No. 873,060. PATENTED DEC. 10, 1907.

H. F. LOEWER.

LAST.

APPLICATION FILED JAN. 13, 1905. RENEWED OCT. 23, 1907.

FIG. 1.

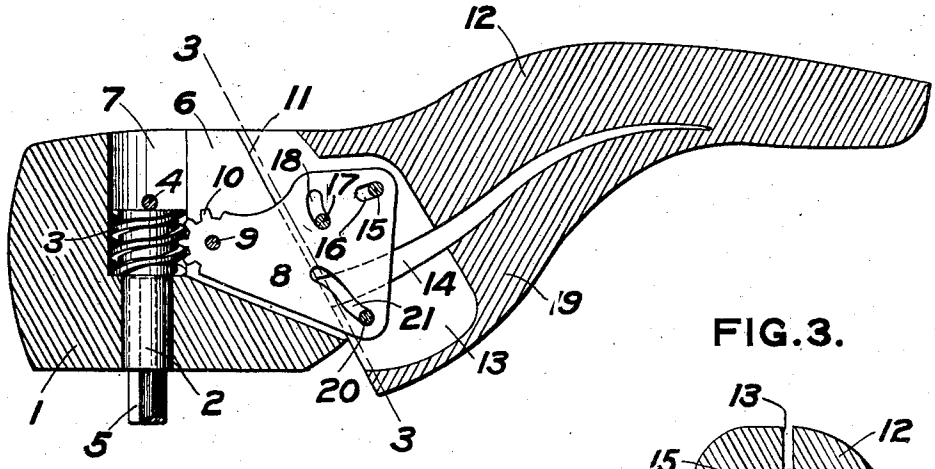


FIG. 3.

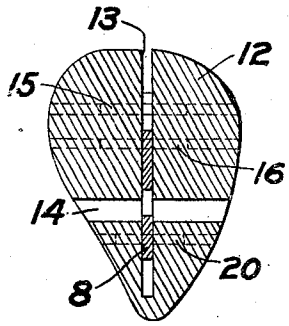
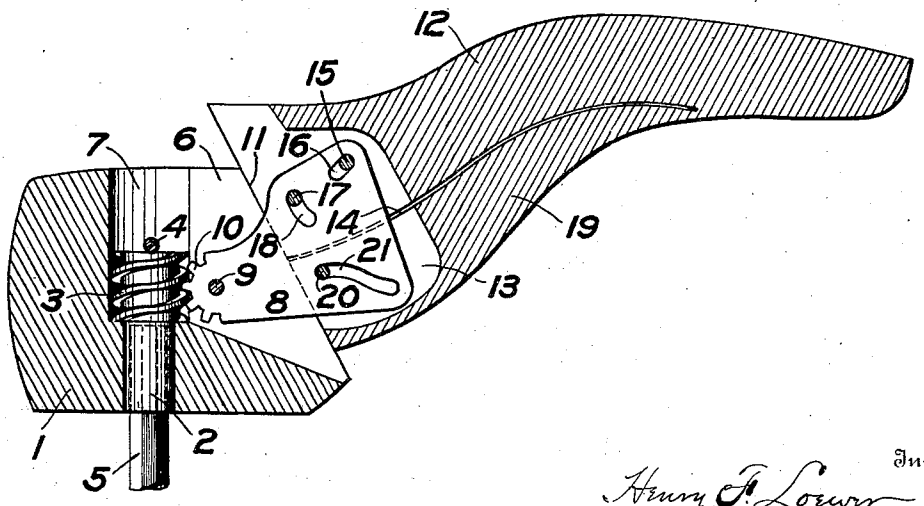


FIG. 2.



Witnesses

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LAST.

No. 873,060. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed January 13, 1905. Serial No. 240,891. Renewed October 23, 1907. Serial No. 393,801.

To all whom it may concern:

Be it known that I, HENRY F. LOEWER, a citizen of the United States, and resident 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 the class of lasts in which a heel block is movable with reference to the toe part, in order to shorten the last and permit the removal of the shoe therefrom, and further to that class of lasts in which an instep portion is collapsed with reference to the remainder of the toe part, in order to facilitate movement of the shoe.

In the drawings:—Figure 1 is a longitudinal section of a last embodying this invention, the parts being in the position of complete expansion. Fig. 2 is a like longitudinal section, the parts being in the position of the greatest reduction; and Fig. 3 is a cross-section on the line 3—3 of Fig. 1.

The heel block 1 contains a thimble 2 having upon it a worm 3, and held in place in the heel block by a cross pin 4. The thimble 2 is irregularly shaped on the inside in order to fit upon a jack post 5 of similar shape, so that said jack post may operate as a key to turn the thimble 2 and worm 3. The heel block is slotted, as at 6, to hold the hinge or connector between the two parts of the last, and is also perforated, as at 7, in order to take the thimble 2 and the larger worm 3 and to hold them in position in the heel block. The slot 6 intersects the cavity or perforation 7, at least at the point adjacent to the worm 3. The two parts of the last are held together by means of a plate 8, which is pivoted in the vertical slot 6 by means of a cross pin or pivot 9, and said plate has a series of teeth 10 cut upon it to form a segmental gear upon a circle drawn from the center of the pivot 9. The teeth 10 mesh with the threads of the worm 3, as shown. The heel block and the toe part of the last are separated by a flat division line or surface 11, which is diagonal with reference to a horizontal plane and to a vertical plane passing through the axis of the thimble 2, so that when the toe part 12 of the last is raised, as shown in Fig. 2, from the position shown in Fig. 1, the toe part will move along said diagonal plane 11 so as to produce a shortening of the total last and a relief of the heel of the shoe that will permit the withdrawal of the shoe from the last. Thus, of the heel part and the toe part, their relative positions are shifted simultaneously both longitudinally and transversely, in the diagonal movement along the plane 11. The end of the plate 8 rests in a vertical slot 13 in the toe part 12, and is held in place by two pins 15 and 17, whose ends are fastened in the toe part 12 and pass through slots 16 and 18 in the plate 8. The slot 18 is between the slot 16 and the pivot pin 9. The slot 16 is cut on a line intersecting the pin 15 and the pin 9, and the slot 18 is drawn on a circle having the pin 15 as its center, and has such a length that the ends of the slot 18 form stops for the movement of the pin 17 and determine the two extreme positions of the last shown in Figs. 1 and 2. The slot 18 guides the toe part 12 of the last so as to keep the surfaces of the toe part and of the heel block on the line or plane 11 in contact with each other as the plate 8 swings around its center or pivot pin 9. At the same time the pin 15 moves slightly to and from the pivot 9 in the movement of the toe part, shown in Figs. 1 and 2.

It will now be seen that if the parts are in the position shown in Fig. 1, and the last is turned with reference to the jack post 5, the plate 8 will be turned upon the worm 3 and this movement will cause the plate 8 to tilt on its pivot pin 9, which will lead the outer end of the plate 8 and the toe part 12 to the position shown in Fig. 2; and if the last is turned back with reference to the thimble 2, the parts will be returned to the position in Fig. 1.

It is evident that a key may be used in place of the jack post 5, and that said jack post merely constitutes a convenient key for producing the movement just described.

The toe part 12 of the last may have a transverse slot 14 severing the instep portion 19 from the remainder of the toe part. This slot 14 has a suitable width when open, as shown in Fig. 1, so that when the instep portion 19 is collapsed toward or against the remainder of the toe part 12, as for instance into the position shown in Fig. 2, the size of the last across the instep will be sufficiently reduced to permit the easy removal of the shoe therefrom. In the drawing, the instep portion 19 remains integral with the remainder of the toe portion 12, but, of course, may be hinged thereto in any suitable manner. In order to collapse and expand the instep portion 19, the plate 8 is provided with

a slot 21 in which runs a pin 20 fixed in the instep portion 19. The slot 21 is of such shape that the instep portion 19 separates from the remainder of the toe part 12 when the upper surface of the heel block 1 matches the remainder of the bottom of the last as shown in Fig. 1; but said instep portion 19 is collapsed or drawn to the remainder of the toe part 12, as shown in Fig. 2, when the heel block 1 is lowered from the position just described. The operation of this instep device is as follows:—Upon turning the last with reference to the jack post 5, the plate 8 is rocked on the pivot pin 9 by its engagement with the worm 3, so that the slot 21 actuates the pin 20 to collapse the last and block 19 toward or against the remainder of the toe part 12, the pin 15 in the slot 16 taking the pressure. Turning the last in the opposite direction replaces the parts from the position shown in Fig. 2 to that shown in Fig. 1.

What I claim is:—

1. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, and means adapted for use as the jack post socket for shifting simultaneously the relative positions of the heel block and toe part both longitudinally and transversely.

2. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, and means for shifting simultaneously the relative positions of the heel block and toe part both longitudinally and transversely by turning the last upon a pivot vertical to the sole of the last.

3. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, a rotary thimble in the heel part set substantially vertically to the bottom of the last, a connection between said heel block and toe part, and a connection with said thimble for actuating said first mentioned connection for shifting simultaneously the relative positions of the heel block and the toe part both longitudinally and transversely upon turning said thimble.

4. In a last, a heel block having a thimble therein, a toe part, the said heel part and toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, a connection for connecting the two parts slidably together, and means actuated by turning said thimble for sliding simultaneously the two parts both longitudinally and transversely with reference to each other.

5. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, means adapted for use as the jack post socket for shifting the relative positions of the heel block and toe part longitudinally and transversely, an instep block, and means for moving said instep block transversely with reference to the toe part at the same time that the said heel block and toe part are shifted with reference to each other.

6. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, means for shifting simultaneously the relative positions of the heel block and toe part both longitudinally and transversely by turning the last upon a pivot vertical to the sole of the last, an instep block, and means for moving said instep block transversely with reference to the toe part at the same time that the said heel block and toe part are shifted transversely with reference to each other.

7. In a last, a heel block and a toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, a rotary thimble in the heel part set substantially vertically to the bottom of the last, a connection between said heel block and toe part, a connection with said thimble for actuating said first mentioned connection for shifting simultaneously the relative positions of the heel block and the toe part both longitudinally and transversely upon turning said thimble, an instep block, and means for moving said instep block transversely with reference to said toe part at the same time that said heel part and said toe part are shifted with reference to each other.

8. In a last, a heel block having a thimble therein, a toe part, the said heel part and toe part having meeting surfaces constructed to permit relative diagonal movement with reference to each other, a connection for connecting the two parts slidably together, means actuated by turning said thimble for sliding the two parts diagonally with reference to each other, an instep block, and means for moving said instep block with reference to the toe part at the same time that the said heel block and toe part are shifted with reference to each other.

9. In a last, a heel block having a thimble therein bearing a worm, a toe part, the said heel part and toe part having meeting surfaces constructed to permit relative movement both longitudinally and transversely, a plate connecting the two parts and having teeth engaging the said worm, and connections between said plate and said two parts whereby on turning said thimble one part is moved both longitudinally and transversely with reference to the other part for releasing the shoe.

10. In a last, a heel block having a thimble therein bearing a worm, a toe part, the said heel part and toe part having meeting sur-

faces constructed to permit relative movement both longitudinally and transversely, a plate connecting the two parts and having teeth engaging the said worm, connections between said plate and said two parts whereby on turning said thimble one part is moved both longitudinally and transversely with reference to the other part for releasing the shoe, an instep block, and means for moving said instep block with reference to the toe part at the same time that the said heel block and toe part are shifted with reference to each other.

11. In a last, a heel block and a toe part divided by a transverse plane diagonal to and inclined forward from the sole of the last, a hinged plate set vertically and edgewise in said two parts and pivoted to one of the parts by a transverse pivot and having a slot convex towards said pivot and another slot cut in a line drawn from the pivot through the middle of the curved slot, and pins in the other part of the last passing through the respective slots.

12. In a last, a heel block and a toe part divided by a transverse plane diagonal to and inclined forward from the sole of the last, an instep block movable with reference to the toe part of the last, a hinged plate set vertically and edgewise in said two parts and pivoted to one of the parts by a transverse pivot and having a slot convex towards said pivot and another slot cut in a line drawn from the pivot through the middle of the curved slot, pins in the other part of the last passing through the respective slots, and a connection between said instep block and said plate for moving said instep block.

13. In a last, a heel block and a toe part divided by a transverse plane diagonal to and inclined forward from the sole of the last, an instep block movable with reference to the toe part of the last, a hinged plate set vertically and edgewise in said two parts and pivoted to one of the parts by a transverse pivot and having a slot convex towards said pivot and another slot cut in a line drawn from the pivot through the middle of the curved slot and a third curved slot for moving said instep block, and three pins, two being situate in the toe part and one being situate in the instep block and the respective pins passing through the respective slots.

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Witnesses:
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