(No Model.)

F. CHASE.

LAST.

No. 565,531. Patented Aug. 11, 1896.

Fig. 1.

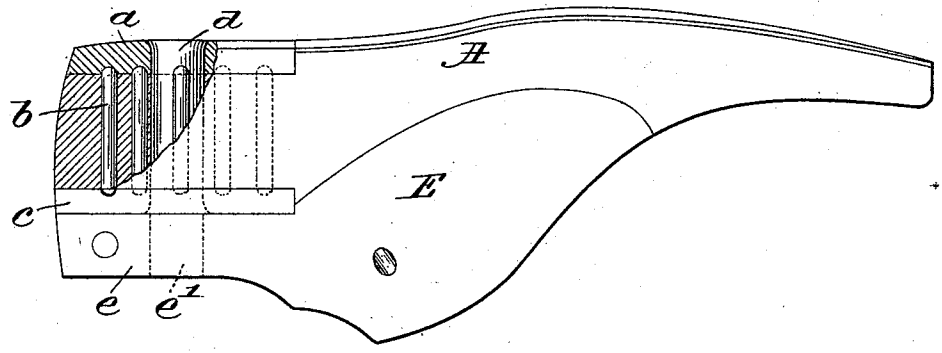


Fig. 2.

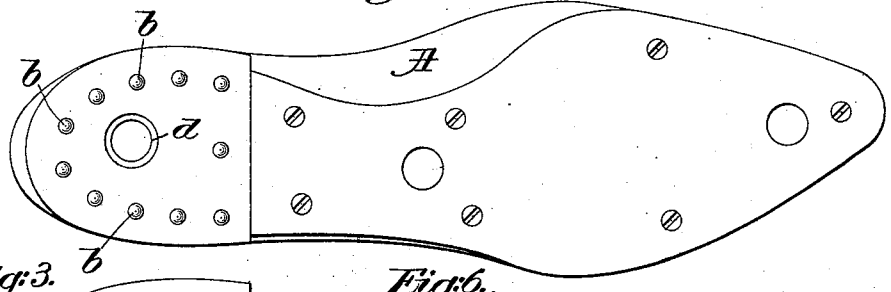


Fig. 3.

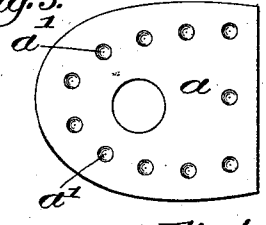


Fig. 6.

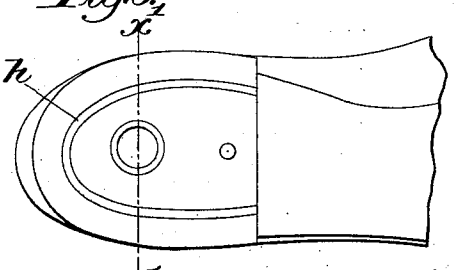


Fig. 4.

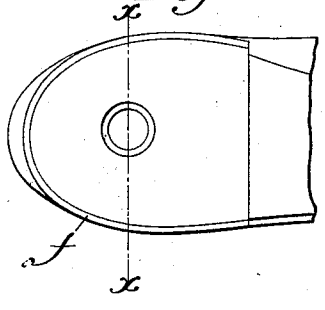


Fig. 5.

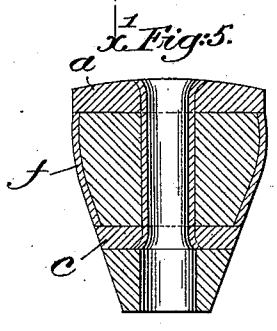
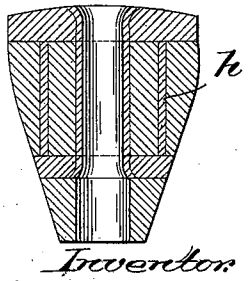


Fig. 7.



Witnesses.
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Thomas L. Drummond.

Inventor.
Frank Chase.
by Crosby & Gregory Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK CHASE, OF WATERVILLE, MAINE, ASSIGNOR OF TWO-THIRDS TO GORDON McKAY, OF NEWPORT, RHODE ISLAND.

LAST.

SPECIFICATION forming part of Letters Patent No. 565,531, dated August 11, 1896.

Application filed September 23, 1895. Serial No. 563,328. (No model.)

To all whom it may concern:

Be it known that I, FRANK CHASE, of Waterville, county of Kennebec, State of Maine, have invented an Improvement in Lasts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Boot and shoe lasts are now commonly made of wood and in some cases provided with a metallic heel piece or plate. In practice it has been found that lasts of such construction cannot be successfully used in a heeling-machine, for the reason that the great pressure employed in such machines will, in case the heel be a trifle thick, crush the material or wood of which the last is made and thereby ruin the last.

My present invention consists in supporting the heel-piece, as claimed, upon a seat-piece, independently of the material of which the last-body is composed, so that when the heel of the last is subjected to great pressure such pressure will be received directly by and upon the seat and to no extent by the interposed material of the last proper, thus preserving the latter and the life of the last.

In the drawings, Figure 1, in side elevation, partially broken away, shows a last embodying my invention; Fig. 2, a view looking down upon the bottom of the last with the bottom piece removed, exposing the ends of the struts *b*; Fig. 3, an under-side view of the heel-piece detached; Fig. 4, a view looking down upon the bottom of a last containing a modified form of my invention; Fig. 5, a cross-section on the dotted line *x x*, Fig. 4; Fig. 6, a view similar to Fig. 4, showing yet another modified form of my invention; Fig. 7, a section on the dotted line *x' x'*, Fig. 6.

In the embodiment of my invention shown in Figs. 1 to 3, inclusive, to which figures reference may be had; my improved last, as there shown, comprises a body portion A, provided at its heel with the heel-piece *a*, herein shown as a plate of the full size and shape of the heel. This heel-piece *a* is shown as provided at its under side (see Fig. 3) with a plurality of recesses or depressions *a'*, which receive one of the ends of as many, preferably cylindrical, struts or pins *b*, which latter at their opposite ends in the construction shown enter similar recesses in what I have elected to term a "seat-piece" *c*, which may be at or near the top of the last.

The usual spindle-sleeve *d* in the construction shown is carried through both the heel-piece and the seat-piece, and is preferably riveted or headed over at the outside of each to hold the two against separation.

In the last shown in Figs. 1 and 2 I have provided the usual removable instep-block E, but the same as there shown is provided with a heel portion *e*, which is extended toward the heel of the last beyond the spindle-hole, preferably quite to the heel of the last, it being provided with a suitable spindle-hole *e'*, which when the block is in position registers with the spindle-hole of the sleeve *d*.

The last described may be used like other lasts in the ordinary course of business in the manufacture of boots and shoes, and when the shoe during its manufacture reaches the heeling-machine the block E is removed and the last placed in position upon the heeling-machine with the seat-piece *c* resting directly upon the last-support of the machine, and the pressure of the heeling-machine upon the heel-piece *a* is received through the struts *b* directly upon and by the seat *c* and independently of the intervening material of the last proper, thus relieving the latter of all pressure tending to crush or crack it and preventing permanent injury of the last.

In the construction Figs. 1 to 3, inclusive, the interposed struts are in the form of cylindrical pins, but such interposed struts or supports need not be in this particular form. For example, in Figs. 4 and 5 I have shown the heel-piece *a* as supported upon the seat-piece *c* by the metallic heel section or plate *f*, shaped to conform to and let in flush with the contour of the last, and in Figs. 6 and 7 the interposed supporting-piece or strut *h* is entirely within the body of the last and set in a saw-cut following the contour of the last. My invention therefore is not limited to the particular embodiments or constructions herein shown and described, for it is evident the same may be varied without departing from the spirit and scope of my invention.

Having described my invention, what I

claim, and desire to secure by Letters Patent, is—

1. A last provided with a seat having a plurality of recesses, the heel-piece provided with a like number of correspondingly-arranged recesses, and a plurality of interposed struts resting at their ends in the recesses of the said seat and heel-piece, and supporting the latter upon the former, substantially as described.

2. A last provided with a seat having a plurality of recesses, a heel-piece opposite thereto, and a plurality of interposed struts resting at their ends in the recesses of the said seat and supporting the said heel-piece upon the said seat, substantially as described.

3. A last provided with a heel-piece having a plurality of recesses, a seat opposite thereto, and a plurality of interposed struts resting at their ends in the recesses of said heel-piece and supporting the latter upon said seat, substantially as described.

4. A last provided with a seat, a heel-piece, and a plurality of interposed cylindrical struts supporting the heel-piece upon the said seat, and arranged about the center of said heel-piece substantially parallel to its edges, so as to evenly distribute the pressure on the heel-piece over the entire said seat, substantially as described.

5. A last provided with a seat, a heel-piece, a spindle-sleeve connecting said seat and heel-piece and preventing separation of the two, and a plurality of interposed struts supporting the heel-piece upon the said seat, and arranged about the said sleeve on all sides thereof, to evenly distribute the pressure on the heel-piece over the entire seat, substantially as described.

6. A last provided with a seat, and a heel-piece, spindle-holes in the said seat and heel-piece, a spindle-sleeve concentric with said holes connecting said seat and heel-piece and preventing separation of the two, and a metallic support interposed between said seat and heel-piece and arranged about said sleeve approximately parallel with the edges of said seat and heel-piece, substantially as described.

7. A last having a removable instep-block provided with a portion extended rearwardly to the heel of the last substantially parallel with the bottom of the last, a seat interposed between said rearwardly-extended portion and the heel portion of the body of the last, and a heel-piece supported upon said seat independently of the material of the last, substantially as described.

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

FRANK CHASE.

Witnesses:

CHARLES E. HARDY,

ALFD. P. THOWELL.