

C. C. BALLOU.

Manufacture of Boots and Shoes.

No. 204,785.

Patented June 11, 1878.

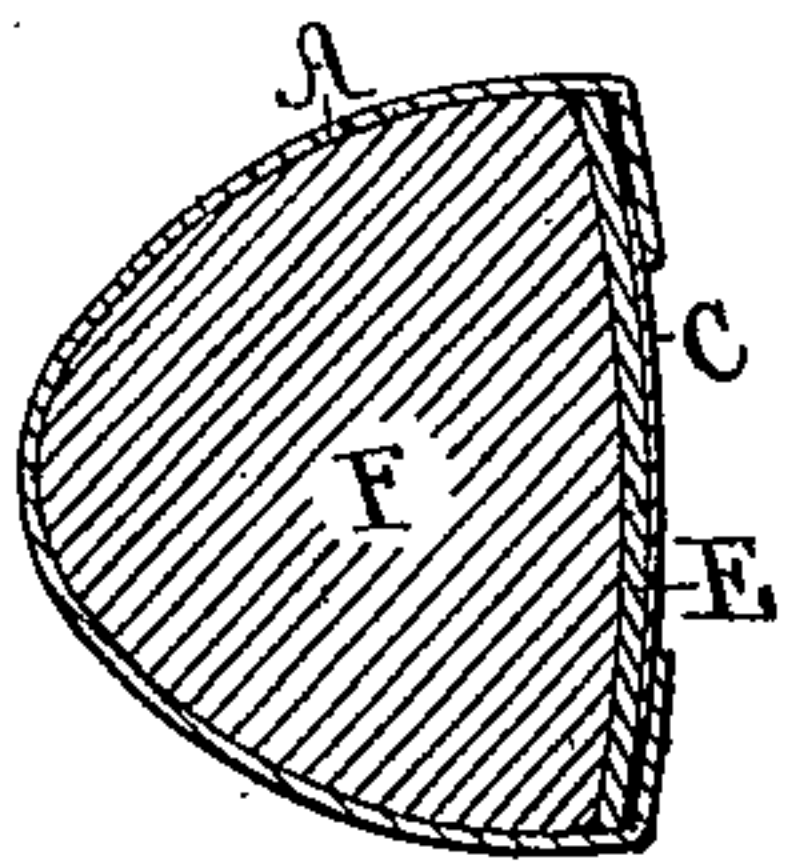


FIG. 2.

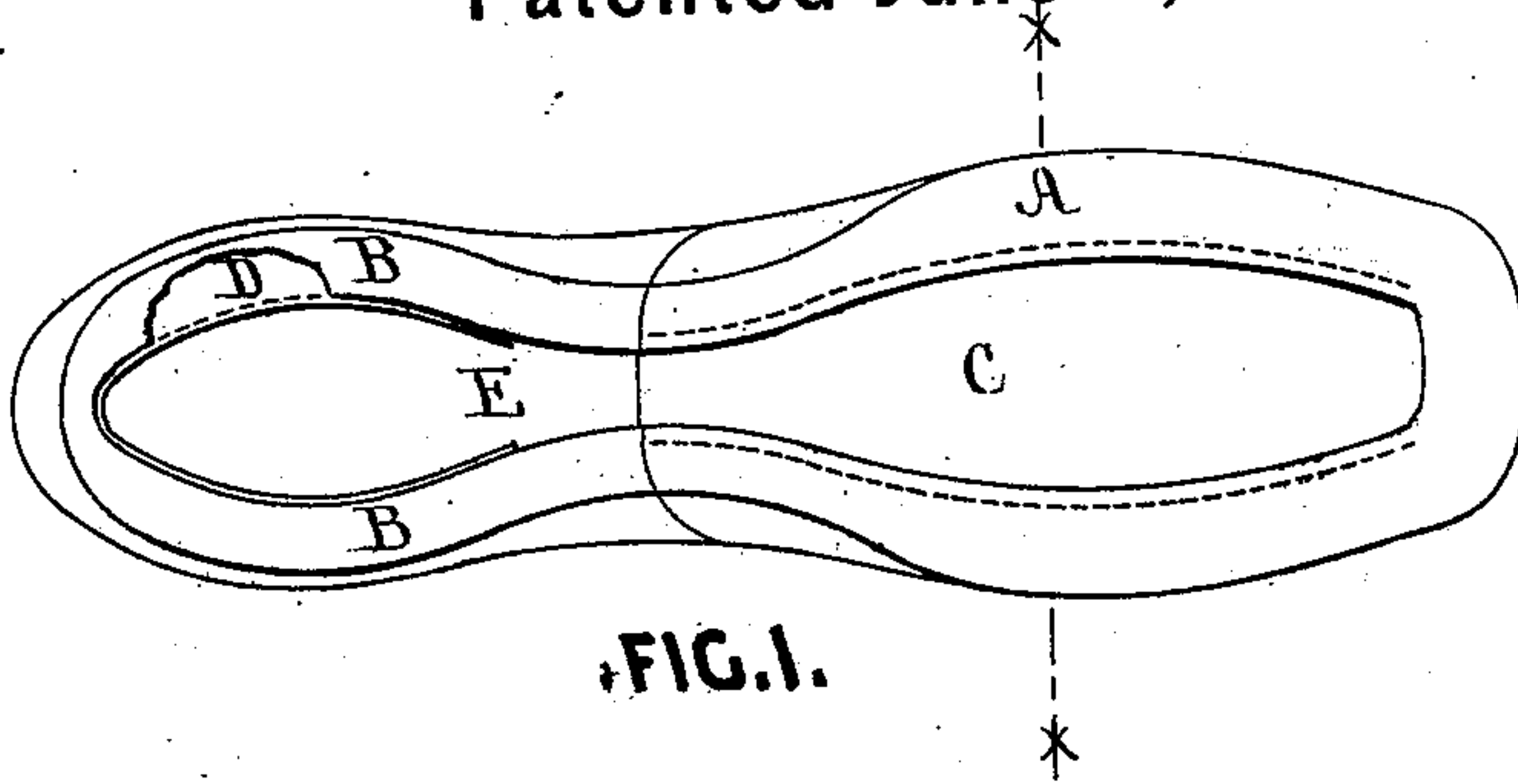


FIG. 1.

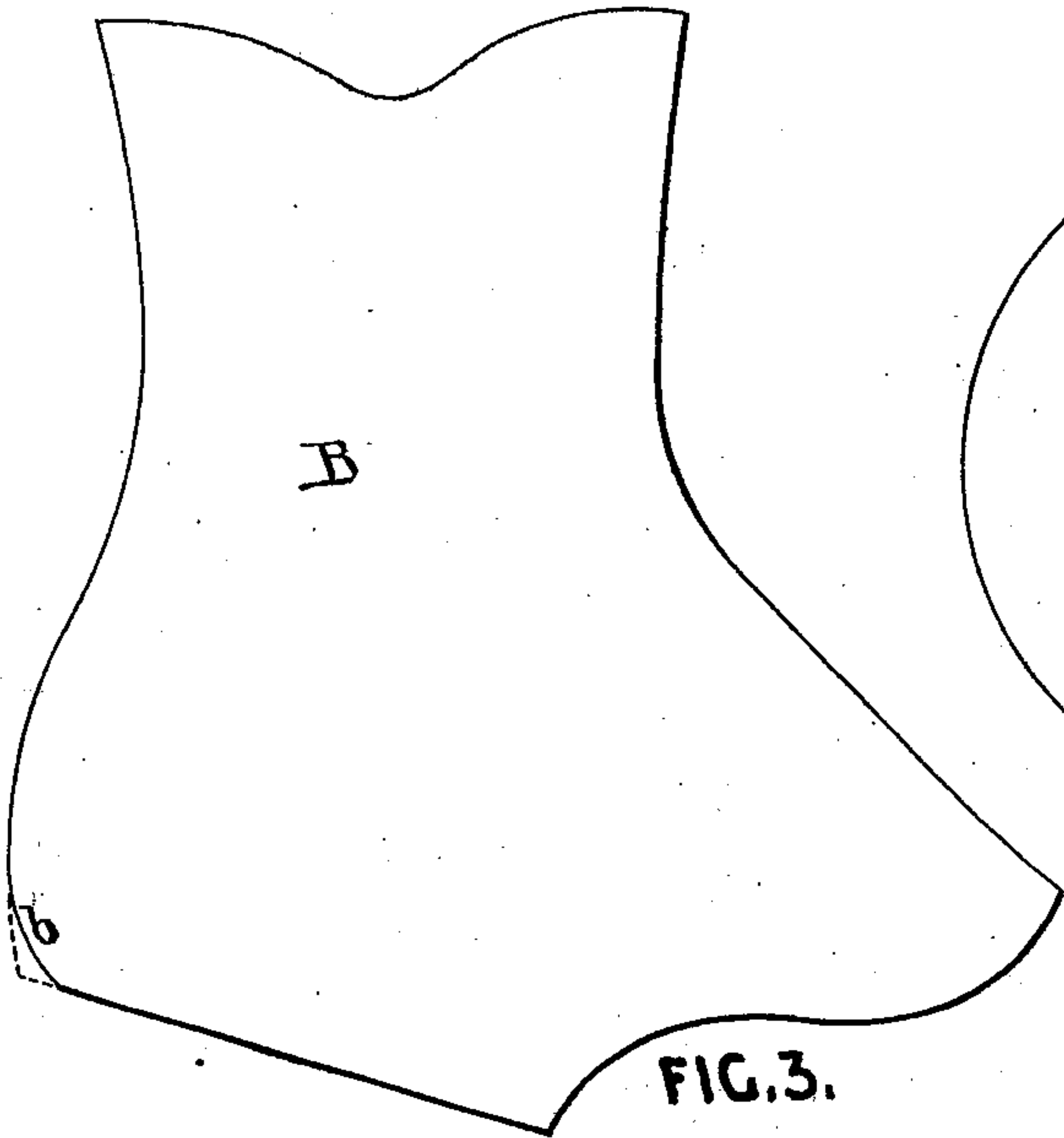


FIG. 3.

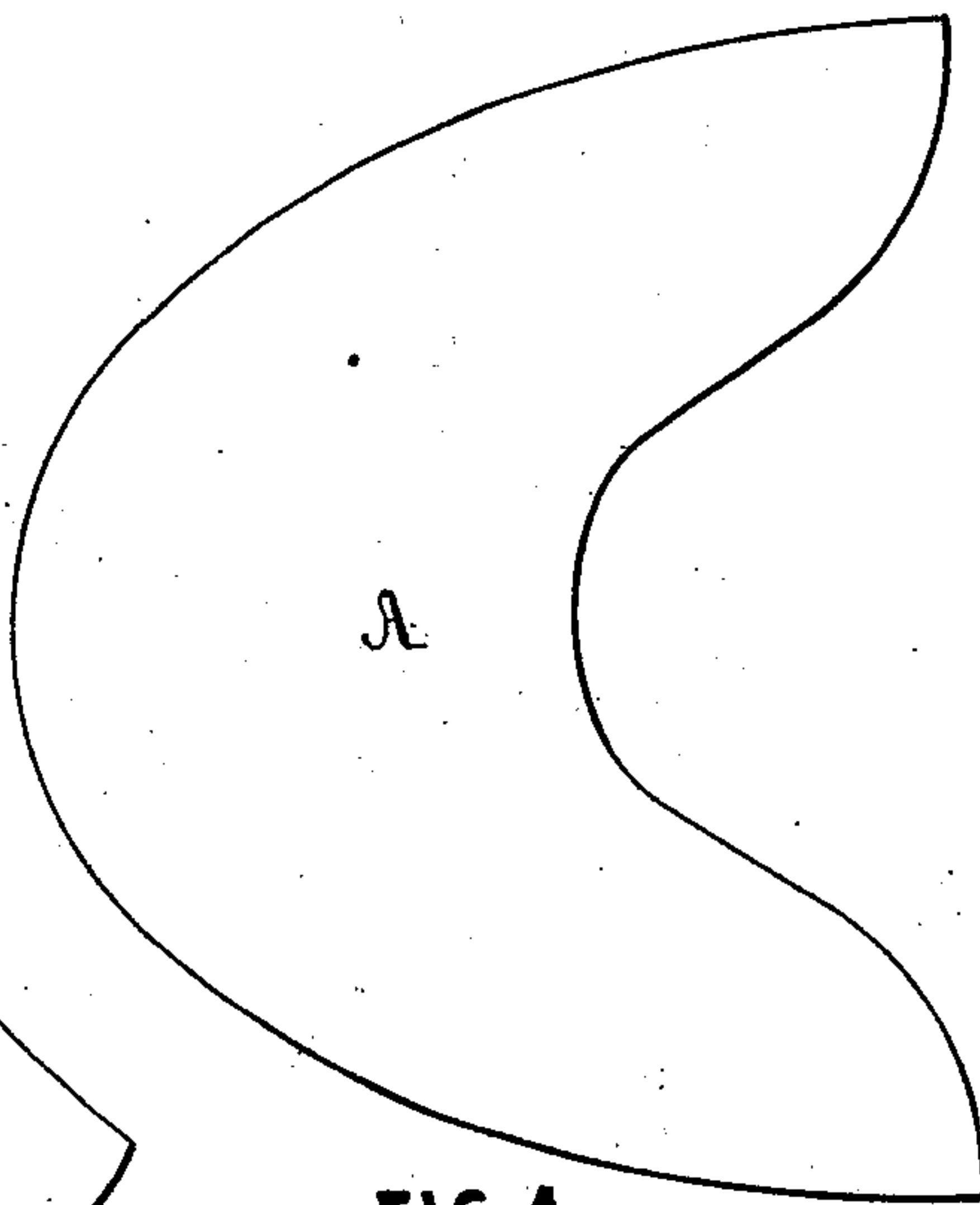


FIG. 4.

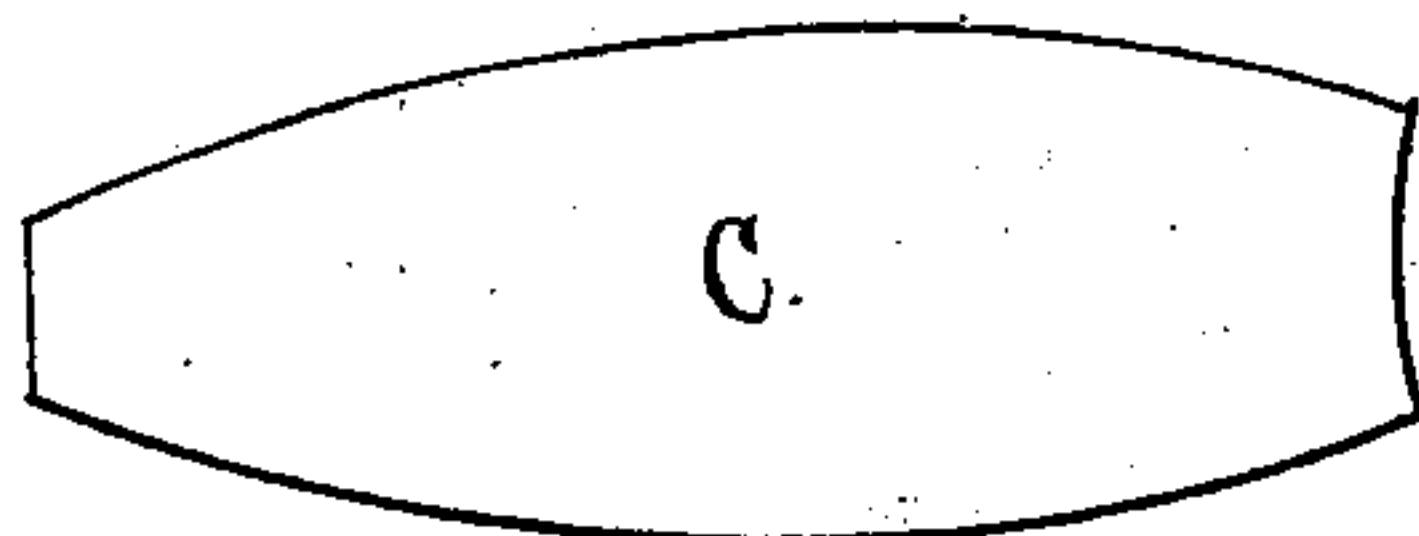


FIG. 5.

Witnesses:

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## IMPROVEMENT IN THE MANUFACTURE OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 204,785, dated June 11, 1878; application filed March 26, 1878.

*To all whom it may concern:*

Be it known that I, CYRUS C. BALLOU, of the city and county of Albany, and State of New York, have invented certain new and useful Improvements in the Mode of Making and Lasting Boots and Shoes, of which the following is a full and exact description.

My invention consists, first, in connecting together, either partially or completely, the lower edges of the vamp or upper by means of a gusset cut independently of the vamp or upper from any suitable material, either elastic or non-elastic, and so shaped and proportioned as to form a complement to the vamp or upper in encircling the last, or the last and inner sole combined, around the fore part and waist thereof; secondly, in shaping the curve of the back line and seam of the quarters by giving to the lower part of the seam an abrupt turn inward toward the shank-line, so that when the quarters and gusseted vamp are seamed together and drawn upon a last the surplus leather will, by the natural tension thrown on the various parts, be drawn down into its proper position, so as to form a close, tight, and smooth upper edge around the outer line of the inner sole as effectually as when each particular part is drawn in by pinchers and fastened in the usual manner of lasting; thirdly, in the mode of lasting boots and shoes herein described.

The object of my invention is to construct a boot or shoe adapted to the operation of lasting without the aid of machinery, and, by simplifying the process of lasting so as to dispense with the aid of skilled labor to effect it, produce a great saving in the cost of manufacture.

In the accompanying drawing, which forms a part of this specification, and to which reference is made, Figure 1 is an inverted plan view of a shoe as lasted containing my improvements; Fig. 2, a transverse section of the same at the line *x x*. Figs. 3, 4, and 5 are pattern-forms for cutting the parts affected by my improvements.

As shown in the drawing, A is the vamp of the shoe, made in the usual form; B, the quarters, which only differ from the usual form by having a quickened curve given to the lower part of the back seam, for the purpose herein-

after expressed, the quickening of the curve being shown at *b* in Fig. 3, wherein the excess in the usual shape is shown by the dotted lines beyond the full outline of my pattern. The quarters are secured together at the back seam and to the vamp in the usual manner.

C is a gusset, made of cloth, leather, sheet metal, or any other suitable elastic or non-elastic material, or, when desired to protect the sole of the foot from dampness, of any waterproof material. It is so proportioned that it will, at any given point, form a complement to the vamp in perfectly encircling the last and inner sole, or the last alone, when so required, around the fore part and waist of the last. After the gusset is secured to the lower edges of the vamp previously secured to the quarters, and the heel-stiffening or counter D is inserted between the quarters and the lining in the usual manner, the upper part of the shoe is in condition for my improved mode of lasting, which is accomplished in the following manner:

The inner sole E (when an inner sole is used) is placed on the last F, and the upper, made as described, with the lower edges of the vamp connected, is drawn on and over the last in the same manner that a stocking is drawn upon the foot. The effect produced by the gusset is to draw the uppers snugly over and around the last, its strain being so perfectly distributed through the ball, waist, and instep portions as to create the necessary degree of tension at every portion of the fore part and through the shank to produce an equably smooth and taut upper edge around the edge of the inner sole. In the accomplishment of this, material aid is given by the quickened curve of the back seam, which, in addition to its preventing the displacement of the stiffening D while the upper is being drawn on the last, creates, in combination with the draft given by the gusset, a circuitous tension around the heel-seat, which gathers in and turns over the lower edge of the quarters and the flange of the heel-stiffening into close contact with the inner sole, completing the production of a close and smooth edge entirely around the bottom edge of the upper, excepting the toe, and leaving the lining on the inner side in a smooth, unwrinkled condition, without recourse to any other ma-



nipulation to effect it. After this the surplus leather at the toe is turned down or lasted, and secured by cementing. The corners of the heel-stiffening may be secured, when found necessary, by means of pegs or by cementing them, and the lasting is completed, leaving the shoe in condition to receive the filling and sole.

While, for the sake of economy in the cost of material, I preferably make use of the gusset C for the purpose of connecting the lower edges of the vamp or upper in preparing a boot or shoe for lasting by my improved mode, I do not confine myself to that particular mode of connecting them, as I am aware that this mode of lasting may be employed when the edges of the vamp or upper are connected in any manner before the lasting is effected.

It will readily be seen that by this mode of lasting the entire operation is accomplished without the aid of machinery, for the production of which enormous amounts have heretofore been vainly expended to obtain a machine that would perform its work in a satisfactory manner; and, while such machines require the employment of skilled operatives for their management during the performance of the work, the entire operation under my mode can be performed by novices. From this cause, and by reason of the greatly-increased amount of work produced by each operative under this mode, the cost of manufacturing is materially lessened. Another manifest advantage arising from my invention is, that it entirely dispenses with the use of the metallic tacks commonly used in lasting, which, of necessity, remain in the shoe after its completion, causing the destruction of sewing-machine needles during the stitching on of the soles, and, by cutting and chafing the thread coming in contact therewith during the same operation, the

effectiveness of the work is impaired and the durability of the article materially destroyed. Tacks remaining in the shoe with their points unclined are liable to rise up and cut through the inner sole, causing injuries to the feet and great annoyance to the wearers.

It is obvious that the gusset may be made in one or more pieces, and that its form may be varied from the shape shown in the drawing by changing the shape of the vamp or upper to conform to the change made, so that the combined measurements of the two parts will closely surround the last, or the last and inner sole, at the points hereinbefore named.

I claim as my invention—

1. The mode of connecting together the lower edges of the vamp or upper of a boot or shoe by means of a gusset, C, made in one or more pieces, and attached to the vamp or upper before the operation of lasting, as and for the purpose herein specified.

2. The quarters B of a boot or shoe, having a quickened curve formed therein at the lower part of the back seam, as and for the purpose herein specified.

3. In an unlasted boot or shoe, the vamp or upper A, having its lower edges connected together by means of the gusset C, in combination with the quarters B, substantially as and for the purpose herein specified.

4. The mode of lasting boots and shoes herein set forth—that is to say, by drawing upon a last in the manner described, the upper parts seamed together, and having the lower edges of the vamp or upper completely or partially connected together preparatory to the operation of lasting, as herein specified.

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Witnesses:

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