3 Sheets—Sheet 1.

G. W. COPELAND.

Lasting Boots and Shoes.

No. 210,920. Patented Dec. 17, 1878.

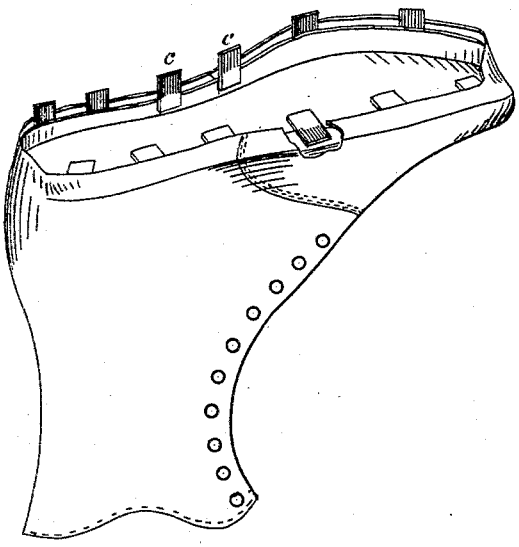

Fig. 1.

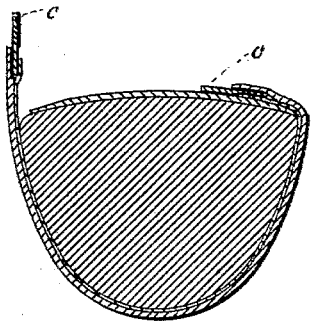

Fig. 2.

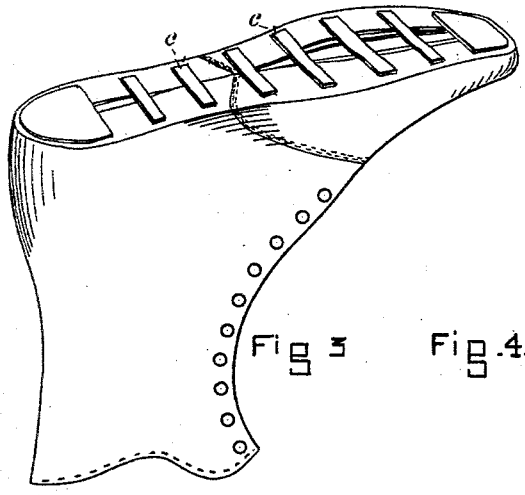

Fig 3

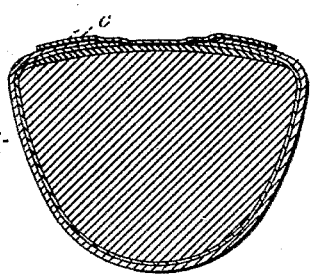

Fig. 4.

WITNESSES

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3 Sheets—Sheet 2.

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Lasting Boots and Shoes.

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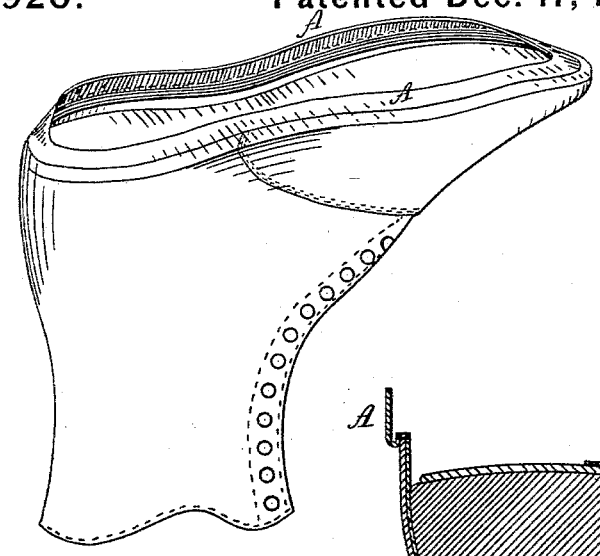

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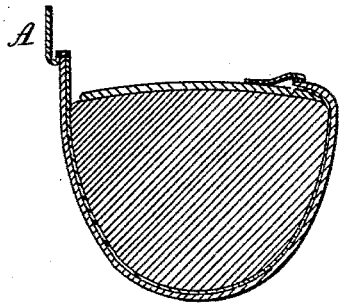

Fig. 2.

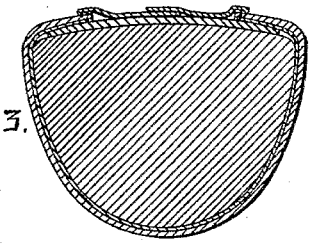

Fig. 3.

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Lasting Boots and Shoes.

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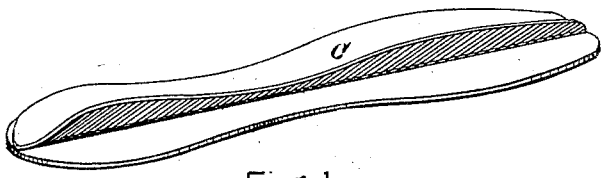

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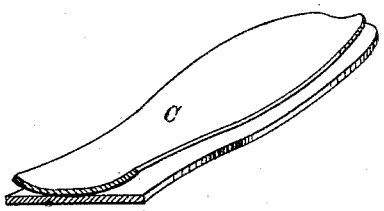

Fig. 2.

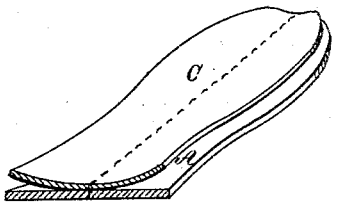

Fig. 3.

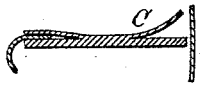

Fig. 4.

Fig. 5.

WITNESSES

Geo. F. Walther

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INVENTOR

Geo. W. Copeland

UNITED STATES PATENT OFFICE.

GEORGE W. COPELAND, OF MALDEN, MASSACHUSETTS.

IMPROVEMENT IN LASTING BOOTS AND SHOES.

Specification forming part of Letters Patent No. **210,920,** dated December 17, 1878; application filed November 11, 1878.

To all whom it may concern:

Be it known that I, GEORGE W. COPELAND, of Malden, in the county of Middlesex, in the Commonwealth of Massachusetts, have invented an Improvement in Lasting Boots and Shoes, of which the following is a specification:

This invention has for its object the within-described improvement in lasting the uppers of boots and shoes; and it relates particularly to that portion of the lasting process which consists in securing upon the last the upper, or upper and lining, after it or they have been fitted to the surface of the last, and the edges thereof folded upon the bottom of the last, or upon the insole, by cement, in connection with fastening-strips united to the edge of the upper, or upper and lining, before or during the lasting process, for the purpose of uniting said edge or edges to the surface of the insole.

In the drawing, Plate 1, Figure 1 is a perspective of an upper adjusted upon a last, showing the edge upon one side united to the surface of the insole by projecting strips, and the other side unfolded, showing the position of the strips in relation to the edge of the upper and to the lining before the folding. Fig. 2 is a cross-section. Fig. 3 shows the application of strips in securing the edge of an upper to the last when used after the edge has been folded upon the insole, or upon the bottom of the last. Fig. 4 is a cross-section thereof.

Plate 2, Fig. 1 is a perspective of a last with the upper adjusted thereon, with the edge thereof united to the insole along one side by a continuous strip which has been previously united to the edge of the upper or upper and lining. Fig. 2 is a cross-section thereof. Fig. 3 is a cross-section illustrating the modification.

Plate 3, Fig. 1 shows a fastening-strip when united to the insole instead of being united to the edge of the upper. Fig. 2 is an illustration of a strip applied to the surface of the insole in securing the edges of the upper thereon in the lasting process. Fig. 3 illustrates a detail in construction. Figs. 4 and 5 are cross-sections further illustrating the invention.

Prior to the date of this invention the edge of the upper was secured to the insole by pegs and tacks. Stitches have also been used for fastening the edge of an upper thereon by being taken from one side to the other across the bottom of the last. These methods of fastening are objectionable on account of the time it takes to use them.

It is very important, in view of the improvements that have lately been made in machinery for lasting the uppers of boots and shoes which automatically adjust and clamp the upper to the surface of the last and fold the edge upon the surface of the insole, to employ a method for quickly uniting the edge thus folded to the surface of the insole or upon the bottom of the last in the lasting process. Tacks, pegs, and stitches will not answer this requirement, because they have to be placed or taken one by one along the edge of the upper. Cement, if properly employed, can best be used for securing a quick fastening of the edge of the upper to the insole.

In an application of even date herewith I have described a process for lasting the uppers of boots and shoes in which the cement is applied directly to the surface of the insole or to the inner surface of the upper, or upper and lining. In this improvement, instead of applying the cement directly to the surface of the insole or to the surface of the upper, I employ an independent fastening-strip, which, preferably, is coated with cement before the lasting process, although I do not confine myself to this use of the strip, as the cement may be applied during the process. The fastening-stripshould be of thin flexible material. Paper, cloth, or leather will answer the purpose very well. It may be cut into narrow strips and used along the edge of the upper, as illustrated in Figs. 1 and 3 of Plate 1, or it may be cut to a shape approaching that of the insole.

The fastening-strip, having been coated with a suitable cement or not, as may be desired, may be fastened to the edge of the upper, or to the edges of the upper and lining, or to the edge of the lining alone, in which case it would generally be necessary to fasten the edge of the upper to the lining to project therefrom, substantially as shown at *c*, Figs. 1 and

2 of Plate 1, and when employed in this manner they are united to the edge of the upper, preferably before the commencement of the lasting process.

In Fig. 3, Plate 1, I show the fastening-strip *c* employed in uniting the edges of the upper by being cemented to the outer surface thereof across the bottom of the last after they have been folded, and in this case the strip may be fastened to the outer edges of the upper during the lasting process.

The fastening-strip may be sewed to the edge of the upper before the lasting process, making the continuous edge A, as shown in Fig. 1, or the continuous side, as shown at A, Fig. 3, Plate 3.

The strip, instead of being sewed to the edge of the upper, or upper and lining, or instead of projecting therefrom at intervals, or instead of extending across the bottom of the last from edge to edge, may be sewed or otherwise united to the insole; and in Fig. 1, Plate 3, I show a strip united at the center of its width to the corresponding center of the insole. This strip C, instead of being united to the insole, may be a leaf or lip skived from its edge inwardly thereon, as shown in Fig. 4, Plate 1.

Where an independent strip is used, it may be applied during the lasting process, and cemented to the insole, and to the entire edge of the upper from toe to heel. When the strip has been united to the insole before the lasting process, or has been secured upon the upper surface thereof, it may be folded upon itself, as shown in Fig. 5, Plate 3.

In employing this cemented strip as a uniting medium, the strip is united to the edge of the upper, or to the upper alone, or to the lining, in any of the ways herein mentioned; and it may be continuous along the edge of the upper, it may be continuous along the sides only; it may be continuous at the toe and heel only, or it may be united to the insole, or used in narrow strips extended across the insole from edge to edge thereof, cemented to the outer edge of the upper, or it may be a continuous piece, which shall unite the outer edges of the upper by being cemented upon the same.

The cement, when used in any of these forms indicated, may be applied to the strip before or during the lasting process. If it has been applied before the lasting process, it of course will be necessary to moisten the same at some stage in the process.

The cement used may be of any suitable composition with sufficient cohesive property to properly unite the surfaces together.

A solution of caoutchouc and naphtha will answer moderately well. Fish-sounds and glycerine properly prepared will do; but I do not confine myself to these compounds, as there are a great many that can be successfully employed for this purpose.

The advantages of this invention consist in the saving in time obtainable in uniting the edge of the upper to the insole. Of course it will be seen that by thus preparing the edge of the upper, or upper and lining, or the insole, with a means for fastening which can be employed in uniting the edge of the upper, or of the upper and lining, to the insole in successive sections rapidly following each other, and permitting both sides to be simultaneously fastened to the insole as one of the sections, a very great economy in time is effected.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

As a means for uniting the edge of an upper or of a lining, or of both, to the surface of the insole in the lasting process, a flexible strip or strips united to the edge of said upper or of said lining, either before or during the lasting process, and cemented to the surface of the insole, or extended across the same, and cemented to the edge of the upper or lining in uniting the said edge of the upper thereon in the lasting process, substantially as and for the purpose described.

GEO. W. COPELAND.

Witnesses:
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GEO. F. WALKER.