Jan. 31, 1967 R. T. PELLETIER ET AL 3,300,799

UPPER SHAPING MACHINES

Filed May 16, 1966 4 Sheets-Sheet 1

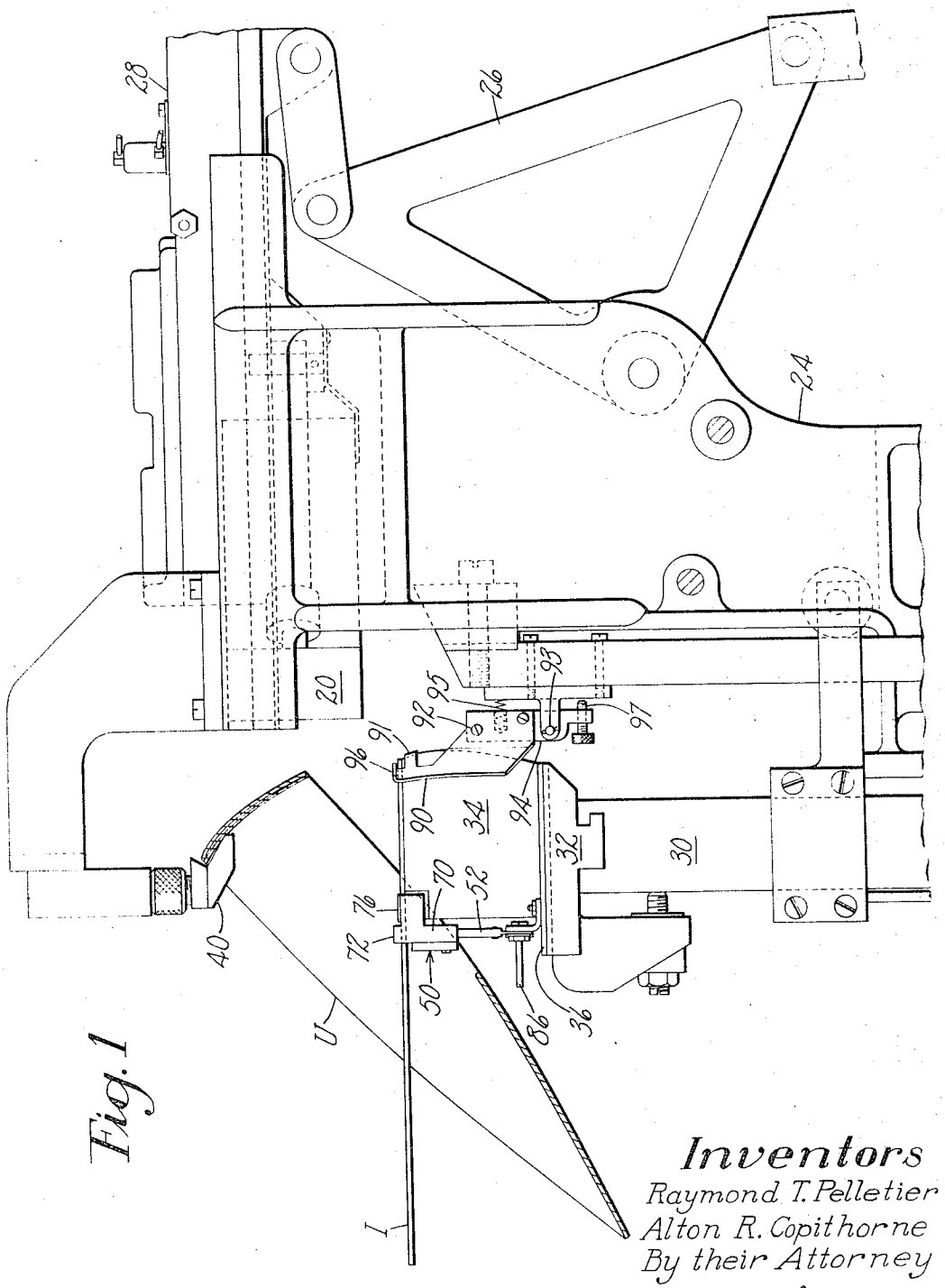


Fig. 1

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By their Attorney
Evans & Sheffield

Fig. 2

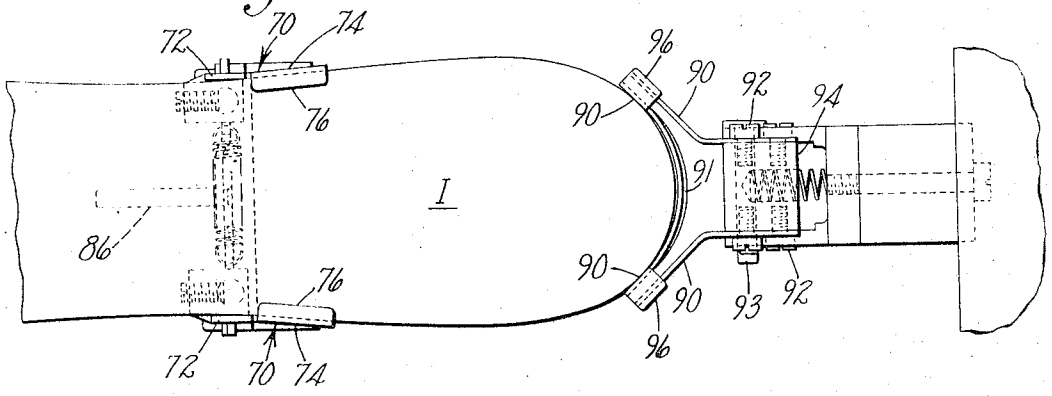
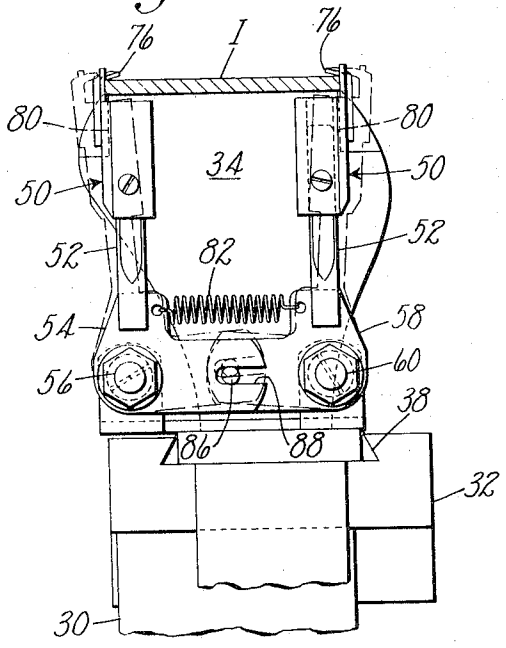

72
70
74
76
96
90
92
94
91
I
86
93

Fig. 3


76
I
80
34
50
52
82
54
58
56
60
38
86
88
32
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UPPER SHAPING MACHINES

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Fig. 4

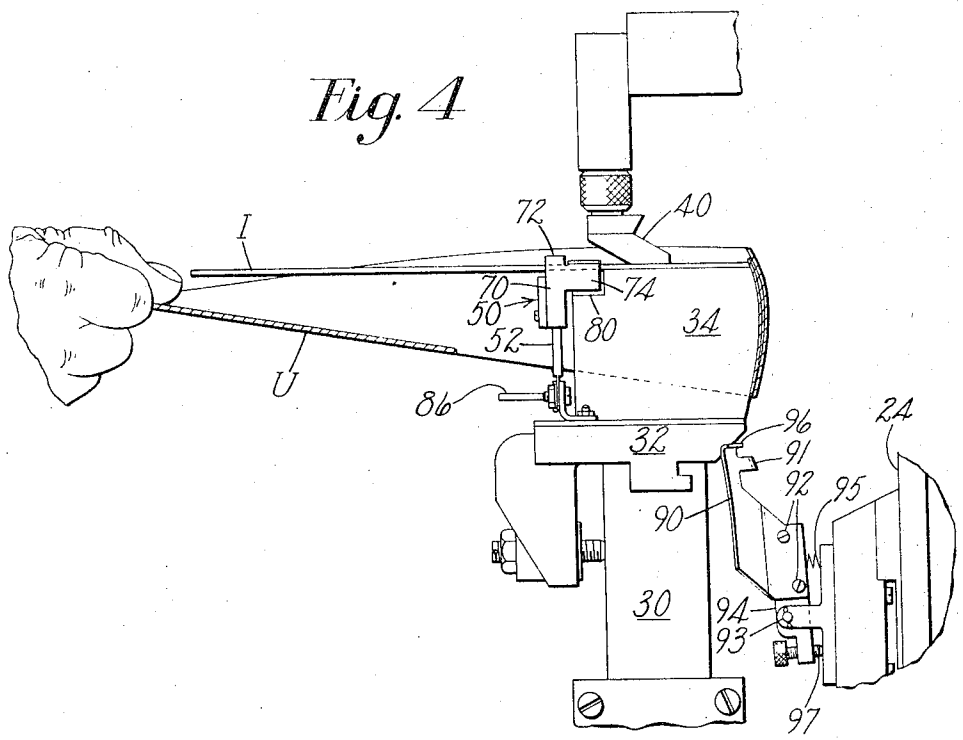



Fig. 5

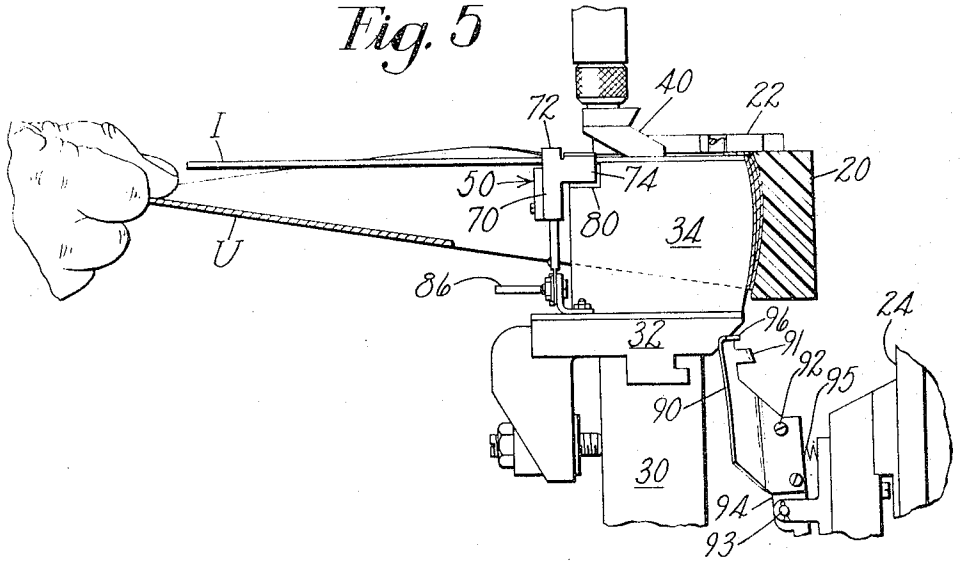


Fig. 6

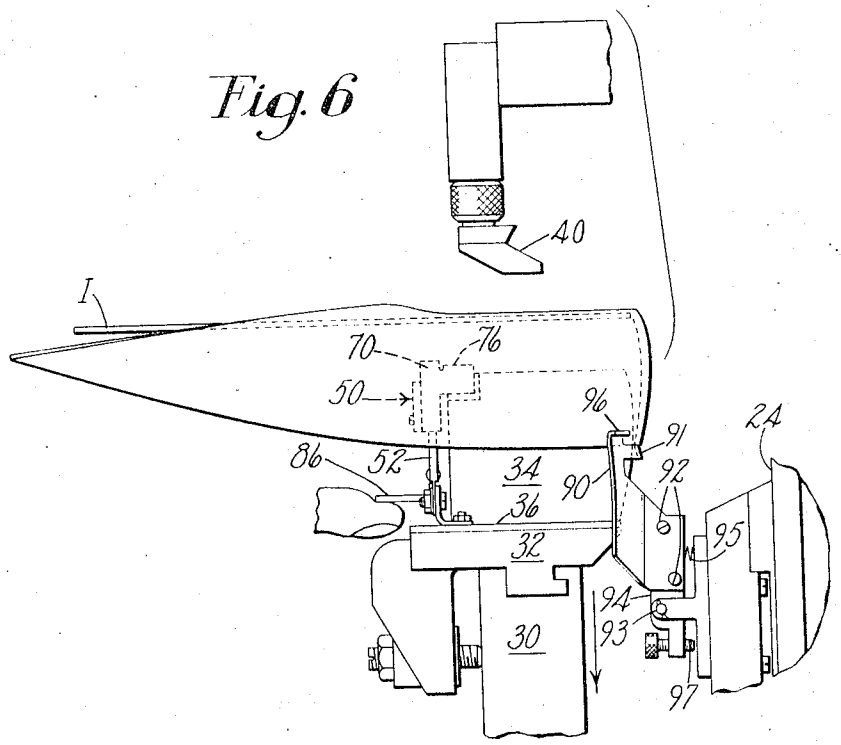
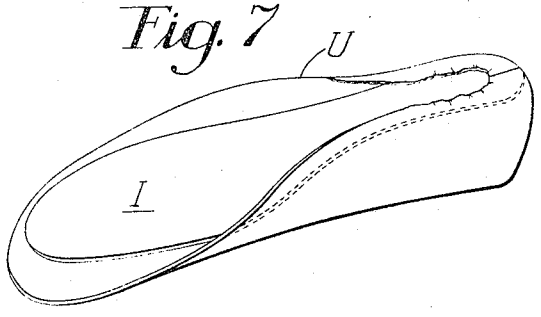



Fig. 7



United States Patent Office 3,300,799 Patented Jan. 31, 1967



3,300,799

# UPPER SHAPING MACHINES

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7 Claims. (Cl. 12—12.5)

This invention relates to shoe machines and is herein illustrated as embodied in a machine for shaping the heel end of an upper to a form and for wiping the lasting margin of the heel portion of the upper inwardly over and attaching said lasting margin to the heel end of an insole with adhesive, such for example as shown in U.S. Letters Patent No. 1,406,337, issued February 14, 1922, on an application filed in the name of Matthias Brock, or No. 3,090,980, issued May 28, 1963, on an application filed in the name of James L. Forma. It will be understood, however, that in its broader aspects the invention is not limited to embodiment in machines of the exact type disclosed in the mentioned patents or to the particular mechanical construction herein illustrated.

It is a principal object of this invention to provide novel and improved means for contacting an insole placed on the heel form of a machine of the type here under consideration thus to locate the heel end of the insole on the form prior to the operation of the means for shaping the heel end of an upper to the form and the means for wiping the lasting margin of the upper inwardly over and pressing it against the heel end of the insole. With this purpose in view, and in accordance with a feature of the invention, the herein illustrated machine, which has a support for a heel form mounted for movement from an inoperative position to an operative position, to clamp the heel end of an insole on the form against a holddown, together with a heel band for shaping the heel end portion of an upper to the form and means for wiping the lasting margin of the upper inwardly over and for pressing it against the heel end of the insole, when the support is in its operative position, is provided with a pair of gauge members for contacting the insole adjacent to its extreme heel end and a pair of gauge members for contacting the insole adjacent to the heel breast line and toewardly of the heel seat.

More particularly, and in accordance with other features of the invention, the gauge members which contact the insole adjacent to the breast line are carried by a pair of arms pivotally mounted on the support adjacent to the heel form and interconnected for equalizing movements toward and away from the opposite sides of an insole placed on the form and means are provided for yieldingly urging the gauge members toward the insole, while the gauge members which contact the insole adjacent to its extreme heel end comprise a pair of fingers pivotally mounted on a fixed part of the machine and adapted yieldingly to engage the extreme heel end of the form of an insole thereon, when the support is in its inoperative position and to be withdrawn from operative position as the support is moved to clamp the insole against the holddown. Preferably, and as herein illustrated, these fingers are joined by an arcuate web portion adapted to engage the heel end of the upper at its top line, as the support is moved downwardly after the upper has been shaped to the form by the heel band and its lasting margin wiped inwardly and pressed against the heel end of the insole by the wipers, thereby to lift the assembled upper and insole off of the heel form.

The above and other objects and features of the invention will appear in the following detailed description of



the preferred embodiment illustrated in the accompanying drawings and will be pointed out in the claims.

In the drawings,

FIG. 1 is a view in side elevation of a portion of a shoe machine in which the novel features of this invention have been embodied;

FIG. 2 is a plan view at an enlarged scale of a portion of the machine shown in FIG. 1;

FIG. 3 is a view in front elevation, also at an enlarged scale, of a part of the machine shown in FIG. 2;

FIG. 4 is a view in side elevation similar to that of FIG. 1, but with portions of the machine omitted and showing an intermediate step in the operation of the machine;

FIGS. 5 and 6 are views like that of FIG. 4 but showing subsequent steps in the operation of the machine;

FIG. 7 is a perspective view of a shoe upper and insole after the heel end of the upper has been shaped and its lasting margin secured to the heel end of the insole.

Referring to these drawings, and particularly FIG. 1, the machine which is partially illustrated therein is similar to a portion of the machine shown and claimed in U.S. Letters Patent No. 3,138,810, issued June 30, 1964, on an application filed in the name of Karl V. Becker, see especially FIG. 2 of the drawings of that patent. As is explained in detail in the aforementioned patent, this machine is provided for shaping the heel end portions of the upper materials of a shoe. Thus, the illustrated mechanism includes an end embracing the heel band **20** and wiping means, identified generally by the reference character **22**, see FIG. 5, which are similar to the wiping means of the Becker patent, see FIGS. 4 and 5 of that patent. The heel band and wiping means are associated with a frame construction, indicated generally by the reference character **24**, and are operated by mechanisms not here shown, but which are similar to a function in the same manner as the corresponding mechanisms of the Becker patent to which reference may be made. In this connection, however, it is pointed out that the heel band **20** is moved from the inoperative postion in which it is shown in FIG. 1 to the operative position of FIG. 5 by means of a fluid pressure actuated piston connected to the triangular shaped lever **26** which in turn is connected to a carriage **28**, slidably mounted on the frame **24** and on which the heel band is carried. Also, the wipers, which are mounted on and actuated by cam mechanism associated with the carriage (which corresponds to the carriage **114** of the Becker patent) are operated by a fluid pressure actuated piston, not shown, which corresponds to the piston contained in the cylinder **142** of the machine of the Becker patent.

As distinguished from the machine of the Becker patent, in which the upper materials are shaped to the heel end of a last and their lasting margins wiped inwardly over the heel end of an insole mounted on the bottom of the last, the herein illustrated machine is intended for so-called off-the-last work wherein the heel end of the upper materials is shaped to a heel form. Also, the machine of the Becker patent is provided with means for driving a tack to secure the overwiped lasting margin to the insole. However, in the machine of this invention, the lasting margin is adhesively secured to the heel end of an insole on the heel form by means of adhesive previously applied to the insole. Adhesion results from the wiping and pressing action of the wiping means.

Accordingly, in place of the usual last pin there is mounted on the upper end of a jack post **30**, slidably mounted on the front portion of the machine frame **24** and corresponding to the jack post **26** of the machine described in the Becker patent, a holder block **32** adapted to receive a heel form **34**. This heel form, which may

be made of wood, metal or any other suitable material, is of a shape corresponding to the shape of the heel end of a last and has a base plate 36 and a dovetail portion 38, by means of which it is removably mounted on the block 32. One end of this dovetail portion abuts against a stop surface, not shown, on the block 32, when the form is in the position shown in the drawings, and the form may be removed from the block 32 by sliding movement to the right, after the block itself has been removed from the jack post.

Directly above the jack post and the heel form thereon, there is supported on the frame 24 a holddown member 40, corresponding to the holddown 48 of the machine of the Becker patent. For elevating the jack post 30, thereby to cause an insole I on the heel form to be clamped in position thereon by engagement with the holddown, a piston, not shown, corresponding to the piston in the cylinder 44 of the machine of the Becker patent, is connected to the lower end of the jack post.

For locating the insole I on the form 34, in proper aligned position thereon, prior to the elevation of the jack post 30, two sets of gauge members are provided. The first set of gauge members comprise a pair of members 50, 50 each adjustably mounted on the upper end of a rod 52, see especially FIG. 3. One of these rods is carried by a first bell crank lever 54, pivotally mounted by means of a screw stud 56 on a upturned portion of the base plate 36, while the other rod is carried by a second and similar bell crank lever 58, pivotally mounted by means of a screw stud 60 to another upturned portion of the plate 36. Secured to each of the members 50 is a gauge member 70 shaped as shown in FIGS. 3 and 4 and having an upstanding finger-like portion 72 and a rearwardly extending portion 74, the upper part 76 of which is bent inwardly at an angle, see FIG. 3. Adjacent to the upper edge of the inner end of the form 34 are two cutaway portions providing abutment surfaces 80, 80 against which the rearwardly extending portions 74, 74 of the members 70, 70 are yieldingly held by the action of a coil spring 82, stretched between the bell crank levers 54 and 58, FIG. 3. Secured to the bell crank lever 58 is a pin 86 which extends forwardly through a slot 88 in the bell crank lever 54, thus providing for equalizing movements of these bell crank levers and of the gauge members 70, 70 carried thereby. Also, by lifting this pin with his finger, as indicated in FIG. 6, the operator of the machine can separate the gauge members thus to release the insole in a manner and for a purpose to be explained below.

The second set of gauge members comprises a pair of fingers 90, 90 formed of resilient material and joined by an arcuate web portion 91 as shown in FIGS. 1 and 2. These fingers are secured, by means of screws 92, 92 to the opposite sides of a supporting block 94 which is pivotally mounted on the machine frame 24 by means of a pin 93. When the jack post is in its lowermost position, FIG. 1, a spring 95 urges these fingers yieldingly into engagement with the heel form in two locations, approximately 90° apart around the generally circular heel end of the form, FIG. 2, when the jack is in its lowermost position. As can be seen in FIG. 1, these fingers extend slightly above the upper surface of the heel form so as to serve as gauge members against which the heel end of the insole I may be engaged to position the heel end of the insole on the form. At their upper ends, the fingers 90, 90 are turned outwardly to provide flanges 96, 96. A stop screw 97 limits pivotal movement of the block 94, as shown in FIGS. 4 and 5, when the jack is elevated.

In using the herein illustrated machine, the operator first suspends a closed shoe upper U on the holddown member 40, in the manner illustrated in FIG. 1, and then places an insole I on the heel form 34, locating the insole on the form, at the breast line by means of the two gauge members 70, 70 and at the extreme heel end by means of the two gauge members 90, 90, see FIGS. 2 and 3. To facilitate the placing of the insole on the heel form, the operator may first separate the gauge members 70, 70 by slightly elevating the pin 86, then after the insole has been brought into engagement with the two gauge members 90, 90, by releasing the pin the operator causes the members 70, 70 to return to the positions shown in FIG. 3, thus causing the upstanding portions 72, 72 to position the insole adjacent to the breast line. As the gauge members 70, 70 return to the positions shown in FIG. 3, the inturned portions 76, 76 will engage and hold the insole down against the upper surface of the heel form.

Next, the operator will cause the jack post to be moved upwardly by depressing a treadle, not shown, which actuates a control valve, corresponding to the control valve 407 of the machine of the Becker patent. Actuation of this valve and the resulting upward movement of the jack post causes the insole to be clamped firmly against the heel form as shown in FIG. 4. Just before the operator steps on the treadle, he will grasp the upper U and hold it in a position out of the way of the heel form as the latter is caused to move upwardly. As the jack post moves upwardly, the insole will be held in proper position by the gauge members 70, 70.

The operator will now place the upper on the heel form and shift it around, laterally and heightwise, to put it in the proper position in which it will be retained as a result of a lengthwise pull exerted thereon by the operator, see FIG. 4. While still exerting this pull on the upper the operator will release the treadle thus causing the control valve, corresponding to valve 407 of the Becker patent to be shifted back to its original position by means of a spring. As a result of this return of the control valve and in a manner explained in detail in the Becker patent, the upper shaping elements, i.e., heel band 20 and wiping means 22, will be caused to operate in an automatic cycle during which the heel band is first advanced to shape the upper around the heel end of the form and then the wipers are advanced and closed to wipe the lasting margin of the upper inwardly over and to press the lasting margin firmly against the bottom of the insole, as shown in FIG. 5.

As a result of this action of the wipers, the lasting margin is secured to the insole in lasted position by the adhesive previously applied to the insole. As the automatic operating cycle of the machine is now completed, with the tack driving step omitted in view of the use of adhesive for securing the lasting margin to the insole, the heel band is retracted together with the wiping means and the jack post is returned to its original position. While the jack post is moving downwardly, the web portion 91 which is yieldingly held against the heel end of the form 34 by the action of spring 95 will engage and lift the now combined upper and insole off of the form, see FIG. 6, this action being facilitated by the operator who lifts the pin 88 slightly and just enough to swing the two gauge members 70, 70 away from the insole to release the insole from the action of the inturned end portions 76, 76. Finally, the operator entirely removes the completed assemblage of an upper and insole, see FIG. 7, from the machine, thus making it ready for operation on the next insole and upper.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. In a machine for shaping the heel end of an upper and for securing the lasting margin of the upper to the heel end of an insole in lasted position thereon having a holddown, a heel form, a support for the heel form mounted for movement from an inoperative position to an operative position to clamp the heel end of an insole on the form against the holddown, means for moving the support, a heel band for shaping the heel end portion of the upper to said form and means for wiping the

lasting margin of the upper inwardly over, and for pressing it against the heel end of the insole when said support is in operative position, means adapted to contact the insole and locate it on the form while the form is in its inoperative position, said means including a pair of gauge members for contacting the insole adjacent to the heel breast line and toewardly of the heel seat and a pair of gauge members for contacting the insole adjacent to its extreme heel end.

2. A machine in accordance with claim 1 wherein said first-named gauge members are mounted on and are movable with the heel form as the support is moved to clamp the insole against the holddown.

3. A machine as set forth in claim 1 wherein said second-named members are mounted on the machine independently of the support, so as to be withdrawn from operative position as the support is moved to clamp the insole against the holddown.

4. A machine as set forth in claim 1 wherein said first-named gauge members are carried by a pair of arms, pivotally mounted on the support adjacent to the heel form and interconnected for equalized movements toward and away from the opposite sides of an insole on the form, and means for yieldingly urging said arms toward the insole.

5. A machine in accordance with claim 1 wherein said second-named gauge members comprise a pair of fingers pivotally mounted on a fixed part of a machine and adapted yieldingly to engage the extreme heel end of



the heel form and of an insole thereon, when the support is in its inoperative position.

6. A machine in accordance with claim 1 wherein said second-named gauge members is adapted to engage the heel end of the upper at its top line, as the support is moved downwardly after the upper has been shaped to the form by the heel band and its lasting margin wiped inwardly and pressed against the heel end of the insole by the wipers, thereby to lift the assembled upper and insole off of the heel form.

7. A machine in accordance with claim 5 wherein said fingers are joined by an arcuate web portion adapted to engage the heel end of the upper at its top line, as the support is moved downwardly after the upper has been shaped, to the form by the heel band and its lasting margin wiped inwardly and pressed against the heel end of the insole by the wipers, thereby to lift the assembled upper and insole off of the heel form.

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