

(No Model.)

A. ROTTÉ, PIERRE GAUTHIER & PAUL GAUTHIER.
CRIMPING MACHINE.

No. 488,252.

Patented Dec. 20, 1892.

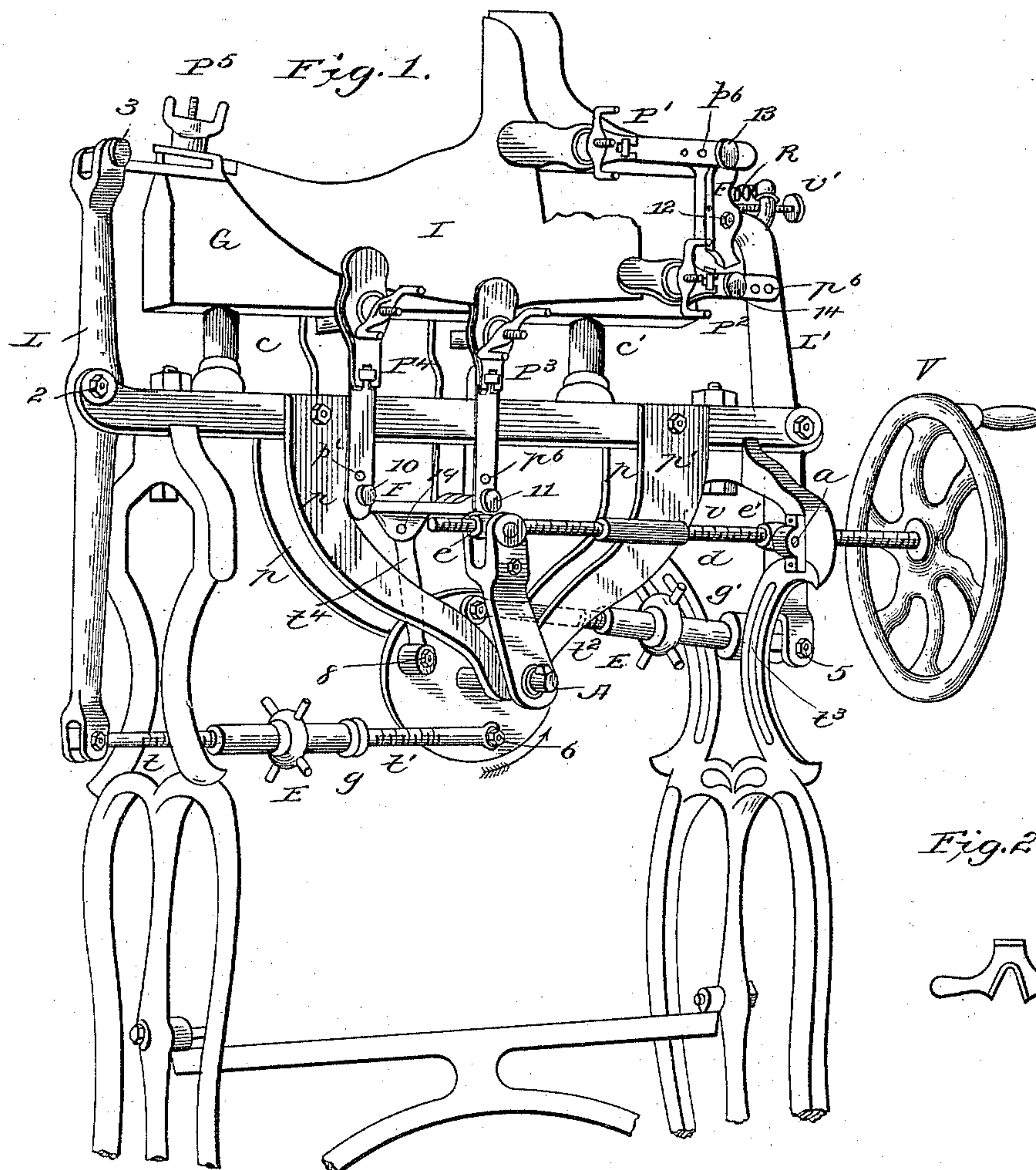


Fig. 2.

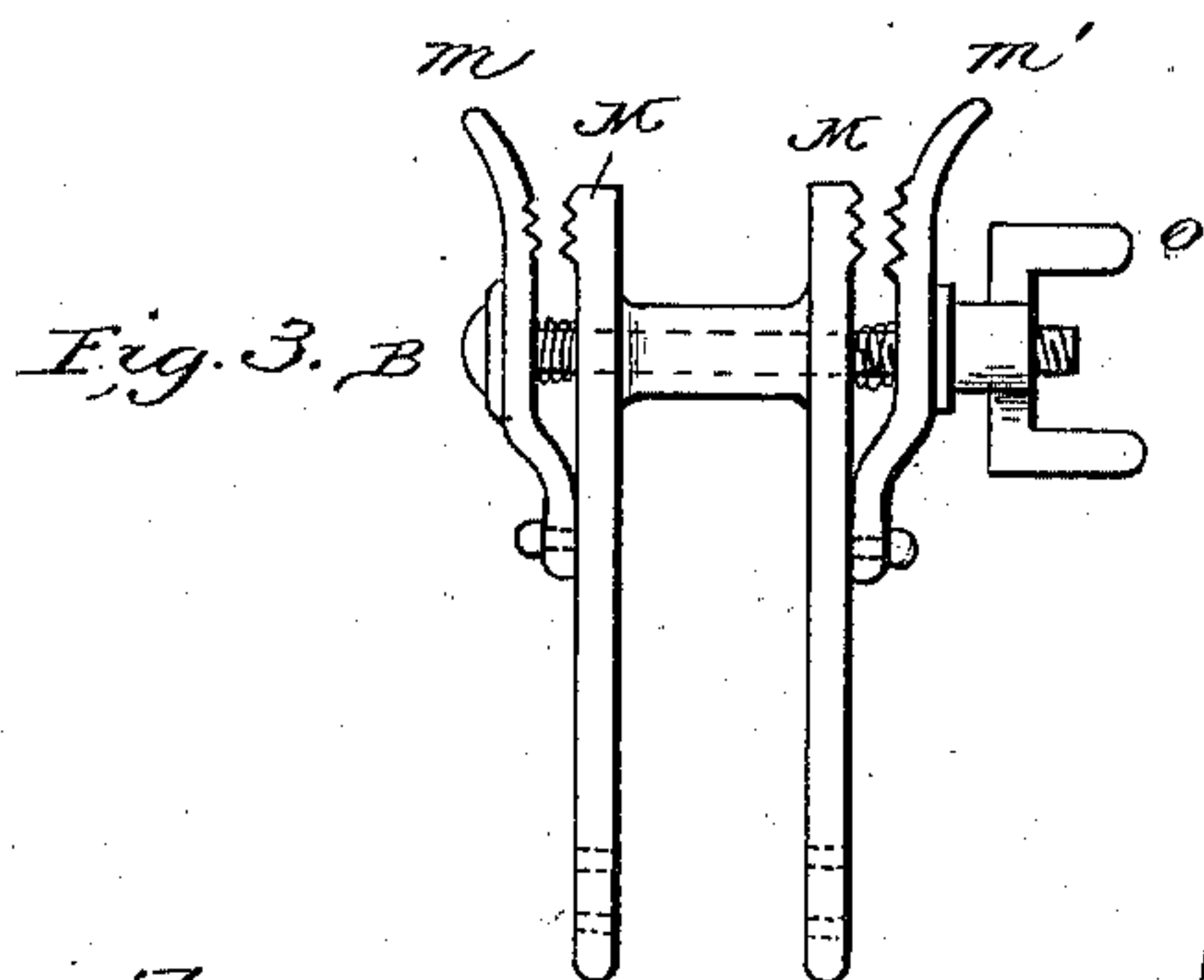


Fig. 3. B

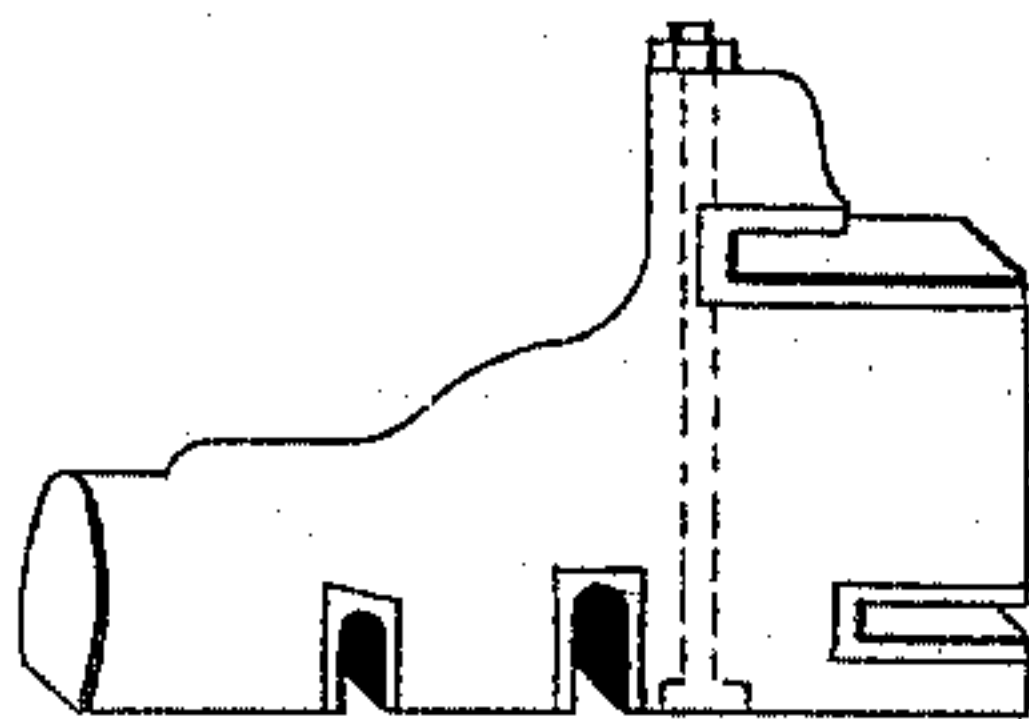


Fig. 4.

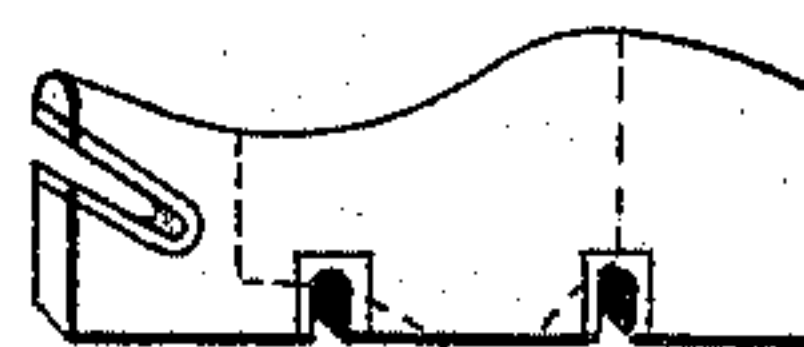


Fig. 5.

witnesses:

J. M. Fowler &
Aly. Stewart.

Inventors;

Alexandre Rotté
Pierre Gauthier and
Paul Gauthier

By Church & Church
their Attorneys.

UNITED STATES PATENT OFFICE.

ALEXANDRE ROTTÉ, PIERRE GAUTHIER, AND PAUL GAUTHIER, OF BLOIS, FRANCE.

CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 488,252, dated December 20, 1892.

Application filed December 11, 1890. Serial No. 374,415. (No model.) Patented in France June 14, 1890, No. 206,247.

To all whom it may concern:

Be it known that we, ALEXANDRE ROTTÉ, PIERRE GAUTHIER, and PAUL GAUTHIER, all citizens of the Republic of France, residing at Blois, in France, have invented certain new and useful Improvements in Apparatus for Curving or Forming the Insteps of Boots and Shoes, of which the following is a specification, and for which I have obtained Letters Patent in France, No. 206,247, dated June 14, 1890.

The object of this invention is to carry out by machinery what has hitherto been best accomplished by hand on wooden blocks or shapes viz. to curve the leather so as to form the instep, and the method of operation is substantially similar to hand work namely it consists in a drawing or stretching action.

In the accompanying drawings;—Figure 1 is a perspective view of the stretching machine proper, Fig. 2 is a view of the rubbing tool, Fig. 3 is a view of one of the end clamps and Figs. 4 and 5 are views of different forms of blocks or shapes.

For this purpose the machine is provided with a block or saddle C Fig. 1 of bronze wood or other material supported by two or more uprights cc' erected upon the bed plate B of the machine. Astride this saddle are placed a pair of boot "uppers" which have previously been submitted to the action of apparatus calculated to assist the leather in conforming to the shape of the block or saddle C. After having placed the uppers astride the saddle or block they are gripped at the edges of the instep portion between the jaws of the double clamp P' and further at the toe by the clamp P^5 and at other parts by the clamps P^1, P^3, P^2 . At that moment the leather although partly curved is far from fitting the shape of the block but if the clamp P^5 be displaced horizontally toward the left of Fig. 1 and both the clamps P' and P^2 horizontally to the right and the two remaining clamps P^3, P^4 vertically downward this will stretch the leather exactly to the shape of the surface of the block C. Now these are precisely the movements which the mechanism arranged under the bed plate B is adapted to impart to the respective clamps. For this purpose there are on the right and left of the

bed plate B two levers pivoted at 1 and 2 respectively. To the top of the lever L is pivoted at 3 a small clamp P^5 which is to draw the toe end of the uppers T. The other lever L' is provided at its upper end with a small lever F fulcrumed at I^2 . To this latter lever are pivoted at I^3 and I^4 the clamps P' and P^2 the former of which is to draw the instep portion and the latter the heel part. These two clamps are retained in their horizontal position by stops or equivalents provided for the purpose on the lever F and this lever is itself maintained in its vertical position by a spiral spring R which tends to bring it into contact with the end of the screw v' which if required may be used for its adjustment.

On each side of the bed-plate are secured by bolts or the like two bearings p, p' supporting a shaft A. Upon this shaft between its bearings is firmly secured a disk D.

The lower ends of the levers L L' are connected to the disk D at points 6 and 7 in the following manner;—the lever L by means of the rod t pivoted at 4, the nut E and the rod t' pivoted at 6 and the lever L' by means of the rod t^2 pivoted at 7, the nut E' and the rod t^3 pivoted at 5. The rods t and t' are provided respectively with right and left handed screw threads so that by turning the nut E, the distance between points 4 and 6 is increased or diminished as the case may be and consequently the clamp P^5 is brought nearer to or carried farther from the instep portion according to the size of the upper operated upon. In the same way the rods t^2 and t^3 are provided with right and left screw threads respectively and by turning the nut E' the clamps P' and P^2 are made to approach or recede from the instep.

Two lock nuts g and g' are adapted to be operated by hand for firmly holding in position the nuts E and E' when the machine is adjusted.

In cases where the clamp P' is sufficiently near to the instep while the other clamp P^2 has not come near enough to the heel all that is necessary is to remove the pin I^4 and to displace the clamp P^2 the distance of one or more of the perforations with which it is provided. The clamps P^3 and P^4 are pivoted to

the lever or bar F' at 10 and 11. All the clamps P' P^2 P^3 P^4 and P^5 are provided with perforations p^6 whereby their position may be adjusted independently of each other.

5 The lever or bar F' is connected with the disk D by the link t^4 pivoted at 8 and 9. The clamps P^3 and P^4 are mounted in vertical grooves or ways formed in the bed plate B as shown, there being preferably sufficient friction between them and the bed plate to enable them to be adjusted readily.

To the outer end of the shaft A is secured a crank arm M provided with a bearing at its top in which is supported a screw nut e provided with a left hand thread. In or upon a shaft a turning in bearings fixed to the right leg of the machine there is another screw nut e' with a right hand thread. The screw v connects the two turning screw nuts e e' .

20 The hand wheel V is arranged to operate the whole mechanism. When the upper is secured on the last by the different clamps the hand wheel V is turned sufficiently to cause the disk D to describe a quarter of a circle in the direction of the arrow the right and left hand screw threads on shaft v facilitating this operation. The levers L and L' are thereby moved so that the clamps which they operate at their upper ends stretch out the leather. The clamps P^3 and P^4 are also caused to descend and stretch the leather downward. While this movement takes place the levers F and F' perform their functions in the following manner. Each of these levers carries two clamps arranged similarly to the plates of scales. So long as the resistance of the leather is uniform, the levers retain their respective vertical and horizontal positions; but as soon as the resistance becomes greater on one side than on the other the corresponding lever F or F' as the case may be is deflected in the opposite direction and carries with it the clamp which has met with the least resistance, and 45 the turning of the hand wheel is continued until it is found that the leather is capable of no further extension. Then by means of the polishing iron in the shape of an upset V , Fig. 2, any remaining creases are smoothed down, the tool being moved down the instep toward the toe, and back, with strong pressure. The hand wheel is then again turned somewhat so as to remove the surplus of yielding material created by the 55 smoothing operation. Then the uppers are removed from the machine and as it was necessary, before stretching, to moisten them, they are now allowed to dry in some position in which they are prevented from getting out of shape. If necessary, in the case of certain special kinds of leather the uppers may be left to dry on the saddle or block itself without interrupting the work. To accomplish this, the uppers are secured on the blocks by 65 independent clamps. All the clamps of the machine are then opened and the saddle or

block with the uppers attached to it is removed. A fresh block is placed on the machine and the operation before described is repeated. Thus with a sufficient number of 70 spare blocks or saddles the work may be continued without interruption. For the ready exchange of the saddle the latter is not permanently fixed to the uprights c and c' but is preferably provided at its lower surface 75 with two openings or recesses a few centimeters deep, for the reception of the said uprights adapted to support them.

As regards the clamps P' P^2 P^3 and P^4 of one or any of which Fig. 3 is a side elevation 80 they are formed as follows;—Each clamp consists of two pairs of cheeks or jaws both simultaneously operated by means of the same screw nut. The cheeks m and m' are pivoted to a T-shaped piece fixed to the cheeks M and 85 M' . A bolt or pin B a part beneath the head of which is of square section is adapted freely to enter a square opening and to traverse the clamping mechanism. The spiral springs interposed between the cheeks force them 90 apart in proportion as the winged nut is loosened. The upper portions of the inner cheeks are rounded on the side nearest to the block while the outer cheeks are flaring outwardly to facilitate the insertion of the leather. These 95 stationary and movable cheeks are provided with teeth which are so arranged that the teeth of one cheek break joint with or are situated opposite the spaces between the teeth of the other cheek. This arrangement 100 is calculated to prevent the slipping or displacement of the leather while it is being stretched on the machine. The winged nut o by being enabled to be turned like a crank handle permits of the ready operation of the 105 double clamp.

The saddle or block Fig. 4 is provided with suitable recesses or grooves for the cheeks M and M' to slide or be received in as these cheeks should under no circumstances pro- 110 ject.

Fig. 5 represents a special last for the heel portion. When this portion is to be curved the clamp P^5 is used instead of the clamp P^2 . This clamp projects from the bearing of the 115 lever L and slides in the left hand groove of the additional last. The position to be occupied by the piece of leather to be curved is indicated in dotted lines, Fig. 5.

We claim;— 120

1. In apparatus for curving or forming the instep of boots and shoes the combination with a block C of levers L and L' and clamps P' P^2 substantially as described and illustrated in the accompanying drawings. 125

2. In apparatus for curving or forming the instep of boots and shoes the combination with a block C of levers F and L' clamps P' P^2 pivot I^2 adjustable pins or pivots I^3 , I^4 adjusting screw v' and spring R substantially 130 as described and illustrated in the accompanying drawings.

3. In apparatus for curving or forming the instep of boots and shoes the combination with a block C and levers L L' of divided links and nuts $t t' E g$ and $t^2 t^3 E' g'$ and crank disk D substantially as described and illustrated in the accompanying drawings.

4. In apparatus for curving or forming the instep of boots and shoes the combination with a block C of clamps $P^3 P^4$ bar or lever F' connecting the clamps and crank disk D and link t^4 connecting the bar and disk substantially as described and illustrated in the accompanying drawings.

5. In apparatus for curving or forming the instep of boots and shoes the combination with a block C clamps $P^3 P^4$ lever F' link t^4 and disk D of shaft A arm M and screwed shaft v substantially as described and illustrated in the accompanying drawings.

6. In apparatus for curving or forming the instep of boots and shoes the combination with a block C levers L L' and links $t t' t^2 t^3$

and nuts $E E' g g'$ and disk D of shaft A arm M and screwed shaft v substantially as described and illustrated in the accompanying drawings.

7. In apparatus for curving or forming the instep of boots and shoes the combination with a block C of clamps $P' P^2 P^3 P^4 P^5$ levers F' L L' links $t t' t^2 t^3 t^4$ nuts $E E' g g'$ disk D shaft A crank arm M right and left handed screwed shaft v and pivoted nuts $e e'$ substantially as described and illustrated in the accompanying drawings.

In testimony whereof we have hereto set our hands in the presence of the two subscribing witnesses.

ALEXANDRE ROTTE.
PIERRE GAUTHIER.
PAUL GAUTHIER.

Witnesses:

ALFRED GARNIER,
JULES ROTTE.