Sept. 17, 1935. T. PIZZA ET AL 2,014,981

EXTENSION LAST FOR SHOE REPAIR WORK

Filed July 20, 1934

Fig. 1.

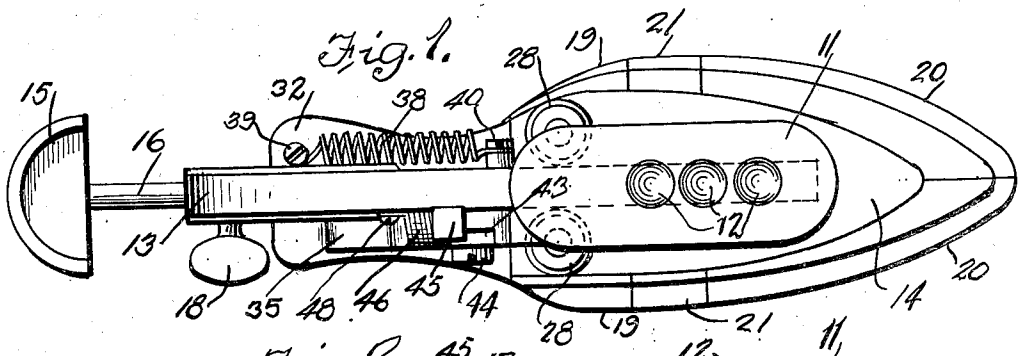


Fig. 2.

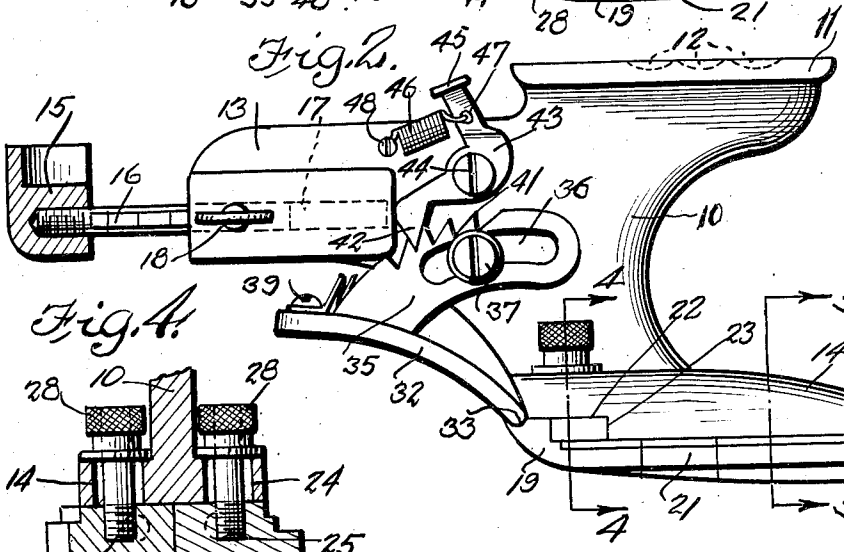


Fig. 4.

Fig. 3.

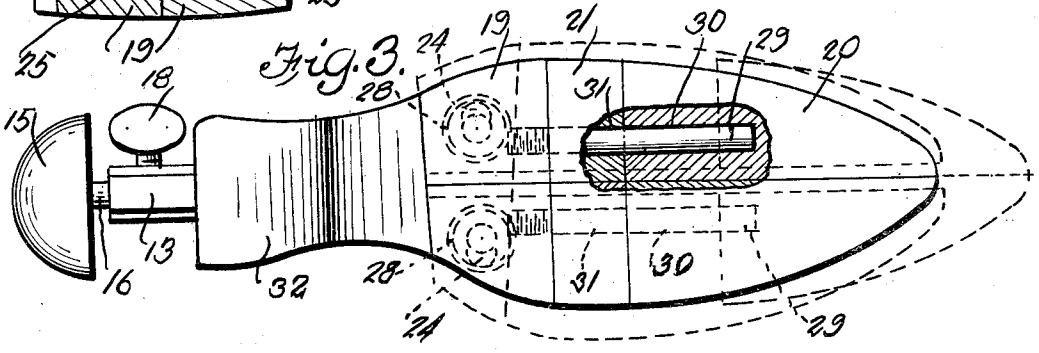


Fig. 5.

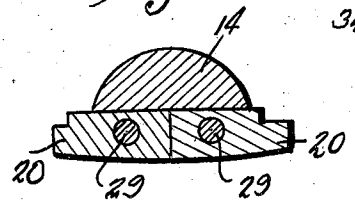
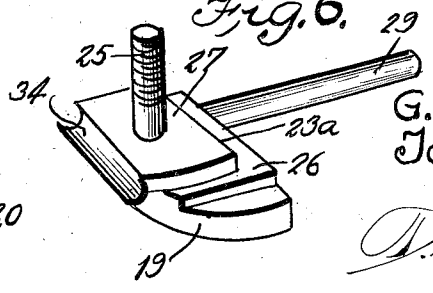


Fig. 6.



Inventors
G. A. Gilles &
Toby Pizza by
T. T. Bryant
Attorneys.

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EXTENSION LAST FOR SHOE REPAIR WORK

Toby Pizza and Gustave A. Gilles, Toledo, Ohio

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12 Claims. (Cl. 12—128.3)

This invention relates to certain new and useful improvements in extension last for shoe repair work.

The primary object of the invention is to provide an extension shoe last especially adapted for use in the glueing or cementing of soles of shoes to be repaired embodying extensible members to accommodate the last to shoes of different lengths and widths.

A further important object of the invention is to provide an extension last for shoe repair work of the foregoing character that is especially adaptable for use in the glueing or cement of soles upon ladies' or men's shoes in which such shoes embody instep portions extending through a wide range of arches or angularity and wherein the last is provided with a movable instep plate adapted to be manually shifted into engagement with the instep portion of the shoe and automatically shiftable to a position spaced from the shoe instep when the holding devices therefor are manually released.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing:—

Figure 1 is a top plan view of an extension last for shoe repair work constructed in accordance with the present invention;

Figure 2 is a side elevational view, partly in section showing the tensioned instep plate carried by the last and the release device therefor;

Figure 3 is a bottom plan view of the last, partly broken away and shown in section and illustrated in extended adjusted position in dotted lines;

Figure 4 is a detail sectional view taken on line 4—4 of Figure 2, showing lateral adjustment for the rear sole plate sections of the last;

Figure 5 is a detail sectional view taken on line 5—5 of Figure 2; and

Figure 6 is a perspective view of one of the rear sole portions of the latter detached from the last body.

The last disclosed herein is especially designed for shoe repair work and for the glueing or cementing of soles to shoes, the last being associated with a press of an appropriate character for moving the sole into intimate contact with the shoe for the more effective adhesion of the sole to the shoe. The last is of the extensible or adjustable character to accommodate the same to shoes of different lengths and widths and especially for use in connection with ladies' shoes wherein insteps of various angularities are found, the last embodying an adjustable instep plate that is adapted to be moved into intimate contact with the instep of the shoe.

Referring more in detail to the accompanying drawing, the last embodies a blade-like body portion 10 having a flat head 11 provided with recesses 12 for cooperation with mating elements of a press machine for the even distribution of pressure over the last body during the glueing or cement of a sole to a shoe. A rearwardly extending arm 13 is carried by the upper end of the last body 10 while a sole block 14 is carried by the lower end of the body portion 10 and projects forwardly thereof.

The last is adjustable in both lengthwise and transverse directions, the lengthwise adjustment including a heel element 15 having one end of a rod 16 anchored therein, while the other end of the rod is adjustable in a bore 17 shown by dotted lines in Figure 2 and is held in adjusted position by the thumb screw 18 threading through the side walls of the last arm 13 for engagement with the rod 16.

The adjustment for the sole section of the last comprises sole sections split longitudinally and including rear sole sections 19, front sole sections 20 and intermediate sections 21, all of the sections being transversely extensible while the front and intermediate sections 20 and 21 are also longitudinally extensible as indicated by dotted lines in Figure 3. To accommodate the mounting of the rear sole sections 19, the lower face of the sole block 14 at its lower side is transversely recessed as at 22 providing a forward shoulder 23 and the rear portion of the sole block 14 at each side of the body portion 10 of the last is provided with a transversely extending slotted opening 24. A threaded pin 25 projects upwardly from the sole section 19 and projects through an adjacent slotted opening 24 of the sole block 14, the upper face of the sole section 19 as shown in Figures 2 and 6 having the portion 26 thereof flatly engaged with the bottom face of the sole block 14 with a block 27 rising from the face 26 and having a forward straight edge 23a that abuts the shoulder 23 of the recess 22, the upper projecting end of the threaded pin 25 receiving a washer and nut combination 28 as shown in Figures 2 and 4. A forwardly projecting rod 29 is carried by each rear sole section 19 and overlies the bottom face of the sole block 14.

Each block section 20 of the extensible sole of

the last is flatly engaged with the bottom face of the sole block 14, the rear edges of the sole sections 20 extending on straight transverse lines and each sole section 20 has a longitudinal bore opening at the rear end thereof, the rod 29 carried by the rear sections 19 being receivable in the bore 30 for the support of the front sole section 20. The intermediate sole sections 21 have a bore 31 therein through which the rods 29 extend for entering in the bores 30 in the front section 20. The adjustability of the sole sections of the last is indicated by dotted lines in Figure 3, loosening of the nuts 28 on the threaded pins 25 of the rear sections 19 permitting the latter to be transversely adjusted relative to the sole block 14 and to carry therewith the front and intermediate sole sections 20 and 21 upon the rods 29, while the front and intermediate sections are also longitudinally adjustable upon the rods 29.

In men's and boys' shoes, the arched portions of the instep are substantially constant, but in ladies' shoes the angularity of the instep varies through a wide range and to accommodate this extensible last for use in the glueing or cementing of soles for ladies' shoes, there is provided an adjustable instep plate 32, the mounting of which is shown more clearly in Figures 1 and 2. The instep plate 32 is of arcuate form and the forward edge 33 thereof seats in transverse grooves 34 formed at the extreme rear edges of the rear sole sections 19, this arrangement providing in effect a hinge joint in the absence of retention devices between the parts at the joint. A forwardly directed curved arm 35 is carried by the instep plate 32 laterally of the body portion 10 of the last and said arm 35 is provided with an arcuately slotted opening 36 through which a headed retainer screw 37 passes for engagement with the body portion 10 to retain the instep plate 32 in position on the last body. The curvature of the forward face of the instep plate 32 is coincidentally the curvature of the rear edge of the body portion 10 and lower side of the rearwardly extending arm 13 and said instep plate is normally retained in engagement with the body portion 10 and arm 13 by means of coil spring 38 attached at one end as at 39 to the instep plate 32 at the outer end thereof and side opposite the curved arm 35 while the forward end of the spring 38 is anchored as at 40 to the body portion 10 of the last. The instep plate 32 is movable away from the body portion 10 of the last for contacting the instep portion of a shoe and against the tension of the spring 38 that automatically returns the same to its inoperative position, the devices for holding the instep plate in engagement with the instep of a shoe being shown more clearly in Figure 2 as comprising a series of ratchet teeth 41 formed on the upper curved edge of the curved arm 35 to be engaged by the pawl 42 carried by one end of a lever 43 pivoted as at 44 upon the body portion 10 of the last. The lever 43 is in the form of a bell crank and has an arm 45 projecting above the rearwardly extending arm 13 with a spring 46 connected at one end as at 47 to the arm 45 with the other end thereof anchored as at 48 to the arm 13, the spring 46 normally tensioning the pawl 42 in a direction toward the ratchet teeth 41. It will be observed from an inspection of Figure 2 that the rear end of the instep plate 32 is manually lowered, the plate 32 hinging at the forward points 33—34 and being retained in its adjusted lowered position by the pawl and ratchet devices. To release the instep plate 32 from engagement with the instep of a shoe, it is only necessary to move the arm 45 against the tension of the spring 46 for shifting the bell crank lever 43 to release the pawl 42 from the ratchet teeth 41 whereupon the spring 38 returns the instep plate to a position for engagement with the rear curved edge of the body portion 10 of the last.

From the above detailed description of the invention, it is believed that the construction and operation thereof will at once be apparent and while there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed is:—

1. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block.

2. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, and the forward end of the instep plate pivoting on the rear section of the sole plate.

3. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, and the forward end of the instep plate pivoting on the rear section of the sole plate, the instep plate being tensioned in the direction of the last body and pawl and ratchet mechanism interposed between the instep plate and last body for holding the instep plate spaced from the body, and the instep plate automatically returning to engagement with the last body when the pawl is disengaged from the ratchet.

4. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, said instep plate being tensioned in a direction toward the last body and cooperating means carried by the last body and instep plate for holding the latter spaced from the last body and in engagement with the instep of a shoe, said means being separable to permit automatic return of the instep plate into engagement with the last body.

5. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, the sole plate including rear sections adjustable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby.

6. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, and the forward end of the instep plate pivoting on the rear section of the sole plate, the sole plate including rear sections ad-

justable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby.

7. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, and the forward end of the instep plate pivoting on the rear section of the sole plate, the instep plate being tensioned in the direction of the last body and pawl and ratchet mechanism interposed between the instep plate and the last body for holding the instep plate spaced from the body, and the instep plate automatically returning to engagement with the last body when the pawl is disengaged from the ratchet, the sole plate including rear sections adjustable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby.

8. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, said instep plate being tensioned in a direction toward the last body and cooperating means carried by the last body and instep plate for holding the latter spaced from the last body and in engagement with the instep of a shoe, said means being separable to permit automatic return of the instep plate into engagement with the last body, the sole plate including rear sections adjustable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby.

9. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, the rear edge of the sole plate being grooved and the forward edge of the instep plate being rounded and freely seated in the groove.

10. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, said instep plate being tensioned in a direction toward the last body and cooperating means carried by the last body and instep plate for holding the latter spaced from the last body and in engagement with the instep of a shoe, said means being separable to permit automatic return of the instep plate into engagement with the last body, the rear edge of the sole plate being grooved and the forward edge of the instep plate being rounded and freely seated in the groove.

11. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, the sole plate including rear sections adjustable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby, the rear edge of the sole plate being grooved and the forward edge of the instep plate being rounded and freely seated in the groove.

12. In an extensible shoe last, a last body having a head and sole block, an extensible heel element on the body, laterally and longitudinally adjustable sole plates on the sole block and an adjustable instep plate centrally of the body and sole block, said instep plate being tensioned in a direction toward the last body and cooperating means carried by the last body and instep plate for holding the latter spaced from the last body and in engagement with the instep of a shoe, said means being separable to permit automatic return of the instep plate into engagement with the last body, the sole plate including rear sections adjustable transversely of the sole block, a forwardly projecting rod carried by each rear sole section and the forward sole sections having openings therein to receive the rods for adjustable support thereby, the rear edge of the sole plate being grooved and the forward edge of the instep plate being rounded and freely seated in the groove.

TOBY PIZZA.
GUSTAVE A. GILLES.