A. BATES & J. P. PRIDE.

JACK LOCKING DEVICE.

APPLICATION FILED APR. 2, 1908.

949,460. Patented Feb. 15, 1910.

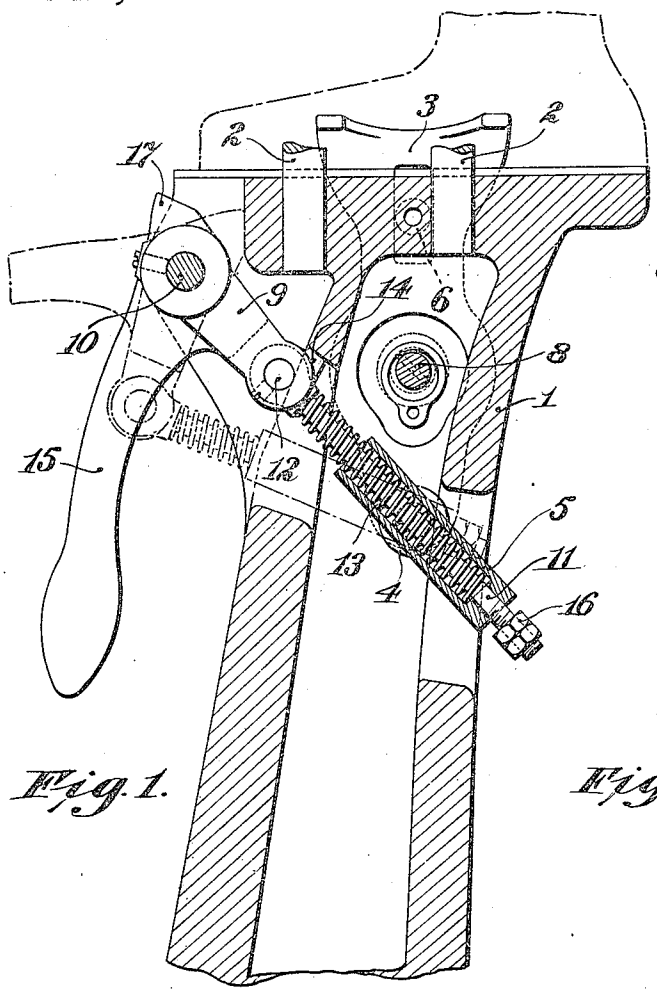


Fig. 1.

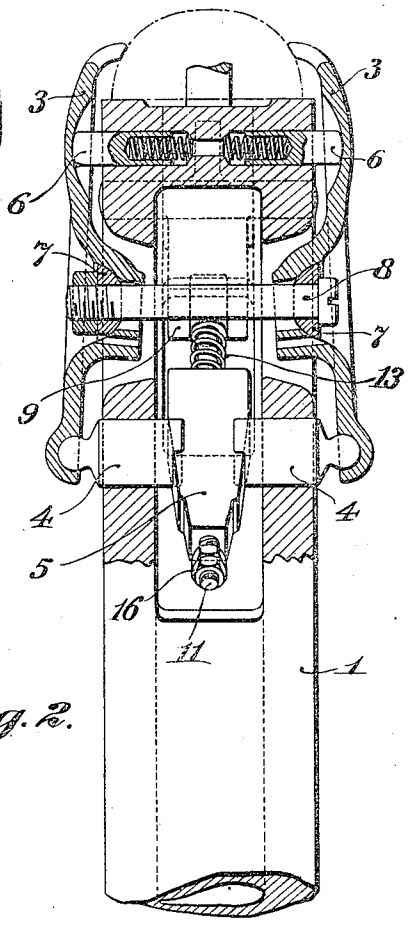
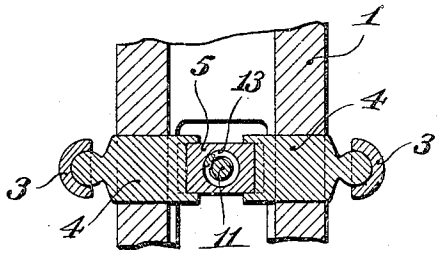


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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JACK-LOCKING DEVICE.

949,460. Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed April 2, 1908. Serial No. 424,741.

To all whom it may concern:

Be it known that we, ARTHUR BATES, a subject of the King of England, and JOHN P. PRIDE, a citizen of the United States, residing at Leicester, in the county of Leicester, England, have invented certain new and useful Improvements in Jack-Locking Devices; and we 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 an improved means for locking the shoe supporting jack or follower of a sole leveling machine upon its support or carrier, and it is designed particularly for use in connection with that class of sole leveling machines known in the art as direct pressure machines, in which all portions of the sole of a shoe are simultaneously subjected to pressure between a shoe supporting jack or follower and a coöperating sole pressing form.

The object of the present invention is to provide an improved jack locking device which will not work loose during the operation of the machine, and which will hold the jack securely upon its support while the operator is acting upon the sole of a shoe with a hand rub stick or hammer and while the operator is removing a shoe therefrom and placing another shoe thereon. With this object in view a feature of the present invention contemplates the provision of a clamping device arranged to engage the jack and hold it upon its support, and mechanism for actuating the clamping device including a toggle, which when straightened forces the clamping device against the jack and locks it in engagement therewith. In accordance with this feature of the invention the clamping device may be of any suitable construction and any suitable connections may be provided between the clamping device and the toggle. In the preferred form of the invention, however, the mechanism for actuating the clamping device also includes a wedge which is moved by the toggle and is interposed between the toggle and the clamping device. To enable the toggle to be straightened and the locking device to be forced firmly into engagement with the jack regardless of its size or its position upon its support, a yielding connection is also preferably provided in the mechanism for actuating the clamping device, which yielding connection in the illustrated embodiment of the invention hereinafter described is interposed between the toggle and the wedge.

As regards the features of invention above referred to the clamping device may be of any suitable construction. In the illustrated embodiment of the invention hereinafter described the clamping device consists of oppositely disposed jaws arranged to engage opposite sides of the base of the jack and hold the jack firmly on its support without any liability of its being displaced either during the separation of the sole pressing form from the sole of a shoe or during the manipulation of the shoe by the operator before or after the leveling operation. The provision of oppositely disposed clamping jaws to engage a jack and hold it upon its support is believed to be new, and these jaws, in connection with means for actuating them to engage the jack, are considered to constitute a feature of the present invention whether or not the actuating means embodies the features of construction above referred to as also constituting features of the present invention.

The present invention also consists in certain constructions 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.

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

Figure 1 is a longitudinal sectional view of the jack support of a direct pressure sole leveling machine with a jack locking device applied thereto which embodies the several features of the present invention in their preferred form. Fig. 2 is a transverse sectional view looking from the right of Fig. 1, and Fig. 3 is a detail sectional view illustrating the manner in which the actuating wedge is mounted in the sliding pins which engage the lower ends of the clamping jaw levers.

Referring to the drawing, the support for the jack is indicated at 1 and, as shown, consists of a hollow post or arm provided at its upper end with two jack retaining pins 2 which enter holes in the base of the jack as is usual in direct pressure sole leveling

machines. The jack is indicated in Figs. 1 and 2 in dotted lines and rests upon the surface at the upper end of the jack support.

The locking device for the jack comprises two oppositely disposed levers 3 shaped at their upper ends to form clamping jaws to engage the base portion of the jack as indicated in Fig. 2. These levers are pivotally mounted intermediate their ends in a manner hereinafter described, and at their lower ends are provided with semi-cylindrical sockets which engage knobs at the outer ends of oppositely disposed pins 4 mounted in the support 1 so as to be capable of oscillating and of sliding longitudinally. The adjacent ends of the pins 4 are provided with inclined slots which receive a wedge 5. This wedge is supported by the pins and is mounted to slide transversely of the pins so that a sliding movement of the wedge in one direction forces the pins apart and actuates the levers 3 to clamp the base of the jack, while a movement of the wedge in the opposite direction permits the pins to move toward each other and the levers 3 to release the jack. The outward movement of the upper ends of the levers 3 to release the jack is insured by spring pressed pins 6 mounted in the support 1 and having their outer ends seated in grooves in the levers 3. These pins, in addition to forcing the upper ends of the levers 3 away from the jack also coöperate with the pins 4 engaging the lower ends of the levers to support the levers on the jack supports. The levers 3 are pivotally mounted upon pivot supports in the form of hemispherical washers 7, which washers are mounted upon a bolt 8 passing loosely through openings in the levers, as best shown in Fig. 2. The bolt 8 forms a connection between the clamping jaw levers so that the levers can move bodily in the same direction with relation to the jack support. The pressure of the clamping jaws against the base of the last is thus equalized and the jaws can accommodate themselves to the shape of the base of the jack.

For actuating the wedge 5 a toggle mechanism is provided consisting of an arm 9 secured to a rock shaft 10, and a rod 11 mounted to slide in the wedge 5. The rod 11 is pivotally connected at 12 to the free end of the arm 9 and the arm is arranged to swing into alinement with the wedge 5, or into a position, as illustrated in Fig. 1, in which the axes of the shaft 10, the pivot 12 and the pins 4 are in line. A coiled spring 13 surrounds the rod 11 and is interposed between a shoulder on the rod and the bottom of a recess formed in the wedge 5 so that the wedge is moved yieldingly in a direction to actuate the clamping jaws to engage the jack and the arm 9 can be swung into alinement with the wedge regardless of the size of the jack which is to be locked on the support. The arm 9, rod 11 and wedge 5 swing from the position illustrated in full lines in Fig. 1 to the position illustrated in dotted lines. The inward swinging movement is limited by a projection 14 on the arm which engages a surface on the support 1 as indicated in Fig. 1. When the parts are in this position with the arm 9 and wedge 5 in alinement, the wedge is locked in position and consequently the clamping jaws are held firmly in engagement with the jack without any liability of working loose. To enable the arm 9 to be readily swung by the operator a handle 15 is secured to the shaft 10 and to insure the withdrawal of the wedge 5 and the outward releasing movements of the clamping jaws, nuts 16 are provided upon the lower end of the rod 11, which, during the outward swinging movement of the arm 9, are arranged to engage the wedge 5 and positively withdraw the wedge. The outward swinging movement of the arm 9 and the withdrawing movement of the wedge 5 are limited by a projection 17 on the hub of the handle 15 which engages a surface at the upper end of the jack support.

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

1. The combination with a shoe supporting jack and a support therefor, of a clamping device to engage the jack and hold it upon the support and mechanism for actuating the clamping device to engage and release the jack including a toggle arranged to be straightened and lock the clamping device in engagement with the jack.

2. The combination with a shoe supporting jack and a support therefor, of a clamping device to engage the jack and hold it upon the support, a wedge for actuating the clamping device to engage the jack and mechanism including a toggle and a yielding connection for actuating and locking the wedge.

3. The combination with a shoe supporting jack and a support therefor, of jack clamping jaws mounted on the support, a wedge for actuating the jaws to clamp the jack and means for actuating and locking the wedge.

4. The combination with a shoe supporting jack and a support therefor, of a clamping device to engage the jack and hold it upon the support, a wedge for actuating the clamping device to engage the jack, and a toggle for actuating and locking the wedge.

5. The combination with a shoe supporting jack and a support therefor, of a clamping device to engage the jack and hold it upon the support, a swinging and sliding wedge for actuating the clamping device to

engage the jack, an arm pivotally mounted to swing into and out of alinement with the wedge and connections between the free end of the arm and the wedge for swinging and sliding the wedge.

6. The combination with a shoe supporting jack and a support therefor of a clamping device to engage the jack and hold it upon the support, a swinging and sliding wedge for actuating the clamping device to engage the jack, an arm pivotally mounted to swing into and out of alinement with the wedge, a rod pivotally connected to the free end of the arm and mounted to slide in the wedge, and a spring bearing on the wedge and arranged to be compressed by the rod.

7. The combination with a shoe supporting jack and a support therefor of oppositely disposed clamping jaws to engage the jack and hold it upon the support, means for actuating the jaws, and means for equalizing the pressure of the jaws against the jack.

8. The combination with a shoe supporting jack and a support therefor of oppositely disposed clamping jaws to engage the jack and hold it upon the support, means for actuating the jaws, and connections between the jaws to equalize the pressure of the jaws against the jack.

9. The combination with a shoe supporting jack and a support therefor of oppositely disposed levers provided at one end with jaws to engage the jack and hold it upon the support, oppositely disposed slides engaging the other ends of the levers, a wedge to force the slides apart and actuate the levers to clamp the jack and a rod connecting the levers provided with pivot supports for the levers.

10. The combination with a shoe supporting jack and a support therefor of oppositely disposed levers provided at one end with jaws to engage the jack and hold it upon the support, oppositely disposed pins engaging the other ends of the levers arranged to rotate and slide longitudinally, a wedge mounted on the pins so as to turn therewith and mechanism for actuating the wedge to force the pins apart and actuate the levers to clamp the jack comprising an arm pivotally mounted to swing into and out of alinement with the wedge and a connection between the free end of the arm and the wedge for swinging and sliding the wedge.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

ARTHUR BATES.
JOHN PENNELL PRIDE.

Witnesses to the signature of Arthur Bates:

GRACE HOLMES,
ARTHUR ERNEST JERRAM.

Witnesses to the signature of John P. Pride:

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CHARLES F. GARDNER.