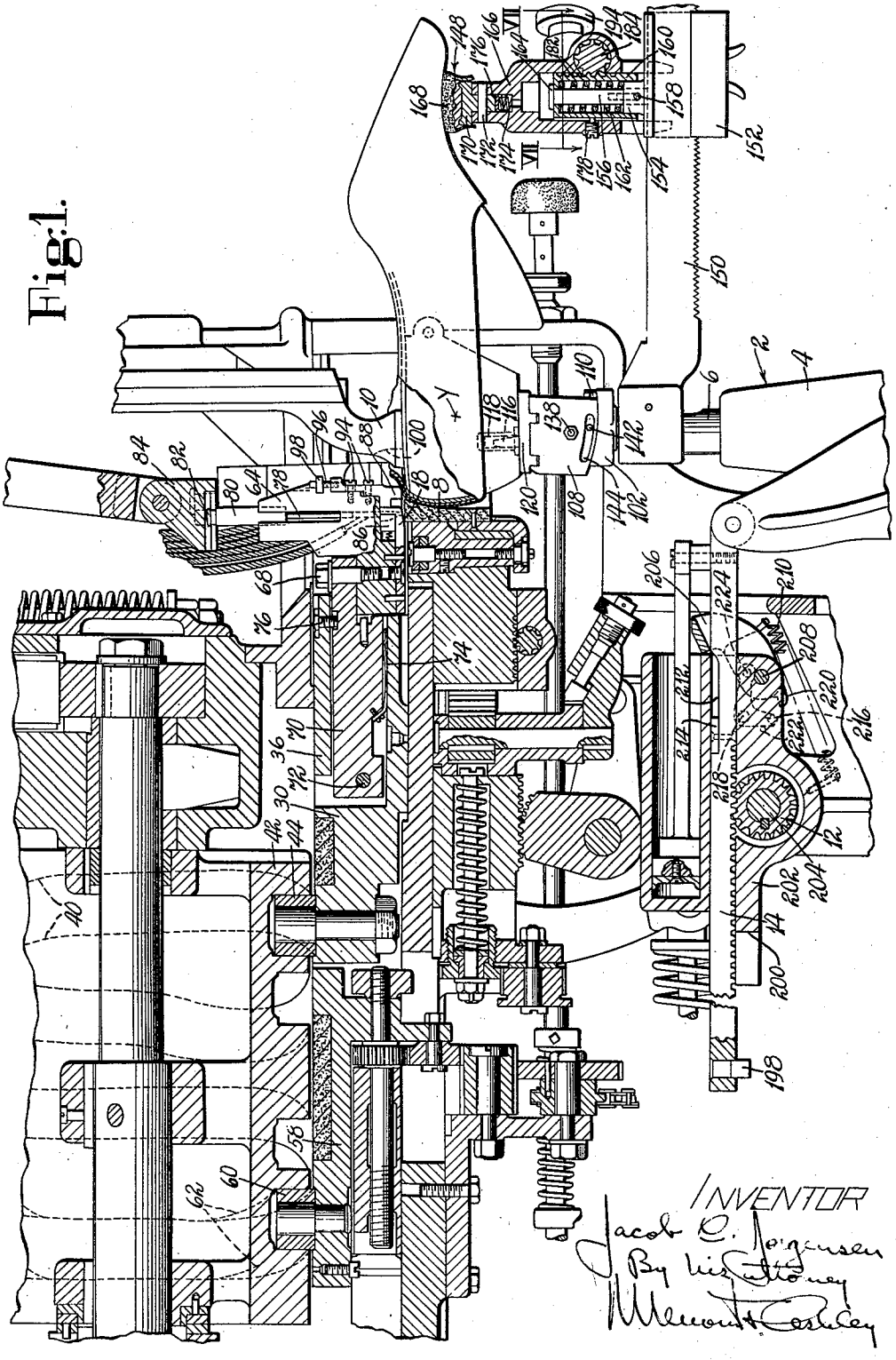
Jan. 6, 1942. J. C. JORGENSEN 2,268,597

SHOE MACHINE

Filed June 27, 1940 3 Sheets-Sheet 1

Fig. 1.



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SHOE MACHINE

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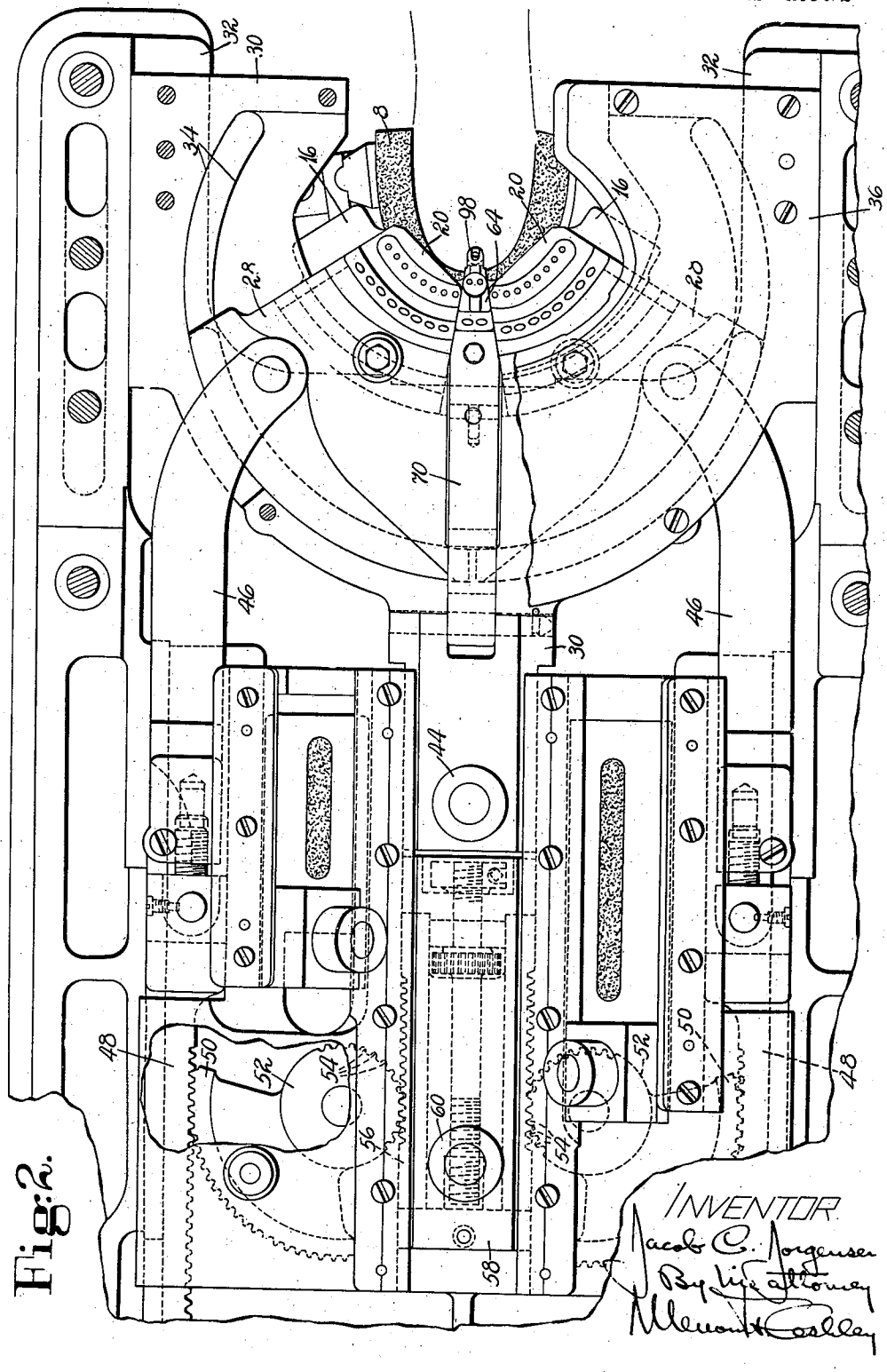


Fig. 2.

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SHOE MACHINE

Filed June 27, 1940 3 Sheets-Sheet 3

Fig. 3.

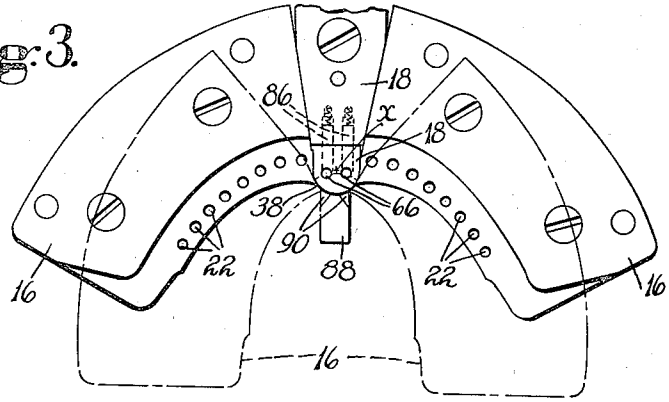


Fig. 5.

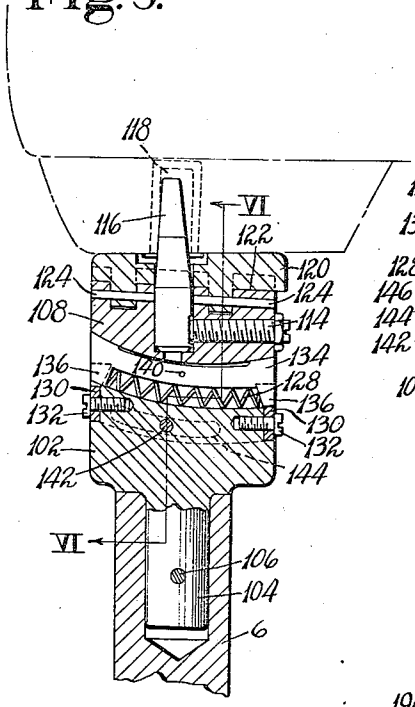


Fig. 6.

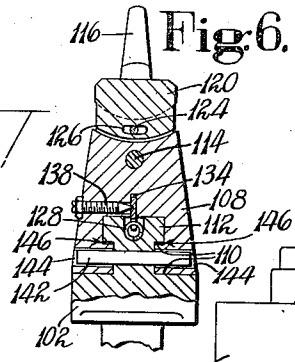
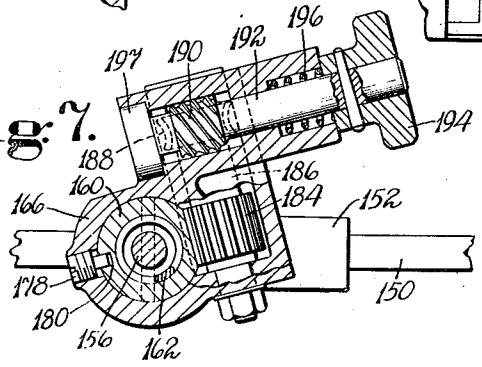


Fig. 4.

Fig. 7.



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Patented Jan. 6, 1942

2,268,597

UNITED STATES PATENT OFFICE

2,268,597

SHOE MACHINE

Jacob C. Jorgensen, Beverly, Mass., assignor to United Shoe Machinery Corporation, Borough of Flemington, N. J., a corporation of New Jersey

Application June 27, 1940, Serial No. 342,680

36 Claims. (Cl. 12—4)

This invention relates to shoe machines, and is herein illustrated as applied to a heel-end lasting machine of the type disclosed in United States Letters Patent No. 2,059,241, granted on November 3, 1936, upon an application of mine. It will be understood, however, that the invention is not limited to machines of that particular type and that in some of its novel aspects also it is not limited to machines for lasting the heel ends of shoes.

One object of the invention is to provide improved means for wiping the margin of an upper into lasted position around an end of a last. For this purpose, the construction herein shown comprises a central wiper movable lengthwise of the last and other wipers movable bodily with the central wiper and movable also widthwise of the last relatively to the central wiper, the central wiper being adjustable heightwise of the last relatively to the other wipers. Among other advantages, this construction insures that the margin of the upper at the extreme end of the last as well as in other locations will be lasted in the most satisfactory manner, the provision for adjustment of the central wiper permitting the pressure on the portion of the margin of the upper which it engages to be controlled as desired independently of the other wipers. This is especially advantageous in lasting the heel ends of shoes in view of the extra thickness usually encountered at the extreme end of the upper by reason of the presence of the back seam.

A further object of the invention is to provide a construction such as to insure that the end of the shoe on which the wipers operate will be positioned in the proper relation to the wipers for the best results in the lasting operation. With this in view, the construction shown includes a member which moves lengthwise of the shoe in fixed relation to the above-mentioned central wiper and serves virtually as an extension of that wiper, this member being arranged to engage a portion of the margin of the upper over the extreme end of the insole to determine the position of the end of the shoe heightwise prior to the wiping operation. As herein illustrated, this member serves as an auxiliary holddown for the heel end of the shoe, in combination with a main holddown such as is commonly provided in machines of the illustrated type for engaging the heel end of the insole far enough inwardly from the edge of the heel seat to provide room for the necessary wiping movements of the wipers. The main holddown and the auxiliary holddown thus cooperate to position the entire heel-end portion of the shoe in the best relation to the wipers. In accordance with a further feature, the auxiliary holddown is adjustable heightwise of the shoe relatively to the wipers.

Machines of the illustrated type are commonly provided with a heel band which serves as an abutment for the heel-end face of the shoe and with a jack which is movable in directions lengthwise and heightwise of a shoe thereon first to carry the shoe into engagement with the heel band and the holddown and thereafter to force it more firmly against the band and the holddown in the power operation of the machine. The jack has further been commonly provided heretofore with an adjustable toe rest which by engagement with the shoe under its toe end assists in determining the position of the shoe relatively to the wipers. As the jack is moved to force the shoe firmly against the heel band the tendency of the band is to tip the shoe in the direction to depress its toe end, and in view of the support provided by the toe rest there is danger under some conditions, especially if the toe rest is adjusted rather high, that this pressure of the band on the heel-end face of the shoe may break a hinge last in the shoe. The present invention, in one aspect, avoids this danger by dispensing with the positioning function of the toe rest, the shoe being positioned in proper relation to the wipers by the holddown means as above described, and by further providing a construction whereby the tendency of the heel band to tip the shoe is effectively counteracted or resisted independently of any toe rest. For the purpose in view the jack is provided with a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last, together with a member on which this heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by the holddown means, the heel-end support being arranged to lock itself frictionally on its guideway in response to the pressure of the heel band against the heel-end face of the shoe to prevent tipping of the shoe and last about the axis of the guideway. The guideway is located a substantial distance below the last and is curved about an axis which intersects the heel end of the last in a location a substantial distance above the heel-end support and nearer the toe end of the last than the last pin, the axis being approximately in the location of the

resultant of the two forces applied to the last by the jack in directions lengthwise and heightwise of the shoe respectively. There is, therefore, but little tendency, in any event, for the heel band to tip the shoe, and any such tendency is effectively resisted by the frictional locking of the heel-end support on its guideway. While no toe rest is used for positioning the shoe, as above explained, a toe rest is nevertheless included in the illustrated machine to assist the operator in controlling the shoe manually during the shoe-presenting movement of the jack, this toe rest being so controlled that it may yield readily in response to pressure of the shoe thereon so as not to interfere, in any event, with the positioning action of the holddown means on the heel end of the shoe.

In addition to means such as provided heretofore for limiting movement of the jack into shoe-receiving position, the invention further provides additional limiting means arranged for alternative use to determine shorter movements of the jack, as may be desirable under some operating conditions.

The above and other features of the invention, including various novel details of construction and combinations of parts, will now be more particularly described with reference to the accompanying drawings and thereafter pointed out in the claims.

In the drawings,

Fig. 1 is a view mainly in central vertical section from front to rear of a portion of a machine of the type illustrated in the previously mentioned Letters Patent as modified for purposes of the present invention;

Fig. 2 is a plan view on an enlarged scale of a portion of the structure shown in Fig. 1, with parts above it removed;

Fig. 3 is an inverted plan view of the wipers, showing them in their initial retracted positions but illustrating by broken lines their closed positions;

Fig. 4 is a view in front elevation of the wipers and parts associated therewith;

Fig. 5 is a view in vertical section from front to rear of a portion of the shoe-supporting jack, illustrating the relative positions of the parts before the shoe is pressed against the holddown and the heel band;

Fig. 6 is a section on the line VI—VI of Fig. 5; and

Fig. 7 is a section on the line VII—VII of Fig. 1.

A machine of the illustrated type is provided with a shoe support or jack **2** on which the operator mounts a shoe and its last, herein sometimes referred to inclusively as the shoe, when the jack occupies a forwardly inclined work-receiving position. The jack comprises a casing **4** supported at its lower end by means not herein shown for swinging movements in directions lengthwise of the shoe, and a post **6** which is mounted for upward and downward movements relatively to the casing. Prior to the starting of the power operation of the machine the jack as a whole is swung rearwardly to carry the shoe against a heel band **8** which serves as an abutment for the heel-end face of the shoe and in the power operation of the machine is closed inwardly against the opposite sides of the shoe, and the post **6** is raised to press the bottom of the heel end of the shoe against a holddown **10** which determines the position of the shoe heightwise relatively to the lasting wipers hereinafter described and also assists in determining its position with respect to tipping movements about axes extending lengthwise and laterally thereof. The swinging of the jack and the raising of the post **6** may be effected by means of a treadle, as disclosed in the previously mentioned Letters Patent, or may alternatively be effected, consistently with the objects of the present invention, by fluid-operated means such as disclosed in United States Letters Patent No. 2,085,755, granted on July 6, 1937, on an application of mine. In the power operation of the machine, after the shoe has thus been positioned against the heel band and the holddown, it is forced more firmly back against the heel band through a pinion **12** acting on a rack bar **14** which is pivotally connected to the jack casing **4**, and it is also forced more firmly against the holddown **10** by upward movement of the post **6** effected by means disclosed in Letters Patent No. 2,059,241, prior to the inward movements of the wipers to wipe the margin of the upper over the insole. Thereafter, prior to a second inward wiping operation of the wipers, the shoe is forced still more firmly back against the heel band and upwardly against the holddown, the holddown being raised slightly to position the bottom of the heel end of the shoe at a somewhat higher level for the second action of the wipers thereon.

For wiping the margin of the heel end of the upper inwardly over the insole the machine herein shown is provided with a pair of wipers **16** which correspond generally to the pair of wipers shown in Letters Patent No. 2,059,241, but are so formed and arranged as to provide a space between them for a third wiper **18** (Fig. 3) which acts on the margin of the upper at the extreme end of the heel seat. Each wiper **16** is secured to a tacker block **20** (Fig. 2) from which tacks are driven through openings **22** in the wiper to fasten the upper in lasted position by means of drivers **24** (Fig. 4) operated by a vertically movable driver block **26** to which the drivers are secured. Each tacker block **20** is mounted in fixed relation to a wiper holder **28** (Fig. 2), the two wiper holders being supported on a wiper carrier or slide **30** rectilinearly movable lengthwise of the shoe along guideways **32** on the frame of the machine. The two holders are guided for swinging movements to impart closing movements to the wipers laterally of the shoe by a curved groove **34** in the slide **30** into which extend similarly curved tongues formed on the holders. The holders **28** are confined on the slide **30** by a cover plate **36** fast on the slide. The wipers **16** are advanced bodily lengthwise of the shoe by forward movement of the slide **30**, and simultaneously rectilinear advancing movement is imparted to the central wiper **18** which is supported on the slide **30** by means hereinafter described. The groove **34** in the slide **30** is curved about an axis x (Fig. 3) located within the area of the central wiper **18**, and this wiper has a front edge **38** which is curved about this axis and is engaged for substantial distances by complementally curved portions of the wipers **16**. It will thus be seen that as the wipers **16** are swung about the axis x they receive bodily movements along the curved edge **38** of the wiper **18**, as is evident from a comparison of the different positions of the wipers **16** illustrated in Fig. 3. The slide **30** is advanced lengthwise of the shoe by a path cam **40** which is formed in a rotatable cam member **42** and engages a roll **44** carried by the slide, as disclosed in Letters Patent No.

2,059,241. In accordance also with that prior disclosure the swinging movements are imparted to the wiper holders 28 through links 46 pivotally connected to rack bars 48 which are engaged by gear sectors 50 formed on members 52 provided with teeth 54 engaged by a double rack bar 56. The rack bar 56 is adjustably secured to a slide 58 which is movable in guideways in the frame and carries a roll 60 engaged by a path cam 62 in the member 42. It will be evident that in imparting the advancing and closing movements to the wipers the slides 30 and 58 are moved respectively in opposite directions.

The central wiper 18 is secured to a central tacker block 64 from which two tacks are driven through openings 66 (Fig. 3) in the wiper to fasten the upper at the opposite sides of the back seam. The tacker block 64 is secured by a screw 68 (Fig. 1) to another block 70 which is mounted on a pin 72 in the slide 30 for swinging movements heightwise of the shoe. A leaf spring 74 fastened at one end to the block 70 and bearing on the slide 30 tends to swing the block upwardly, and cooperating with this spring to determine adjustably the position of the block is a screw 76 which is threaded in the cover plate 36 and bears at its lower end on the block 70 in a recess therein. This construction permits the central wiper 18 to be adjusted heightwise of the shoe relatively to the pair of wipers 16, as may be desirable by reason of the extra thickness of an upper at the back seam. The central tacker block 64 is provided with a pair of tack drivers 78 secured to a vertically movable driver block 80 which is provided with a T-shaped head 82 lying in a groove formed in the same driver-operating member 84 which operates the previously mentioned driver blocks 26 in the manner disclosed in Letters Patent No. 2,059,241. The block 64 also carries a pair of spring-pressed tack-controlling fingers 86 corresponding to similar fingers (not herein shown) which are carried by the tacker blocks 20, the character of these fingers and of parts associated therewith being more fully disclosed in the last-mentioned Letters Patent. It will be understood that when the two wipers 16 receive their operative swinging movements the rows of tack holes 22 therein are carried into positions where they substantially aline with the pair of holes 66 in the central wiper 18 prior to the driving of the tacks.

As hereinbefore suggested, the holddown 10 not only determines generally the position of the shoe heightwise relatively to the wipers, but also by its engagement with the insole assists in positioning the heel end of the shoe in proper relation to the wipers with respect to tipping movements about axes extending lengthwise and laterally of the shoe. This holddown is necessarily located far enough from the edge of the insole to provide sufficient room for the inward movements of the wipers and tackers over the heel seat, and to afford better insurance that the bottom of the heel end of the shoe will extend lengthwise in proper relation to the wipers the machine herein shown is further provided with an auxiliary holddown 88 which is carried by the central tacker block 64 and is arranged to engage the margin of the upper over the extreme end of the insole, as illustrated in Fig. 1, when the shoe is first moved upwardly by the jack post 6. The auxiliary holddown 88 abuts against the front end of the central wiper 18 and moves forwardly with this wiper in fixed relation thereto in the wiping operation, and accordingly it serves as an extension of the central wiper in wiping engagement with the upper. It is provided at its opposite sides with recesses 90 (Fig. 3) into which portions of the wipers 16 engaging the curved edge 38 of the wiper 18 are carried when the wipers 16 are closed laterally of the shoe. The auxiliary holddown 88 has an upwardly extending portion provided with vertical slots 92 (Fig. 4) through which extend screws 94 threaded in the block 64, the heads of the screws being arranged to clamp the holddown firmly in fixed relation to the block. Threaded in the upwardly extending portion of the holddown 88 is a vertical screw 96 provided with a knurled head 98 which extends into a horizontal slot formed in the block 64 to prevent the screw from moving upwardly or downwardly. Accordingly, when the screw 96 is turned, after the screws 94 have been loosened, it serves to adjust the holddown 88 in an upward or a downward direction relatively to the central wiper 18, as may be desirable to vary the amount of pressure which the wipers when they are operated will apply to the upper at the rear-end portion of the heel seat. It will be understood that after the auxiliary holddown has thus been adjusted the screws 94 are again tightened. To provide room for the forward movement of the auxiliary holddown with the wipers, the main holddown 10 is formed with a recess 100 to receive the auxiliary holddown.

To permit the shoe to adjust itself to the position determined by the holddown members 10 and 88 when it is pressed upwardly against these members, the jack 2 is so constructed that the shoe may tip readily about axes extending lengthwise and laterally thereof. Supported on the upper end of the jack post 6 is a holder 102 having a depending stem 104 (Fig. 5) which extends into a socket in the post and is prevented from turning by a pin 106 in the post. The holder 102 serves as a support for a block 108 and is provided with a guideway 110 for the block, this guideway being curved about an axis extending laterally of the shoe, as more particularly hereinafter described, and being formed in part on a T-shaped tongue 112 which lies in an appropriate groove in the block. Secured in fixed relation to the block 108 by a screw 114 is a last pin 116 which, as common in machines of the illustrated type, is a tapered pin arranged to extend more or less loosely into the usual spindle hole 118 in the heel end of the last. Mounted on the top of the block 108 is a plate 120 arranged for supporting engagement with the top face of the heel end of the last. A guideway 122 on the block, on which the plate 120 is supported, permits the plate to tip freely about an axis extending lengthwise of the shoe to adjust itself to the shoe, such movements of the plate being limited by pins 124 which are fast in the block 108 and extend through curved slots 126 formed in downwardly extending lugs on the plate, one of these slots being shown in Fig. 6.

The block 108 is yieldingly controlled, with respect to movements along its guideway 110, by a spring 128 which is housed in a recess in the tongue 112 of the holder 102 and is confined at its opposite ends by stops 130 secured by screws 132 to the holder. A thin plate 134 carried by the block 108 is provided at its opposite ends with downwardly extending lugs 136 which lie normally in slots in the stops 130 opposite the ends of the spring 128. The plate 134 is fastened to the block 108 by a screw 138 which is threaded in the block and has a pointed end

extending into a depression 140 (Fig. 5) in the plate. It will thus been seen that the spring 128 tends to centralize the block 108 relatively to its holder 102 and is compressible by one or the other of the lugs 136 in response to movement of the block along its guideway 110. A pin 142 fixed in the tongue 112 of the holder 102 extends into curved slots 144 in the opposite sides of the block 108 to limit movements of the block.

In machines of the illustrated type, as shown in Fig. 1, the heel band 8 applies its pressure mainly to the upper portions of the inverted shoe located comparatively near the heel seat. Accordingly, when the jack is operated to force the heel-end face of the shoe firmly back against the heel band in the power operation of the machine, the pressure of the band on the shoe has a tendency to tip the shoe in the direction to force its toe end downwardly, especially in view of the fact that the last pin 116 through which the jack applies its rearward force to the last extends but little above the supporting plate 120 and therefore acts only on the lower portions of the heel end of the last. The construction provided by the present invention is such that the tendency thus to tip the shoe is effectively resisted or counteracted by the means whereby the jack controls the heel end of the shoe. An important factor in this result ordinarily is the cramping or binding of the block 108 on its guideway 110, so that the block becomes frictionally locked to its holder 102 in response to the rearwardly directed force applied by the jack post 6. Contributing to this cramping action is the fact that the guideway 110 is curved on a comparatively long radius and the further fact that the guideway has a general inclination heightwise of the shoe in a forward and downward direction. The axis of curvature of the guideway is indicated at y in Fig. 1 and it will be noted that it is located well above the supporting plate 120 and somewhat forwardly of the last pin 116. With reference to a last of average size the axis, as illustrated, is thus located approximately midway between the bottom and top faces of the heel end of the last. It will be noted, moreover, that the guideway 110 is located a substantial distance below the last. Aside from the cramping of the block 108 on its guideway, the fact that the axis y is located at such a height, near the portion of the shoe to which the pressure of the heel band is directly applied, decreases the tendency for the shoe and the block 108 as a unit to be tipped by such pressure, as compared with conditions if the axis were located substantially lower. The fact, moreover, that the axis is located so far forwardly increases the effectiveness of the holddown means, by its downward pressure on the shoe, in counteracting the tendency of the heel band to tip the shoe. The construction is actually such that the resultant of the forces transmitted to the last by the jack in rearward and heightwise directions respectively through the last pin 116 and the plate 120 passes approximately through the axis y. The location selected for this axis, however, is such that in operating on shoes of various styles and sizes a shoe will not in any event be tipped in a counterclockwise direction, with reference to Fig. 1, by the downward pressure of the holddown means or of the wipers on the bottom of the shoe. That is, the tendency of the heel band to tip the shoe is a predominant tendency, which is effectively resisted by the frictional locking of the block 108 in the manner previously described. It has been found that the block 108 more effectively locks itself on its guideway 110 if there is provision for a small amount of play vertically between the block and its holder 102, and such provision for play is afforded by small spaces 146 (Fig. 6) between the opposite side portions of the T-shaped tongue 112 and the portions of the block 108 located immediately below them. There is provision correspondingly for play between the pin 142 and the slots 144.

It will be evident that effective control of the shoe in the manner above described requires that the top face of the heel end of the last shall bear firmly on portions of the plate 120 located forwardly of the last pin 116. To insure firm engagement of the last with the plate in this location, the construction shown is such that when the block 108 is in its initial position the portion of the top face of the plate 120 which is located forwardly of the last pin is slightly higher than the portion of this face at the rear of the pin, and when the shoe is first pressed up against the holddown 10 prior to the starting of the power operation of the machine the pressure of this holddown on the shoe causes the block 108 to turn a short distance about its axis in a clockwise direction, as the parts are viewed in Fig. 1, against the resistance of the spring 128. This not only insures firm pressure of the last on the plate forwardly of the last pin, but also further contributes to the proper control of the shoe by reason of the fact that the compressed spring 128 assists in resisting any tendency for the shoe to be tipped by the pressure of the heel band against it. It will be noted that the plate 120 extends a substantial distance forwardly of the last pin, and in fact, as illustrated, extends farther forwardly than rearwardly of the pin which contributes also to the effective control of the shoe by the block 108. It will be evident that any tendency for the shoe to tip relatively to the plate 120 is effectively resisted by the auxiliary holddown 88. In order that the force of the tapered last pin 116 shall be applied to the last for a substantial distance heightwise of the last, rather than only adjacent to the top face of the last, the pin is so mounted in the block 108 that it is inclined in a rearward direction with its rear face, under most conditions, substantially parallel to the rear wall of the hole 118 in the last when the top of the heel end of the last is parallel to the last-supporting face of the plate 120, as it is in the operation of the machine on the shoe.

With a shoe controlled at the heel end by the means above described, a toe rest such as used heretofore in machines of the illustrated type is no longer needed to assist in controlling the shoe in the lasting operation. It is desirable, however, and is the practice for the operator to steady the shoe with his hand at the toe end during the shoe-positioning movement of the jack, and a toe rest under the toe end of the shoe is useful in this operation to assist in steadying the shoe. In the construction herein shown, therefore, a toe rest 148 is provided for this purpose, this toe rest being so controlled that it has no function to determine the position of the shoe relatively to the wipers and does not interfere with the positioning action of the controlling means at the heel end of the shoe. The toe rest is supported by a bar 150 which is secured at its rear end to the jack post 6 and has adjustably mounted thereon a block 152 substantially as disclosed

in the previously mentioned Letters Patent No. 2,059,241. This block, in the construction shown, is provided with an upwardly extending boss 154, and extending upwardly from this boss is a pin 156 fastened at its lower end to the boss by a cross pin 158. The boss and the pin serve as guiding means for a thimble 160 within which is a spring 162 which tends to move it upwardly, its upward movement being limited by engagement with a head 164 on the pin 156. Mounted for movement in upward and downward directions on the thimble 160 is a casing 166 which supports a pad 168 arranged to engage the top of the toe end of the shoe, the pad being mounted on a holder 170 which may tip about a pin 172 in directions widthwise of the shoe. The holder is held normally in a central position by a spring 174 which presses a plate 176 against a flat face thereon. The lower end of the casing 166 is bifurcated so as to extend downwardly at the opposite sides of the block 152 and thus prevent the casing from turning, and the casing is provided with a stud 178 having a reduced end extending into a slot 180 (Fig. 7) in the thimble 160 to prevent the thimble from turning about the pin 156. On one side the thimble 160 is provided with rack teeth 182 engaged by a pinion 184 formed on a shaft 186 which is rotatable in the casing 166, this shaft having thereon a helical gear 188 in engagement with a worm 190 on a shaft 192 at right angles to the shaft 186. Fast on the shaft 192 is a hand wheel 194 for turning it. It will thus be seen that by turning the hand wheel 194 the toe rest may be adjusted in directions heightwise of the shoe. A spring 196 mounted in the casing 166 tends by engagement with the hand wheel 194 to move the shaft 192 in one direction and thus holds a head 197 on the shaft in frictional engagement with the casing 166 to assist in maintaining the toe rest in adjusted position. The spring 162 is a comparatively light spring and is, in fact, so readily yieldable that if the toe rest happens to be adjusted to a position higher than required by the toe end of a shoe when the shoe is positioned as determined by the controlling means at its heel end, the toe rest yields in a downward direction with the thimble 160 in response to pressure of the toe of the shoe thereon without opposing any substantial resistance to the proper positioning of the shoe. The toe rest may, moreover, sometimes be so adjusted that after the shoe has been properly positioned by the controlling means at its heel end the toe end of the shoe is not actually in contact with the toe rest.

For limiting the forward swinging movement of the jack 2 the machine is provided as heretofore with a pin 198 which is mounted in the rear end of the rack bar 14 and is arranged to engage a shoulder 200 on a casing 202 in which the rack bar is slidingly mounted, this casing being mounted to turn about a shaft 204 which carries the pinion 12 engaged by the rack bar. When the jack is in the position determined by this limiting means its upper end is located well forwardly of the heel band 8 and the holddown 10 and enables the operator to perform readily any preliminary operation which may be required at the heel end of the shoe prior to the shoe-presenting movement of the jack. Under some conditions, however, nothing else is required than to mount the shoe on the jack and then immediately to impart the shoe-presenting movement to the jack. The construction herein shown accordingly further provides means which may be used, if desired, to stop the forward movement of the jack before it arrives in the position determined by the pin 198 and the shoulder 200, thus facilitating movements of the jack and speeding up the production of the machine. This means comprises a yoke-shaped stop member 206 the two arms of which extend downwardly at opposite sides of the rack bar 14 and are pivotally mounted on a pin 208 in the casing 202. A spring 210 connected to the stop member and to the casing tends to swing the stop member in a clockwise direction, as the parts are viewed in Fig. 1, and thus, when permitted, holds the intermediate portion of the member against the top of the rack bar 14. In the top of the rack bar is a depression 212 in which is secured a plate 214, and when the stop member 206 is operative it enters this depression under control of the spring 210 in each forward swinging movement of the jack and engages the front edge of the plate 214 to stop the movement of the jack before it arrives in the position determined by the pin 198 and the shoulder 200. If it is not desired to use the stop member 206, it may be maintained in an inoperative position by means of a latch 216 mounted for swinging movement about a stud 218 on the casing 202 and having a depending arm arranged to engage a tail 220 on one of the arms of the stop member 206 to swing the stop member a short distance against the resistance of its spring 210, after which frictional engagement of the tail 220 with the depending arm of the latch serves to maintain the latch in operative position. The idle position of the latch is determined by engagement of its depending arm with a pin 222 on the casing 202. The latch carries a pin 224 by which the operator may move it to operative or inoperative position.

The manner of operation of the machine, in so far as it is of interest with reference to the present invention, will now be briefly summarized. The jack occupies an initial forwardly inclined position determined either by the stop pin 198 or the alternative stop member 206. The operator mounts a shoe on the jack with its toe end on the toe rest 148 and then swings the jack rearwardly and raises its post 6 to position the shoe against the heel band 8 and the main and auxiliary holddowns 10 and 88. As hereinbefore explained, this shoe-presenting operation may be performed alternatively by fluid-operated means if the machine is equipped with such means. During this operation the operator holds the toe end of the shoe down on the toe rest by hand, the toe rest assisting in steadying the shoe. As the shoe is forced upwardly against the holddowns it assumes a position determined by these holddowns, and the heel-end support, comprising the block 108 and its plate 120, adjusts itself to the position of the shoe and last thus determined, the block moving a short distance in a rearward or heelward direction along its guideway 110 against the resistance of the spring 128 by reason of the pressure of the top of the last on that portion of the plate 120 which is located forwardly of the last pin 116. As the shoe adjusts itself to the holddowns the toe rest yields in a downward direction against the resistance of the spring 162 in response to the pressure of the toe end of the shoe thereon if it is adjusted to a position higher than required by the shoe when in proper relation to the wipers.

The shoe having thus been positioned, the operator starts the power operation of the ma-

chine. In the course of the operation of the machine the shoe is forced more firmly back against the heel band and upwardly against the holddowns through the jack and its post **6** prior to the wiping operation of the wipers on the margin of the upper, and thereafter it is forced still more firmly against the band and the holddowns prior to a second wiping operation of the wipers.

The downward shoe-depressing movement of the holddown **10** prior to the first wiping operation of the wipers, described in Letters Patent No. 2,059,241, is preferably omitted, so that after the shoe has adjusted itself to the two holddowns **10** and **88** it need not readjust itself by reason of depression of the holddown **10**. In each wiping operation of the wipers the central wiper **18** moves in a straight path lengthwise of the shoe and the wipers **16** move bodily with the central wiper and also are swung laterally of the shoe to wipe the upper inwardly at the sides of the heel seat. The auxiliary holddown **88**, which initially engages the portion of the margin of the upper extending inwardly over the insole in the vicinity of the usual assembling tack, serves virtually as an extension of the central wiper in wiping engagement with the upper.

Between the two wiping operations of the wipers the holddown **10** is preferably raised slightly as heretofore to increase the pressure of the wipers on the upper in the second wiping operation, which results in a corresponding increase in the pressure of the shoe against the auxiliary holddown **88**. As the shoe is forced each time by the jack firmly against the heel band and the holddowns, the heel band tends to tip the shoe in the direction to depress its toe end, but this tendency is largely counteracted by the pressure of the holddowns on the shoe by reason of the location of the axis of the guideway **110** on which the block **108** is mounted. As hereinbefore explained, the plate **120** on this block is held firmly against the top of the heel end of the last forwardly of the last pin **116** by the compressed spring **128** which assists in counteracting any tendency for the shoe and the block **108** to be tipped as a unit in the direction to depress the toe end of the shoe. Any tipping of the shoe in this direction relatively to the block **108** is prevented by the holddowns, and especially by the auxiliary holddown **88** at the extreme end of the heel seat. Any predominant tendency which the heel band still may have to tip the shoe about the axis of the guideway **110** is effectively resisted by the frictional locking or cramping of the block **108** on the guideway by the rearwardly directed force of the jack. The shoe is thus effectively maintained in the proper position for the lasting operation independently of any control by the toe rest **148** which is readily yieldable in a downward direction as hereinbefore explained. It will be understood that after the second wiping operation of the wipers, the upper-fastening tacks are driven through the several wipers, including the central wiper **18**, and thereafter the parts of the machine are returned in the usual manner to their starting positions.

In the appended claims the term "insole" is to be understood as referring to any appropriate shoe part over which the margin of the upper is lasted.

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

1. In a lasting machine, wipers for wiping the margin of an upper inwardly over the bottom of a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, and means for varying relatively the position of the central wiper and the position of said other wipers heightwise of the last.

2. In a lasting machine, wipers for wiping the margin of an upper inwardly over the bottom of a last around an end of the last, said wipers comprising a central wiper rectilinearly movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, the central wiper being adjustable heightwise of the last relatively to said other wipers.

3. In a lasting machine, wipers for wiping the margin of an upper inwardly over the bottom of a last around an end of the last, a wiper carrier supporting said wipers and movable lengthwise of the last, said wipers comprising a central wiper movable lengthwise of the last with said wiper carrier and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, a member supporting the central wiper on the wiper carrier, and means for adjusting said member relatively to the wiper carrier to adjust the central wiper heightwise of the last relatively to said other wipers.

4. In a lasting machine, wipers for wiping the margin of an upper inwardly over the bottom of a last around an end of the last, a wiper carrier supporting said wipers and movable lengthwise of the last, said wipers comprising a central wiper movable lengthwise of the last with said wiper carrier and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, a member supporting the central wiper on the wiper carrier, said member being mounted for swinging movement relatively to the wiper carrier to adjust the central wiper heightwise of the last relatively to said other wipers, and means for thus swinging said member.

5. In a lasting machine, wipers for wiping the margin of an upper inwardly over the bottom of a last around an end of the last, a wiper carrier supporting said wipers and movable lengthwise of the last, said wipers comprising a central wiper movable lengthwise of the last with said wiper carrier and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, a member supporting the central wiper on the wiper carrier, a spring tending to move said member in one direction heightwise of the last, and means cooperating with said spring for adjusting said member and the central wiper heightwise of the last relatively to said other wipers.

6. In a lasting machine, a pair of wipers movable bodily lengthwise of a last and mounted also for swinging movements widthwise of the last to wipe the margin of a shoe upper inwardly over an insole at opposite sides of an end of the last, and wiping means movable lengthwise only of the last between said pair of wipers and comprising a member arranged to engage a portion of the margin of the upper over the insole to determine

the position of the end of the shoe and last heightwise relatively to said wipers prior to the wiping operation of the wipers.

7. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, a wiper carrier supporting said wipers and movable with them lengthwise of the last, and a member supported by said wiper carrier to move therewith and arranged to engage a portion of the margin of the upper over the insole to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers, said member being adjustable heightwise of the last relatively to the wipers.

8. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over the bottom of a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, the central wiper having an extension for engaging the shoe to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping movement of the wipers

9. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, and a member movable with said central wiper in fixed relation thereto and arranged to engaged a portion of the margin of the upper over the insole to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers.

10. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, a wiper carrier supporting said wipers and movable lengthwise of the last, said wipers comprising a central wiper movable lengthwise of the last with said wiper carrier and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, a block supporting the central wiper on the wiper carrier, and a member supported on said block and arranged to serve as an extension of the central wiper in wiping engagement with the margin of the upper, said member being arranged to engage a portion of the margin of the upper over the insole to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers.

11. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, and a member movable with said central wiper in fixed relation thereto and arranged to engage a portion of the margin of the upper over the insole to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers, said member being adjustable heightwise of the last relatively to the central wiper.

12. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over the bottom of a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and mounted to swing also widthwise of the last relatively to the central wiper, the central wiper being adjustable heightwise of the last relatively to said other wipers, and a member movable lengthwise of the last with said central wiper and arranged to engage a portion of the margin of the upper over the bottom of the last to determine the position of the end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers, said member being adjustable heightwise of the last with the central wiper and being also adjustable heightwise of the last relatively to the central wiper.

13. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, and a holddown for engaging the bottom of the end portion of the insole to determine the position of the shoe and last heightwise relatively to the wipers in the wiping operation, the central wiper having an extension arranged to engage a portion of the margin of the upper over the insole further to determine the position of the extreme end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers.

14. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, said wipers comprising a central wiper movable lengthwise of the last and other wipers movable bodily lengthwise of the last with said central wiper and movable also widthwise of the last relatively to the central wiper, a holddown for engaging the bottom of the end portion of the insole to determine the position of the shoe and last heightwise relatively to the wipers in the wiping operation, and a member movable with said central wiper in fixed relation thereto and arranged to engage a portion of the margin of the upper over the insole further to determine the position of the extreme end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers.

15. In a lasting machine, wipers for wiping the margin of a shoe upper inwardly over an insole on a last around an end of the last, a wiper carrier supporting said wipers and movable with them lengthwise of the last, a holddown for engaging the bottom of the end portion of the insole to determine the position of the shoe and last heightwise relatively to the wipers in the wiping operation, and means supported by said wiper carrier for engaging a portion of the margin of the upper over the insole further to determine the position of the extreme end of the shoe and last heightwise relatively to the wipers prior to the wiping operation of the wipers.

16. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face

and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said heel-end support being arranged to lock itself frictionally on said guideway in response to the pressure of said abutment on the heel-end face of the shoe to prevent any further tipping of the shoe and last about the axis of the guideway by said pressure.

17. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said guideway having a general inclination away from the last heightwise thereof in a toeward direction.

18. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said guideway being located at a substantial distance from the last heightwise thereof and being curved about an axis intersecting the heel end of the last at a substantial distance from said heel-end support.

19. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said guideway being located at a substantial distance from the last heightwise thereof and being curved about an axis intersecting the heel end of the last in a location at substantial distances both from the top and bottom faces of the last and nearer the toe end of the last than said last pin.

20. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member having a tongue-and-groove connection with said heel-end support to provide an arcuate guideway extending lengthwise of the last along which said heel-end support is movable to permit it to adjust itself to the position of the last determined by said holddown means, said heel-end support being arranged to lock itself frictionally on said guideway in response to the pressure of said abutment on the heel-end face of the shoe and said tongue-and-groove connection being formed to provide for limited play heightwise of the last between said member and support to facilitate the locking of the support on its guideway.

21. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last and having a general inclination away from the last in a toeward direction to permit it to adjust itself to the position of the last determined by said holddown means, and a spring controlling said heel-end support and against the resistance of which said support is movable along its guideway in a heelward direction in response to pressure of the top of each last thereon under control of said holddown means prior to the lasting operation of the wipers.

22. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of a shoe to position the shoe relatively to the wipers, and a jack movable in directions lengthwise and heightwise of a shoe thereon to force the shoe against said abutment and holddown means, said jack comprising a heel-end support arranged to en-

gage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said guideway having a curvature of such radius and being located in such relation to the last that said heel-end support is cramped on its guideway by the force of the jack in pressing the shoe against said abutment.

23. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack movable in directions lengthwise and heightwise of a shoe thereon to force the shoe against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a pin arranged to enter the spindle hole in the last and comprising also a member on which said heel-end support is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said guideway being curved about an axis intersecting the heel end of the last approximately in the location of the resultant of the forces applied to the last lengthwise and heightwise thereof by the jack.

24. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a heel-end support arranged to engage the top of the heel end of the last and having a tapered pin arranged to enter the spindle hole in the last, said pin being inclined lengthwise of the last relatively to said heel-end support to position the rear face of its tapered portion in substantially parallel relation to the rear wall of the spindle hole in the last when the top of the heel end of the last is parallel to the last-supporting face of said heel-end support.

25. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, and a jack for supporting the last and shoe and for holding the shoe pressed against said abutment and holddown means, said jack comprising a block arranged to support the heel end of the last and having fast thereon a pin arranged to enter the spindle hole in the last and comprising also a member on which said block is movable along an arcuate guideway extending lengthwise of the last to permit it to adjust itself to the position of the last determined by said holddown means, said block having thereon a member arranged to engage the top of the heel end of the last and movable relatively to the block and said pin about an axis extending lengthwise of the last to adjust itself to the position of the last.

26. In a shoe machine, the combination with means for operating on a shoe, of a support for the shoe and its last comprising a member for engaging the top of the heel end of the last and a tapered pin arranged to enter the spindle hole in the last, said pin being inclined lengthwise of the last relatively to said member to position the rear face of its tapered portion in substantially parallel relation to the rear wall of the spindle hole in the last when the top of the heel end of the last is parallel to the last-supporting face of said member.

27. In a shoe machine, the combination with means for operating on a shoe, of a support for the shoe and its last comprising a block provided with a pin arranged to enter the spindle hole in the last and provided also with a member for engaging the top of the heel end of the last, said block and member being movable as a unit about an axis extending widthwise of the last to adjust themselves to the last and said member being also movable relatively to the block and the pin about an axis extending lengthwise of the last further to adjust itself to the last.

28. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of an abutment and holddown means arranged respectively to engage the heel-end face and the bottom of the heel end of the shoe to position the shoe relatively to the wipers, said holddown means being so constructed as to determine the position of the shoe with respect to tipping movement about an axis extending laterally thereof prior to the operation of the wipers thereon, and a jack movable in directions lengthwise and heightwise of a shoe thereon to force the shoe against said abutment and holddown means, said jack comprising a heel-end support movable along an arcuate guideway extending lengthwise of the shoe to permit it to adjust itself to the position of the shoe determined by said holddown means and arranged to lock itself thereafter frictionally on said guideway in response to the pressure of said abutment on the heel-end face of the shoe to prevent any further tipping of the shoe about the axis of the guideway by said pressure, the jack including also a spring-controlled toe rest yieldingly movable in a direction heightwise of the shoe in response to pressure of the shoe thereon as required to permit the shoe to adjust itself to said holddown means.

29. In a heel-end lasting machine, the combination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of holddown means arranged to engage the bottom of the heel end of the shoe and to determine by such engagement the position of the shoe with respect to tipping movement about an axis extending laterally thereof prior to the operation of the wipers theron, a heel-end support for the shoe and last including a member movable about an axis extending laterally of the shoe to permit the shoe to adjust itself by such tipping movement to the position determined by said holddown means, and a spring-controlled toe rest yieldable in a direction heightwise of the shoe in response to pressure of the shoe thereon as required to permit the shoe thus to adjust itself to the holddown means.

30. In a heel-end lasting machine, the com-

bination with wipers for wiping the margin of the heel end of a shoe upper inwardly over an insole on a last, of holddown means arranged to engage the bottom of the heel end of the shoe and to determine by such engagement the position of the shoe with respect to tipping movement about an axis extending laterally thereof prior to the operation of the wipers thereon, a heel-end support for the shoe and last including a member movable about an axis extending laterally of the shoe to permit the shoe to adjust itself by such tipping movement to the position determined by said holddown means, a toe rest arranged to support the toe end of the shoe, a spring-controlled member yieldable with said toe rest in a direction heightwise of the shoe in response to pressure of the shoe on the toe rest as required to permit the shoe thus to adjust itself to said holddown means, and mechanism for adjusting the toe rest in directions heightwise of the shoe relatively to said spring-controlled member.

31. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, limiting means for stopping such reverse movement of the shoe support, and additional limiting means arranged for alternative use to stop the movement of the shoe support before it arrives in the position determined by said first-named limiting means.

32. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, limiting means for stopping such reverse movement of the shoe support, a device for automatically stopping the reverse movement of the shoe support before it arrives in the position determined by said limiting means, and means for rendering said device either operative or inoperative at the will of the operator.

33. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, limiting means for stopping such reverse movement of the shoe support, a member for stopping the reverse movement of the shoe support before it arrives in the position determined by said limiting means, a spring for controlling said member to render it operative each time the shoe support receives its reverse movement, and means arranged for use at the will of the operator to hold said member in an idle position to prevent it from thus acting on the shoe support.

34. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, a bar connected to the shoe support to move in opposite directions respectively as the shoe support receives its shoe-presenting and reverse movements, limiting means arranged to act through said bar to stop the reverse movement of the shoe support, and a device arranged to act alternatively on said bar to stop the reverse movement of the shoe support before it arrives in the position determined by said limiting means.

35. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, a bar connected to the shoe support to move in opposite directions respectively as the shoe support receives its shoe-presenting and reverse movements, limiting means arranged to act through said bar to stop the reverse movement of the shoe support, a member arranged to act alternatively on said bar to stop the reverse movement of the shoe support before it arrives in the position determined by said limiting means, a spring for controlling said member to render it thus operative each time the shoe support receives its reverse movement, and means movable at the will of the operator into position to prevent said member from thus acting on the shoe support.

36. In a shoe machine, the combination with means for operating on a shoe, of a shoe support movable in a direction lengthwise of a shoe thereon to carry the shoe into position to be operated upon and reversely movable thereafter to shoe-receiving position, a bar connected to the shoe support to move in opposite directions respectively as the shoe support receives its shoe-presenting and reverse movements, limiting means arranged to act through said bar to stop the reverse movement of the shoe support, a stop member arranged to engage a shoulder on said bar to stop the reverse movement of the shoe support before it arrives in the position determined by said limiting means, a spring for positioning the stop member in the path of said shoulder, and means for maintaining the stop member in an idle position at the will of the operator to prevent it from thus acting on said shoulder.

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