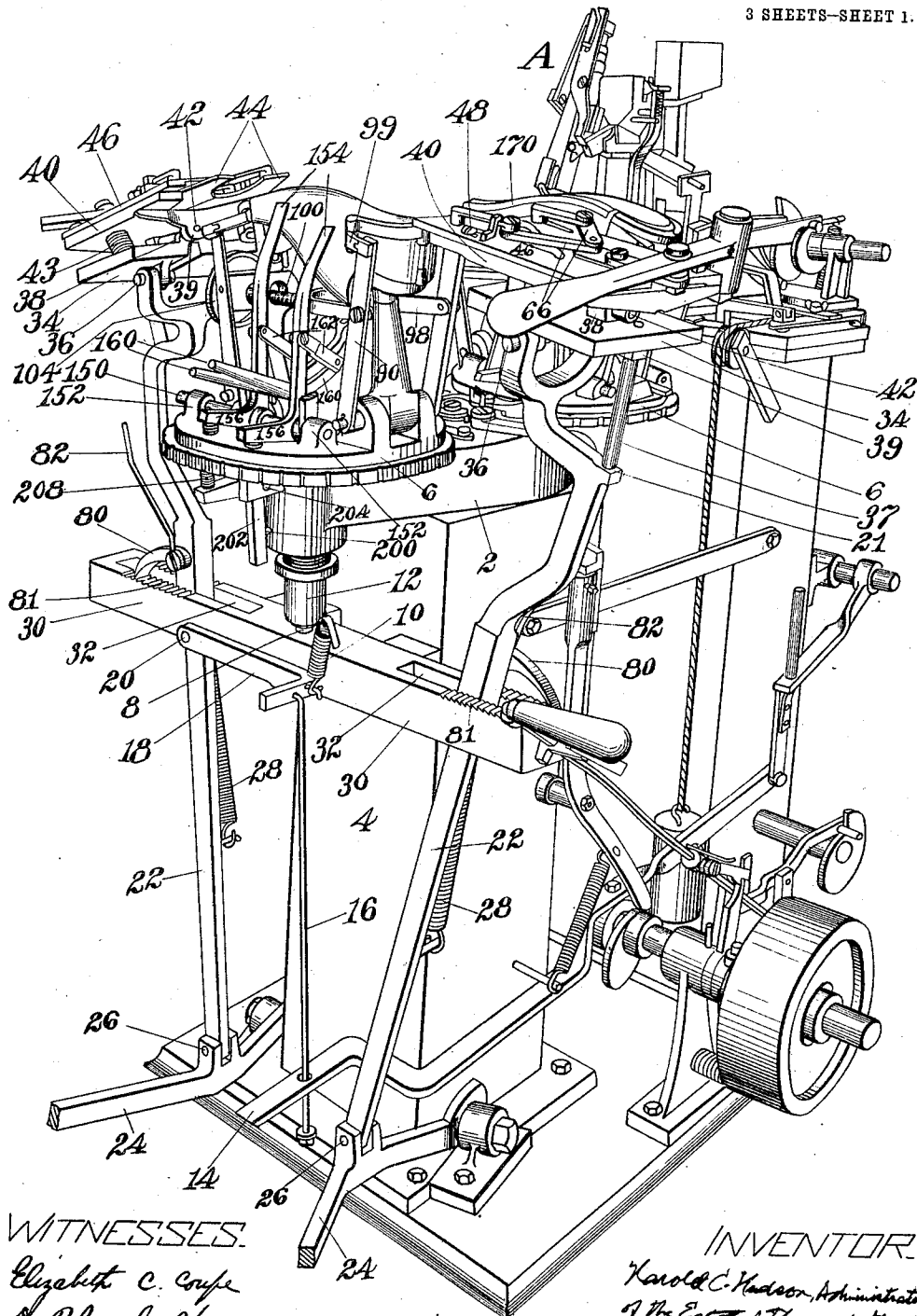


T. K. KEITH, DEC'D.
H. C. HUDSON, ADMINISTRATOR.
LASTING MACHINE.
APPLICATION FILED JULY 22, 1911.

1,030,821.

Patented June 25, 1912.

3 SHEETS—SHEET 1.



WITNESSES:

Elizabeth C. Coyle
O. Blanche Hargraves

Fig. 1.

INVENTOR:

Harold C. Hudson, Administrator
of the Estate of Thomas K. Keith,
Deceased.
By his Attorney,
Nelson W. Howard

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3 SHEETS—SHEET 2.

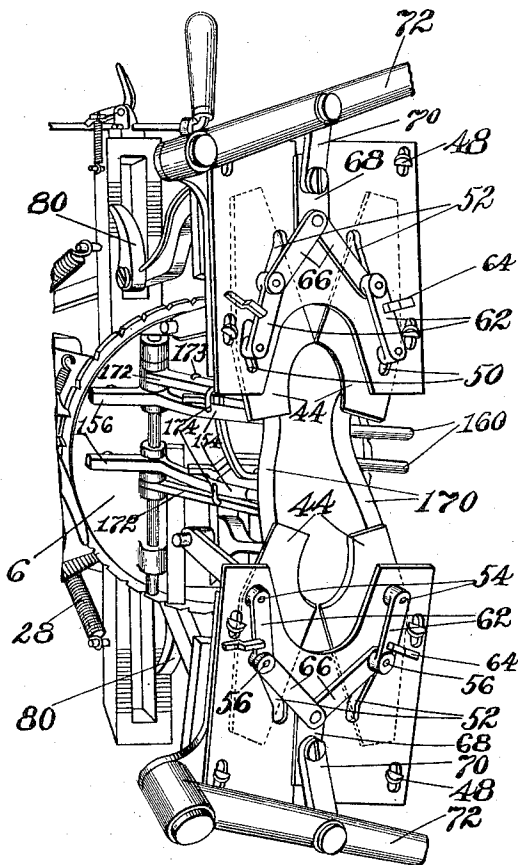


Fig. 3.

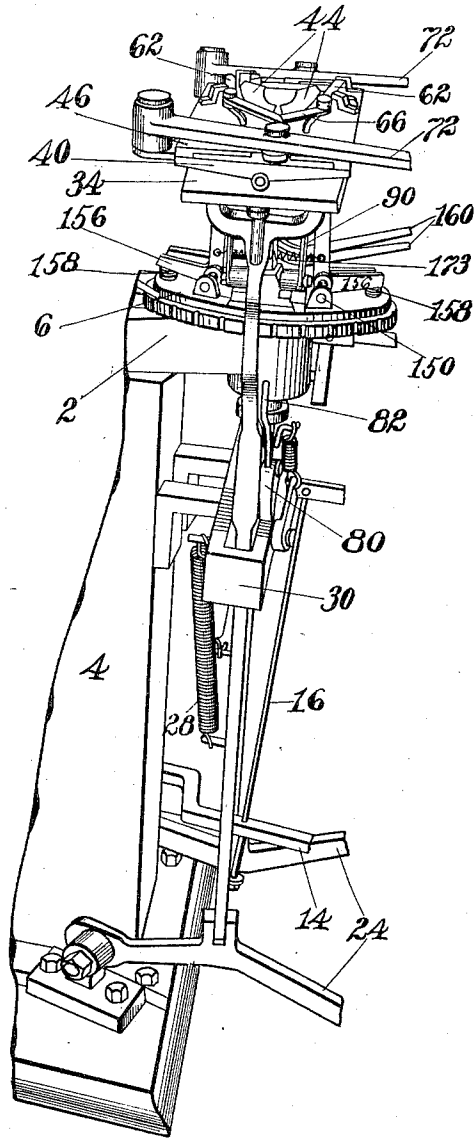


Fig. 2.

WITNESSES:

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3 SHEETS-SHEET 3.

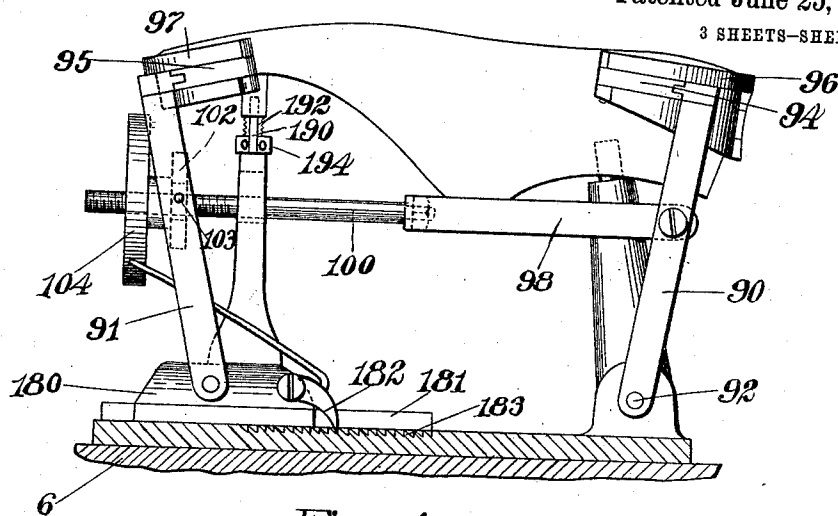


Fig. 4.

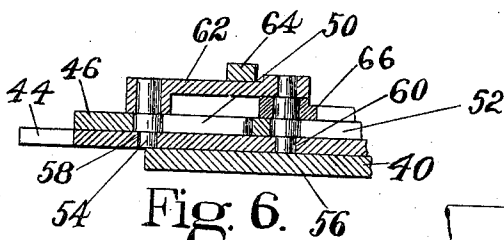


Fig. 6.

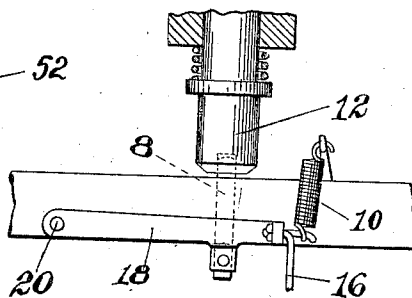


Fig. 5.

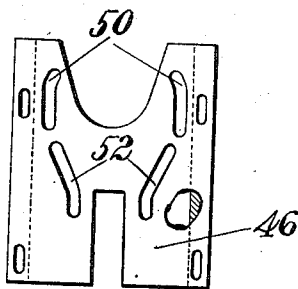


Fig. 8.

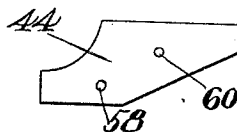


Fig. 7.

WITNESSES.

Elizabeth C. Cope
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INVENTOR.

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UNITED STATES PATENT OFFICE.

THOMAS K. KEITH, DECEASED, LATE OF BOSTON, MASSACHUSETTS, BY HAROLD C. HUDSON, ADMINISTRATOR, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LASTING-MACHINE.

1,030,821.

Specification of Letters Patent.

Patented June 25, 1912.

Original application filed April 24, 1897, Serial No. 633,693. Divided and this application filed July 22, 1911. Serial No. 639,979.

To all whom it may concern:

Be it known that THOMAS K. KEITH, late of Boston, in the county of Suffolk and State of Massachusetts, deceased, invented certain
5 Improvements in Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several
10 figures.

This invention relates to lasting machines of the class employing wipers for laying the upper over the last bottom at the heel and toe, with or without side lasting means, such
15 machines being known as "bed" lasting machines.

The invention is herein illustrated as associated with an automatic tacking machine of the type shown and described in the application for United States Letters Patent,
20 Serial No. 633,693, filed April 24, 1897, of which this application is a division.

In the prior application and also herein are shown, in connection with tacking mechanism, a lasting machine equipped with devices for working an upper into proper position upon a last and clamping the same in place while being tacked. Two jacks are
25 mounted in a carrier by movement of which the last carrying the prepared upper is brought into position to be operated upon first by the lasting mechanism and then into position to be operated upon by the tacking mechanism. Each jack is mounted for rotation
30 about an axis perpendicular to the sole of the shoe at its middle portion, and means is provided for automatically rotating the same about the said axis.

An important feature of the present invention is found in the construction or arrangement of the end lasting mechanisms whereby each may be closed in to effect a preliminary lasting by hand and then a final inward and downward movement of the
45 wipers may be effected by a treadle to break down the margin of the upper into final lasted position. As the lasting heads are moved inward toward the shoe, they are locked in position without attention from
50 the operator by pawls which pass over

ratchet teeth formed on the guiding means for the posts which carry the heads. The pawls being of substantial length serve also as links which, being normally inclined to the horizontal, give the lasting heads an
55 inward movement as the posts are depressed by means of pedal levers and the links are made to approach the horizontal. By this mechanism the wipers are given a movement oblique to the plane of the last bottom and
60 act to lay the upper over and wipe it down hard upon the last bottom. Furthermore, toward the limit of their movement the ends of the wipers are forced downward upon the last.

A further feature of the invention is found in a novel construction of the lasting heads whereby the lasting plates may be readily removed and interchanged or replaced.
65

The mechanism for operating the wiper plates comprises pairs of links having pins at their ends which pass through slots in the top plate of the lasting head and engage
70 holes in the wiper plates. The links are connected to levers by which they are moved to open and close and to advance and retract the wipers. Keepers for the links are provided to hold them in place relatively to the top plate while the top plate is held in place
75 by turn buttons which, when given a quarter turn, permit the plate to be raised sufficiently to enable the wipers to be removed and wipers having different shapes to be substituted. This arrangement also permits removal of the plate, if desired, for any purpose.
80

Another important feature of the invention is shown as embodied in mechanism for sustaining a plurality of shoe supports and
85 means for bringing them in succession into operative relation to a set of lasting mechanisms, means being provided for effecting a wide separation of the end lasting mechanisms to permit the positioning of the shoe
90 relatively thereto as the shoe approaches in a circular path. For effecting this wide separation of the lasting devices, the posts upon which they are mounted are pivoted for swinging movement at a point near the
100

floor, so that wide separation of the lasting heads may be effected without materially affecting the inclination of the wiper plates to the horizontal.

5 As a feature of the invention constituting part of the lasting mechanism, toe and heel bands are provided with a single actuating mechanism for closing them upon the shoe. Levers pivoted below the shoe have pivoted
10 thereto at their upper ends links which have attached to their other ends the toe and heel bands. The levers of the heel band are connected between their ends with a yoke. The levers of the toe band are connected between
15 their ends by a bar and a threaded rod passes loosely through the bar and is connected to the yoke of the heel band. A hand wheel on the threaded rod, by pressure upon the bar, serves to draw the heel band toward
20 the toe band and the links at the ends of the bands act to close in the said ends against the shoe.

A further feature of my invention is embodied in the side lasting mechanism which
25 comprises means for forcing the upper locally against the sides of the shoe as, for example, at the ball and shank, said means consisting of levers pivoted on the jack base and resiliently pressed against the shoe.
30 Means is provided for moving the levers in pairs away from the shoe and for holding them in inoperative position.

As auxiliary side lasting means which constitute a feature of the invention, there are
35 provided guide plates located upon each side of the shoe and contoured to correspond with the portions of the sides of a shoe held between them and lying between the ends of the heel and toe bands. The side engaging
40 plates are mounted for movement toward and from the sides of the shoe and are resiliently held in operative position. Means comprised by my invention is provided for moving equally and oppositely the clamping
45 members away from the shoe and for holding them in inoperative position.

These and other features of the invention will appear more clearly from the following description of the illustrated machine and
50 will then be pointed out in the claims.

Figure 1 is a perspective view of the complete lasting and tacking machine, with the lasting mechanism embodying the invention shown in detail in the foreground; Fig. 2 is
55 a perspective view approaching an end elevation of the lasting mechanism; Fig. 3 is a perspective approaching a plan view of the lasting mechanism; Fig. 4 is a side view partly in section of the shoe support, together with the heel and toe bands and their
60 operating mechanism; Fig. 5 is a detail view of the locking mechanism for the jack carrier; Fig. 6 is a detail sectional view taken through the wiper plates and their

supporting and operating mechanism; Fig. 65 7 is a plan view of one of the wiper plates; Fig. 8 is a plan view of the cover plate or top plate of the wiper mechanism, showing the slots which control the movements of the wipers. 70

For a full description of the tacking mechanism and the machine in general reference may be had to the above mentioned application and to a divisional application Serial No. 589,681, filed October 29, 1910, 75 in which the tacking mechanism is particularly claimed.

The tacking mechanism shown in general at A, Fig. 1, comprises means for effecting operations which, briefly considered, are as follows:—The tacker head A is advanced toward and over the edge of the insole, by which movement it is brought into proper position for driving the tacks. After the driving operation the tacker head is up-
80 lifted and retracted from its tack inserting position, so that it clears the overlaid upper during its return to position for the next tacking movement. The tacker has an automatic movement longitudinally of the shoe, 90 so that at each operation the tacker head will act upon a new portion of the work and thereby space the fastenings for the side portions of the upper. To carry on the tacking operation about the toe and heel
95 portion of the shoe and to present the opposite side of the shoe to the tacking mechanism, the last support is given a half revolution when the toe is reached and also when the heel is reached. It is desirable for tack-
100 ing along the second side of the shoe to have the tacker start from its initial position, and advantage is taken of the rotation and consequent backward travel of the toe portion of the shoe for bringing the tacker mechanism back again to initial position for tack-
105 ing the second side of the shoe. During the backward movement of the tacking mechanism, however, the rotative movement of the shoe is sufficiently in excess of the said
110 movement of the tacker mechanism so that the requisite relative movement is provided between the tacker and the shoe upper for placing the tacks in suitably spaced relation from each other. 115

For supporting a plurality of jacks so that they may be brought in succession into operative relation to a single set of end lasting mechanisms, a carrier 2 is provided which is mounted centrally for rotation
120 upon a column 4 mounted upon the base of the machine. Upon each end of the carrier is rotatably mounted a base plate 6 which carries the last pin and toe rest of the jack, together with certain portions of the lasting
125 mechanism to be described. The carrier is locked in position with either of the last supports in proper relation to the end last-

ing mechanisms by means of a bolt 8, spring-pressed upwardly by a spring 10 to engage a recess in the projecting end 12 of the pivot of the jack base 6. The locking bolt may be withdrawn by pressure upon the treadle lever 14 acting through the rod 16 and the lever 18 pivoted at 20 and connected between its ends with the bolt 8. The end of the pivot 12 is beveled so that the bolt 8 will snap into the recess in its end as either jack is moved into position between the lasting heads, as best shown in Fig. 5.

For supporting the end lasting mechanisms posts 22 are provided, each of which is pivoted to a lever 24 which is pivoted at one end to the base of the machine and at the other is provided with a pedal (not shown). Each lever and post together with the lasting mechanism carried thereby is normally held in elevated position by means of a spring 28. The pivots 26 of the posts 22 are so arranged that the posts may be swung toward and from each other, and means for guiding the posts for this movement is provided comprising a member 30 having slots 32 in which the posts 22 are adapted to swing. Above the guiding means 30 each post is bent outwardly and then inwardly so as to provide clearance for the base of the jack as it swings into position between the end lasting mechanisms. The upper end of each post 22 is forked and carries an end lasting mechanism or lasting head. As these lasting heads are, in all essential respects, substantially identical, it will be sufficient to describe in detail a single one of them.

To enable the lasting wipers to be tipped about an axis extending transversely of the shoe, the base plate 34 of each head is pivoted at 36 to the forks of the post 22. For adjusting the position of the lasting heads about the pivot 36, a stop 37 is provided, the upper end of which is threaded through the base plate 34 and is provided beneath the plate with a lock nut 39. The lower end of the stop engages the projection 21 from the post 22. The base plate 34 is provided with ears 38 to which a plate 40 is pivoted by corresponding ears 39 on its under side for movement about an axis 42 arranged at right angles to the axis of the pivot 36 and longitudinally of the shoe. Movement about the axis 42 permits the wipers to adjust themselves to the transverse inclination of the last bottom or to the "roll" of the last. Springs 43 are provided upon each side of the axis 42 which maintain the plate 38 normally parallel with the base plate 34. The wipers 44 are arranged in sliding engagement with the plate 40 and are held in position thereupon by a top plate 46 which is secured to the plate 40 by means of turn buttons 48. By giving the buttons a quar-

ter turn, the top plate 46 may be raised for the purpose of removing the wipers. The top plate 46 is provided with slots 50, 52, Fig. 8, through which pass pins 54, 56, that engage holes 58, 60 in the wiper, Figs. 6 and 7. The pins 54, 56 are connected by links 62 which are held in position upon the top plate by means of keepers 64. The rearward pins 56 of each pair of wipers, Fig. 3, are connected by links 66 to a slide 68 which is connected by a link 70 to a lever 72 pivoted at 74 at a point to the rear of the lasting head. It will be observed that by movement of the lever 72 the slide 68 is reciprocated and through the links 66, 62, movement is communicated to the pins 54, 56 which carry at their lower ends the wipers. The movement of the pins 54, 56 is directed, by the configuration of the slots 50, 52, Fig. 8, so that the wipers are given a closing as well as an inward movement as they progress inward over the shoe.

For holding the lasting heads in operative position, pawls 80 are provided which are of substantial length and are pivoted at one end to the posts 22 at points considerably above the guide member 30. The other ends of the pawls are adapted to engage ratchet teeth 81 formed in the upper face of the member 30. As the lasting heads are moved into operative position toward the shoe, the pawls 80 pass readily over the teeth 81 but prevent backward movement of the lasting heads.

It is desirable to exert a downward pressure upon the wipers to break down the lasted-over margin of the upper into intimate contact with the insole and to effect this, pressure is applied to the pedal levers 24 which draw downwardly upon the posts 22 and force the wipers down upon the heel-seat or toe portion, as the case may be, of the shoe being lasted. During the downward movement of the posts 22, however, the pawls 80 being pivoted to the posts above the ratchet teeth 81 act as links which force the lasting heads inwardly toward the shoe concurrently with their downward movement. After the lasting operation is completed the pawls may be disengaged from the ratchet teeth by the handles 82.

Upon each of the jack bases 6 are provided heel and toe clasps which are arranged to be simultaneously brought into clamping relation to the shoe as follows: Levers 90 (Fig. 4) are pivoted at 92 near the jack base and carry at their upper ends links 94 to which are pivoted the opposite ends of the heel band 96. Intermediate the ends of the levers 90 are pivotally connected the ends of a yoke 98, from the bight of which extends a threaded rod 100, an opening being provided in the toe post for permitting the passage of the rod. The toe

band 97 is supported in a similar manner by levers 91 and links 95. A plate 102 is pivotally connected at 103 to the levers 91 of the toe band and is provided with a hole through which the threaded rod 100 passes. A hand wheel 104 threaded upon the rod and engaging the outer side of the plate 102 serves to draw the levers 91 of the heel band toward the corresponding levers 90 of the toe band, thereby moving the heel band and toe band toward each other. As the bands come into engagement respectively with the heel and toe, the links 94 of the toe band and 95 of the heel band tend to turn inwardly toward the last and press the ends of the bands tightly against the sides of the heel and sides of the toe. As the heel and toe bands operate only upon the heel and toe portions of the shoe, it is desirable to provide means for holding in the upper locally along the sides of the shoe. To accomplish this, rods 150, Fig. 1, are passed through ears 152 upon the rotating base plate of the jack upon each side of the shoe. Upon the rods 150 are pivoted levers 154 which have outwardly projecting portions 156 between which and the base plate of the jack are secured compression springs 158 which act to force the members 154 inwardly against the sides of the shoe. The levers 154 are arranged in a plurality of pairs lengthwise of the shoe, each pair being connected by a lever 160 and link 162 so arranged that as the lever 160 is raised the levers 154 are moved outwardly away from the shoe. At the limit of the outward movement of the levers 154, the link 162, pivoted to one of the levers 154, is brought into line with the end portion of the lever 160 which is pivoted to the opposite lever 154, thus forming a straightened toggle so that the levers 154 are held separated until the lever 160 is again depressed. As shown, there are two pairs of the levers 154, one pair engaging the upper at the shank portion and another pair engaging the upper at the ball but obviously a greater number may be provided if desired.

In addition to the levers 154 there are provided between the ends of the toe band and the heel band guides which act to hold the upper in lasted position, besides furnishing means for guiding the tacker nose in its progress along the side of the shoe. These guides 170, Fig. 3, are shaped to correspond with the contour of the opposite sides of the shoe between the heel and toe portions and are supported upon levers 172 pivoted, like the levers 154, upon the rods 150. The levers 172 are urged toward each other by tension springs 173 extending across from one to the other beneath the shoe. To overcome the tension of the springs and move the levers 172 away from the shoe, thereby car-

rying the guides 170 out of clamping relation with the upper, offsets 174 are provided on the levers 172 which engage the levers 154 as they move outwardly away from the shoe. By this arrangement as the levers 154 are withdrawn from operative position by operation of the levers 160, the said clamping guides 170 are also withdrawn from contact with the shoe and held in inoperative position.

Referring to Fig. 4 it will be observed that the toe rest is provided with a base 180 guided in ways 181 formed on the rotating base plate 6 of the jack. This construction permits adjustment of the toe rest for different lengths of shoes, and the toe rest is maintained in any position of adjustment by means of a pawl 182 which engages ratchet teeth 183 upon the base plate. The levers 91 of the toe band are secured to the base 180 of the toe rest so that the heel band is also adjusted with the toe rest. The upper portion of the toe rest is guided for movement vertically relatively to the toe portion by pins 190. Between the pins is located a screw 192 secured in the upper portion of the toe rest and passing freely into the lower portion. A nut 194 on the screw rests on the upper end of the lower portion of the toe rest and means is thus provided for adjusting the toe rest vertically. The base plate 6 is preferably held from rotation during the lasting operation by a pin 200, Fig. 1, adapted to pass through a hole in the carrier 2 into engagement with a suitably located hole in the spindle 12 which forms the axis of the plate 6 to hold the jack in proper relation to the lasting heads. The pin 200 is carried on one arm of an elbow lever 202 pivoted at 204 to lugs on the carrier 2. The other arm of the lever is pressed downwardly by a spring 208. Obviously the pin 200 may be withdrawn from engagement with the hole in the spindle 12 to permit rotation of the plate and jack by upward pressure on the horizontal portion of the elbow lever 202.

In the operation of the machine an assembled last and upper is placed upon the jack which is adjusted to fit the kind of shoe being operated upon. The heel and toe bands are then closed in, in the manner described, by manipulation of the hand wheel 104, the levers 160 are manipulated to release the levers 154 which are forced in to press the upper against the ball and shank of the last. Simultaneously the guide plates 170 are brought into position to further press the upper in place along the edge of the last. At this point or later lasting pincers may be employed to supplement the operation of the lasting devices in stretching the upper and working it into lasted position. The lasting heads are next brought into position

over the heel band and toe band and the wipers manipulated by the levers 72 to wipe the upper in at the toe and heel portions and lay it down upon the last. At the same time, or subsequently, the pedal levers 24 are operated to forcibly depress the wipers and to give them a further inward movement due to the action of the pawls 80, as described, and the upper is thereby broken down upon the last and firmly pressed into lasted position. The levers 24 and the pawls 80 are next released and the lasting heads are raised into normal position by the springs 28 and moved outwardly away from each other to permit the jack carrying the lasted shoe to swing away from the end lasting mechanism. The pedal 14 is depressed to unlock the carrier 2 which is then given a rotation through 180° to carry the jack with the shoe just lasted in the manner described beneath the tacking mechanism, A, for further treatment. By the same movement the other jack, which was previously located beneath the tacker, is brought into position beneath the end lasting mechanisms and the finished shoe thereon is removed and another placed thereon to undergo the lasting operation.

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

1. In a lasting machine a base, a swinging post pivoted on the base, a heel lasting mechanism carried by said post into and out of working positions, a treadle capable of operation for depressing said post and mechanism in any working position they may occupy and means compelling inward movement of the lasting mechanism as it is depressed.

2. In a lasting machine a post, a heel lasting mechanism carried thereby, a second post, a toe lasting mechanism carried thereby, a floor base on which both posts are pivoted, a guide for both of said posts, and independent locking means for the two posts having provision for locking each post in various working positions dependent on the sizes of the shoes to be lasted.

3. A machine of the class described having, in combination, a column, a table rotatable thereon, a plurality of last supports mounted on the table and an end lasting mechanism outside of said table and movable with relation thereto into and out of operative relation to a last carried by the table.

4. A machine of the class described having, in combination, a last support, toe and heel lasting mechanisms each of which is pivoted at a substantial distance below the last for swinging movement from and toward the last to facilitate removal and introduction of the shoe, means to lock each

lasting mechanism in working position and means for separately depressing each swinging lasting mechanism upon the last.

5. A machine of the class described having, in combination, a last support, toe and heel lasting mechanisms, posts pivoted near the floor and each carrying one of said mechanisms, a guide bar in which the posts are movable and which has ratchet teeth adjacent to each end, said mechanisms being arranged for outward movement by gravity, and reversely faced pawls cooperating with said ratchets for locking the lasting mechanisms in their operative positions.

6. A machine of the class described, having, in combination, a shoe support, an end lasting mechanism which is movable toward and from operative relation to the shoe, an outwardly and downwardly inclined pawl to lock said mechanism in operative position, and means to depress the lasting mechanism to flatten down the upper, said pawl acting during such depression to advance the lasting mechanism further over the shoe.

7. A machine of the class described having, in combination, a shoe support, an end lasting mechanism, means to depress the end lasting mechanism to flatten down the upper upon the shoe bottom and means to advance the lasting mechanism automatically when it is depressed.

8. A machine of the class described having, in combination, a shoe support, an end lasting mechanism, a vertically stationary heel embracing band, a heel lasting mechanism including wipers, and means for depressing the wipers upon the shoe bottom to flatten down the overwiped upper while the last and the heel band remain stationary.

9. A machine of the class described having, in combination, a shoe support, a heel embracing band vertically stationary relatively to the shoe support, heel lasting mechanism including wipers which are automatically upheld yielding above the plane of the shoe bottom, means to advance the wipers to lay down upon the last bottom the marginal portion of the upper that is clamped between the band and the side of the last, and means to depress the wipers as they are advanced whereby they are caused to lay the upper over and then wipe it down hard by a movement oblique to the plane of the last bottom.

10. A machine of the class described having, in combination, a support for a last, an end lasting mechanism cooperating with the last, a support on which said mechanism is mounted by a transverse pivot, a screw rod connected to said mechanism and resting on the support for adjustment of the mechanism about said pivot, said mechanism including wipers, and a lever to close the wipers, said parts being so arranged that force

applied to the lever for effecting final inward closing movement of the wipers tends to tip the lasting mechanism about the transverse pivot in the direction to force the wiper ends downwardly upon the shoe bottom.

11. An end lasting mechanism having in combination, a wiper supporting plate, end embracing wipers mounted to slide thereon and having formations for engagement with actuating means, a cover plate having two pairs of differently shaped cam slots arranged one in front of the other, studs guided in said slots and engaging said formations in the wipers, and mechanism for actuating said studs together, said cover plate and actuating mechanism being readily removable together from the supporting plate to uncover the wipers for facilitating exchange of wipers.

12. An end lasting mechanism having in combination, a wiper supporting plate, end embracing wipers mounted to slide thereon, and a cover plate having two pairs of differently shaped cam slots arranged one in front of the other, and wiper actuating mechanism detachably connected with the supporting plate for ready removal to uncover the wipers and permit them to be replaced by wipers of different shape.

13. An end lasting mechanism having in combination, a wiper supporting plate, end embracing wipers mounted to slide thereon, a cover plate having two pairs of differently shaped cam slots arranged one in front of the other, and wiper actuating mechanism which is connected with the wipers through cam slots in the cover plate and is removable together with said cover plate from the supporting plate and wipers, and turn buttons for detachably connecting the cover plate to the supporting plate.

14. A lasting machine, having in combination, end lasting mechanism, means for treating the upper at localized points along the sides of the shoe to force the upper laterally against the side of the last, and means for forcing each side portion of the upper as a whole laterally against the side of the last adjacent to its edge.

15. A lasting machine, having in combination, end lasting mechanism, means for treating the upper at localized points along the sides of the shoe to press the upper laterally against the side of the last, and means extending continuously along the edge portions of the last between the heel and toe portions for forcing the side portions of the upper into contact with the last.

16. A lasting machine, having in combination, means comprising wipers for lasting the heel and similar means for lasting the toe, a heel band to embrace the heel portion of the shoe and a toe band arranged to em-

brace the toe portion of a shoe, means independent of the lasting means for supporting the bands and means for forcing the bands toward each other to clasp the shoe.

17. A lasting machine, having in combination, means for lasting the heel and means for lasting the toe, bands arranged to embrace, respectively, the heel and toe portions of the shoe, means independent of the lasting means for supporting the bands and means also independent of the lasting means for forcing the bands toward each other to clasp the shoe.

18. A lasting machine, having in combination, shoe supporting means, an end lasting mechanism, and means to effect relative movement of said mechanism and the shoe to wipe the upper over the end portion of the last and effect relative movement of the last and said mechanism to compress the upper upon the last bottom during the overwiping.

19. A lasting machine, having in combination, shoe supporting means, an end lasting mechanism including lasting plates, means to actuate said plates over the shoe bottom to wipe the upper toward lasted position, and means to actuate the end lasting mechanism downwardly to compress the overwiped stock, said machine having provision for automatically actuating the entire lasting mechanism including the wipers forwardly when it is actuated downwardly.

20. A lasting machine, having in combination, shoe supporting means, and lasting mechanism including lasting plates, means to actuate said plates to overwipe the upper, and additional means to impart to the wipers simultaneously a combined downward and further inward movement to iron the overwiped upper down upon the last bottom.

21. A machine of the class described having, in combination, toe and heel lasting mechanisms adapted to operate during the same period upon a shoe, a plurality of last supports, a carrier by which said supports are movable to bring them successively between the heel and toe lasting mechanisms, said mechanisms being mounted to spread for permitting the entrance and exit of the last supports and for subsequent movement into operative relation to the shoe on the support which has been introduced.

22. In a machine of the class described, the combination of a pivoted carrier adapted to turn when desired, means to lock said carrier at the end of each movement, a plurality of jacks having cooperating devices to act against the upper along the sides and heel and toe of the last carried by said jacks, lasting devices having wiper plates and mounted each on independent levers, means to actuate said levers for moving the

heel and toe lasting devices one away from
the other to permit each jack in succession
to be brought with its shoe to be lasted in
position under said heel and toe lasting de-
vices, and means for actuating said heel
5 and toe lasting devices to close upon the
upper upon the last and wipe the edges of
the upper over on the innersole on said last.
In testimony whereof I have signed my

name to this specification in the presence of 10
two subscribing witnesses.

HAROLD C. HUDSON,
Administrator of the estate of Thomas K.
Keith, deceased.

Witnesses:

O. BLANCHE HARGRAVES,
JAMES R. HODDER.

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