E. L. KEYES.

WELT BUTT TACKING MACHINE.

APPLICATION FILED OCT. 3, 1910.

1,066,916.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

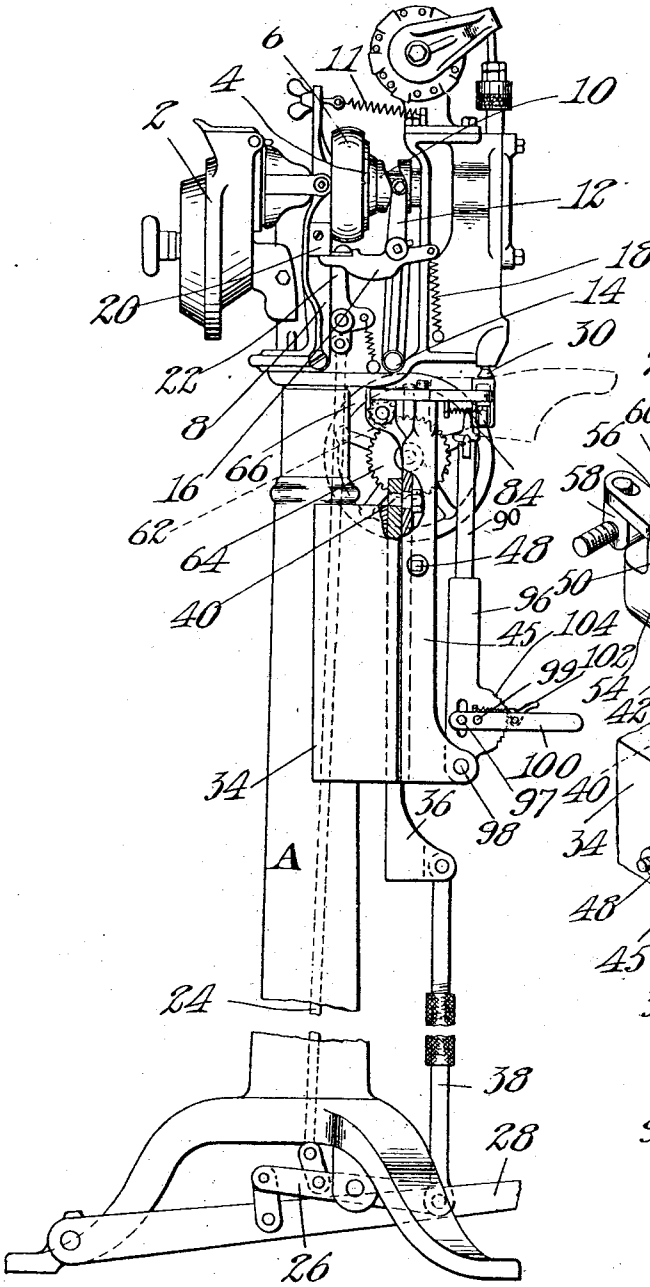


Fig.1.

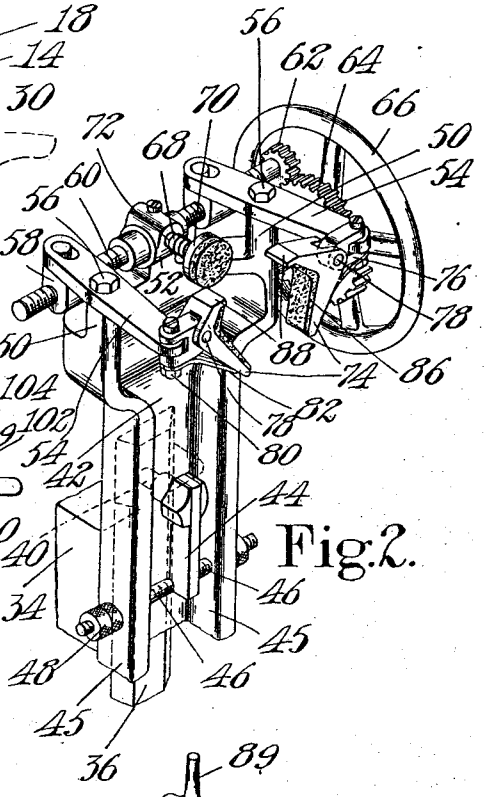


Fig.2.

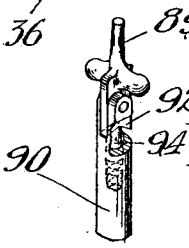


Fig.3.

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2 SHEETS—SHEET 2.

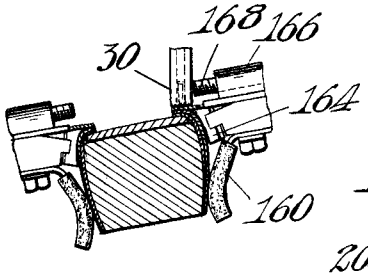


Fig. 7.

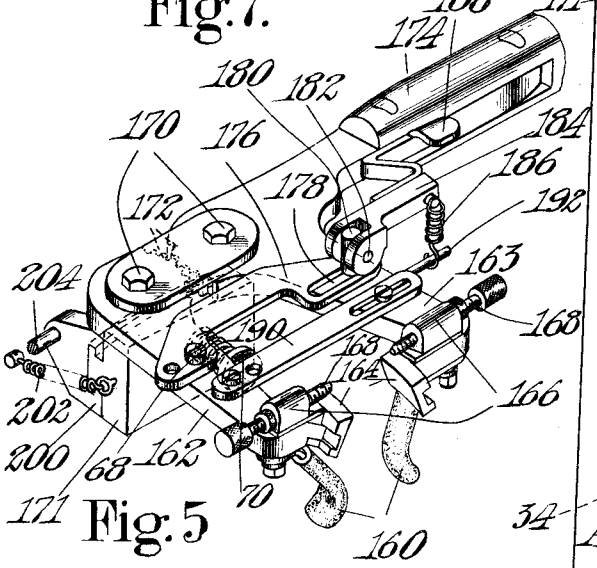


Fig. 5

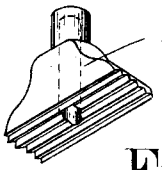


Fig. 6.

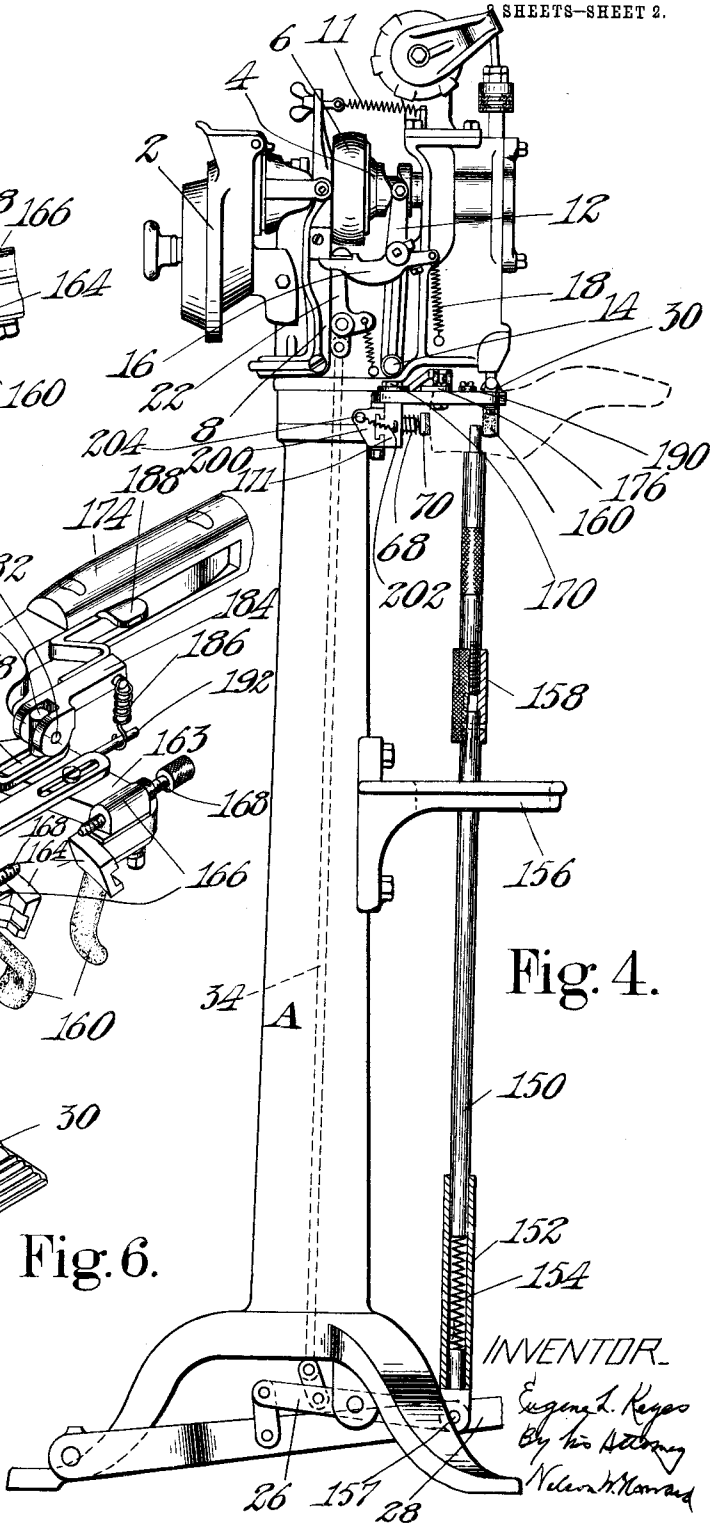


Fig. 4.

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UNITED STATES PATENT OFFICE.

EUGENE L. KEYES, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

WELT-BUTT-TACKING MACHINE.

1,066,916. Specification of Letters Patent. Patented July 8, 1913.

Application filed October 3, 1910. Serial No. 585,099.

To all whom it may concern:

Be it known that I, EUGENE L. KEYES, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Welt-Butt-Tacking 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 figures.

This invention relates to machines for use in the manufacture of boots and shoes as, for example to lasting and tacking machines, and is embodied in a machine for tightening a welted shoe to the last adjacent to the end of the heel seat and fastening it.

Objects of this invention are to increase the speed and efficiency and reduce the labor required to operate some machines heretofore proposed for this work, including the machine of my prior application Serial No. 399,529, filed Oct. 28, 1907.

An important feature of this invention consists in the provision of novel means for tightening and holding the shoe stock in position to be fastened including, if desired, means for locking the tightening mechanism. This is shown as including oppositely disposed shoe engaging or clamping members, each of which is arranged to engage the shoe at the upper and lower edges of the heel stiffener for forcing the sides of this portion of the shoe snugly to the last. The lower portions of the engaging members clamp the sides of the shoe first at a point some distance below the insole and act upwardly and inwardly to gather the fullness of the upper and force it toward the insole, while the upper portions of the engaging members are formed to engage in the welt crease under the end portions of the welt to take up the fullness in the stock developed by the lower clamping members and to tighten the stock over the last edge by pressure against the welt and the upper and, it may be, against the stitches of the inseam which said member may be shaped to engage in the crease. The opposed clamps are connected for operation together by means which is shown as manually actuated and, in one embodiment of the invention, a locking means is provided conveniently arranged with relation to the actuator for manipulation in relation therewith.

Another very important feature of this invention is found in the provision for presentation of different portions of the work alternately to the tacking mechanism. As shown, the work clamping device or holder, formed as above indicated or otherwise, is mounted and preferably guided relatively to a tacker for movement to present one tightened side of the shoe in position to be fastened and then to present the opposite portion or side of the shoe while the stock continues to be held. In the illustrated construction, the work holder is guided for transverse movement in the tacking machine. The shoe is yieldingly upheld upon a spindle which is raised in time relation to the tacking operation. After the work clamping device or holder has been actuated to tighten the shoe to the last, the shoe is positioned with one side of its bottom, including the over-worked edge of the upper or the welt, or both, under the nozzle of the tacker and the treadle is then depressed to raise the shoe firmly against the nozzle and then to start the tacker. A plurality of tacks may be driven if desired and then the work is shifted laterally to present the other side of the shoe bottom in position to be tacked.

A further feature of the invention consists in provision for laterally positioning the movably supported shoe relatively to the tacker for the tacking operation. Preferably stops are employed which are positioned relatively to the shoe and are arranged to engage the machine as the shoe is moved transversely to determine the distance from the side edge of the shoe at which the tacks shall be driven.

The machine is so constructed and arranged that its use requires very light manual labor and a small degree of skill so that it can be operated by a boy or other cheap labor.

These and other features of this invention will be more fully explained in connection with the detailed description of the machine in which the invention is illustrated as embodied and will then be pointed out in the claims.

In the drawings:—Figure 1 represents a machine embodying this invention in a preferred form; Fig. 2 represents the oscillating clamping device in perspective; Fig. 3 represents the last spindle in detail; Fig. 4

represents a modified construction covered by my divisional application Serial No. 633,469, filed June 16, 1911; Fig. 5 represents in perspective, the clamping device of the modified construction; Fig. 6 represents the presser-foot of the tacking machine and Fig. 7 is a section through the shoe and last in front of the clamping device showing the relative position of the clamps and the tacker when in operative position.

Referring to Fig. 1, A represents the standard of a tacking machine of common type, a description of which is found in United States Patent No. 389,275, granted September 11, 1888, and need not be given herein except in general. 2 is a tack hopper and tack arranging and feeding device, 4 is one clutch member and 6 is the driving pulley which forms the second clutch member, 8 is the clutch operating lever, and 10 is a cam which acts on a lever 12, which is fulcrumed at 14. On the lever 12 is pivoted a lever 16, the left hand arm of which is forced upward by a spring 18 and rests against a block 20 on the clutch lever 8. The block 20 is engaged by a shoulder on the lever 16 and when this lever is displaced lengthwise to the left by the cam 10 and lever 12, the clutch is thrown out. The cam 10 is timed to throw out the clutch just before the tack is driven so that, when the clutch is thrown in by depressing the left hand end of the lever 16 so as to disengage the shoulder thereon from the block 20, the tack will be immediately driven. The lever is depressed by means of a spring-pressed dog 22 attached to a rod 24 leading to lever 26 and treadle lever 28. When the treadle is depressed the dog engages a projection on the lever 16 and depresses it, thus permitting a spring 11 to throw the clutch in.

The means whereby the shoe is supported and the parts pressed into position to be fastened by tacks from a nozzle 30 are mounted on a pivoted support, including the member 42, capable of limited oscillation to bring the opposite sides of the shoe alternately under the tacker. Referring to these parts more in detail, a block 34 is rigidly clamped to the standard A. In a groove in the front face of the block slides a bar 36 which is connected at its lower end by a rod 38 with the treadle lever mechanism and at its upper end has a bolt 40 rigidly secured therein on which is pivoted for limited oscillation, the support 42 of the shoe clamping means. Referring now particularly to Fig. 2, it will be seen that the bar 36 has beveled edges and slides in corresponding ways in the block 34 so that it cannot be displaced laterally. The head of the bolt 40 is provided with a slot in which is inserted a downwardly extending tongue 44. Opposite to the lower end of the tongue 44 rods 46 are threaded through ribs 45 on the support 42 and are provided with thumb lock nuts 48. The support which holds the shoe is thus mounted to oscillate on the bolt 40 about a center which preferably is substantially the center of curvature of the average shoe shank near the heel breast line to an extent determined by the adjustment of the stop rods 46. By this construction the shoe support may be given a sidewise movement in a curved path corresponding to the average curvature of the shanks of shoes about the pivot of the support to bring the sides of the shoe alternately into operative relation to the tacker and the shoe presented at a predetermined angular relation to the tacker, so that the tacks will be driven in a direction inclined inwardly from the edge of the last. Upon the top of the support 42 are bosses 50, 50 on opposite sides and a boss 52 between them. On the bosses 50, 50 are fulcrumed levers 54, 54 by tap bolts 56, 56. Power is applied to the levers by a pin and slot connection between the rear ends of the levers and blocks 58 which are moved toward and from the central boss 52 by means of a right and left threaded screw 60 which is rotated rapidly by means of small and large gears 62 and 64 and a hand wheel 66 in a manner obvious from inspection of Fig. 2. The middle unthreaded portion of the right and left screw 60 is journaled in the boss 52 and means is provided for preventing longitudinal movement of the screw therein. In the boss 52 above the journal of the screw and at right angles thereto is mounted the stem 68 of a back rest 70. The stem of the rest slides freely through the boss 52 and is normally held forward by a spring 72.

On the forward ends of the levers 54 are shoe engaging clamps 74 which are pivoted to blocks 76 by horizontal pins 78, the blocks being in turn pivoted to the levers 54 by vertical bolts 80. In this manner limited universal movement is provided for the clamps 74 with respect to the levers 54. Leaf springs 82 are fastened at one end by the bolts 80 to the under sides of the blocks 76 and their free ends engage the lower ends of the clamps 74 to force them toward each other. Springs 84 (Fig. 1) are attached to the under side of levers 54 and to the inner part of the clamps, to keep the clamps in normal position facing inwardly as shown. The inner sides of the clamps are shaped to grasp a shoe about the rear shank portion and have pads 86 of some material which will not injure the finish of the leather of the shoe. The pads however do not extend the whole length of the clamps but stop short of inwardly projecting portions 88 on the upper ends of the clamps; these rigid portions are formed to enter the welt crease of a welted shoe and serve to force the welt and adjacent parts firmly together near the

point of nailing and to position or locate the welt butts for the tacks to be inserted therein. As the padded lower ends of the clamping members 74 are pressed inwardly by the springs 82 they engage the upper first at a point considerably below the insole and press and smooth it upwardly and inwardly against the last as they close until finally the rigid upper ends 88 of the clamps engage the upper in the welt crease and force it firmly in over the insole. By this means the upper is drawn tightly over the last and into position to be tacked in place.

In the prior constructions of which I am aware there has been a tendency for the welt locating blades to lift the stock and hold it away from the last bottom at the tacking point. Pressure of the lower ends of the devices 74 against the side of the shoe insures a downward component of pressure by the crease engaging ends 88 while said ends are pressing inwardly against the stock of the welt seam, thereby obviating the objectionable lifting of the stock which accompanies the use of other constructions.

To provide for slight movement of the shoe so that it is free to be clamped in position for tacking, the spindle 89 of the jack is pivoted (Fig. 3) in the bifurcated end of a jack rod 90. Below the pivot of the spindle a notch 92 is provided in which is seated, normally, a spring pressed pin 94. In this way the spindle is held upright but is capable of being moved to a limited extent from side to side. The jack rod 90 slides in a sleeve 96 which is pivoted at 98 to the base of the support. To the lower end of the sleeve 96 is pivoted at 99 a jack lever 100 which is pivoted to the jack rod 90 at 97, a slot in the sleeve 96 accommodating the pivot pin. The lever 100 is held in depressed position with the rod 90 raised by a pawl 102 engaging a ratchet segment 104 formed on the sleeve 96.

In the operation of this form of the machine the last with a welted shoe on it is placed on the spindle and elevated to the proper degree by depressing the lever 100. The hand wheel 66 is then operated to bring the clamps 74 simultaneously in toward the shoe which they engage first at a point remote from the bottom and press the material inward, and toward the bottom, rocking meantime on the pivots 78 until the rigid fingers 88 engage the upper beneath the welt and tighten the upper and press the stock down upon the last bottom into position to be tacked. When the shoe stock has been clamped with sufficient force in the proper position the support 45 is rocked to one side until one of the stops 46 engages the tongue 44. This movement will, if the stop 46 is properly adjusted, bring the margin of the shoe bottom in proper position under the tacker. The treadle 28 is now depressed to raise the jack so that the shoe is pressed against the nozzle 30 of the tacker and to trip the clutch by depressing the lever 16 through the dog 22 and rod 34. Tripping the clutch starts the tacker into action and a tack is driven to secure the upper in tightened condition and it may also be to fasten the welt butt and the heel stiffener to the insole. The treadle is released during the first tacking operation and the cam 10 throws out the clutch and stops the machine as it is on the point of driving another tack leaving it ready for the next operation which occurs when the shoe jack is swung over against the other stop 46 and the pedal lever again depressed.

Referring now to Figs. 4, 5, 6 and 7 in which a somewhat modified embodiment of the invention is shown, 150 is a jack rod which is slidingly mounted in a socket block 152 which is loosely pivoted at 157 to the lever 26. Within the block 152 a spring 154 is provided for yieldingly pressing the rod upwardly. Excess movement of the jack about the loose joint 157 is prevented by a bracket 156 which embraces the jack rod and is bolted to the standard of the machine. The jack rod is in two parts connected by a collar 158 which is pinned to the lower part of the rod and threaded to the upper part so that the length of the rod may be adjusted by rotating either part relatively to the other.

The clamping means in this construction comprises spring fingers 160, bolted to levers 162, 163, and rigid plates 164 which are pivotally mounted on the levers and hence may be disposed at the proper angular position to clamp the upper to the last. The fingers 160 are preferably covered with non-abrasive material. Lugs 166 on the levers carry adjustable stops 168 to engage the nozzle 30 of the tacking machine (see Fig. 7). The levers 162, 163 are pivoted at 170 to a block 171 and are provided with intermeshing toothed segments 172 whereby the clamping fingers are made to move simultaneously in opposite directions; the lever 163 has a handle 174 for operating the clamping fingers and means is provided for locking the fingers in clamping position. This consists of a plate 176 pivoted to the lever 162 at one end and at the other provided with a slot 178 through which passes a pin 180 on the lever 163. On the pin is pivoted eccentrically at 182 the bifurcated end of a catch lever 184 which is held in engaging position with the slotted plate 176 by a spring 186, the other end of which is attached to a pin 192 extending from the lever 163. The lever 184 carries offset therefrom a thumb piece 188 disposed in convenient position to be engaged by the thumb

of a hand of the operator while holding the handle 174. By this means the clamp may be readily unlocked. A height gage 190 for the shoe is attached to the levers 162 and 163 by a screw and hole and by a screw and slot respectively.

The clamping mechanism is attached to the machine standard for lateral sliding movement by the engagement of a T-shaped curved tongue on the block 171 with a corresponding groove in a plate 200 attached to the standard the curve of the tongue being taken from the pivot of the jack post 157 as a center. Springs 202 are attached to pins 204 and to the block 171 on each side of the machine and tend to hold the block in normal position. The pins 204 also serve as a pivot or hinge for the plate 200 which moves about this pivot as the clamps are raised by the jack toward the tacker.

In Fig. 6 is shown the nozzle of the tacker detached. As shown the engaging surface is ribbed or corrugated but it may be made smooth, if desired. The mode of operating this form of device is substantially the same as that of the form previously described and an extended account thereof will therefore not be necessary.

The shoe is jacked in the usual manner and swung in between the jaws of the clamp or holder which is closed thereon by operation of the handle 174. The fingers 160 press the upper and stiffener to the sides of the last and then the rigid blocks 164 clamp the upper and heel stiffener firmly and hold it as in Fig. 7. The clamp is then locked by the action of the spring 186 upon the lever 184. The shoe is now swung to one side until one of the stops 168 engages the nozzle 30 of the tacker, the curved tongue on the block 171, during this movement, sliding in the block 200. The pedal lever 28 is now depressed and the tack driven as previously described. The operation is then repeated upon the other side of the shoe.

Having now described my invention and explained how it may be used, what I believe to be new and desire to secure by Letters Patent of the United States is:—

1. A machine of the class described having, in combination, tacking mechanism, a clamp movably connected therewith and arranged to grip a lasted and welted shoe at the ends of the heel stiffener on the opposite sides and hold the shoe stock in position to be tacked, and means for guiding the clamp to present the shoe bottom adjacent to one end of the welt and then adjacent to the other end to the tacking mechanism.

2. A machine of the class described having, in combination, tacking mechanism, a clamp movably connected therewith and constructed and arranged to apply local pressure to the shoe at and adjacent to its edge in the region of the opposite ends of the heel stiffener and guided for movement in a line extending directly across the shoe at the heel seat to present the shoe alternately in position to receive tacks in the opposite ends of the welt.

3. A machine of the class described having, in combination, a tacker, and a shoe clamp arranged to grip a shoe on opposite sides in the welt crease to tighten the shoe stock over the last and hold it for presentation to the tacker and guided for movement with the clamped shoe in a direction extending transversely across the heel seat to present opposite sides of the shoe alternately to the tacker.

4. A machine of the class described, having, in combination, tack inserting means, a shoe clamp movably connected therewith and comprising elements to engage the shoe on its last at each side over a region remote from the bottom of the last to clamp and hold the upper to the last and relatively unyielding elements to engage each side of the shoe locally near the edge of the shank, and means for actuating said clamp to cause said elements to operate in the order named to grip, tension and hold the upper about the shank portion of the last during presentation of the shoe to the tack inserting means.

5. A machine of the class described, having, in combination, a tacker, a jack mounted to move in a single plane about a center which is located substantially at the center of transverse curvature of the heel seat of a shoe supported thereon for receiving the operation of the tacker and stops adjustable to limit the lateral curvilinear movement in both directions whereby wide and narrow shoes may be positioned to present opposite sides thereof in the same lateral and angular locations relatively to the tacker.

6. A welt butt tacking machine having, in combination, a tacker and means for positioning simultaneously the opposite butt ends of the welt, said means being mounted for movement to present said ends alternately to the tacker.

7. A welt butt tacking machine having in combination, a tacker, welt end positioning means, and coöperating stops arranged for use alternatively as one side or the other of the shoe is to be tacked to assist the operator in positioning the shoe for the insertion of the tacks in desired relation to the welt butt ends.

8. A welt butt tacking machine having, in combination, one tacker, end positioning means for the two butt ends of the welt of a welted shoe, and means including two lateral stops adapted to operate alternately to assist the operator in positioning the shoe to receive the tacks first on one side of the shoe and then on the other side in the desired relation to the welt.

9. A welt butt tacking machine having, in combination, a tacker, welt end positioning means mounted for movement about an axis parallel to and below the longitudinal axis of the shoe and coöperating devices to assist the operator in positioning the shoe to receive the tacks in predetermined opposed angular relations at the two sides.

10. A welt butt tacking machine having, in combination, means to clamp opposite sides of a welted shoe to the last adjacent to the ends of the heel stiffener, means for locating the butt ends of the welt laterally, and a tacker relatively to which the shoe and said means are movable to tack the two sides successively.

11. A welt butt tacking machine having, in combination, means to clamp opposite sides of a welted shoe to the last adjacent to the ends of the heel stiffener, means for locating the butt ends of the welt laterally, one tacker, and means permitting movement of the shoe as a whole relatively to the tacker to receive the tacks at opposed inclinations at the two sides successively.

12. A welt butt tacking machine having, in combination, a tacker, and means acting upon the two sides of a shoe to position the opposite butt ends of a welt laterally on the shoe bottom and movable laterally with the shoe into position for the insertion of tacks into the shoe adjacent to the two ends of the welt in successive operations of the tacker.

13. A welt butt tacking machine having, in combination, a tacker, means to position the opposite butt ends of a welt laterally on the shoe bottom and movable with the shoe into position for tacking the shoe adjacent to the two ends of the welt in successive operations, and stops to position the shoe as a whole laterally with relation to the tacker.

14. A machine of the class described having, in combination, a tacker, a shoe holder movable laterally to present opposite sides of the shoe to the tacker, and stops for limiting lateral movement of the shoe to assist the operator in positioning the shoe to receive tacks in uniform lateral relation to its edge at the two sides.

15. A welt butt tacking machine having, in combination, a single tacker, and upper tightening devices engaging the welt crease at opposite sides of the shoe and movable therewith to present the two sides to the tacker successively.

16. A welt butt tacking machine having, in combination, a single tacker, and welt butt end locators engaging the shoe at the two sides and movable therewith in presenting the two sides of the shoe to the tacker.

17. A machine of the class described having, in combination, a heel pin for supporting the last, a clamp independent thereof for the rear portion of the shoe, and a tacking mechanism relatively to which the shoe with the clamp thereon may be swung bodily to present different portions of the shoe in position to be tacked.

18. A machine of the class described having, in combination, a clamp to engage opposite sides of a shoe at the end portions of the heel stiffener and a tacking mechanism relatively to which the clamp is mounted for movement transversely of the machine to permit either side of the shoe to be presented to the tacker.

19. A machine of the class described having, in combination, a shoe clamp comprising opposed members to apply local pressure to opposite sides of a lasted and welted shoe near the ends of the heel stiffener and hold the upper materials at said two sides tightened to the last while they are being secured, and supporting and operating means for said clamp members arranged to cause said members to engage first the sides of the shoe and then, while continuing such engagement, to advance under the welt of the shoe and effect inward pressure against the welt seam for drawing the upper over the last bottom and positioning the welt butts where they should be secured, said operating means being adapted to hold the work at rest to permit inspection of it and subsequent fastening at the will of the operator.

20. A machine of the class described having, in combination, a vertically movable slide arranged to have a limited turning movement about an axis extending lengthwise of the shoe, opposed connected members on said slide to apply local pressure at opposite sides of the last and an actuator for said pressure members.

21. A welt butt tacking machine having, in combination, welt butt tacking means, and shoe preparing and presenting means comprising levers having on their front ends clamps adapted to engage a welted shoe in the welt crease at the rear ends of the welt and tighten the welt ends and adjacent portions of the shoe upper materials into position to be fastened and movable with the shoe for presentation of the tightened stock to the tacking means.

22. A machine of the class described having, in combination, opposed shoe clamping levers 54 arranged for equal and opposite movement to center the shoe between them and having the shoe-engaging members 74, 88 connected thereto for tipping movement and leaf springs 82 to tip said engaging members into position to engage the shoe first by their lower portions and allow them to adjust themselves into positions to bear equally by their upper and lower portions upon the sides of the shoe.

23. A machine of the class described having, in combination, shoe clamps and a relatively yielding back stop, and a carrier

therefor supported for vertical movement of said parts together and for lateral tipping movement thereof about a fixed horizontal axis.

24. A machine of the class described having, in combination, opposed shoe clamping levers 54 having the shoe engaging members 74, 88 connected thereto, slots in the rear ends of said levers, blocks 58 having studs standing in said slots, a screw shaft reversely threaded in said two blocks, and gearing and a hand wheel for rotating the screw to close the clamping levers.

25. A machine of the class described having, in combination a tacker and the block 34 having the bar 36 sliding therein and the treadle to move it, the support 42 pivoted on the bar to turn laterally for presenting opposite sides of the shoe alternately to the tacker.

26. A machine of the class described having, in combination, a tacker and the block 34 having the bar 36 sliding therein and the treadle to move it, the support 42 pivoted on the bar to turn laterally for presenting opposite sides of the shoe alternately to the tacker, and the relatively adjustable stops 44, 46 to limit the lateral movement of the support.

27. A machine of the class described having, in combination, a tacker and means to clamp and hold the shoe stock in position to be secured comprising the shoe-engaging members 74 having the angular inner faces as described, provided with the lining 86 and having also the inward extensions 88 reduced in thickness at their ends to enter the welt crease and tighten the material of the inseam over the last bottom.

28. A machine of the class described, having, in combination, suitable supporting and operating means, and opposed engaging members having lower portions which are arranged to clamp the sides of a welted shoe at the rear portion of the shank first at points some distance below the insole and to act upwardly and inwardly for the purpose described and having upper angular portions with their inner end faces formed to engage the shoe stock at the welt seam and press it inwardly and connected with the lower portions to be caused automatically to press the shoe stock down upon the last bottom as they press it inwardly.

29. A machine of the class described, having, in combination, a tacker normally at rest, a shoe support movable toward the tacker and sidewise to bring the edge of the shank under the tacker, means engaging in a welt crease to tension the upper over the shank portion of the shoe, a single treadle, and connections therefrom to raise the support and then to start the tacker.

30. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time and a shoe holder having means to engage a welted shoe in the welt crease at the two ends of the welt and tighten the upper materials into position to be fastened, and connected mechanism for operating the tightening means at the two sides of the shoe, said holder being movable with the shoe to present the two sides of the shoe successively to the tacker.

31. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, a shoe holder having means to engage a welted shoe in the welt crease at the two ends of the welt and tighten the upper materials into position to be fastened, connected mechanism for operating the tightening means at the two sides of the shoe, and guiding connections between the shoe holder and the tacker for directing movement of the holder in a predetermined path transversely of the machine to present the two sides of the shoe to the tacker.

32. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, a shoe holder having means to engage a welted shoe in the welt crease at the two ends of the welt and tighten the upper materials into position to be fastened, connected mechanism for operating the tightening means at the two sides of the shoe, guiding connections between the shoe holder and the tacker for directing movement of the holder transversely of the machine, and means for moving the holder vertically.

33. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising a bar guided for vertical movement relative to the tacker, a support pivoted to the bar for curvilinear movement transversely of the shoe, stops adjustable to limit said transverse movement for positioning the shoe to receive tacks through each welt butt, and actuating means for the bar to raise the shoe to the tacker.

34. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising a slide guided for vertical movement relatively to the tacker, a support guided for lateral movement on the slide to present either side of the shoe alternatively to the tacker, and connected devices for raising the shoe holding means as a whole and then starting the tacker.

35. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising a slide guided for vertical movement relatively to the tacker, a support guided for lateral movement on the slide to present either side of the shoe alternatively to the tacker, shoe clamping devices carried

on the support and adapted to grip a welted shoe in the welt crease at the welt butts, a last spindle, and means for adjusting the spindle in the support and relatively to the clamping means.

36. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising a support, shoe clamping means arranged on the support to grip a welted shoe at the welt butts, and a last spindle adjustable in the support and relatively to the clamping means, said support with the shoe being movable laterally to present either welt butt alternatively to the tacker.

37. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising the operatively connected clamps adapted to engage a welted shoe at the welt butts, the last spindle mounted to swing to carry the shoe in and out between the clamps and means for raising said spindle, clamps and shoe to present the shoe to the tacker.

38. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising operatively connected clamps shaped and arranged to extend into the welt crease and tighten the upper stock over the last bottom at the butt ends of the welt, a last spindle movable to carry the shoe in and out between the clamps and adjustable vertically to force the shoe up against the overlying portions of the clamps, said clamps and spindle being movable together to present the shoe to the tacker.

39. A welt butt tacking machine having, in combination, a tacker adapted to operate on one welt butt at a time, shoe holding means comprising clamps shaped and arranged to extend between the upper and the welt at the butt ends of the welt and tighten the upper materials over the last bottom, a last spindle and means for actuating it to raise the last relatively to the clamps for compressing the upper materials between the overlying portions of the clamps and the last, and means for raising the clamps, spindle and last to compress the welt butt and underlying portions of the shoe stock between the tacker and the last bottom.

40. In a machine of the class described, the combination with manually operated members adapted to engage a welted shoe in the region of the front ends of the heel stiffener, of manually actuated means connected to said members to move them together to clamp the two sides of a shoe first at points substantially below the shoe edge and then at the edge also.

41. In a machine of the class described, the combination with levers having clamps on adjacent ends arranged to engage a welted shoe to tighten the upper materials about the sides of the heel portion of the last, a right and left screw-threaded shaft connecting the ends of the levers remote from the clamps, a hand wheel, and large and small pinions through which the hand wheel is connected to the threaded shaft to operate the clamps.

42. In a machine of the class described, the combination with suitable supporting and operating means, of opposed engaging members having lower portions which are arranged to clamp the sides of a welted shoe at the rear portion of the shank first at points some distance below the insole and act upwardly and inwardly to gather the fullness of the upper that is unsecured between the inseam and the heel seat tacks and force it toward the insole and having thin upper portions which extend substantially horizontally and have pressure faces on their inner ends to extend into the welt crease and press against the welt seam under the end portions of the welt to carry the fullness over the shoe bottom and position the welt ends where they should be fastened to the insole.

43. A welt butt tacking machine, having, in combination, means adapted for engaging a welted shoe in the welt crease at the butt end of the welt and tightening the stock upwardly on the side of the last and inwardly over the innersole on the last bottom; means actuating said crease engaging means downwardly toward the last bottom as it tightens the upper stock as described, whereby lifting of the stock from the last bottom by the action of said engaging means is avoided; and means for operating on the stock of the shoe bottom while it is so held in position over the innersole.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EUGENE L. KEYES.

Witnesses:

C. IRENE PARIS,

ARTHUR A. RUSSELL.

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