

E. S. PRATT.
 Manufacture of Boots and Shoes.

2 Sheets—Sheet 1.

No. 226,193

Patented April 6, 1880.

Fig1.

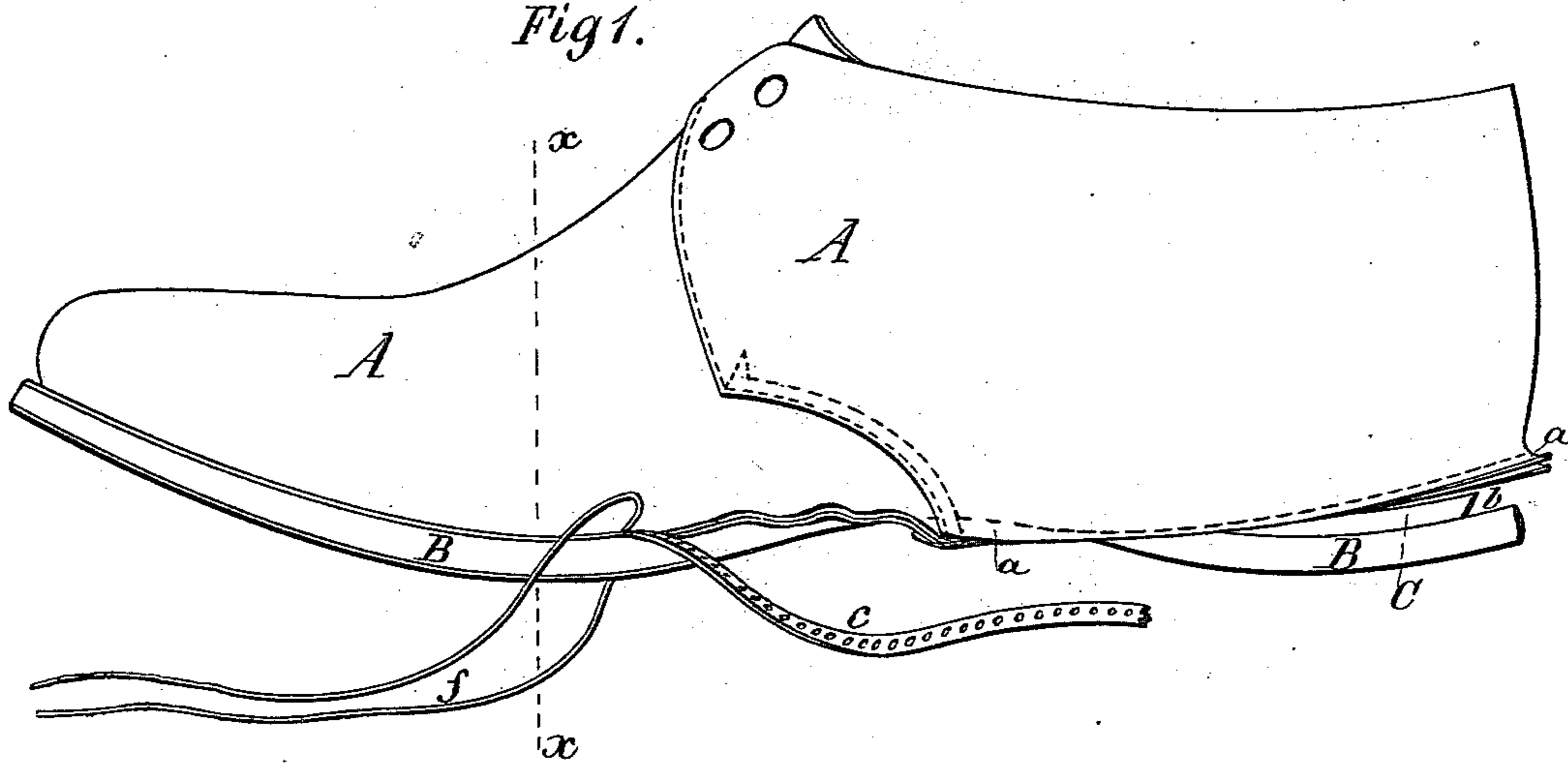


Fig2.

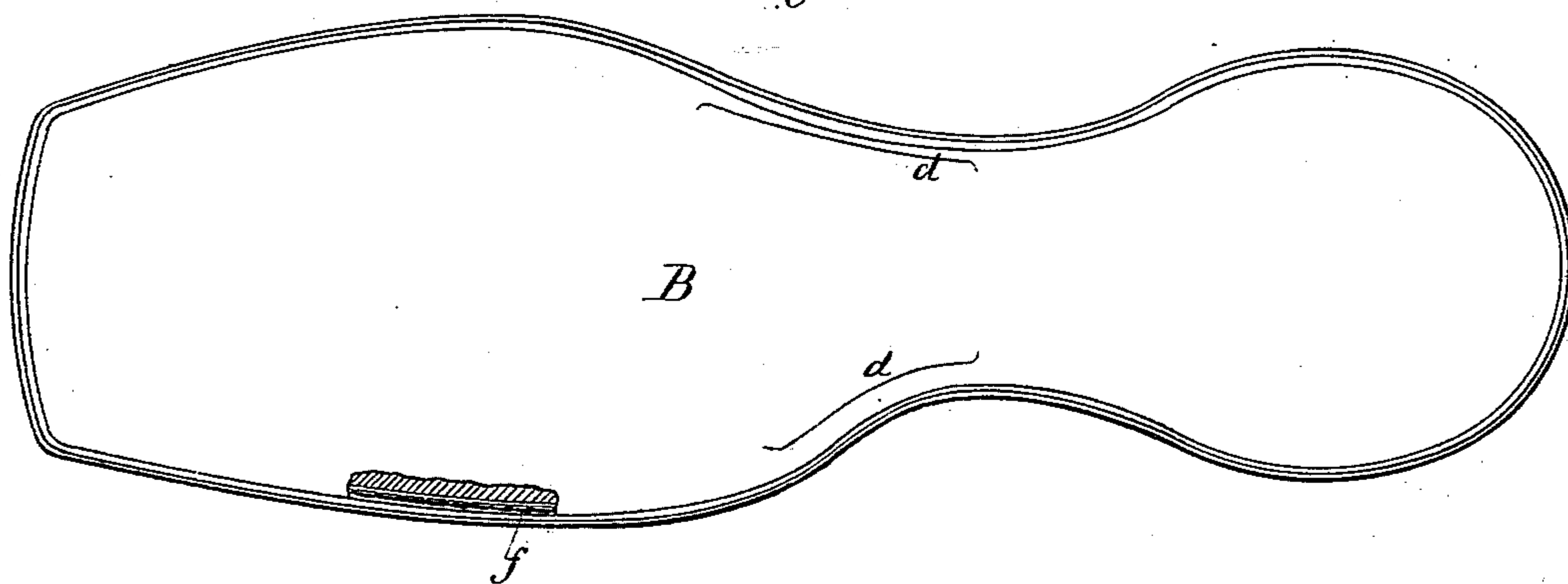


Fig3.

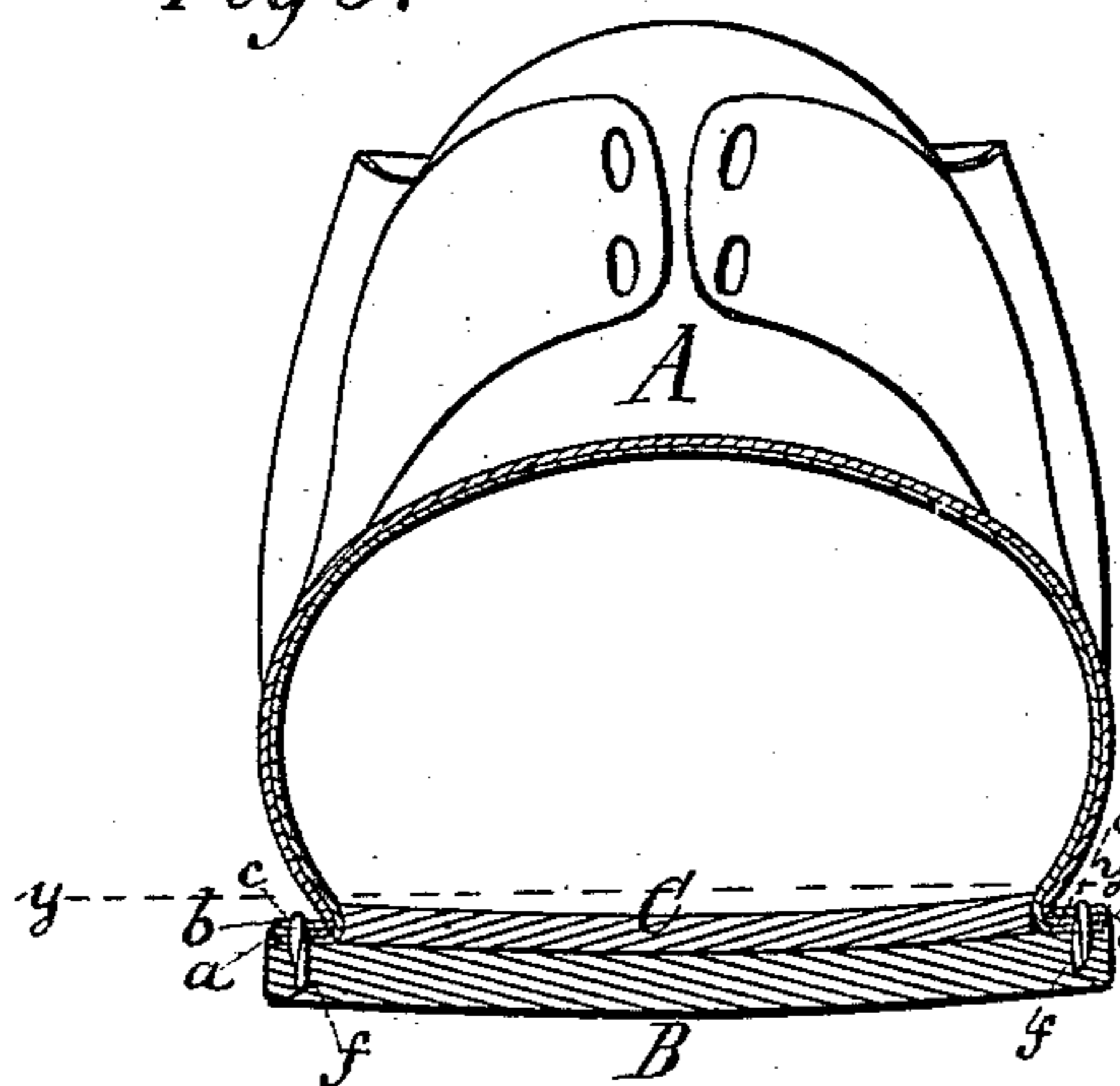


Fig5.

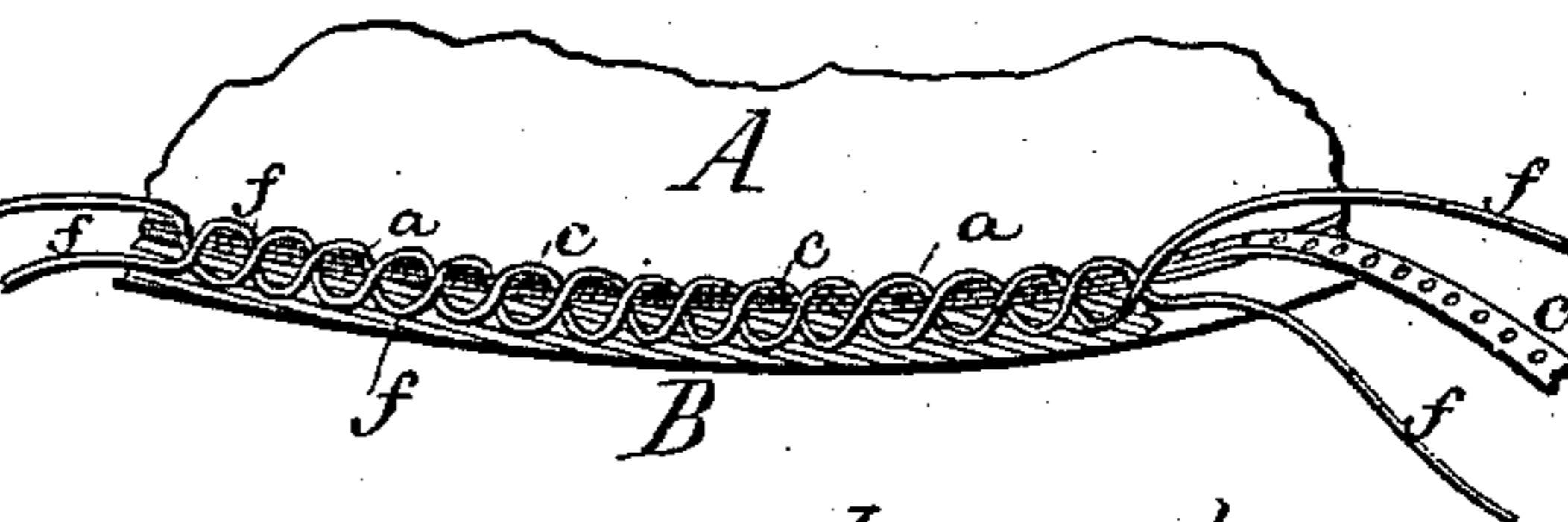
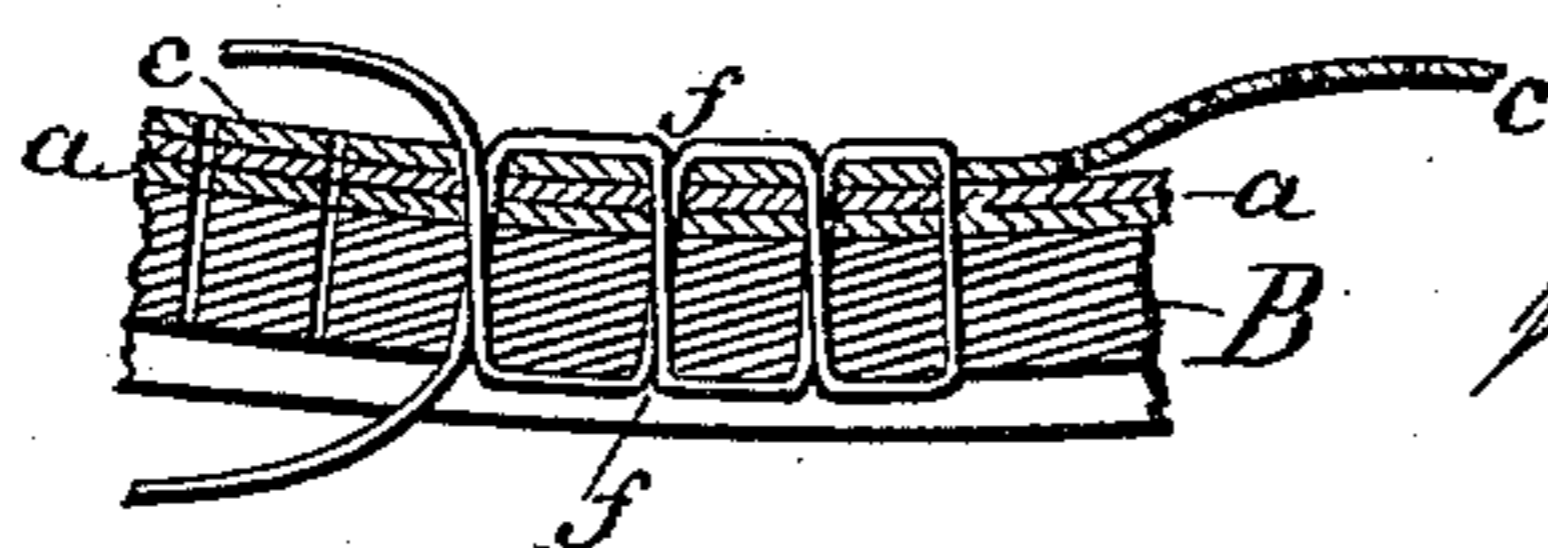


Fig4.



Inventor:

Elbridge S. Pratt

by
 Mason, Bennett & Lawrence

Witnesses:

J. P. Th. Lang
 J. Russell Barr

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Fig 6.

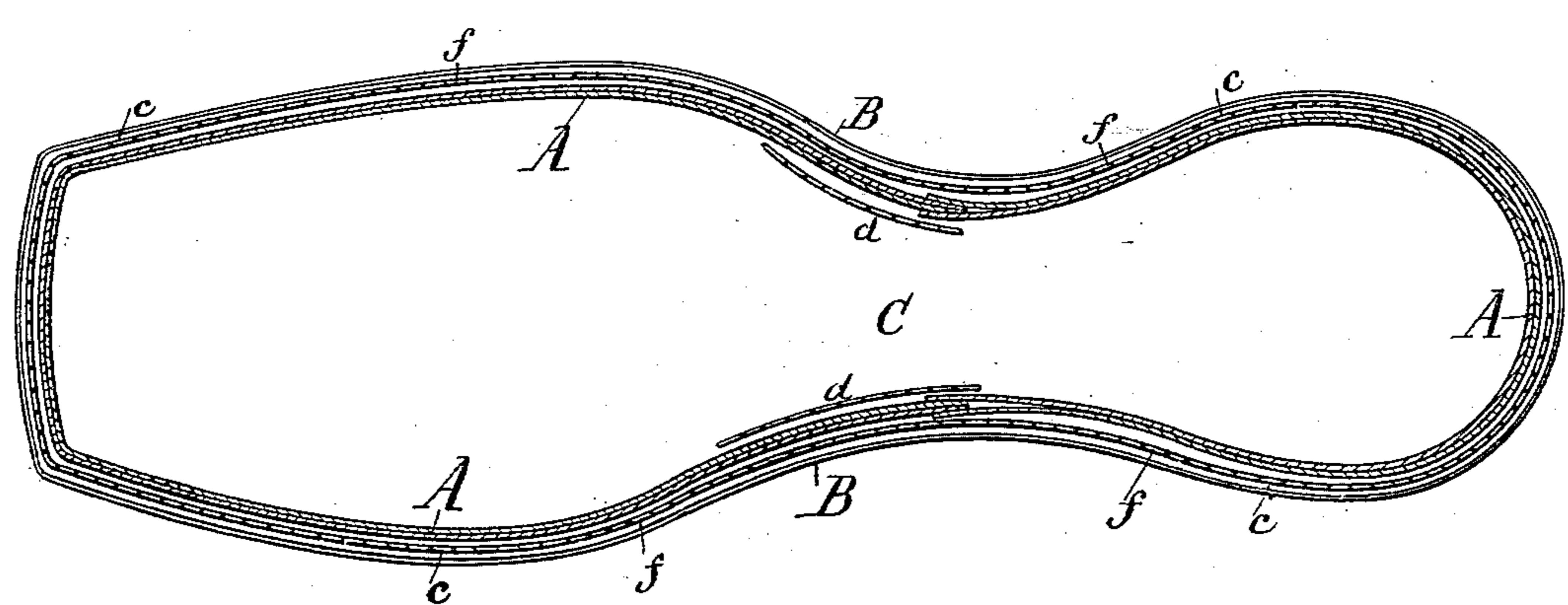
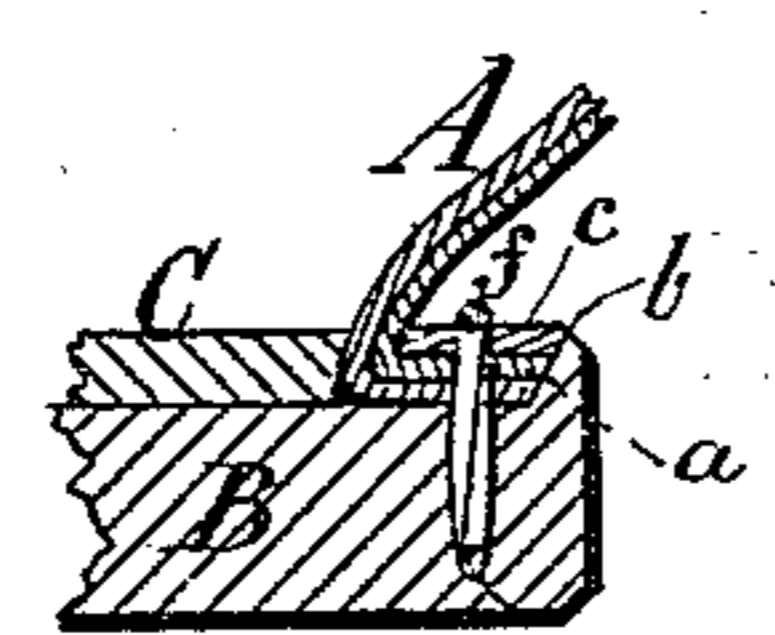


Fig 7.



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UNITED STATES PATENT OFFICE.

ELBRIDGE S. PRATT, OF CHICAGO, ILLINOIS.

MANUFACTURE OF BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 226,193, dated April 6, 1880.

Application filed January 14, 1880.

To all whom it may concern:

Be it known that I, ELBRIDGE S. PRATT, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Manufacture of Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

In the accompanying drawings, Figure 1 is a perspective view of a shoe in process of being manufactured according to my invention. Fig. 2 is a bottom view of the same, a portion of the leather which covers the stitches being broken out, so as to expose some of the stitches. Fig. 3 is a vertical cross-section of the shoe shown in Fig. 1, the section being taken in the line *xx* of Fig. 1. Fig. 4 is a vertical detail section through the seam which unites the outer sole, upper, and welt. Fig. 5 is a similar section to Fig. 4, except that it also illustrates the way the lower stitches are covered by the leather which was displaced in the operation of forming the seam-channel. Fig. 6 is a horizontal section of the shoe in the line *yy* of Fig. 3, showing it as it appears after being sewed entirely around its outer sole. Fig. 7 is a detail section.

My invention relates, specially, to a boot or shoe as an improved article of manufacture, and to a new method or process as an improvement in the art of manufacturing boots or shoes; and the object of my improvements is to furnish the trade with first-class work of an improved construction at less cost than heretofore, and to facilitate the operation of manufacturing the same.

The nature of my invention consists, first, in a boot or shoe having its upper turned outward upon the sole-edge at the line of juncture, and a welt overlying such outwardly-turned portion, and the sole, upper, and welt united by suitable fastenings outside of the body of the upper; second, as an improvement in the art of manufacturing boots and shoes, the method of uniting the upper, welt, and outer sole, consisting in beveling, depressing, or channeling the inner surface of the

outer sole, so as to leave its outer edge higher or thicker than the body of the sole, applying the upper to the sole with its lower edge turned outward, placing a welt on the top of such outward-turned upper, and then securing the three parts in place by suitable fastenings.

In carrying out my invention in the manufacture of sewed boots or shoes, the upper *A* may be cut to the desired pattern either by hand or machinery, and it may be for either a boot or shoe; and if it is not preferred to use a last during the sewing of the upper and other parts together, the lower edge of the upper may be shaped to exactly conform to the outline of the edge of the sole. This upper is formed with a sufficient fullness and depth to allow of its lower edge being turned outward horizontally upon the extended edge of the outer sole, *B*, the horizontal portion beginning at the margin of the insole *C*, and terminating at or near the margin of the outer edge of the outer sole, *B*. The horizontal portion of the upper is designated by *a* in the drawings.

The outer sole, *B*, is beveled or depressed from near its vertical edges downward and inward, as indicated at *b* in the drawings, and this beveling or depressing of the inner upper surface of the outer sole, together with the placing of the insole upon the outer sole, forms a depression or channel between the margin of the insole and the margin of the outsole, over which depression or channel the outward-turned portion *a* of the upper rests, and upon the same a strong welt is placed flatwise, with its inner edge bearing against the body portion of the upper and its outer edge vertical or nearly so, both edges being detached from the upper and insole. The outer sole, upper, and welt are united by a thread, *f*, the respective ends of which are passed in opposite directions through the respective awl-holes punched through the welt, upper, and outer sole in the manner illustrated in the drawings.

During the sewing operation the operator presses down the lower edge of the upper and the welt into the depression or channel of the outer sole, using appropriate tools for the purpose, and by this means these parts are caused to fit snugly in the depression or channel, which end is further secured by the draft of

the operator upon the two ends of the waxed thread in forming the stitches. The outwardly-turned portion of the upper and the welt are forced into the channel or depression to such an extent that the upper surface of the welt stands flush or nearly so with the uppermost or highest portion of the edge of the outer sole, while the vertical edges of the welt are tightly bound by the lowest part of the body of the upper and the beveled wall of the channel or depression of the outer sole, and thus a very close union of the welt with the upper and outer sole is effected, and when the parts are sewed together the edges of the upper and welt cannot be seen, especially so after the shoe is completely finished, which latter operation, comprising the finishing of the edge of the sole, on top, bottom, and side, may be performed by any of the well-known implements or machines in use.

If an insole is not used upon the outer sole the depression formed by beveling the inner or upper surface of the outer sole will be formed by rolling down or displacing the leather between the outer edges of the said sole, and thereby making the body portion of the sole thinner or lower than the edges; and in uniting the upper and welt to a sole thus prepared the upper and welt will be depressed into the channel formed by the beveled wall of the outer sole and the lower portion of the body of the upper, and then sewed in place; but when an insole, C, is used it is fastened to the outer sole at certain places by sewing, as illustrated at *d*, Figs. 2 and 6. This insole C forms no part of the support for the waxed thread used in uniting the outer sole, uppers, and welt, and hence no harm will result from its being made of paper or other cheap material adapted for use as a filling.

The greatest benefits are derived from my invention when it is applied in the manufacture of boots and shoes which are made partly by machinery and partly by hand—that is to say, when the whole work except the sewing operation is performed by machinery.

The most successful mode of carrying out my invention is as follows: Cut the inner and outer soles, fasten them together, place the upper upon the last and turn out the lower edge (which previously to this has been tacked to the bottom of the last) upon the depressed portion of the outer sole, and then place a welt, already prepared with stitch-gaging and awl-guiding holes, upon the turned-out edge of the upper and upon the top edge of the outer sole, and press down the welt and the edge of the upper into the depression of the outer sole, and sew the three parts in place in the manner hereinbefore described.

Boots and shoes manufactured in accordance with my invention can be made by the most ordinary workman with a stitch-finish equal to those made by first-class workmen, and the cost of their manufacture will be far

less than first-class work made by hand or machinery in the ordinary way.

The beauty of finish in the hand-made boots and shoes manufactured in accordance with my invention, as well as the facility with which the work can be performed by ordinary workmen, is due, to a great extent, to the use of a stitch-gaging and awl-guiding welt, (shown in the drawings,) as this welt determines the lengths of the stitches and keeps them in a true and regular course on the upper surface of the sole-edge, and also guides the awl in its passage through the upper and the sole, and thus insures a regularity of the sewing both on top and underneath the outer sole.

The gage-welt is not claimed here, specially, as it is claimed in another application now pending.

It is practicable with my mode of manufacturing boots and shoes to cut out the soles by dies, to fasten the inner and outer soles together by sewing or otherwise at certain places, and to completely finish them by the process of rolling, shaving, trimming, and molding; also, with the filling placed between the soles and several soles united, to channel or depress the outer sole upon its upper edge sufficiently deep and wide for the admission into the channel or depression of the outward-turned portion of the upper and the welt which is to cover it; and, if desired, the heel may be added to the sole, and when thus finished the sole may be tacked to the last. Thus it is plain that machinery may be made to do all the hand-work now done upon hand-sewed shoes and boots, and this, too, better than can be done when the soles are incumbered with the uppers and lasts, as in the case of machine-stitched boots and shoes, and at the same time the soles produced will be smoother, more uniform, and more solid and less expensive than those made wholly or in part by hand.

Boots and shoes made in accordance with my invention will have the fastening which unites the sole, upper, and welt sustained by these three parts, which are of the best materials, and no connection between the body of the upper, insole, and welt is necessary; and my mode of uniting the parts insures a seam which turns the water away from the insole of the boot or shoe.

In some instances the sole, upper, and welt can be fastened together and in place by pegs, nails, screws, or rivets, instead of by waxed threads, without departing from my invention.

What I claim is—

1. The mode herein described as an improvement in the art of manufacturing boots and shoes, consisting in beveling, depressing, or channeling the inner or upper surface of the outer sole, so as to leave its outer edge higher or thicker than the body of the sole, applying the upper to the sole with its lower edge turned outward, placing a welt on the

top of such outward-turned upper; and then securing the three parts in place by fastenings, all substantially as and for the purpose described.

- 5 2. A boot or shoe having its upper turned outward upon the sole-edge at the line of juncture, and a welt overlying such outwardly-turned portion, the sole, upper, and welt

being united by suitable fastenings outside of the body of the upper, all substantially as 10 and for the purpose described.

ELBRIDGE S. PRATT.

Witnesses:

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