No. 612,481. Patented Oct. 18, 1898.

G. H. CLARK.

LAST.

(Application filed Oct. 11, 1897.)

(No Model.)

Fig. 1.

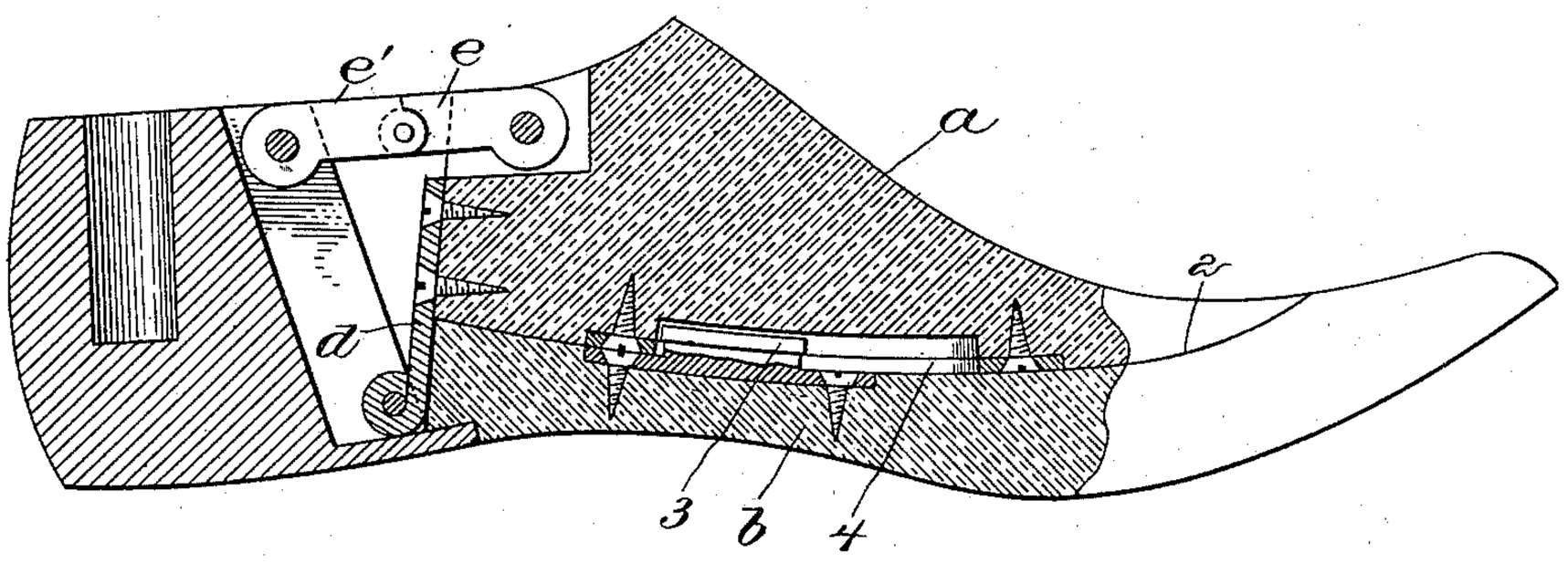
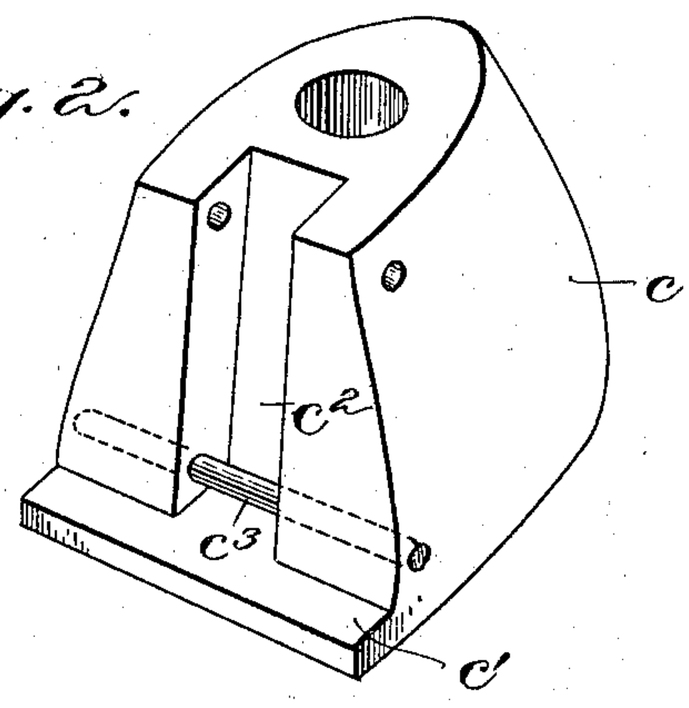


Fig. 2.



Witnesses:
Arthur D. Randall.
Mary E. Foster.

Inventor:
George H. Clark
by B. J. Hayes
atty

UNITED STATES PATENT OFFICE.

GEORGE H. CLARK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MORLEY FINISHING MACHINE COMPANY, OF SAME PLACE.

LAST.

SPECIFICATION forming part of Letters Patent No. 612,481, dated October 18, 1898.

Application filed October 11, 1897. Serial No. 654,739. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. CLARK, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Lasts, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates to lasts for boots and shoes upon which the boots and shoes may be lasted, and thereafter, while the last still remains in the boot or shoe, the latter may be subjected to whatever steps or processes desired in their manufacture, and, finally, while yet remaining in the boots or shoes, may be used as trees upon which the boots or shoes may be treed.

The last forming the subject-matter of my present invention is intended as an improvement upon the last shown and described in my application, Serial No. 630,370; and the invention has for its object to improve the construction of the last in many particulars, better adapting it to withstand the hard usage to which it will be put and also adapting it to be used in a boot or shoe having its waist measure less than its ball measure.

In accordance with this invention the last comprises, essentially, a fore part and a heel-piece hinged together and having a V-shaped opening between them, and the heel-piece is preferably made of metal and formed with an opening at that side which abuts against the fore part, and at or near the bottom of said opening a cross-pin is secured, which receives upon it the leaf or member of a hinge which is attached to the fore part, said pin thereby constituting the pintle or pivot-pin of the hinge. The heel-piece also has at its lower end and projecting from its abutting face a lip or flange, which overlies the shank end of the fore part, said lip or flange better enabling the last to withstand sudden and severe shocks to which it may be subjected.

The fore part is split in two or more pieces or sections, which are connected together by suitable sliding connections, the line or lines of severance being so located as to separate the instep portion from the remaining portion, and the hinge by means of which the heel-piece is connected with the fore part is attached to said instep portion, so that as the heel-piece is withdrawn the instep portion which is connected thereto will follow it and finally the remaining portion or portions of the split fore part.

An engaging device for a last-hook is provided whereby the split fore part and the piece are connected together, and said engaging device is adapted to be engaged by any usual last-hook to withdraw the last from the shoe. The engaging device is also preferably constructed so as to draw the instep portion of the fore part and heel-piece toward each other to thereby relieve the pressure at the ball and heel when withdrawing the last from the shoe, and said engaging device is also preferably constructed and arranged to serve as a means of holding the several parts of the last in their proper relative positions in the shoe—*i. e.*, it is adapted to serve as a rear stop for that part of the split fore part to which it is attached and as a front stop for the heel-piece, and a rear stop is provided for the remaining portion of the split fore part, and said engaging device while serving as stops for the parts to which it is connected, holds said parts so as to make said rear stop for the remaining portion of the split fore part effective.

Figure 1 shows in longitudinal section a last embodying this invention. Fig. 2 shows a perspective view of the heel-piece of the last.

The fore part, as herein shown, comprises the instep portion *a* and a sole-piece *b*, separated on a line of severance 2, said sole-piece *b* comprehending the toe of the fore part. These pieces *a* and *b* are connected together by a sliding connection, so that they may be moved longitudinally one with relation to the other. The sliding connection herein shown consists of a T-shaped piece 3 on the abutting face of the sole-piece, which is fitted to slide in a slotted plate or guideway 4, secured to the abutting face of the instep portion. I desire it to be understood, however, that instead of forming the split fore part in two parts, as *a* and *b*, it may be formed of any number of parts which may be deemed desirable, and, furthermore, instead of locating the line of severance 2 as herein shown, whereby the instep portion is removed from the sole-piece, said line of severance may be otherwise dis-

posed and yet enable the instep portion to be divided from the remaining portion or portions of the fore part. By dividing the split fore part in the manner shown or any equivalent manner the instep portion may be withdrawn first and the remaining portions will follow.

c represents a heel-piece, and it is made of suitable size and shape, and, as herein shown, it is composed of metal and is formed at the bottom of its abutting side or face with a projecting lip or flange *c'*, which overlies the shank end of the fore part. The heel-piece *c* is formed on its abutting side or face with a vertical recess c^2, and at the lower end of said recess a cross-pin c^3 is secured in the heel-piece, which receives upon it the lower end of a leaf or member *d* of a hinge. The leaf or member *d* of the hinge is attached by screws or otherwise to the rear end of the instep portion of the split fore part, as herein shown in Fig. 1, and thereby connects the heel-piece with the fore part, leaving a V-shaped opening between them. A toggle-joint *e e'* is contained in said V-shaped opening at the top, which is composed of two levers jointed together and having their extremities connected, respectively, with the fore part and heel-piece. This toggle-joint *e e'* when straightened out, as shown in Fig. 1, serves to hold the fore part and heel-piece separated, but is adapted to be engaged by a last-hook or other device, and when drawn out will operate to draw the heel-piece toward the fore part, and by thereby shortening the last will gradually and easily release and permit easy withdrawal of the last from the shoe.

By connecting the heel-piece with the instep portion of the fore part it will be seen that as the last is withdrawn from the shoe the heel-piece is withdrawn first, the instep portion following it, and then the remaining part or parts of the split fore part will follow said instep portion.

It is obvious that many other ways of connection may be employed in lieu of the toggle-joint herein shown for connecting the heel-piece and fore part together and having the function of holding said parts separated, and also for serving as an engaging device for a last-hook or equivalent when withdrawing the last from the shoe.

The split fore part herein shown may be withdrawn from a shoe having the waist measure less than its ball measure; but yet many other forms of split fore parts may be constructed which will enable the accomplishment of this result.

A rear stop is provided for the sole portion *b* of the split fore part, which is herein shown as the rear end of the slotted plate 4, against which the T-shaped piece 3 strikes, or it may be the leaf *d* of the hinge, or it may be the lip *c'* of the heel-piece, either one will suffice, and the engaging device for the last-hook, consisting of the toggle-joint *e e'*, serves as a rear stop for the instep portion of the split fore part and as a front stop for the heel-piece, and when thus employed to hold said parts separated the rear stop for the sole portion *b* becomes effective.

I claim—

1. A last comprising a split fore part, the parts of which are connected together by a sliding connection, and a heel-piece loosely connected to one of the parts of said split fore part, substantially as described.

2. A last divided transversely at or near the shank from top to bottom, and comprising a longitudinally-divided fore part and a heel-piece, and a hinge connecting said heel-piece with one of the parts of said divided fore part, whereby it may be moved relatively to said fore part in expanding or contracting the last, substantially as described.

3. A last divided transversely at or near the shank, and comprising a longitudinally-divided fore part, the parts of which are connected together by a sliding connection, and a heel-piece hinged to one of the parts of said fore part, substantially as described.

4. A last comprising a split fore part and a heel-piece hinged to the instep portion of said fore part, substantially as described.

5. A last comprising a fore part having its instep portion divided from the remaining portion, a heel-piece and a hinge connecting said heel-piece with said instep portion, substantially as described.

6. A last comprising a fore part and a heel-piece, provided with a V-shaped opening between them, said fore part having its instep portion divided from the remaining portion, and a hinge connecting the instep portion of the fore part with the heel-piece, substantially as described.

7. A last comprising a fore part having its instep portion divided from the remaining portion, a heel-piece, a hinge connecting said heel-piece with the instep portion of the fore part, the pivot of said hinge being located at or near the bottom of the last, substantially as described.

8. A last comprising a fore part and a heel-piece loosely connected together, said fore part having its instep portion divided from its sole portion, a rear stop for said sole portion, and a toggle-joint connecting said heel-piece with the instep portion of said fore part, which holds said rear stop in fixed position, substantially as described.

9. A last comprising a fore part and a heel-piece hinged together, said fore part having its instep portion divided from the remaining portion, a rear stop for said remaining portion of the fore part, and a toggle-joint connecting the heel-piece with said instep portion, which serves as a means of holding said rear stop in fixed position while holding the instep portion of the fore part and the heel-piece in expanded position, substantially as described.

10. A last comprising a fore part and a heel-

piece hinged together, said fore part having its instep portion divided from the remaining portion and connected therewith by a sliding connection and an engaging device for the last-hook connecting the heel-piece with the instep portion of said fore part, by means of which said instep portion and heel-piece may be drawn together in withdrawing the last, substantially as described.

11. A last comprising a split fore part, the parts of which are connected together by a sliding connection, and a heel-piece hinged to the instep portion of said split fore part, substantially as described.

12. A last comprising a split fore part, the parts of which are connected together by a sliding connection, a heel-piece hinged to the instep portion of said split fore part, a rear stop for the sole portion of said split fore part borne by one of the other parts of the last, and an engaging device for a last-hook connected to said heel-piece and to the instep portion of said fore part, which holds the parts to which it is connected in expanded position, and also holds said rear stop in fixed position to thereby hold the sole portion of the fore part, substantially as described.

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

GEORGE H. CLARK.

Witnesses:
B. J. NOYES,
MARY E. FOSTER.