May 11, 1954

J. S. KAMBORIAN

2,677,835

APPARATUS FOR USE IN SHOE MANUFACTURE

Filed March 7, 1951

3 Sheets-Sheet 1

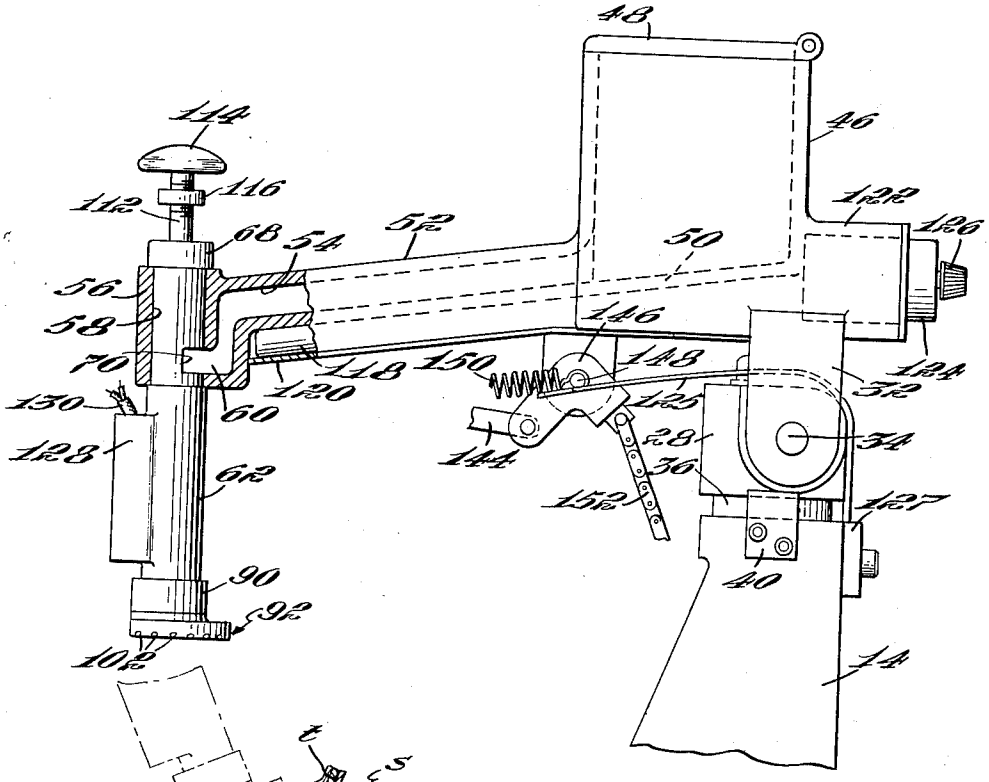


Fig. 1

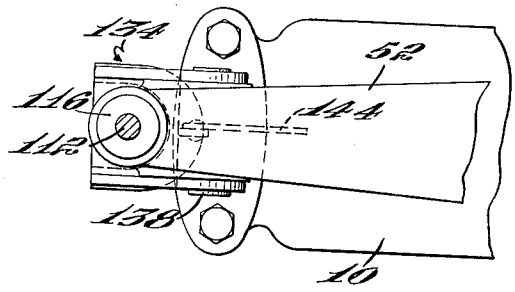


Fig. 2

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3 Sheets-Sheet 2

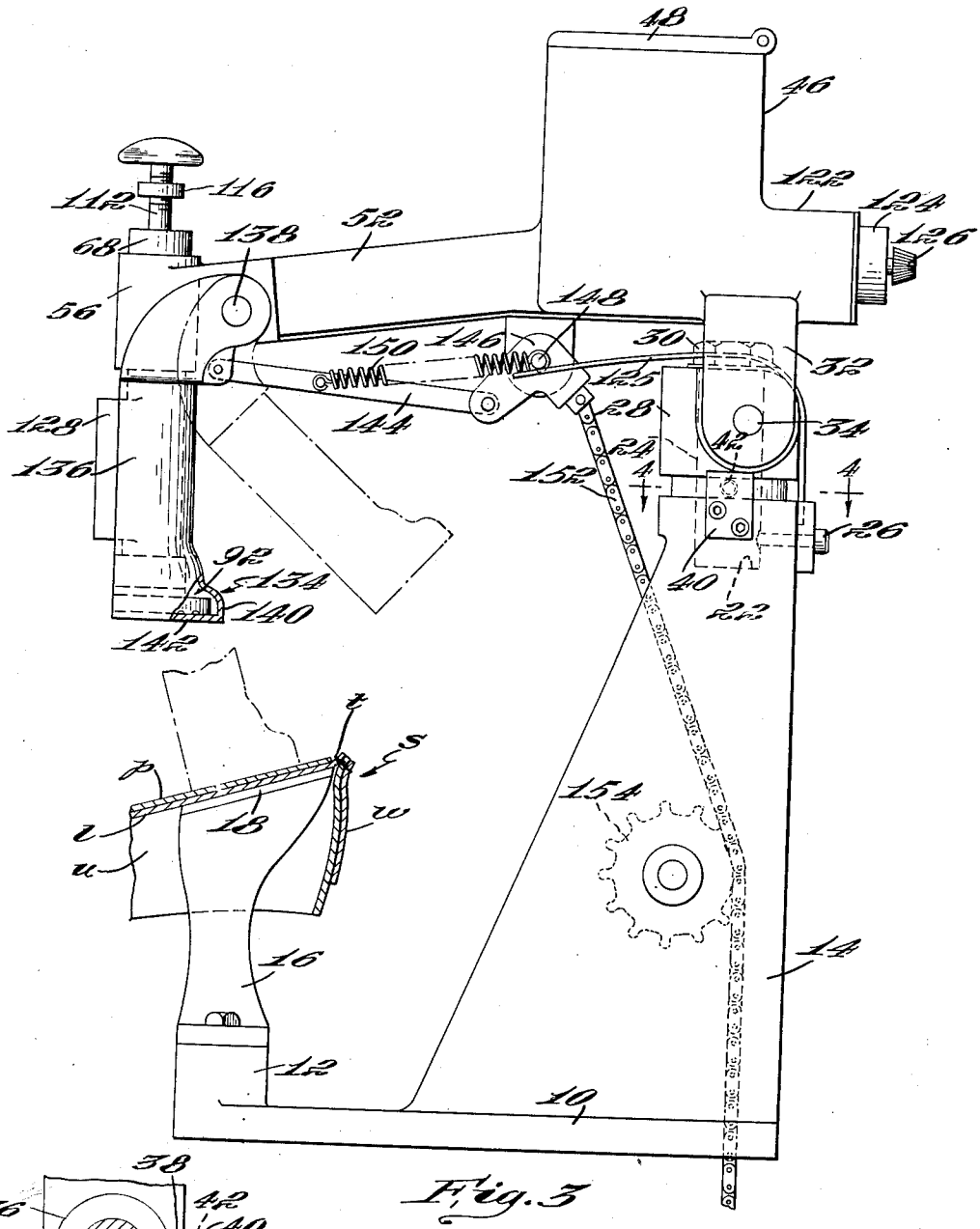


Fig. 3

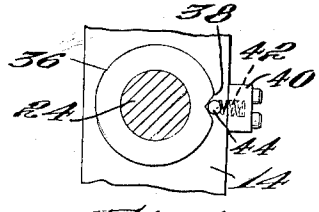


Fig. 4

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3 Sheets-Sheet 3

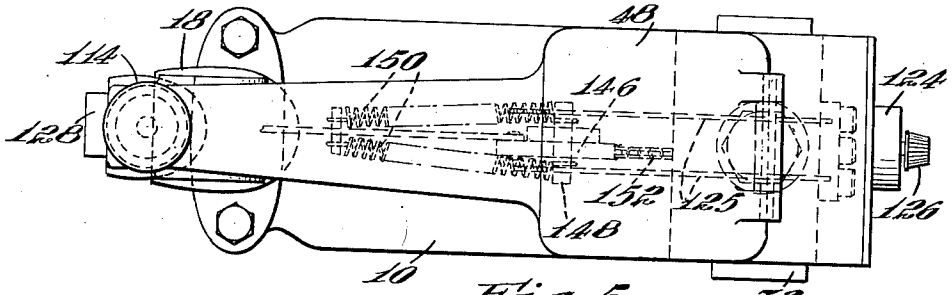


Fig. 5

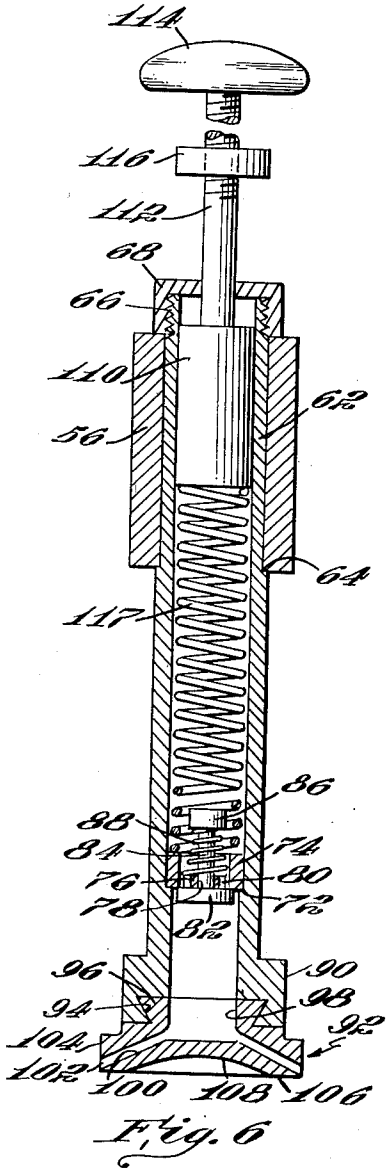


Fig. 6

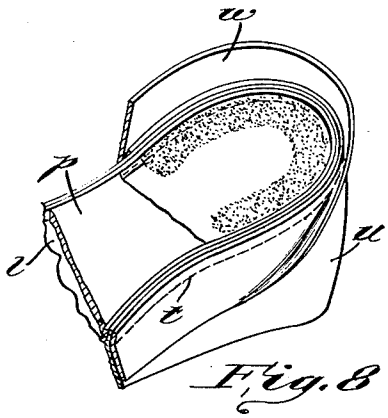


Fig. 8

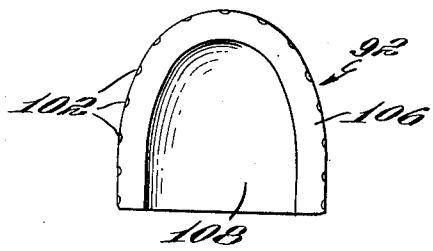


Fig. 7

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2,677,835

UNITED STATES PATENT OFFICE

2,677,835

APPARATUS FOR USE IN SHOE MANUFACTURE

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Application March 7, 1951, Serial No. 214,318

19 Claims. (Cl. 12—17)

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This invention relates to apparatus for use in shoe manufacture and more especially to the manufacture of the California or slip-lasted shoe.

In the manufacture of the foregoing type of shoe, the upper, sock lining and wrapper strip are joined marginally by a line of stitches with the wrapper strip folded upwardly against the upper. Adhesive is then applied by hand by means of a brush or the like, to the heel end portion of the sock lining, the heel tuck is laid on the adhesive coated surface either before or after the adhesive has dried in accordance with the type of adhesive used, and following this, the wrapper strip is turned by pulling upwardly or downwardly, depending upon the position of the shoe, so as to stand upright from the plane of the sock lining. A platform together with a cushioning material if the latter is to be used, is then placed on the sock lining and tuck, the wrapper is folded about the edges of the platform and heel inwardly over their bottoms, and an outsole is attached to complete the bottom structure.

The principal objects of this invention are to provide apparatus for applying adhesive to a predetermined area of the heel end portion of the sock lining prior to the application of the tuck piece without waste of adhesive, either by applying an excess of adhesive to a larger area than is necessary, or by a loss of adhesive through delivery of an excess thereof to the applicator so that it bleeds and drips to the floor or accumulates and becomes encrusted on the applicator itself. Another object is to provide an applicator which may be used with equal success upon sock linings of various size without adjustment or the need for substitution of an applicator of one size for another. A further object of the invention is to provide apparatus for holding the upper during the application of the adhesive thereto and for thereafter pressing the tuck piece against the adhesive coated surface when it is laid thereon and holding it in place while the wrapper is turned so that at the end of the turning operation, the tuck is firmly united to the sock lining and the upper is ready for bottom treatment, and a holding means which is interposed between the applicator and shoe after the latter is withdrawn, thereby preventing accidental dripping of adhesive on the work during the turning operation. Other objects are to provide an apparatus of extremely simple construction which substantially eliminates direct contact of the operator with the adhesive, so that there is less likelihood of soiling the hands and/or the work; which protects the operator from accidentally touching the heated parts of the apparatus; which speeds up production by eliminating transfer of the work from one apparatus to another for successive operations of cementing and turning; in which the adhesive is delivered to the applicator

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under pressure and hence is always dependable in contrast to gravity fed applicators, and yet will not drip adhesive; and which may be manually operated, thereby eliminating an expenditure of power. Still further objects are to provide equipment in which the adhesive can be kept liquid throughout delivery from the container in which it is stored, to the point of application and is conducted through closed passages so as not to be exposed to the air, and hence may be kept in good condition.

In accordance with the foregoing objects and as herein illustrated, the device has a jack upon which may be placed a partial assembly consisting of an upper, sock lining and wrapper strip stitched along a common margin with the exposed side of the heel portion of the sock lining uppermost, and an applicator arranged to apply adhesive to a predetermined area of the sock lining at the heel end. The foregoing parts are arranged for relative movement about axes at right angles so that the applicator may be moved into contact with the shoe part on the jack and while in contact therewith, may be moved over its surface to spread the adhesive. The applicator has an acting face shaped to engage the central area of the heel end of the sock lining, leaving a substantially horseshoe-shaped area, marginally of the sock lining, and has delivery orifices peripherally of its acting face through which the adhesive is expelled outwardly over the horseshoe-shaped area which is to be coated, adhesive being excluded from the central portion of the sock lining by contact of the acting face of the nozzle therewith. A container for adhesive is connected by a conductor to the nozzle, and a combination valve and pump is interposed between the container and the nozzle which is adapted to supply the adhesive to the nozzle under pressure. A presser foot is carried by the nozzle and is selectively movable therewith into engagement with the jack. Normally, during application of the adhesive, the presser foot is held deflected in an out-of-the-way position. There is means, however, for swinging the presser foot into operative position when the nozzle is lifted away from the jack without disturbing the orientation of the nozzle, so that a portion of it underlies the acting face of the nozzle and accordingly, when the nozzle is again moved toward the jack, the presser foot will engage the jack ahead of the nozzle for the purpose of pressing the tuck piece against the tacky surface of the sock lining and will hold it during the turning operation.

The invention will now be described in greater detail with reference to the accompanying drawings, wherein:

Fig. 1 is a side elevation of the apparatus showing a partial shoe assembly mounted on the jack in readiness for application of adhesive to the

heel end portion of the sock lining and the applicator in its elevated position, with the presser foot omitted and the base broken away in part;

Fig. 2 is a fragmentary plan view of Fig. 1, looking down at the top thereof, showing the applicator, the adhesive container being omitted;

Fig. 3 is a side elevation of the apparatus including the presser foot, showing a partial assembly mounted on the jack with a tuck applied thereto in readiness for holding down and turning;

Fig. 4 is a horizontal, transverse section taken on the line 4—4 of Fig. 3;

Fig. 5 is a plan view of the apparatus shown in Fig. 3, looking down at the top thereof;

Fig. 6 is a vertical diametrical section through the applicator, showing the details of the combination valve and pump;

Fig. 7 is a bottom view of the applicator nozzle; and

Fig. 8 is a perspective view of the bottom portion of the upper at the heel end, with the upper partially turned and with the tuck broken away to show the area to which the adhesive is applied.

Referring to the drawings (Fig. 3) the apparatus has a rigid base plate 10 suitable for attachment to a bench or table from which rise fore and aft, pedestals 12 and 14. A jack 16 is bolted in an upright position to the forward pedestal and has at its upper end a forwardly and downwardly inclined plate 18 which corresponds substantially in shape to the heel end portion of a shoe for reception of a partial shoe assembly S consisting of an upper *u*, sock lining *l* and wrapper *w* joined along common margins by a line of stitching *t* with the wrapper strip folded upwardly against the upper. The partial assembly is placed, foot opening down (Fig. 1), so that the plate 18 engages the inside of the assembly at the heel end.

The rear pedestal 14 rises upwardly from the base plate beyond the upper end of the jack 16 and has at its upper end a vertical socket 22 in which is set a post 24 having a head 30 at its upper end. A set screw 26 is threaded through the rear side of the pedestal and by rotation, its inner end may be brought to bear upon the post to lock it against rotation and to anchor its lower end in the socket. A block 28 is rotatably mounted on the post between the top of the pedestal and the head 30 of the post, and provides a support for a bracket 32. The lower part of the bracket is bifurcated so as to straddle the block and is fulcrumed on pivots 34 extending from opposite sides of the block for rocking movement about a horizontal axis and for swinging movement about the vertical axis of the post, for purposes which will appear hereinafter.

The lower end of the block 28 is shaped to provide a cylindrical surface 36 (Fig. 1) and in this surface there is formed a dimple 38 (Fig. 4). A plate 40 is secured to the pedestal so that a part thereof overlaps the recessed surface 36 opposite the dimple. At the inside of the plate there is formed a well in which is seated a stiff spring 42 for holding a ball 44 seated in the dimple. As thus constructed, the spring pressed ball limits rotation of the block on the post, that is the block will turn in either direction through a small angle but will be stopped by jamming of the ball against the shoulders of the dimple.

A container 46 for receiving a quantity of adhesive is made fast to the bracket 32 and has a cover 48 closing its top, and a false bottom 50 (Fig. 1). Extending forwardly from the container and integral therewith (Fig. 1) is a hollow arm 52 which provides an inclined passage 54 running lengthwise thereof, the upper end of which is in communication with the interior of the container 46. The outer extremity of the arm 52 terminates in a cylindrical boss 56 having a vertically elongate bore 58 therein, which is in communication with the lower end of the passage 54 in the arm by way of an opening 60. In the vertical bore 58 of the boss 56 there is disposed a hollow barrel 62 (Fig. 6) which has an external shoulder 64 engaged with the lower end of the boss 56. The upper end of the barrel is threaded at 66 and a cap 68 is placed on the threaded end and engages the upper end of the boss 56 so as to fix the barrel 62 in the bore in the boss. An opening or slot 70 (Fig. 1) in the wall of the barrel 62 affords a direct communication from the interior of the barrel by way of the opening 60 with the lower end of the passage 54.

Within the barrel 62 near its lower end (Fig. 6), there is an internal annular shoulder 72 on which there rests an annular valve seat 74 having a transverse septum 76 provided with an axial bore 78 surrounded by a plurality of openings 80. A valve disc 82 having a stem 84 fast thereto and extending through the bore 78 is held against the under side of the septum 76 so as to close the openings 80. To this end, the stem 84 has at its upper end a head 86 between which and the web 76 there is mounted on the stem a compression spring 88. As thus arranged, the valve disc 82 will normally remain seated until positive pressure is applied from above it so as to move it away from its seat.

The lower end of the barrel 62 has an enlarged portion 90 to the end of which is fastened a nozzle head 92 by means of a cooperating dovetail groove 94 and dovetail 96 formed on the respective parts. The nozzle head 92 has an end face corresponding substantially in shape to the heel end portion of the sock lining but is somewhat smaller (Fig. 7) so that when it has contact with the sock lining, it engages the central portion thereof, leaving a horseshoe-shaped margin peripherally of the heel end (Fig. 8). The nozzle head is hollow, having an opening 98 therein which forms a continuation of the chamber of the tubular barrel. A plurality of passages 100 extend laterally, downwardly from the opening 98 through the wall of the head and terminate in discharge openings or orifices 102 in the substantially vertical peripheral edge face 104 of the head 92. The bottom or end face of the nozzle head 92 has a flat surface 106 marginally thereof which when brought to bear upon the sock lining, as will appear hereinafter, prevents adhesive extruded from the orifices 102 from flowing inwardly between the end face of the nozzle and the work. The central portion 108 of the end face is concave so as to minimize the possibility of the marginal edge of the nozzle being held out of close contact with the sock lining by unevenness in the work. Thus adhesive extruded from the orifices 102 will flow outwardly therefrom so as to coat only the marginal portion of the sock lining as illustrated in Fig. 8.

Above the valve in the barrel there is located a plunger 110 which has a rod 112 extending therefrom upwardly through the cap 68. A knob 114 is fastened to the top of the rod 112 and provides means for forcing the plunger 110 downwardly in the barrel. A collar 116 is threaded

on the rod below the knob 114 and may be adjusted by rotation thereon to limit the downward movement of the plunger 110. A compression spring 117 is placed within the barrel 62 between the lower end of the plunger 110 and the upper side of the valve seat 74 so as normally to hold the plunger 110 at the top of the barrel with its lower end above the opening 70 in the barrel. Thus adhesive in the container 46 is free to gravitate through the passage 54 into the barrel 62 below the plunger 110, but is prevented from running through the nozzle 92 by reason of the closed valve 82 until the latter is forced open.

The container 46, arm 54 and barrel 62 are kept warm by means of heating elements. As illustrated, a heating element 118 is placed against the under side of the false bottom 50 of the container 46 and along the under side of the arm 52, being retained there and concealed by a cover-plate 120 fastened to the under side of the container 46 and arm 52. A hollow boss 122 is formed integral with the container 46 in which is placed a switch 124 and control 126 through which current is supplied to the heating element and the temperature thereof is regulated. A boss 128 is formed integral with the side of the barrel 62 in which there is placed another heating element (not shown) supplied with current through a conductor 130. This latter heating element may be controlled by the same switch as the heating element 118 or by an independent switch.

As thus constructed, when it is desirable to apply adhesive to the heel end of a sock lining, the operator places the partial assembly on the jack, bottom up, then grasps the knob 114 and pushes down on it so as to bring the acting face of the nozzle 92 into engagement with the central portion of the exposed surface of the sock lining by tilting the arm 52 and container 46 downwardly on the bracket 32. After the nozzle is brought firmly into engagement with the sock lining, the knob is further pressed down so that the plunger 110 moves downwardly in the barrel 62, closing the opening 60 and applying pressure to the adhesive within the barrel 62 below it so that the valve 82 is unseated, and adhesive is extruded through the orifices 102 of the nozzle head. While thus held down, the applicator may be swung about the vertical axis of the post so as to slide the face of the nozzle transversely of the sock lining a limited amount, and hence to spread the extruded adhesive uniformly and into close proximity with the seam peripherally of the lining. This limited swinging movement is afforded by the spring pressed ball 44 seated in the dimple 38 (Fig. 4) heretofore explained, making it possible to use an applicator of a given size for shoes of several sizes within a given range of sizes, since it may be moved laterally enough in opposite directions to insure spreading the adhesive outwardly to cover an area larger than the acting face of the nozzle.

As soon as the knob 114 is released, the spring 117 returns the plunger 110 to its top position, the valve 82 closes, and a slight vacuum is created below the valve 82 which serves to prevent adhesive from bleeding or oozing from the orifices 102. The applicator is returned from its depressed position to its elevated position by springs 125 to be described hereinafter.

There is also mounted on the arm 52 a presser foot 134 which is shown in full lines in Fig. 3 in its operative position. The presser foot has a leg portion 136 fulcrumed at its upper end at

138 to the arm 52 and has at its lower end a foot 140. The leg and foot are of hollow, U-shaped cross section and large enough to embrace the barrel 62 and nozzle 92. The acting face 142 of the foot is flat and substantially heel-shaped, being about the size and shape of the adhesive coated marginal portion of the sock lining. When swung down into operative position from its retracted position (shown in broken lines), the acting face 142 extends beneath the acting face of the nozzle so as to be situated between the nozzle and the jack. Normally, the presser foot is held retracted at an angular position with respect to the nozzle, and is only moved into a position beneath the nozzle after adhesive has been applied to the sock lining and a tuck has been placed on the adhesive coating surface. The presser foot is then used to press the tuck into engagement with the sock lining and hold it pressed against the jack while the wrapper strip is turned. As illustrated, one end of a link 144 is pivotally connected to the presser foot and has its opposite end connected to one arm of a bell crank 146 fulcrumed on a pin 148 at the under side of the arm 52. Two springs 150 are stretched between a pin fast to the link 144 and to the opposite ends of the fulcrum pin 148 respectively and normally hold the presser foot retracted or in normal position. A chain or other flexible member 152 is connected to the other arm of the bell crank 146 and extends downwardly over a sprocket or equivalent element 154 journaled on the pedestal 14 and further down to a treadle (not shown). By drawing the chain downwardly the bell crank 146 may be swung clockwise and hence through the link 144, the presser foot may be swung forwardly beneath the nozzle for use without in any way disturbing the nozzle which remains in its original position.

Normally the container 46, arm 52 and applicator are held elevated above the jack by a pair of stiff leaf springs 125 (Figs. 1 and 3). One end of each spring is fastened to the pedestal behind the block 127 which in turn is fastened to the pedestal by the set screw 26 and the other end of each spring is engaged beneath one end respectively of the fulcrum pin 148. The springs are bent over the block 28, passing between the spaced legs of the bifurcated part of the bracket member 32, and are sufficiently stiff to sustain the weight of the foregoing parts.

In operation, the partial assembly of the upper, sock lining and wrapper is placed over the jack as shown in Fig. 1 and then the acting face of the nozzle 42 is brought into engagement with the exposed surface of the sock lining by depressing the knob 114. Just before the nozzle is brought into firm engagement with the sock lining, the operator has an opportunity to adjust the assembly on the jack so that it will be correctly positioned. By further pressing the knob 114, adhesive may be extruded from the nozzle onto the surface of the sock lining along the margin at the heel end thereof, as illustrated in Fig. 8, and if the sock lining is considerably larger in area than the applicator, the latter may be swung transversely in opposite directions to spread the adhesive over the entire marginal portion of the sock lining exclusive of the central portion thereof. Having spread the adhesive, the applicator is raised from the work and an uncoated tuck piece p is laid on the adhesive coated surface of the sock lining, whereupon the chain 152 is drawn downwardly to swing the presser foot 134 beneath the nozzle into operative position. By continued

downward movement of the chain, the arm 52 together with the applicator and presser foot 134 may be brought down so as to engage the acting face 142 of the presser foot with the tuck piece and press it firmly against the sock lining supported by the jack. While thus clamped between the presser foot and jack, the operator grasps the wrapper *w* and turns it, that is, folds it outwardly and upwardly so that it stands upright from the plane of the sock lining (Fig. 8). The chain 152 is then released and the springs 125 elevate both the nozzle and the presser foot from the jack, whereupon the partial assembly is removed for application of the platform thereto. A quick setting adhesive is preferably employed so that during the interval in which the tuck is held clamped against the sock lining while the upper is being turned, the tuck will be united permanently to the sock lining.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. In apparatus for use in the manufacture of slip-lasted shoes wherein the exposed surface of a sock lining, secured to an upper and wrapper, is provided with a marginal band of adhesive upon which a tuck piece is laid preparatory to turning the wrapper, said apparatus including a jack for supporting the heel portion of a sock lining while the adhesive is being applied, an applicator having a nozzle portion for applying the adhesive, and means for supplying adhesive to the applicator, in combination, a presser foot for movement relatively to the jack and relatively to the applicator, means for use in moving the applicator into contact with a sock lining resting on the jack thereby to deposit adhesive on the sock lining, said treadle-actuated means for moving the presser foot into contact with a tuck piece resting upon the adhesively coated surface of the insole and for holding the tuck piece and sock lining under pressure while the wrapper is being turned.

2. In apparatus for use in the manufacture of a slip-lasted shoe and which includes a jack provided with a surface for supporting the heel end of a sock lining of such a shoe, an applicator having a horseshoe-shaped nozzle portion designed to overlie the marginal part of the heel end of a sock lining resting on the jack and to deliver a marginal band of adhesive to the sock lining, in combination, a presser foot having a work-contacting surface shaped to correspond substantially to that of the heel end portion of the sock lining, and means operative, at will, to interpose the presser foot between the applicator and jack and to move both applicator and presser foot toward the jack.

3. In apparatus of the class described including a jack for supporting a sole element of an unlasted shoe, an applicator and a reservoir for adhesive, in combination, an elongate, upright, cylindrical barrel, means supporting the barrel for bodily movement toward and from the jack, means connecting the applicator to the lower end of the barrel, means for conducting adhesive from the reservoir to the interior of the barrel, a normally closed, downwardly opening valve within the cylindrical barrel normally operative to prevent delivery of adhesive from the interior of the barrel to the applicator, a plunger within the cylindrical barrel, a stiff spring normally urging the plunger toward the upper end of the barrel, a manually actuable handle above and spaced from the applicator for moving the latter toward the jack, and means for transmitting motion from the handle to the plunger thereby to move the plunger down to apply pressure to adhesive within the barrel sufficient to force open the valve, the spring being of such stiffness that force sufficient to open the valve first moves the applicator as a whole into operative relation to the sole element resting upon the jack.

4. An apparatus for use in the manufacture of shoes comprising a jack upon which the sock lining of a shoe may be placed bottom up, an applicator corresponding in shape but smaller than the heel end portion of the sock lining for applying adhesive to the sock lining marginally of its junction with the upper, means supporting the applicator for movement to and from the jack to bring the applicator into operative relation with the jack, a container on the last-named means movable therewith, a conduit connecting the container to the applicator, a valve in the conduit operable to admit adhesive from the container to the applicator, heating elements at the bottom of the container along the conduit and at the applicator for heating the parts to keep the adhesive fluid, and means for supplying current to said heaters.

5. Apparatus for use in the manufacture of shoes of the slip-lasting type comprising relatively movable operating instrumentalities including a jack having a substantially flat forwardly inclined work-supporting surface upon which an unlasted partial assembly, consisting of an upper and sock lining united by stitching, may be placed with the heel end of the sock lining resting on said surface and upwardly exposed, an applicator having a substantially flat work-contacting surface corresponding in contour substantially to the shape of the heel end of the sock lining and having peripherally disposed adhesive discharge ports, said applicator being normally above the jack with its work contacting surface substantially horizontal, the applicator being movable downwardly toward the jack, means constraining the applicator to move in a path such that the work-contacting surface of the applicator is parallel to the flat forwardly inclined work-supporting surface of the jack when the applicator reaches operative position, a container for adhesive, mounted for movement up and down with the applicator, a manually actuable handle, spaced from and above the applicator, which is operative successively to move the applicator until it is stopped by contact with a sock lining resting on the flat surface of the jack and thereafter to cause adhesive to be delivered from the ports of the applicator, and means tending to return the applicator to its elevated position above the jack and which normally holds the applicator in said elevated position.

6. Apparatus for use in the manufacture of shoes of the slip-lasted type, comprising a jack having a substantially flat, downwardly inclined surface upon which a partial assembly, consisting of an unlasted upper and a sock lining secured thereto by marginal stitching, may be placed with the heel end of the sock lining resting on said surface and upwardly exposed, an applicator, means supporting the applicator for movement in an arcuate path whose axis is horizontal, from an inoperative position above the jack in which the work-contacting surface of the applicator is substantially horizontal to an oper-

ative position where its work-contacting surface is parallel to the sock lining resting upon the jack, a container for adhesive, a tubular barrel normally in direct communication with the adhesive container and arranged to be gravitationally filled with adhesive from the container, a valve device associated with the applicator, which, when open, admits adhesive from the container to the barrel, and a manual actuable plunger which is operative, but only after the applicator has been contacted with the sock lining supported by the jack, simultaneously to cut off the flow of adhesive from the container to the barrel, and forcibly to eject a quantity of adhesive from the barrel into the applicator.

7. In apparatus for use in the manufacture of slip-lasted shoes, and which comprises a jack having a substantially flat inclined surface upon which the heel end of the sock lining of an unlasted shoe may be placed for support, an applicator for applying adhesive to a horseshoe-shaped marginal area of the heel end of a sock lining resting upon said inclined surface of the jack, the applicator having a substantially flat work-contacting surface which, when the applicator is in inoperative position, is spaced above the jack, means for supporting the applicator for movement along an arcuate path, whose axis of curvature is horizontal, from its inoperative position toward the jack until its work contacting surface is substantially parallel to the inclined face of the jack and is in operative engagement with a sock lining resting on the jack, a source of adhesive elevated relatively to but which is movable up and down with the applicator, a conduit, connecting the source of adhesive with the applicator, through which adhesive tends to flow by gravity to the applicator, a normally closed valve interposed in the conduit, but which when open, admits adhesive from the source to the applicator, a manually actuable handle located above the applicator for use in swinging the applicator downwardly toward the jack, and a part connected to the handle and which is operable, after motion of the applicator toward the jack has been stopped by contact of the applicator with the sock lining, to cause the valve to open in response to further downward movement of the handle.

8. Apparatus for use in the manufacture of shoes of the slip-lasted type, comprising a jack upon which a partial assembly, consisting of an unlasted upper and a sock lining united thereto by stitches, may be placed with the heel end of the sock lining uppermost, the jack having a substantially flat, forwardly and downwardly inclined work-supporting surface on which the sock lining rests, an applicator having a substantially flat, work-contacting surface, a lever arm supporting the applicator for movement in an arcuate path about a horizontal axis from an inoperative position where its work-contacting surface is horizontal to an operative position relatively to the jack where the work-contacting surface of the applicator is substantially parallel to the inclined work-supporting surface of the jack, the applicator including a barrel and a nozzle at the lower end of the barrel, the nozzle corresponding in contour to the heel end of the stock lining and having discharge orifices at its peripheral edge, a container for adhesive, a conductor through which adhesive may flow gravitationally from the container to the barrel, a normally closed valve situated near the bottom of the barrel, and which when open admits adhesive from the barrel to the nozzle, a plunger in the barrel, a spring which normally holds the plunger at the upper limit of its path of movement, in which position adhesive is permitted to flow from the container to the barrel, a handle spaced from and above the applicator and which is operable for moving the applicator by manual pressure into contact with the sock lining resting on the jack, the handle being also operable to actuate the plunger, but only after downward motion of the applicator has been terminated by contact with the sock lining resting on the jack, simultaneously to cut off the flow of adhesive from the container to the barrel and forcibly to eject adhesive from the barrel into the applicator.

9. Apparatus for use in the manufacture of shoes of the slip-lasting type comprising relatively movable operating instrumentalities including a jack having a downwardly and forwardly inclined work-supporting surface contoured like the heel end of the sock lining of a shoe and on which the heel end of the sock lining of an unlasted partial assembly, consisting of an upper and sock lining united marginally by stitching, may be placed, an applicator for applying adhesive to the marginal area of the sock lining, the applicator, when in inoperative position, being above the work-supporting surface of the jack, means for supporting the applicator for movement in an arcuate path, about a horizontal axis, from its normally elevated, inoperative position to an operative position relatively to the jack, the parts being so constructed and arranged as to permit limited relative lateral motion of the applicator and jack, after the applicator has been contacted with the sock lining, thereby to spread adhesive deposited by the applicator on the sock lining.

10. Apparatus for use in applying adhesive to the marginal portion of the heel end of a sock lining constituting an element of an unlasted partial assembly, wherein the sock lining is united by marginal stitching to an upper, said apparatus comprising in combination a rigid support on which the sock lining rests, a nozzle having a substantially vertical peripheral edge surface and a horizontal flat bottom face of approximately horseshoe shape for engagement with the sock lining, the nozzle having lateral discharge orifices arranged about its periphery approximately at the junction of its peripheral edge and its flat bottom face, the flat bottom face of the nozzle acting as a seal, by contact with the sock lining, to prevent flow of adhesive inwardly beneath the applicator, and means for applying adhesive under pressure to the nozzle.

11. In apparatus for use in the manufacture of slip-lasted shoes thereby to apply adhesive to the marginal portion of the heel end of the sock lining of an unlasted partial assembly, consisting of a sock lining marginally united to an upper, said apparatus comprising a support having a substantially flat surface on which the sock lining rests, a nozzle of a contour approximating that of the heel end of the sock lining, and having a substantially vertical peripheral edge surface, and a substantially flat bottom surface of substantially horseshoe shape for clamping the sock lining against the support, the nozzle having discharge orifices at the junction of said peripheral surface and said flat bottom surface for discharging adhesive onto the surface of the sock lining marginally of the nozzle, said flat bottom surface acting to form a seal to prevent flow of adhesive

inwardly beneath the nozzle, the central portion of the nozzle being upwardly concave, so that the pressure of the nozzle against the sock lining is confined to the marginal portion of the latter, and means for delivering adhesive under pressure to the nozzle for delivery through the discharge orifices of the latter.

12. Apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an applicator and a presser foot, means supporting the presser foot and applicator for movement to and from the jack, and for relative movement with respect to each other, and means for use in moving either the applicator or presser foot, alternatively, into operative relation to a shoe part resting on the jack.

13. Apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, a nozzle, normally spaced from the jack for applying adhesive to a predetermined area of the shoe part, said nozzle being movable toward and into operative relation to the jack, a presser foot movable with the nozzle, means normally holding the presser foot at an angle to the nozzle such that it will not contact a shoe part resting on the jack during the application of adhesive to the work by the nozzle, and means operative at will, to swing the presser foot beneath the nozzle whereby, as the nozzle approaches the jack, the presser foot is interposed between the nozzle and a shoe part supported by the jack.

14. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an applicator normally spaced from the jack for applying adhesive to a predetermined area of the shoe part, said applicator being movable toward and into operative relation to the jack, a presser foot mounted for movement with the applicator toward and from the jack, the presser foot being pivoted for angular movement relatively to the applicator, means normally holding the presser foot at an angle to the applicator in an out-of-the way position while the applicator is engaged with the shoe part resting on the jack, and means operative, at will, to move the presser foot between the applicator and a shoe part supported by the jack as the applicator is being moved toward the jack thereby to engage the presser foot with the shoe part resting on the jack before the applicator can contact said shoe part.

15. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, a movable applicator, means guiding the applicator for movement toward and from the jack along a predetermined path, a presser foot pivotally mounted on the applicator for movement therewith, means normally holding the presser foot retracted from the applicator at an angle to the latter, and means for bringing the presser foot into the path of movement of the appilcator and beneath the acting face of the applicator whereby the presser foot is engaged with a shoe part supported by the jack as the applicator is moved toward the jack.

16. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an arm mounted for swinging movement from a substantially horizontal position downwardly toward the jack, an applicator at one end of the arm movable along a predetermined path into operative relation to the jack by angular movement of the arm, a presser foot pivotally suspended on the arm, means normally holding the presser foot out of the path of movement of the applicator, the presser foot having a work-contacting surface of larger superficial area than that of the applicator, and means for swinging the presser foot into the path of movement of the applicator thereby to interpose the presser foot between a shoe part supported by the jack and the applicator so as to prevent contact of the applicator with the shoe part.

17. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an applicator, having an adhesive delivery nozzle, mounted for movement along a predetermined path toward and from the jack, a presser foot pivotally mounted on the applicator for movement therewith toward and from the jack, means normally holding the presser foot retracted from the path of the applicator and at an angle to said path, and means for bringing the presser foot into the path of movement of the applicator and beneath the acting face of the applicator as the latter moves toward the jack.

18. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an arm, said arm being pivoted at one end, an applicator fast to the free end of the arm, means normally holding the arm in a substantially horizontal position, means for use in tilting the arm to move the applicator toward the jack to bring the applicator into engagement with the work on the jack, a presser foot mounted for movement with the applicator to and from the jack, said presser foot being pivotally mounted on the arm for movement relatively to the applicator from an angular, out-of-the-way normal position into alignment therewith, said presser foot having a shank of substantially U-shaped cross section adapted to embrace the applicator, and an acting face of substantially heel shape which extends beyond the acting face of the applicator when aligned therewith, and means for moving the presser foot, at will, between the applicator and the jack as the applicator moves toward the jack.

19. An apparatus for use in the manufacture of shoes comprising a jack upon which a shoe part may be placed for support, an applicator vertically spaced above the jack, an arm to which said applicator is fast, means supporting the arm at its opposite end for tilting movement about a center such that the acting face of the applicator is parallel to the surface of the jack at their place of contact, and other means supporting the arm for swinging movement about an axis at right angles to the axis of tilt so that when the applicator is in contact with the jack it may be shifted transversely of said surface.

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