

A. W. COX  
Lasts.

**No. 210,300.**

**Patented Nov. 26, 1878.**

Fig:1.

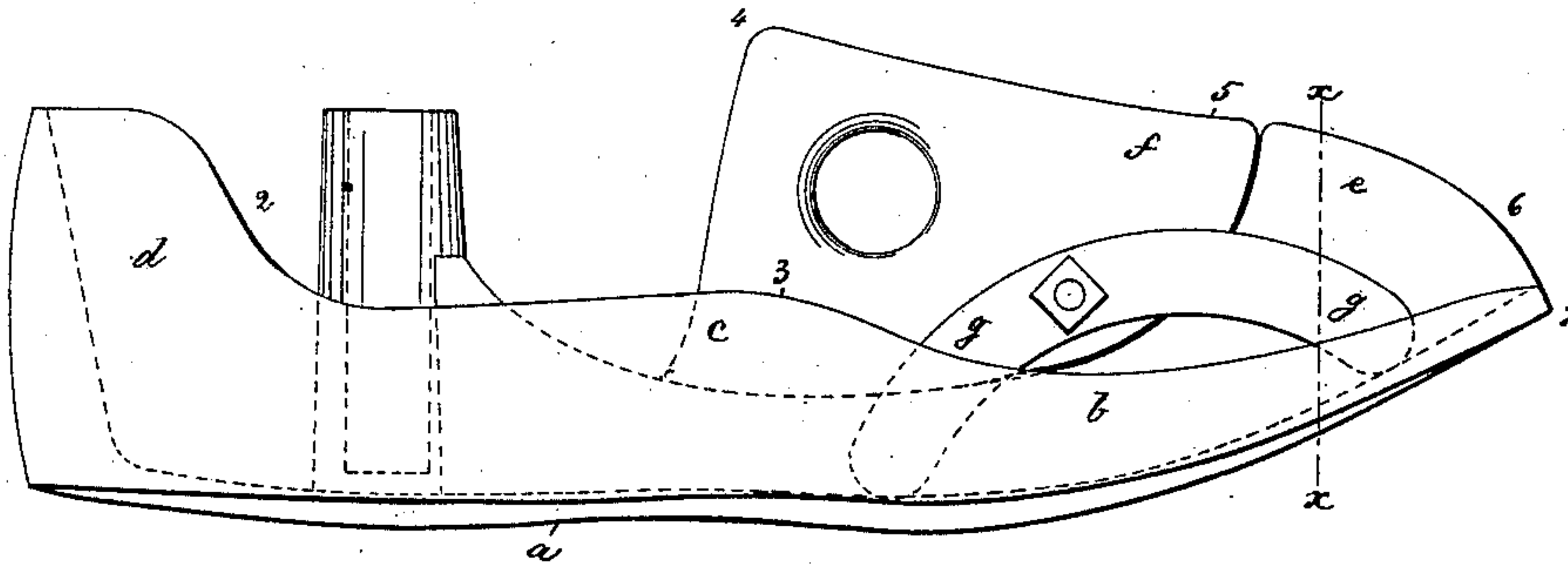


Fig: 2.

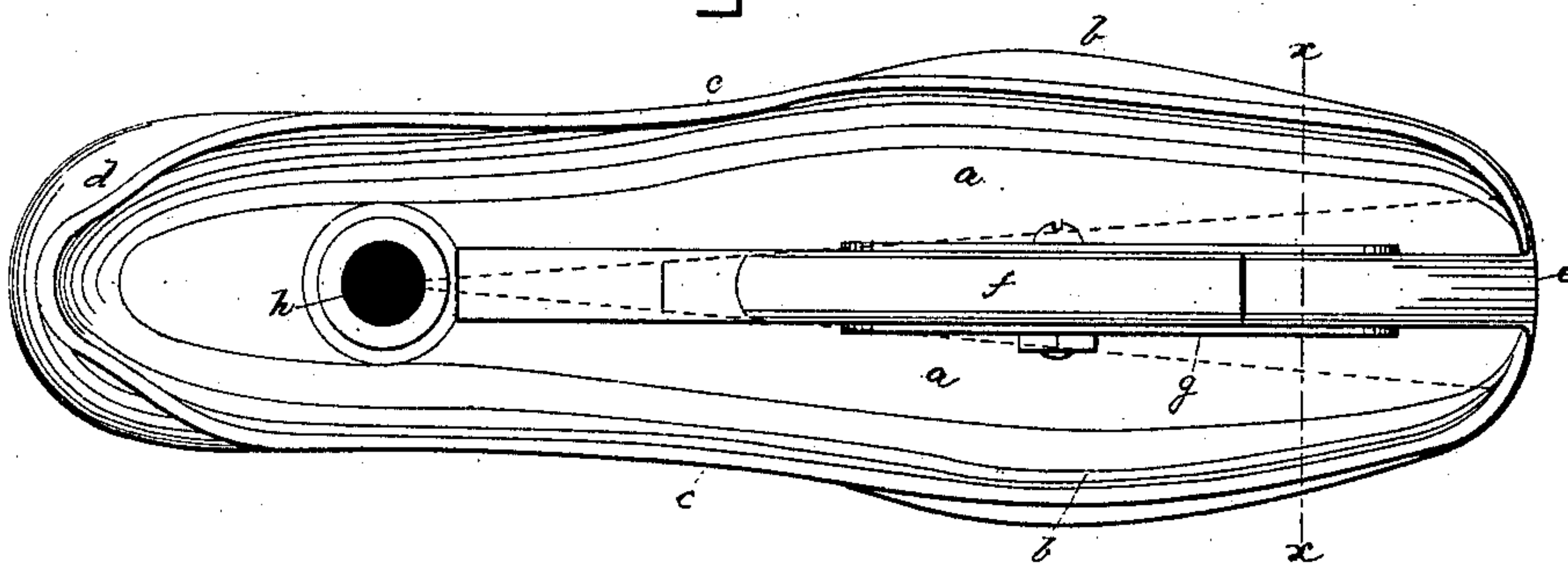


Fig:3.

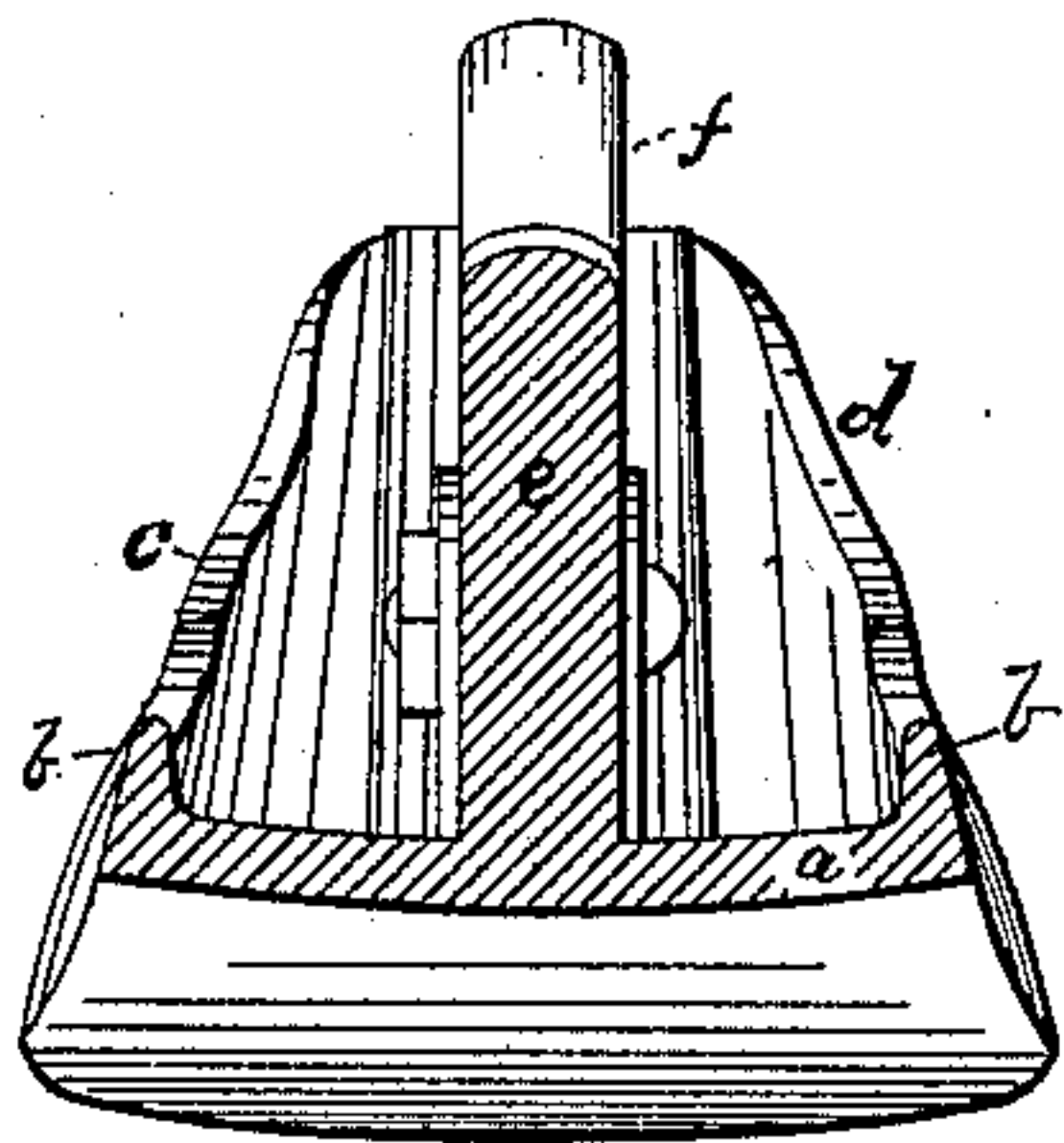
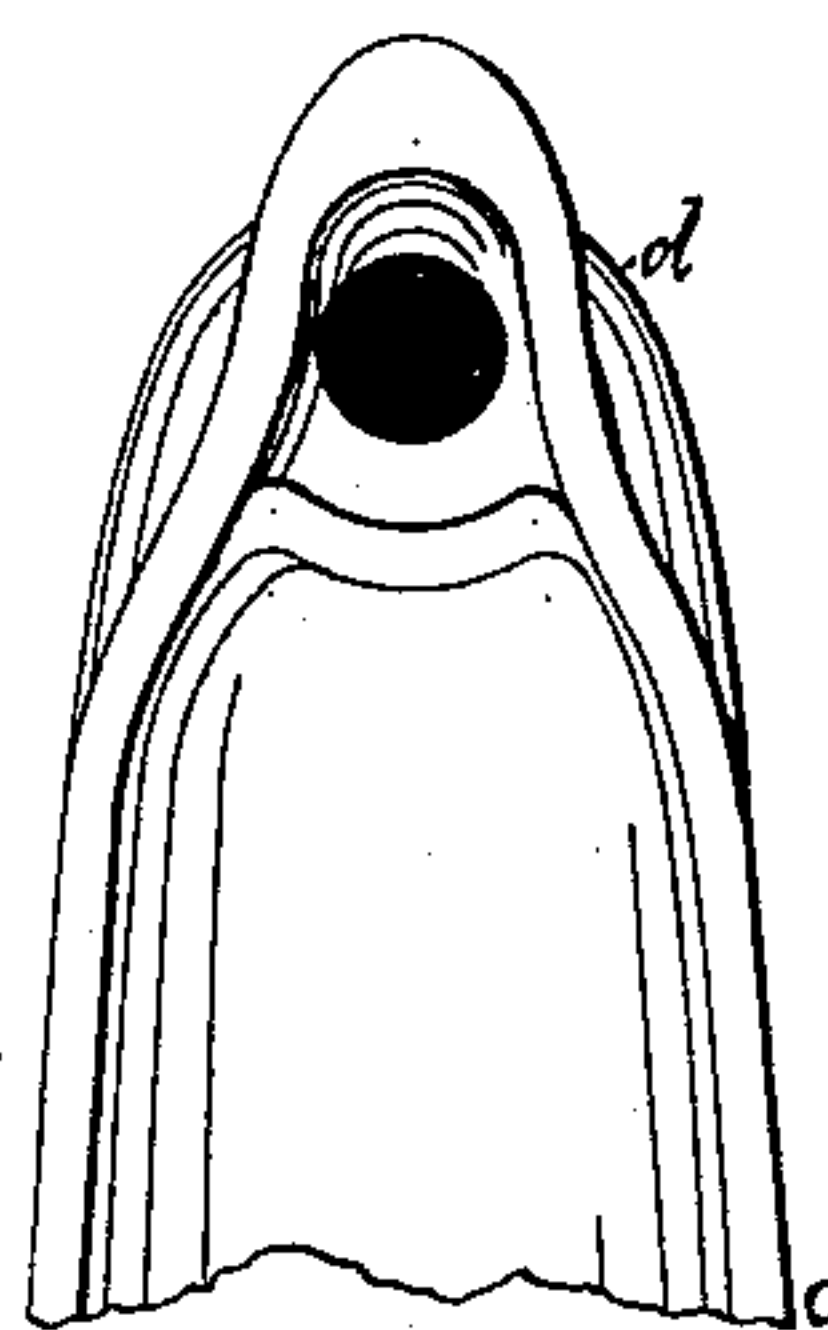


Fig: 4..



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# UNITED STATES PATENT OFFICE.

ARTHUR W. COX, OF AUBURN, MAINE.

## IMPROVEMENT IN LASTS.

Specification forming part of Letters Patent No. **210,300**, dated November 26, 1878; application filed July 29, 1878.

*To all whom it may concern:*

Be it known that I, ARTHUR W. COX, of Auburn, county of Cumberland, State of Maine, have invented a Metallic Last, of which the following description, in connection with the drawing forming a part thereof, is a specification.

This invention relates to metallic lasts, and has for its object the production of a light and efficient shell-like last.

The invention consists in a last provided at or near its center with a sectional upper-distending rib, and having a flange or rim extended about its bottom from the toe to the heel, the heel-flange being of a length equal to the depth of the heel of the shoe or boot to be made, or for the height of the stiffener used therein; and forward of the said heel-flange the flange is reduced in height, leaving it just high enough to keep the upper at the shank and ball of the foot distended, so that when a portion of the rib is removed or lowered the flange so left about the edges of the last will afford the upper a sufficient bearing-surface to retain the last in the shoe. More flange than is required to hold the shoe and the last together is unnecessary.

Figure 1 represents, in side elevation, a last constructed in accordance with my invention; Fig. 2, a top view thereof; Fig. 3, a section on the line *xx*; and Fig. 4, a modification, showing the jack-pin receiving-socket placed at the extreme heel rather than at or near the shank of the last, as is desirable with lasts of small sizes.

The metallic last herein shown is composed of a shell, the portion *a* of which constitutes the bottom of the last, the portions *b c d* the rim or flange about the ball, shank, and heel of the last-bottom.

The heel-flange is projected upward for a distance substantially equal to the depth of the heel or heel-stiffener, and at 2 it is curved or sloped downward until it meets the shank-rim *e*, which is preferably rounded upward at 3, opposite the small bones at the sides of the foot, immediately in front of the shank, and from 3 forward to the toe the rim is gradually reduced in height, substantially as shown in the drawing; but the particular line of this

shape is not essential, so long as it is lower than the rib which rises from the last-bottom between the side flanges.

The rib *e*, which starts from at or near the toe end of the last, is, in this instance, shown as made of a fixed toe and a movable instep-piece, *f*, and its purpose is to take up and stretch or hold taut the upper between the points of its bearing upon the flanges at or near the edge of the last-bottom.

The contour of the top of the upper-distending rib, as along the line 4 5 6 7, (see Fig. 1,) may be variously changed to adapt the last to the peculiar shape or character of the upper being lasted; and it is obvious that this rib may be of one or more pieces. If of two pieces, as shown in the drawings, the piece *f* is made removable, it having attached springs, fingers, or clamps *g*, or other suitable attaching devices, to retain it in place in line with the portion *e*.

The rib might be in one piece, and be pivoted at or near the toe of the last, and be raised or lowered at its other end by a suitable screw or other device. Instead of one central rib, *e f*, two ribs might be started, one at each side of the position now occupied by the rib *e f*, as shown by dotted lines in Fig. 2, such ribs extending toward the socket *h* of the last. This socket *h*, to fit the pin of the jack, will, for heavy lasts, be placed preferably at or near the shank; but for small shoes said socket will be placed nearer the heel, as in Fig. 4.

By this construction it is possible to make a shell-like last which shall be light and inexpensive as compared with the cost of other iron lasts; and by reason of the rib, shaped as may be desired, the fullness of the upper may be all taken up without fitting said upper closely upon the body of the last, as has been heretofore common.

The bottom of this metallic last and its side curves may be of any particular shape common to wooden lasts.

I claim—

1. As an improved article of manufacture, a metallic shell-like last having a metallic bottom, a rim or flange, *b c d*, about the ball, shank, and heel, and a sectional upper-dis-

tending rib at or near the center of the last, substantially as described.

2. In an iron last, the sectional rib *e f* and attaching devices to connect the movable portion *f* with the fixed portion *e*, substantially as described.

In testimony whereof I have signed my name

to this specification in the presence of two subscribing witnesses.

ARTHUR W. COX.

Witnesses:

G. W. GREGORY,  
N. E. WHITNEY.