No. 620,835. Patented Mar. 7, 1899.

G. C. BEMIS.

TOE TIP SHELL FOR LASTS.

(Application filed July 18, 1898.)

(No Model.)

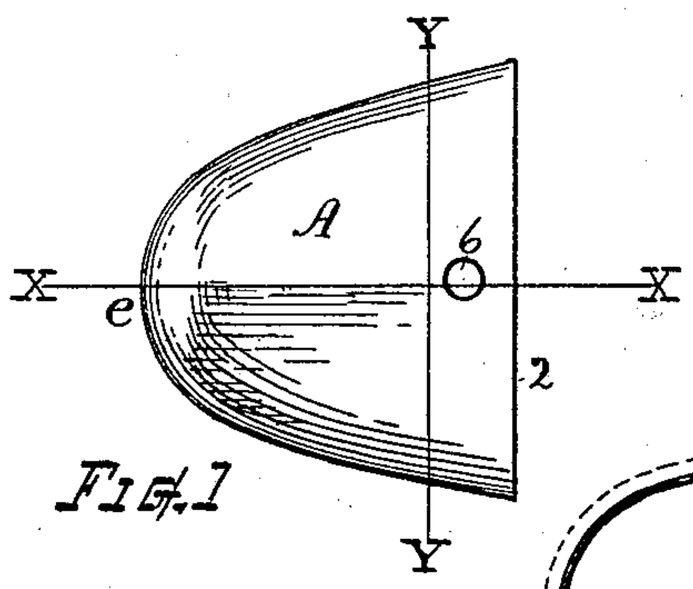

FIG. 1

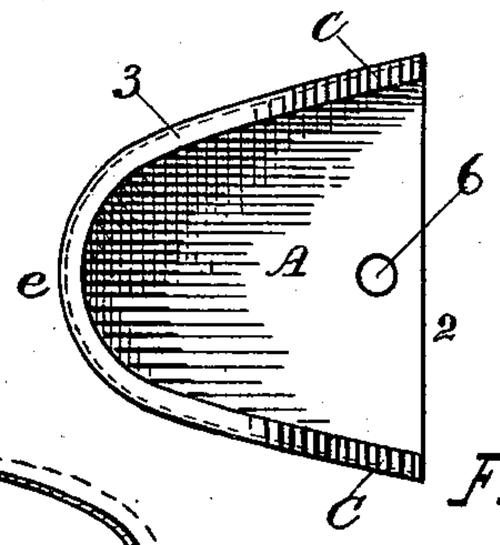

FIG. 2

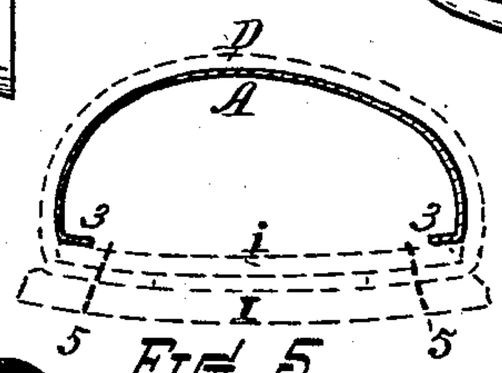

FIG. 5

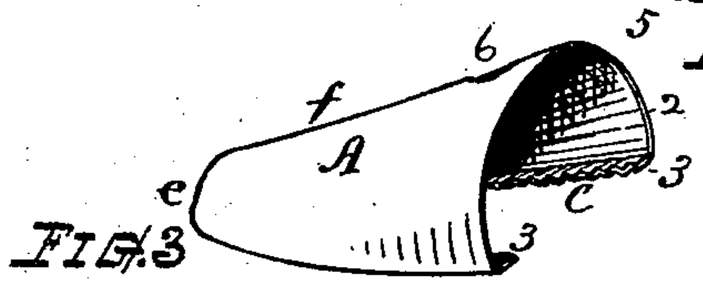

FIG. 3

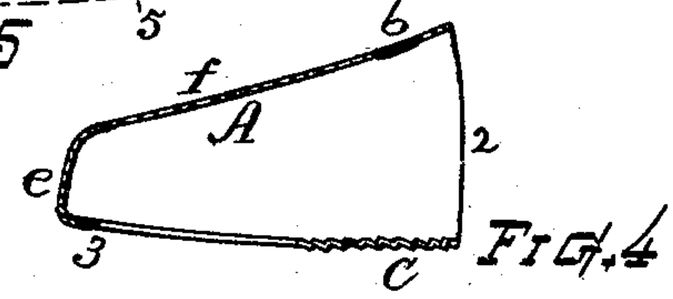

FIG. 4

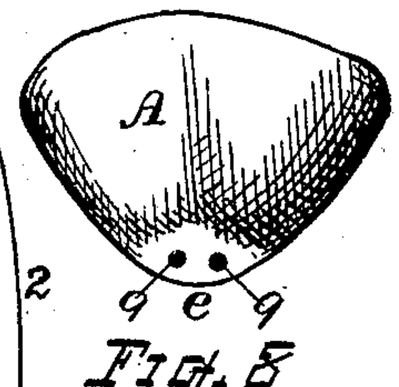

FIG. 8

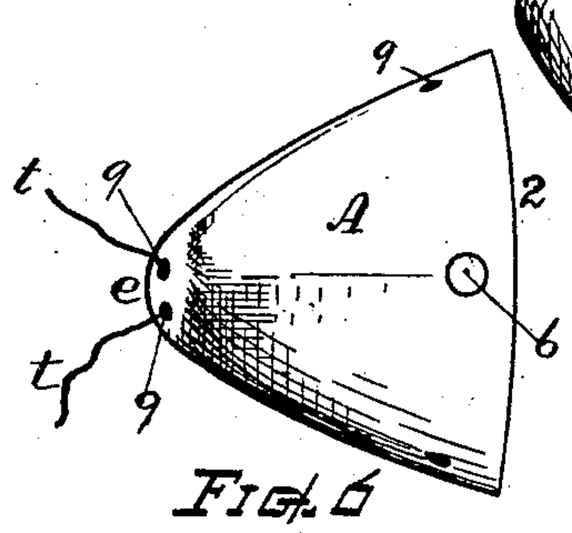

FIG. 6

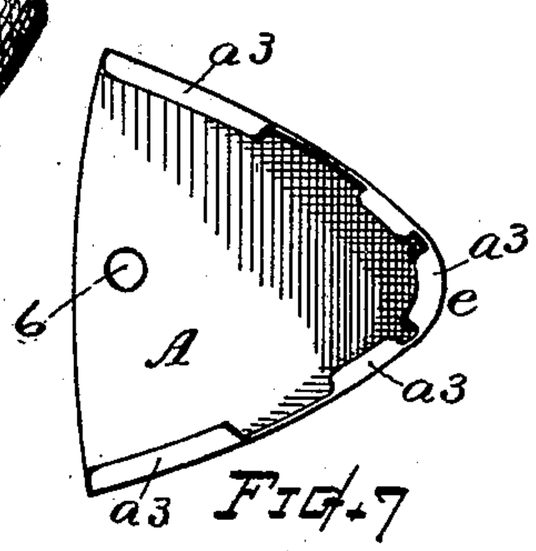

FIG. 7

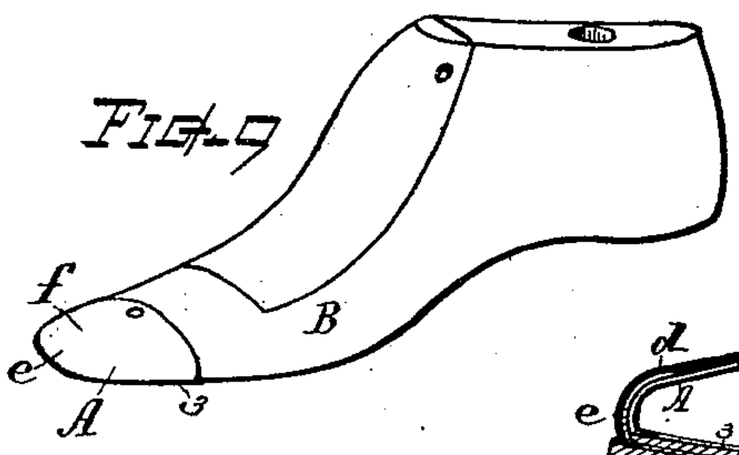

FIG. 9

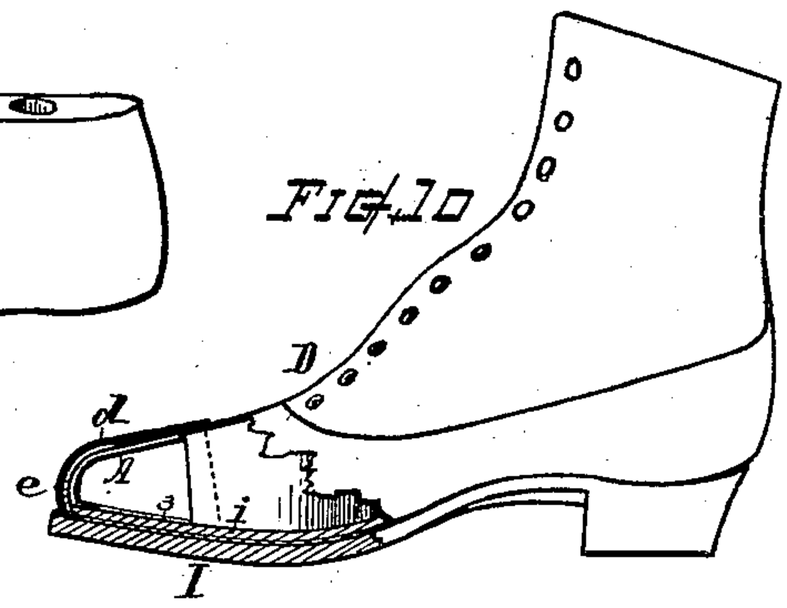

FIG. 10

Witnesses.
Charles A. Bacon
Simeon E. Rice

Inventor.
Gilbert C. Bemis
By Chas. H. Burleigh
Attorney

UNITED STATES PATENT OFFICE.

GILBERT C. BEMIS, OF LACONIA, NEW HAMPSHIRE.

TOE-TIP SHELL FOR LASTS.

SPECIFICATION forming part of Letters Patent No. 620,835, dated March 7, 1899.

Application filed July 18, 1898. Serial No. 686,247. (No model.)

To all whom it may concern:

Be it known that I, GILBERT C. BEMIS, a citizen of the United States, residing at Laconia, in the county of Belknap and State of New Hampshire, have invented a new and useful Improvement in Toe-Tip Shells for Lasts, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My present invention relates to the peculiar novel construction or improvements embodied in an instrument adapted, as described, for temporary use in boots or shoes during the process of their manufacture and designed for fitting over the toe of the last before lasting on of the sole and upper and to be left within the toe of the shoe when the last is removed therefrom, there to support and maintain the proper form of the toe during the subsequent sewing, nailing, or pegging on of the soles and such further operations as may be required and then to be conveniently withdrawn from the shoe.

The objects of my invention are, first, to provide an inexpensive and practically efficient means for the purpose stated; second, to provide a releasable toe-tip shell having a flange or lips for its firm support upon the insole of the shoe without interfering with the stitching or nailing, and, third, to provide an instrument of the character described with facilities for the retention of the same in position within the extreme toe of the shoe. For the attainment of these objects my invention consists in an instrument or article having the peculiar construction hereinafter specified, and as illustrated in the drawings, wherein—

Figure 1 is a top view; Fig. 2, a bottom view; Fig. 3, a perspective view; Fig. 4, a vertical section at line X X; Fig. 5, a vertical section at line Y Y, with dotted lines indicating the soles and upper of a shoe. Figs. 6, 7, and 8 respectively show a top view, bottom view, and front perspective view of a toe-tip shell for a narrower-toed last with some modifications in form. Fig. 9 shows the toe-tip shell as arranged upon the last, and Fig. 10 shows the toe-tip shell as left in the shoe when the last is removed therefrom.

My invention comprises a toe-tip shell A, formed of thin sheet-steel or other suitable material swaged or drawn by means of dies to conform at the extremity *e* and upper toe-surface *f* to the last B and so as to fit upon and cover the toe of the last without attachment thereto and inclosing the toe portion for a distance approximately corresponding to the length of the ordinary toe-caps *d*, which are employed on the shoe-uppers. The rear end of the shell is preferably terminated on a transverse line at 2. The bottom of the shell is open, and at its lower edge, corresponding with the bottom line of the last, it is provided with a narrow inwardly-directed flange 3 or lip-offsets that give a seating-support upon the top surface of the insole *i* and prevent the edge of the shell from crowding down between the edge of the insole and the shoe-upper D when the device is in use. The offset portion 3 is best made as a continuous flange about the entire lower edge of the shell A, (see Figs. 2 and 4,) but may in some instances be formed in partial flange-sections or a series of short lips, as at a^3, Fig. 7. The lateral width of the flange 3 is sufficient to give an ample seating-surface, but terminates outside the normal line 5 of the stitching or nailing employed in attaching the soles and at a position which will not interfere with the insertion of the stitches, nails, or other fastening devices.

The flange 3 is in some instances made corrugated or with detents, as at C, to give increased hold at its seating upon the insole *i*. This corrugated surface serves to retain the shell securely at forward position without preventing its ultimate withdrawal from the shoe. A hole 6 is formed in the upper rear part of the shell for the reception of the pulling-hook, by which withdrawal from the shoe is effected at any time desired.

In some instances, as for peaked toes or last-tips having quick taper, I provide the toe-tip shell with apertures or openings 9 for the reception of a thread or strand *t* to be rove therethrough and its ends laid and secured beneath the insole *i* when the shoe is lasted, which strand then serves for positively retaining the shell at forward position in the shoe after the last has been withdrawn

and until such time as the shell is to be removed, when the strand can be severed at the interior to release the shell.

In the manufacture of boots or shoes it is a well-known or customary practice to remove the wooden last after the boot or shoe is lasted in order to permit of the sewing or other attachment of the soles being effected on machines having a horn or anvil-arm that works at the interior of the shoe, also to finish the shoe in its various manipulations after the last is removed.

The manner of using my improved detachable toe-tip shell is as follows: The toe-tip shell A is placed upon the toe of the last B with its inward flange 3 resting between the bottom edge of the last and face of the insole. The upper is then lasted over the same and the outsole I tacked on. The last B being then drawn out of the shoe, the toe-tip shell is left within the shoe, (see Fig. 10,) where it forms a support for the extreme toe portion of the upper and the toe-cap, its flange or lip 3 seating upon the insole-surface in a manner to prevent any rolling up of the insole edge around the toe or any distortion or contraction of the toe-cap *d* or box-toe while drying out the moisture occasioned by the pasting of said toe-cap at the time of lasting. It also affords a guard within the upper without interfering with the operations of stitching or nailing the soles or preventing the proper movement of the shoe about the horn of the machine.

The toe-tip shell is retained in the shoe by the resistance of the corrugations C and the hug of the upper pressing them against the face of the insole (or in the case of Figs. 6, 7, and 8 by the strand *t*) until such stage of the manufacture as it is no longer required. It is then readily withdrawn by a suitable hook or pulling device inserted in the hole 6. The strand *t*, if used, can be cut at the inner surface of the shell before inserting the hook.

These improved toe-tip shells can be readily produced in various sizes and styles to match the several sizes and styles of lasts employed in any factory, and being formed to embrace only the toe portion of the last B and being slightly resilient a single-sized shell can be used on lasts of slightly-varying sizes and widths, thereby affording a device practically convenient, economical, and efficient for shoe-manufacturing purposes.

This flanged toe-tip shell, being of short dimension and of a structure readily formable from very thin sheet-steel, can be produced in an efficient and durable form at comparatively small expense and in such quantities and facility as renders its use practical and economically available for shoe-factories where a great variety of styles of boots or shoes are manufactured and for which many different lasts are required.

I am aware that hollow forms of different kinds have heretofore been devised for the purpose of supporting the uppers of shoes after the last is removed, and I do not therefore make claim, broadly, to such forms, as my invention relates to the improved structure or article essentially as herein shown and specifically defined.

I claim as my invention and desire to secure by Letters Patent—

1. The releasable toe-tip shell for lasts consisting of the thin sheet-metal cap conforming to the extremity and upper toe-surface of the last, and detachable therefrom, said shell provided with apertures 9 for the reception of a retaining-strand, for the purpose set forth.

2. The combination with a last, of a detachable thin sheet-metal shell conformed to fit over the extremity and upper toe-surface of the last, and extending back thereon a distance approximately corresponding to the dimension of a shoe-toe cap, said shell open at the bottom and provided with a narrow inwardly-directed flange that extends beneath the sole of the last, but terminates outside of the normal sewing line, and means for retaining said shell temporarily in a shoe when the last is withdrawn, substantially as set forth.

Witness my hand this 11th day of July, 1898.

GILBERT C. BEMIS.

Witnesses:
F. O. CLARKE,
ALBERT V. LOCKE.