

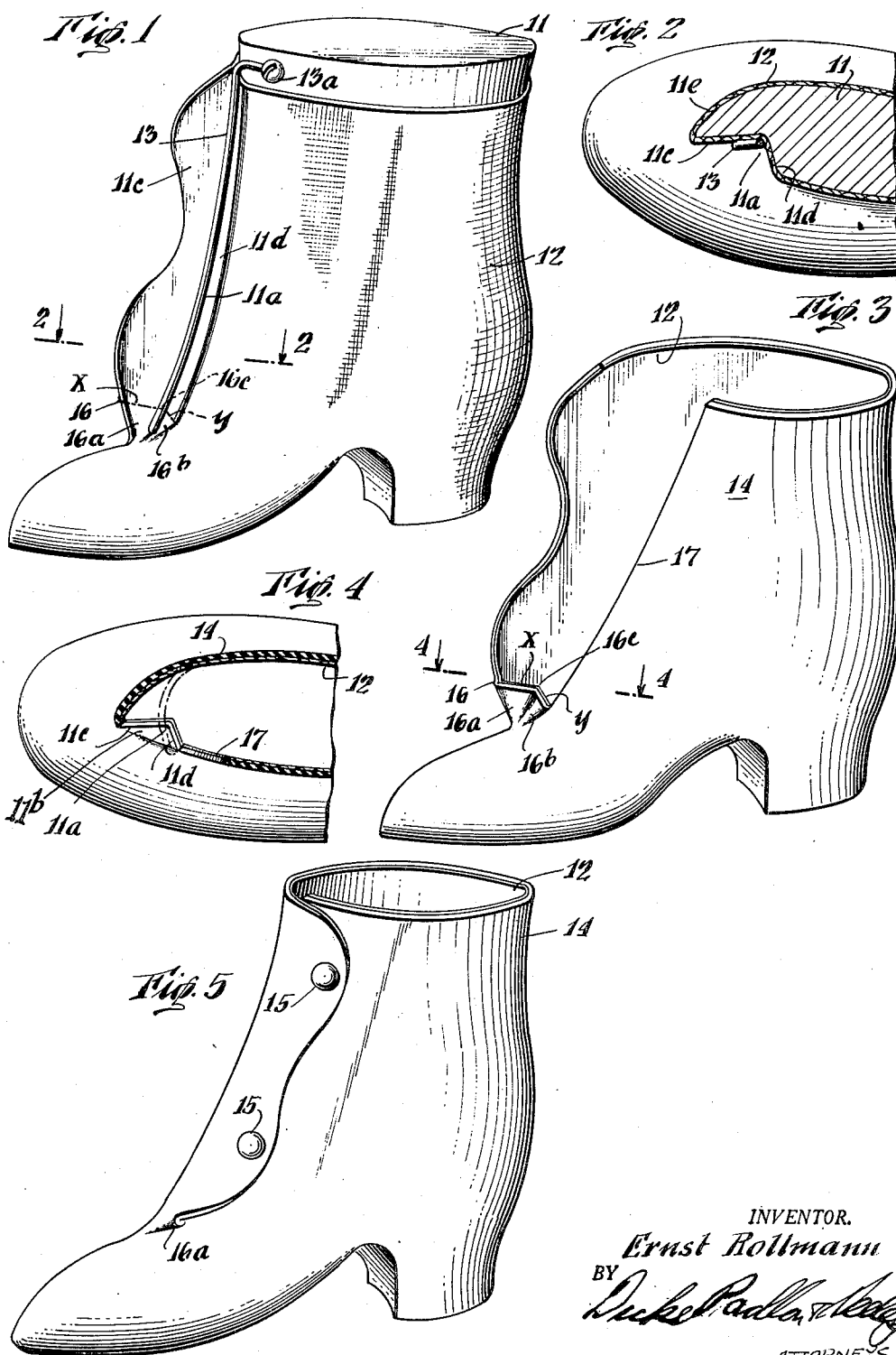
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FOOTWEAR WITH INTEGRAL GUSSET AT BOTTOM OF OPENING

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FOOTWEAR WITH INTEGRAL GUSSET AT
BOTTOM OF OPENINGErnst Rollmann, Los Angeles, Calif., assignor to
Ro-Search, Inc., Waynesville, N. C., a corpo-
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552,469. Divided and this application Septem-
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2 Claims. (Cl. 36-7.3)

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This invention relates to footwear and this application is a division of my previously filed application Serial Number 552,469, filed September 2, 1944, now Patent No. 2,432,174, granted December 9, 1947, which relates to the general subject matter of my earlier application Serial Number 300,761, filed October 26, 1939, now Patent Number 2,357,360.

An object of this invention is to provide an article of footwear such as an overshoe for example, constructed of a single piece of material which may be lined or not, and having a front opening adapted to be closed by a flap integral with the body portion of the article.

A further object is to provide such an article having a construction suitable for manufacture by spraying, dipping, or molding operations.

A still further object is to provide such an article constructed and arranged to assure complete overlapping by the flap and to prevent entry of water or snow near the bottom of the flap.

Further objects and advantages of the invention will be apparent from consideration of the specification as illustrated by the accompanying drawing of an illustrative embodiment of the invention, in which drawing:

Fig. 1 is a perspective view of a last for use in making an article of footwear embodying the invention, showing a sock applied thereto before the application of rubber or the like;

Fig. 2 is a partial sectional view taken on the line 2-2 of Fig. 1;

Fig. 3 is a perspective view of an overshoe illustrative of the invention showing it after removal from the last illustrated in Fig. 1 and before final finishing.

Fig. 4 is a cross-sectional view on the line 4-4 of Fig. 3, showing in dotted lines the position of certain parts when the flap is folded over the upper and fastened; and

Fig. 5 is a perspective view of the finished shoe constituting the present invention, the flap being fastened in place.

Referring to said drawings, 11 indicates a last made of suitable material formed as to its lower and rear portions and the toe forwardly of the instep to correspond to the desired article of footwear, in the illustrated embodiment an overshoe. However, the forward portion of the last above the toe is deformed in the manner shown. This deformation comprises a depression, such as 11a, formed at one side of the longitudinal vertical center plane of the last and extending from a point adjacent the toe partly or entirely upwardly to its top. The depression is provided

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with a lower or end wall 11b which merges into the toe portion, and side walls 11c and 11d. The side wall 11c preferably tapers outwardly as it approaches the top of the last and the outer forward wall 11e narrows down so that the top ends of the two walls merge into and become flush with the outer face of the last adjacent the top thereof, as indicated in Fig. 1. The extreme forward edge of the last is shown as formed with a scalloped edge which is desirable if a corresponding edge on the flap is desired.

It is to be understood, however, that this forward edge may be straight or curved in any manner, and the edge of the flap may be trimmed to any desired shape.

The numeral 12 indicates an elastic sock, preferably of knitted textile material, shown drawn over the last. This sock ultimately will form the lining for the shoe including the flap. The sock is omitted in making an unlined article of footwear.

13 indicates a sock-holding element attached to any suitable support, as screw 13a, threaded into the last. Such a holding element is necessary to force the sock into the depression 11a because the sock, being elastic and drawn tightly over the last, would otherwise take the shortest path across the depression 11a. The lower end of the holding element 13 also assures contact of the sock with the lower wall 11b of the depression.

With the parts in the position shown in Figs. 1 and 2, the rubber or other suitable plastic material is applied to the sock 12 by dipping the covered last in a solution of latex, or other similar material, sufficiently far to entirely immerse the sock therein, or the plastic material may be applied, if desired, by other methods, such as spraying or painting it thereon. The plastic is now treated in any suitable manner to cause it to set and solidify, forming an external layer 14. In the case of latex or a rubber solution, vulcanization may be accomplished by the application of heat or suitable chemicals which may be in the form of a gas.

After solidification, the coating 14 and liner 12 are preferably cut along both sides of the holding element 13, the screw 13a and holding element 13 removed, and the shoe stripped from the last. It is thereupon suitably trimmed, preferably by hand or a suitable trimming die, to a conformation for example like that shown in Figs. 3 and 4. In this operation the portion of the flap formed by the wall 11c of the last is cut away along the shaped edge of the last wall 11e,

which is shaped to provide the desired configuration to the flap edge, such, for example, as is illustrated in Figs. 1 and 3, the cutting being preferably from the top of said shaped edge down to about the point 16, and then along the dotted line *x* to approximately the point 16c, as will appear more clearly from Fig. 3. The material of the shoe which is formed along the last wall 11d is trimmed away along the outer edge of said wall 11d to form the edge 17, and then along a line *y* to the point 16c. This forms a gusset comprising the two gusset sections 16a and 16b. Suitable fastening elements, such as snap buttons 15, are applied and the shoe is ready for use.

It will be noted from Fig. 3 that the material is trimmed along the top edges of the sections 16a and 16b which together serve to form a gusset. It will be apparent from Figs. 1 and 2 that the walls 11c and 11b are substantially perpendicular to each other. Inasmuch as the gusset section 16a is formed along the lower portion of the wall 11c, it is substantially perpendicular to the gusset section 16b, which is formed along the corner end wall 11d of the depression. Also the lower end of the sock holding element 13 was located along the fold line between the two gusset sections 16a and 16b.

As a result, a fold line is formed between the two gusset sections, see Fig. 3. As the flap is folded over the upper, the portion 16a will be folded tightly against the portion 16b, and the outer portion of the flap will be folded tightly against the portion 16a, as is shown more clearly in the dotted line position of the parts in Fig. 4. Since the upper edge of the section 16a of the gusset is longer than the upper edge of the section 16b, the section 16a will extend beyond the edge of the opening in the upper and serve to completely close said opening, preventing the entry of water and snow.

It will be noted that the present invention provides a shoe having an integral flap overlapping the upper and formed with a gusset, all of the material for said upper, flap, and gusset as well as the sole being formed in one piece to provide an entirely new article of footwear.

Instead of applying the solidifiable plastic material by spraying or dipping, as described above, it would of course be possible to form the plastic covering by a moulding process. In that event, the last would be surrounded by a separable mould which may be of the general construction of the mould disclosed in my Patent Number 2,357,360, it being understood that the internal conformation of the mould would correspond with the external conformation of the last, sufficient space being left between the mould and the last to accommodate the material of the shoe or other article.

It is also to be understood that, whether the material is applied by dipping, spraying, or by moulding in an enclosed mould, the lining-forming sock may be omitted, in which event the plastic material will be formed directly upon the last. Such shoes could either be used without a lining or a lining could be inserted therein at a later time by any known or suitable method and means.

The invention is not intended to be limited to the form shown, which is understood to be illustrative only and not limiting, as various changes in construction and arrangement may be made, all coming within the scope of the claims which follow.

I claim:

1. As an article of manufacture, an integrally constructed shoe made of plastic material comprising an upper formed with an opening at its front and a flap integrally attached to the upper at one side of said opening and adapted to overlap said opening and to overlap said upper along substantially the entire length of the other side of said opening and to be temporarily attached thereto, and a gusset at the bottom of said opening formed integrally with the upper and flap, said gusset consisting of two sections, one formed as an integral extension of the lower part of the outer edge of said flap and the other formed integrally with the material of said upper which upper is adapted to be overlaid by said flap, the two sections being integrally connected together and biased to fold at their line of connection, whereby, as the flap is overlapped upon the upper to close said opening said sections are folded together under the lower part of the flap to form a gusset near the bottom of said opening.

2. As an article of manufacture, an integrally constructed shoe made of plastic material comprising an upper formed with an opening at its front and a flap integrally attached to the upper at one side of said opening and adapted to overlap said opening and to overlap said upper along substantially the entire length of the other side of said opening and to be temporarily attached thereto, and a gusset at the bottom of said opening formed integrally with the upper and flap, said gusset consisting of two sections, one formed as an integral extension of the lower part of the outer edge of said flap and a shorter section formed integrally with the material of said upper which upper is adapted to be overlaid by said flap, the two sections being integrally connected together and biased to fold at their line of connection, whereby, as the flap is overlapped upon the upper to close said opening said sections are folded together under the lower part of the flap to form a gusset near the bottom of said opening, the second mentioned shorter section of the gusset being entirely covered by the flap.

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