Sept. 18, 1923. 1,468,591

E. CASSANO

SHOE

Filed Dec. 8, 1922 2 Sheets-Sheet 1

Fig. 1.

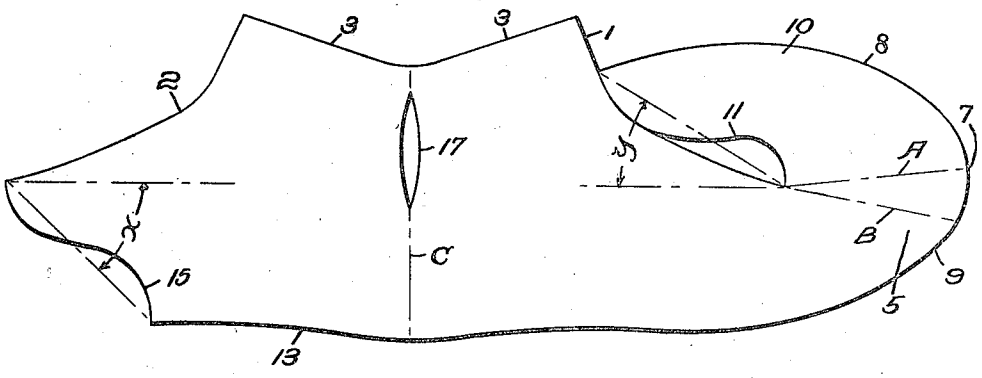


Fig. 2.

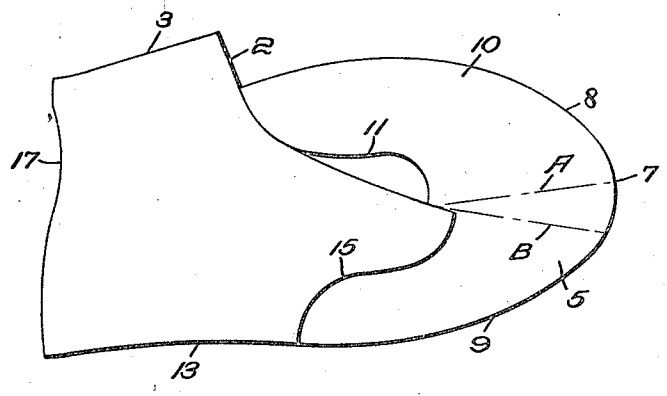
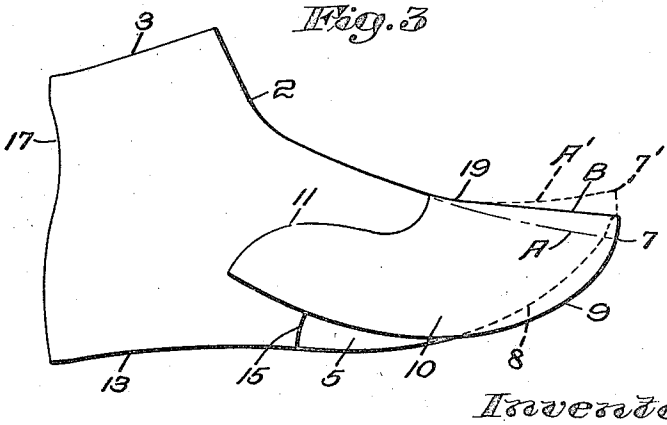


Fig. 3



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Fig. 4.

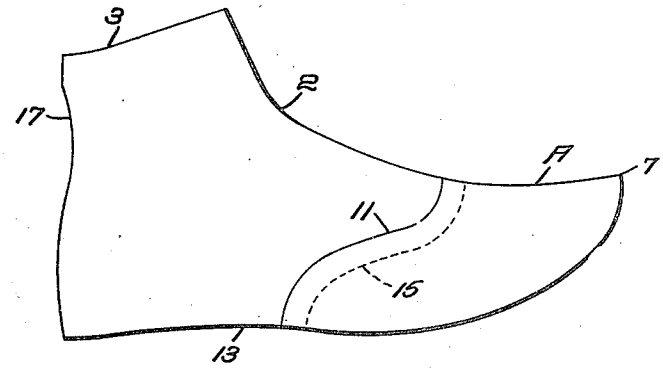
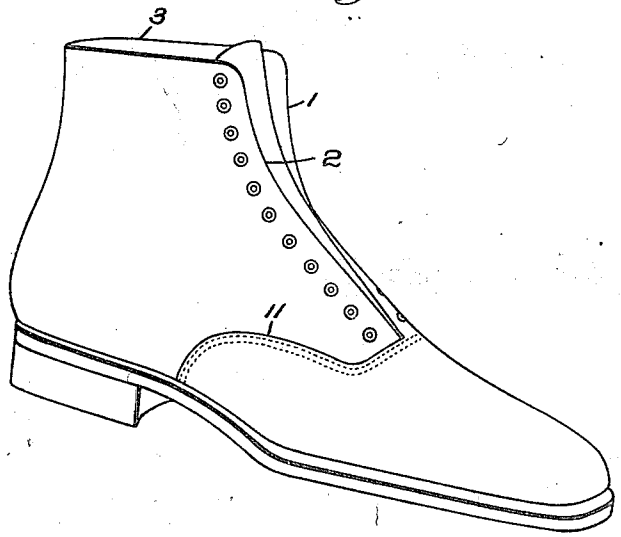


Fig. 5.



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Patented Sept. 18, 1923. 1,468,591

UNITED STATES PATENT OFFICE.

ERMINIO CASSANO, OF WELLESLEY, MASSACHUSETTS, ASSIGNOR TO EVERBEST ONE PIECE SHOE CO., OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

SHOE.

Application filed December 8, 1922. Serial No. 605,693.

To all whom it may concern:

Be it known that I, ERMINIO CASSANO, a citizen of the United States, and a resident of Wellesley, county of Norfolk, State of Massachusetts, have invented an Improvement in Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

My invention relates to shoes and particularly to those with one piece uppers.

My invention which has among its objects the forming of the uppers with a minimum waste of material in a manner to secure the desired shape without crimping or stretching will be best understood from the following description when read in light of the accompanying drawings illustrating one specific embodiment of my invention, while the scope of my invention will be more particularly pointed out in the appended claims.

In the drawings:—

Fig. 1 illustrates a blank for forming one piece uppers;

Figs. 2, 3 and 4 are more or less diagrammatic representations of the steps of one method of forming the uppers from the blank; and

Fig. 5 illustrates the uppers as applied to a finished shoe.

Referring particularly to Fig. 1 of the drawings I have shown a blank which is to be folded to form the uppers. The blank comprises the upwardly converging concave edges 1 and 2 which in the finished shoe form the edges of the front opening of the shoe, while the edges 3 form the top opening of the uppers. As shown, the toe portion 5 of the blank is formed approximately symmetrical with the line A which line in the finished shoe extends from adjacent the apex of the front opening of the uppers to the apex 7 of the toe, the symmetrical edges of the toe portion being indicated at 8 and 9. As will be noted in Fig. 1 the line B representing the continuation of the edge 1 intersects the outer edge 9 of the toe portion of the blank below the apex 7.

The part 10 of the toe portion of the blank extends towards the edge 1 and as shown has an edge 11 conforming with the edge 1 for a portion of its length and is spaced from the edge 1 adjacent the portion of the latter contiguous to the apex of the front opening of the shoe. In Fig. 1 the edge of the toe portion referred to is represented by the reversely curved edge 11, the exact shape of this edge however depending to a large extent upon the particular shape of uppers desired.

The edge 2 is joined with the bottom edge 13 of the blank by an edge 15 which is approximately similar in shape to the edge 11, and for a reason which will hereinafter appear the cord connecting the extremities of the edge 15 is at a greater angle to the lengthwise dimension of the blank than the angle of the corresponding cord of the edge 11, these angles in Fig. 1 of the drawing being represented at x and y.

Figs. 2, 3 and 4 represent diagrammatically one manner in which the blank may be folded to form the uppers. Referring particularly to Figs. 1, 2, 3 and 4 the portion of the blank to the left of the line C of Fig. 1 may first be folded upon the portion of the blank to the right of said line, the relation of parts when folded being indicated by Fig. 2, and in this connection it will be noticed that the material at the upper portion of the line C is slotted symmetrically as is indicated at 17 to give shape to the rearward portion of the uppers.

Referring particularly to Figs. 2 and 3 the part 10 of the toe portion is now folded upon the remainder of the blank. In folding the material the same tends to bend approximately upon the line B or upon the cord of said line which line as heretofore pointed out is a continuation of the edge 1. This brings the part 10 approximately into the position indicated by Fig. 3 in which position it will be noted that the part 10 is out of coincidence with the corresponding parts of the remainder of the toe portion; in other words, the edge 9 is folded past the front portion of the edge 8 while the edge 11 has not been moved far enough to bring it parallel with the edge 15. It will be also noted that the line A and the apex 7 of the toe are out of proper position, or in other words that the material adjacent the apex of the toe has been folded more than is sufficient to bring the corresponding parts into coincidence while the parts adjacent the rearward end of the toe portion have not been folded enough to bring them into coincidence.

The next step consists in causing the edge

11 to move into parallel relation with the edge 15 so as to make a seam as is indicated in Fig. 4. This sliding of the edge 11 over the blank to bring it parallel to the edge 15 moves the line A and the apex 7 of the toe into approximately the positions A′ and 7′ indicated on Fig. 3, and the edges 8 and 9 into coincidence. In doing this the material at the front portion of the toe is unfolded to bring the parts into coincidence, and the material adjacent the apex of the front opening of the shoe is further folded. This movement of the part 10 of the toe portion it has been found from trial is approximately a rotary motion about a point slightly in front of the apex of the front opening of the shoe which point is indicated at 19 in Fig. 3. It will be noticed that the progressive folding from the point 19 to the apex of the toe gives fullness to the material at the apex of the toe and at the same time causes the material adjacent the apex of the front opening of the shoe, that is the material rearwardly of the point 19, to be drawn tight. Heretofore it has been found that when uppers are made to fold exactly into coincidence by mere bending upon lines that there is too much fullness to the material at the apex of the front opening of the shoe, while the apex of the toe portion is too tight. In such cases it is necessary to resort to crimping and stretching to secure the desired shape. With my invention the exact degree of fullness and tightness may be secured without subjecting the uppers to further operations.

It will be noticed that by having the edges 1 and 11 closely adjacent less material is wasted than when they are spaced from each other as has been the case in prior arrangements wherein the blank is so cut as to cause the uppers to be shaped by merely folding it upon itself. Also it will be noticed that the part 10 of the toe portion is separated from the main portion of the blank by a single cut forming the edge 1 and part of the edge 11 which simplifies the cutting of the blank.

Although I have described for purposes of illustration a blank for forming one particular kind of shoe and a method for folding the blank it will be understood that I am not limited thereby to the specific details disclosed, but that wide deviations may be made therefrom without departing from the spirit of my invention.

Claims:

1. That method of forming a one piece upper for a shoe which comprises folding a part of the toe portion of a suitably shaped blank upon the remainder of the blank on a line substantially longitudinal of the finished shoe and so positioned that the rearward end portion of said part folded only partially reaches the corresponding parts of the main portion of the blank; and then moving said part folded by a rotary motion about the rearward portion of said line into coincidence with said corresponding parts of the main portion of the blank.

2. That method of forming a one piece upper for a shoe, which comprises folding the toe portion of a suitably shaped blank on a line substantially connecting the apex of the front opening of the shoe with a point below the apex of the toe, and then moving said folded portion to a position wherein it coincides with corresponding portions of the part upon which it is folded.

3. That method of forming a one piece upper for a shoe, which comprises folding the toe portion of a suitably shaped blank on a line substantially intersecting the apex of the front opening of said shoe, said line being so positioned that the rearward end portion of said part folded only partially reaches the corresponding parts of the remaining portion of the blank; and then causing said corresponding parts to come into coincidence by moving the folded portion of said blank about substantially a point on said line close to the apex of said front opening.

4. That method of forming a one piece upper for a shoe, which comprises folding the toe portion of a suitably formed blank upon the main portion of said blank into such position that corresponding parts only partially coincide, and then moving said parts into coincidence by increasing the fold adjacent the front opening of the shoe.

5. That method of forming a one piece upper for a shoe, which comprises folding the toe portion of a suitably formed blank upon the main portion of said blank into such position that corresponding parts only partially coincide, and then moving said parts into coincidence by increasing the fold adjacent the front opening of the shoe and decreasing the fold adjacent the apex of the toe of the shoe.

6. That method of forming a one piece upper for a shoe, which comprises folding the toe portion of a suitably formed blank upon the main portion of said blank into such position that corresponding parts only partially coincide, and then moving said parts into coincidence by progressively increasing the fold from a point adjacent the apex of the front opening of the shoe to the apex of the toe.

7. A blank for a one piece upper for a shoe comprising a portion having diverging concave edges forming the front opening of the finished shoe, said blank having a toe portion which bends back toward one of said concave edges and substantially coincides therewith for a portion of its length.

8. A blank for a one piece upper for a shoe comprising a portion having diverging

concave edges forming the front opening of the finished shoe, said blank having a toe portion with a reversely curved edge, the outer portion of said reversely curved edge substantially coinciding with one of said concave edges, and said blank at its end opposite the toe portion having a reversely curved edge intersecting the other of said concave edges.

9. A blank for a one piece upper for a shoe comprising a portion having diverging concave edges forming the front opening of the finished shoe, said blank having a toe portion with a reversely curved edge facing one of said concave edges, and the end of said blank opposite said toe portion having a second reversely curved edge intersecting the other of said concave edges, and the two reversely curved edges being substantially of similar shape and so positioned that the cordal lines connecting the two extremes of each are out of parallelism.

10. A blank for a one piece upper for a shoe comprising a portion having diverging concave edges forming the front opening of the finished shoe, said blank having a toe portion with a reversely curved edge facing one of said concave edges, and the end of said blank opposite said toe portion having a second reversely curved edge intersecting the other of said concave edges, and the two reversely curved edges being substantially of similar shape and so positioned that the cordal line connecting the extremes of the one at the toe portion is at a smaller angle to the lengthwise direction of the blank than the corresponding cordal line of the one at the opposite end of the blank.

11. A blank for a one piece shoe having a portion with diverging concave edges, said blank having a toe portion an edge of which substantially conforms to one of said concave edges, and the continuation of said last mentioned concave edge intersecting the outside edge of the toe portion of said blank at the side of the apex of the toe portion remote from said concave edges.

12. A blank for a one piece shoe upper having a toe portion, said toe portion being substantially symmetrical, and said blank being so formed that when said toe portion is folded the parts must be drawn over each other around a point on the axis of said toe portion to bring said symmetrical parts into coincidence.

13. In a blank for a one piece upper for a shoe, a toe portion having a part to be folded upon the remainder of the toe portion, the body of said blank having an edge forming a side of the front opening of the finished shoe and facing said part of the toe portion to be folded upon said remainder of the toe portion, and said edge being so shaped and disposed to cause excess folding of the material adjacent the apex of said toe portion and insufficient folding of the material adjacent the apex of the front opening, whereby to bring the parts of the toe portion of the blank into coincidence after such folding, the said part of the toe portion folded upon the remainder of the toe portion must be moved to partially unfold the material adjacent the apex of the toe portion and to further fold the material adjacent the apex of the front opening.

14. A blank for a one piece upper for a shoe, said blank having edges which form the front opening of the finished shoe and having a toe portion a part of which extends toward one of said edges, and said last mentioned edge being so positioned and disposed to necessitate a lesser degree of folding of the material forming the front of the toe portion than of the material forming the rearward part of the toe portion.

In testimony whereof, I have signed my name to this specification.

ERMINIO CASSANO.