

H. F. LOEWER & F. W. KITTLINGER.

LAST.

APPLICATION FILED FEB. 17, 1908.

933,087.

Patented Sept. 7, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

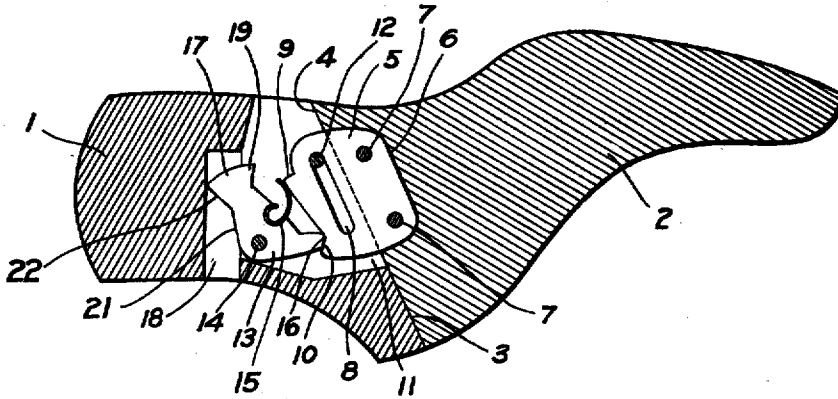


FIG. 2.

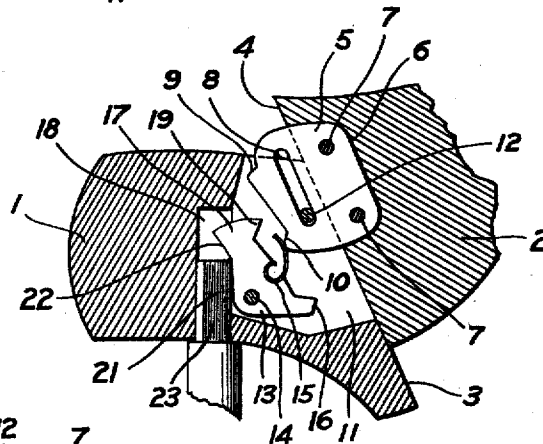
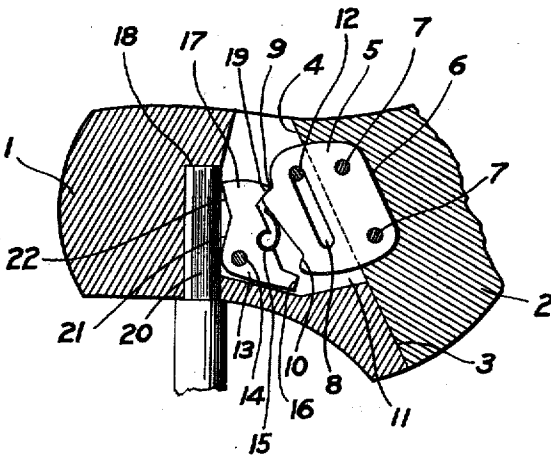


FIG. 3.



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2 SHEETS—SHEET 2.

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FIG. 4.

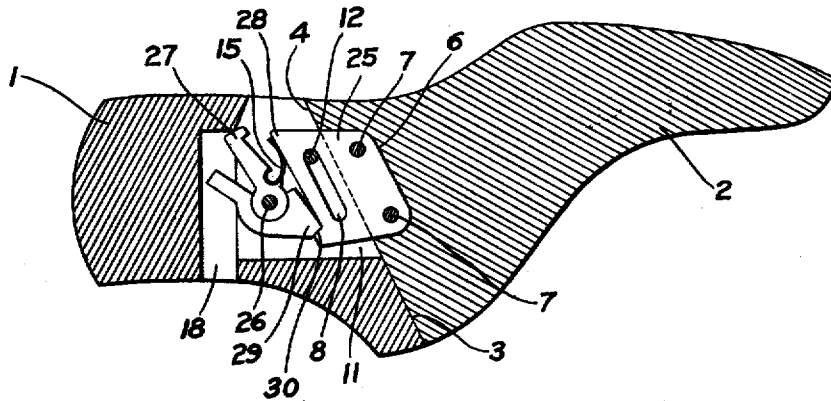


FIG. 5.

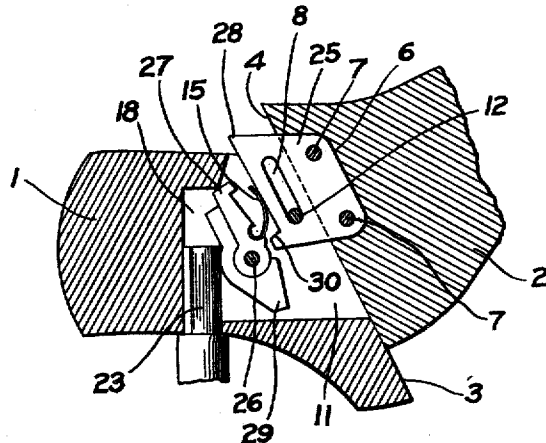
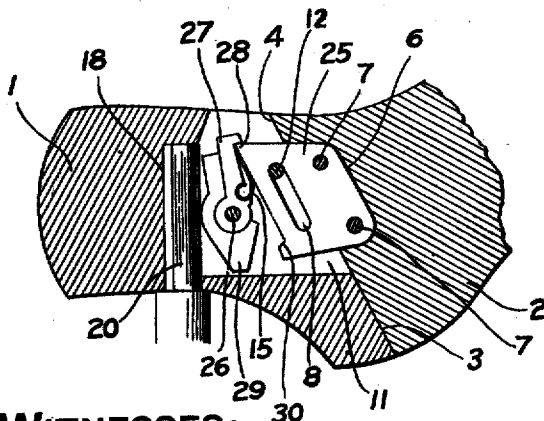


FIG. 6.



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LAST.

933,087.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HENRY F. LOEWER and FREDERICK W. KITTLINGER, citizens of the United States, and residents of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lasts, of which the following is a specification.

This invention relates to lasts, and consists in the apparatus hereinafter described and claimed.

The object of the invention is to provide a two-part last in which the parts are connected together, and are adapted to be locked in the lasting position and to be released, as hereinafter described.

In the drawings:—Figure 1 is a vertical, longitudinal section through a last embodying this invention, showing the parts locked when in the lasting position and when the last is not upon a jack post, or a last key pin is not applied for unlocking the same; Fig. 2 is a like section of a part of the last showing the parts in the unlocked and disengaging position; Fig. 3 is a like section through a last, showing the parts in the lasting position and locked in this position by an ordinary jack post; Fig. 4 is a like section through a last embodying a modified form of the invention, showing the parts in the lasting position; Fig. 5 is a like section of a part of a last, showing the parts in the unlocked position upon a short jack post; and Fig. 6 is a like section through a part of a last showing the parts locked in the lasting position by a jack post.

This last is adapted to be used either as a first or as a second last. In the present example of the apparatus, it is shown as a second last, which is used for maintaining the shape of a shoe, during the manipulation thereof after the outer or first lasting process. The "lasting position" above mentioned is intended to define the relative position of the two parts of the last, shown, for instance, in Figs. 1 and 4. If the last is used as a first last, the upper is fastened to the sole while on the last, and this operation is done with the parts locked in the position shown in Fig. 1. If then it is desired to continue the manufacture of the shoe, it is removed from the first last by sliding the heel-block 1 upon the toe-part 2 of the last, so that the heel-block moves forward from the lasting position, and this substantially shortens the last, so that the shoe may be removed from

it. In the present invention, the heel-block and toe-part have contact surfaces 3 and 4 (see Figs. 3 and 4), which contact surfaces are inclined with reference to the bottom of the last, and are transverse to the length of the last. In the present example of the invention, these contact surfaces are inclined from the bottom of the last forwardly or toward the toe part. If a shoe is to be put upon the last, the heel block is slid upon the toe part, into the position of these parts shown in Figs. 2 and 5, the shoe is pushed upon the toe part of the last until it fits the same with reasonable closeness, and then the heel block 1 is pushed down until its rear end meets the inside of the heel portion of the upper, and then, by reason of the inclined contact surfaces 3 and 4, a wedge action takes place, and the toe part 2 is pushed forward by this wedge action tightly into the toe of the shoe. When the bottom of the heel part 1 registers with the bottom of the toe part 2, the last is in the "lasting position".

This invention relates to means of locking the parts of the last in the lasting position, and to means of holding the locking devices out of operation in order to shorten the last for removing the shoe from it.

In a two-part last, such as that shown in the drawings and above described, means are provided for locking the heel block in the lasting position by means of a locking dog or latch in either of two positions thereof, and to release the heel block from the toe part by setting the dog or latch in the intermediate position. Specifically to the toe part is fastened a plate 5 by any suitable means, such as by setting the same into a socket 6 in said toe part, and fastening it therein by means of pins 7. This plate projects rearwardly from the contact surface 4 to the toe part, and is preferably set in the middle line thereof, and projects at right angles to said contact surface 4. The plate 5 has a slit 8 parallel to the surface 4, and has two engaging projections or notches 9 and 10 on its rear edge for a purpose to be described. The heel block 1 has a groove or mortise 11, adapted to take the projecting portion of the plate 5, and thus to constitute a guide for the movement of the heel block 1, with reference to the toe part. A transverse pin 12 in the heel block passes through the slot 8 and limits the movement of one of the parts with reference to the other, and also maintains the

contact surfaces 3 and 4 of the two parts in proper contiguity. The groove or mortise 11 also contains a spring operated dog or latch 13, which is pivoted upon a transverse pin 14 in the heel block 1. This dog or latch preferably carries its own spring 15, which is fastened thereto by making one end of the spring into a sharp turn, which rests in a socket of a contour adapted to fit said turn; and a long end of the spring projects from the dog or latch. This spring may engage a suitable abutment in order to tilt the dog or latch in one direction, so as to cause engagement of the same with one of the notches or projections on the plate 5. In the present form of the device the spring engages the rear edge of said plate 5, and tilts the dog or latch, so that one end 16 thereof, when the latch is free and the two parts of the last are in the lasting position, engages the notch or projection 10, and this locks the two parts in said lasting position, as shown in Fig. 1. The other end 17 of said dog or latch projects into the jack post socket 18 in the heel block 1, and has a lug 19 that is adapted to engage the notch or projection 9 on the plate 5, when the ordinary jack post socket 20, Fig. 3, presses against the rear edge of said end 17. The parts are then in the position shown in Fig. 3, and the parts of the last are positively locked together, the spring 15 is compressed, and the lock nut 16 on the latch or dog is tilted so that it is not in engagement with the notch or projection 10 on the plate 5.

The back of the latch or dog 13 has two surfaces 21 and 22, the first of which bears such a relation to the pivotal axis that when a key of suitable length, or a short jack post 23, Fig. 2, is inserted into the jack post socket 18, the surface 21 will lie against the side of the key or jack post, and hold the latch or dog in an intermediate position in which the end 16 and the lug 19 are both disengaged from the notches 10 and 9, and the plate is free so that the two parts of the last may be moved with reference to each other, as shown in Fig. 2, when removing the shoe from the last. This effect may be produced by placing the last on the ordinary jack post socket, or by graduating the insertion thereof to the proper depth; but if the jack post is pushed farther into the socket, the end of the jack post will slide along the surface 22, and will force the end 17 of the dog inward toward the plate 5, and thus may lock the parts in the position shown in Fig. 3.

It is obvious that this mechanism is easy to manufacture and to assemble; is made of cheap and few parts; and is not apt to fail in operation nor to wear out.

The parts designated 20 and 23 may represent keys formed by rods of suitable shape, or ordinary jack posts.

In Figs. 4, 5, and 6 is shown a modified

form of device, although the device of Figs. 1, 2, and 3, is the preferred form. The toe part 2 carries a plate 25 that projects at right angles to its contact surface 4, and into a mortise or groove 11 in the heel block 1. On a transverse pin 26 in the heel block is pivoted a double latch or dog consisting of the hook 27 carrying the spring 28 that bears against the rear edge of the plate 25. This hook is adapted to engage a projection or corner 28 on the plate 25. The other part of the dog or latch is pivoted outside the hook 27, and consists of an end 29, which, when the two parts of the last are in the lasting position, is adapted to engage a notch or projection 30 on the lower end of the rear face of the plate 25; and the said second part of the latch or dog has on the other side of its pivot a projecting portion 31 that is adapted to make contact with the back of the hook 27, so that the action of the spring 28 through the hook 27 and upon the end 31, tilts the latch or dog, so that its end 29 engages the notch or projection 30 on the plate 25. When no jack post or key is in the socket 18, the parts take the position shown in Fig. 4 and the last is locked in the lasting position. When a key is inserted part way into the socket 18, to the position shown in Fig. 5, the latch or dog is tilted into a position intermediate between its two latching positions and the plate 25 is released, so that the parts of the last may be moved with reference to each other, as shown in Fig. 5. When the key or jack post is inserted still farther into the socket 18, it presses upon the end 31 of the lever or dog, which, acting upon the hook 27, forces it into the position shown in Fig. 6, so that it engages the projection or corner 28, and the parts are positively locked in the lasting position.

It will be noted that in both forms of the device the notches or projections on the plate 5 or 25 are in such positions that the latch or dog may be tilted from one of its latching positions to the other of its latching positions, without moving the two parts of the last from the lasting position.

What we claim is:

1. In a two-part last in which the parts slide on each other and have contact surfaces inclined with reference to the bottom of the last and transverse to the length of the last, one of which last parts has two latch abutments, a tilting latch having two positions for engaging the abutments and locking the heel block in the same lasting position, and an intermediate position in which the heel block is released.

2. In a two-part last in which the parts slide on each other and have contact surfaces inclined with reference to the bottom of the last and transverse to the length of the last, a latch plate on one part, a tilting spring-operated latch on the other part having two

positions for engaging the latch plate and locking the parts in the same lasting position, and an intermediate position in which said parts are released.

- 5 3. In a two-part last in which the parts slide on each other and have contact surfaces inclined with reference to the bottom of the last and transverse to the length of the last, a latch plate on one part, a tilting spring-operated latch having three positions, one
10 for engaging the latch plate and locking the heel block to the toe part in the lasting position by spring action in one tilted position thereof, a second for engaging the latch
15 plate and locking the heel block in the lasting position by action of a key on said latch in another tilted position thereof, and a third for disengaging the latch plate and releasing the heel block by key action in an
20 intermediate position thereof.

4. In a two part last in which the parts

slide on each other and have contact surfaces inclined with reference to the bottom of the last and transverse to the length of the last, a plate on one part projecting into a groove
25 in the other part and having two engaging projections or notches, a tilting spring-operated latch on the other part adapted to engage one projection or notch in one tilted
30 position and the other projection or notch in another tilted position and to be released from both projections or notches in an intermediate position whereby the heel block is
35 locked in the lasting position when the latch engages either projection or notch and is released when the latch is in the intermediate position.

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