H. F. CRAWFORD.

ADJUSTABLE LAST.

APPLICATION FILED MAY 29, 1920.

1,424,343.

Patented Aug. 1, 1922.

Fig. 1

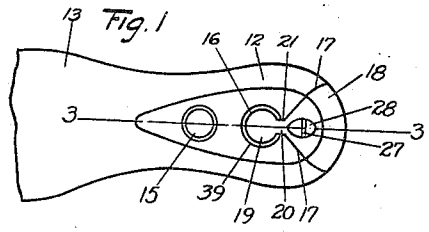


Fig. 3

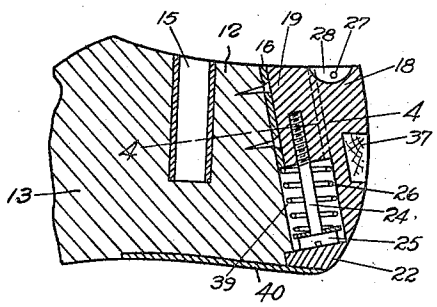


Fig. 2

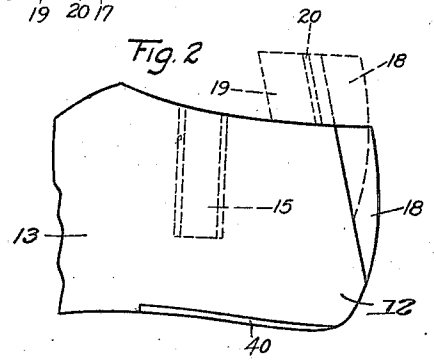


Fig. 4

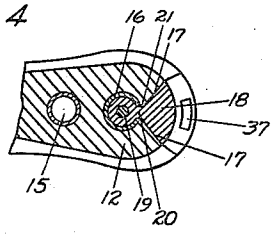


Fig. 6

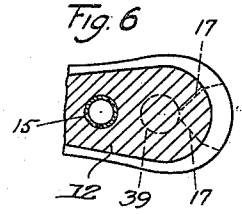
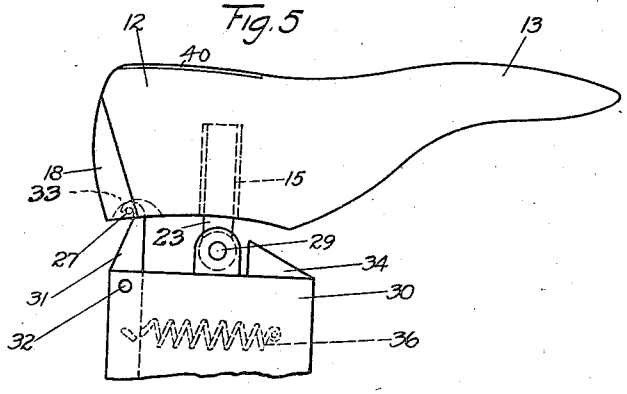


Fig. 5



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ADJUSTABLE LAST.

1,424,343. Specification of Letters Patent. Patented Aug. 1, 1922.

Application filed May 29, 1920. Serial No. 385,206.

To all whom it may concern:

Be it known that I, HARVEY F. CRAWFORD, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Adjustable Lasts, of which the following is a specification.

This invention relates to a last having at its heel portion an adjustable section, adapted to be displaced from its normal position to shorten the last and permit it to be withdrawn from a shoe lasted thereon, the heel section, when in its normal position, imparting operative length to the last.

The invention has for its object to provide an adjustable last, the heel section of which is located wholly behind the usual socket in the heel portion on the last, which receives a jack spindle, so that the last may be shortened to release a shoe built thereon while engaged with the spindle, without varying the relative positions of the body portion of the last, the shoe, and the spindle.

The invention is embodied in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a top plan view of a last embodying the invention, the fore portion of the last being broken away.

Figure 2 is a side view of the portion shown by Figure 1.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a section on line 4—4 of Figure 3.

Figure 5 is a side view, showing the last inverted, and engaged with a jack spindle.

Figure 6 is a fragmentary sectional view, showing the heel portion of the last before it is prepared to receive the heel section.

The same reference characters indicate the same parts in all of the figures.

A last embodying the invention comprises a body which includes a heel portion 12, and a fore portion 13, and is made in a single piece or part, preferably of wood, and a movable heel section 18. The body is reduced at its rear end to form an incomplete heel portion, and the heel section 18 is formed to complete said portion. The heel portion contains the usual spindle socket 15, adapted to receive a jack spindle 23 (Figure 5). The heel portion 12 is provided with an inclined rectilinear guide 16, located behind the socket 15, and preferably formed by driving a slotted metal tube into a socket formed for its reception in the heel section, behind the spindle socket, the heel portion being cut away to form inclined faces 17, behind the guide 16.

The heel section 18 is preferably composed of metal and is provided with a slide or runner 19, connected with the heel section by a neck 20 occupying a slot 21 in the guide 16.

The heel portion 12 is provided with a fixed stop member 22, at the lower end of the socket which receives the guide 16, said stop member being spaced from the lower end of said guide.

The heel section 18 is provided with a complemental stop member, adapted to abut against the fixed stop member 22, as shown by Figure 3, and thus limit the last-lengthening movement of the heel section. The stop member of the heel section may be the head of a screw 24, engaged with the runner 19 and projecting downwardly therefrom. The lower end of the guide 16 and the head 25 of the screw 24 constitute abutments for a spring 26, which normally holds the heel section 18 in the position shown by Figure 3, this being the last-lengthening position of the heel section.

The heel section is movable from its normal position to shorten the last, as indicated by dotted lines in Figure 2, this being accomplished by sliding the runner 19 in the guide 16, against the stress of the spring 26. When the heel section is thus displaced, the last is materially shortened, as may be seen by comparing the full line and dotted line representations of the heel section in Figure 2.

The heel section may be provided with means such as a pin 27, located in a recess 28, for engaging a pulling device, whereby the heel section may be displaced to shorten the last.

The last may be used in connection with a spindle 23, which is pivoted at 29 to a jack standard 30, the spindle entering the socket 15. The standard 30 may be provided with an arm 31, pivoted at 32, and provided with a hook 33, adapted to engage the pin 27, the arrangement being such that when the toe end of the last is depressed from the position

shown by Figure 5, until the crown of the last abuts against an inclined stop 34, the heel section 18 is moved by the hook 33 to shorten the last. The spindle 23 and arm 31, are adapted to swing on their pivotal connections 29 and 32, the arm being normally held in the position shown by Figure 5 by a spring 36.

It will be seen that the heel section 18 has a limited bearing on the interior of a shoe, and is readily displaced to shorten the last, there being no displacement of any other part of the last relatively to the jack spindle.

37 represents a wooden insert or block, inserted in the heel section 18, to receive tacks securing the heel portion of the shoe to the heel section.

It is obvious that the movement of the heel section 18 to its normal or last-lengthening position may be limited by stop means other than the member 22 and screw or stud 24. For example, the inclined faces 17 on the heel portion of the last, and the forward side faces of the heel section 18, may be so formed and arranged that when the heel section is in its normal position, its side faces will come to a positive bearing on the inclined faces 17, and when the heel section is displaced, its side faces will be slightly separated from the faces 17. The socket which receives the guide 16 and the inclined faces 17 behind the guide, may be formed, as shown by dotted lines in Figure 6, by first boring a hole 39 through the heel portion 12, and then cutting away enough of the material of the heel portion behind the hole to form the faces 17, and an opening between said faces communicating with the bored hole, and formed to receive the heel section 18. The member 22 is subsequently inserted and secured in the hole 39, to close the lower end of the latter. The usual metal bottom plate 40 may be applied to the heel portion 12 after the insertion of the member 22, and may project under the latter to support it.

The body portion 12, 13 supports the fore part and nearly all of the heel part of a shoe built upon the last, the area of the heel section 18 being so limited that said section offers practically no resistance to the removal of the heel and of a shoe upper therefrom, when the last is mounted on the spindle 23. The last may, therefore, be shortened without removing it from the spindle, and without changing the relative positions of the last body, the shoe thereon, and the spindle.

I claim:

1. A last comprising a body which is reduced at its rear end to form an incomplete heel portion, and is provided with a spindle socket adjacent to said rear end; and a movable heel section formed to complete said heel portion, and provided with means for engaging a pulling device, the last body and heel section being provided with complemental interengaged guide members arranged to permit variations of the operative length of the last by movements of the heel section, and with means for limiting the last-lengthening movement of the heel section, the last body and heel section being engageable respectively with a jack spindle and with a pulling device, so that the last may be shortened by a tipping movement thereof.

2. An adjustable last comprising a single part body including a fore portion, and an incomplete heel portion, containing the usual spindle socket and provided with an inclined rectilinear guide behind said socket, a heel section formed to complete the heel portion and having a runner engaged with said guide and movable therein to shorten and lengthen the last while the body and shoe thereon are supported by a spindle, a headed stud fixed to the runner, the guide being provided with a spring abutment, and a spring interposed between said abutment and the stud head, and normally holding the heel section in its last-lengthening position, the body and heel section being provided with stop means limiting the lengthening movement of the heel section.

In testimony whereof I have affixed my signature.

HARVEY F. CRAWFORD.