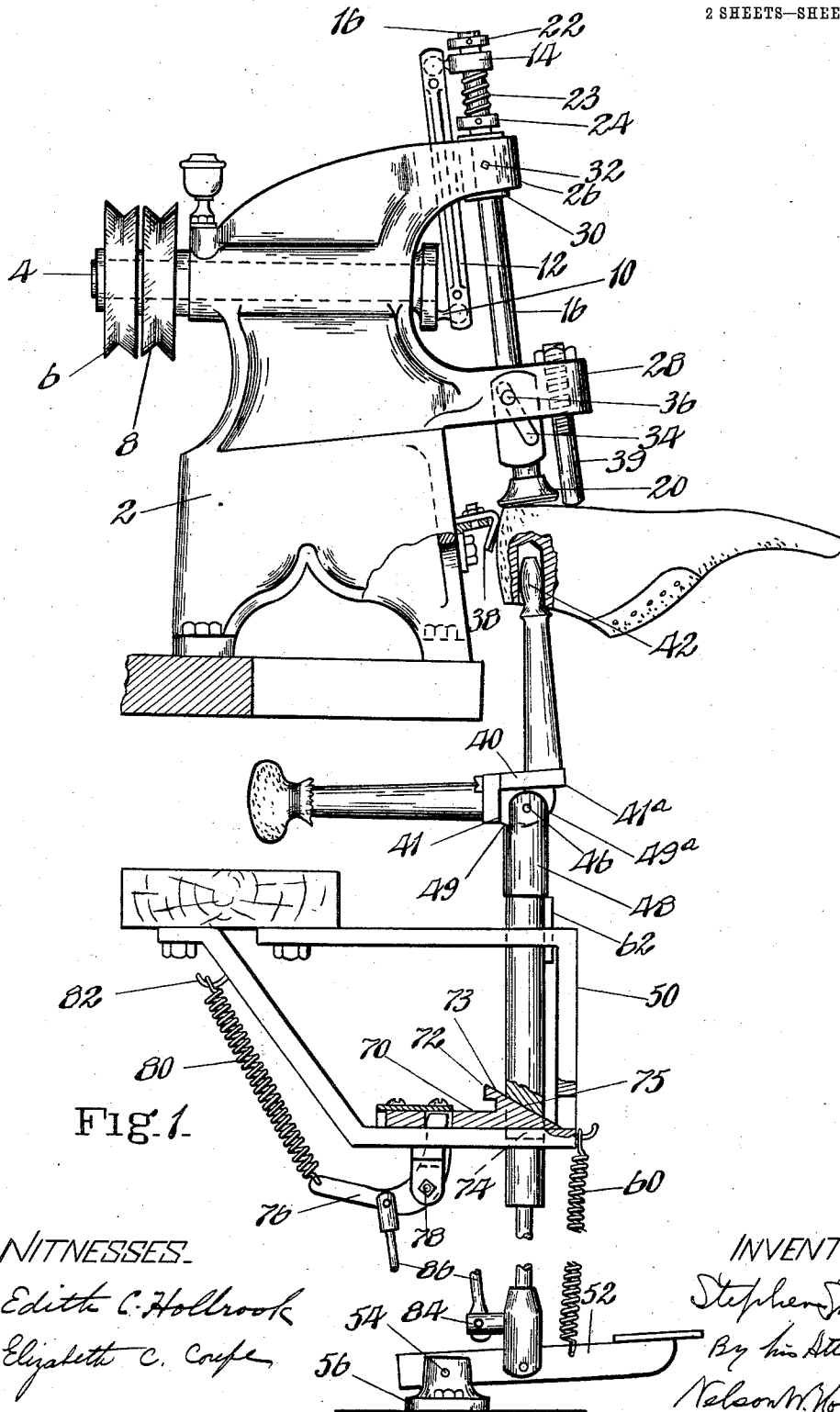


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SHOE SUPPORT FOR POUNDING-UP MACHINES.
APPLICATION FILED JAN. 29, 1910.

1,018,638.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.



WITNESSES.

Edith C. Hollbrook

Elizabeth C. Coyle

INVENTOR.

Stephen Snow

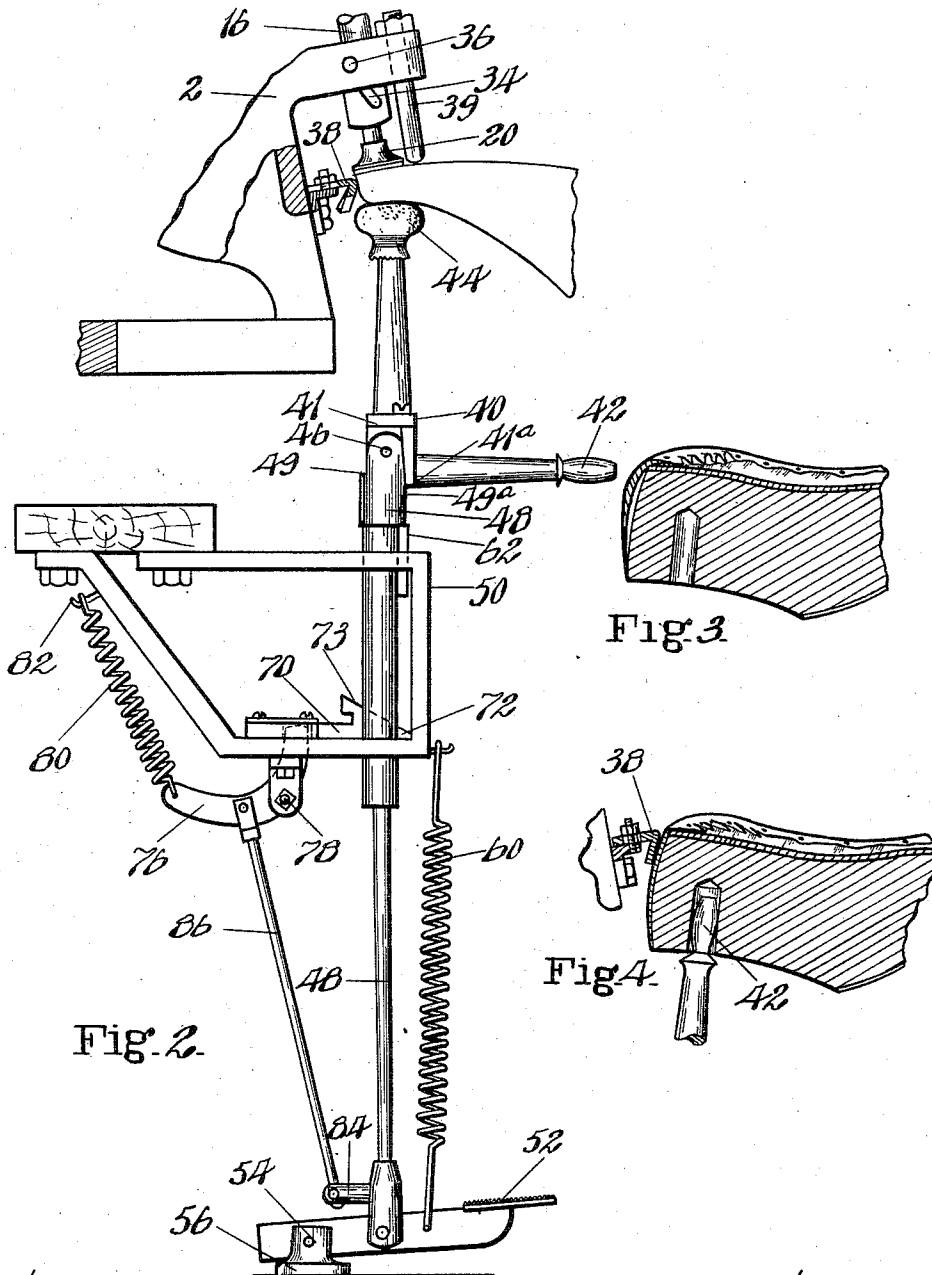
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UNITED STATES PATENT OFFICE.

STEPHEN SNOW, OF EVERETT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SHOE-SUPPORT FOR POUNDING-UP MACHINES.

1,018,638.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Original application filed July 9, 1904, Serial No. 215,924. Divided and this application filed January 29, 1910. Serial No. 540,810.

To all whom it may concern:

Be it known that I, STEPHEN SNOW, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Shoe-Supports for Pounding-Up Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines adapted for use in the manufacture of shoes, and more particularly to certain improvements in jacks or work supports for use in connection with "pounding-up" or similar machines, this application being a division of application Serial No. 215,924, filed by me July 9, 1904.

The features of the jack which are covered by the present application are, as above indicated, especially useful for supporting a shoe during the pounding-up operation, and while the invention is shown and described as applied to such a machine, it is to be understood that many of its features are not necessarily limited to such use, but may be employed for supporting shoes while they are being subjected to other operations.

In the pounding-up operation it is essential that the blows of the hammer or tool be so rapid and of such force that it is impracticable for the workman to sustain the work in his hands because of the rapid succession of hard blows, and further because it is not possible for a workman to hold the shoe up to the machine with sufficient firmness for the shoe to be properly operated upon.

An important feature of the invention, therefore, consists in improved means for supporting the work in proper position to be operated upon by the pounding-up or other devices for delivering rapid blows to the work.

Preferably the machine will be provided with means for supporting the shoe in a substantially rigid manner, and in the embodiment of the invention herein shown means is provided for positioning the shoe in predetermined relation to the pounding-up means. The shoe support is movably sustained for placing the work in position

to be operated upon, and preferably a stop or abutment is employed for determining the position to which the shoe may be moved, means being also provided to automatically raise the work support to place the surface of the work, whatever may be the thickness of the stock, against the abutment, and thereby adjust its position relative to the stroke of the pounding-up means.

The invention also includes means for locking and rigidly sustaining the jack or shoe support in the position to which it is raised, which in the illustrated embodiment of the invention comprises a wedge which is constructed to engage the spindle of the jack, and a spring which acts to automatically advance the wedge to locking position as the spindle rises, a treadle and suitable connections being provided to depress the spindle and to retract the wedge in the operation of lowering the jack.

Another feature of the invention consists in a convenient means for alternately supporting the heel and the toe of a shoe in position for the operation thereon of the pounding-up hammer, or other tool, which comprises a heel spindle and a toe rest rigidly connected together at a suitable angle to one another, and pivotally mounted in such manner as to permit either one to be brought into position to support that end of the shoe for which it is adapted.

Other features of the invention, including details of construction and combinations of parts, will be hereinafter described and pointed out in the claims.

Figure 1 is a side elevation, partly in section, of a machine embodying my invention, the shoe support being shown in position to sustain the heel of the shoe. Fig. 2 is a similar view of a portion of the machine showing the shoe support in position for sustaining the toe of the shoe. Figs. 3 and 4 are perspective views, partly in section, of the heel portion of a shoe, illustrating the effect of the pounding-up operation, Fig. 3 showing the shoe before being pounded-up and Fig. 4 showing the same shoe after being operated upon by the pounding-up machine.

The machine comprises a frame 2 provided with bearings for a driving shaft 4 having fast and loose pulleys 6 and 8. The

shaft 4 is provided on its front end with a head carrying a crank pin 10 which has a ball and socket connection with a link 12. The link is guided through an opening in the frame, and at its upper end has a similar universal-joint connection with a sleeve 14 loosely mounted on the operating rod 16, which supports at its lower end the pounding-up device 20. The sleeve 14 is arranged between fixed collars 22, 24 on the rod 16, and a spring 23 is interposed between the lower collar 24 and said sleeve. By this arrangement the rod and the pounding-up device are reciprocated from the crank pin on the driving shaft, the upward stroke being positively effected, while the downward stroke or striking movement is yieldingly effected.

The rod carrying the pounding-up device 20 is arranged obliquely, as shown in Fig. 1, being guided in forwardly and upwardly extending arms 26, 28 of the frame. The arm 26 sustains a swiveled bearing 30 mounted to turn on center pins 32, one of which is shown in Fig. 1. The portion of the rod 16 which extends through the lower arm 28 is provided with a slot 34 extending downwardly and forwardly, and a guide pin 36 secured in the arm 28 extends through said slot. The pin and slot constitute guiding means for directing the pounding-up device forwardly as it descends into striking contact with the work, whereby said pounding-up device is caused to draw the upper materials over the edge of the last and innersole as said materials are flattened down on the innersole. The downwardly and forwardly directed blows of the pounding-up device thus force the upper inwardly over the innersole, thereby taking up any slack there may be and also preventing the upper material from bulging away from the side of the last as it would otherwise tend to do when flattened down on the innersole by the pounding-up operation.

A rest 38 is adjustably mounted on the machine frame in position to be engaged by the side of the shoe for determining the distance the shoe may be moved under the pounding-up device 20. The rest serves the further purpose of holding the upper material firmly in contact with the side of the last near the edge of the shoe as the workman presses the shoe against the rest, thereby assisting in shaping the edge of the shoe as the latter is acted upon by the pounding-up device. By the term "edge" as applied to the shoe I mean to designate the edge or corner formed by the upper material lying against the side of the last and the upper material on the bottom of the innersole. The height at which the shoe may be presented to the pounding-up device is determined by a stop or abutment 39 which is adjustably mounted in the lower arm 28 of the frame 2. The

stop or abutment is so located relatively to the edge rest that it engages the bottom of the shoe some distance from the edge of the shoe, and therefore contacts with the even surface of the innersole instead of contacting with the irregular surface of the upper material on the last bottom. The abutment 39 will in practice preferably be adjusted longitudinally to position its lower end at the desired distance above the lower limit of the downward stroke of the pounding-up device 20 so that the pounding-up device, by striking the work more or less before the end of its normal stroke, will pound the work with greater or less force. The spring 23 of course yields to permit the downward stroke of the pounding-up device to be arrested while the actuating link 12 and crank pin 10 continue to move. The oblique arrangement of the shaft 16 enables the pounding-up device to act properly upon the slightly inclined marginal portion of the shoe bottom without the necessity of rocking the shoe as the different portions thereof are presented to said device.

The means comprised in the illustrated embodiment of this invention for supporting the boot or shoe for the operation of the pounding up devices above described comprises a jack 40 having one arm provided with a heel pin 42 to fit the usual pin hole in the heel of the last, as shown in Fig. 1, and a second arm provided with a padded rest 44 for sustaining the toe of the shoe, as shown in Fig. 2. The jack 40 is connected by a hinge pin 46 to a spindle 48 mounted to slide through a bracket 50 and connected at its lower end to a foot lever 52. The foot lever is pivoted at 54 to a base 56 fixed to the floor, and a spring 60 connects said foot lever to the bracket 50 and yieldingly upholds said lever together with the spindle and the jack which the shoe thereon. The spindle is preferably provided with a guide rib 62 fitting a similarly shaped opening in the bracket to hold the spindle from turning.

The bracket 50 supports a slide bar 70 having a head 72 provided with an inclined upper face 73, and the spindle 48 has a slot or opening 74 shaped to receive the head of said slide bar, the upper wall 75 of the opening being inclined to coact with the inclined upper face of the head 72. The inclined head 72 of the slide bar enters the opening 74 in the spindle more or less, according to the position of the shoe support, and coöperates with the inclined wall 75 of said opening for sustaining the shoe support at different altitudes. The slide bar is arranged to be actuated, for moving the head 72 in the opening 74 of the spindle, through a lever 76 fulcrumed at 78 to ears depending from the bracket 50. The front end of the

lever is upturned and extends through a recess in the bracket into an opening in the slide bar, as shown most clearly in Fig. 1. A spring 80 connects the rear end of the lever with a hook 82 on the bracket and acts on the lever for forcing the head of the slide bar into the opening 74 of the spindle as far as the position of the spindle permits said head to enter. The spindle and jack are thereby rigidly sustained or locked against depression and this is effected automatically whatever may be the position of the shoe support. The spring 80, acting directly upon the lever 76, exerts sufficient pressure on the slide bar to prevent the head 72 from being forced out of the opening 74 in the spindle and the shoe support from being lowered by the action of the pounding-up mechanism on the work.

For the purpose of retracting the slide bar to unlock the shoe support and permit said shoe support to be depressed for removing one shoe and applying another the foot lever 52 has connection, through an arm 84 on the lower part of the spindle and through a link 86, with the lever 76 whereby said lever may be actuated for withdrawing the head of the slide bar from the opening in the spindle when the foot lever is depressed for lowering the shoe support. The connections between the foot lever and the slide bar are preferably so arranged and proportioned that the slide bar is actuated substantially simultaneously with the actuation of the spindle up or down, and said slide bar and spindle are moved through such relative distances that the inclined face 73 of the head 72 and the coacting face 75 of the opening 74 are maintained in substantial contact at all times and in all positions of the shoe support.

It will be understood that with the construction above described the spring 60 tends to lift the shoe support so that when a shoe has been applied to the support and the foot lever released the shoe support is automatically raised by said spring until the shoe contacts with the abutment 39 and that simultaneously the slide 70 is advanced by the spring 80, or by its connection with the foot lever, for forcing the head 72 more or less into the opening 74 in the spindle, thereby to lock the shoe support automatically in whatever position the abutment 39 may stop the shoe and to sustain said shoe support rigidly in such position. This arrangement is of importance because it is desirable that each shoe be pressed upwardly into engagement with the abutment 39, which is in effect a gage, in order that the shoes may be presented in uniform position to be treated by the pounding-up device. As lasts of different sizes and styles vary in height or thickness, the shoe-support requires to be moved upwardly different dis-

tances, and should always be locked at precisely the right height. The co-acting faces 73 and 75 form simple and effective means for sustaining and locking the shoe-support in any desired position.

In the pounding-up operation as carried out with the present machine the workman depresses the shoe support by means of the foot lever 52 and places the shoe with the heel on the heel pin 42, as shown in Fig. 1, or with the toe on the toe rest 44, as shown in Fig. 2, according as may be most convenient, and then releases the foot lever. Thereupon the spring 60 lifts the shoe support, carrying the shoe into the range of action of the pounding-up device until the shoe is stopped against the abutment 39, the spring 23 permitting the pounding-up device and rod 16 to yield relative to their actuating means. As the shoe support is raised through the instrumentality of the spring 60 the slide bar 70 is advanced by the spring 80 and link 86, acting through the lever 76, to force the head 72 of the bar into the opening 74 in the spindle of the shoe support as far as the elevation of the spindle permits. The slide bar thus follows up the spindle, locking it in whatever position it may occupy and rigidly sustaining it against depression by the action of the pounding-up mechanism or by any other force until said slide bar shall be retracted. The advance movement of the slide bar for locking the shoe support is insured by the connection of the lever 76 with the arm 84 of the spindle through the link 86, so that if at any time the slide bar does not respond promptly to the action of the spring 80 by reason, for example, of the accumulation of particles of leather in the path of the bar, said slide bar will certainly be advanced and the shoe support locked as the spindle is raised. The shoe will now be clamped between the shoe support and the abutment 39 between which it may be turned for presenting the different portions of the heel or toe to the action of the pounding-up device 20. It will be understood that the vertical position of the end of the abutment 39 determines the relation of the shoe to the stroke of the pounding-up device and that by raising or lowering the abutment the height to which the shoe may be raised by the shoe support will be varied and thereby the pounding-up device will be caused to engage the work earlier or later in its downward stroke.

The shoe support having been elevated to put the shoe into the range of action of the pounding-up device and automatically locked against depression, the workman presses the edge of the shoe firmly against the rest 38 to hold the upper material against the last near the edge of the last and prevent the side of the shoe from being

forced outwardly as the upper material on the shoe bottom is flattened down, and he then turns the shoe upon the shoe support to present different portions of the end thereof to the pounding-up device. The striking movement of the pounding-up device is directed inwardly away from the edge of the shoe, as described, and therefore draws the upper material farther over the innersole at the same time that it flattens the upper material down onto the innersole. By this means the upper material is caused to conform approximately to the contour of the edge of the last and innersole.

When the pounding-up of that end of the shoe being operated upon is completed the workman actuates the foot lever to retract the slide bar 70 by means of the link 86 and lever 76, thereby unlocking the spindle and simultaneously depressing the shoe support. The shoe may then be removed and the jack tipped on its pivot 46 to bring the other arm thereof into operative position. The other end of the shoe will then be applied to the jack and the pounding-up operation for that end of the shoe performed in the same manner as just described. It is to be noted that the frame 2 and the bench or table upon which the machine rests are suitably cut away to permit the jack to be turned about its pivot 46 as required to place one arm or the other in operative position and that the jack and spindle are provided with cooperating stop faces 41, 49 and 41^a, 49^a for limiting the tipping movements of the jack. While the invention has been described as embodied in a machine adapted to be employed for performing the pounding-up operation on a shoe after the shoe has been lasted, it is within the scope of this invention to employ the novel shoe support with mechanism for operating upon shoes at other stages of their manufacture.

No claim is made in this application to the pounding-up mechanism, or to combinations which include such mechanism, either broadly or specifically, with certain features of the shoe support, as these matters are claimed in my co-pending application Serial No. 215,924, above referred to.

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 of the class described a

shoe supporting spindle, a treadle connected to the spindle, a lock for the spindle, a connection from the lock to the treadle, and a spring arranged to uplift the spindle and automatically advance the lock.

2. In a machine of the class described, a shoe supporting spindle, a treadle connected to the spindle, a wedge arranged to engage an inclined face on the spindle, a connection from the treadle to the wedge, and means for yieldingly uplifting the treadle and causing the wedge to move proportionally for maintaining supporting relation to the spindle.

3. In a machine of the class described, a shoe supporting spindle, a treadle connected to the spindle, a wedge arranged to engage an inclined face on the spindle, a connection from the treadle to the wedge, a spring to uplift the treadle and also advance the wedge, and additional means for yieldingly pressing the wedge forwardly.

4. In a machine of the class described, a shoe supporting spindle, a treadle connected to the spindle, a spring to uplift the treadle, a locking wedge to engage the spindle, a lever, a spring acting through the lever to advance the wedge to locking position, and a connection from the treadle to said lever to withdraw the wedge when the treadle is depressed for lowering the spindle.

5. In a machine of the class described, the combination with the spindle 48, the treadle 52 therefor, the spring 60, the wedge 73, the wedge lever 76, the spring 80 to advance the wedge, and the connection 86 from the treadle to the lever arranged to operate for the purpose described.

6. In a machine of the class described, a heel spindle and a toe rest connected together at substantially right angles to one another and pivotally mounted to permit either one to be brought into an upright position for use, and a holder upon which said arms are arranged to turn as described through a limited distance for the purpose stated.

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

STEPHEN SNOW.

Witnesses:

ARTHUR L. RUSSELL,
ELIZABETH C. COUPE.