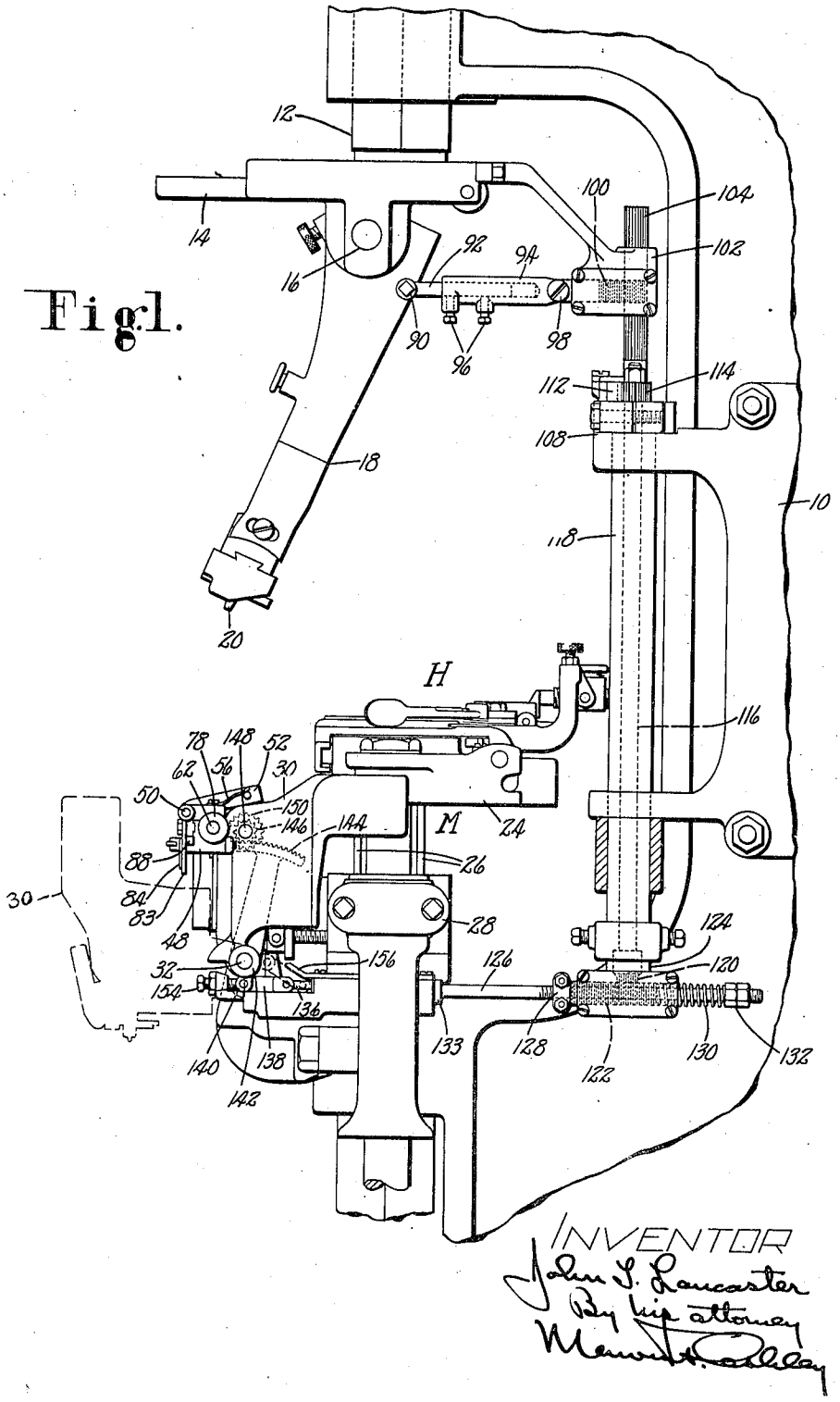
Sept. 21, 1943. J. T. LANCASTER 2,329,771

GAUGING MECHANISM FOR SHOE MACHINES

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Fig. 1.



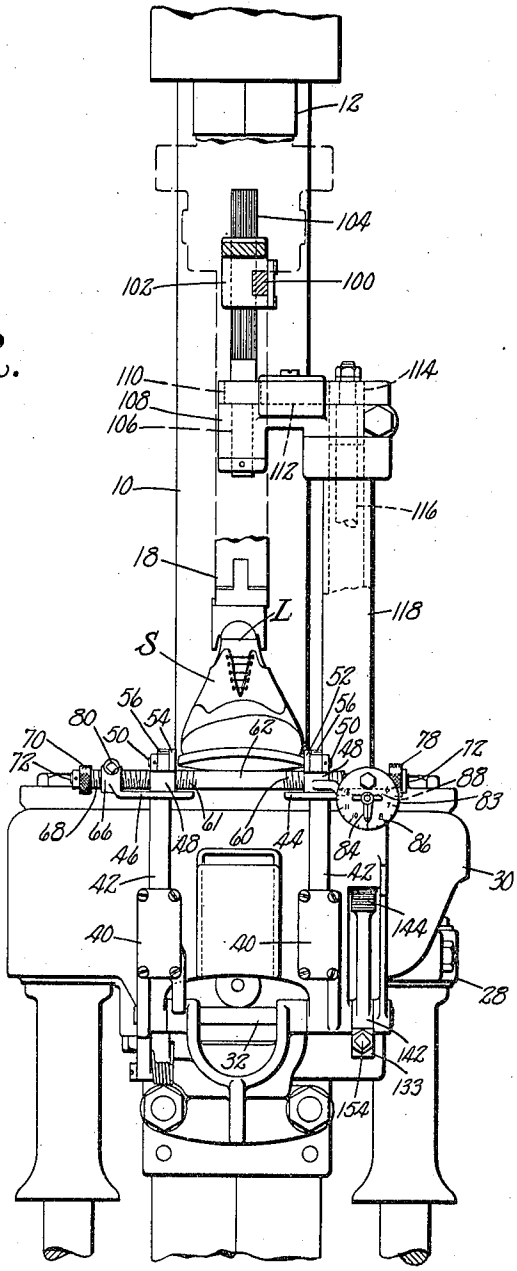
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GAUGING MECHANISM FOR SHOE MACHINES

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Fig. 2.



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Sept. 21, 1943. J. T. LANCASTER 2,329,771

GAUGING MECHANISM FOR SHOE MACHINES

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Fig. 5.

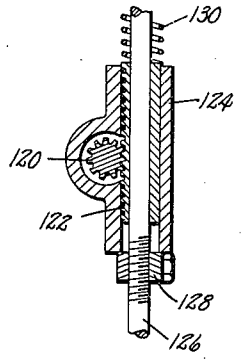


Fig. 3.

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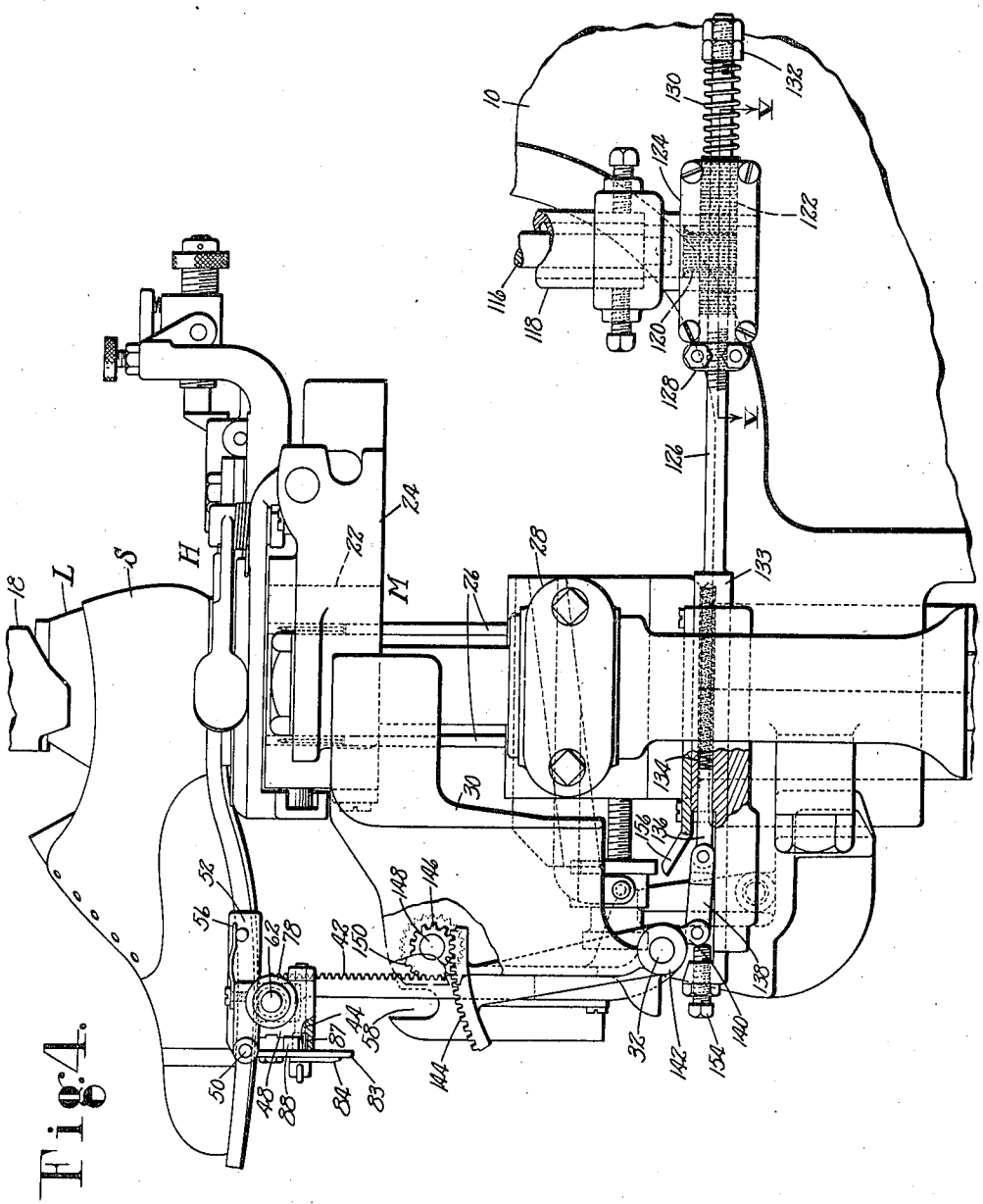


Fig. 4.

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Patented Sept. 21, 1943 2,329,771

UNITED STATES PATENT OFFICE

2,329,771

GAUGING MECHANISM FOR SHOE MACHINES

John T. Lancaster, Newton, Mass., assignor to United Shoe Machinery Corporation, Flemington, N. J., a corporation of New Jersey

Application May 19, 1942, Serial No. 443,548

34 Claims. (Cl. 1—32)

This invention relates to mechanisms by which shoes may be positioned for operations in machines employed for the attachment of heel-parts, as bases and top-lifts.

In heel-attaching machines, a shoe, presented to fastening-inserting mechanism upon a jack or like support, is capable of some angular movement about the longitudinal axis of the jack. An example of a machine in which this may occur is found in Letters Patent of the United States No. 1,157,688, Glidden, October 26, 1915. To locate the heel-seat of the shoe in the desired relation to a heel or top-lift presented in a ring, swing-plate or other holder, the operator varies the angle of the shoe until he believes that the breast-line of the heel or top-lift lies at a proper angle across the shank of the shoe, and the peripheries of the heel-seat and those of the heel-parts correctly register. This is commonly effected by mere inspection of the work, a method which does not give satisfactory results unless the operator is quite skillful, or an undue amount of time is spent. An object of this invention is to enable an operator to determine rapidly and accurately the angular position of a shoe with relation to a part to be attached to it, this being accomplished by means which in no way interferes with the manipulation of the work or of parts of the machine.

In the attainment of the above object, there is combined with fastening-inserting mechanism and a co-operating jack or like work-support, gauging means into contact with which a shoe, preferably at the forepart, may be brought, and a mounting for the gauging means situated in front of the inserting mechanism and normally spaced vertically from the work, as below the shoe-support in an inactive position. Here, it is clear of all parts which the operator must manipulate or have ready access to, as the jack or the holder for the heel-portions, and is also removed from the exposed parts of the inserting mechanism. Yet, by mounting the gauge for movement into the plane of the work, there is furnished means by which said work may be located positively by touch, and without the necessity for inspection. Upon its mounting, the gauging means, which may consist of spaced members for the reception of contact by right and left shoes, may be varied in position for the purpose of correctly presenting shoes of different widths to the heel-holder and the inserting mechanism for the inserting operation, and this position is preferably indicated visually to the operator by means actuated by the gauging means. The movement of the gauging means between inactive and active positions is most advantageously effected by transmitting to it the movement of the work-support, which takes place as it is shifted into and out of operating relation at the inserting mechanism. In such heel-attaching machines as that of the previously mentioned patent, a protective guard is provided for the inserting mechanism, and this furnishes a most effective means upon which to mount movably the gauging means. This guard being pivoted for movement with respect to the inserting mechanism, interference with the transmission of the movement of the work-support to the gauging means may be prevented by making one of the transmitting elements move about the pivot of the guard. With the gauging means may be associated means, as an element through which said gauging means is adjusted, furnishing a bottom-rest for the shoe being operated upon, so as said shoe is being carried into operating position it will, without effort on the part of the operator, be located vertically for presentation to either of spaced right and left members and there maintained during the gauging movement. By making this rest yieldable, it will be caused to accommodate itself to the level at which the tread-surface of the outsole of the shoe moves into operating position, and also to changes in the vertical relation of the shoe produced by the application of clamping pressure upon the work. For the transmission of the movement of the work-supporting jack to the gauges, connection between these elements may include yieldable means to compensate for differences in the extent of the two movements. As herein disclosed, each of a pair of right and left gauges is mounted upon a vertically movable rack, and both the jack and gauges are geared to an intermediate vertical shaft. Preferably included in the connections is a slide-rod, acting upon a lever geared to the gauge-racks and actuated through a rack which is movable upon it. The last-mentioned rack is shown as operated by a pinion upon the vertical shaft, it acting at one end upon a collar, variable in position upon the rod, and at the opposite end upon a spring interposed between the rack and rod. The slide-rod, as it is shifted under the influence of the jack, acts positively upon the gauge-lever during movement in one direction, and yieldably through a compensating connection upon movement in the opposite direction. This compensating connection also allows movement of the guard about its pivot without interference by the gauge-actuating connec-

tions. Adjustment of the right and left gauges for shoes of different widths may occur through their mounting upon carriers, movable upon heads of the supporting racks and shifted by a right and left screw threaded into the carriers. A portion of this screw may have the additional function of serving as previously mentioned the bottom-rest.

In the accompanying drawings, illustrating one of the possible embodiments of this invention,

Fig. 1 shows my improved gauging mechanism included in a heel-attaching machine, of which a portion is shown in side elevation;

Fig. 2 is a front elevation thereof;

Fig. 3, an enlarged top plan view of the gauging mechanism;

Fig. 4, a side elevation taken from the right in Fig. 3; and

Fig. 5, a horizontal sectional detail, on the line V—V of Fig. 4.

Of the several machines to which the present gauging mechanism may usefully be applied, one is that disclosed in the patent to which reference has already been made. Of this, there is shown herein the frame 10, having movable vertically in an overhanging portion a plunger 12, upon the head of which is guided horizontally a slide 14. At 16 is pivoted to the slide a work-supporting jack 18, provided at its lower end with a last-pin 20 adapted to receive the pin-hole of a last L within a shoe S to which a heel is to be attached. The jack may be moved about its pivot from the work-receiving position of Fig. 1 to the operating position of Fig. 4. The jack presents the work to nail-inserting mechanism M, including a die 22 carried upon a crosshead 24, and in the nail-holding passages of which reciprocate drivers 26 rising from a second crosshead 28, both crossheads being guided for vertical reciprocation in the frame. A heel-base and a lift, which are to be attached to the heel-seat of the shoe, are presented above the die in superposed relation by a holder H, which may be that of Letters Patent of the United States No. 1,723,310, Standish, August 6, 1929. Downward movement of the jack by the plunger 12 applies preliminary pressure to the work, after said jack has been swung into operating position above the nailing die, while elevation of the crosshead 24 gives final clamping pressure. Then, the drivers 26 rise to insert the nails which they bear upon their ends. Across the front and at the sides of the inserting mechanism M lies a protective guard 30, pivoted at 32 upon the frame. The guard is hollow or recessed, having a vertical front wall from which side and top walls extend rearwardly, while the rear and lower portions are open. It appears in the drawings in active position in full lines, and in Fig. 1 is shown in dash-lines as lowered to give access to the nailing mechanism.

Considering now the gauging mechanism of this invention, attached to the front wall of the guard 30 at opposite sides are guides 40, 40, in which are movable vertically rack-bars 42, 42, having fixed to their upper ends laterally extended right and left heads 44 and 46, respectively. Resting upon the plane horizontal surface of each head is a carrier-block 48, to which is pivoted at 50 an elongated gauge member, the member 52 being at the right upon the head 44 and the member 54 at the left upon the head 46. A leaf-spring 56, attached to each block and bearing upon a projection from the side of the gauge, holds the latter down into a substantially horizontal position when lifted to its active relation, as in Fig. 4, but allowing it to yield upon engagement wtih the guard when lowered and inactive, as in Fig. 1. In the latter position, a portion of actuating mechanism for the gauges rests in depressions 58 (Fig. 4) at the front of the guard. This arrangement increases the possible extent of retraction and more completely removes the gauges from the front of the holder H. If a right jacked shoe is turned about the last-pin 20, when the jack 18 is in the inward position of Fig. 4, the bringing of the inner side of the outsole at the point of maximum projection at the ball-line against the inner side of the raised gauge 52 will correctly position the shoe about the vertical axis of the jack for the attachment of its heel and lift in the holder H. The opposite gauge 54 serves similarly to locate the left shoe. Contact of the indicated portion of the shoe-soles with the gauges so removes the gauging point from the heel-seat, that, as the apex of the angle subtended is approached, the angular displacement of the heel-seat is minimized. Consequently, one transverse position of the gauges will serve for a considerable number of widths, and any possible error in the relation of the heel-seat introduced by inaccurate gauging is lessened. The length of the gauge members is such that they will be engaged properly by all sizes of shoes.

Means is provided for locating the gauges 52, 54 for co-operation with shoes of all widths. For this purpose, there is threaded into the carriers 48 right and left screws 60 and 61, respectively, formed upon a rod 62 rotatable in an enlargement 64 on the head 44. Into an enlargement 66 upon the opposite rack-head, a tubular screw 68 is threaded and having a head or finger-piece 70. Through this screw 68 passes a reduced portion 72 of the rod. A shoulder 74 upon the rod abuts against the inner end of the tubular screw, while a collar 76 fast upon the rod-portion 72 contacts with the outer side of the head 70. When the rod 62 is turned by a finger-piece 78, the rotation of the right and left screws carries the gauges toward or from each other to locate the bars 52, 54 for gauging shoes of various widths. By rotating the screw 68, both gauges may be shifted simultaneously longitudinally of the axis of the rod 62, either to the right or to the left, this being particularly designed to give a setting-up adjustment. This screw 68 may be locked against displacement by dividing the enlargement 66 and clamping it by a screw 80. To facilitate the setting of the gauges 52 and 54, there is rotatable in the enlargement 64 a short horizontal shaft 82, extending forwardly through an opening in a dial-plate 83 attached to the front of the enlargement. Outside the plate, the shaft carries a hand 84 movable over a series of index-marks 86 inscribed upon the face of the dial, these marks corresponding to shoe-widths. At the inner side of the dial a pinion 87 is fast upon the shaft, and has meshing with it a rack 88 projecting from the carrier of the gauge 52. As the gauges are adjusted by rotation of the finger-piece 78, the gearing moves the hand over the dial, the reading which it furnishes at the index-marks informing the operator as to the correct location of the gauges.

The movement of the gauges between their lowered inactive and raised active positions is accomplished by a connection to the jack 18. Piv-

oted at 90 to said jack (Fig. 1) is a link, which is formed in inner and outer sections 92 and 94, respectively, they being fixedly connected to each other by screws 96. This permits a variation in the length of the link to compensate for adjustment of the jack by the operator fore and aft of the machine in its ways by movement of the slide 14. The link-section 94 is joined at 98 to a rack 100, guided horizontally in an extension 102 from the head of the plunger 12. With the rack meshes a pinion 104 fast upon the end of a short vertical shaft 106, journaled in a horizontal bracket 108 fixed to the frame. Below the pinion 104, a pinion 110 is secured to the shaft (Fig. 3) and is in mesh with teeth upon the inner end of a rack-bar 112, movable horizontally in the bracket 108. The rack-bar has at its opposite extremity a series of teeth engaging a pinion 114 fixed to a vertical shaft 116. This shaft is journaled within a tube 118 fixed in the frame. Fast upon the bottom of the shaft 116 is a pinion 120 (Figs. 4 and 5) in mesh with a horizontal reciprocatory rack 122, movable in a guide 124 secured to the lower extremity of the tube 118. Passing through a bore in the rack is a horizontal rod 126, which is compelled to move positively with said rack in one direction by a collar 128 adjustable along the rod. It is yieldable in the opposite direction by compression of a spring 130, interposed between the rack and a nut and lock-nut at 132 upon the rear extremity of the rod. At the forward end of the rod is an enlargement 133, rectangular in cross-section and guided to slide in the frame. In this enlargement is a horizontal bore containing a compression-spring 134, this contacting at its forward end with a telescoping, compensating rod-section 136. This rod 136 is joined by a link 138 to the short arm 140 of a lever 142, fulcrumed about the pivot-pin 32 upon which turns the guard 30 of the nailing mechanism M. The upper extremity of the lever 142 has formed upon it a gear-segment 144, this being in mesh with a pinion 146 upon a horizontal shaft 148 journaled transversely near the top of the guard. Upon this shaft are secured two pinions 150, 150, which engage, respectively, the racks 42 of the gauges 52 and 54. The extent of movement of the racks and gauges is limited downwardly by the seating of the rod 62 in the depressions 58 at the front of the guard 30, and adjustably in the opposite direction by the engagement of the collar 128 with the end of the guide 124. A contact-screw 154 is threaded through a shoulder at the forward extremity of the rod-enlargement 133 and by contact with the lever-arm 140, turns the segment 144 contraclockwise.

The relation of the elements in the connecting chain just described, between the jack 18 and the gauges 52, 54, is such, that when the jack is in its forward work-receiving position the gauges are lowered close to the top of the guard 30, then yielding against their springs 56, as appears in Fig. 1. When the jack is swung in to operating position (Fig. 4), it rotates, through the link 92, 94 and intermediate gearing, the shafts 106 and 116 to carry the rack 122 to the right in Fig. 1. This, through the spring 130, the slide-rod 126, 133 and the contact-screw 154, turns the lever 142 contraclockwise and, by the rotation of the shaft 148 geared to it, elevates the racks 42 with the gauges 52 and 54. The level to which these gauges rise may be determined by the setting of the contact-collar 128 on the rod-portion 126. They are now in a horizontal plane in which the outsole of the shoe S upon the jack 18 will move into nailing position, and along this plane the work is guided by the engagement of the thread-surface of the outsole with the central portion of the gauge-adjusting rod 62. Upon this rod as a bottom-rest, the operator may swing the forepart of the shoe about the longitudinal axis of the jack. If it is a right shoe, the inner side of the outsole at the portion of maximum projection at the breast-line will contact with the inner vertical surface of the right-hand gauge 52. This positions the heel-seat of the shoe correctly, as to its angular relation in a horizontal plane, with respect to a heel and lift in the holder H. The opposite gauge 54 serves similarly to locate the left shoe. If the racks 42 tend to be lowered by a force created by engagement of the work with the rod 62, the movement is transmitted through the gearing 146, 144, lever 142 and contact-screw 154 to the rod 126, 133. The resulting compression of the spring 130 allows the gauge mechanism to yield downwardly, and to yield farther when the clamping pressure goes on the work. It also compensates for differences in the extent of inward movement of the jack and upward movement of the gauge mechanism. The heeling operation having been completed and the jack 18 carried out to work-receiving position by the operator, the connections previously outlined move the rod 126, 133 to the left in Fig. 4. This lowers the racks 42 through the rod-section 136 and link 138, the spring 134 compressing and absorbing any excess of movement of the jack over that of the gauges.

If the operator desires access to the nailing mechanism M, he swings outwardly and downwardly the guard 30. At this time, the contraclockwise movement of the arm 140 of lever 142 (Fig. 4) causes the connection between the lever-arm and the link 138 to break upwardly. This is permitted by the compression of the spring 134 by the rod-section 136, while the rod 126, 133 remains at rest. A contact member 156 upon the frame receives engagement of the link as it is carried up, and thus limits the extent of movement of the lever 142. Since the fulcrum of this lever and the pivot of the guard coincide, there is no interference with the movement of said guard.

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

1. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, gauging means into contact with which a supported shoe may be brought, and a movable mounting for the gauging means situated in front of the inserting mechanism and normally below the shoe-support.

2. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, gauging means into contact with which the forepart of a supported shoe may be brought, a movable mounting for the gauging means situated in front of the inserting mechanism and normally below the shoe-support, and means for moving the mounting with the gauging means into and out of the plane of the work.

3. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, gauging means into contact with which the forepart of a supported shoe may be brought, a movable mounting for the gauging means situated in front of the inserting mechanism and normally below the

shoe-support, and means arranged to move the gauging means upon the mounting to vary the position at which the forepart of the shoe may be presented for the inserting operation.

4. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, gauging means for the forepart of a supported shoe, a mounting for the gauging means, means arranged to move the gauging means upon the mounting to vary the position at which the forepart of the shoe may be presented for the inserting operation, and means actuated by the gauging means for indicating the position to which it has been moved.

5. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a movable shoe-support co-operating therewith, movable gauging means into contact with which the forepart of a supported shoe may be brought, and means for transmitting the movement of the support to the gauging means to move said means into and out of gauging relation.

6. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a movable shoe-support co-operating therewith, movable gauging means into contact with which the forepart of a supported shoe may be brought, means for transmitting the movement of the support to the gauging means to move said means into and out of gauging relation, and means arranged to vary the position of the gauging means for shoes of different widths.

7. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a movable shoe-support co-operating therewith, movable gauging means, means for transmitting the movement of the support to the gauging means to move said means into and out of gauging relation, means arranged to vary the position of the gauging means for shoes of different widths, and a width-indicator set by the gauging means.

8. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, a guard for the inserting mechanism, and means mounted upon the guard for contact with a supported shoe.

9. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, a guard for the inserting mechanism, means mounted upon the guard for contact with a supported shoe, and means for moving the gauging means upon the guard into and out of gauging relation.

10. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support situated above the inserting mechanism to co-operate therewith, a guard for the inserting mechanism situated below the support, gauging means mounted upon the guard for contact with the supported shoe, and means for raising and lowering the gauging means upon the guard.

11. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support co-operating therewith, a guard for the inserting mechanism, right and left gauge members mounted upon the guard for contact with a supported shoe, and means arranged to move the members upon the guard toward and from each other.

12. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a movable shoe-support co-operating therewith, a guard for the inserting mechanism, gauging means movable upon the guard for contact with a supported shoe, and means for transmitting movement of the support to the gauging means.

13. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support movable into and out of operating position at the inserting mechanism, a pivoted guard for the inserting mechanism, gauging means for a supported shoe movable upon the guard, and means for transmitting the movement of the support to the gauging means to carry said means into and out of active relation, an element of the transmitting means being movable about the pivot of the guard.

14. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support movable into and out of operating position at the inserting mechanism, a pivoted guard for the inserting mechanism, gauging means for a supported shoe movable upon the guard, and means for transmitting the movement of the support to the gauging means to carry said means into and out of active relation, said transmitting means including a lever fulcrumed about the pivot of the guard.

15. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support movable into and out of operating position at the inserting mechanism, a gauge into contact with which the forepart of a supported shoe may be moved, and means associated with the gauge and furnishing a rest upon which the forepart of the supported shoe may move into operating position.

16. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support movable into and out of operating position at the inserting mechanism, a gauge for the forepart of a supported shoe, and adjusting means for the gauge furnishing a bottom-rest for the shoe.

17. In a machine for attaching heel-parts to shoes, fastening-inserting mechanism, a shoe-support movable into and out of operating position at the inserting mechanism, a gauge into contact with which the forepart of a supported shoe may be moved, and means associated with the gauge and furnishing a bottom-rest for the forepart of the supported shoe, said means being yieldable under the influence of the shoe.

18. In a heel-attaching machine, nailing mechanism, a jack movable into and out of operating position at the nailing mechanism, a gauge associated with the nailing mechanism and movable into and out of position to receive contact of the forepart of a jacked shoe, and means for transmitting the movement of the jack to the gauge and including means yieldable to compensate for differences in the extent of movement of the jack and gauge.

19. In a heel-attaching machine, nailing mechanism, a jack movable into and out of operating position at the nailing mechanism, a gauge associated with the nailing mechanism and movable into and out of position to receive contact of the forepart of a jacket shoe; and means for transmitting the movement of the jack to the gauge and including means yieldable to permit movement of the gauge by the jacked shoe.

20. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable mounting for the gauge, and means for connecting the jack to the mounting to raise and lower the gauge.

21. In a heel-attaching machine, nailing mech-

anism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, gearing for reciprocating the rack, gearing actuated by the jack, a shaft rotatable by the jack-gearing, a rod connected to the rack-gearing, and means for communicating the movement of the shaft to the rod.

22. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, gearing for reciprocating the rack, gearing actuated by the jack, a shaft rotatable by the jack-gearing, a rod connected to the rack-gearing to move it positively in one direction and yieldably in the opposite direction, and means for communicating the movement of the shaft to the rod.

23. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, gearing for reciprocating the rack, gearing actuated by the jack, a shaft rotatable by the jack-gearing, a rod connected to the rack-gearing, a rack movable upon the rod, and a pinion upon the shaft meshing with the rod-rack.

24. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, gearing for reciprocating the rack, gearing actuated by the jack, a shaft rotatable by the jack-gearing, a rod connected to the rack-gearing, a rack movable upon the rod, a collar variable in position upon the rod and with which one end of the rack may contact, and a spring interposed between the opposite end of said rack and the rod.

25. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, a lever geared to the rack, a slide-rod contacting with the lever to move it in one direction, a member yieldable upon the slide-rod and connected to the lever to move in the opposite direction, and means for joining the jack to the slide-rod to effect its reciprocation.

26. In a heel-attaching machine, nailing mechanism, a jack pivoted above the nailing mechanism, a gauge situated normally below the nailing mechanism, a vertically movable rack upon which the gauge is mounted, a lever geared to the rack, a slide-rod having a portion contacting with the lever to move it in one direction, a rod-section movable upon the slide-rod, a spring interposed between the rod-section and the slide-rod, and a link joining the rod-section to the lever.

27. In a heel-attaching machine, nailing mechanism, a jack movable into and out of operating position at the nailing mechanism, a pivoted guard for the nailing mechanism, a forepart-gauge movable upon the guard, a lever fulcrumed about the pivot of the guard and by which the gauge is moved, and means connected to the jack for oscillating the lever.

28. In a heel-attaching machine, nailing mechanism, a jack movable into and out of operating position at the nailing mechanism, a pivoted guard for the nailing mechanism, a forepart-gauge movable upon the guard, a lever fulcrumed about the pivot of the guard and by which the gauge is moved, a slide-rod movable by the jack, and a link connected to the lever and joined yieldably to the slide-rod.

29. In a heel-attaching machine, nailing mechanism, a jack movable into and out of operating position at the nailing mechanism, a pivoted guard for the nailing mechanism, a forepart-gauge movable upon the guard, a lever fulcrumed about the pivot of the guard and by which the gauge is moved, a slide-rod movable by the jack, a link connected to the lever and joined yieldably to the slide-rod, and a contact member by which the angular movement of the link is limited.

30. In a heel-attaching machine, nailing mechanism, a jack co-operating with the nailing mechanism, a guard for the nailing mechanism, two racks spaced from each other and guided for vertical movement upon the guard, each rack having a laterally extended head, a carrier movable upon each head, a forepart-gauge mounted upon each carrier, and a right and left screw rotatable upon the heads and threaded into the carriers.

31. In a heel-attaching machine, nailing mechanism, a jack co-operating with the nailing mechanism, a guard for the nailing mechanism, two racks spaced from each other and guided for vertical movement upon the guard, each rack having a laterally extended head, a carrier movable upon each head, a forepart-gauge mounted upon each carrier, a right and left screw rotatable upon the heads and threaded into the carriers, and means arranged to adjust the position of the right and left screw with the carriers and gauges longitudinally of the axis of the screw.

32. In a heel-attaching machine, nailing mechanism, a jack co-operating with the nailing mechanism, a guard for the nailing mechanism, two racks spaced from each other and guided for vertical movement upon the guard, and a forepart-gauge mounted upon each rack and arranged to yield upon contact with the guard.

33. In a heel-attaching machine, nailing mechanism, a jack co-operating with the nailing mechanism, a guard for the nailing mechanism, two racks spaced from each other and guided for vertical movement upon the guard, each rack having a laterally extended head, a carrier movable upon each head, a forepart-gauge mounted upon each carrier, a right and left screw rotatable upon the heads and threaded into the carriers, an indicating hand movable upon one of the heads, and means connected to the carrier upon said head for moving the hand.

34. In a heel-attaching machine, nailing mechanism, a jack co-operating with the nailing mechanism, a guard for the nailing mechanism, two racks spaced from each other and guided for vertical movement upon the guard, each rack having a laterally extended head, a carrier movable upon each head, a forepart-gauge mounted upon each carrier, a right and left screw rotatable upon the heads and threaded into the carriers, an indicating hand rotatable upon one of the heads, a pinion rotatable with the hand, and a rack projecting from the carrier of the head upon which the hand rotates and meshing with the pinion.

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