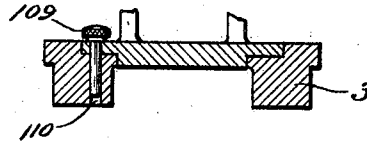
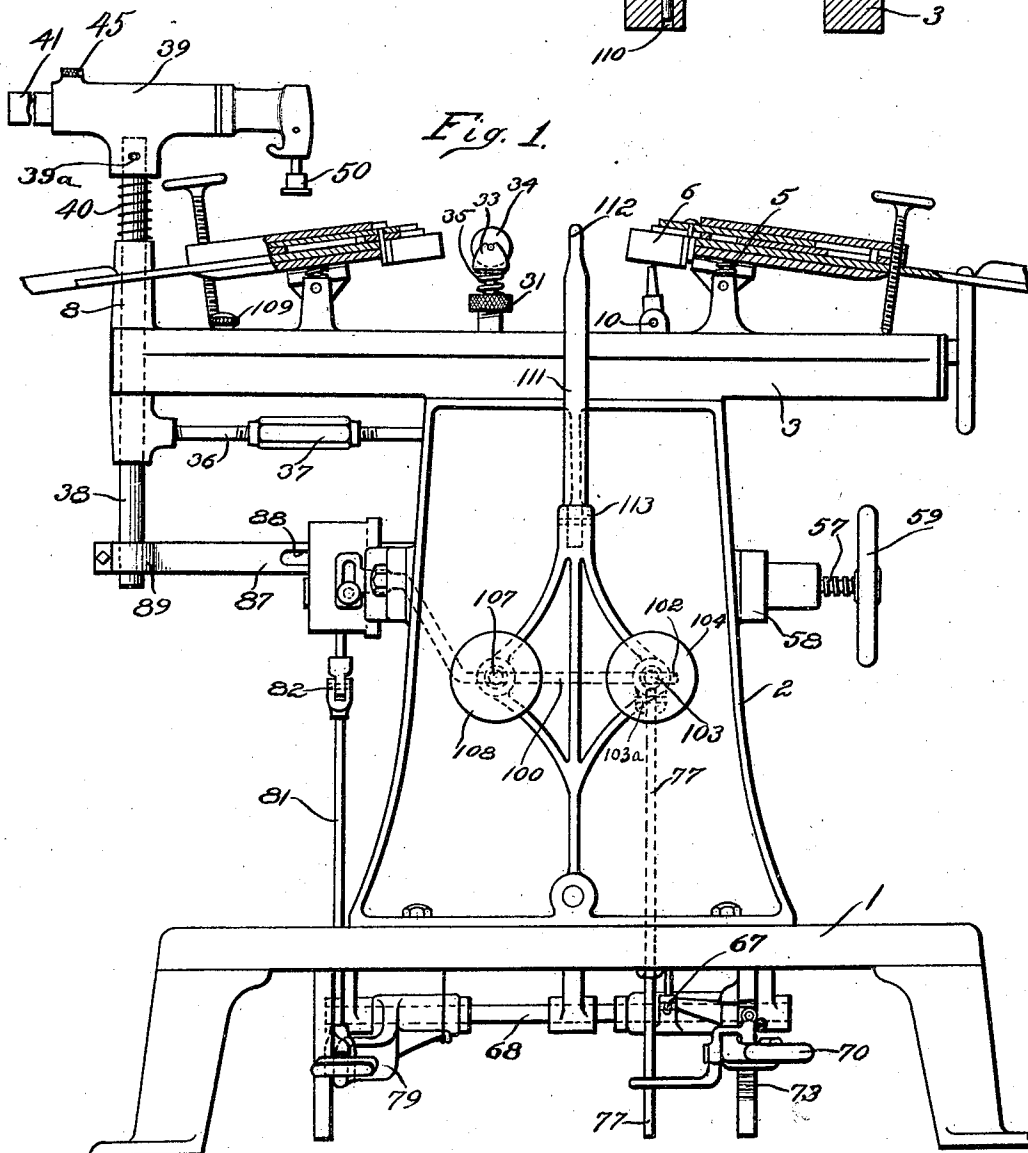


1,413,697.

Fig. 2.



Inventor

Charles F. Adams

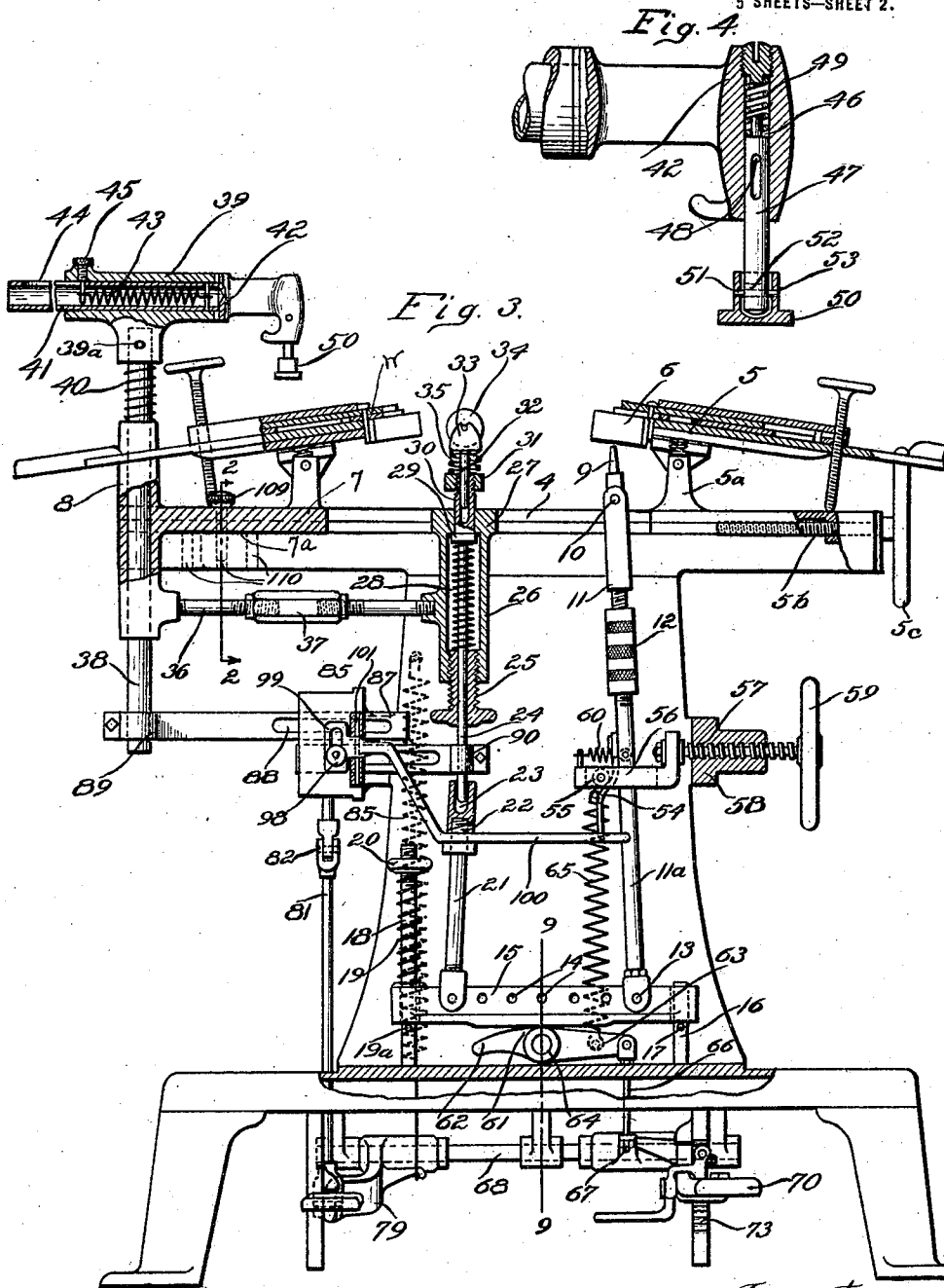
~~14~~ Clyde L. Rogers
his ~~Wife~~.

C. F. ADAMS.
LASTING MACHINE.
APPLICATION FILED MAY 19, 1917.

1,413,697.

Patented Apr. 25, 1922.

5 SHEETS—SHEET 2.



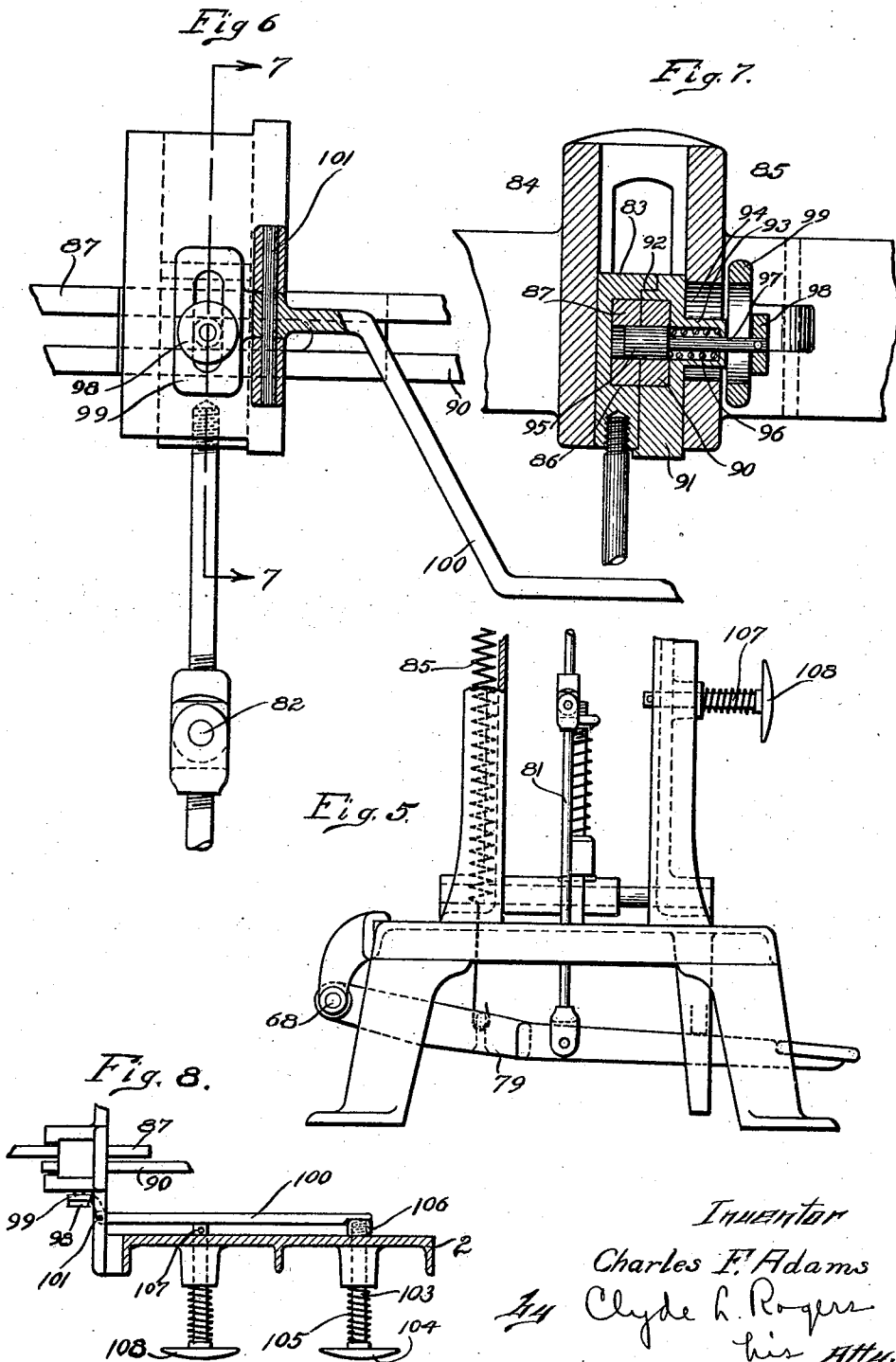
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5 SHEETS—SHEET 3.

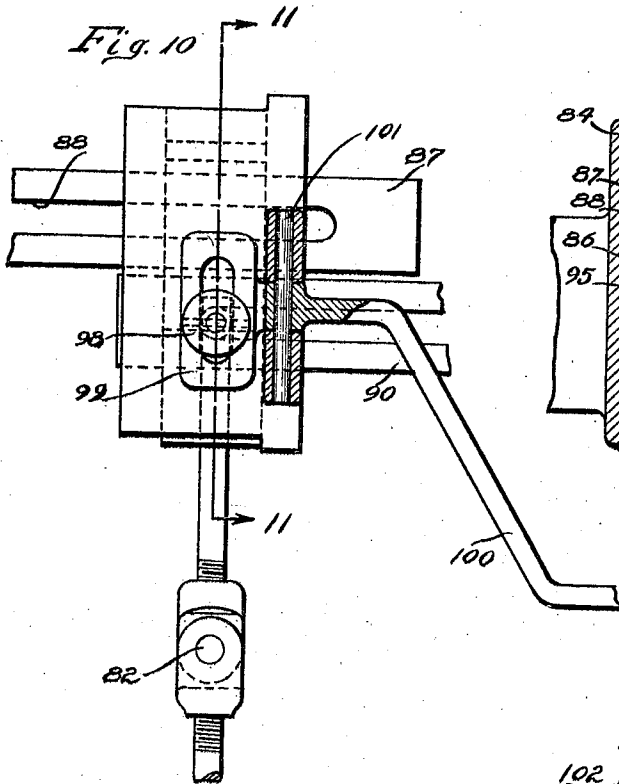
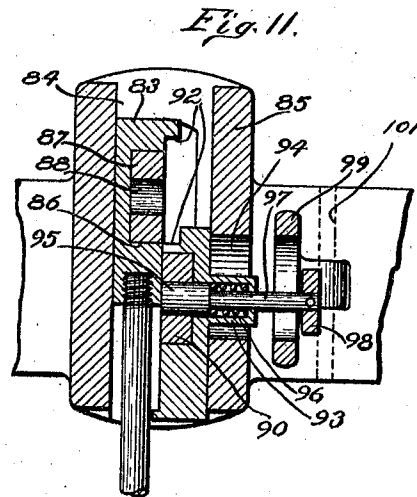
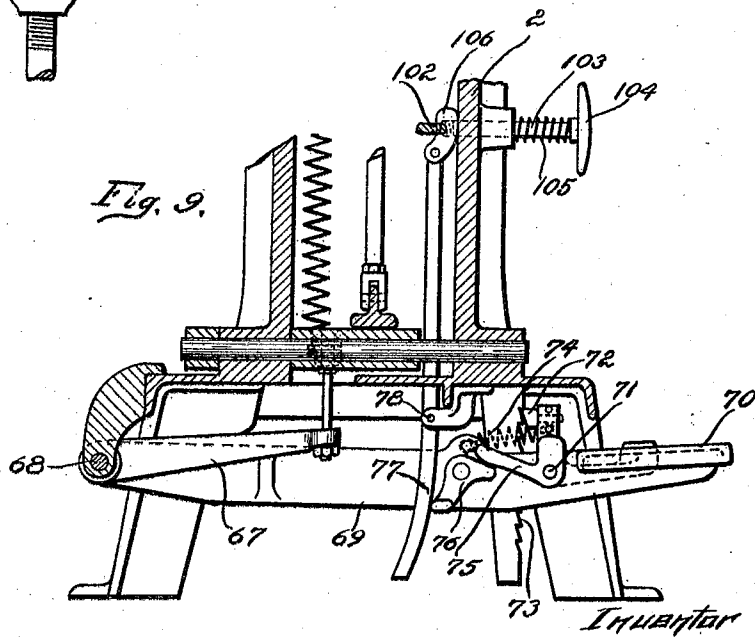


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5 SHEETS—SHEET 4.



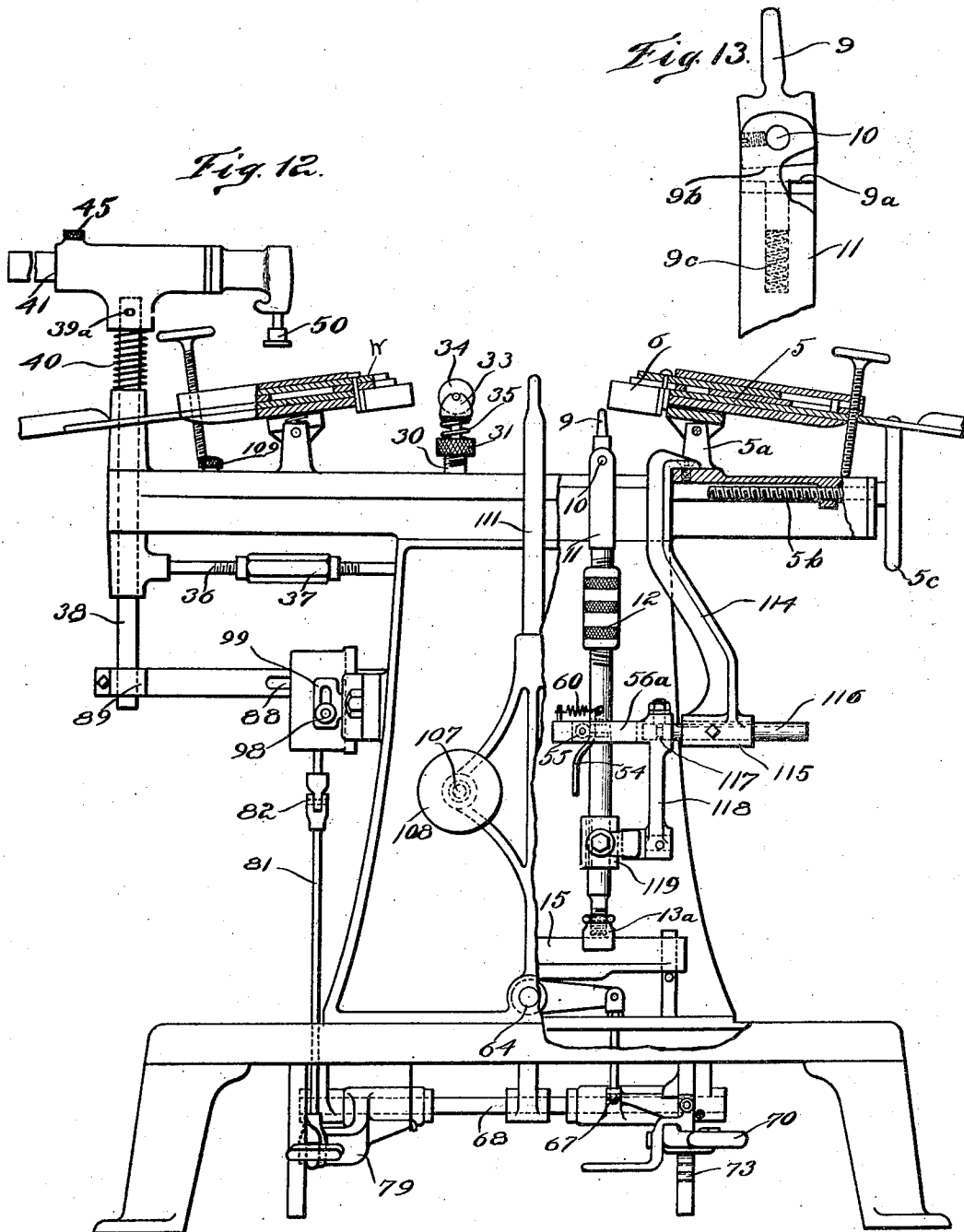
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APPLICATION FILED MAY 19, 1917.

1,413,697.

Patented Apr. 25, 1922.

5 SHEETS—SHEET 5.



Inventor:
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by Clyde L. Rogers
his Att'y.

UNITED STATES PATENT OFFICE.

CHARLES F. ADAMS, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO HAMEL SHOE MACHINERY COMPANY, OF LYNN, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

LASTING MACHINE.

1,413,697.

Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed May 19, 1917. Serial No. 169,667.

To all whom it may concern:

Be it known that I, CHARLES F. ADAMS, a citizen of the United States, and resident of Swampscott, county of Essex, Commonwealth of Massachusetts, have invented an Improvement in Lasting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts in each of the several views.

This invention relates to lasting machines of the general type shown in the patent to Chase No. 571,509 and the patent to Scarlett and Adams 1,313,121. One prime object of the present invention is to provide improved mechanism for manipulating the clamping and holding devices of the shoe with the last therein with reference to the wiper heads at the toe and heel of the shoe whereby the shoe may be pressed against the wiper plates to the required degree at a preliminary stage of the lasting at the heel, and then given a final lasting pressure, all by the manipulation of devices operable in an especially convenient manner and responsive to the will of the operator to an exceptional degree. A further object is to provide improved and simplified means for pressing and fitting the heel of the shoe into the heel pad therefor in the heel wiper-head, this being accomplished in the present embodiment with a combined upward and yielding backward movement particularly effective for the purpose in view. A still further object is to provide means whereby the clamping devices for both toe and heel portions of the shoe may be simultaneously tripped and released, or only one of such devices tripped at will. The foregoing and other objects and advantages of the invention will more fully appear from the following detailed description, and the distinctive features of novelty will be pointed out in the appended claims.

Referring to the drawings:

Fig. 1 is a side elevation showing a lasting machine constructed in accordance with my invention, a portion of the wiper heads being shown in section;

Fig. 2 is a partial transverse section on line 2—2 of Fig. 3;

Fig. 3 is a view partly in side elevation and partly in central lengthwise vertical section;

Fig. 4 is an enlarged fragmentary detail

in section of a presser head operative on the toe of the shoe;

Fig. 5 is a partial end view of the lower portion of the machine looking from the left in Fig. 1;

Fig. 6 is a fragmentary detail partly in elevation and partly in section of a connecting and trip device for operating the presser head at the toe;

Fig. 7 is a sectional detail view on line 7—7 of Fig. 6;

Fig. 8 is a detail plan view of the trip arm employed;

Fig. 9 is a partial transverse vertical section on line 9—9 of Fig. 3;

Fig. 10 is a view similar to Fig. 6 but showing the parts in different relative positions;

Fig. 11 is a sectional detail on line 11—11 of Fig. 10;

Fig. 12 is a view partly in elevation and partly in lengthwise vertical section showing a modification of certain features of the invention; and

Fig. 13 is a detail elevation enlarged, showing the construction of the heel jack post.

The frame work of the machine comprises a base 1, spaced apart upright side or cheek plates 2 secured to said base and a horizontally extending top 3 carried by said plates and equipped with spaced apart parallel rails 4 constituting a guide-way on which the wiper heads and certain other operating devices to be described are slidably mounted. The heel and toe wiper heads may be of usual or any suitable construction comprising heel and toe pads and wipers, a conventional form of heel wiper head being indicated at 5, this head being mounted on a carriage 5^a adjustable along the ways 4 by means of an operating screw 5^b swiveled in the frame and engaging a nut of said carriage, said screw having at its outer end an operating hand wheel 5^c. The wiper head 5 is equipped with a suitable concave heel pad 6. A toe wiper head is indicated at 7 also slidably fitted to the slide ways 4 and having rigid therewith with a web or like connection a guide sleeve and holder 8 for a toe presser head to be further described later. The heel jack pin or spindle 9 is pivotally mounted at 10 on the top of a stout rod or post 11 which is in sections and equipped with a suitable turnbuckle

connector 12, this typifying any suitable means for adjusting the jack pin 9 endwise without disturbing the operating connections thereto. The lower end 11^a of the post 5 or rod 11 is pivotally connected at 13 to one of a series of spaced apart holes 14 in a bar 15.

The bar 15 constitutes a "floating" type of lever having no single permanent fulcrum 10 but slidably guided vertically with a capability of tilting by an upright post 16 secured to the frame at that end of bar 15 adjacent the rod 11, this post having a stop pin 17 to limit the downward movement of 15 said lever end. The other end of said lever is likewise vertically guided with a capability of tilting by a higher upright post 18 having a coil spring 19 encircling the same and adjustably pressed down on to the end 20 of said lever by an adjusting nut 20 threaded on the top portion of said post. A stop pin 19^a is provided to limit downward movement of bar 15 on rod 18. The bar 15 has also pivoted thereto at one of the holes 14 25 a bar 21 having a head 22 in its upper end formed with a relatively deep cup recess 23 into which fits the lower end of a rod 24 which carries the toe rest. The rod 24 is slidably fitted through a sleeve 25 that is 30 threaded into a barrel 26, said barrel having at its upper end a head 27 slidably fitted to the ways 4. The barrel 26 houses a compression coil spring 28 abutting the adjustable sleeve 25 and pressing against a stop 35 collar 29 carried at the top of the rod 24 and limiting the upward movement of said rod bearing the toe rest. The collar 29 has formed therewith an upright sleeve 30 slidable through the head 27 and having threaded thereon an adjustable upper stop collar 40 31. The sleeve 30 has fitted therein a depending stem 32 bearing at its top a head 33 in which is journaled a roll 34 of rubber or the like constituting the immediate toe rest element. Interposed between the head 33 45 and the collar 31 is a coil spring 35 tending to hold said head pressed outward. Spring 35 may, under certain conditions, be dispensed with. The barrel 26 is connected 50 through a two-part rod 36 equipped with a turnbuckle connection 37, to the sleeve 8 which bears the toe presser head, and as stated, is rigid with the toe wiper head 7—this permitting an adjustable setting of the 55 toe rest 34 with reference to the toe wiper head 7 and to the toe presser head to be now described. Slidably fitted vertically through the sleeve 8 is a bar or rod 38 having at its top a bearing sleeve block 39 with an inter- 60 posed spring 40 reacting to normally press said rod and bearing sleeve block yieldingly upward. The bearing block 39 is mounted on the bar 38 with a capability of small angular movement with reference thereto, this 65 being permitted by a pin and slot connection

39^a between said block and bar, the slot in the block 39 being a little elongated laterally to permit a limited pivoting of said bearing block on said bar, this being for the purpose of permitting the presser foot 70 piece 50 later described to be adjusted laterally enough to center it with reference to the toe of the shoe. The sleeve block 39 has slidably fitted therein a tubular rod 41 bearing at its inner end a head 42 and having 75 enclosed therein a tension coil spring 43 arranged to normally draw the head 42 into contact with the end of the sleeve 39 as shown in the drawings, the tube 41 having a long slot 44 at one side thereof to afford 80 clearance for a pin 45 constituting an anchor for said spring. The head 42 is equipped with a vertical bore 46 in which is slidably fitted a pin 47 held for limited vertical movement therein by a pin and slot con- 85 nection 48, a spring 49 being housed in the upper portion of said bore and reacting to press the pin 47 downward. The pin 47 has mounted upon its lower extremity a toe presser piece 50 comprising a substantially 90 flat work engaging plate and a sleeve portion 53 providing a socket of somewhat larger diameter than pin 47 and in which the latter is seated. A cross pin 51 extends 95 loosely through a passage 52 in pin 47 and engages at its opposite ends in openings in the walls of sleeve 53. By this arrangement the presser piece is enabled to tilt about pin 51 and to move slightly in an up-and-down 100 direction as well as to swing with head 42 as above described.

The post or rod 11 has removably secured thereto at an intermediate point a stout leaf spring 54 which is bent obliquely outward and downwardly from its securing point on 105 said rod. The outer surface of this spring is engaged by a roll 55 carried by a bracket 56 held at the inner end of a screw 57 threaded through a nut member 58 fixed to the frame, said screw being equipped with a 110 suitable operating handle 59, at its outer end. For holding the spring 54 pressed against the roll 55 a tension coil spring 60 is provided anchored at one end to the bracket 56 and engaging the rod 11 at its 115 other end. The rod 11 passes through a slot in the bracket 56 which serves as a guide therefor and thus by adjusting the screw 57 the jack pin 9 may be set in proper position with reference to the heel pad 6 and so 120 as to permit the proper action of the spring 54 for yieldingly pressing the heel into said seat as later more fully described. The lever bar 15 is engaged from below at an intermediate point by a cam 61 having a 125 curved toe portion 62 extending toward the toe operating mechanism and forming part of a lever 63 pivoted to the bed at 64, said lever extending in the opposite direction where it is engaged by a tension spring 65 130

having a fixed anchorage as shown to the bracket 56 and normally retaining said cam in an inoperative position, the outer end of the lever 63 also having connection with an operating link 66 whose other end is connected with a lever arm 67 fulcrumed to the rear of the frame bed at 68 and having rigid therewith a treadle lever 69 extending to the front of the bed where it is equipped with a suitable treadle 70. The treadle lever 69 has pivoted thereto at 71 a latch dog 72 yieldingly drawn into engagement with a series of ratchet teeth 73 on a fixed downward projection of the frame by a coil spring 74. The latch dog 72 has a rigid therewith a projecting toe member 75 engageable by a trip lever 76 in bell crank form having a toe portion engageable by a depending bar 77 pivoted to the frame at 78, this bar having an upward extension above said pivot to be operated by a manual trip connection to be presently further explained.

For operating the toe presser head with its presser member 50 and also to a limited extent the toe rest 34, a second treadle lever 79 is provided pivoted to the rear of the frame bed, as shown on the same pivot shaft 68 which serves as a fulcrum for the lever 69. The lever 79 is normally drawn upward by a tension coil spring 80 engaged therewith and anchored to the frame. This lever is connected to operate a draw link 81, this draw link having an intermediate pivot 82 and having fixed at its upper end a head 83 fitted to vertical slide ways 84 of a housing 85 fixed to the main frame work. The head 83 is provided with a recess constituting a horizontal slide way 86 in which is guided for sliding horizontal movement a bar 87 formed with an elongated slot 88 in the portion thereof that is guided through the head 83, an outward extension of said bar being fixed to the lower end of the upright toe presser carrying rod 38 as indicated at 89.

The depending stem 24 of the toe rest has fixed thereto a bar 90, this bar having a slotted portion extending into the housing 85 in parallelism with the bar 87. The bar 90 is slidingly guided in horizontal ways of a head 91 also guided to slide vertically in the housing 85 and lying face to face with the head 83. The heads 83 and 91 are provided with co-operative shoulders 92 so formed that the head 83 may move upward leaving behind it the head 91 while the head 91 is prevented by the engagement of said shoulders from moving up past the head 83, and thus a downward movement of the head 83 under the action of the treadle constrains the head 91 to move downward with it. The head 91 is quipped with a hub 93 extending into an elongated slot 94 of the housing 85 and thus the range of movement of the head 91 is limited in either direction by the

vertical extent of said slot. The bars 87, 90 which as stated are arranged in parallelism are adapted to be brought face to face when the heads 83, 91 are directly opposite and in this position a pin 95 housed in a hollow of the hub 93 and in the bar 90 is adapted to be projected by a coil spring 96 housed in said hub into the slot of the bar 87 thus locking the two heads 83, 91 together for vertical movement, and hence causing the toe rest 34 to partake of the movement of the toe presser head at this time. The pin 95 is provided with a stem 97 having a head 98, and over this stem is fitted the widened and vertically slotted end 99 of a trip lever 100. The trip lever 100 is pivoted to the housing 85 at 101 and its free extremity is extended along the machine to the right (Fig. 3) to a point adjacent the upward extension of the bar 77 as indicated at 102. At this point a pusher pin 103 is slidably fitted in the frame and equipped with an enlarged operating head 104 in position and adapted to be engaged by the knee of the operator, a coil spring 105 being disposed around said pin 103 to normally hold the pin in an outward projected position. The inner end of the pin 103 within the frame plate 2 has fixed thereon a block 106 recessed to receive and hold in co-operative relation the end of the lever 100 and also pivoted as indicated at 103^a to the upper end of the pivoted bar 77. Thus assuming the heel treadle lever 69 to be locked in lowered position by the detent 72 and also the presser foot 50 to be held locked downward by the engagement of the pin 95 as seen in Fig. 7, the toe treadle 79 being then depressed, upon pressing in the push pin 103, both these devices will be tripped, i. e., the jack pin 9 will be permitted to lower and at the same time the presser foot 50 will be released for elevation by the spring 40. Means is also provided whereby the presser foot 50 may be tripped to permit it to rise without releasing the lever 69 and the jack pin. For this purpose I provide a second push pin 107 having a head 108 similar to the head 104 and also in convenient position to be reached by the knee of the operator. This pin which is also normally spring pressed outward engages the lever 100 at an intermediate point and is adapted on being pushed in to swing said lever so as to withdraw the pin 95 without affecting the block 106 and thus not tripping the detent 72. The web or plate portion 7^a connecting the base of the toe wiper head 7 with the bearing sleeve 8 is equipped with a removable pin 109. This pin is adapted to engage selectively any one of a series of spaced apart holes 110 in one side of the slide way 4, thus locking the toe wiper head and the toe presser piece or presser foot 50 in any one of a series of selective positions according to the class of the shoes to be

lasted. It will be understood that the reason for the provision of the bars 87, 90 with elongated slots is so as to permit the action of the locking pin or bolt 95 in any position of adjustment of the toe wiper head and also in any relative position of adjustment of the toe rest 34 as effected by the turnbuckle 37. I preferably mount an upright post 111 having a reduced upper end 112 adapted to receive the last, in a lug 113 at a side of the machine frame, so that the operator can place the shoe on this pin for any desired manipulation during or incidental to the operation of lasting and have it out of the way of the operating devices.

In accordance with my invention jack pin 9 is preferably held on its pivot 10 with a bias towards forward tilting such as to cause the toe portion of the shoe to tilt somewhat downward to bring it against the toe rest when positioned on said jack pin. For this purpose I provide a spring pressed head 9^a (Fig. 13) having its top inclined as seen at 9^b and pressed against the bottom surface of the head of the jack pin 9 by the coil spring 9^c housed in the top of the post 11. Thus the jack pin is normally held tilted forward to a small extent as determined by the angle of the incline 9^b, but with a capability of being readily swung backward as required in the manipulation of the shoe in the lasting operation.

In Fig. 12 I show a modification of the invention wherein instead of having a separate controlling screw 57 and hand wheel 59 for adjusting the upright post 11 of the jack pin, the bracket 56^a corresponding to the bracket 56 is mounted rigid with, and is controlled from the heel wiper carriage 5^a. For this purpose the wiper carriage 5^a has depending therefrom and rigid therewith an arm 114, the lower end of which is formed with a sleeve 115 in which is adjustably clamped a bar 116 which has secured at its inner end the bracket 56^a as by means of a clamp device 117. The bracket 56^a in this form may be equipped with a roller abutment 55 to cooperate with the spring 54 just as in the first described form. The bracket 56^a has rigid therewith and depending therefrom an arm 118 equipped at its lower end with an inward extension having a bearing collar 119 pivotally secured thereto and adapted to guide and position the lower portion of the post 11. In this form the lower end of the bar 11 instead of having a fixed pivotal connection with the bar 15, has instead a bearing block 13^a to slidably engage the top of the bar 15, said block being held in operative relation to said bar by the sleeve 119 and being slightly moved along the bar as the heel wiper carriage 5^a is adjusted, so that the relation of the jack pin 9 to the heel pad 6 is preserved. This construction is of advantage in that it permits the entire heel controlling and heel wiper mechanism to be moved as a unit by manipulation of the hand wheel 5^c, as is required for moving the shoe forward to a small extent after the preliminary lasting steps, to bring the toe of the shoe fully into the toe wiper seat for the completion of the toe lasting. To permit such small lateral adjustment of the jack pin as may be requisite for properly centering the heel transversely, in this form of the invention the connection at 117 may be formed to permit a slight swiveling at this point to the extent necessary for this purpose.

I consider the construction of the toe rest 34 as a roller, in connection with the described provision for adjusting the heel wiper head and the jack pin 9 forward simultaneously, especially as in Fig. 12, to be a valuable and important feature of the invention since thereby after the preliminary stage of the lasting operation and after the toe is semilocked on the rest 34, the shoe with the heel wiper mechanism operatively engaged therewith may be moved bodily forward to the small extent required by manipulation of the hand wheel 5^c so as to bring the toe up closely into the toe wiper pad and into proper operative relation with the toe wipers for the final operative engagements therewith.

It will be understood that the provision of the lost motion shown between the end of the stem 24 and the bottom of the cup socket 23 is for the purpose of permitting the described small downward movement of the toe rest 34 in the preliminary stage of the lasting operation. The described adjustment of the stop collar or nut 31 on the stem 30 permits a yielding setting of the toe rest 34 so that the spring 35 may be put in compression to a desired variable degree at the initial stage of the lasting operation and prior to compression of the spring 28.

The operation of the machine is as follows, it being understood that the wiper heads and other operative instrumentalities have been set in proper relative position for working upon the particular size and shape of shoe to be lasted:

The shoe when placed upon the last supporting spindle 9 will, if the parts are properly adjusted, have its heel seat surface slightly below the heel wipers and spaced a short distance from the heel pad carried by the heel wiper head. The operator now places his foot upon treadle 70 depressing the same slightly, thereby lifting the jack post, which at this time is free to rise,—the lever 15, the left hand extremity of which is resiliently held downwardly against the pin 19^a by means of the spring 19, turning about the pin 19^a as a fulcrum during this movement. At the same time the post is caused to swing backwardly under action of

the cam 54, it being understood that this cam, being removable, may be interchanged for cams of different shapes. Such movement of the jack post brings the rear portion of the shoe firmly against the heel pad and substantially in the plane of the heel wipers, the wheel 5^c being manipulated to move the shoe forwardly until its tip lies closely adjacent but out of contact with the toe pad carried by the toe wiper head.

If after bringing the presser foot down to operative position it is found desirable to change its position it may be released for readjustment by actuating trip pin 107.

By reason of the spring abutment of the last supporting spindle 9, the shoe is caused at this time to bear somewhat heavily upon the toe rest 34, whereby the shoe is subjected to a preliminary clamping action. Furthermore, by the employment of the wedge member 9^a the last supporting spindle is prevented from swinging rearwardly beyond the vertical to as great an extent as it is possible for it to swing forwardly, this arrangement being particularly desirable in connection with lasts in which the rear portion is hinged to the forward portion and which might buckle under the lasting pressure if the last pin were permitted to swing far rearwardly.

The pulling-over tacks at the tip of the toe are now removed and the upper leather at the tip is stretched firmly by means of hand lasting pincers, and the wipers are drawn close up to the toe, the upper stock being spread outwardly over the wipers.

The operator now slides the presser foot 50 outwardly over the toe portion of the shoe and depresses the treadle 79, thereby bringing the presser foot down onto the surface of the shoe adjacent the toe and within the lip of the innersole.

As the presser foot 50 is brought downwardly into contact with the shoe, it is free to rock slightly about the pivot 51, and also to move vertically upwards due to the enlarged opening 52 in which the pin 51 is mounted, thus accommodating itself to irregularities in plane of the shoe sole, while the operator may, by oscillating the sleeve 39 about its mounting upon the upper end of the rod 38, swing the presser foot into proper lateral relation to the toe regardless of the style of last employed.

In depressing the treadle 79, the springs 40, 49 and 35 are compressed, these springs all being relatively lighter than the spring 28 which supports the toe rest. As the toe presser foot moves downwardly depressing the spring 35 of the toe rest as above noted, the shoe moves downward slightly and the toe portion is caused to bear firmly against the toe pad while the upper stock is tightly stretched by its engagement with the wipers. At a predetermined point in the downward

movement of the treadle 79 and when spring 35 has become substantially fully compressed, the locking pin 95 snaps into the slot 88 and locks the toe presser foot and the toe rest together. Continued downward movement of the treadle 79 thereupon tends to move the toe rest and toe presser foot downward simultaneously, the shoe being clamped between these parts and under pressure of the aforementioned springs.

At substantially the same time that the toe rest and toe presser foot are locked together, the spring 28 begins to be compressed. When the innersole has reached the level of the wipers, the latter are pushed inwardly slightly and the toe wiper head is rocked about its supports sufficiently to cause an even bearing of the wipers around the toe, whereupon the wipers are moved all the way in and the shoe is moved bodily forward into close contact with the toe pad by manipulation of the hand wheel 5^c. The toe treadle is now released whereupon the spring pressure of spring 28 forces the toe rest 34 upwardly holding the shoe forcibly against the under surface of the wipers.

The operator now adjusts the heel portion of the shoe by further manipulation of the treadle 70 until the proper wiping level, which may have been disturbed during the toe lasting operation, is attained, whereupon the heel wipers are brought partially in, and as the operator adds gradual pressure to the treadle 70 the wiper head is rocked to level the wipers relatively to the heel seat and then the wipers are drawn completely in, thereby wiping in the heel portion of the upper.

At this point of the operation while both heel and toe portions are held beneath the wipers, the operator forces treadle 70 downwardly to its furthest extent. As at this time the jack post can only rise very slightly the lever 15 tends to turn about the pin 17 as a fulcrum, compressing spring 19, and the cup 23 at the upper end of the rod 21 is brought into contact with the lower end of rod 24 whereby the toe rest is lifted positively to put an additional pressure against the toe wipers, it being noted that at this time both the heel and toe are under positive pressure which is substantially equalized by the rocking lever 15.

While the parts are under this final pressure, wheel 5 is operated to bring final pressure between the heel pad and the shoe, and while this pressure is maintained the treadle 70 is released and the heel wipers are retracted, the operator now tacking the heel in the usual manner.

The toe wire is now fastened at one side of the toe, the wheel 5 manipulated to slightly release the pressure on the toe pad and while the operator holds the toe treadle 79 depressed he retracts the toe wipers suffi-

ciently to permit placing the wire around the toe. The operator then moves the wipers inwardly to wipe in the wire and fastens it to the second tack. He now retracts the toe wipers, releases the presser foot by means of the trip pin 103 and removes the shoe from the machine, thus completing the operation.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

- 20 1. A machine of the class described having, in combination, toe wiper mechanism, a toe rest associated therewith, a toe presser foot arranged to be brought into clamping relation to said toe rest, and a single, posi-
- 25 tively acting manually operable device for simultaneously depressing said toe rest and presser foot relatively to the wiper mechanism, and resilient means for simultaneously
- 30 raising said toe rest and presser foot whereby to hold the work in operative engagement with the wiper mechanism.
2. A machine of the class described having, in combination, toe wiper mechanism, a toe rest associated therewith, a toe presser
- 35 foot arranged to be brought into cooperative relation to said rest for clamping work thereagainst, a single controlling device for simultaneously moving said toe rest and presser foot relatively to said wiper mechanism, and means for releasing said toe rest
- 40 from operative connection to said controlling device.
3. A lasting machine comprising toe wiper mechanism, a vertically movable toe
- 45 rest having provision for normally holding the same yieldingly upward, a toe presser foot arranged in opposition to said toe rest to clamp work thereagainst, a single operating device having connections to move both
- 50 said toe rest and presser foot together, and a manual trip device operative on said connections to disconnect said toe rest from said operating device at will.
4. A lasting machine comprising toe wiper
- 55 mechanism, a vertically movable toe rest, a toe presser foot arranged to be brought into opposition to said toe rest for clamping work thereagainst, a single operating device having connections for moving said toe rest
- 60 and presser foot simultaneously, a manually operable trip device interposed in said connections for releasing said toe rest from said operating device at will, and means for moving said toe rest upwardly.
5. A lasting machine comprising toe wiper

mechanism, a vertically movable toe rest, a toe presser foot arranged to be brought into clamping relation to the toe rest, a single operating device having connections for moving said toe rest and presser foot simultaneously in the same direction, an operator actuable trip device interposed in said connections for releasing said toe rest at will, heel wiper mechanism, a vertically movable jack post co-operative therewith, and means for operating said jack post, said means being also arranged to impart an upward movement to the toe rest.

6. A lasting machine comprising toe wiper mechanism, a vertically movable toe rest, means for urging the same yieldingly toward an upper limit of movement, a toe presser foot connected to said toe wiper mechanism for adjustment therewith, an operating device having connections for moving said presser foot downwardly and for imparting a simultaneous downward movement to the toe rest during the latter portion of the movement of the presser foot, and a separate operating device for moving said toe rest upwardly with a relatively powerful impulse for the final lasting pressure.

7. A lasting machine comprising toe wiper mechanism, a vertically movable toe rest mounted for adjustment toward and from said toe wiper mechanism, means for normally holding the same yieldingly upward, a toe presser foot adapted to be brought into clamping relation to said toe rest, a single operating device having connections for moving said presser foot downwardly and for imparting a simultaneous downward movement to the toe rest during the latter part only of the movement of the presser foot, and a manually operable trip device associated with said connections for releasing said toe rest at will, said connections and said trip device being constructed and arranged to preserve their operative relationship throughout the range of relative adjustment of said toe rest mounting with respect to said wiper mechanism.

8. A lasting machine having, in combination, toe wiper mechanism, a vertically movable toe rest associated therewith, a toe presser foot, manual means for moving said toe presser foot in a substantially vertical path, means for automatically connecting said toe rest and said presser foot at a predetermined intermediate point in the downward travel of the latter, heel wiper mechanism, a jack post mounted for movement to cooperate therewith, and an operating device for actuating said jack post, said device having connections for imparting an upward movement to the toe rest.

9. A lasting machine having, in combination, toe wiper mechanism, a vertically movable toe rest associated therewith, heel

wiper mechanism, a jack post mounted for movement to co-operate therewith, means for moving said toe rest downwardly at a preliminary stage of the lasting operation, and means for moving said jack post upwardly into cooperative relation to said heel wiper mechanism, said means having operative connections to said toe rest for imparting an upward movement thereto.

- 10 10. A lasting machine having, in combination, toe wiper mechanism, a vertically movable toe rest, means for normally holding the same yieldingly upward, said means including a primary spring presser device and a secondary spring presser device, a toe presser foot mechanism for moving said presser foot downwardly into work clamping position relatively to said toe rest and for locking it in said position, said mechanism comprising devices for imparting downward movement to said toe rest, a trip device for unlocking said presser foot, heel wiper mechanism, a jack post cooperative therewith, means for moving said jack post to operative position, said means having operative connections to said toe rest for lifting the same, and means for locking said jack post in operative position and for tripping said locking means.

11. A lasting machine having, in combination, toe wiper mechanism, a toe rest movable vertically into cooperative relation thereto, means for moving said toe rest downwardly, a trip device for rendering said moving means ineffective, heel wiper mechanism, a jack post movable to cooperate therewith, means for moving said post, locking devices for holding said post in adjusted position, a trip for releasing said locking devices, and connections for transmitting movement from said last named trip to said first trip whereby said trips may be actuated simultaneously, said connections being constructed and arranged to permit independent actuation of said first trip.

12. A lasting machine comprising a toe wiper mechanism, a toe rest movable vertically into cooperative relation thereto, a presser foot, means for moving said presser foot into work clamping relation to said toe rest, means for connecting said toe rest and presser foot for simultaneous movement, a trip device for disengaging said connections, heel wiper mechanism, a jack post mounted for movement to cooperate therewith, operating means for said jack post including a lever having a trip device for releasing said lock, and connections for operating both of said trip devices simultaneously by a single operative movement of said second trip device but permitting the first named trip device to be operated independently.

13. A lasting machine having, in combination, toe wiper mechanism, a toe rest movable vertically into cooperative relation thereto, a presser foot, means for bringing

said presser foot into work clamping relation to said toe rest, devices for imparting operative movement to said presser foot and for connecting it for simultaneous movement to the toe rest at a pre-determined point in the travel of the presser foot, a trip device for disconnecting said toe rest from said operating devices, heel wiper mechanism, a jack post mounted for movement to cooperate therewith, operating means for said jack post including a lever having a lock, a trip device for releasing said lock, and means for operating said trip devices comprising two push pins and connections constructed and arranged to transmit movement of one of said pins simultaneously to both said trip devices, and to transmit movement of the other of said pins to the toe rest trip device only.

14. A lasting machine having, in combination, heel wiper mechanism having a heel pad associated therewith, a jack post mounted for cooperation therewith, means for moving said jack post upwardly, and an adjustable cam device having operative connection to said jack post intermediate its ends and acting to move it backward into said pad at the same time as it is moved upward.

15. A lasting machine having, in combination, heel wiper mechanism having a heel pad associated therewith, a jack post mounted for cooperation therewith, means for moving said jack post upwardly, and a yieldable cam device having operative engagement with the longitudinal surface of said jack post and acting as the post is moved upwardly to simultaneously move it backward toward said pad.

16. A lasting machine having, in combination, heel wiper mechanism having a heel pad associated therewith, a jack post movable upwardly and backwardly to press a heel into said pad and against the wipers, means for elevating said jack post, and means for moving it backwardly comprising a resilient cam and cooperating abutment and means for securing one of said parts at a point on said post intermediate its ends.

17. A lasting machine having, in combination, heel wiper mechanism having a heel pad associated therewith, a jack post swingingly mounted at its lower end and having an operating device associated therewith for elevating the same, and means operative for moving said jack post backwardly as it is raised to press the heel of the shoe thereon into said pad, said means comprising a spring cam element and an adjustable abutment cooperative therewith.

18. A lasting machine having, in combination, a heel wiping mechanism having a heel pad associated therewith, a jack post swingingly mounted at its lower end and having an operating device for elevating the

same, a spring cam carried by said jack post, and an adjustable abutment cooperative therewith for swinging said jack post backwardly as it is raised to press a heel thereon into said pad.

19. A lasting machine having, in combination, a machine base, heel wiper mechanism having a heel pad associated therewith and mounted for horizontal adjustment in said base, a jack post mounted for cooperation therewith, means for moving said jack post upwardly, and a cam device operative on said jack post as it is moved upwardly to move it simultaneously backward toward said pad, said jack post together with said cam device being bodily adjustable with said heel wiping mechanism.

20. A lasting machine having, in combination, a base frame, heel wiper mechanism having a heel pad associated therewith and mounted for horizontal adjustment on said frame, a jack post mounted for cooperation therewith, means for moving said jack post upward, and a yieldable cam device operative on said jack post as it is moved upwardly to move the same backwardly toward said pad, said jack post and cam device being connected with said heel wiper mechanism to partake of the horizontal adjustments thereof.

21. A lasting machine having, in combination, a base frame, heel wiper mechanism having a heel pad associated therewith mounted for horizontal adjustment on said frame, a jack post having means for moving the same upward, and means for causing said jack post to be moved backwardly toward said pad simultaneously with said upward movement, said latter means and said post being mounted for simultaneous bodily adjustment with said wiper mechanism.

22. In a machine of the class described, in combination, heel lasting devices comprising a heel pad, a jack post provided with a last supporting spindle, and a single operating device for raising said spindle into cooperative relation to said heel lasting devices and for simultaneously moving said spindle toward said heel pad.

23. A lasting machine having, in combination, a heel pad, a toe rest, a jack post interposed therebetween and adjacent said heel pad, means for moving said post vertically relatively to said heel pad, a last supporting spindle pivoted upon the upper end of said post to swing in a vertical plane, and means limiting the angle of swing of said spindle toward said heel pad to a lesser amount than that permitted toward said toe rest.

24. A machine for lasting shoes having, in combination, a heel pad, a toe rest, and a vertically movable jack post interposed therebetween, a last supporting spindle pivoted

upon said post to swing in the vertical plane of said pad and rest and a wedge shaped member interposed between said post and spindle and having its thicker end directed toward said heel pad.

25. In a shoe machine, in combination, a toe rest, a heel pad, a jack post interposed between said rest and pad and movable relatively thereto in the vertical plane thereof, said post having a longitudinal bore at its upper end, a compression spring seated within said bore, a slidable pin resting upon said spring and guided within said bore, a wedge shaped member carried by said pin and having its thicker end directed toward said heel pad, and a last supporting spindle pivoted upon the upper end of said post and in said vertical plane, said spindle having a surface arranged for engagement with said wedge shaped member.

26. In a lasting machine having a toe rest and toe lasting mechanism, in combination, a toe presser foot and means for supporting the same, said means comprising a member movable in a substantially vertical path, and a second member carried thereby, said second member being slidable longitudinally of a shoe being lasted and oscillatable in a substantially horizontal plane.

27. In a lasting machine having a toe rest and a heel pad, in combination, a toe presser foot, and a supporting member therefor, said member being constructed and arranged for both vertical and horizontal movement in a vertical plane passing through said heel pad and toe rest.

28. In a lasting machine having a toe rest and a last supporting spindle, in combination, a toe presser foot, and means for supporting said presser foot for movement to and from operative position, said means comprising a pair of elements movable respectively in rectilinear paths at substantially right angles to one another and in a plane passing through said toe rest and spindle.

29. In a lasting machine having a toe lasting mechanism, in combination, a toe presser foot, means supporting said presser foot for movement in a substantially vertical plane toward and from operative position, and resilient means normally operative to move said presser foot upwardly from and to one side of said toe lasting mechanism.

30. In a machine of the class described, having a toe rest and a heel pad, in combination, a toe presser foot and means normally supporting said presser foot at a point above and to one side of said toe rest, said supporting means being constructed and arranged to permit horizontal rectilinear movement of said presser foot in a vertical plane passing through said toe rest and heel pad whereby to place it in operative position.

31. In a lasting machine, in combination, toe wiping mechanism, a toe rest, a toe

presser foot, and means for supporting said presser foot comprising a vertically slidable post, a horizontally arranged sleeve carried by said post, a rod slidable in said sleeve, 5 said sleeve having a vertically disposed guideway thereon, and a bar slidable in said guideway and having connections to said presser foot.

32. In a shoe machine, in combination, a 10 toe presser foot and means for supporting the same, said means comprising a vertically slidable rod, a sleeve swiveled thereon for oscillation in a horizontal plane, a tubular rod slidable in said sleeve, a spring with- 15 in said tubular rod and arranged to normally maintain the latter in retracted position within said sleeve, a head carried by said tubular rod and having a vertical bore therein, a bar slidable in said bore and hav- 20 ing pivotal engagement with said presser foot, and a spring within said bore normally operative to urge said rod downwardly therein.

33. In a lasting machine, in combination, 25 toe wiping mechanism, a toe rest, and a toe presser foot, said foot comprising a work contacting plate, and means supporting said plate for slight, free rocking movement and for slight, free, vertical sliding movement.

34. In a lasting machine, in combination, 30 toe lasting mechanism, a toe presser foot, means normally operative to retain said presser foot in a plane above said mechanism, a treadle for depressing said presser 35 foot to the work engaging plane, means for locking said presser foot in work engaging position, and a knee-operated device for releasing said locking means.

35. In a lasting machine, in combination, toe lasting mechanism, a shoe supporting 40 element cooperative therewith, means for resiliently moving said element relatively to said mechanism to provide a preliminary lasting pressure, and means for imparting 45 a final and positive relative movement of said parts.

36. In a lasting machine, in combination, a toe rest, toe lasting wipers, spring means 50 for moving said rest toward said wipers whereby to secure a preliminary lasting pressure of said wipers against a shoe supported upon said rest, and means for imparting a final and positive movement of said rest toward said wipers.

In testimony whereof, I have signed my 55 name to this specification.

CHARLES F. ADAMS.