

C. S. WELLS.
 WORK SUPPORT.
 APPLICATION FILED OCT. 16, 1908.

1,018,537.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.

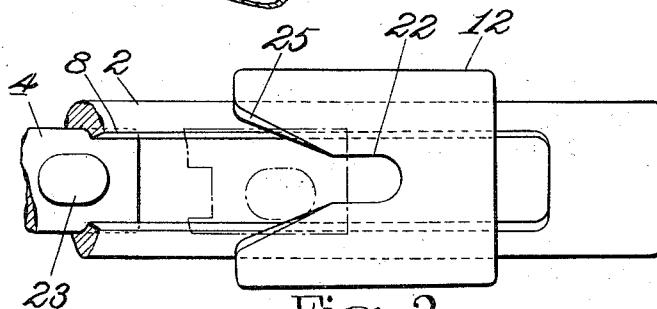
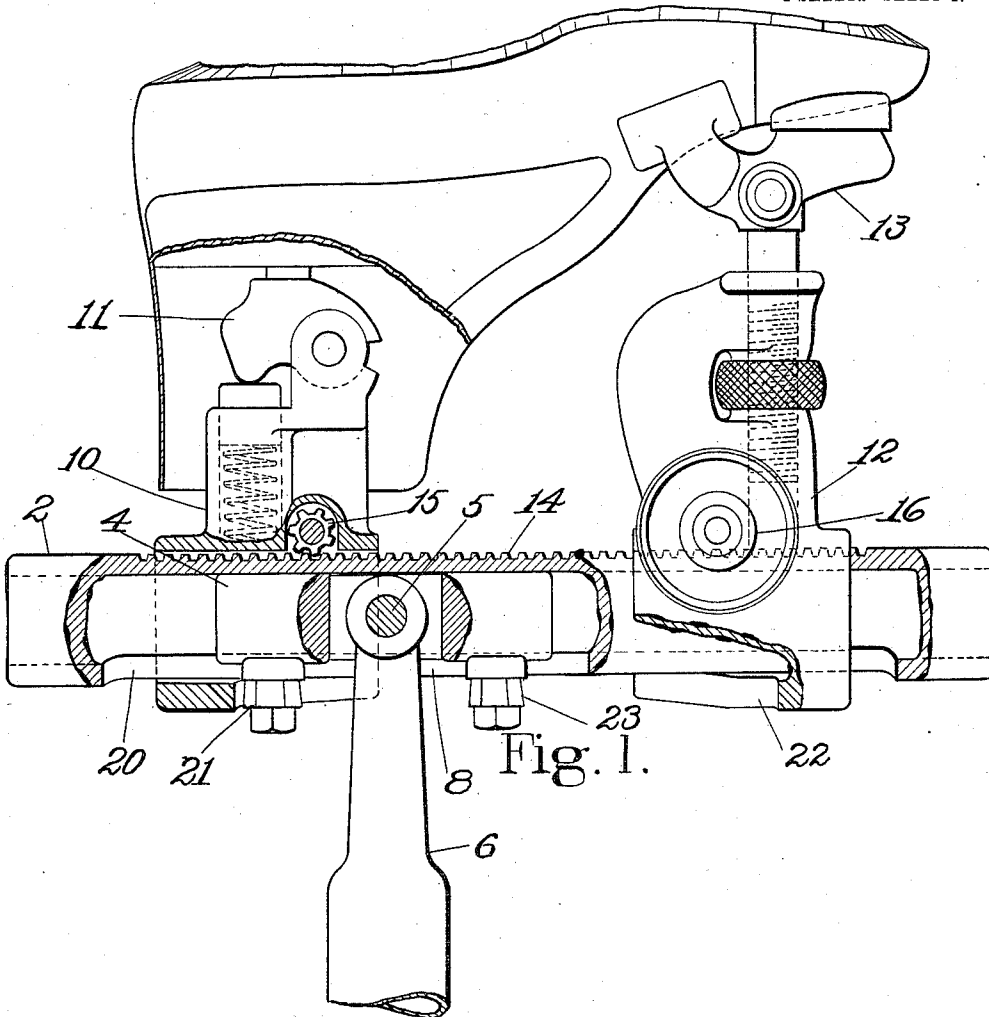


Fig. 2.

WITNESSES.

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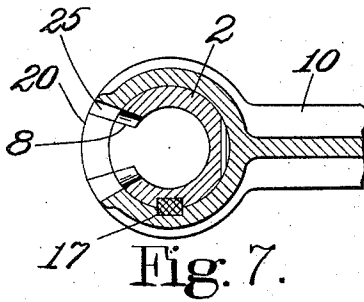
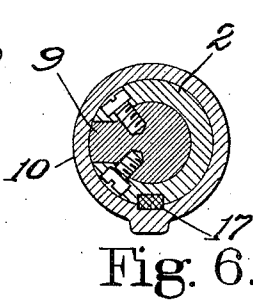
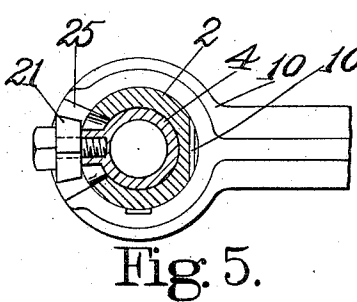
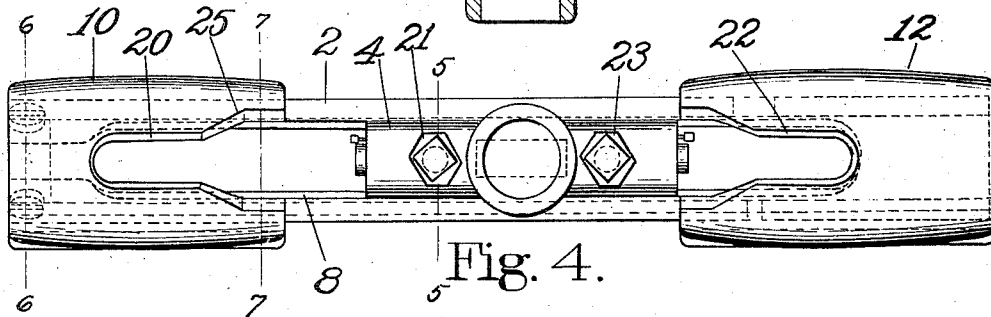
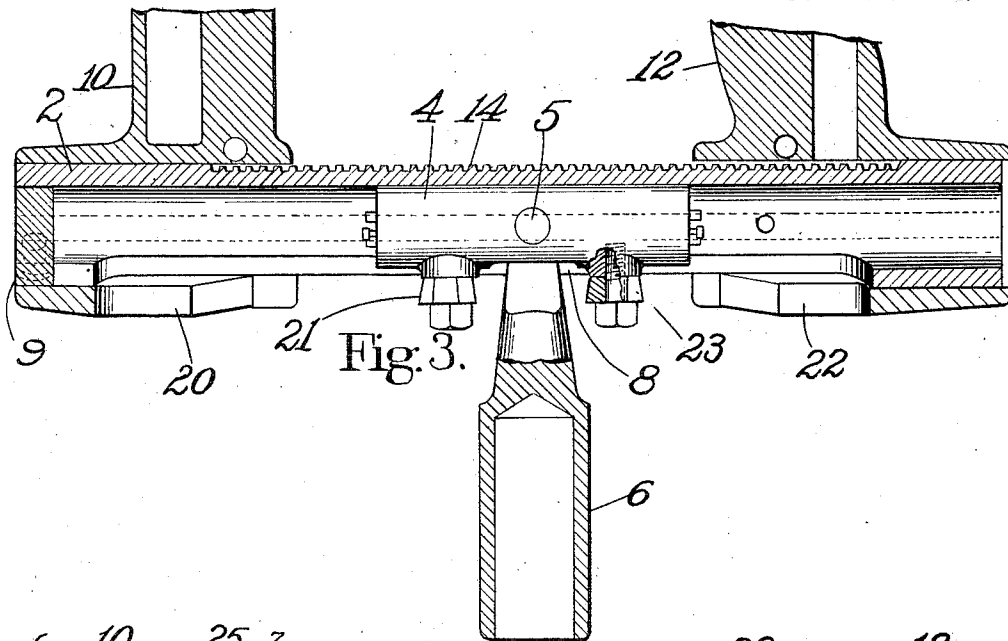
Charles Stonehall Wells
By his Attorney,
Nelson P. Howard

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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES STONEHALL WELLS, OF LEICESTER, ENGLAND, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

WORK-SUPPORT.

1,018,537.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed October 16, 1908. Serial No. 458,100.

To all whom it may concern:

Be it known that I, CHARLES S. WELLS, a subject of the King of England, residing at Leicester, in the county of Leicester, England, have invented certain Improvements in Work-Supports, 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 jacks or work supports such as are used in machines employed in the manufacture of boots and shoes, and the invention relates more particularly to that type of jack that can be adjusted upon its support to bring different parts of a boot or shoe supported upon it into range of the tool or tools of the machine of which the jack forms a part.

A jack of the above mentioned type has heretofore been employed, which is capable of being moved endwise upon its support and also canted about an axis extending longitudinally of the jack. But, in the use of this jack in certain kinds of work as, for example, in pounding up shoes, such canting movement is required only when certain portions of the shoe are being operated upon by the tool or tools, and, accordingly, it has been necessary for the operator, when other portions of the shoe are being treated, to hold the jack firmly to prevent it from being canted under the action of the tool or tools. Under other conditions, a limited amount of canting is required and it has been necessary for the operator to hold the jack canted to such extent and prevent it from canting more by the action of the tools.

It is an object of the present invention to relieve the operator of the necessity of thus holding the jack, and to this end a feature of the present invention is the provision in a shoe machine jack that can be canted and also moved otherwise (for example endwise) upon its support of a device that by the endwise or other change of the position of the jack is brought into action to vary the extent of the canting movement of the jack or to lock it against the said canting movement.

A convenient form of shoe machine jack constructed according to this invention comprises the provision of a locking device which as the jack is moved endwise, locks

the jack from canting during part or parts of such movement and at other part or parts unlocks the jack to permit it to cant. This form of the invention is of particular use in a machine (such as a pounding-up machine) wherein the jack is canted only when the side or shank of the shoe is being treated, and not when the heel or toe portions are being acted upon, or is canted to a limited extent only when the end portions of the shoe are being pounded. Preferably the locking device for preventing the canting of the jack is combined with means to adjust the point or points at which the device is brought into action. To accommodate shoes of different sizes the heel rest and toe rest of the jack are relatively adjustable toward and from each other, and a further feature of the invention comprises the provision of connections between the locking device and one or both of said rests of the jack whereby the amount of endwise movement of the jack before the locking device is brought into action is proportional to the distance between the rests, that is to say, is proportional to the size of the shoe on the jack. The locking device may comprise a pin or slot on the jack adapted to engage, respectively, a slot or pin on the jack support.

With the aid of the accompanying sheet of drawings a preferred construction of a jack embodying the present invention will now be described but it must be understood that the construction and arrangement of parts set forth is merely by way of example and that they could be varied without exceeding the scope of the invention.

In the drawings:—Figure 1 is a side view of the jack; Fig. 2 is a bottom plan of a portion thereof, showing diagrammatically in full and dotted lines two relative positions of the parts adjusted to receive a short shoe which is shown thereon; Fig. 3 is a vertical longitudinal section; Fig. 4 is an inverted plan view; Figs. 5, 6, and 7 are respectively sections on the lines 5—5, 6—6, 7—7 of Fig. 4.

The base of the jack is formed of a tubular portion 2 within which is received a core or piston 4 pivoted at 5 upon a rotatable jack post 6, a recess being formed in the core or piston to receive the end of the jack post 6. The head of the jack post 6 enters the tubular portion through a slot 8 which ex-

tends longitudinally from a point near one end of the portion 2 to a point near the other end thereof. If desired however the longitudinal slot may be open at one end of the tubular part so as to facilitate the introduction of the core or piston 4, the open end being closed by a plug 9 as in Fig. 3, after the piston 4 has been inserted. The plug may also be provided with a projecting part which engages in the slot and the said plug may be secured in the tubular portion by screws which pass through the said portion and engage with the plug. Carriages 10 and 12 for a heel rest 11 and a toe rest 13 respectively, are mounted to slide upon the tubular portion 2 but are restrained from angular displacement thereon. A rack 14 is formed on the tubular portion 2 and is engaged by a pinion on each of the carriages. Of these pinions, the one attached to the heel rest carriage is shown at 15 while at 16 is indicated a nut or wheel by which the pinion upon the toe rest carriage is turned, a similar nut or wheel being provided for the pinion on the heel rest carriage. The pinions and the rack afford means for adjusting the distance between the carriages 10 and 12 to accommodate boots or shoes of different sizes. The engagement of the pinions with the rack prevents the carriages 10 and 12 from turning upon the tubular portion 2 but if desired a feather 17 on the tubular part 2 can also be arranged as shown in Figs. 5, 6, and 7 which feather by engaging with ways formed in the carriages will hold still more securely the carriages from angular displacement upon the said tubular part. Any other suitable means may also be provided when desired to lock the carriages in their adjusted positions upon the tubular part.

The construction hereinbefore described enables the following movements to be imparted to the jack:—It can be rotated about the axis of the rotatable jack post 6; tilted about the pivot 5 which is situated within the core or piston 4 and by which the piston is connected with the jack post 6; moved endwise, because of the sliding engagement of the piston 4 and the tubular portion 2; and finally it can be canted about the axis of the tubular portion 2 within limits determined by the relative dimensions of the slot 8 in the latter and the head of the jack post 6 that, as aforesaid, extends through the slot. These movements are necessary in order that the portions to be treated of the boot on the jack can be brought within range of the tool or tools of the machine and presented at the desired angle to the path of movement of the said tool or tools.

When the jack is used in a pounding-up machine the canting movement aforesaid, *i. e.* the movement about the axis of the tubular portion 2, although it is desirable

and necessary when the tool of the machine is hammering the side or shank of the boot, is unnecessary when the heel and toe portions are being hammered. And to obviate the necessity of the operator holding the jack to prevent it from canting while such portions are being treated the following mechanism is provided:—Slots 20 and 22 are formed in the lower portions of the carriages 10 and 12 respectively. The core or piston 4 is provided with two downwardly projecting stops 21, 23 which are so disposed that, when the jack is moved for a certain distance endwise in either direction, one of the said studs will engage with its corresponding slot 20 or 22 and thereby lock the jack against movement about the axis of the tubular portion.

As shown in Fig. 1 of the drawings the jack is in the position in which the heel of the shoe is in a situation to be operated upon, the slot 20 is engaged by the pin 21 and the jack is thereby held from canting. To effect the operation of the machine along the boot the jack is moved in a longitudinal direction whereby the slot 20 will be first slid away from the pin 21 leaving the jack free to be canted while the side or shank of the shoe is being operated upon. Further longitudinal movement of the jack in the same direction will cause the slot 22 to engage the pin 23 as shown in dotted lines in Fig. 2 and the jack will again be locked so that the toe part can be dealt with. Instead of locking the jack when the toe and heel are presented, the slots and pins may be relatively proportioned to limit or vary the extent of the tipping movement which the jack can have. Also the stops may be formed to limit as described and thus to restrain entirely the canting of the jack as the operation progresses along the side or waist to the end portion of the shoe. To facilitate the entrance of the stops 21, 23, into the slots 20, 22, the open ends of the latter are flared or wedge-shaped as indicated at 25 in Fig. 2. The stops are shown as comprising collars held in place by a bolt and nut. Each collar has three pair of opposed faces whereby in different positions it presents different widths relatively to the width of the slot 20 or 22. The stop can be adjusted about its bolt by loosening the nut and when it is adjusted to present its greatest width it locks the jack against canting movement. When adjusted to present a lesser width it permits a slight canting when the heel or toe is being pounded.

It will be noted that the locking device comprised by the studs 21, 23, and the slots 20, 22 is controlled as to its times of operation during the endwise movement of the jack by the distance between the heel rest 11 and the toe rest 13 and as such distance bears a definite relation to the length of the side or

waist of the boot in the jack it will be apparent that adjustment of the rests to take a boot of another size automatically sets the locking device so that it shall act to unlock and lock the jack against canting movement at the proper times during the endwise movement of the jack for the treating of such boot.

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

1. An apparatus of the class described comprising a support and a shoe jack which can be canted on the support and has also another movement on said support, combined with a device which is brought by said other movement into action to vary the extent of the canting movement of the jack.

2. An apparatus of the class described comprising a support and a shoe jack which can be canted on the support and has also another movement on said support, combined with a device which can be brought by said other movement into position to co-operate with the support for locking the jack against canting movement.

3. The combination with a jack support and a shoe machine jack that can be canted and also moved endwise upon said support of a locking device that as the jack is moved endwise locks the jack from canting during part of such movement and at another part unlocks the jack to permit it to cant.

4. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, means to vary the extent of the canting movement at a certain part of the endwise movement and means for changing the point in the endwise movement of the jack when the last mentioned means becomes operative.

5. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, said jack comprising a heel rest and a toe rest, means operatively connected with one of said rests to restrain the canting movement of the jack when it is at one end of its endwise movement, and means whereby that rest can be adjusted for shoes of different lengths.

6. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and means located at each end of the jack to be engaged by the support in the endwise movement of the jack for guiding the jack into an upright position and holding it against canting movement.

7. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and means arranged to become operative during the endwise move-

ment of the jack for varying the extent of possible canting movement.

8. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, said jack comprising a base, a heel rest and a toe rest adjustably secured at the two ends of the base and each provided with a slot, widest at its inner end, and studs carried by the jack support and adapted to engage the walls of said slots to limit the canting of the jack.

9. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant sidewise and also to move endwise, means which partakes of said endwise movement and limits the canting movement variably according to the position of the jack in different parts of the endwise movement.

10. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and guiding means constructed and arranged to limit the canting movement in one portion of the endwise movement and to lock the jack against canting movement at another portion of its endwise movement.

11. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant sidewise and also to move endwise, and means for limiting the canting movement variably according to the position of the jack in different parts of the endwise movement, said jack comprising a heel rest and a toe rest and having provision for adjusting said rests for shoes of different lengths and for simultaneously adjusting the position of said limiting means to correspond with the adjustment of the toe and heel rests.

12. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, means for locking the jack against canting movement as it reaches the end of its endwise movement, and means for adjusting the jack to hold shoes of different lengths, said jack having provision for adjustment of the position of the locking means.

13. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, means for locking the jack against canting movement as it reaches the end of its endwise movement, and means for adjusting the position of the locking means proportionally to the size of the shoe.

14. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and means for controlling the canting movement constructed and ar-

5 ranged to permit of a maximum of canting at the middle portion of the endwise movement and to guide the jack into an upright position and lock it against canting at the ends of the endwise movement.

10 15. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and means adapted to be adjusted to lock the jack against canting movement at the ends of its endwise movement or to restrict said canting movement.

15 16. An apparatus of the class described, having in combination, a jack support, a jack mounted thereon to cant and also to move endwise, and means coöperating with each end of the jack and adapted to be independently adjusted to lock or to permit different degrees of canting movement at the two ends of the endwise movement of the jack.

20 17. In a device of the class described, a jack support, a jack mounted for movement thereon in a lengthwise direction and for movement transversely to said first named movement, and means whereby the extent of said transverse movement is varied according to the position of said jack in the direction of said first named movement.

25 30 18. In a device of the class described, a shoe support, a jack mounted thereon for movement in a predetermined path and also mounted for movement transversely of said path, and means whereby the extent of said transverse movement is limited according to the position of said jack along said path.

35 19. A device of the class described, comprising in combination, a jack support, a jack mounted for movement thereon longi-

40 tudinally of the shoe and for rotative movement about an axis parallel to said longitudinal movement, and means for gradually diminishing said rotative movement as the jack is moved longitudinally in either direction.

45 20. In a device of the class described, a jack support, a jack mounted thereon for movement in a rectilinear path and for rotative movement at right angles to said path, and means for varying the limits of said rotative movement according to the position of said jack along said rectilinear path.

50 21. In a device of the class described, having a jack and a support therefor, the combination of means constructed and arranged to permit the jack to slide endwise and to rock transversely, means for diminishing said rocking movement as the jack slides in either direction, and means for locking the jack against transverse movement when the limits of sliding movement are reached in either direction.

55 22. A device of the class described, having a support and a jack mounted thereon, means constructed and arranged to permit to and fro movements of translation of the jack and means for permitting movements of said jack to incline the shoe sole to the horizontal, and means for locking and unlocking the jack for such latter movements in time relation to its to and fro movements.

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

CHARLES STONEHALL WELLS.

Witnesses:

GRACE HOLMES,

ARTHUR ERNEST JERRAM.