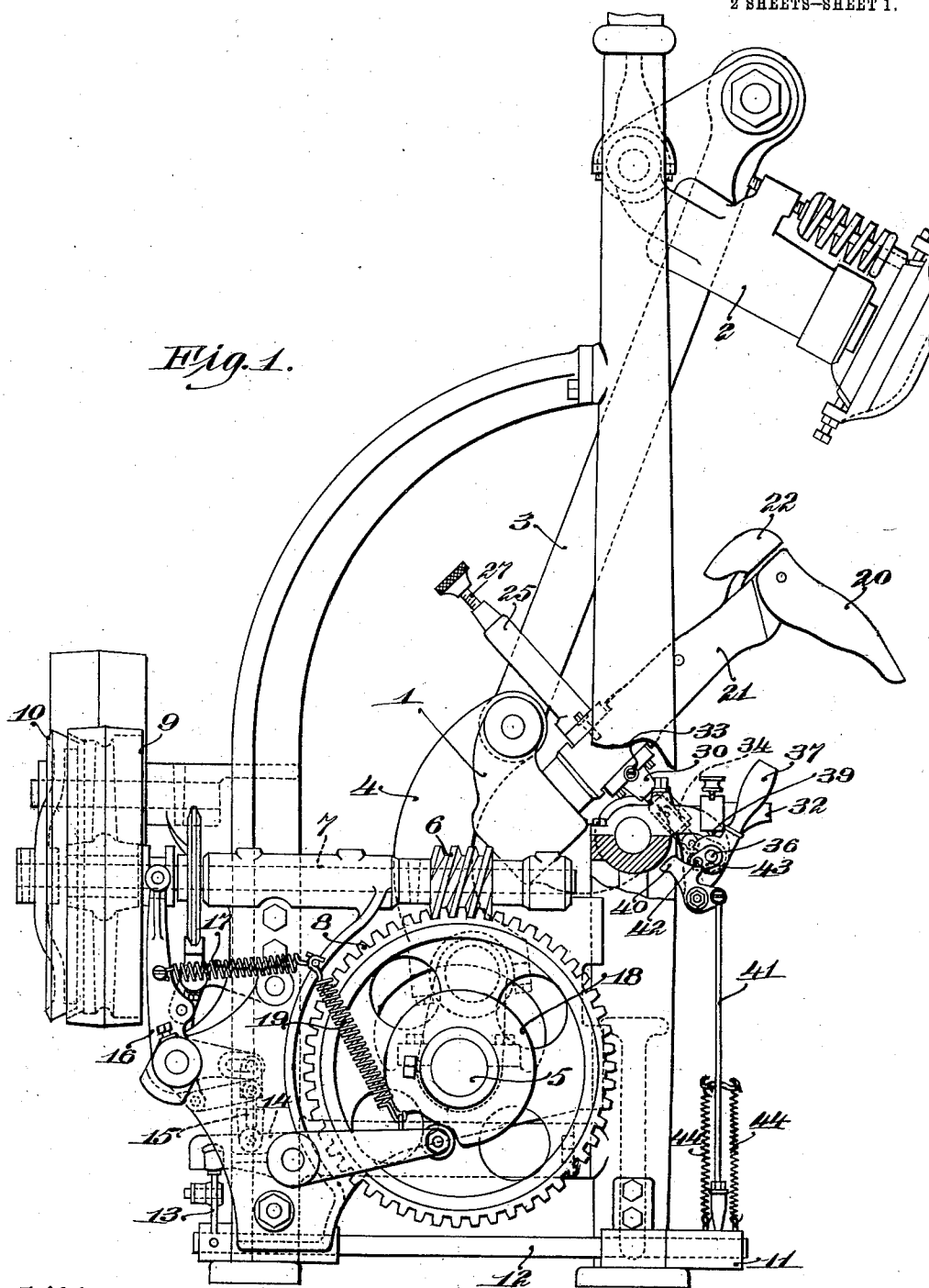


1,030,012.

J. P. PRIDE.
JACK FOR SHOE MACHINES.
APPLICATION FILED OCT. 25, 1907.

Patented June 18, 1912.

2 SHEETS—SHEET 1.



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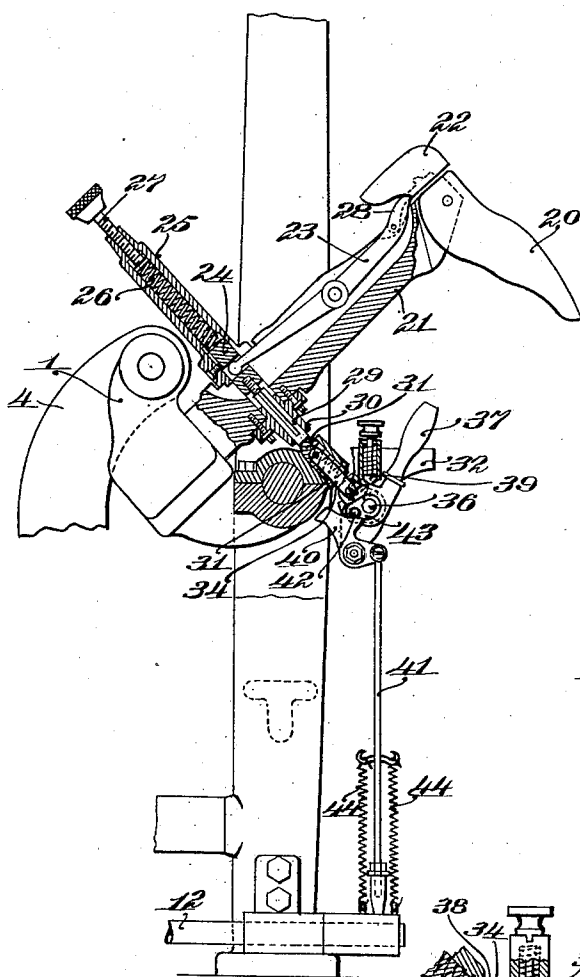


Fig. 2.

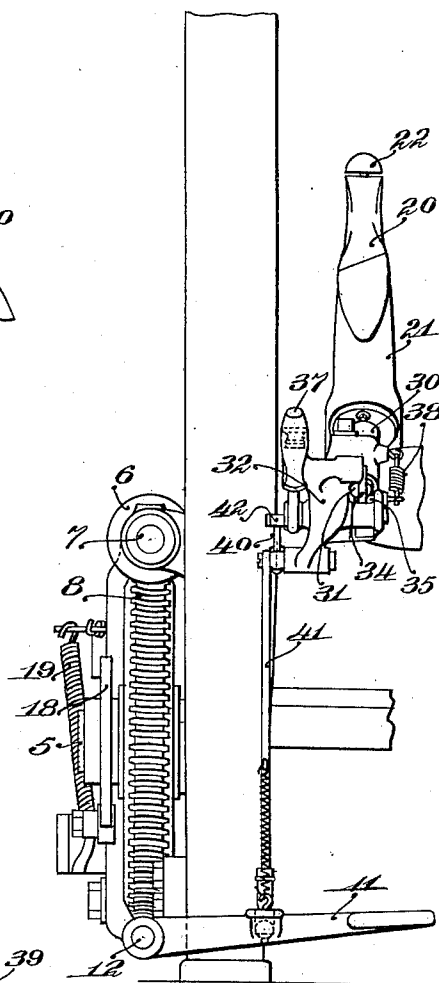


Fig. 3.

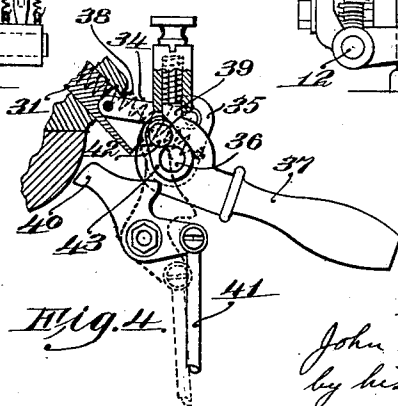


Fig. 4.

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UNITED STATES PATENT OFFICE.

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JACK FOR SHOE-MACHINES.

1,030,012.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed October 25, 1907. Serial No. 399,075.

To all whom it may concern:

Be it known that I, JOHN PENNELL PRIDE, a citizen of the United States of North America, residing at Belgrave Road, Leicester, England, have invented certain new and useful Improvements in Jacks for Shoe-Machines; 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.

As to its broader features the invention is applicable to any shoe machine in which there is a jack provided with a last or follower for supporting the work although the invention is primarily designed and 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.

The object of the present invention is to render machine jacks which comprise a last or follower upon which the shoe is supported of greater utility than heretofore by facilitating the operation of the placing of work thereon and by insuring that the work is held in a more secure and a more correct manner while the machine is operating and by facilitating the removal of the work.

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 a 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 its position of presentation actuates the mechanism connected with the last to contract the last. In the machine hereinafter specifically described, the jack moves toward and from its position of presentation a plurality of times while each shoe is being 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. As a convenient means for controlling the position of the stop, suitable connections are provided between the stop and the treadle by which the machine is thrown into operation. It is often desirable to expand the last without throwing the machine into operation to determine whether a shoe of a particular size will be firmly held on the last and accordingly the machine hereinafter described is provided with means for actuating the stop independently of the connections to the starting treadle.

The several features of the present invention will be clearly understood from an inspection of the accompanying drawings in which—

Figure 1 is a view in side elevation, partly in section, 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 detail view in side elevation, partly in section, illustrating the mechanism for contracting and expanding the last. Fig. 3 is a view in front elevation of the parts illustrated in Fig. 2 together with a portion of the driving mechanism of the machine and Fig. 4 is a detail view illustrating certain of the parts shown in Fig. 2 in a different position.

The machine illustrated in Fig. 1 of the drawings, with the exception of the mechanism constituting the preferred embodiment of the present invention, is 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 or jack is indicated at 1 and its cooperating form carrier is 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 the 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 engagement with a clutch member 10 fixedly secured to the shaft. The pulley 9 is moved longitudinally of the shaft 7 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 which shaft at its rear end is provided with a cam 13. This cam engages the rear end of a lever 14 which lever is connected by a link 15 to the horizontal arm of a bell crank lever 16, the vertical arm of which is forked at its upper end and engages a grooved collar on the hub of the pulley 9. These 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 the pulley is permitted to move away from the clutch member 10 under the influence of a spring 17 connected to the vertical arm of the bell crank 16. The front end of the lever 14 extends into the path of a notched disk 18 secured to the cam shaft 5 and the notch in the disk is so located that the front end of the lever is not allowed to rise under the influence of a spring 19 connected to the lever 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 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 last illustrated in the drawings consists of a forepart 20 rigidly mounted in the upper end of the jack post 21 and a heel part 22 mounted upon the jack post so as to be capable of a longitudinal movement toward and from the forepart to thereby contract and expand the last. The heel part is secured upon the upper end of a lever 23 pivotally mounted in the jack post and the lower end of the lever 23 enters a slot in a plunger 24 mounted to slide in a transverse guideway formed in the jack post and in a casing 25 projecting laterally from the

jack post. A spring 26 within the casing 25 acts upon the block 24 and tends to move the block in a direction to expand the last. An adjusting screw 27 at the outer end of the casing 25 serves as a means for adjusting the tension of the spring 26 to cause the last to be expanded with the desired force. To enable the heel part of the last to be readily changed for another of a different shape or size as required by the nature of the work to be operated upon, it is removably mounted upon the lever 23 by means of a dove-tailed tongue and groove formed respectively on the lever and heel part and is secured in position by means of a pivoted latch indicated at 28 in Fig. 2.

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 24 is provided with a stem 29 extending through a guide sleeve 30 secured to the jack post, which stem is arranged to engage a stop 31 mounted in a stationary bracket 32, the action of the stop being to press back the stem 29 and plunger 24 against the tension of spring 26 and thereby contract the last. The stem 29 has a screw-threaded engagement with the plunger 24 by means of which it can be adjusted to regulate the extent to which the last is contracted as may be desired. The stem is held from rotation after adjustment by means of a pin 33 (see Fig. 1) which enters a longitudinal slot in the stem.

To enable the stop 31 to be moved into and out of operative position so that the last may be contracted only at the desired times, it is mounted to slide in the bracket 32 and is connected by a link 34 to an arm 35 projecting from a rock shaft 36 mounted in the bracket 32. To the shaft 36, a handle 37 is secured by means of which the shaft can be rocked manually to move the stop 31 into and out of operative position. The arm 35 and the link 34 constitute a toggle which when straightened will render the stop 31 operative and when broken will remove it out of operative position. A spring 38 connected to an arm on the shaft 36 tends to straighten the toggle and hold the stop in operative position while a spring pressed latch pin 39 is arranged to engage a notch in the hub of handle 37 and hold the toggle broken and the stop in inoperative position.

The handle 37 and the connections above described constitute a means for actuating the stop 31 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 31 connections are provided whereby the desired movements of the stop

31 are controlled from the starting treadle 11 of the machine. To this end a cam plate 40 is pivotally mounted upon the bracket 32 and is connected by a rod 41 to the treadle 11. The cam surface of the cam plate 40 is arranged to bear against a pin 42 projecting from an arm 43 on the rock shaft 36 and the construction is such that when the cam plate is rocked by the downward movement of the rod 41 the rock shaft is actuated to move the stop 31 into its inoperative position. Upon the return of the cam plate to its original position when the rod 41 rises, the spring 38 returns the stop to its operative position. In the form of construction wherein the stop is actuated by the connections to the foot treadle the latch pin 39 is not needed and hence the operator may raise and turn it through a portion of a revolution so as to maintain it at all times out of engagement with the lever 37. To prevent the last from being suddenly and violently expanded when the treadle is depressed, the rod 41 instead of being connected directly to the treadle 11 is coupled thereto by means of a lost motion connection which permits the treadle to move downwardly independently of the rod so that the machine can be started before the stop 31 is moved to its inoperative position. The lost motion connection comprises a ball upon the lower end of the rod 41, which ball is retained in a recess in the treadle by springs 44 connected at their ends to the rod 41 and to the treadle 11. With this construction when the treadle 11 is depressed, the rod 41 remains stationary and the springs 44 are put under tension. The cam plate 40 is thus pressed against the pin 42 by the force of the springs 44. So long as the stem 29 is in engagement with the stop 31 the force exerted by the springs 44 is insufficient to break the toggle formed by the link 34 and arm 35 against the force exerted thereon by the spring 26, the toggle being bent slightly in the direction opposite to that in which it breaks. As the jack begins to swing toward the rear however, the stem 29 is removed from the stop 31 and at this time the cam plate 40 is operated by the springs 44 to break the toggle and move the stop into its inoperative 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 upon shoes having, in combination, a shoe supporting jack including an expansible last movable toward and from a position of presentation, means for operating on a shoe supported on the jack, mechanism connected with the last, and means under the control of the operator acting on said mechanism to contract the

last automatically when the jack moves to its position of presentation.

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, means for operating on a shoe supported on the jack, mechanism connected to the last and a stop acting on said mechanism to contract the last when the jack moves to its position of presentation and means for moving the stop into and out of operative position.

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, means for operating on a shoe supported on the jack, mechanism connected to the last, a stop movable into and out of operative position and acting on said mechanism when in operative position to contract the last when the jack moves to its position of presentation and means under the control of the operator for actuating the stop.

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, means for operating on the shoe supported on the jack, mechanism connected to the last, a stop movable into and out of operative position and adapted to actuate said mechanism to contract the last when the jack moves to its position of presentation, mechanism for actuating the jack, a treadle and suitable connections for controlling the jack actuating mechanism and connections between the treadle and the stop for actuating the stop.

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, means for operating on a shoe supported on the jack, mechanism connected to the last, a stop movable into and out of operative position and adapted to act on said mechanism to contract the last when the jack moves to its position of presentation, mechanism for actuating the jack, a treadle and suitable connections for controlling the jack actuating mechanism, connections between the treadle and stop for actuating the stop and means under the control of the operator for actuating the stop independently of said connections.

6. A sole pressing machine, having, in combination, a pivotally mounted shoe supporting jack including a jack post and an expansible last on the post, a lever pivotally mounted on the post and connected at one end to the last, a plunger mounted in the post and engaging the other end of the lever, a spring acting on the lever to expand

the last, a sole pressing form coöperating with the jack to exert a rolling pressure on the sole of a shoe supported on the jack, means for moving the jack backward and
5 forward about its pivot to cause the jack to coöperate with the sole pressing form and for continuing the forward movement to bring the jack into a position of presentation, and a stop to engage the plunger and

contract the last during the forward move- 10
ment of the jack.

In testimony whereof I affix my signature,
in presence of two witnesses.

JOHN PENNELL PRIDE.

Witnesses:

JOHN RICHARD LAW,
ARTHUR ERNEST JERRAM.

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