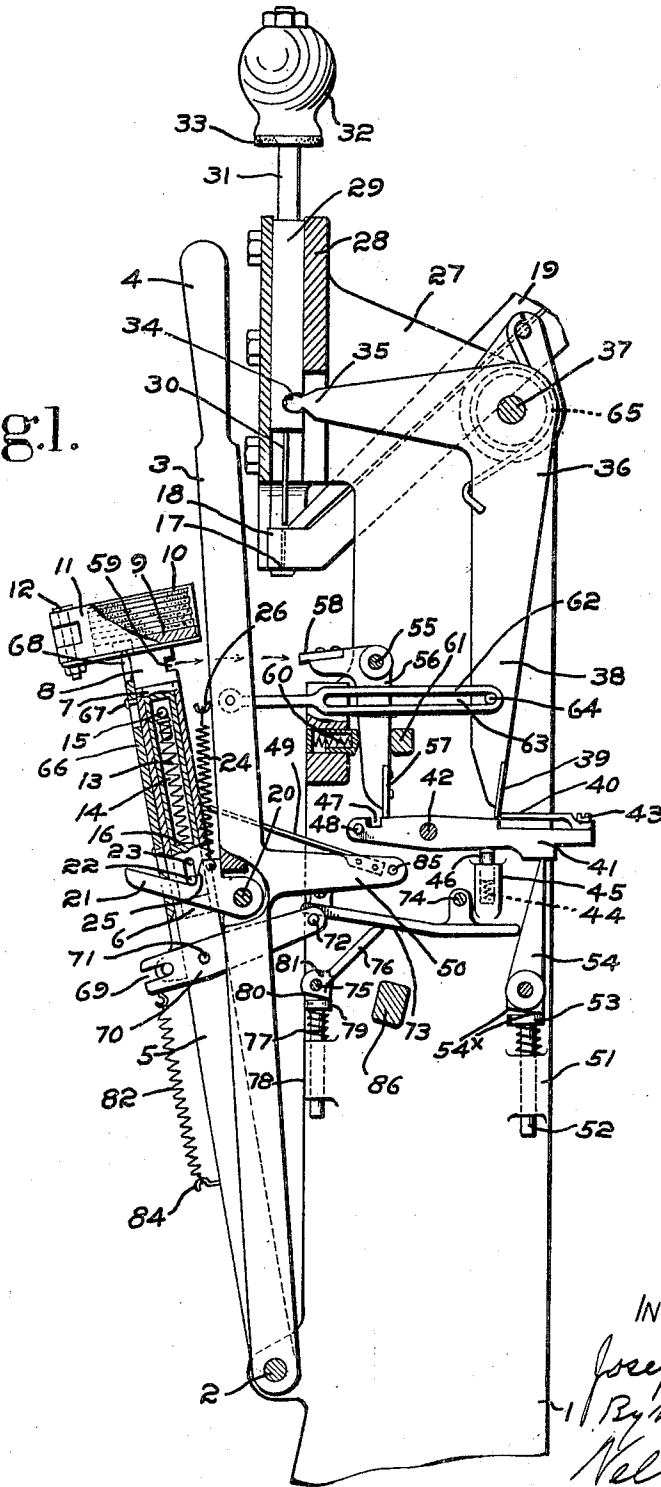


Fig. 1.



INVENTOR.

Joseph H. Pope

By his Attorney

Nelson Howard

1,398,343.

Patented Nov. 29, 1921.

2 SHEETS—SHEET 2.

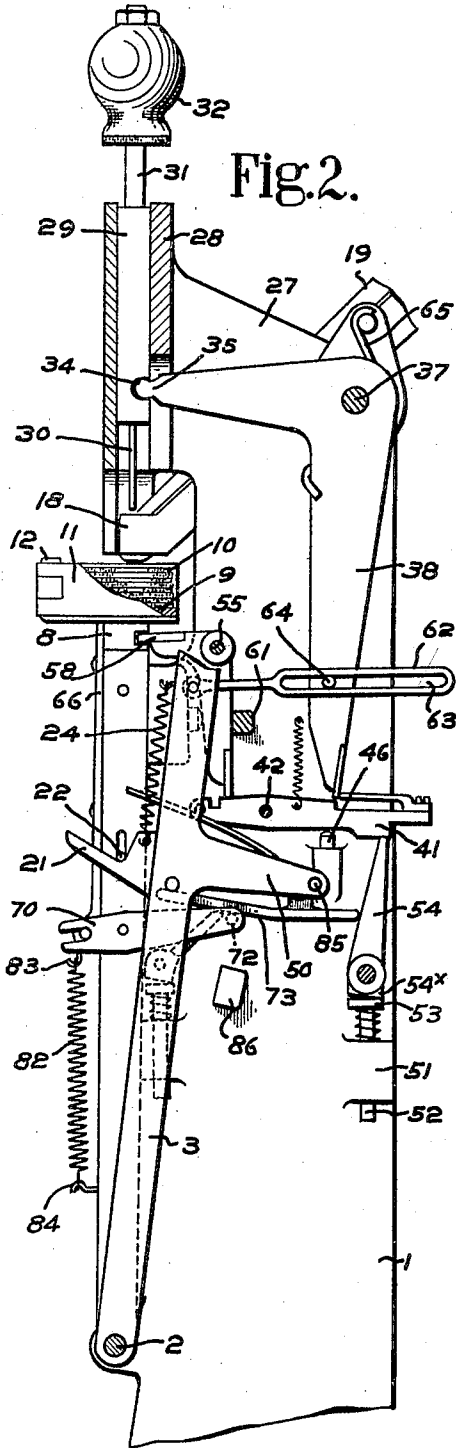


Fig. 2.

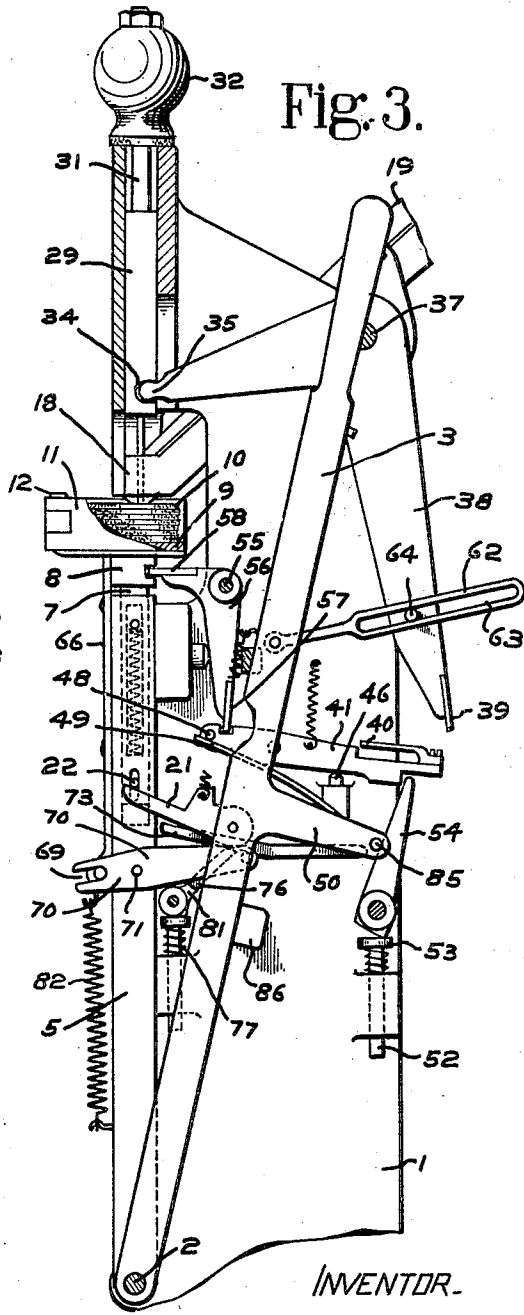


Fig. 3.

INVENTOR.

Joseph H. Pope
By his Attorney,
Nelson Howard

UNITED STATES PATENT OFFICE.

JOSEPH H. POPE, OF HAMILTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

HEEL-BUILDING MACHINE.

1,398,343.

Specification of Letters Patent.

Patented Nov. 29, 1921.

Application filed October 24, 1919. Serial No. 332,926.

To all whom it may concern:

Be it known that I, JOSEPH H. POPE, a citizen of the United States, residing at Hamilton, in the county of Essex and State of Massachusetts, have invented certain Improvements in Heel-Building 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 heel building machines whereby a plurality of blanks or heel lifts are assembled and fastened together to form a heel.

In building heels in accordance with a practice heretofore common, a number of lifts or pieces of heel material have been manually assembled, one on top of another, in a mold and secured together by one or more fastenings driven into or through the assembled lifts while under pressure. The attendant or operative usually gages the height of the pile of lifts in the mold by the sense of touch and selects from a pile of lifts one or more of a thickness to complete the height desired, and as a result heels of a series have not been uniform. In an attempt to overcome this objectionable variation in the height of a series of built-up heels, it has been proposed to assist the attendant's efforts by a series of gage plates arranged in piles about the heel forming space and which may be felt and compared with the pile of lifts by one hand while with the other the attendant could select a lift or lifts of proper thickness to complete the pile. Here again, dependence is placed upon the skill and care of the attendant or operative, and non-uniformity in the height of the series of heels results.

In the patent to John H. Richardson, No. 1,148,716, dated August 3, 1915, automatic or mechanical means is provided for measuring or determining the actual height of a pile of lifts before pressing and securing them together, and if the pile fails to conform to a predetermined standard, operation of the securing means is prevented. This machine has greatly improved the uniformity of built-up heels produced by it. The material of the lifts may vary in character, some of the lifts may be softer than others, so that while successive piles of lifts may measure the same height before

they are subjected to pressure, they may vary in height after they have been pressed.

An important feature of the present invention, therefore, consists in the provision in a heel building machine of means which is made effective when a built up pile of lifts is moved into position for treatment to control the securing means, and prevent its operation when the pile of lifts under pressure fails to conform to a predetermined standard.

This feature of the invention may be variously contrived, but in the present instance is carried into effect by mounting the heel lift support or mold on a jack which is movable to and from a position of presentation relative to the securing means, and providing a controller which controls the operation of the securing means and is rendered effective in its control when the jack moves the pile of lifts to a position of presentation.

When the heel lifts are placed in the heel building machine and piled one on top of another, the contacting surfaces are usually coated with an adhesive or glue which causes the edge portions of the lift to adhere closely together, throughout subsequent operations on the heel and after the heel is finally attached to the shoe and finished. Some of the adhesive or glue is expelled from between the lifts when the pile of lifts is subjected to pressure, consequently the mold or support for the pile of lifts soon becomes clogged with glue and dirt, and much difficulty is experienced in removing the built-up heels after the lifts have been secured together, or where, by reason of the pile of lifts being too high or too low, the fastening or fastenings have not been driven. Another important feature of the invention, therefore, consists in the combination with other features of the invention of an ejector for ejecting a pile of lifts from the mold or support as the latter is moved from its position of presentation.

An object of the present invention, in addition to the above, is to provide an efficient, cheaply constructed and effective manually operated heel building machine, and a further important feature of the present invention, therefore, consists of a unitary manually operated member which, upon actuation by the machine attendant, first moves the pile of lifts to a position of presentation,

compresses the pile of lifts, and if the pile of lifts conforms with a predetermined standard, permits operation of the securing means.

5 The above and other features and novel combinations of parts will be hereinafter described in connection with one good form of the present invention, and then the invention in its true scope will be defined by
10 the claims.

In the drawings:

Figure 1 is a sectional side elevation of a heel building machine embodying the present invention, some of the parts being broken
15 away, and the heel lift support being indicated in receiving position.

Fig. 2 is a side elevation of the same machine showing the heel lift support or jack in its position of presentation before pressure is applied to the pile of lifts.
20

Fig. 3 is a view similar to that of Fig. 2 after pressure has been applied and the pile of lifts is found to conform in height to the predetermined standard.

25 The machine frame may be of any suitable form for supporting the operating parts and in the present instance comprises a standard or column 1 rising from a suitable base. Mounted upon the standard 1 for
30 rocking movement about an axis 2 is the unitary manually actuated means for operating the machine, and as shown comprises a hand lever 3 provided with a hand grasping portion 4. Mounted on the machine frame for
35 movement to carry the pile of lifts to and from a position of presentation relative to the driving or securing means, is a jack 5 which is shown as mounted for rocking movement about the axis 2. The jack 5
40 carries the heel lift support or mold and in the illustrated embodiment of the invention the jack 5 is provided with a longitudinally extending recess 6 in which is mounted
45 8 surmounted by the heel lift support or mold. In the present instance the heel lift support consists of a plate 9 on which the heel lifts 10 may be piled. The lifts 10 may be died out of single pieces into the
50 general shape of the heel, or they may be made up each of one or more pieces. In order to hold the lifts upon the lift support and in their co-related positions for the action of the securing means, the jack has
55 mounted thereon the mold members 11 of which there may be two pivotally connected at 12 so that they may be opened and closed as desired.

When a pile of lifts is to be placed upon
60 the heel lift support, the jack 5 is turned outwardly into the position indicated in Fig. 1, or its receiving position, whereby the attendant may readily place the lifts one upon the other upon the support.

65 The member or plunger 7 which slides

longitudinally of the jack 5, is normally held in its depressed position by a spring which, in the present instance, comprises a coil spring 13 contained within a recess 14 of the plunger or member 7, one end of the spring resting against a suitable abutment or pin 15 secured to the jack 5, and the other end 16 of which bears against the lower end of the recess 14, the construction being such that normally the heel lift support is retained in its lowered or depressed position.
70 75

In building heels, it is desirable that the pile of lifts may be subjected to pressure while the securing means operates to drive a fastener or fastenings into the pile of lifts.
80 In the present instance, the lift support 9 constitutes one of the presser members, and the other is afforded by the nose 17 of the driver block 18 which may be located at the lower end of a chute 19 for supplying
85 tacks, nails or other forms of fasteners for the action of the driving mechanism.

Pivotally mounted on the lever 3 at 20 is a finger 21 which bears against a pin 22 extending from the lower end of the plunger
90 or member 7 through a slot 23 formed in the surrounding wall of the jack 5. The finger 21 is normally under the influence of a spring 24, the energy of which is superior or greater than that of the spring 13, and the
95 upper bearing edge of the finger 21 is inclined and terminates in an abutment 25, the construction being such that upon movement of the handle 1 from the position indicated in Fig. 1 to that of Fig. 2, the jack
100 5 will be moved from its receiving position to its presenting position, and upon further movement of the lever 3 in the same direction the inclined surface of the finger 21, acting upon the pin 22, serves to lift the
105 support 9 and place the pile of lifts thereon under pressure against the nose of the nail block 17. The spring 24 may be variously contrived, but in the present instance is shown as a coil spring, one end of which is
110 connected to the lever at 26, and the other end to the finger 21, to normally hold the finger in its inclined position, but yielding when the lever 3 has been moved to place the pile of lifts under the desired pressure.
115

Extending upward from the machine frame 1 is the over-hanging arm 27 provided with a guide 28 for the slide 29 which carries the driver 30. In driving nails or
120 tacks into the material of the lifts on the lift support, it is desirable to impart to the driver a hammer-like blow and to this end the slide 29 has extending upwardly therefrom the stem 31 surmounted by a driving weight 32 the bottom portion of which at 33
125 is provided with a cushion formed of some yielding material such as leather, rubber, or the like, and which, when the driver has completed its driving stroke, engages the top of the guide 28 to arrest the driver.
130

The slide 29 for actuating the driver has connected thereto means by which the driver may be retracted after a driving stroke, and as one means to this end the slide 29 is provided with an opening 34 into which extends one end 35 of a bell crank lever 36 pivotally mounted on the extension 27 at 37. The other arm 38 of the bell crank lever is provided with a shoe 39 which, when the driver is in its retracted or up position, engages a stop 40 carried by a latch 41 pivoted to the machine frame at 42. The stop 40 may be variously contrived, but in the present instance is shown as an arm secured at 43 to the latch 41, the free end portion of the arm extending somewhat above the upper surface of the latch 41 to properly engage the shoe 39. The latch 41 is normally maintained in position to hold the driver in its elevated or up position, as indicated in Fig. 1, by means of a spring. In the present instance the spring is of the coil type 44 and seated in a recessed lug 45 to act against the plunger 46, the construction being such that the latch 41 will be normally held in the position indicated in Fig. 1, but be capable of having its engaging end portion 40 depressed, as will later appear.

The latch 41 is provided with a notch 47, and extending from the latch 41 is a pin 48 which, when the handle 3 is moved to present the pile of lifts to the driver and compress the lifts, is engaged by a spring or arm 49 secured to a projection 50 extending from the lever 3. The spring or arm 49 is shown as of the leaf type and is inclined so that upon movement of the lever 3 to the right, Fig. 1, the spring or member 49 will ride along the pin 48 and cause the latch 41 to tilt to depress its shoe holding end, provided such tilting movement is not prevented. Mounted in a suitable guide 51 on the machine frame, is a spring actuated plunger 52 carrying a disked upper end 53 above which is pivotally mounted on the machine frame a trip member 54, the ends 54^x of which adjacent the disk 53 are shaped to normally hold the trip 54 in the position indicated in Fig. 1, with the end of the trip below and in engagement with the latch 41, the construction being such that so long as the trip 54 is in the position indicated in Fig. 1, the latch 41 cannot free the hammer or driver to its operating movement. Pivotally mounted on the machine frame at 55 is a controller 56, one end portion 57 of which is shaped to enter the notch 47 in the latch 41, when the parts are related for such engagement. The other arm of the controller 56 is provided with an edge piece 58 which, when the jack is moved to position of presentation, engages a notch or recess 59 in the plunger or member 7, which, as hereinbefore pointed out, is moved to place the pile of lifts under pressure when they are in

a position of presentation. A spring plunger 60 serves to normally hold the controller 56 with its downwardly extending arm bearing against a stop 61, but is yieldable to permit the downwardly extending arm to be moved to place the end 57 above the notch 47 in the latch 41.

When the lift support is moved from a receiving position, as indicated in Fig. 1, to a position of presentation, as indicated in Fig. 2, the edge 58 of the controller engages the notch 59, and upon further movement of the hand operated lever 3, the plunger or member 7 is raised to place the pile of lifts under pressure, thereby turning the controller about its pivotal mounting 55 to an extent dependent upon the height of the pile of lifts. If the pile of lifts on the lift support conforms to a predetermined standard, to which the machine is adjusted, the upward pressure movement of the lift support will move the controller from the position indicated in Fig. 2 to that indicated in Fig. 3 with the end 57 of the controller opposite the notch 47. If, however, the pile of lifts on the lift support is too high, the upward or pressure movement of the member or plunger 7 will be correspondingly less and the end 57 of the controller 56 will not be moved into position above the notch 47, but will remain in the path of movement of the latch 41 to one side or the right of the notch 47. If, on the other hand, the pile of lifts is too low, the upward pressure movement of the plunger 7 will be correspondingly greater, thereby moving the controller 56 to bring its end portion 57 in the path of movement of the latch 41 at the other side of the notch 47. Thus, if the pile of lifts is either too high or too low when it is under pressure, the controller will prevent movement of the latch 41 to release the hammer or inserting mechanism, but if the pile of lifts is of the proper height when under compression, then the end 57 of the controller will be opposite the notch 47 and permit the latch to be turned upon its pivot 42 as the hand lever 3 is moved backwardly to the position indicated in Fig. 3, thereby withdrawing the stop 40 from in front of the shoe 39 and allowing the securing mechanism or hammer to operate.

After an operation of the driving means, it is desirable that the shoe 39, connected to the driving means, shall be returned to its position in front of the stop 40, and to this end the lever 3 is provided with an arm 62 provided with a slot 63 engaged by a pin 64 on the lower arm 38 of the bell crank 36, the construction being such that while the hand lever 3 is permitted its movement to the right, as indicated in Figs. 1, 2 and 3, it will, through the slotted arm 62, return the shoe 39 to a position above the stop 40 when the lever is moved to the left, as in

licated in Fig. 1, thereby lifting the driver and locating parts in their upward or driving position.

If desired a spring 65 may be employed in addition to the weight 32 to actuate the driver, but this is not always essential.

When a pile of lifts, the surfaces of which are coated with glue or adhesive, are placed upon the lift support or jack and placed under compression, some of the adhesive or glue is liable to gum up the mold or lift support in a manner to render difficult the ejection of the pile of lifts, regardless of whether they have been secured together by the fastening or not. In either event, however, the pile of lifts must be removed and to this end the present invention contemplates an ejector which is made effective when the jack is moved toward its receiving position to eject the pile of lifts. In the present instance of the invention the jack has mounted thereon for sliding movement the ejector arm 66 which is connected to the jack by a pin and slot connection 67 to permit the ejector to be moved longitudinally relative to the jack. The upper end 68 of the ejector extends through the bottom of the heel lift support 9, and its lower end is received in the bifurcated end 69 of an operating member or lever 70 pivoted at 71 upon the jack 5. The opposite end portion of the operating member or lever 70 is provided with a pin or roll 72 which, as the jack is moved from receiving position to a position of presentation, rides along a guide 73 which may be secured to the machine frame by suitable means, such as the screws 74. Pivotaly mounted upon the machine frame at 75 below the guides 73, is a finger 76 normally under the action of a spring to hold the end of the finger against the surface of the guide 73 but yieldingly to permit passage between the finger and guide, of the pin or roll 72. In the present instance the spring or yielding means for acting upon the finger comprises a spring actuated plunger 77 mounted in a guide 78 on the machine frame and carrying a head 79 adapted to bear against the straight edge 80 of the finger below the pivot 75, the construction being such that normally the end of the finger 76 will bear against the guide 73 but will yield to permit passage of the pin or roll 72 between it and the guide, as the jack is moved to its position of presentation. When, after a driving operation, the lever 3 is moved frontwardly to carry the pile of lifts away from presenting position, the pin or roll 72 will engage the finger 76 and cause a rocking movement of the actuator or lever 70 upon the jack, thereby lifting the bifurcated end 69 of the lever or actuator and moving the ejector upwardly to expel or reject a pile of lifts. As the jack moves to its full receiving position, the roll

or pin 72 passes below the side projection of the finger 76 through the passage 81, and through the action of the spring 82, one end of which is connected to the lever or actuator 70 at 83, and the other end to the jack at 84, the actuator or lever 70 is returned to its normal or non-ejecting position.

Before the latch 41 can be tripped to remove the stop 40 from the shoe 49, it is necessary that the trip 54 be removed from its locking position, as indicated in Fig. 1, and to this end the arm 50 of the hand actuated lever 3 is provided with a pin or other abutment 85 which, as the hand lever reaches its rearward position, engages the latch 54 and moves it from the position indicated in Fig. 1, the locking position, to that indicated in Fig. 3, thereby freeing the latch for movement about its pivot 42 under the stress of the arm or spring 49.

If, at this time, the pile of lifts under pressure conforms to a predetermined standard, in which case the end 57 of the controller is above the recess 47 of the latch, the latch will be turned to cause operation of the securing means or hammer. Should the pile of lifts be either too high or too low when under pressure, however, the end 57 of the controller will not be positioned above the notch 47 of the latch and will, perforce, prevent movement of the latch even after the trip 54 is removed from its locking position.

From the construction described as a good embodiment of the present invention, it will be noted that by movement of the single or unitary hand operated lever 3, the pile of lifts is moved from a receiving position to a position of presentation opposite the driver or opposed pressure member, and by further movement of the same unitary means the pile of lifts is subjected to pressure. If, at this time, the pile of lifts while under pressure, conforms to a predetermined standard, the securing means will be operated and the pile of lifts secured together by one or more fastenings.

To limit the rearward movement of the hand lever 3, a suitable stop may be provided as, for instance, the stop 86.

Having described the invention, what is claimed as new and desired to be secured by Letters Patent of the United States is:—

1. In a heel building machine, the combination of receiving means into which a pile of lifts may be built into the form of a heel, means for securing the pile of lifts together, and means rendered effective by movement of the pile of lifts to position for treatment by the securing means to control the latter and permit its operation only when the heel conforms to a predetermined standard.

2. In a heel building machine, the combination of a mold in which a pile of lifts may be built into the form of a heel, said mold

being movable from a receiving position to a position of presentation, means for securing the lifts together, and means rendered effective by movement of the pile of lifts to a position of presentation for controlling the operation of the securing means and permitting its operation only when the heel conforms to a predetermined standard.

3. In a heel building machine, the combination of a jack for supporting a pile of heel lifts and moving them from a receiving position to a position of presentation, means for securing the pile of lifts together, a controller for controlling the operation of the securing means arranged to be engaged by the jack when the pile of lifts is moved to a position of presentation, and pressure means for moving the controller to permit operation of the securing means when the pile of heel lifts conforms to a prescribed standard.

4. In a machine for building heels, the combination of a mold in which a pile of lifts may be built into the form of a heel, said mold being movable to and from a position of presentation, driving means for driving a fastening into the pile of lifts in the mold when in position of presentation, manually operated means for moving the pile of lifts to position of presentation, subjecting the pile of lifts to pressure, and causing operation of the driving means, and means for preventing operation of the driving means when the pile of lifts under compression fails to correspond to a predetermined standard.

5. In a heel building machine, the combination of a support for a pile of heel lifts, driving means for driving a fastening into the pile of lifts, a unitary manually actuated member for moving the pile of lifts into position for the action of the driver, subjecting the pile of lifts to pressure when in position for the action of the driver, and causing the operation of the driver, and means for preventing operation of the driver when the pile of heel lifts fails to correspond to a predetermined standard.

6. In a heel building machine, the combination of a support for a pile of heel lifts, driving means for driving a fastening into the pile of lifts, and a unitary manually actuated member for moving the pile of lifts into position for the action of the driver, subjecting the pile of lifts to pressure when in position for the action of the driver, and causing the operation of the driver, and an ejector for ejecting the pile of lifts when they are moved from driver treating position.

7. In a heel building machine, the combination of a jack carrying a mold adapted to receive a pile of heel lifts, a driver for driving a fastening into the pile of lifts, and means operated by the machine attendant for successively moving the jack to present

the pile of lifts to the driver, and to subject the pile of lifts to pressure, and causing operation of the driver.

8. In a heel building machine, the combination of a jack, a mold upon the jack in which a pile of heel lifts may be built into the form of a heel, a driver for driving a fastening into the pile of lifts in the mold, means operated by the machine attendant for successively moving the jack to present the pile of lifts to the driver, subjecting the pile of lifts to pressure, and causing operation of the driver, and means for preventing the operation of the driver when the pressed pile of lifts is either too high or too low.

9. In a heel building machine, the combination of a jack for supporting heel lifts, a driver for driving a fastening into the pile of lifts, means operated by the machine attendant for successively moving the jack to present the pile of lifts to the driver, subjecting the pile of lifts to pressure, and causing operation of the driver, and an ejector operated by movement of the jack from presenting position to eject the pile of lifts.

10. In a heel building machine, the combination of a jack for supporting heel lifts, a weight actuated driver for driving a fastening into the pile of lifts, and means operated by the machine attendant for successively moving the jack to present the pile of lifts to the driver, subjecting the pile of lifts to pressure, and causing operation of the driver.

11. In a heel building machine, the combination of a jack for supporting heel lifts and movable to and from a position of presentation, a driver, manually operated means movable with and relatively to the jack for first moving the jack to a position of presentation and then by movement relative thereto to subject the pile of lifts carried by the jack to pressure, and means controlled by the height of the pile of lifts when under pressure to prevent operation of the driver if the pile of pressed lifts fails to correspond to a predetermined standard.

12. In a heel building machine, the combination of a driver, a catch normally effective to prevent operation of the driver, a heel lift support, means for moving the lift support toward the driver for placing the pile of lifts on the support under pressure, and a controller actuated by the lift support as it is moved to place the lifts under pressure and effective to permit movement of the driver catch and allow operation of the driver when the heel conforms to a predetermined standard.

13. In a heel building machine, the combination of a driver, a catch normally acting to prevent operation of the driver, a heel lift support movable to and from a position of presentation, manually operated means for moving the heel lift support to and from a position of presentation, a controller en-

gaged by the lift support when moved to a position of presentation, and means for moving the lift support to subject the pile of lifts to pressure and acting upon the controller to prevent operation of the driver when the pile of lifts fails to correspond to a predetermined standard.

14. In a heel building machine, the combination of a jack for supporting a pile of heel lifts, an ejector carried by the jack, a driver, manually operated means for moving the jack to and from a position of presentation and for causing operation of the driver, means for preventing operation of the driver if the pile of lifts is too high or too low, and means for actuating the ejector as the jack is moved from its position of presentation, whether the driver has been operated or not, to eject the pile of lifts.

15. In a heel building machine, a jack, a heel lift support carried by the jack and movable relatively thereto for subjecting the pile of lifts to pressure, a driver, a controller engaged by the lift support as the jack is moved to a position opposite the driver,

manually operated means for moving the jack to and from a position opposite the driver, and means controlled by the controller as it is moved by the lift-support for preventing operation of the driver when the pile of lifts fails to correspond to a predetermined standard.

16. In a heel building machine, a manually operated lever, a heel lift support, an opposed presser member, connections between the heel lift support and manually operated lever for moving the support toward the opposed presser member to subject the pile of lifts to pressure, a driver having an automatic hammer-like driving blow for driving a fastening into the pile of lifts, a trip adapted to be actuated by the manually operated lever to effect operation of the driver, and means for preventing operation of the driver when the pile of lifts on the support fails to correspond to a predetermined standard.

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

JOSEPH H. POPE.