

(No Model.)

T. BALCOM & W. H. ALLEN, Jr.

SEAMLESS UPPER FOR BOOTS OR SHOES.

No. 361,478.

Patented Apr. 19, 1887.

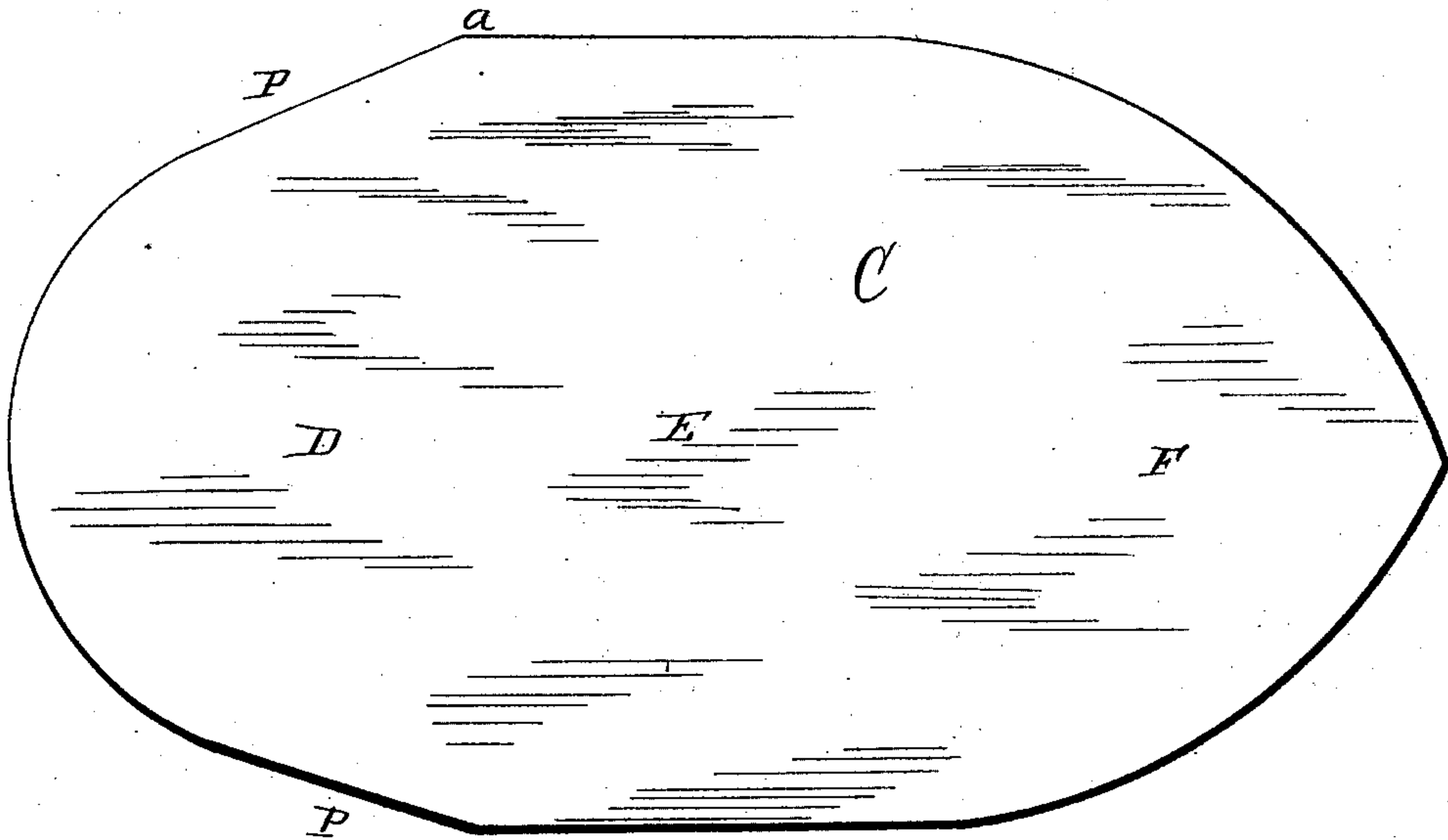


FIG. 1.

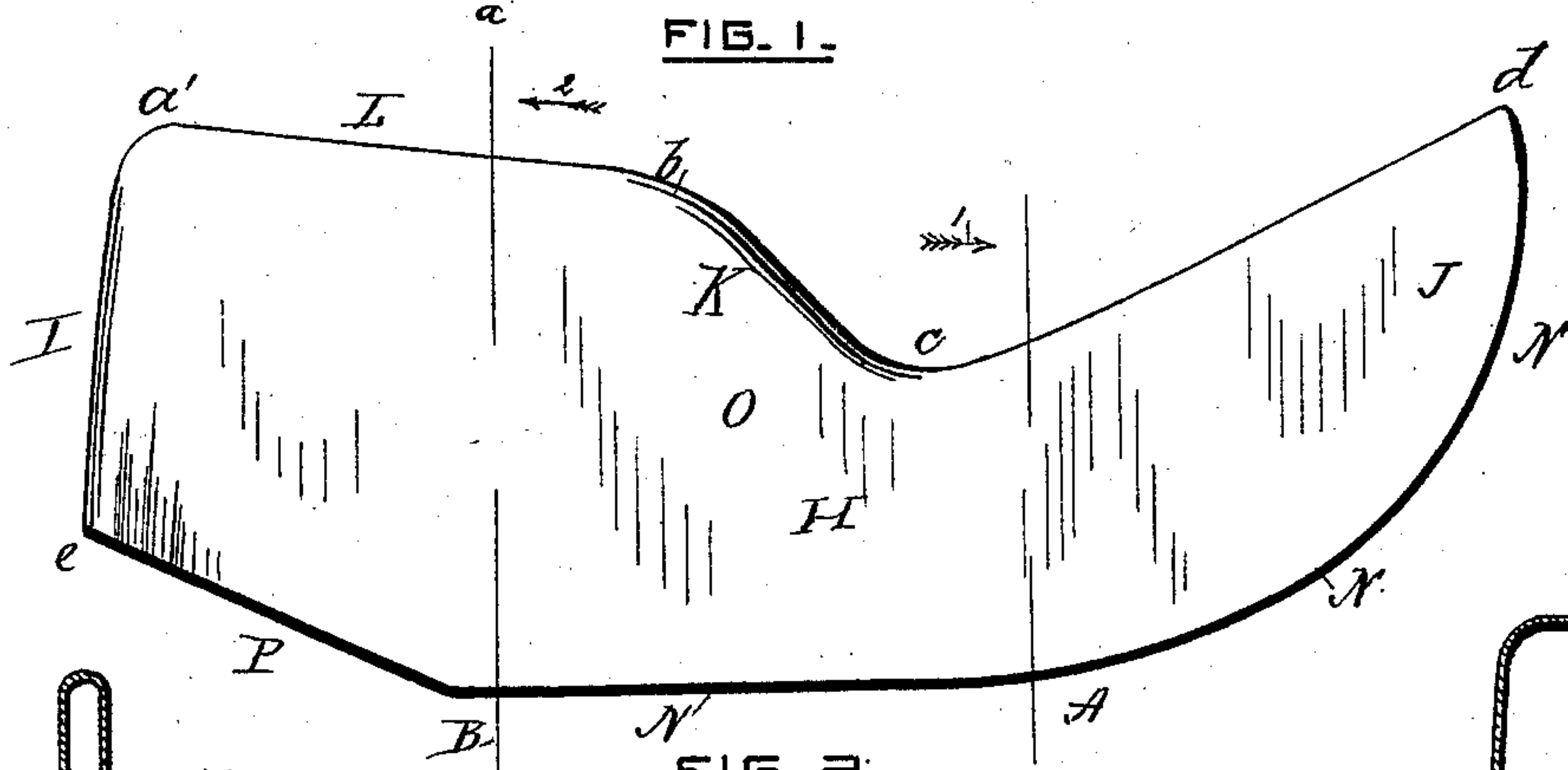


FIG. 2.

FIG. 4.

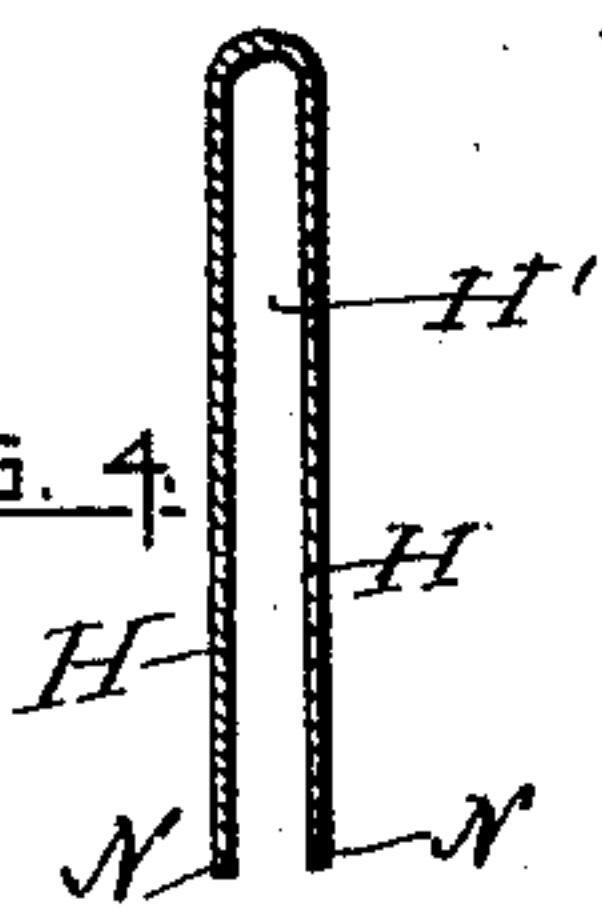


FIG. 5.

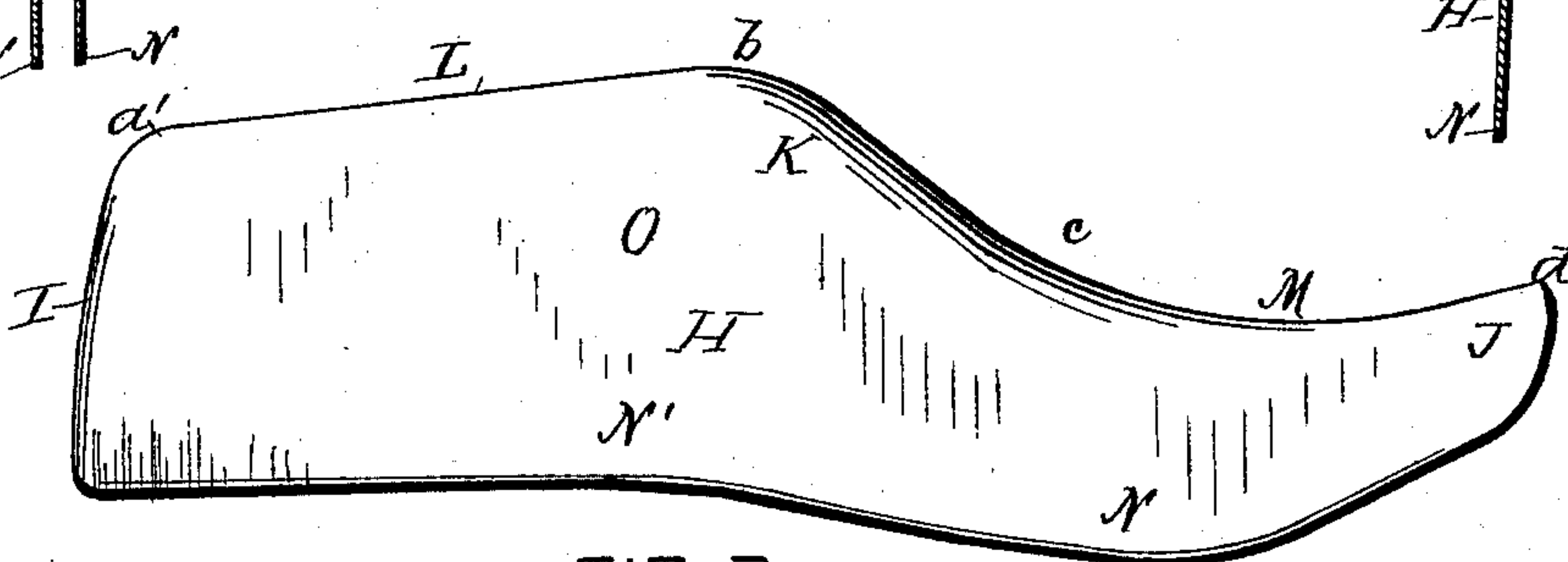
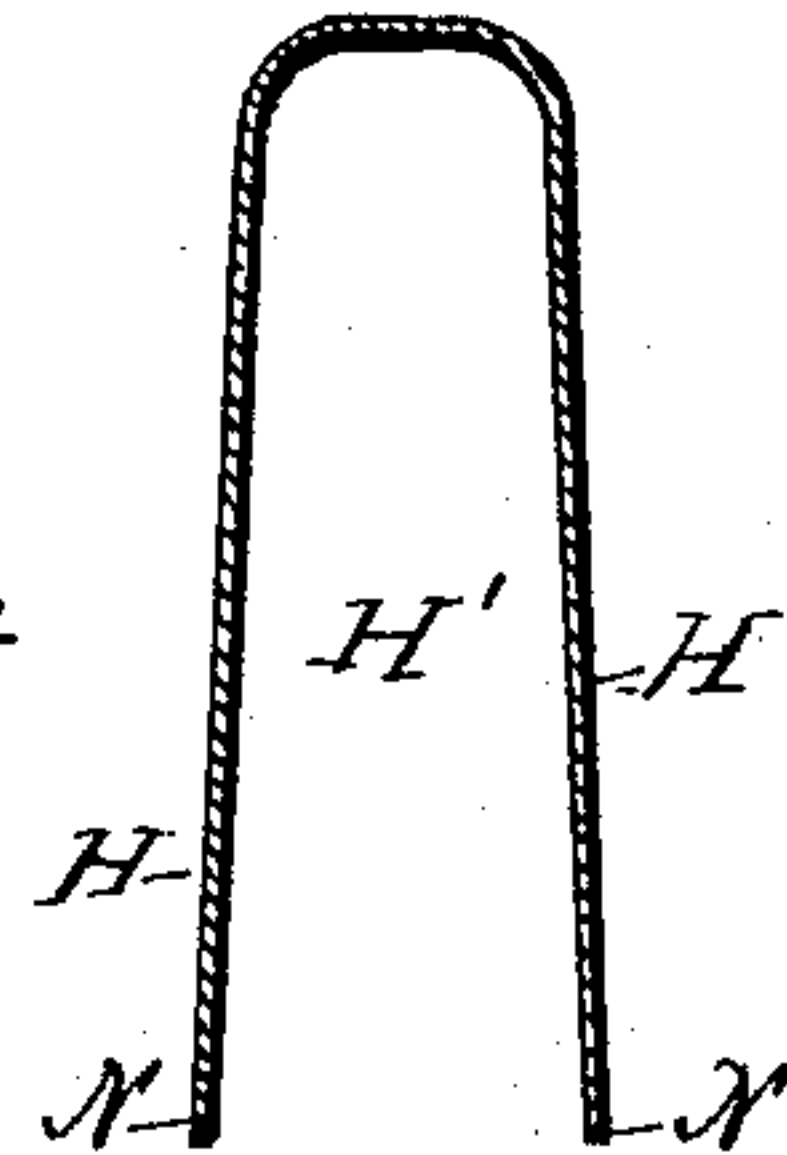


FIG. 3.

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# UNITED STATES PATENT OFFICE.

TIMOTHY BALCOM, OF WORCESTER, AND WILLIAM H. ALLEN, JR., OF  
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## SEAMLESS UPPER FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 361,478, dated April 19, 1887.

Application filed February 28, 1887. Serial No. 229,149. (No model.)

*To all whom it may concern:*

Be it known that we, TIMOTHY BALCOM, of the city and county of Worcester, and State of Massachusetts, and WILLIAM H. ALLEN, Jr., of West Brookfield, in said county and State, have invented a certain new and useful Improvement in Blanks for Seamless Uppers for Shoes or Boots; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan view of a piece of leather cut out preparatory to being stretched and molded or pressed into shape according to our invention, or so as to embrace in its completed form our present improvement. Fig. 2 represents a side view of our seamless shoe or boot blank completed, ready to be applied to the boot or shoe form, as the case may be, as will be hereinafter described. Fig. 3 represents a side view of the blank shown in Fig. 2 as it appears after having been fitted to the form preparatory to being made into a shoe or boot, as the case may be. Fig. 4 represents a vertical section on line A, Fig. 2, looking in the direction of arrow 1; and Fig. 5 represents a vertical section on line B, Fig. 2, looking in the direction of arrow 2.

To enable those skilled in the art to which our invention belongs to make and use the same, we will proceed to describe the invention more in detail.

The nature of our invention consists in a peculiarly-formed seamless upper for shoes or boots, stretched and molded in such a manner that the part which forms the instep and toe will be left in elevated positions, while a deep depression is left between them, as will be hereinafter fully described and explained.

In the drawings, the part marked C is the piece of leather cut out ready for further use, and the precise form will be, of course, such as can be employed to the best advantage in each particular size and style of shoe or boot, the present form being given as an example. These pieces of leather—such as shown in Fig. 1—are taken and placed over a matrix formed in the table of the machine, one at a time, the part D being placed so as to receive the heel part of the stretching and forming plunger or

movable die, the part E receiving the instep and the part F the toe parts of the same forming plunger or die.

The table in which the matrix is formed has a plane surface to receive and support the leather blank C, say from the points *a a* back, with an opening in the center to receive the heel end of the plunger or die, while the instep part of the leather forward of the points *a a*, and extending forward to about the middle of the table, rises up in the shape of two jaws with rounded edges, a space being left between them to receive the instep and shank of the plunger or stretching or forming die, and which is of reverse form to that shown from *b* to *c*, Fig. 2, and then the same jaw parts project down in reverse form from that shown from *c* to *d*, and these parts support that part of the leather blank C which forms the top and toe part of the shoe or boot, while the opening between the jaw parts of the table is still narrower than at the heel end, and it will be seen that we depart from the modes heretofore followed, and do not press and mold our seamless uppers into the width of the foot, whereby great advantages are obtained. The opening in this table is called the "matrix," and we have found it a good plan to make the heel part wider than the front part, the section shown of Fig. 2 in Fig. 5 indicating the width of the heel proportionally considered, and the section Fig. 4 the width of the forward or toe part from *b* to *c*. The die or molding plunger is about five-eighths of an inch in width and tapers from *c* to one-fourth of an inch at *d*.

The opening or matrix is wide enough to receive the stretching or forming die and a space on each side and the rear, to permit the sides H H and heel part I of the leather C to be passed down freely into the matrix as the leather is drawn and stretched over the edges of the matrix to form the closed sides H H and back I.

The face of the stretching and forming plunger or die is indicated by the line *a'*, *b*, *c*, and *d*, Fig. 2. It will be understood that the blank form shown in Fig. 2 is shown in a reverse position to what it occupies in the machine, since in the machine the line *a'*, *b*, *c*, and *d* is down and the sides H H are up, the



stretching die or plunger descending and occupying the space H'.

It will be observed that we stretch the forward and toe part of the leather, and also the instep part, in a special and peculiar manner, whereby we obtain important and valuable practical results that distinguish our invention from those that have preceded it in the same class or line of inventions.

We do not fasten rigidly any part of the leather blank C to the table, but simply have a clamp to hold the heel part on the plane surface of the table with sufficient force to keep it in the proper relative position until the stretching and forming die descends and forces the toe part *d* and heel part *a'* into the matrix, and we prefer to have the toe part J and instep part K caught first, since by this operation the leather from the shank and upper part of the foot is drawn upward and forward from lines N, Figs. 2, 4, and 5, and stretched out in a very perfect manner, so that when the upper is made into a shoe or boot the toe J, shank N', and top M will be all smooth and even, while at the same time by stretching and forcing the instep part K up, as shown in Fig. 2, an easy fit is obtained over the instep of the foot.

In addition to the above advantages, a seamless shoe or boot blank, formed as shown in Fig. 2, can be made of a smaller piece of leather for a given size than by the old modes practiced prior to our invention.

After the line indicated by letters *a'*, *b*, *c*, and *d* has been forced into the matrix, the operation is continued until the piece of leather C, Fig. 1, has been stretched and formed into the shape shown in Figs. 2, 4, and 5, having a space, H', between the sides H H and back or heel part, I, but open from the point *e* between the edges N to the point *d*, said space being formed by the stretching plunger or die.

The leather pieces C are properly moistened previous to being subjected to the stretching and forming operation.

Our seamless blanks O are especially adapted for making Congress shoes and tongued boots, since the instep K, being stretched and pressed up very high, enables the manufacturer to divide the top L, turning one part forward and the other part to the rear, as those skilled in the art will understand.

In Fig. 3 our improved seamless upper-blank O for shoes or boots is shown as it appears after it has been fitted to the proper form preparatory to its being made up into a shoe or boot, as desired, the rear or heel part, I, and toe part J having been drawn down, and all the parts fitted to the foot-form and edges N trimmed off.

It will be understood that the blank O is opened properly along the line L from *a'* to *b* for a boot, and also cut down in the usual manner over the instep K for a shoe. The heel-face of the stretching plunger or die may be made to leave the line from *a'* to *b* horizontal instead of inclined, as shown in Fig. 2, if preferred. By pressing the toe part J over a narrow die shaped as described the leather is stretched out laterally, and also forward and up from *c* to *d*, in a manner never before attained.

As hereinbefore indicated, each manufacturer will cut his pieces C of a form and shape as he finds best adapted for the particular class of goods to be made. In this case we cut the piece with straight lines P P in rear of the points *a*.

The blanks O are to be made and sold to the trade as an improved article of manufacture, and may be kept in that form for a long time, when by simply moistening them they are easily fitted to the proper form, as indicated in Fig. 3 of the drawings.

The machine we use for making our improved seamless shoe or boot upper blank O and the process for making the same form the subject of a separate application for Letters Patent of even date with this application.

What we claim as our invention, and desire to secure by Letters Patent, is—

An improved article of manufacture consisting of a stretched and molded seamless shoe or boot upper blank, O, having the toe part J and instep K stretched and molded into the relative positions indicated by lines N, *b*, *c*, and *d*, Fig. 2, all substantially as and for the purposes set forth.

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Witnesses:

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