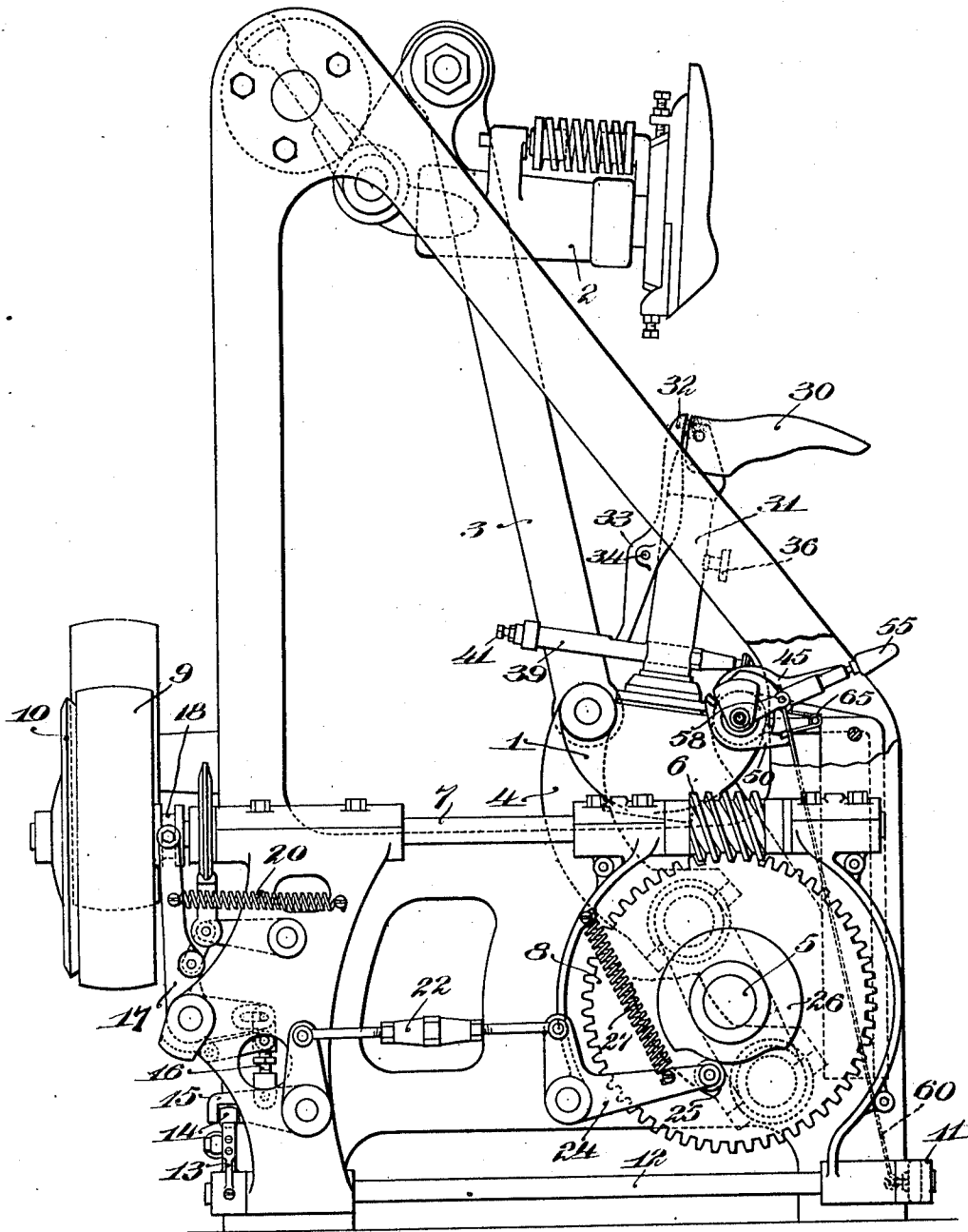


A. BATES.
MACHINE FOR OPERATING UPON SHOES.
APPLICATION FILED AUG. 25, 1909.

1,020,177.

Patented Mar. 12, 1912.

4 SHEETS—SHEET 1.



Witnesses
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W. D. McPhail

Fig. 1.

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4 SHEETS—SHEET 2.

Fig. 2.

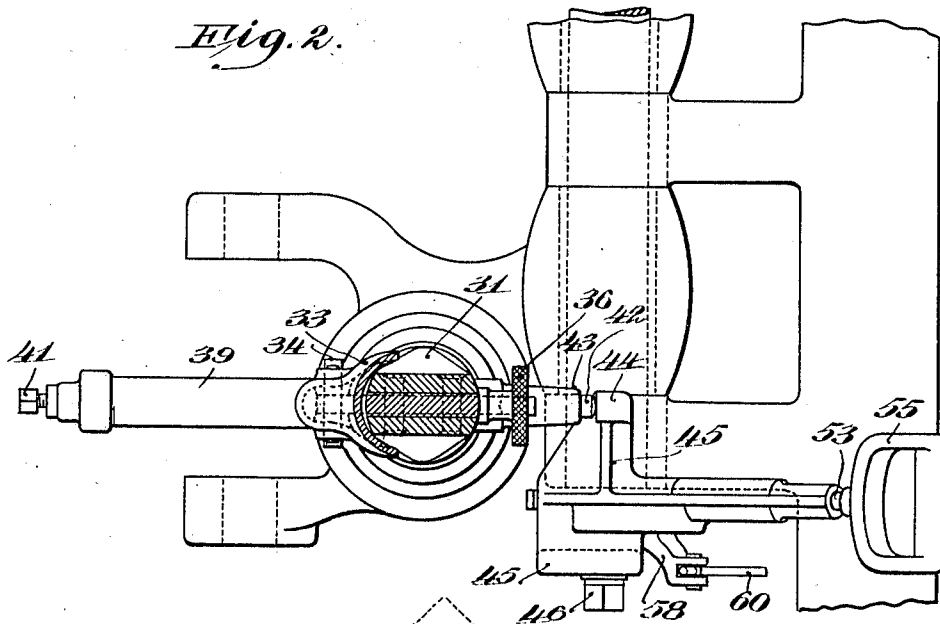
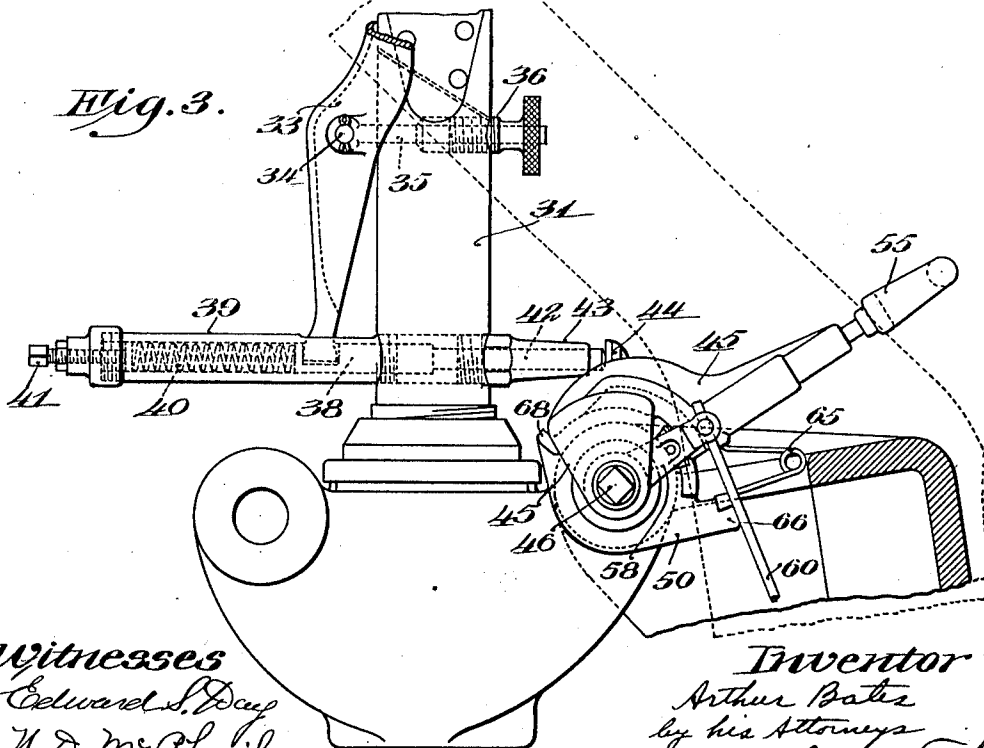


Fig. 3.



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4 SHEETS—SHEET 3.

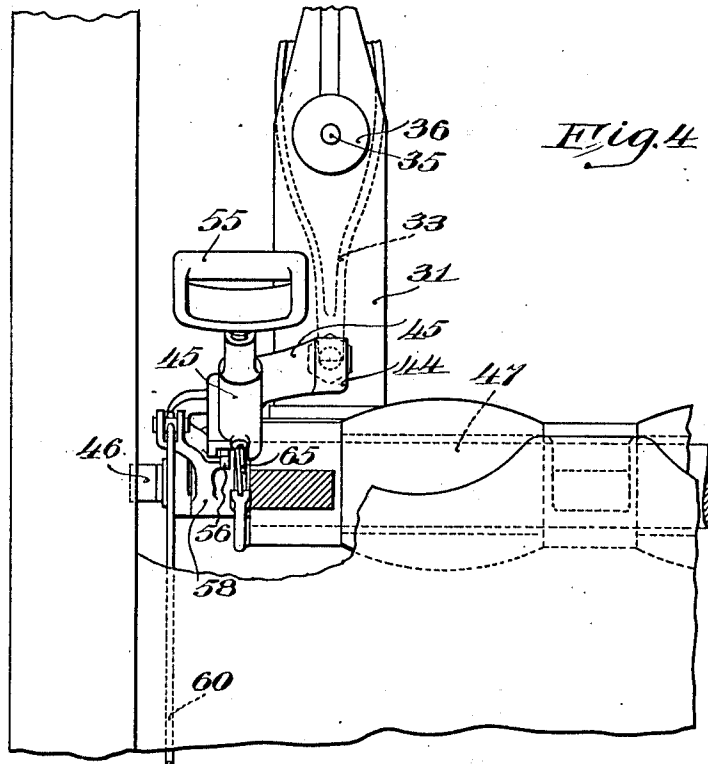


Fig. 4.

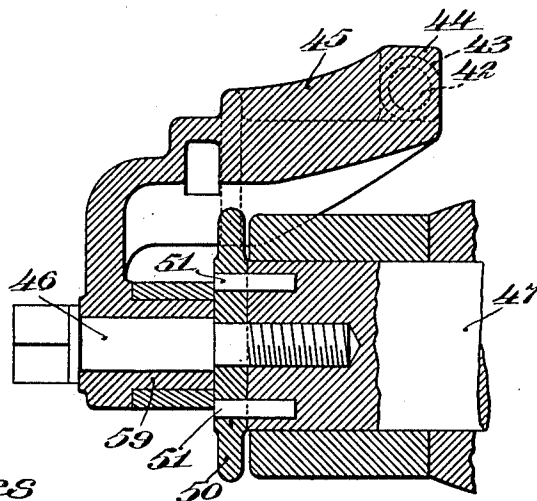


Fig. 5.

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4 SHEETS—SHEET 4.

Fig. 6.

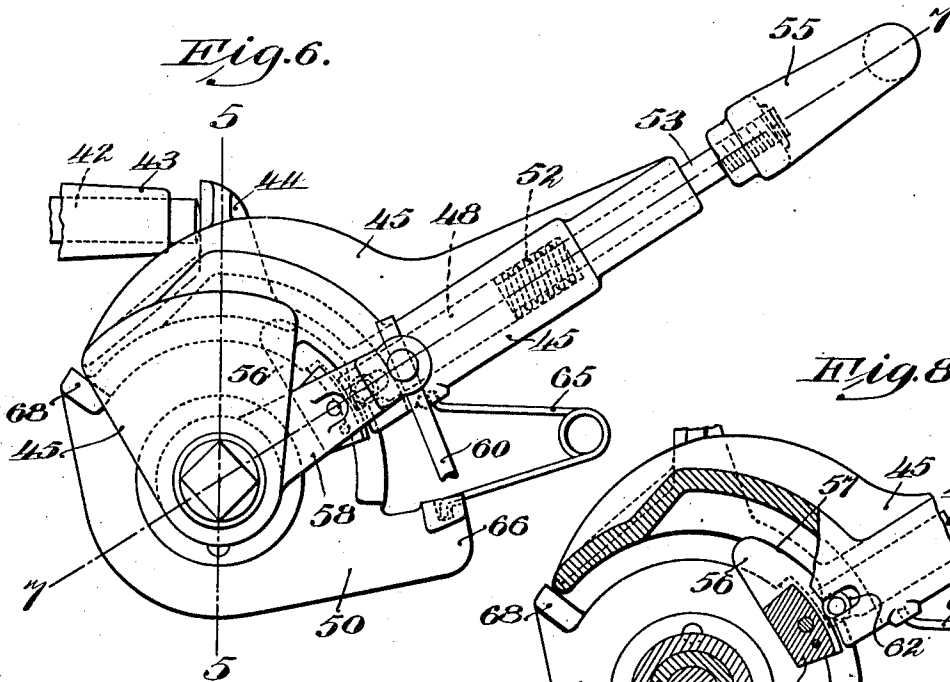


Fig. 8.

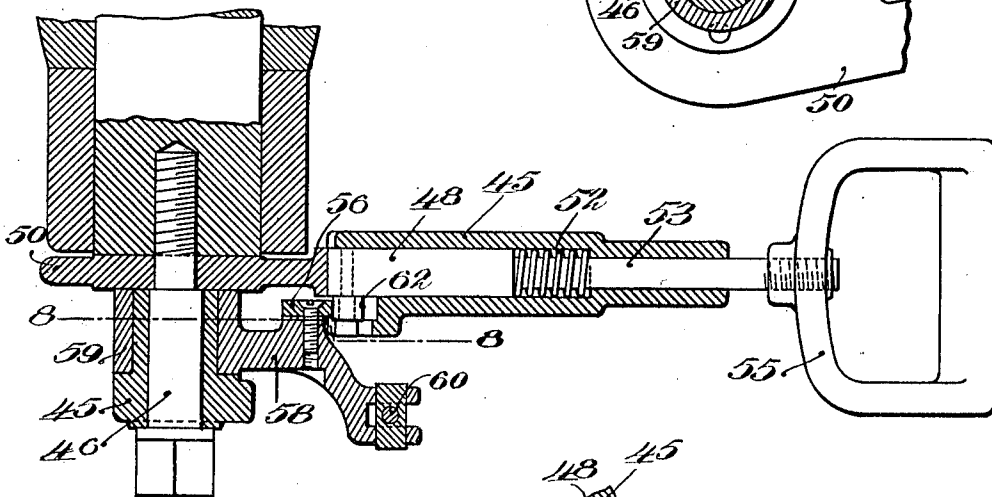
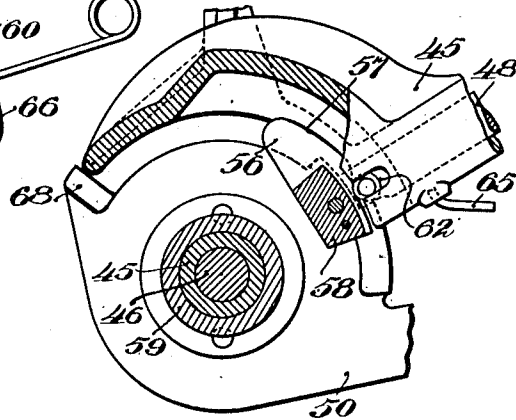
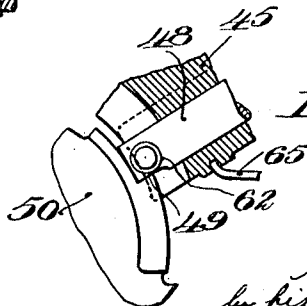


Fig. 7.

Fig. 9.



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UNITED STATES PATENT OFFICE.

ARTHUR BATES, OF LEICESTER, ENGLAND, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR OPERATING UPON SHOES.

1,020,177.

Specification of Letters Patent.

Patented Mar. 12, 1912.

Application filed August 25, 1909. Serial No. 514,479.

To all whom it may concern:

Be it known that I, ARTHUR BATES, a subject of the King of Great Britain, residing at Leicester, in the county of Leicester, England, have invented certain new and useful Improvements in Machines for Operating upon Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to jacks for shoe machines, and more particularly to jacks which are provided with a last or follower upon which the shoe being operated upon is supported and from which the shoe is removed by the operator after the operations thereon have been completed.

The invention is particularly adapted for use in connection with sole pressing machines, such, for example, as sole leveling machines of the class disclosed in the patent to B. F. Mayo, No. 861,746, dated July 30, 1907, and is intended primarily as an improvement on the jack for shoe machines disclosed in the application filed by John Pennell Pride, Serial No. 399,075, dated October 25, 1907, although the several features of the invention are not limited to use in any particular form of sole pressing machine.

The object of the present invention is to improve the construction and mode of operation of the jack disclosed in the above-mentioned application.

With the above object in view a feature of the invention contemplates the provision of improved means for controlling the expansion and contraction of the last.

In the preferred embodiment of the invention hereinafter described the jack is mounted to move from a position in which a shoe can be readily removed from or placed on the last, which position is termed the position of presentation, to a position in which the shoe supported upon the last is operated upon. Mechanism is provided connected with the last, and a stop, which as the jack moves to the position of presentation actuates the mechanism connected with the last. The jack moves toward and from its position of presentation while each shoe is operated upon, and in order to prevent the last from being contracted until the jack makes its final movement toward

its position of presentation, means are provided whereby the stop can be moved into and out of operative position. In the machine hereinafter specifically described, the stop is mounted upon an arm and locked in operative position by a latch carried by the arm. A cam is provided which is connected with the starting treadle and operates to control the latch to unlock the stop during the running of the machine. Yielding means, such as a spring, is provided, which tends to keep the stop in its operative position and hold the stop-carrying arm in such a position that the latch will automatically lock the stop when the cam is removed by the movement of the treadle in the act of stopping the machine. A handle is also provided whereby the stop may be actuated independently of the connections to the starting treadle. Said handle is connected to the latch and to the stop-carrying arm in such a manner that the former may be withdrawn from locking position and the stop moved as desired.

In addition to the features of the invention above referred to the present invention also consists in certain devices, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art, from the following description.

In the accompanying drawings, Figure 1 is a view in side elevation of a sole pressing machine with the preferred form of the present invention applied thereto, so much only of the machine being shown as is necessary to illustrate the connection of the present invention therewith; Fig. 2 is a fragmentary plan view, partly in section, illustrating the mechanism for contracting and expanding the last; Fig. 3 is a side elevation of the same, partly in section. Fig. 4 is a partial front elevation of the same; Fig. 5 is a vertical section taken on line 5—5, Fig. 6; Fig. 6 is a detail side elevation of the stop and its actuating mechanism; Fig. 7 is a sectional view taken on line 7—7, Fig. 6; Fig. 8 is a sectional view taken on line 8—8, Fig. 7; and Fig. 9 is a fragmentary sectional view showing the latch and lock plate.

The machine illustrated in Fig. 1 of the drawings, with the exception of the mechanism constituting the preferred embodiment of the present invention, is substantially the same in construction and mode of

operation as the machine disclosed in the patent to Mayo above referred to, but one jack and its cooperating sole pressing form being illustrated to avoid confusing the drawing.

An oscillating last carrier for the jack is indicated at 1 and its cooperating form carrier indicated at 2, these parts being mounted in the frame of the machine so that when they are oscillated the sole of a shoe supported upon the jack is subjected to a rolling pressure. The form carrier and jack are connected by a link 3 by which the form carrier is actuated from the jack, and said jack is connected by a link 4 to a crank shaft 5. The crank shaft 5 is rotated by means of a worm 6 secured to a driving shaft 7 and meshing with a worm wheel 8 secured to the crank shaft. Upon the rear end of the driving shaft 7 is loosely mounted a belt pulley 9 which is adapted to slide longitudinally into and out of engagement with a clutch member 10 fixedly secured to the shaft 7. The pulley 9 is moved longitudinally of the shaft into and out of engagement with the clutch member 10 to throw the jack and form into operation by connections from a foot treadle 11 at the front of the machine. The treadle 11 is secured to a rock shaft 12 having a cam 13 secured to its rear end. This cam engages a roller 14 mounted in a bell crank lever 15. The horizontal arm of the bell crank lever 15 is connected by means of a link 16 with the horizontal arm of a bell crank lever 17. The upper end of the vertical arm of the bell crank lever 17 is forked and engages the grooved hub 18 of the driving pulley 9. A spring 20 is connected at one end to the vertical arm of the bell crank lever 17 and at the other end to the frame of the machine. The connections between the treadle 11 and the pulley 9 are so arranged that when the treadle is depressed the pulley is moved into engagement with the clutch member 10 and when the treadle rises under the influence of the spring 20 the pulley 9 is permitted to move away from the clutch member 10. The vertical arm of the bell crank lever 15 is connected by means of an adjustable link 22 to the vertical arm of a bell crank lever 24 which is provided with a roller 25 at the outer end of its horizontal arm, said roller engaging a notched disk 26 on the crank shaft 5. A spring 27 is connected at one end to the horizontal arm of the bell crank lever 24, and at its other end to the frame of the machine. The notch in the disk 26 is so located that the horizontal arm of the bell crank lever 24 is not allowed to rise under the influence of the spring 27 until the jack is moved to the position illustrated in Fig. 1, which position is the position of presentation. So long as the treadle 11 is held depressed the jack and form will continue to

oscillate, and after the treadle is permitted to rise the jack and form will continue to oscillate until the jack reaches its position of presentation.

The parts so far described and the other parts not hereinafter specifically referred to, are constructed and arranged to operate in substantially the same manner as the corresponding parts of the machine of the patent hereinbefore referred to, reference to which may be had for a complete disclosure of their construction and mode of operation.

The construction illustrated in the drawings as embodying the preferred form of the present invention comprises a last having a forepart 30 rigidly mounted in the upper end of a jack post 31 and a heel part 32 which is formed by the upper end of the lever 33 fulcrumed upon the pin 34 which is carried by an eye bolt 35. Said eye bolt is mounted to slide within the jack post 31 and is threaded into an adjusting nut 36, said nut being in turn threaded into the jack post 31. By turning the nut 36 the fulcrum of the lever 33 may be moved toward or away from the jack post 31, thus varying the position of the upper end of said lever, or, in other words, the rear part of the last, to adjust the same for various sizes of shoes. The lever 33 is substantially U-shaped in cross-section for a portion of its length, and partially embraces the upper tapered portion of the jack post 31. The lower end of the lever 33 enters a slot in a plunger 38 mounted to slide in a casing 39 which projects laterally from the jack post 31. A spring 40 within the casing 39 acts upon the plunger 38 and tends to move the plunger in a direction to expand the last. An adjusting screw 41 at the outer end of the casing 39 serves as a means for adjusting the tension of the spring 40 to cause the last to be expanded with the desired force.

The parts above described act to expand the last and hold it in expanded position during the sole pressing operation, as will be obvious without further description. To cause the last to be contracted when the jack moves toward its position of presentation, the plunger 38 is provided with a stem 42 extending through a guide sleeve 43 which projects laterally from the jack post 31. This stem is arranged to engage a stop 44 carried by an arm 45 which is pivoted about a stud 46 threaded into a pivot rod or shaft 47. The action of the stop 44 is to press back the stem 42 in the plunger 38 against the tension of the spring 40 and thereby contract the last.

To enable the stop 44 to be held in operative position so that the last may be contracted, a latch 48 is slidably mounted within the arm 45 and adapted to enter a notch and engage a shoulder 49 on a lock plate 50 which is held in fixed position upon the

pivot rod 47 by means of dowel pins 51. The latch 48 is pressed outwardly by means of a spring 52 embracing an extension 53 of the latch and pressing against the inner end of the latch. A handle 55 is secured to the outer end of the extension 53 whereby the latch may be withdrawn from engagement with the shoulder 49 and the arm 45 moved manually to bring the stop 44 into and out of operative position. The handle 55 and the connections above described constitute a means for actuating the stop 44 independent of the means by which the machine is thrown into and out of operation.

To obviate the necessity of a separate operation by the operator to actuate the stop 44, connections are provided whereby the desired movements of the stop 44 are controlled from the starting treadle 11 of the machine. To this end a cam plate 56 is mounted upon an arm 58 which is pivoted about a boss 59 on the arm 45. The arm 58 is connected by means of a rod 60 with the treadle 11. The cam surface 57 of said cam plate 56 is adapted to engage a roller 62 carried by the latch 48 when the treadle 11 is in its depressed position. When the roller 62 is in engagement with the cam surface 57 the latch 48 is withdrawn from engagement with the shoulder 49 so that the stop 44 may be moved into inoperative position. A spring 65 is secured at one end to a laterally projecting arm 66 on the lock plate 50 and at the other end is secured to the arm 45. This spring tends to keep the arm 45 raised and the stop 44 in operative position. The upward movement of the arm 45 is limited by a stop 68 on the lock plate 50. This stop prevents the arm 45 from being moved beyond the position in which the latch 48 may pass into the notch on the lock plate 50. The tension of the spring 65 is not sufficient to overcome the tension of the spring 40 and thus cause the contraction of the last, but it is necessary to lock the stop 44 in operative position by means of the latch 48 in order to contract the last. So long as the treadle 11 remains depressed the latch 48 is prevented from engaging the shoulder 49, but when the treadle is raised the roller 62 is freed from the cam surface 57 and the latch 48 automatically engages the shoulder 49 to lock the stop in operative position.

The nature and scope of the present invention having been indicated and the preferred embodiment of the invention having been specifically described, what is claimed is:

1. A machine for operating on shoes, having in combination a shoe supporting jack including an expansible last, means for operating on a shoe supported on the jack, mechanism connected to the last, a stop acting on said mechanism to contract the last when the jack moves to its position of presentation, a latch for holding the stop in

operative position, and means for moving the latch.

2. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a stop, a slidable latch for holding the stop in operative position to act on said mechanism to contract the last when the jack moves to its position of presentation, and means under the control of the operator for actuating the latch and stop.

3. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a pivoted arm provided with a stop, a slidable latch for holding the stop in operative position to act on said mechanism to contract the last when the jack moves to its position of presentation, and means for moving said latch and arm.

4. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a pivoted arm provided with a stop, a latch slidably mounted in said arm, a handle connected to said latch and adapted to actuate the latch and move said stop into and out of operative position, said stop being adapted to actuate said mechanism to contract the last when the jack moves to its position of presentation, a treadle, and means operatively connected with the treadle for actuating the latch.

5. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a stop, a latch for holding the stop in operative position to act on said mechanism to contract the last when the jack moves to its position of presentation, means for actuating the latch and moving the stop into and out of operative position, a cam for engaging the latch, a treadle, and means connected to the treadle for actuating the cam.

6. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a stop, a latch for holding the stop in operative position to act on said mechanism to contract the last when the jack moves to its position of presentation, a cam for actuating the latch, a treadle, and means operatively connected to the treadle for actuating said cam.

7. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable

toward and from a position of presentation, mechanism connected to the last, a stop, a lock plate, a latch for engagement with the lock plate to maintain the stop in operative position to act on said mechanism to contract the last when the jack moves to its position of presentation, means for moving the stop out of operative position, and means tending to maintain the stop in operative position.

10 8. A machine for operating upon shoes, having in combination a shoe supporting jack including an expansible last movable toward and from a position of presentation, mechanism connected to the last, a stop, a

15 lock plate, a latch for engagement with the lock plate to maintain the stop in operative position to act on said mechanism to contract the last when the jack moves to its position

of presentation, means for moving the stop out of operative position, and a spring tending to maintain the stop in operative position.

9. A machine for operating upon shoes, having, in combination, a shoe supporting jack including an expansible last, mechanism for expanding the last, a stop, means for manually moving the stop into and out of operative position, a lock plate, a latch for engaging the lock plate and maintaining the stop in operative position, and a spring tending normally to move the stop into operative position.

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