

C. E. SHATTUCK.  
POUNDING-UP MACHINE.

APPLICATION FILED DEC. 17, 1906. RENEWED NOV. 22, 1910.

1,030,751.

Patented June 25, 1912.

4 SHEETS—SHEET 1.

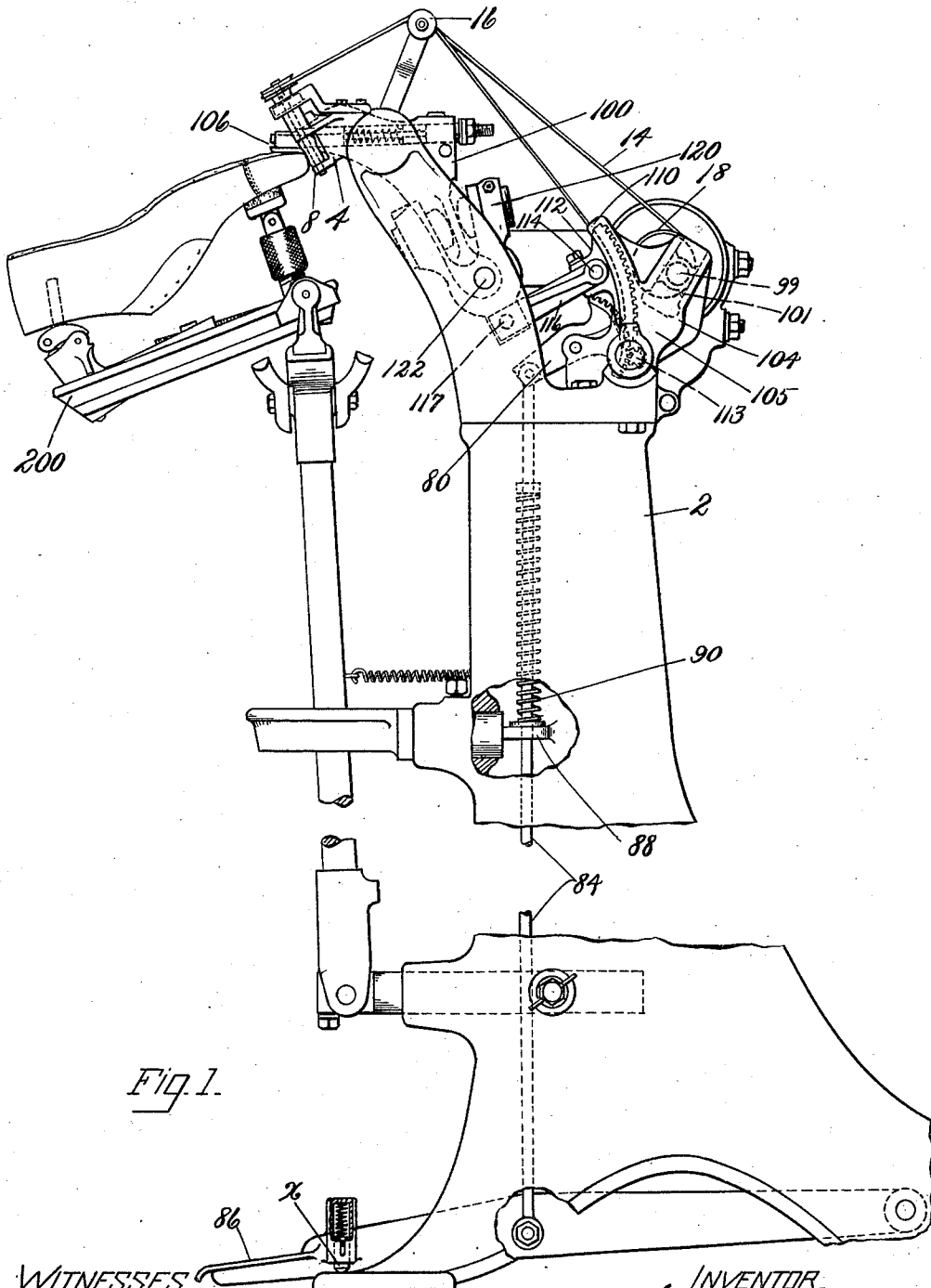


Fig. 1.

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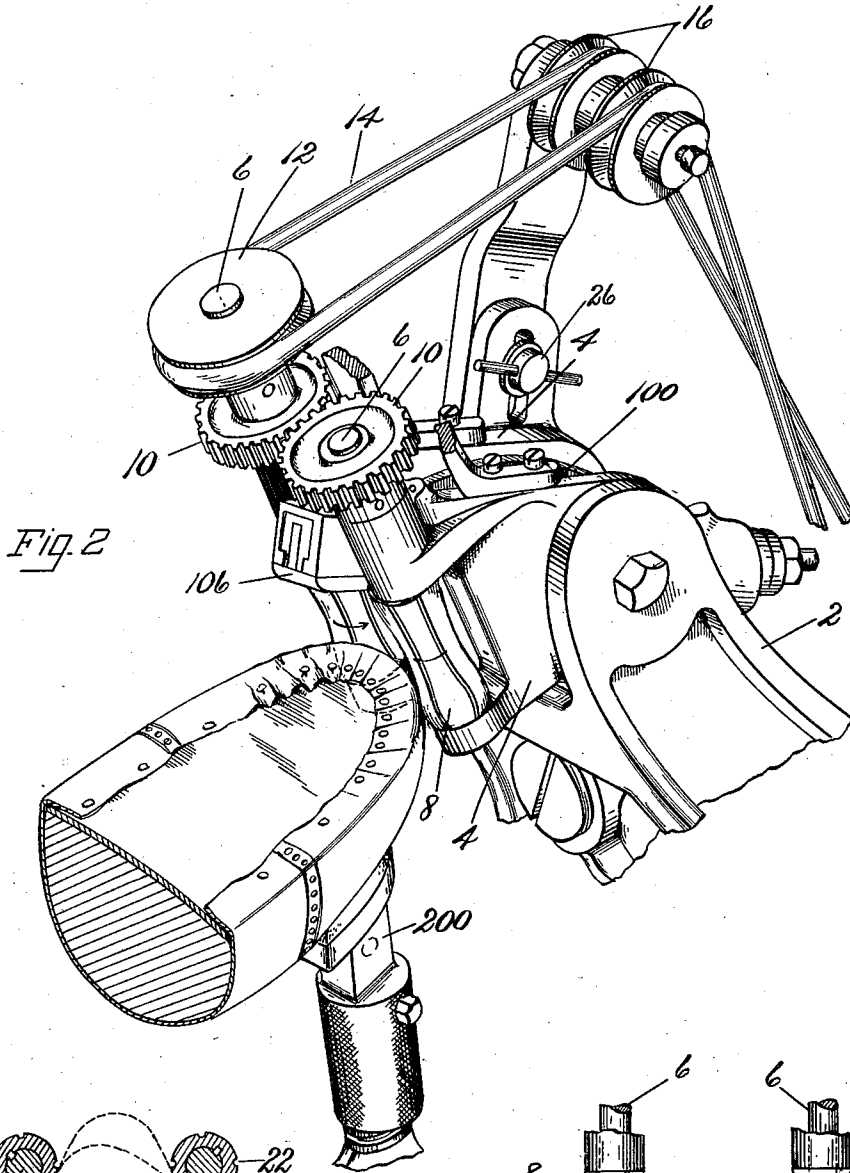


Fig. 2

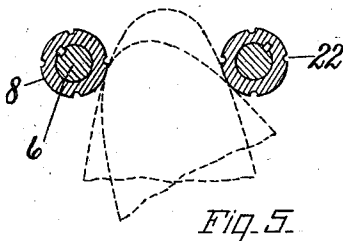


Fig. 5.

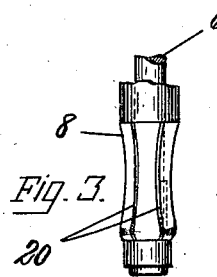


Fig. 3.

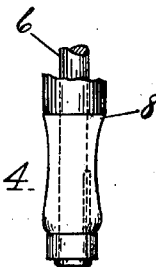


Fig. 4.

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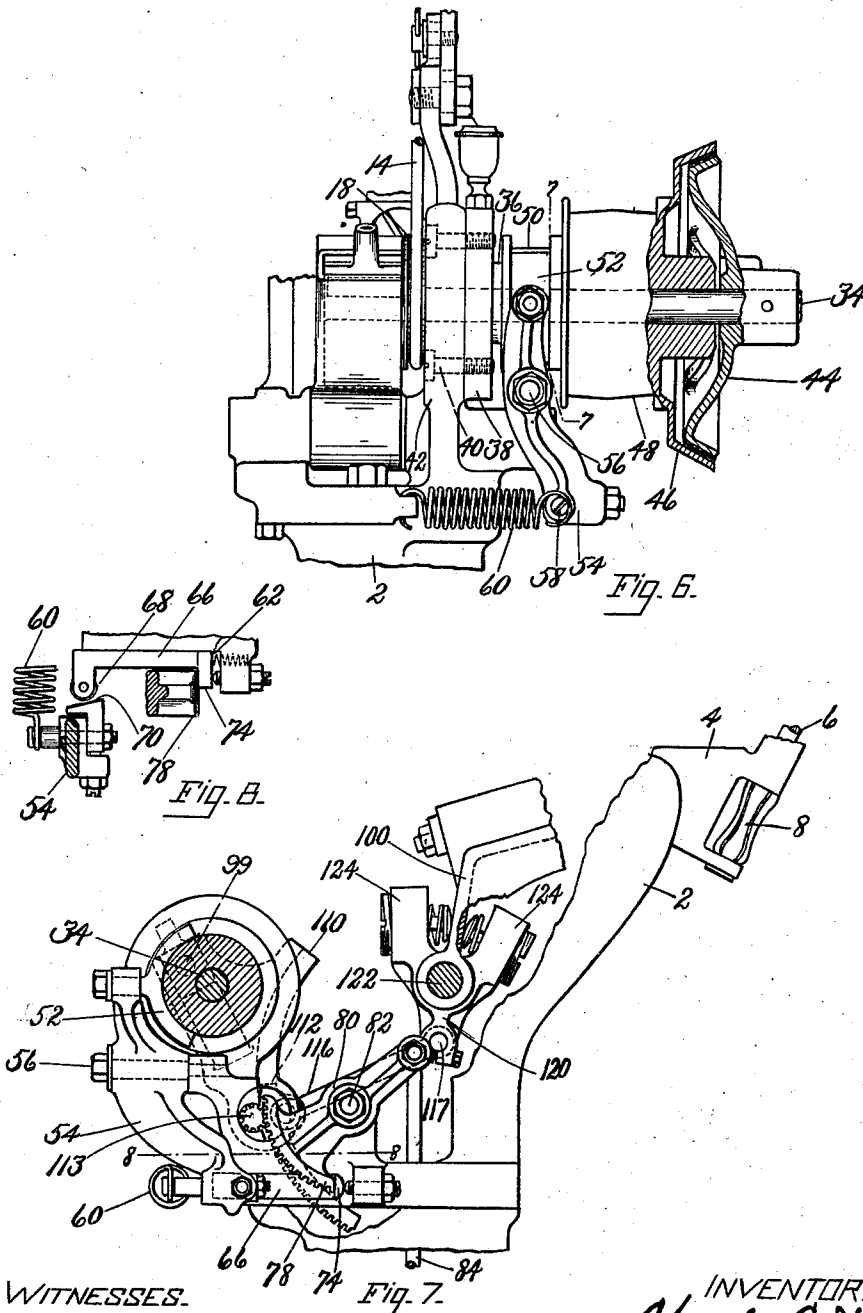
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4 SHEETS-SHEET 3.



WITNESSES.

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4 SHEETS-SHEET 4.

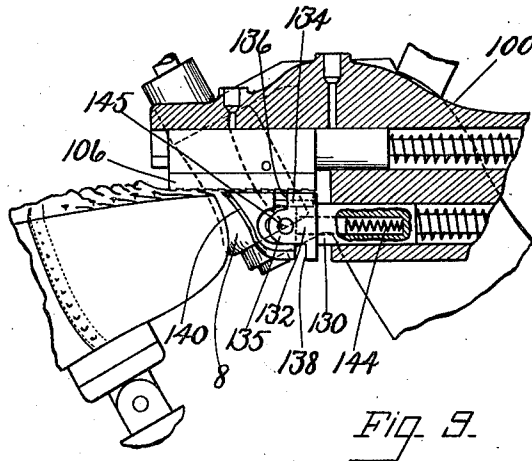


Fig. 9.

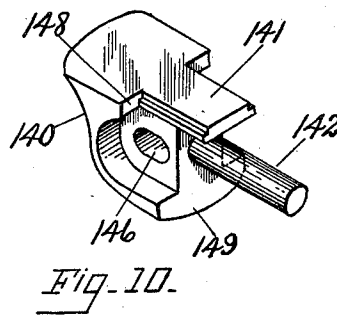


Fig. 10.

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# UNITED STATES PATENT OFFICE.

CHARLES E. SHATTUCK, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## POUNDING-UP MACHINE.

1,030,751.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed December 17, 1906, Serial No. 348,187. Renewed November 22, 1910. Serial No. 593,721.

*To all whom it may concern:*

Be it known that I, CHARLES E. SHATTUCK, a citizen of the United States, residing at Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain Improvements in Pounding-Up Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for use in the manufacture of shoes and is herein shown as embodied in a machine for pounding-up and blocking a shoe.

A feature of the invention consists in providing means for engaging the side of a shoe adjacent to the edge of the shoe bottom and means for actuating said engaging means to rub the shoe upper. In the preferred embodiment of the invention the engaging means consists of a roller which is turned to rub the side of the shoe presented to it whereby the upper material may be smoothed and polished and wrinkles or inequalities, if any exist in the upper, may be obliterated. It is the custom of hand workmen to block a shoe by beating and rubbing the side of the shoe adjacent to its edge to smooth the upper and remove wrinkles. The rollers of the present invention constitute mechanical means for performing the blocking operation better and much faster than it can be done by the hand workman.

Preferably, and as herein shown, the means for engaging and blocking the side of the shoe is used in combination with means for pounding-up the shoe. The blocking means and the pounding-up means cooperate to shape or form the upper at the edge of the shoe and as shown the said two means are arranged in different vertical planes so that they act successively upon a section of upper material extending up the side and over upon the bottom of the last. In the illustrated embodiment of the invention a roller is mounted to engage the upper at the side of the shoe and smooth and shape it to the edge in advance of the engagement of the pounding-up means with the portion of that section of upper which lies on the bottom of the last. The roller preferably extends upwardly above the edge of the shoe and the pounding-up means ex-

tends outwardly beyond the edge of the shoe, so that said devices may respectively act upon the side and bottom of the shoe quite to its edge for shaping the edge. Preferably a second roller is arranged to act upon the side of the shoe in the rear of the pounding-up means. The two rollers form a rest for the shoe in presenting it to the pounding-up means and the rear roller reforms the edge of the shoe if the pounding-up means has drawn the upper inwardly so that the shoe is rounded instead of angular at its edge. Preferably when two rollers are used they are driven in opposite directions, whereby any tendency which might otherwise exist for the rollers to work the upper longitudinally of the last is avoided. The acting faces of the rollers are preferably ribbed or grooved.

While the pounding-up means and the blocking means are adapted to be used in combination and superior results are secured by their coöperation, either of said means may be employed separately if desired, and a further feature of this invention consists in making provision by which either the pounding-up means or the smoothing means may be actuated while the other is idle, or whereby both said means may be actuated together.

In the illustrated embodiment of the invention the main shaft of the machine is connected to the driving shaft by a clutch. A treadle mechanism has connection with this clutch and also with a mechanism for controlling the length of stroke of the pounding-up means. The arrangement is such that a primary actuation of the treadle will start the main shaft and a secondary movement of the treadle will adjust the controlling mechanism to start the pounding-up means and to vary the length of the stroke of the pounding-up means. The blocking rollers are connected with the main shaft by a belt and pulleys so that they may be set in operation by the primary depression of the treadle while the pounding-up means remains at rest or its stroke is of insufficient length to cause it to act upon the shoe being operated upon by the smoothing rollers. The pounding-up means may be set in operation together with the smoothing rolls by the secondary actuation of the treadle. The belt by which the smoothing rollers are

actuated is held under tension to drive the rollers by an adjustably supported idler which may be positioned to render the belt operative or inoperative for driving the  
 5 rollers. These and other features of the invention, including a novel construction of blocking hammer, together with certain details of construction and both generic and specific combinations, will be more fully set  
 10 forth in the following description and pointed out in the claims from which the true scope of the invention is to be ascertained.

Figure 1 is a side elevation of a machine embodying the present invention in one of  
 15 the best forms now known to me. Fig. 2 is a perspective view of the upper portion of the machine. Figs. 3 and 4 are detail views of rollers hereinafter described. Fig. 5 is a detail to be explained. Fig. 6 is a rear  
 20 elevation of a portion of the actuating mechanism. Fig. 7 is a section in the plane of line 7—7, Fig. 6. Fig. 8 is a section on substantially the line 8—8 of Fig. 7. Figs. 9 and 10 are views showing a novel form of  
 25 blocking hammer.

The frame 2 of the machine supports actuating mechanism, the preferred construction of which is described below, for vibrating a lever 100. The lever has in its upper  
 30 arm a guideway in which is mounted a longitudinally movable pounding-up device 106. The vibration of the lever 100 moves the pounding-up device from and toward the shoe, which may be sustained on  
 35 a suitable jack 200, and as the pounding-up device is capable of movement in the guideway in the lever it is actuated by its inertia forwardly as it descends upon the work and backwardly as it is reversely  
 40 moved. The pounding-up device, therefore, engages the upper material on the bottom of a shoe, and delivers blows which force the said upper material downwardly toward the bottom of the shoe or last and inwardly away from the edge of the shoe or last.  
 45

The frame of the machine supports two forwardly extending brackets 4 located on opposite sides of the plane in which the  
 50 pounding-up device is vibrated. The forked ends of the brackets are provided with bearings for shafts 6, which carry rollers 8. The shafts are provided above the brackets 4 with pinions 10, which intermesh so that the  
 55 two shafts are rotated together in opposite directions, and one of the shafts is extended above its pinion 10 and provided with a pulley 12 which receives a belt 14 extending over idlers 16 to a pulley 18 fast on the  
 60 main shaft of the machine, or to any other suitable source of power. By this actuating mechanism the rollers 8 are continuously driven in opposite directions, and as herein shown, they are driven in the directions indicated by the arrows in Fig. 2. The rollers  
 65

are so arranged with relation to the jack that they may have engagement with the upper at the side of the shoe being operated upon by the pounding-up device and the rollers are preferably arranged so that they  
 70 engage the shoe at and adjacent to the edge or angle formed by the side and bottom faces of the shoe. The rollers are preferably so arranged and proportioned that they extend above the normal level of the shoe  
 75 bottom in order that they may at all times reach to the edge of the shoe. The pounding-up device has an acting face of such length that it reaches from a point outside of the shoe well over upon the shoe bottom. 80  
 The pounding-up device and the rollers thus cooperate in forming or defining the angular edge of the shoe, which, previous to the operation of the machine, usually is more or less rounded on a lasted shoe. One of the  
 85 rollers acts upon a section of upper before the pounding-up device and the other roller after the pounding-up device. If the pounding-up device should force the upper inwardly to such an extent as to round the  
 90 edge of the shoe to an undesirable extent the second smoothing device will tend to overcome this action by rubbing the upper material on the side of the shoe at its edge.  
 95 The peripheries of the rollers, which constitute their acting surfaces, may be smooth or uninterrupted but preferably have ribs or grooves, as indicated at 20 in Fig. 3.

It will be observed that the rollers 8 are spaced apart so that the end portion of a  
 100 shoe extends between them to some extent, as indicated in Fig. 2. It is within this invention to arrange the rollers so that a shoe may be thrust endwise between them and allow the rollers to act upon opposite sides  
 105 of the shoe simultaneously for blocking the upper, as shown in Fig. 5.

For actuating the driven parts of the machine mechanism is preferably provided as follows: A shaft 34 is mounted in a bearing  
 110 36 which is provided with a collar 38. The bearing is firmly secured in position by screws 40 which connect the collar 38 to an extension 42 of the frame 2. The outer member 44 of a cone clutch is pinned to the  
 115 end of the shaft opposite that carrying the collar 38, while the inner member 46 of said clutch is loose on the shaft and is movable lengthwise of the shaft toward and from position to engage the outer member. The  
 120 inner clutch member 46 is shown as formed upon one end of the hub of the driving pulley 48, which is continuously rotated, while the other end of said hub is formed with a circumferential groove 50 to receive  
 125 a block 52 on the clutch-operating lever 54. The clutch-operating lever 54 is pivoted on a stud 56 and its lower end has a stud 58 which is engaged by a spring 60, as shown in Figs. 6 and 7. The spring 60, when per- 130

mitted to do so, moves the lever in the direction for forcing the inner clutch member 46 into frictional engagement with the outer clutch member whereby the shaft is rotated.

5 The mechanism for moving the clutch-operating lever in opposition to the action of the spring 60 for separating the clutch members comprises a slide 66, provided on one side with a roller 68 adapted to engage the inclined face 70 of a block secured to the lower arm of the clutch-operating lever 54. The slide 66 is acted upon by a spring 62 for pressing it normally in the direction for positioning the roller 68 over the low part of the inclined face 70, and when the roller is in this position the spring 60 acts through the lever 54 to force the clutch member 46 toward the cooperating clutch member for starting the machine. The slide is further provided with an outstanding lug 74 located in the path of the heel of the segment-shaped lower end 78 of a lever 80. The lever is fulcrumed on a fixed stud 82 and its end opposite to that having the segment is connected by a rod 84 to a foot treadle 86, see Fig. 1. The rod 84 extends through a fixed guide 88 and is surrounded above said guide by a spring 90. The spring 90 is of proper strength to hold the rod and treadle 86 normally elevated and the lever 80 and slide 66 in the position in which the roller 68 is engaged with the high part of the inclined face 70 and the clutch-operating lever is positioned for holding the clutch members apart.

The shaft 34 is provided, on the end opposite that to which the clutch member 44 is secured, with a crank pin 99 upon which is mounted a block 101, shown by dotted lines in Fig. 1. The block fits in a guideway in the side face of the rear arm 104 of an angle lever 105 fulcrumed on the machine frame. The other arm 110 of the angle lever 105 is provided with a curved guideway, hereinafter further described, which extends the full length of the front face of the arm and is formed in cross section to receive a flanged segment-shaped block 112 which is pivotally attached at 114 to the rear end of a connecting link 116. The link is joined at its front end by a pivot 117 to the lower arm of a lever 120 which is fulcrumed on a pivot pin 122 carried by upwardly and forwardly directed extensions of the machine frame. The lever 120 above its pivot is forked and in the adjacent face of its two branches 124, 124 are mounted springs which engage opposite surfaces of the lever 100 before mentioned, which in the present embodiment of the invention carries the pounding-up device, and is fulcrumed at its lower end on the pivot pin 122. Provision is made for varying the length of the strokes of the lever 100 for the purpose of causing said pounding-up

means to act upon the work with greater or less force. To this end the segment-shaped block 112, by which the link 116 and lever 120 are connected to the angle lever 105, is adjustable in the arm 110 of said angle lever for increasing or diminishing the movement transmitted by said lever to the link 116 and thereby varying the extent or amplitude of the oscillations of the carrier lever 100. For the purpose of effecting this adjustment of the segment-shaped block 112 said block is provided on its rear face with rack teeth constructed to engage a pinion formed on the adjacent end of a shaft 113 which is mounted in the angle lever 105, the shaft 113 being preferably so located in the angle lever 105 that the point of engagement of said shaft with the segment-shaped block will be substantially at the center of oscillation of the angle lever. The opposite end of the shaft 113 is also formed as a pinion and is engaged by rack teeth provided on the segment-shaped lower end 78 of the lever 80 before described. The arrangement is such that when the lever 80 is rocked by means of its connection with the foot treadle 86 to permit the clutch members to engage, or to disengage said clutch members, as hereintofore explained, the shaft 113 will be simultaneously rotated to raise or lower the segment-shaped block in its guideway in the angle lever.

In practice the segment-shaped block will preferably stand in substantially its lowest position when the foot treadle is elevated and the clutch members therefore disengaged, and in this position of the block the link 116, which connects the segment-shaped block 112 with the lever 120, is approximately in alinement with the fulcrum of the angle lever and the pivot 117 which connects said link to lever 120, so that little or no movement is imparted to said lever 120 and the carrier lever 100. When, however, the foot treadle is depressed, to move the lower end 78 of the lever 80 away from the lug 74 and thereby permit the spring 60 to cause the clutch members to engage, as before explained, the shaft 113 will be turned by the lever 80 in the direction to raise the segment-shaped block 112 toward the position shown in Fig. 1, thereby placing said link 116 out of alinement with pivot 117 and the axis of angle lever 105, whereby the levers 120 and 100 will be oscillated by the treadle and the lever 80 for permitting the machine to be started raises the segment-shaped block a distance which is insufficient to cause the carrier lever 100 to be oscillated through a large enough arc to move the pounding-up device for doing any work, but by further depressing the treadle lever the segment-shaped block may be raised to render the pounding-up device operative and

variably control the length of its strokes. It will now be understood that the treadle operates to release the movable clutch member so that it may engage the cooperating  
 5 clutch member and start the main shaft for driving the pulley 18 that actuates the smoothing rollers 8 without rendering the pounding-up device operative. The foot treadle may then be given a further or sec-  
 10 ondary movement to set the pounding-up means also in operation. A spring stop  $\alpha$  may be provided on the treadle 86 to guide the operator in depressing the treadle the right distance for starting the smoothing  
 15 rollers without rendering the pounding-up device operative.

The bracket 24, on which the idlers 16 are carried, is adjustably clamped to the frame 2 by the binding screw 26, so that the idlers  
 20 may be lowered to relax the tension on the belt 14 and discontinue the driving of the rollers 8 if it is not desired to employ them for rubbing the side of the shoe. The rollers could, of course, be similarly stopped by re-  
 25 moving the belt 14 from the pulley 18. Either procedure discontinues the actuation of the smoothing rollers without interfering with the actuation of the pounding-up device.

It has been found in practice that the rollers alone will perform the operation known as "blocking" the shoe. If it is desired, however, to use a blocking hammer the construction thereof shown in Figs. 9 and 10 is  
 35 preferred. In said figures the blocking hammer is shown as mounted upon the carrier lever 100 in the same vertical plane as the pounding-up device 106 and when used in combination with the rollers 8 said hammer  
 40 engages the side of the shoe between the two rollers. The hammer comprises a shank 130 having a head 132 provided in its upper face with a guideway formed by the grooved ribs 134. On its front end the head has ears 135  
 45 and shoulders 136, 138 are formed as shown. The striking member 140 has an acting face shaped to adapt it to the contour of the side of the shoe and a rearward extension or tongue 141 shaped to fit and slide in the  
 50 guideway formed by the grooved ribs on the upper face of the head. The striking member has also a rearwardly extending stem 142 which is received in a recess formed in the head 132 and shank 130. The stem is  
 55 acted upon by a spring 144 that presses the striking member normally forward but permits it to yield when it engages the work. A pin 145 passes through the ears 135 and through a slot 146 in the stem 142 to con-  
 60 fine the parts in assembled relation and to limit the forward movement of the striking member under the pressure of the spring 144. The striking member has faces 148, 149 to engage the shoulders 136, 138 on the  
 65 head for limiting its rearward movement.

It will be observed that the striking member is so guided in its supporting head that it has no loose, pivotal movement and that its angular position with relation to said head and with relation to the pounding-up device 70 is predetermined.

In the use of the machine the shoe may be applied to the jack or it may be supported in the hands of the operator. The primary depression of the foot treadle sets the clutch 75 and starts the shaft 34, which carries the pulley 18, from which the rollers 8 are driven. The spring stop  $\alpha$  guides the operator in determining the extent necessary to depress the treadle if the smoothing rollers only are to be used and the pounding-up device is to remain inoperative. If the  
 80 pounding-up device is to be used the further depression of the treadle is effected against the resistance of the spring stop  $\alpha$  85 and the desired amplitude of oscillation of the lever 100 obtained. If the rollers are not to be driven the belt 14 may be stopped by lowering the idlers 16 or by removing the belt from the pulley 18. The shoe is 90 moved about to present successive portions or sections of the upper material to the action of the rollers and the pounding-up device or either of them and the rollers not only serve the purposes above stated, but 95 act as edge rests for the shoe.

It is to be noted that in the described machine the working position of the rollers is predetermined by their mounting in the machine, as distinguished from power driven 100 tools supported in the hands of the operator, and that these rollers are arranged and operated to rub the upper lengthwise of the shoe edge as indicated by their position and the arrows in Fig. 2. 105

Having explained the nature of this invention and described a preferred construction embodying the same, I claim as new and desire to secure by Letters Patent of the United States:— 110

1. In a machine for treating a shoe prior to the application of the sole, the combination with a stationary support, and means mounted thereon constructed and arranged for engaging the side of the shoe at and ad- 115 jacent to the edge of the shoe bottom, of means for actuating the engaging means to rub the edge of the shoe.

2. In a machine of the class described, the combination with a roller having its 120 working face on its periphery, mechanical means for supporting the roller in predetermined relation to the work, and means for supporting the shoe in position for the upper on the side of the shoe to be engaged 125 by the roller at and adjacent to the edge of the shoe bottom, of means for driving the roller to rub the upper.

3. In a machine of the class described, the combination with a stationary support, a 130

roller mounted thereon and formed and arranged to engage the side of a shoe adjacent to its edge, of means for actuating the roller to remove wrinkles or surface inequalities from the upper at and adjacent to the edge of the shoe.

4. In a machine of the class described, the combination with a stationary support, a roller mounted thereon and formed and arranged to engage the side of a shoe and provided with a grooved working surface, and means for supporting the shoe adapted for universal movement to present the shoe in position for the roller to engage the shoe upper adjacent to the edge of the shoe, of means for turning the roller to rub the upper.

5. In a machine of the class described, the combination with means for pounding-up the bottom of a shoe, of a blocking roller arranged to engage the side of the shoe, and mechanism for actuating the roller to remove wrinkles or surface inequalities from the upper adjacent to the edge of the shoe.

6. In a machine of the class described, the combination with a roller arranged to engage the side of a shoe at and adjacent to its edge, of means for forcing the upper material on the shoe bottom downwardly and inwardly away from the edge of the shoe bottom.

7. In a machine of the class described, the combination with a roller arranged to engage the side of a shoe to smooth out wrinkles or surface inequalities from the upper adjacent to the edge of the shoe, of pounding-up means for forcing the upper material on the shoe bottom downwardly and inwardly away from the edge of the shoe, said roller and pounding-up means being arranged one in advance of the other to act on different portions of the upper successively.

8. In a machine of the class described, the combination with a roller adapted to engage the side of a shoe adjacent to its edge, of pounding-up means for forcing the upper material on the shoe bottom downwardly and inwardly away from the edge of the shoe, and operating mechanism constructed and arranged to actuate the roller and the pounding-up means together or to actuate the roller while the pounding-up means remains inoperative.

9. In a machine of the class described, the combination with pounding-up means for forcing the upper on the bottom of a shoe downwardly and inwardly away from the edge of the shoe, of rollers arranged to engage the upper at the side of the shoe on either side of the plane in which the pounding-up means is located, and actuating mechanism having provision for actuating either the rollers or the pounding-up means or both said rollers and pounding-up means.

10. In a machine of the class described, the combination with pounding-up means and means for actuating it to force the upper on the bottom of a shoe downwardly and inwardly away from the edge of the shoe, of rollers arranged on either side of the pounding-up means to engage the upper on the side of the shoe, and means for actuating the rollers to rub the upper adjacent to the edge of the shoe.

11. In a machine of the class described, the combination with pounding-up means and means for actuating it to force the upper on the bottom of a shoe downwardly and inwardly away from the edge of the shoe, of rollers arranged on either side of the pounding-up means to engage the side of the shoe, and means for actuating the rollers to rub the upper adjacent to the edge of the shoe, said machine having provision for rendering the roller actuating means inoperative while the pounding-up actuating means remains operative.

12. In a machine of the class described, the combination with pounding-up means for engaging the upper on the bottom of a shoe, of means for engaging the side of the shoe, and means for actuating said last-mentioned means to smooth the upper on the side of the shoe, said machine having provision for actuating the smoothing means while the pounding-up means remains inoperative.

13. In a machine of the class described, the combination with pounding-up means, of smoothing means, actuating mechanism for said two means, and controlling mechanism having provision for adjustment to cause the smoothing means to be actuated alone, and for further adjustment to cause the pounding-up means also to be actuated.

14. In a machine of the class described, the combination with rollers and a stationary support in which the rollers are arranged to engage the opposite sides of a shoe at and adjacent to the edges of the shoe bottom as the shoe is pressed between them and turned, of means for actuating said rollers to smooth out wrinkles or surface inequalities from the portions of the upper acted upon by them.

15. In a machine of the class described, the combination with two rollers arranged to engage the upper on the side of a shoe adjacent to its edge, of means for rotating the rollers in opposite directions lengthwise of the upper to rub the upper for removing wrinkles or surface inequalities from the upper.

16. In a machine of the class described, the combination with means for pounding-up the bottom of a shoe, of smoothing means for engaging the side of the shoe, and means for actuating the smoothing means lengthwise of the shoe.

17. In a machine for treating a shoe before the outersole is applied thereto, the combination with two rollers arranged to engage the upper at opposite sides of the shoe adjacent to the edge of the shoe, of means for actuating said rollers substantially lengthwise of the shoe simultaneously to block the shoe.

18. In a machine of the class described, the combination with a fixed support and shoe shaping means mounted thereon and constructed and arranged for continuously engaging the upper of a shoe adjacent to the edge of the shoe bottom, of mechanism for actuating said engaging means to rub the upper for shaping the shoe along its edge.

19. In a machine of the class described, the combination with means for pounding-up a shoe, of means continuously engaging the side of the shoe, and mechanism for actuating said last-named means to block the shoe.

20. In a machine of the class described, the combination with means for pounding-up a shoe arranged to work the shoe upper inwardly away from the edge of the last, of a roller arranged to turn on an axis substantially perpendicular to the bottom of the shoe, and mechanism for turning the roller to block the shoe upper.

21. In a machine of the class described, a blocking hammer comprising a supporting head which is restrained from rotation, a striking member movably mounted on the head and having an acting face shaped to adapt it to the contour of the side of the shoe, means for pressing the striking member normally outwardly, and a tongue and groove sliding connection between the striking member and the head to insure substantially constant angular relation of said acting face to said head.

22. In a machine of the class described, a pounding-up device, and a blocking hammer having an acting face shaped to adapt it to engage the side of a shoe and supported for movement lengthwise of the pounding-up device, combined with means for maintaining a predetermined angular relation of the acting face of the blocking hammer to the pounding-up device.

23. In a machine of the class described, the combination with a blocking hammer and means to actuate it to deliver blows to the upper on the side of the shoe, of rollers arranged at opposite sides of the blocking hammer, and means for actuating the rollers to rub the upper engaged by the blocking hammer.

24. In a machine of the class described, the combination with pounding-up means and a blocking hammer, of rollers arranged on opposite sides of said pounding-up means and blocking hammer to engage the side of

the shoe, and means for rotating said rollers to rub the upper.

25. A machine of the class described, having a plurality of devices for acting upon the work, combined with actuating mechanism therefor, and a single controlling means constructed and arranged to be actuated to start said devices and then to be further actuated for varying the action of one of said devices upon the work without changing the action of another of said devices.

26. In a machine for treating a shoe before the outersole is applied thereto, the combination with a plurality of rollers arranged to turn upon axes extending substantially perpendicularly to the shoe bottom and to act simultaneously upon the upper at and adjacent to the edge of the shoe for removing wrinkles or inequalities from the upper and shaping the shoe and means for predetermining the working position of said rollers, of actuating means therefor.

27. In a machine for treating a shoe before the outersole is applied thereto, the combination with a roller having a concave acting face provided with ribs or grooves and arranged on an axis extending substantially perpendicularly to the shoe bottom to engage the upper on the side of the shoe adjacent to its edge, of mechanism for actuating the roller to block the shoe.

28. A machine of the class described having, in combination, means for preparing the bottom of a lasted shoe for the reception of an outersole, and a plurality of rollers driven in opposite directions and arranged to engage the side of the shoe at and adjacent to its edge for removing wrinkles and surface inequalities from the upper during the operation of the first-mentioned means.

29. A machine of the class described having, in combination, means for preparing the bottom of a lasted shoe for the reception of an outersole, a rubbing tool constructed and arranged to engage the side of the shoe at and adjacent to its edge for removing wrinkles and surface inequalities from the upper during the operation of the first-mentioned means, and means for actuating the tool to rub the upper lengthwise of the shoe.

30. In a machine for use in the manufacture of boots and shoes the combination with a plurality of working tools arranged to permit operation on the shoe at the same time and mechanism for actuating said tools, of means arranged for manipulation for throwing said actuating mechanism into operation and for further manipulation to vary the effect of only certain of said tools upon the stock.

31. In a machine for use in the manufacture of boots and shoes, the combination with a plurality of separate devices for act-

ing upon a shoe and mechanism for actuating said devices, of a single manually controlled means for throwing said actuating mechanism into operation, said means serving also to vary at will the force with which one of said devices shall be driven.

32. A machine of the class described having, in combination, means for beating the side of a shoe comprising two contacting members arranged to turn independently about axes extending substantially perpendicular to the plane of the shoe bottom, and mechanism for actuating said beaters to do their work.

33. A machine of the class described, hav-

ing in combination, means for operating on a shoe, a blocking tool to shape the shoe upper, connected mechanism for actuating said means and the tool, and means under control of the workman for varying the operation of the blocking tool independently of said other means while the machine is running.

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

CHARLES E. SHATTUCK.

Witnesses:

PHILIP H. FRAHER,  
ARTHUR L. RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."