

O. ASHTON.

JACK.

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1,012,581.

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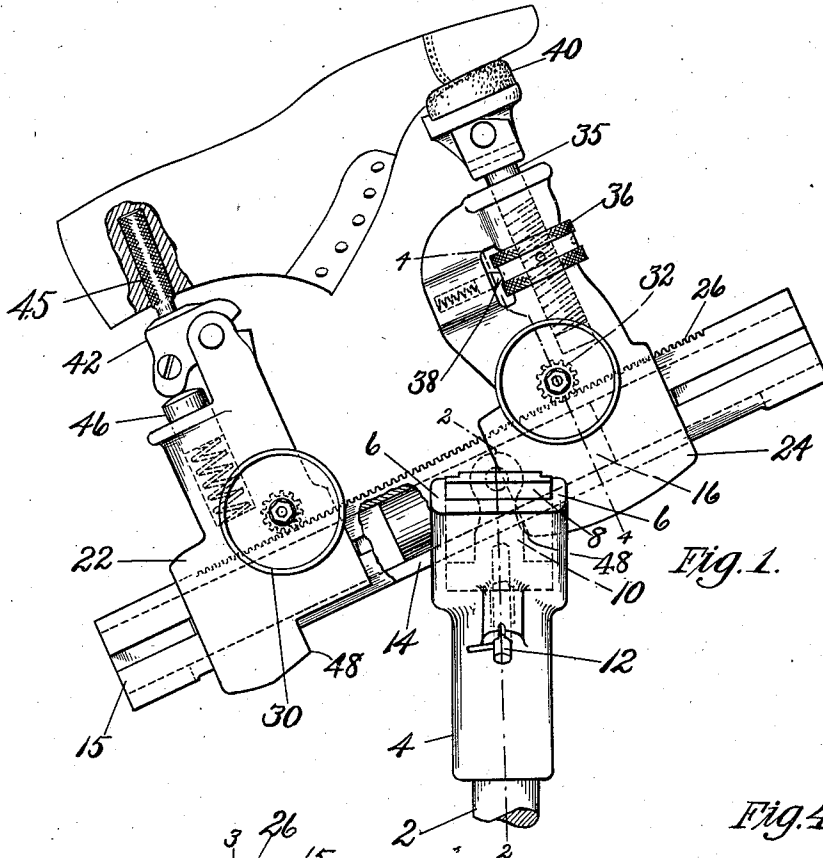


Fig. 1.

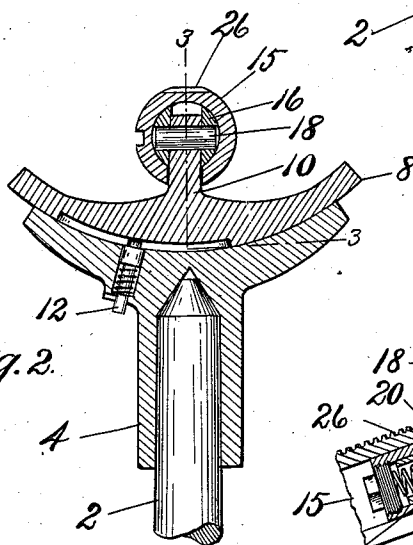


Fig. 2.

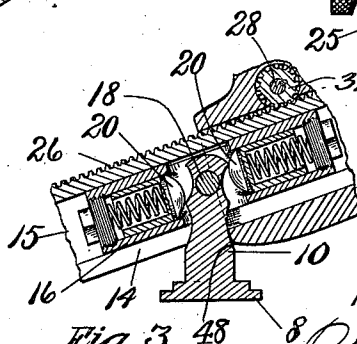


Fig. 3.

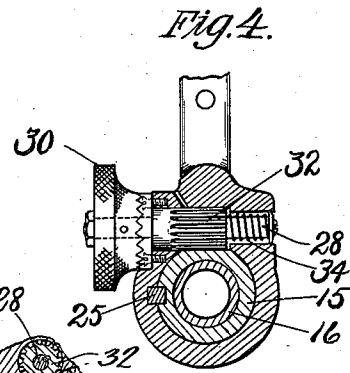


Fig. 4.

WITNESSES.

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JACK.

1,012,581.

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To all whom it may concern:

Be it known that I, ORRELL ASHTON, a citizen of the United States, residing at Lawrence, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Jacks, 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 shoe supports or jacks and has for its object to provide a jack of simple and strong construction.

The jack comprises a heel post and a toe rest and one feature of the invention consists in providing novel means by which adjustment of the heel post and toe rest relatively to each other can be effected while a shoe is supported thereon and said parts can be locked in their adjusted positions.

A further feature of the invention consists in novel means for supporting the heel post and toe rest.

As shown the post and rest comprise carriages which are mounted for adjustment toward and from each other upon a tubular bar which receives a cylindrical block. The tubular bar has a longitudinal slot in its lower side and a stem is pivotally connected to the cylindrical block, extends through the slot, and is provided with a transversely extended foot. The foot has an arc-shaped convex lower face and rests in an undercut guideway in a support on which it slides about a center which is approximately in the bottom of a last carried by the jack, whereby the last may be tilted transversely without materially affecting the elevation at which its bottom face is held. Preferably also novel means is provided for tending to hold the jack with the shoe bottom in an approximately horizontal position and for yieldingly resisting the tipping movement of the jack longitudinally. As shown the stem which connects the tubular bar to the support has in opposite sides seats for spring-pressed plungers which are carried by the cylindrical block. These plungers yieldingly resist tipping movement of the jack and tend to restore it to its normal horizontal position.

These and other features of the invention, including certain details of construction and combinations of parts will be explained in

the accompanying description and pointed out in the claims.

In the drawings which show a preferred embodiment of the invention,—Figure 1 is a side elevation of a jack; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a section on the line 4—4 of Fig. 1.

A spindle 2 or any other means may be employed for pivotally sustaining the support 4 on which the jack is mounted for movement of the shoe laterally. The support is provided with a concave guideway, the side walls 6 of which are shaped to receive and retain the foot 8 of the stem 10. The support carries a spring-pressed locking pin 12, the upper end of which stands in a groove in the lower face of the foot 8 and limits the sliding movement of the jack on the support. The upper portion of the stem 10 extends through a longitudinal slot 14 in a tubular bar 15 that sustains the heel post and toe rest. The tubular bar receives a close fitting cylindrical block 16 to which the upper end of stem 10 is connected by a pivot pin 18 as shown in Fig. 3. The cylindrical block 16 may be provided with spring-pressed plungers 20, the rounded heads of which engage seats or inclined faces on the stem to cause the jack to be maintained normally in a horizontal or approximately horizontal position. Preferably the faces of the stem 10 engaged by the plungers are so formed that the plungers are each put under increasing tension as the jack is tipped, so that this movement of the jack is yieldingly resisted.

The heel post carriage 22 and the toe rest carriage 24 are mounted upon opposite ends of the tubular bar 15 and guided therein by keys 25, see Fig. 4. The upper side of the bar has rack teeth 26 and the carriages each carry a shaft 28 provided with a hand wheel 30 and having a spline and groove connection with a pinion 32 which engages the rack teeth. This construction enables the operator to adjust either the heel post or the toe rest lengthwise of the jack for adapting them to the length of the shoe being supported or for other purposes, and this adjustment can be made if desired after the shoe has been jacked, for the hand wheel provides sufficient power to enable this to be done readily. For locking the parts in

adjusted relation, the shaft 28 may be longitudinally movable against a spring 34 and the hand wheel carries ratchet teeth to engage teeth formed on an angular plate which is attached to the carriage and confines the pinion 32 in place in the carriage, as shown in Fig. 4.

The toe carriage 24 carries a screw-threaded post 35 which is adjusted vertically by a nut 36 which is locked by a spring pin 38. The toe rest 40 is supported on the upper end of the post and may be of any suitable form. The heel post carriage 22 gives pivotal support to a block 42 that carries the heel pin 45 and is pressed by a spring plunger 46 in the direction to tip the shoe forwardly and downwardly against the toe rest 40.

In the use of the jack a shoe is applied by entering the heel pin into the usual pin hole in the cone of the last and raising the toe of the last against the pressure of the spring-actuated plunger 46 until the toe can be swung into position on the rest 40. If it is then found that the post and rest are not properly positioned for the length of the particular shoe thereon, either the post or rest can be moved forwardly or backwardly to the desired position, the hand wheels 30 enabling sufficient power to be applied for this purpose notwithstanding the movement is resisted by the binding of the shoe in the toe rest toward which it is impelled by the spring plunger 46. The shoe can be moved lengthwise by reason of the sliding connection between the tubular bar 15 and the cylindrical block 16, the extent of this movement being adjustably limited according to the size of the shoe by the engagement of faces 48 on the toe and heel carriages with the sides of the stem 10 as indicated in Fig. 1. The shoe may be tipped longitudinally in a vertical plane about the pivotal connection between the stem and the block 16, but too free movement about this connection is prevented by the spring-pressed plungers 20 which steady the shoe in whatever position it occupies and, because of the inclined faces of the stem engaged by them, offer increasing resistance to movement of the shoe from a horizontal position. The shoe may be tipped laterally without changing the elevation of its bottom face by reason of the connection between the foot of the stem 10 and the support 4 which permits movement about an axis approximately in the bottom of the shoe.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a shoe supporting jack, a last rest, a bar on which the rest is adjustable lengthwise of the shoe, said bar having rack teeth and said rest having a pinion engaging the teeth, a hand wheel to turn the pinion

mounted for axial movement, a locking device connecting the hand wheel and the rest, and means for yieldingly holding the hand wheel against axial movement with the hand wheel locked.

2. In a shoe support, a last rest, a bar 15 on which the rest is adjustable lengthwise of the shoe, said bar having rack teeth and said rest having a transverse bearing, a toothed sleeve 32 confined to turn in the bearing and engaging the rack teeth, a shaft 28 turning the sleeve and movable endwise therein, a hand wheel 30 fast to the shaft and having locking endwise engagement with the rest, and a spring 34 arranged to press the hand wheel endwise and maintain such locking engagement.

3. In a shoe supporting jack, a heel rest and a toe rest, a shaft carried by one of said rests, a device fixed on said shaft by which it can be manually actuated, a pinion turned by the shaft and in which the shaft is movable endwise, and a rack bar engaged by said pinion whereby one rest may be adjusted independently of the other rest, combined with means for locking the parts in adjusted position comprising a toothed plate fixed upon the movable rest, a cooperating plate carried by said shaft actuating device, and a spring located between an end of the shaft and an end of the pinion for holding said plates normally in engagement.

4. In a shoe supporting jack, a heel post carriage, a toe rest carriage, a tubular bar upon which said carriages are mounted, a block mounted in said tubular bar between the carriages and arranged to permit lengthwise movement of the bar thereon, a depending stem pivotally connected with said block and extending through a slot in the bar, and a support for said stem.

5. In a shoe supporting jack, a heel post carriage, a toe rest carriage, a tubular bar upon which said carriages are mounted, a cylindrical block mounted in said tubular bar between the carriages and arranged to permit lengthwise movement of the bar thereon, adjustable stops for limiting the relative movement of the bar and block, a stem pivotally connected to the block to permit rocking movement of the shoe in one direction, and a support to which the stem is connected to permit movement of the shoe transversely of the direction of the first mentioned movement.

6. In a jack, shoe supporting means, a rotatable pivotal support about which a shoe carried by the shoe supporting means may be rotated and tipped and means for yieldingly resisting tipping movement of the shoe in reverse directions.

7. In a jack, shoe supporting means, a pivotal support about which a shoe carried by the shoe supporting means may be tipped in reverse directions, a spring-pressed plun-

ger carried by one of said parts and inclined faces formed on the other part to cause the resistance to tipping movement to be increased as said movement progresses in either direction from a normal position of the supporting means.

8. In a jack, the combination with a heel post, a toe rest, a support for said post and rest, a stem pivotally connected to the support and provided in opposite faces with seats, of spring-pressed plungers carried by the support to engage said seats for yieldingly maintaining the shoe carried by the jack in a normal angular position.

9. In a jack, the combination with a heel post, a toe rest, a tubular bar upon which the post and rest are mounted, a block slidingly mounted in said bar, a stem pivotally connected to the block and extending through a slot in the bar and spring-pressed plungers carried by said block and engaging the stem for yieldingly resisting movement of the bar about its post connection with the stem.

10. In a shoe supporting jack, the combination with the heel and toe rests and the support therefor, of the stem 10 pivoted to the support and the spring-pressed plungers 20 arranged in the support to engage opposite sides of the stem for maintaining the support in a normal angular relation to the stem.

11. In a shoe supporting jack, the combination

with the heel and toe rests and the support therefor, of the stem 10 pivoted to the support and provided with seats, the spring plungers to engage in said seats for resisting angular movement of the support from its normal position, and cooperating stop faces to limit the possible angular movement of the rest support.

12. In a shoe supporting jack, the combination with the tubular toe and heel rest support 15 provided with the slot 14, of the plunger 16 slidingly mounted therein and the stem 10 pivotally connected to the block and extending through the slot to limit the endwise and rotary movement of the support.

13. In a shoe supporting jack, the combination with the tubular toe and heel rest support 15 provided with the slot 14, of the plunger 16 slidingly mounted therein and the stem 10 pivotally connected to the block and extending through the slot, and the opposed spring plungers 20 in the plunger to restrain pivotal movement thereof on the stem.

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

ORRELL ASHTON.

Witnesses:

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ARTHUR L. RUSSELL.