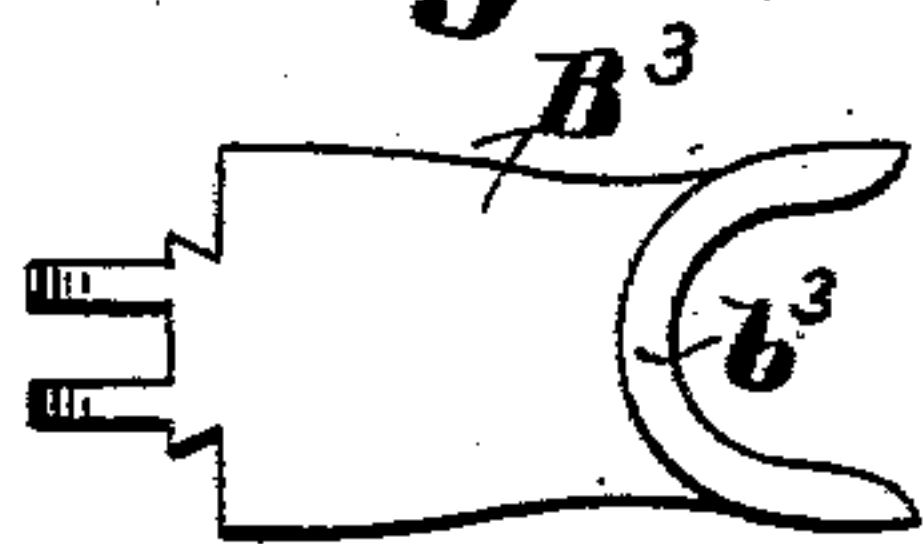
(No Model.)

**2 Sheets—Sheet 1.**

*Fig. 1.*



*Fig. 1a.*



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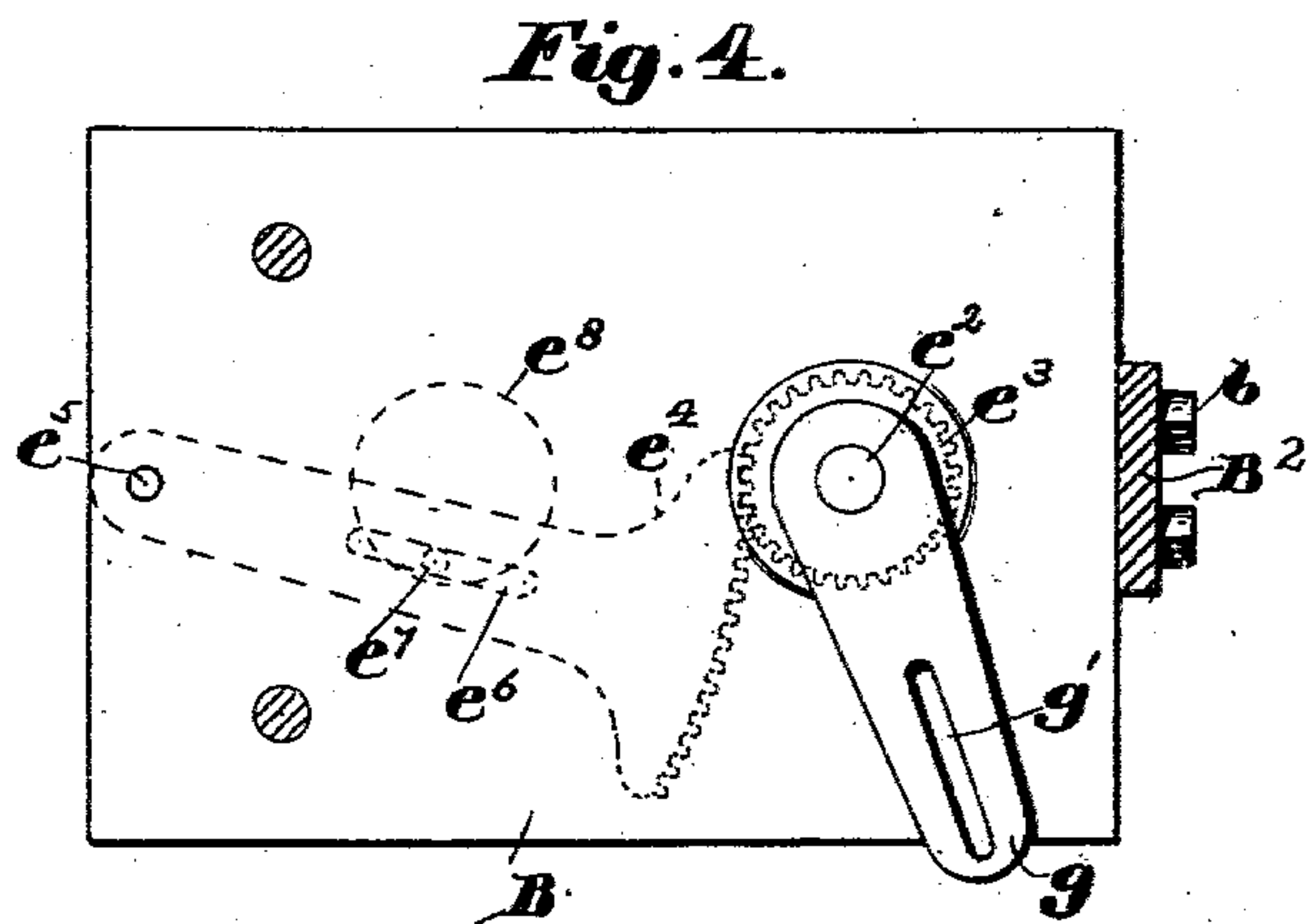
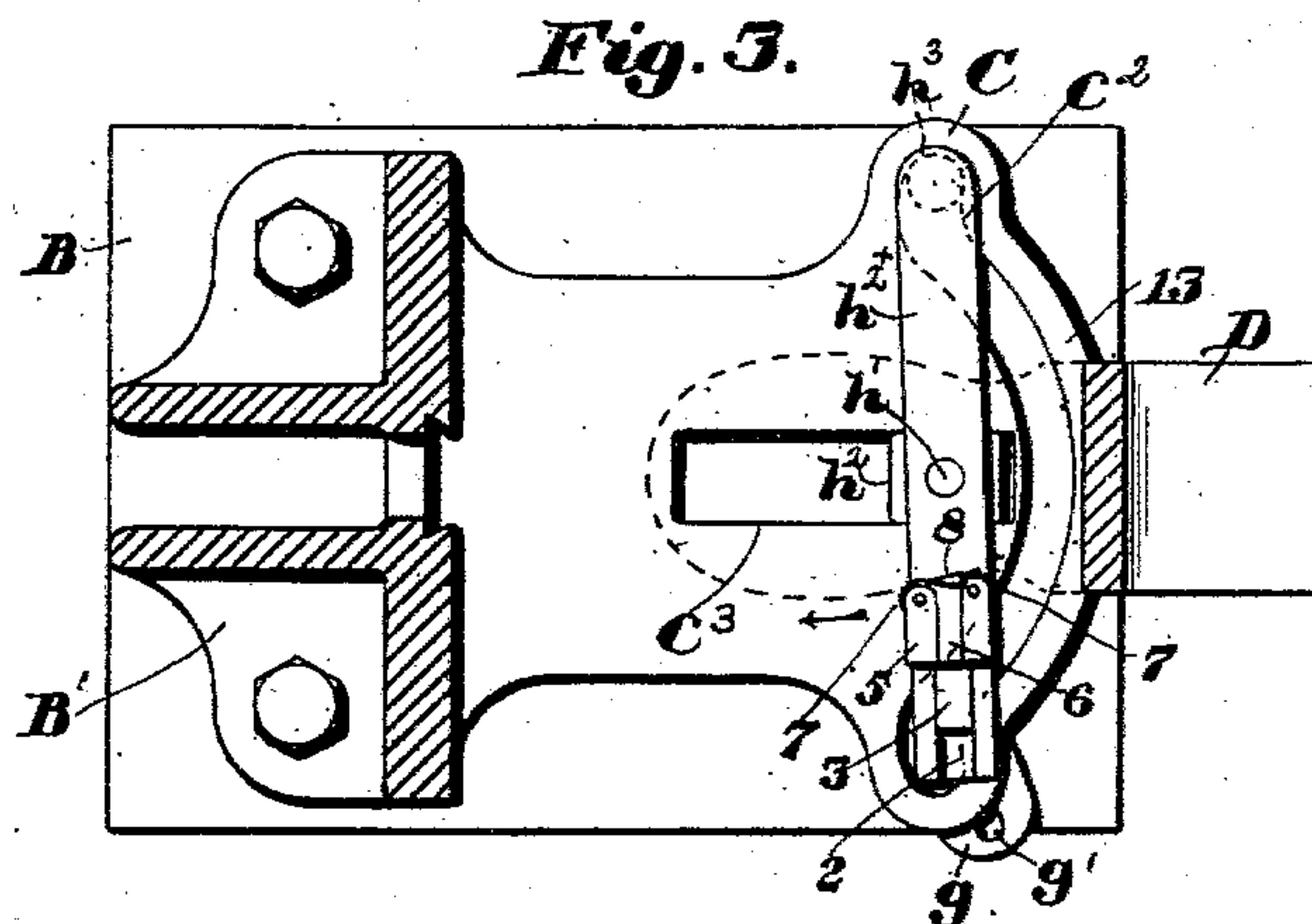
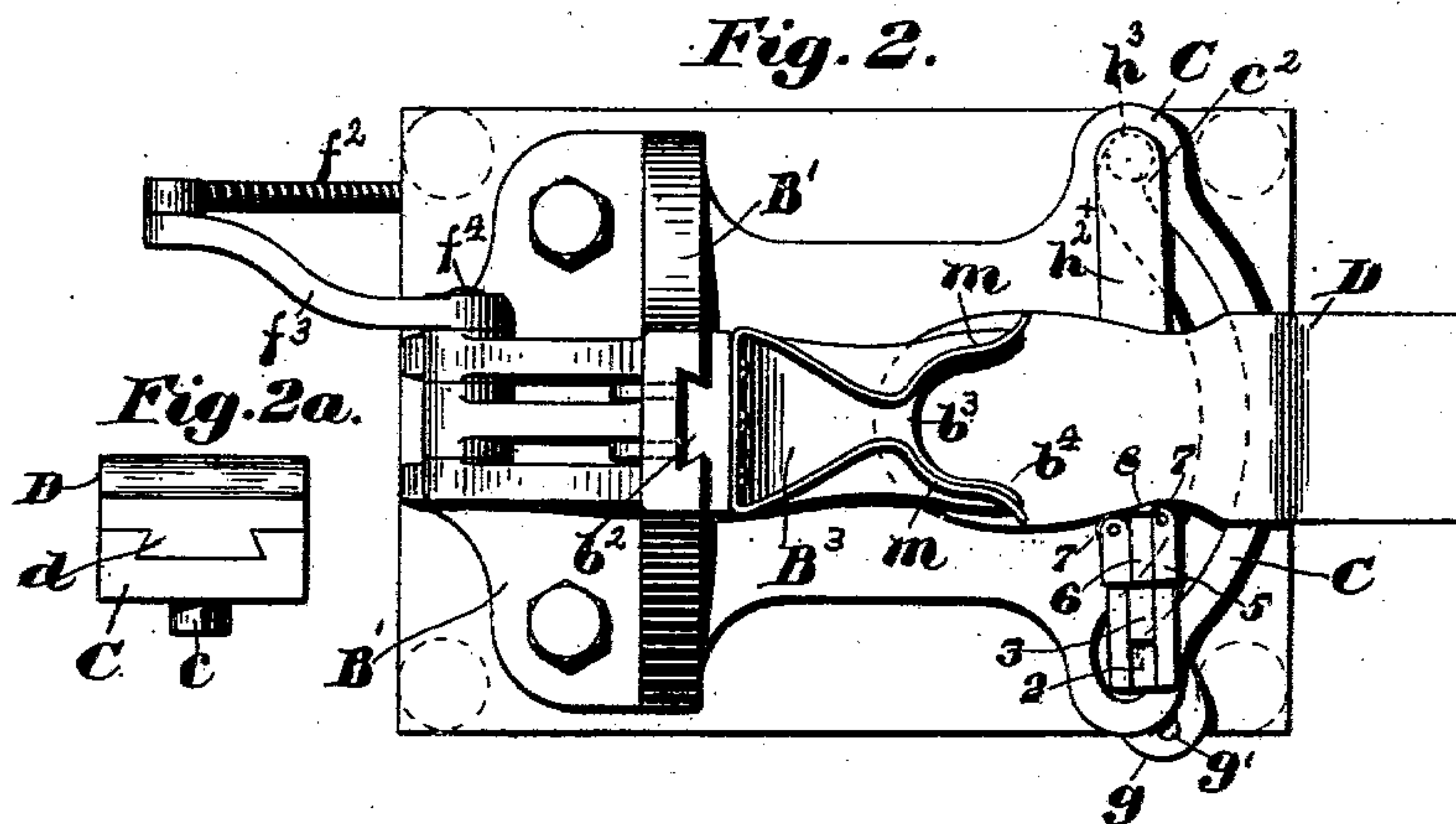
Patented Aug. 1, 1899.

O. PAQUETTE.  
HEEL SEAT ROUNDING MACHINE.

(Application filed Apr. 13, 1898.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

OCTAVE PAQUETTE, OF HAVERHILL, MASSACHUSETTS.

## HEEL-SEAT-ROUNDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 629,810, dated August 1, 1899.

Application filed April 13, 1898. Serial No. 677,452. (No model.)

*To all whom it may concern:*

Be it known that I, OCTAVE PAQUETTE, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in Heel-Seat-Rounding Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

In the manufacture of boots and shoes it is customary, especially in welted work, to apply the outer sole to the lasted shoe and then while the sole is held in place trim the same, giving to it the shape of the last, a suitable guide working usually in the space between the junction of the welt and the upper while the surplus material of the sole is being removed from a point back of the shank about the ball and toe, thus shaping the sole exactly in conformity to the shape of the last. Frequently the sole while being so trimmed or shaped is channeled. The heel end of the sole, called the "heel-seat," is not, however, trimmed to shape in this usual machine for the reason that in the absence of the welt, which does not extend about the heel-seat, the guide used would not find a proper bearing, and consequently the heel-seat would not be trimmed correctly and has to be done at a subsequent operation.

I have devised a novel machine for trimming the heel-seat end of the sole, thus fully preparing the sole for the subsequent steps of attaching the sole to the welt and applying the heel to the heel-seat end of the sole.

My novel machine has a pattern-plate, it in this instance of my invention being represented as stationary, said pattern-plate being of the shape which it is desired to give to the heel-seat end of the sole. The heel-seat end sustained on this pattern-plate is acted upon by a clamp interposed between the upper and inner sole and the inner side of the outer sole the edge of which is to be trimmed, said clamp being preferably operated automatically to effect the firm clamping of the stock in one movement of the blade-carrier, to be described—that is, that part of its stroke when the heel-seat is being trimmed—the clamp preferably rising immediately after the trimming or rounding has been effected and while the carrier and blade are being returned into

their normal or starting position. This clamp will preferably be provided at its under side with a projection which may approximate in shape the shape of the pattern, such projection, it bearing directly on the sole, providing ample space to enable the carrier and its trimming-blade to be moved freely under the arm of the clamp even with very thin soles. My improved carrier, having attached to it the blade for rounding the heel-seat, is mounted upon a lever which has imparted to it a peculiar and novel movement in order to enable the carrier and blade to follow in the proper path desired for the heel-seat end of the sole. The lever referred to is mounted upon a block which is free to slide in a guideway occupying a position substantially parallel with a line which would divide the sole from end to end, said block deriving its movement to and fro in said guideway by or through an arm pivotally mounted on or with relation to said block, said arm deriving its motion from a second arm which is moved to and fro in the arc of a circle, the two arms being shown as made movable about different centers and as being connected loosely one with the other by a pin-and-slot or other loose connection.

The lever upon which is mounted the carrier referred to is provided at one end with a suitable roller or other stud which enters an irregular cam-groove in a plate, preferably the same plate which is provided with the guideway referred to, in which moves the slide-block carrying the lever hereinbefore mentioned. This plate will also have, preferably, a suitable groove to receive a projection of the pattern-plate on which rests the end of the sole to be trimmed or rounded for the production of the heel-seat.

The carrier is so mounted on the lever referred to that it may slide back and forth under the control of a suitable spring or springs to thereby enable the carrier to adapt itself to different sizes of patterns according to the size of the shoe the heel-seat of which is to be rounded.

Figure 1, in vertical section, shows a machine embodying my invention in one form, said machine being partially broken out to save space on the drawings. Fig. 1<sup>a</sup> is an under side view of the clamp. Fig. 2 is a top view thereof on a smaller scale. Fig. 2<sup>a</sup> is a



right-hand end view of some of the parts shown in Fig. 2. Fig. 3 is a detail in top view, the pattern, clamp, and counter-guide being omitted; and Fig. 4 shows the bed-plate as transparent, with the devices underneath, chiefly in dotted lines, for moving one of the arms referred to for imparting motion to the lever having the blade-carrier.

The framework of the machine consists, essentially, of suitable legs A, having mounted upon them a top plate A', above which is supported in suitable manner a bed-plate B, a standard B' being erected on the bed-plate. The bed-plate has connected to it at one end, as by a screw b, a stand B<sup>2</sup>, on which rests a plate C, said plate being held in position by a suitable screw c. This plate C has (see Fig. 2) an irregular cam-groove c<sup>2</sup>, and it also has a guideway c<sup>3</sup>. (Shown in Figs. 1 and 3 by full lines.) The opposite end of the plate C is suitably sustained rigidly with relation to the stand B' and the bed-plate.

The stand B' has a suitable guideway b', preferably dovetailed in cross-section, in which fits to slide a dovetailed projection b<sup>2</sup> of a clamp B<sup>3</sup>, the under side of said clamp being cut away, preferably, to leave a projection b<sup>3</sup>, (see Figs. 1 and 1<sup>a</sup>.) the outlines of said projection approximating in shape the end of the pattern D and when in operative position falling preferably with the face of said projection inside the edge of the pattern. The upper side of the clamp is preferably tapered on the lines b<sup>4</sup>, so that the said clamp may be readily inserted between the upper of the shoe (designated by dotted lines e) and the heel-seat end e' of the sole of the shoe, said sole, it being understood, being at such time secured in some way to the lasted shoe on the last in order that the heel-seat end may be trimmed to the desired shape—a shape determined by the pattern D. This pattern in this instance of my invention has a suitable dovetailed or other shaped projection, as d, which enters a dovetailed groove (see Fig. 2<sup>a</sup>) in the plate C, preferably the same screw c hereinbefore described, acting, when turned in fully, to clamp and retain the said pattern-plate in its working position.

The pattern-plates used will be of different sizes, according to the particular size of the heel-seat end which is to be trimmed, and one pattern-plate may be readily substituted for another one of the proper size, as desired.

The bed-plate B has a suitable hole for a short shaft e<sup>2</sup>, having applied to its lower end a pinion e<sup>3</sup>, which is engaged in this instance of my invention by the teeth of a sector-lever e<sup>4</sup>, pivoted at e<sup>5</sup>, said sector-lever being shown as slotted, as at e<sup>6</sup>, said slot being entered by a crank e<sup>7</sup>, carried by a disk e<sup>8</sup>, fast on the upper end of a shaft e<sup>9</sup>, provided, as represented, with a suitable beveled gear e<sup>10</sup>, which is engaged and rotated by a beveled gear e<sup>12</sup>, fast on a shaft e<sup>13</sup>, which derives its motion from any usual or suitable automatic clutch, so that said clutch controlled by a treadle in

any usual or suitable way will when the said treadle is depressed effect the engagement of said clutch with said shaft and rotate said shaft once, letting it then stop, the operator being obliged to manipulate the treadle for each rotation of the shaft.

The shaft e<sup>13</sup> referred to has fast upon it a suitable disk or hub, or the rear side of the gear e<sup>12</sup> may have cut into it a suitable cam-groove f, in which may enter a roller or other stud f', extended from a rod f<sup>2</sup>, attached to an arm f<sup>3</sup>, fixed to a rock-shaft f<sup>4</sup>, mounted in the stand B', said rock-shaft having a second arm f<sup>5</sup>, which is suitably joined to an ear of the clamp B<sup>3</sup>.

The cam-groove f referred to is of such shape that when the machine is in its stopped position the said clamp will occupy its elevated position, the cam immediately after the machine is started acting to depress the clamp and holding it depressed substantially throughout the trimming or rounding operation, at which time the cam will act to again effect the raising of the clamp to release the heel-seat end of the sole.

The shaft e<sup>2</sup> has suitably connected to its upper end (see Fig. 1) an arm g, herein represented as provided with a slot g', which is entered by a pin or stud g<sup>2</sup> of a second arm h, connected with a rocking stud h', extended through a block h<sup>2</sup>, mounted to slide to and fro in the guideway c<sup>3</sup> of the plate C hereinbefore described. The upper end of this rocking stud h' has suitably pinned to it a lever h<sup>2x</sup>, provided at one end with a roller or other stud h<sup>3</sup>, which enters the cam-groove c<sup>2</sup> of the plate C. This lever at its opposite end is slotted, as at 2, to receive a carriage 3, on which is pivoted at 4 a suitable carrier 5, having at its end next the pattern-plate suitable rollers 7 to contact with the edge of said pattern-plate, said carrier having a groove in which is fixed in an adjustable manner by a suitable set-screw the shank of a blade 8—the blade used to round or trim the heel-seat end e' of the sole. A suitable spring 10, located in the lever h<sup>2</sup> and acting against a portion of the carriage 3, serves normally to keep the rolls of said carrier in contact with the edge of the pattern, the spring yielding more or less as the carrier mounted upon the lever is moved about the pattern in the trimming of the heel-seat end of the sole.

Figs. 2 and 3 show the carrier and its blade in their normal position, and while the carrier is being moved in the direction of the arrow Fig. 3 around to the point 13 (see Fig. 3) of the pattern the clamp hereinbefore referred to will act to hold the heel-seat end of the sole firmly pressed against the pattern; but soon or immediately after the arrival of the blade in the position 13 the said clamp may be raised while the carrier is being returned into its normal position ready to again act upon and trim and round another heel-seat, and during this return movement of the carrier and blade the trimmed or rounded



heel-seat is withdrawn with the shoe from the machine. When the shoe is being put into position to have the heel-seat end of the sole trimmed, the counter of said shoe or the upper at a point surrounding the usual counter is forced back into the counter-guide *m*, shown as composed of two bent spring-arms. Preferably the acting end of the clamp will be cut out, leaving it of a forked or U shape, as in Fig. 1<sup>a</sup>.

Believing myself to be the first to devise a machine having a clamp to act upon the heel-seat end of the sole after the sole is applied at its fore part to a lasted boot or shoe to thereby clamp the said heel-seat end transversely and firmly upon a pattern-plate while the heel-seat end is being trimmed or rounded to shape, this invention is not limited to the precise form or shape of clamp or to the exact means described for actuating said clamp, as it will be obvious to those skilled in the art that the construction and shape of the clamp and its actuating means might be variously modified with only the skill of the mechanic and without invention.

It will be noticed that the short shaft *e*<sup>2</sup> and the short shaft *h*<sup>1</sup> occupy different centers, and the provision of allowing the shaft *h*<sup>1</sup> to move to and fro in the guideway *c*<sup>3</sup> while the lever upon which is mounted the carrier and its blade is being moved about the pattern enables the carrier and blade to follow correctly the pattern, which is not in the same curved line, but is in varying lines or contour, according to the shape to be given to the heel-seat end of the sole.

In this invention the clamp made the subject of this claim does not act against the edge of the sole at its heel-seat end, but said clamp is so shaped that it may be interposed between the upper side of the sole as yet unattached to the upper at its heel-seat end, said clamp acting upon the upper side of the sole next the lasted upper and clamping it transversely against the face of the pattern-plate, leaving the edge of the outer sole to be rounded projecting between said clamp and pattern-plate, so that the blade, actuated by the carrier, may traverse about and trim the heel-seat end while it is clamped transversely or in the direction of the thickness of the sole between said clamp and the pattern-plate.

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

1. In a machine for trimming or rounding the heel-seat end of a sole, the following instrumentalities, viz: a pattern-plate occupying a stationary position during the operation of rounding the heel end of the sole, a clamp concaved at one end and adapted to bear on the inner face of the outer sole about the extremity thereof to be rounded, means to hold said clamp stationary in contact with the inner side of said outer sole to thereby clamp it firmly in the direction of its thickness against the face of the pattern-plate, and a

carrier having an attached blade, and means to actuate said carrier to cause the blade to round the heel-seat end of said sole, said blade acting on the projecting end of the said sole while held between said clamp and pattern-plate, substantially as described.

2. In a machine for trimming or rounding the heel-seat end of an outer sole applied to an upper and its inner sole, the following instrumentalities, viz: a stationary pattern-plate to sustain the outer face of the sole to be rounded, a clamp concaved at one end and adapted to enter the space between the heel-seat end of the outer sole and the upper held on the last, means to automatically operate said clamp and put it in a stationary position to bear on the inner side of said outer sole and clamp it in the direction of its thickness about the end thereof between said clamp and said stationary pattern-plate, a blade, and means to actuate it to travel about the end of said pattern-plate, said blade acting upon the projecting end of the said outer sole and rounding the same to conform to the shape of the said pattern-plate, substantially as described.

3. A lever provided with a carrier having a blade to trim the heel-seat end of a sole, a pattern-plate with which said carrier cooperates, a lever to move said carrier, said lever being pivotally mounted upon a block and being provided at one end with a roller or other stud, combined with a plate having a guideway for said block, and a cam to be entered by the roller or other stud of said lever, and means to move said block in said guideway, and at the same time to effect the rotation of said lever due to said roller or other stud traveling in said cam-groove while the carrier follows the contour of the pattern, substantially as described.

4. In a heel-seat-rounding machine, the following instrumentalities, viz: a pattern, a clamp to hold the heel-seat end of the sole of a lasted shoe clamped upon said pattern, a pivoted lever having a roller or other stud at one end and provided with a carrier having a blade, said carrier being mounted upon a carriage movable longitudinally on said lever, a block to receive the pivot or fulcrum of said lever, a guideway to receive said block, a plate having a cam to receive the roller or other stud of said lever, an arm connected with the pivot of said lever at a point below said slide-block, a second arm having a different center of motion from the arm connected with the pivot of said lever, a pin-and-slot connection between said two arms, and means to positively move one of said arms in order that it may actuate the other of said arms and cause the carrier to travel about the pattern, substantially as described.

5. In a heel-seat-rounding machine, the following instrumentalities, viz: a pattern, a clamp to hold the heel-seat end of the sole of a lasted shoe clamped upon said pattern, a pivoted lever having a roller or other stud at



one end and provided with a carrier having a blade, said carrier being mounted upon a carriage movable longitudinally on said lever, a block to receive the pivot or fulcrum of said lever, a guideway to receive said block, a plate having a cam to receive the roller or other stud of said lever, an arm connected with the pivot of said lever at a point below said slide-block, a second arm having a different center of motion from the arm connected with the pivot of said lever, a pin-and-slot connection between said two arms and means to positively move one of said arms in order that it may actuate the other of said arms and cause the carrier to travel about the pattern, and means to automatically raise said clamp after the heel-seat end has been trimmed or rounded, substantially as described.

6. In a heel-seat-rounding machine, a pattern, a clamp made vertically movable with relation to said pattern, and provided at its under side with a projection which bears directly upon the inner face of the outer sole at and about its heel-seat end and between said sole and the upper of the lasted shoe, a lever movable under the said pattern, a carrier mounted on the said lever and provided with a blade, and means to move said lever and carrier and its blade about said pattern

and under the clamp during the rounding of the heel-seat end of the sole, substantially as described.

7. In a heel-seat-rounding machine, the following instrumentalities, viz: a stationary pattern-plate presenting a rounded edge to conform to the shape it is desired to trim the heel-seat end of the sole, a clamp occupying a position normally within the contour of the end of the pattern-plate and adapted to be moved vertically with relation to the face of said pattern-plate and to act upon the inner face of the outer sole within its end and for a distance about the end of said sole, and means to move said clamp toward and from said pattern-plate, said clamp when moved toward the pattern-plate clamping the end of the sole to be trimmed firmly for a considerable distance about its end between the clamp and the stationary pattern-plate, and a suitable guard to act upon the upper and aid in positioning it, substantially as described.

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

OCTAVE PAQUETTE.

Witnesses:

GEO. W. GREGORY,  
MARGARET A. DUNN.