July 2, 1940. A. DE VITO ET AL 2,206,716

INSOLE AND METHOD OF USING THE SAME

Filed June 2, 1939

Fig. 1

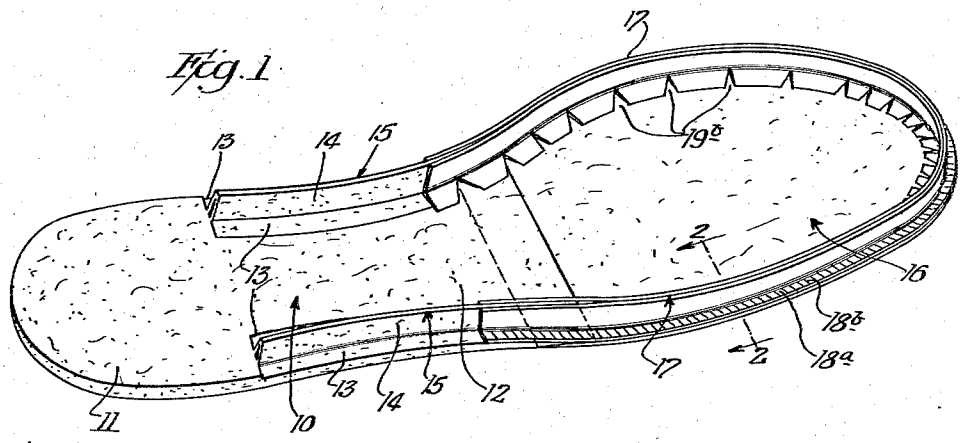


Fig. 2

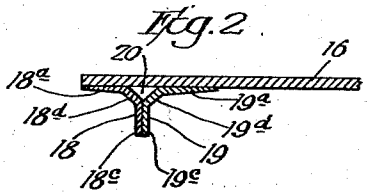


Fig. 3

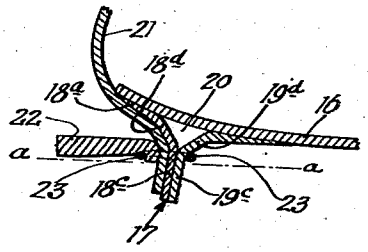
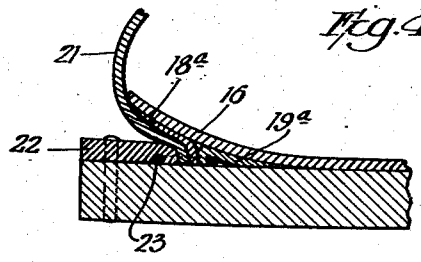


Fig. 4



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INSOLE AND METHOD OF USING THE SAME

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Application June 2, 1939, Serial No. 276,976

5 Claims. (Cl. 12—142)

This invention relates to improvements in shoes and in the method of making the same.

An object of the invention is to provide an insole for a shoe which, due to the characteristics of the insole, adds little to the stiffness of the outsole of the finished shoe. The soles of shoes embodying the present improvements are initially very flexible and comfortable. In accomplishing the result mentioned, the sole piece of the insole is made of thin, flexible material such as shoe-upper leather which is so thin as to be non-channelable to provide conventional sewing lips. Where such relatively thin sole pieces have been employed in the construction of shoe insoles heretofore, lips have been provided by cementing one or more strips to the sole piece, and we have found that in making such lips of two strips of material and cementing them together, back to back, a marginal ridge having a relatively abrupt shoulder is formed in the upper surface of the thin insole after the upper has been sewed to the lip, and the lip trimmed and leveled. Where relatively thick insole material of the type generally employed heretofore is used for insoles, such ridges are not formed, or at least are not so pronounced as to render the shoe uncomfortable, since such heavy insole material is sufficiently thick to permit portions of the trimmed lip to be partially embedded in the lower surface of the insole during the leveling operation. However, where the insole material is sufficiently thin to afford the desired flexibility of the finished shoe, the portion of the sewing lip which remains after seaming and trimming cannot be so embedded in the insole, and hence, as stated, objectionable ridges have been formed which render the shoes less comfortable than is desired in spite of the increased flexibility of the finished shoe which is afforded by the thin sole piece of the insole. By the present improvements, the formation of such objectionable ridges in thin, flexible sole pieces is avoided.

In the accompanying drawing wherein an embodiment of the invention is shown for illustrative purposes:

Fig. 1 is a perspective illustrating the lower surface of an insole embodying the present invention, the insole being in inverted position;

Fig. 2 is an enlarged section taken on line 2—2 of Fig. 1 but showing the insole in reversed or normal position;

Fig. 3 illustrates the relation of the insole sewing lip to the shoe upper and the welt after sewing the upper and welt to the lip;

Fig. 4 illustrates an outsole attached to the welt.

In the drawing the insole shown in Fig. 1 is illustrated as comprising a section indicated generally by the numeral 10 which comprises a heel portion 11 and a shank portion 12. This section 10 may be formed of conventional insole leather, having sufficient thickness or body to enable it to be channeled at 13—13 to form flanges 14—14, each pair of which, when turned upwardly, as viewed in Fig. 1, and cemented together, provide sewing lip sections 15—15. These sections are spaced inwardly a suitable distance from the margin of the shank 12. The forward end of the shank is skived or beveled and attached as by cement to a complementarily skived end of a sole piece indicated generally by the numeral 16. This sole piece 16 is of relatively thin material such as leather of the type generally used for shoe uppers. This material is too thin to be channeled to provide integral sewing lips, such as are formed in the shank, and hence a lip section indicated generally by the numeral 17 is provided by attaching a pair of angular strips to the sole pieces as by cement.

The outer of these two strips comprises an upstanding flange 18 and a horizontal flange 18a. The material of these strips may likewise be thin, flexible material, such as shoe upper leather or even thinner material. The flange 18a preferably is provided with the relatively closely spaced transverse cuts 18b which facilitate the shaping or bending of the strip to the shape of the sole piece 16. The angular shape of the strips may be effected by known mechanism and suitable pressure sensitive adhesive applied to the strip during the shaping operation. The inner strip comprises an upstanding flange 19 and a horizontal flange 19a which, like flange 18a, are preferably attached to the sole piece by the cement on the former. The ends of the flanges 18 and 19 overlap the lip sections 15—15 and are cemented thereto, thus providing a continuous composite sewing lip. The flange 19a is provided with spaced notches 19b which facilitate bending the strip to the shape of the sole piece without the formation of folds or wrinkles in such flange. Since the sole piece, as stated, is of thin material, folds or wrinkles or other protuberant formations in the lip may, after a period of use, cause high spots in the upper surface of the thin insole piece and may thereby make the finished shoe uncomfortable. The flanges 18a and 19a are beveled or skived, as shown in Fig. 2. The flanges 18 and 19, as shown in Fig. 2, are attached to-

gether at their outer or marginal edges 18c—19c by the cement carried by the strips, but it will be noted that the bases of the flanges are spaced apart by reason of the spacing of the respective flanges 18a and 19a in attaching the same to the sole piece 16. This arrangement provides convergent portions 18d, 19d, which are not attached together. The space provided by the spacing of the bases which is indicated by the numeral 20 is of importance in that it accommodates portions 18d, 19d of the flanges 18 and 19 upon leveling the seam after an upper has been sewed to the lip and surplus portions of the lip and margin of the upper have been trimmed and leveled, thereby reducing the vertical height of the lip 17. This arrangement avoids the formation of a ridge in the upper surface of the sole piece 16 above the lip which we have found frequently occurs where no provision is made for a space corresponding to space 20 to accommodate the flanges 18 and 19 during the leveling operation.

In Fig. 3, the upper 21 and the welt 22 are shown sewed to the lip section 17, the stitches of the seam passing through the welt, the upper, and the lip sections 15—15, and through the connected portions 18c—19c of lip section 17. The stitches are indicated by the numeral 23. After the stitching operation, the composite lip and any surplus portion of the upper is then trimmed as closely to the line of stitches as is practicable, as along the line a—a of Fig. 3. Thereafter, the seam is leveled by well-known means which forces the convergent portions of lip 17 into the space 20, and into contact with the sole piece to which they adhere. In other words, while the stitching operation is performed when the lip is in the original extended position of Fig. 2, it is vertically collapsible due to the construction described whereby the vertical height of the lip, after stitching and trimming, can be reduced without pressing a ridge in the upper surface of the thin insole piece 16.

In Fig. 3 it will be seen that the upper and lower surfaces of welt 22 taper inwardly slightly. This taper is produced by suitably skiving the lower or flesh side of the leather, where the latter material is used. Since the inner edge of the welt is turned downwardly in stitching the same to the upper and to the lip and thereafter sewing the welt to the outsole, the effective thickness of the welt at the inner edge thereof is increased. It will be noted that the margin of the upper overlies the inner portion of the top surface of the welt and that the flange 18a overlies the inside of this portion of the upper. In making shoes of the type herein described, where the welt was not skived, as described, the added thickness of the welt caused by folding over the inner edge thereof, produced an additional elevation at the edge of the insole piece 16 which it is desirable to avoid. By skiving the welt as described and illustrated, we reduce slightly the vertical distances through the assembly just inside the upper, as shown in Fig. 3, and by providing space 20 into which the lip section 17 can be pressed, we avoid the formation of the objectionable elevation having an abrupt shoulder extending around the margin of the upper surface of the insole approximately above lip 17. The present construction provides, as shown in Fig. 4, a gentle incline at the margin of the insole which comfortably supports the contacting portion of the wearer's foot and thus increases the comfort of the shoe over that afforded merely by the flexibility of the material of which the insole piece is formed.

By the present improvements, the sole of the finished shoe is extremely flexible due to the use of the thin material of the sole piece 16 and of the flanges 18 and 19, in lieu of material of sufficient thickness to enable the insole to be channeled to provide the conventional sewing lips. The comfort of the shoe has been enhanced due to the construction whereby the former rather abrupt marginal shoulder or elevation has been eliminated from the top surface of the insole and, in lieu thereof, a gently sloping portion has been provided which comfortably supports the foot of the wearer.

While we have shown and described an embodiment of our improvements, we do not wish to be restricted specifically thereto since various detailed steps in the method and details of the construction may be altered without departing from the spirit of the invention.

What we claim as new and desire to cover by Letters Patent is:

1. The method of making shoes which comprises forming an insole of a heel and shank portion of channeled material having lips and a relatively thin, flexible non-channelable sole piece, providing a continuation of such lips by attaching to the forward ends thereof and to the sole piece a pair of thin, flexible, angular lip strips spaced apart at their bases, securing the strips together at the edges opposite said bases, sewing a shoe upper to the composite continuous lip thus formed, trimming surplus material from the lip adjacent the seam, and then reducing the vertical height of said lip portion of the sole piece by pressing portions of the lip of the sole piece into the space between the bases of the attached lip strips, and thereafter attaching an outsole to the shoe.

2. An insole for a shoe, comprising a heel and shank portion of channelable material, a sole piece of thin, flexible non-channelable material secured to the end of the shank and a composite sewing lip for said insole comprising channel-lip portions disposed along the lateral edges of the shank and a fabricated lip on the sole piece attached to the adjacent ends of said channel-lips, said fabricated lip portion comprising a pair of flexible strips of angular cross section having bases secured in spaced apart relation to said sole piece and outwardly directed sewing flanges attached together at the edges opposite the bases, said space between said bases being sufficient to accommodate therein a portion of said sewing flanges after the same have been trimmed following the sewing of an upper thereto.

3. An insole for a shoe comprising a heel and shank portion and a sole piece, the latter being of thin, flexible, non-channelable material, and a sewing lip on said sole piece comprising a pair of thin, flexible, angular strips having skived bases attached to the sole piece in spaced apart relation and having outwardly directed flanges, said flanges having convergent portions adjacent said bases and terminal edge portions secured together whereby, after an upper has been stitched to said marginal portion of the lip, said convergent portions thereof can be pressed into contact with the sole piece in the space between said bases to reduce the height of the lip.

4. An insole for a shoe comprising a sole piece provided with a sewing lip consisting of a pair of adhesive-coated strips, said strips having angularly disposed bases spaced apart and adhesively attached to the sole piece and convergently disposed intermediate portions terminating in mar-

gins adhesively secured together, said spacing of the bases being sufficient to enable said convergent portions of the strips to be pressed into adhesive contact with the sole piece for reducing the vertical height of the lip.

5. The method of making a shoe which comprises providing an insole having a flexible sole piece, attaching to the sole piece a pair of thin flexible lip strips spaced apart at their bases to form a composite lip, attaching an upper and a welt to the lip strips, leveling the seam to press portions of said strips into the space between the bases thereof and into contact with such sole piece to reduce the vertical height of the lip, and thereafter attaching an outsole to said welt.

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