

No. 696,215.

E. C. VERRILL.
LAST.

Patented Mar. 25, 1902.

(Application filed Jan. 23, 1901.)

(No Model.)

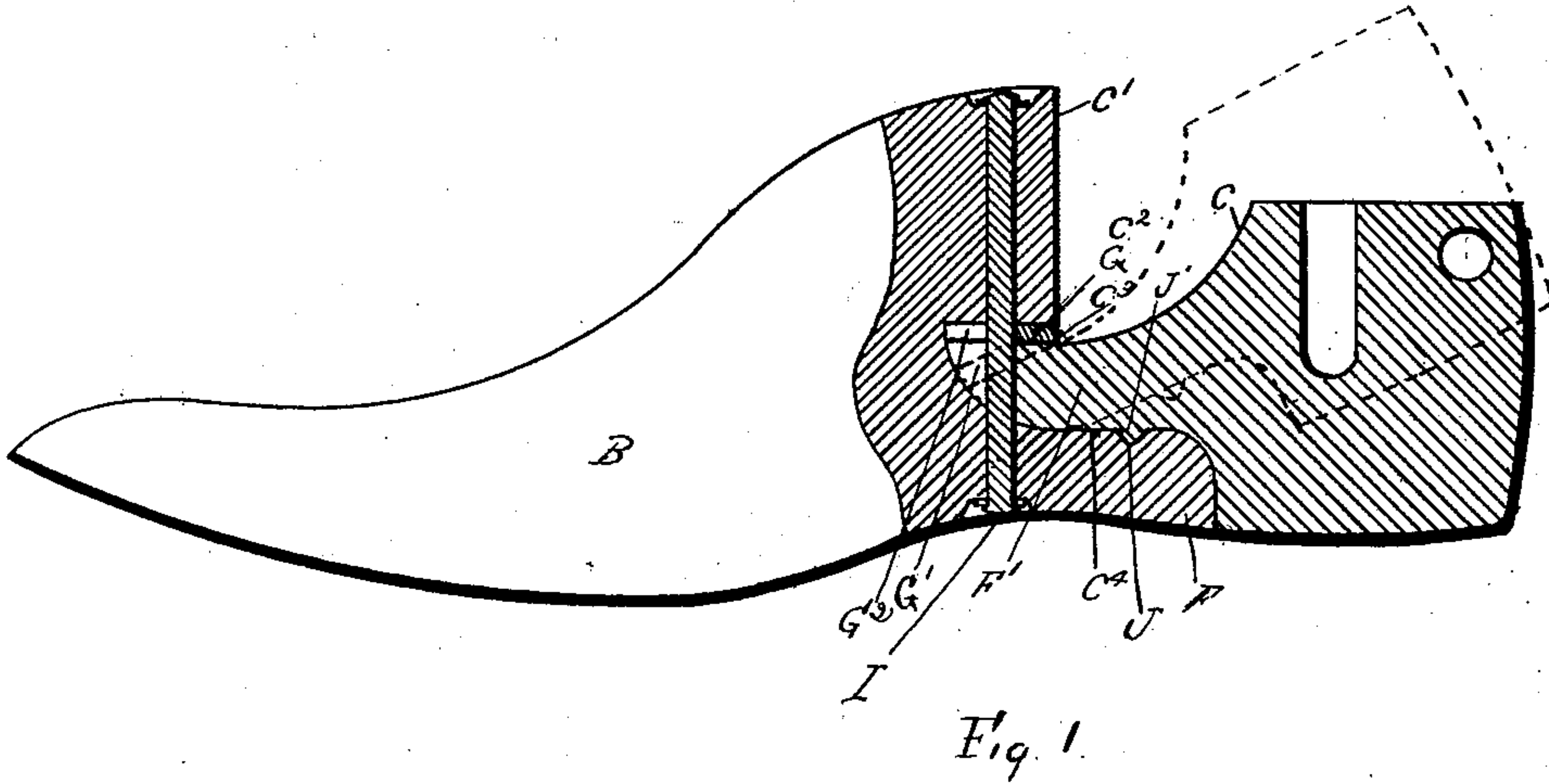


Fig. 1.

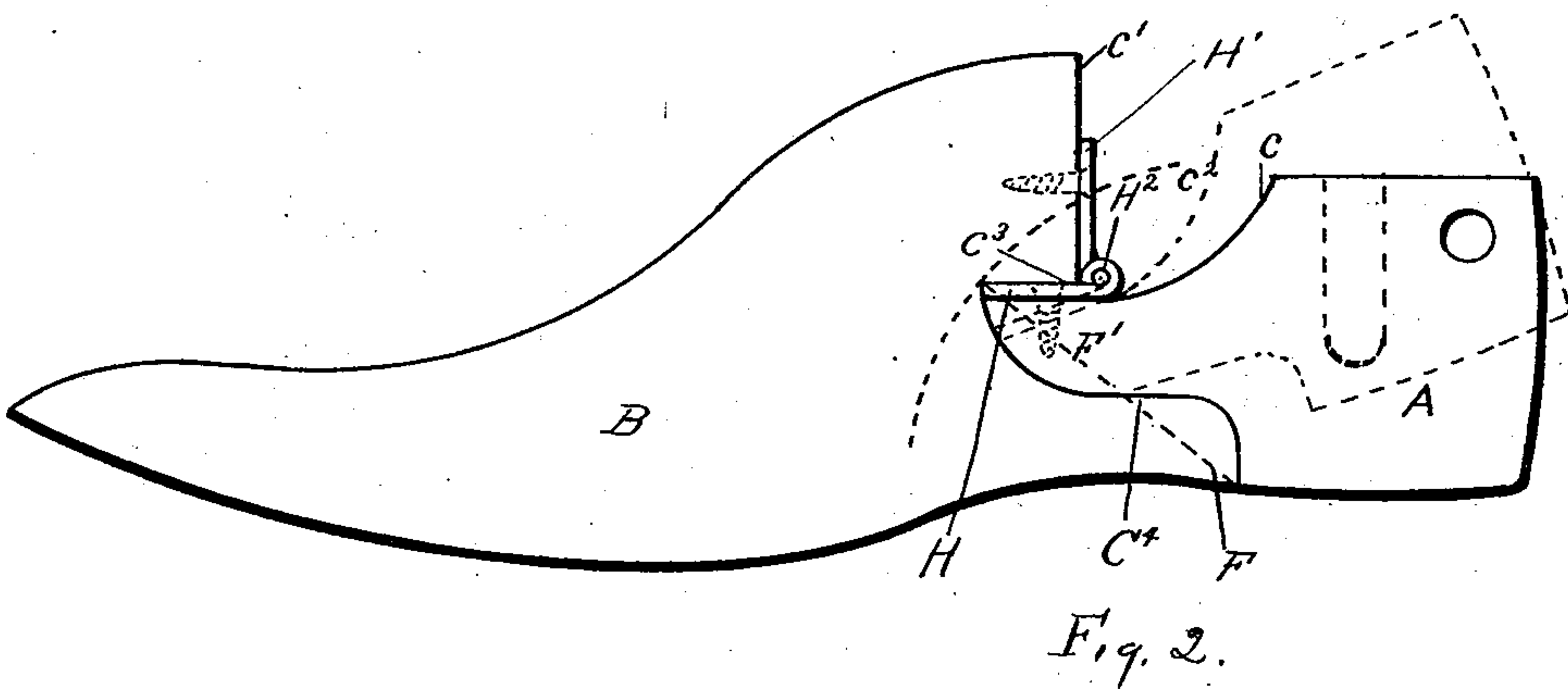


Fig. 2.

Witnesses,
J. B. Shaw
Marion Richards

Inventor,
Edwin C. Verrill,
by *Verrill & Clifford*,
Attorneys.

UNITED STATES PATENT OFFICE.

ELGIN C. VERRILL, OF CAPE ELIZABETH, MAINE.

LAST.

SPECIFICATION forming part of Letters Patent No. 696,215, dated March 25, 1902.

Application filed January 23, 1901. Serial No. 44,353. (No model.)

To all whom it may concern:

Be it known that I, ELGIN C. VERRILL, a citizen of the United States, residing at Cape Elizabeth, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Lasts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in lasts, and more particularly to that class of divided lasts which have a gap at the top, which permits the two parts to be folded upwardly toward each other to shorten the last to facilitate its insertion in and removal from the shoe, and a line of division extending from said gap to the bottom. It is applicable to all classes of such lasts for whatever purpose they are designed to be used, including first lasts, followers, &c.

The object of my invention is in a last thus divided to simplify its construction, increase its utility and durability, and lessen its expense.

In the drawings herewith accompanying and making a part of this application, Figure 1 is a vertical longitudinal sectional view of my improved last, partly in elevation; and Fig. 2 is a side elevation showing slight modifications thereof.

The mode of manufacture of my improved last is substantially as follows: Lines of cut extending transversely of the last, beginning at some distance apart at the top, converge to a common point at some point within the body of the last, whereby a portion of the last between said lines is removed. One of said lines of cut is then extended forwardly into the body of the last a suitable distance. Then from the bottom of the last a cut extends upwardly, forwardly, and thence upwardly until it meets the last-named cut, thus forming a recess in the rear wall of the toe part. Of course the order and time of these cuts may be reversed, the one leading from the bottom being cut first. The positions of all of these lines of cut may be changed relatively to each other and to the last itself without changing the principle involved in my invention.

For a more particular description of the construction and operation of my improved last reference is had to said drawings, in which—

A and B represent the heel part and toe part, respectively; C and C', the lines of cut converging downwardly from the top; C², the gap formed thereby; C³, the forward extension of said line of cut into the body of the toe part, and C⁴ the line of cut extending from the bottom of the last to its junction with line C³. Line C³ will usually extend in a substantially horizontal direction, and line C⁴ will terminate in the arc of a circle of which a radius is equal to the length of line C³. The direction of line C⁴ from said curved part to the bottom of the last may vary, but should be on such a line as can be readily cut in a continuous course with a saw. It will be found convenient and useful to extend the cut C⁴ from the circular part before referred to in a substantially horizontal direction rearwardly a short distance, and thence in an easy curve to a vertical direction, and thence to the bottom of the last, thus completely severing the last into said parts A and B and forming a projection F on the bottom of the fore part and an overlapping projection F' on the heel part, one adapted to rest upon the other and the end of projection F' extending into said recess in the toe part. When thus divided and the projection on the heel part is inserted in the recess in the fore part, there will be a space between the top of said projection and the top of the recess in the fore part equal to the thickness of the saw-scarf. This may be taken up by means of a plate G, secured to the top of said projection, as seen in Fig. 1, or, if desired, the two parts A and B may be united by a hinge, one half H being secured to the top of said projection in place of said plate and the other, H', to the upright wall C' of the fore part, the pivot-point of the hinge lying at or near the meeting-point of the converging lines C and C', as seen in Fig. 2. The hinge may, however, be omitted or any suitable union substituted therefor, if desired, the main purpose of the hinge or union being to afford a convenient means of withdrawing the toe part and of keeping the parts assembled.

To enable the last to withstand without fracture the great strain which in some of the processes of shoe manufacture is applied to the bottom at the center, the heel and fore parts being supported, I pass a strengthening-bolt I in a substantially vertical direction through the fore part of the last, as seen in Fig. 1. If

desired, the bolt may pass through the recess made in the fore part and through the projection on the heel part and the plate or leaf of the hinge, as the case may be, said projection and the plate or leaf being provided with longitudinal slots G' and G^2 , respectively, through which said bolt also passes. The upper face of the projection of the toe part may have a recess J therein and the under face of the projection on the heel part a corresponding projection J' , adapted when the two parts are in their normal relation to enter said recess, as seen in Fig. 1, and lock the parts against endwise movement, said projection engaging in said recess only when the heel part is turned down into normal position, as shown, but offering no obstruction to the free upward movement of the heel part to the position shown in dotted lines, Fig. 1.

The operation of my improved last is as follows: When the heel part is tipped up relative to the fore part, the upper face of the projection on the heel part pivots against the upper outer edge of the overhang formed by the recess in the fore part, the curved part formed at the end of the projection traversing the circular part of the recess, or, in case of the hinge, turns on the pintle of the hinge as a center. When pressure is applied to the bottom of the last, the heel and toe parts being supported, it cannot collapse the last unless the projection on the heel part breaks or the toe part of the last is split by the pressure. The strain comes wholly on the parts of the last and not on the hinge or union connecting them. This is true whether a hinge be used or not, as is evident from Figs. 1 and 2 and as is illustrated in Fig. 2 by the arc of a circle drawn with a radius extending from the line of division at the bottom of the last to the extreme inner and upper point of the projection on the heel part, the arc of the circle passing through the body of the fore part of the last, above the recess therein, thus causing the front of said projection on the heel part to impinge against the overhang on the fore part and preventing the collapse of the last under pressure applied to the bottom.

Having thus described my invention and its use, I claim—

1. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last and a projection on the heel part adapted to have endwise entrance into said recess and to pivot against the fore part above said recess, the pivot-point on said projection being located rearwardly of the end thereof.

2. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last and a projection on the heel part adapted to have endwise entrance into said recess, and a hinge uniting

the two parts, one leaf secured to the fore part and the other to the heel part.

3. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last and a projection on the heel part adapted to have endwise entrance into said recess, and a hinge uniting the two parts, one leaf of said hinge being secured to that part of the top of the projection which enters said recess and the other leaf being secured to the wall of the fore part above said recess.

4. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last and a projection on the heel part adapted to have endwise entrance into said recess, and a reinforcing-rod extending from top to bottom of the last and having its ends anchored in the wood of the last, one above and the other below said recess.

5. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last and a projection on the heel part adapted to have endwise entrance into said recess, said projection having a longitudinal vertical recess in the end thereof, and a reinforcing-rod extending from top to bottom of the last passing through the recess in the fore part and the recess in the projection on the heel part and having its ends anchored in the wood of the last, one above and the other below said recess.

6. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the toe part below said gap, abutting surfaces extending thence to the bottom of the last, the inner end and bottom of said recess being curved, and a projection on the heel part adapted to have endwise entrance into said recess, the outer end and under side of said projection being curved to fit corresponding parts in said recess.

7. A last divided transversely by lines of cut which form a gap extending into it from the top, a recess extending into the top part below said gap, a projection extending rearwardly beyond the outer end of said recess, a projection on the heel part adapted to have endwise entrance into said recess and rest upon said projection on the toe part and abutting surfaces extending thence to the bottom of the last.

In testimony whereof I affix my signature, in presence of two witnesses, this 21st day of January, 1901.

ELGIN C. VERRILL.

Witnesses:

NATHAN CLIFFORD,
MARION RICHARDS.