Sept. 5, 1939. J. F. SMITH 2,172,017

SHOE UPPER FORMING AND PRESSING MACHINE

Filed March 25, 1938

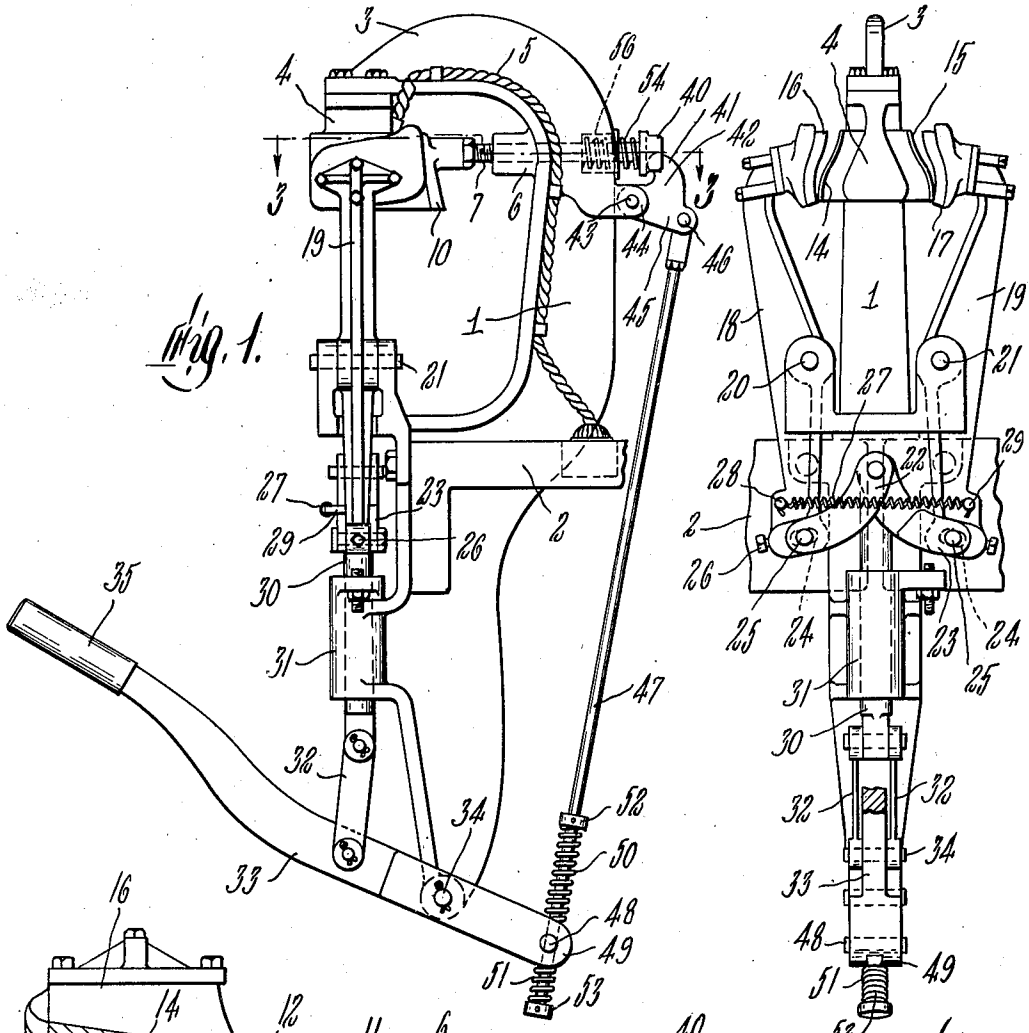


Fig. 1.

Fig. 2.

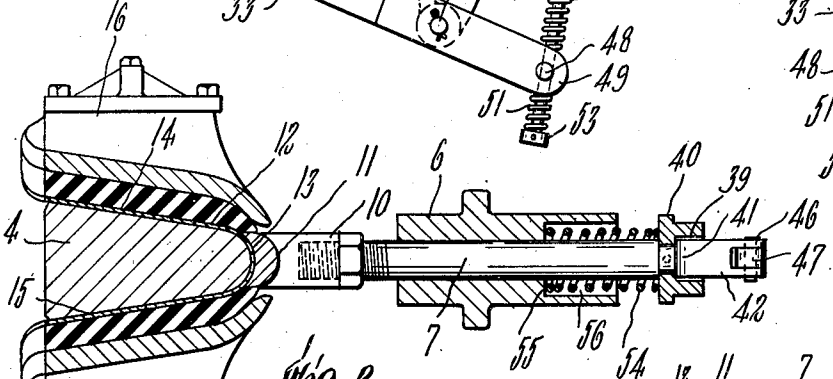


Fig. 3.

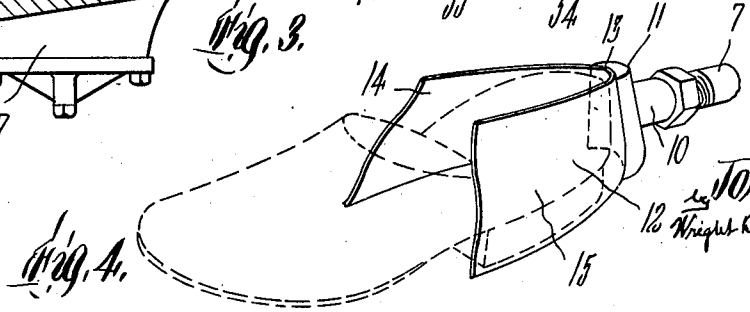


Fig. 4.

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SHOE UPPER FORMING AND PRESSING MACHINE

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Application March 25, 1938, Serial No. 197,974

8 Claims. (Cl. 12—51)

This invention relates to shoe upper forming and pressing machines of that type wherein a thin, preferably sheet metal member, embraces the heel end and sides of the shoe upper, while the shoe is supported on a form, this sheet metal member being pressed against the shoe by a pair of side presser members.

The present invention has for one object to provide improved means for pressing the thin embracing member against the heel end of the shoe so as to smooth and flatten the back seam at the heel end of the shoe upper when there is such a seam and to prevent the side presser members from forming a ridge between them.

A further object is to cause the embracing pressing member to press the shoe simultaneously at the sides and heel end of the shoe.

For a more complete understanding of this invention, reference may be had to the accompanying drawing in which

Figure 1 is a side elevation of a shoe upper pressing machine embodying the invention.

Figure 2 is a front elevation of the same.

Figure 3 is a section on line 3—3 of Figure 1.

Fig. 4 is a perspective view of the sheet material presser member and its support, a slipper being shown by dash lines in position to be pressed thereby.

Referring to the drawing, at 1 is indicated a bracket frame member which may be supported from the edge of a table or bench 2. This frame member is shown as provided with a gooseneck top portion 3, which extends outwardly from the edge of the table or bench 2, and which carries at its outer end and depending thereover, a form 4 over which a shoe may be placed with its heel end facing the forward face of the bracket frame 1. It may be heated, if desired, electric conductors 5 being shown in Figure 1 for leading electric current to a heating unit (not shown) in heating relation to the form.

Immediately back of the form 4, the frame member is provided with a slidable bearing at 6 for the slidable reception of a bar 7. The forward end of this bar extends toward the heel end of the form 4 and has secured thereto a shoe presser element 10. As shown best in Figure 4, this element 10 comprises a back supporting block 11 to the face of which is secured the intermediate portion of an element preferably made of sheet metal, as at 12, its back portion 13 being secured to the block 11. From this back portion it has extending forwardly, a pair of wings 14 and 15 which are so formed as to extend about the sides of the upper of a shoe held by the form 4, the sheet metal element thus embracing the heel end of the shoe on this form and extending forwardly along opposite sides thereof. Cooperating with these wings 14 and 15 are side presser members 16 and 17, respectively, supported at the upper ends of a pair of levers 18 and 19. These levers are fulcrumed at 20 and 21 and their lower ends are connected together by toggle links 22 and 23. For the purpose of adjustment, these toggle links are shown as provided with slots 24 in which ride transverse pins 25 at the lower ends of the arms 18 and 19, adjusting screws 26 being employed to determine the limit of outward motion of the cross pins 25 in these slots. The lower ends of the arms 18 and 19 are normally pulled toward each other to maintain the pressure jaws 16 and 17 removed from the form 4 so as to permit a shoe to be placed readily in position or removed from the form 4. As shown this is accomplished by a spring 27, opposite ends of which engage over the pins 28 and 29 from the lower ends of the arms 18 and 19, respectively. The toggle links 22 and 23 are pivoted together at their inner ends and to a rod 30 slidably guided in a bearing sleeve portion 31 of the bracket 1 beneath the level of the table 2. At its lower end the bar 30 is connected through links 32 with an actuating lever 33 fulcrumed at 34 on the lower end of the bracket 1. This lever 33 has a handle 35 at its forward end by which it may be manipulated. As this handle is moved downwardly, the toggle links 22 and 23 are swung downwardly toward "make" position, and the presser members 16 and 17 are swung inwardly to press the wings 14 and 15 against the sides of the shoe, while the portion 11 is moved forwardly against the heel end of the shoe by the same motion of the lever 33. The means by which this lever 33 produces such forward motion of the heel end portion of the presser element 12 will now be described.

The bar 7 is provided at its rear end with a head 40 slotted as at 39 (see Figure 3) to receive therein the end of an arm 41 of a bell crank lever 42 fulcrumed at 43 between ears 44 extending rearwardly from the back portion of the bracket 1. The other arm 45 of this bell crank lever is pivoted at 46 to an actuating rod 47. The lower end of this rod extends through a pivot 48 journaled in the forked rear end portion 49 of the lever 33. Springs 50 and 51, reacting between the pivot 48 and collars 52 and 53 secured to the rod 47, provide a yielding connection between the lever 33 and the rod 47 such that on depressing the handle 35, the rod 47 is moved upwardly and the bell crank lever 42 rocked in a direction to

force forwardly the bar 7, and with it the element 12, against the heel end of a shoe in position on the form, as shown in Figure 4, where an opera slipper is shown in dotted lines in position between the wings 14 and 15 of this element. On upward motion of the handle 35 sufficient to break the toggle, the side presser members 16 and 17 are moved outwardly by the spring 27 and the rod 47 is depressed, swinging the bell crank lever 42 in the opposite direction, thus permitting the bar 7 to be retracted, as by the action of a spring 54 surrounding it, and reacting between the inner side of the head 40 and the base 55 of the socket 56 in which the inner end of the spring 54 is housed. It will thus be seen that by depression of the handle 35, the pressing element 12 is moved against the rear or heel end of the shoe, thus to smooth and condense the heel seam portion and the wings 14 and 15 are moved inwardly against opposite sides of the shoe by the action of the presser members 16 and 17. By reason of the use of metal in the presser member 12, heat applied to the form will be effective to heat this metal and result in an ironing effect on the outer face of the shoe.

Due to the generally wedge shape of the form, its upper portion being narrower than its lower portion, and the pressure of the side presser members against the shoe carried on the form, an effect to force the form downwardly is produced, which causes a wiping action of the presser element 12 toward the top margin of the shoe while it exerts inward pressure also. This has a desirable effect in smoothing the upper, and extending the outer layer of its upper at its top edge above the top edge of the lining so as to render the lining edge less prominent in the finished shoe.

From the foregoing description of an embodiment of this invention, it should be evident to those skilled in the art that various changes and modifications may be made without departing from the spirit or scope of this invention as defined by the appended claims.

I claim:

1. A machine of the class described, comprising a form over which a shoe may be placed, an element having a back and wings extending forwardly along the sides of a shoe on said form from said back, means for pressing said back against the heel end of said shoe, side pressing members, and means for moving said members in contact with sand wings and closing said wings against the sides of said shoes.

2. A machine of the class described, comprising a form over which a shoe may be placed, an element having a back and wings extending forwardly along the sides of a shoe on said form from said back, means for pressing said back against the heel end of said shoe, side pressing members, means for engaging said members with the wings of said element and movable to press said wings against the sides of said shoe, and a common actuator for said pressing means.

3. A machine of the class described, comprising a form over which a shoe may be placed, an element having a back and wings extending forwardly along the sides of a shoe on said form from said back, means for pressing said back against the heel end of said shoe, side pressing members, means for engaging said members with the wings of said element and movable to press said wings against the sides of said shoe, a lever, and operative connections from said lever to said pressing means.

4. A machine of the class described, comprising a form over which a shoe may be placed, a sheet metal element having a back and wings extending forwardly along the sides of a shoe on said form from said back, means for pressing said back against the heel end of said shoe, and means for pressing the wings of said element against the sides of said shoe.

5. A machine of the class described, comprising a form over which a shoe may be placed, an element having a back and wings extending forwardly from said back along the sides of a shoe on said form, a member mounted for motion toward and from the heel end of a shoe on said form and supporting said element at its back, side presser members movable from and toward the sides of said shoe and engaging said wings, and means actuable to move said members toward the shoe to cause said element to embrace and press the shoe upper about its sides and heel end against said form.

6. A machine of the class described, comprising a frame, a form carried by said frame and over which a shoe to be treated may be placed, a support slidably guided in said frame to move toward and from the heel end of said form, a shoe upper pressing member carried by said support, means normally holding said support in position with said pressing member retracted from said form, means actuable to move said support to move said pressing member toward said form, side presser means independent of said support and mounted for motion toward and from said form, and means for moving said side presser means.

7. A machine of the class described, comprising a frame, a form carried by said frame and over which a shoe to be treated may be placed, a support slidably guided in said frame to move toward and from the heel end of said form, a shoe upper pressing member carried by said support, means normally holding said support in position with said pressing member retracted from said form, a rocker pivotally carried by said frame and having a portion engaging said support, an actuating lever, and a link connecting said lever and rocker for causing swinging of said lever in one direction to cause said rocker to press on said support and move said presser member toward said form.

8. A machine of the class described, comprising a gooseneck frame member, a form over which a shoe may be placed carried at the end of said frame member, a bar slidably guided through said frame member and movable toward and from the heel end of a shoe on said form, said bar having a head at its rear end, a spring surrounding said bar and reacting between said head and frame member for normally holding said bar retracted from said form, a shoe presser member carried by the forward end of said bar, a bell crank lever having an arm engaging said head, and means actuable to rock said bell crank lever to press said bar forwardly and move said presser member against a shoe on said form.

JOHN F. SMITH.

CERTIFICATE OF CORRECTION.

Patent No. 2,172,017. September 5, 1939.

JOHN F. SMITH.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, first column, line 53, claim 1, for the word "sand" read said; line 54, same claim, for "shoes" read shoe; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 24th day of October, A. D. 1939.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)