Dec. 17, 1946. J. R. BRADY ET AL 2,412,865

SHOE AND METHOD OF MANUFACTURING THE SAME

Filed Feb. 20, 1946

FIG. 1.

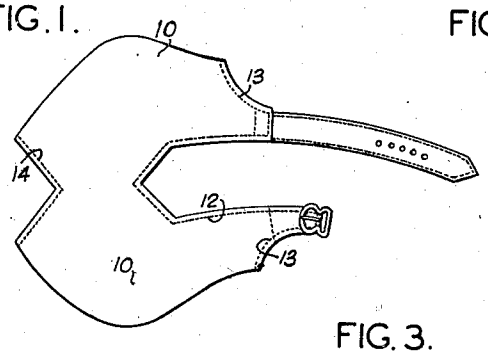


FIG. 2.

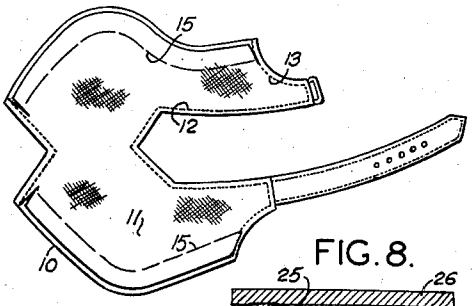


FIG. 8.

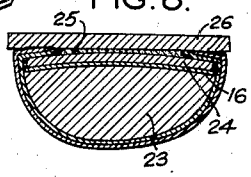


FIG. 3.

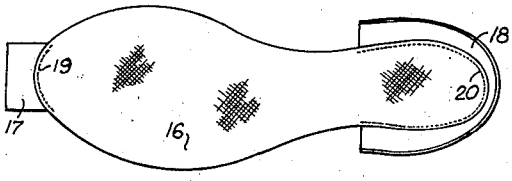


FIG. 5.

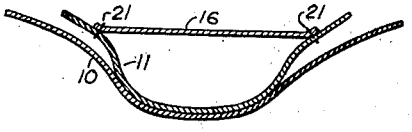


FIG. 4.

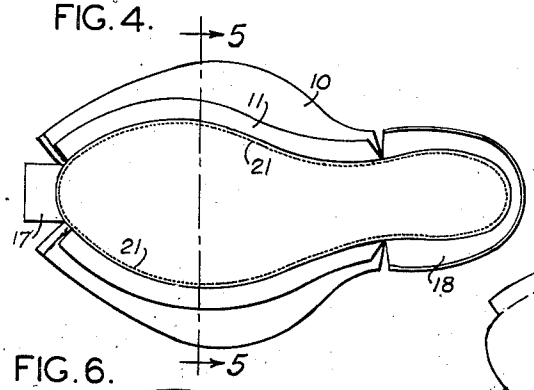


FIG. 9.

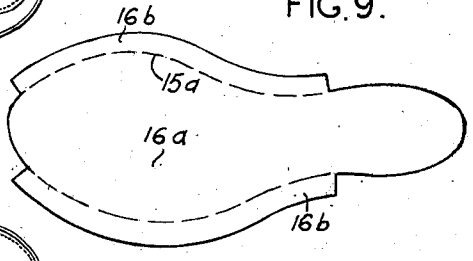


FIG. 6.

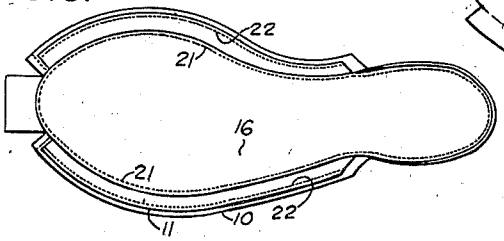


FIG. 10.

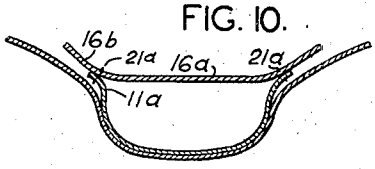
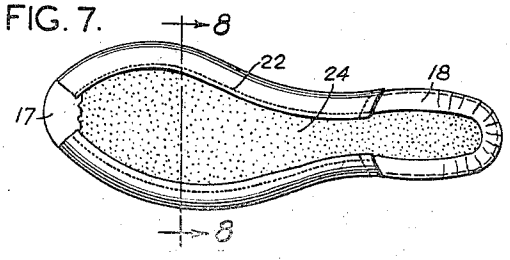


FIG. 7.



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SHOE AND METHOD OF MANUFACTURING THE SAME

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Application February 20, 1946, Serial No. 648,879

7 Claims. (Cl. 36—19.5)

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This invention relates to shoes and methods of manufacturing the same, and has special reference to improvements in the so-called slip-lasted type of shoe. This type, as is well understood, is chiefly distinguished by the manner in which the parts are assembled and secured together which involves stitching a sock lining member to an upper and thereafter inserting a last into this preformed body to facilitate the securement thereto to one or more sole members. The described method eliminates the need for skillful hand lasting treatment or complicated lasting machines. The method also affords manufacturing economies in other respects.

The principal object of the present invention is to construct a shoe in general accordance with the prescribed slip-lasting method but with certain improvements therein that enhance the comfort, appearance, and wearing quality of the shoe.

An important object of the present invention is to construct a shoe of this character, wherein the inner sole members and stitching at the sole line are concealed. Although this, of itself, is not a new concept in slip-lasted constructions, all former methods have incidental disadvantages, not the least of which is the creation of wrinkles in the linings of the shoes. It is the purpose of this invention to provide an improved and more efficient construction that eliminates such objections.

Another objection to such former constructions is that the outer ply of the upper that serves to hide the sole line stitches requires special and skilled manipulation to conform it to a last, akin to that required in connection with hand and machine lasted shoes. The objection is avoided in the presently described construction by producing an upper assembly which is completely fashioned prior to the introduction therein of the last, and whereby the outer ply conforms itself to the shape of the inserted last so that little or no effort, skill or experience is required by the shoemaker in the operation of turning in and securing the lasting allowance. Accordingly, the fundamental advantages of the slip-lasted process which heretofore were only partly attained in "hidden stitching" constructions are fully realized by the improved method of the present invention.

These and other objects and advantages will be more fully explained in the description that follows, reference being made to the accompanying drawing in which:

Fig. 1 is a top plan view of a pre-formed upper

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assembly for an open toe, open heel type of women's shoe;

Fig. 2 is a plan view showing the under side of the same upper assembly;

Fig. 3 is a plan view of a sock liner having toe and heel tabs attached thereto;

Fig. 4 is a bottom plan view showing the parts illustrated in Figs. 2 and 3 after they have been stitched together;

Fig. 5 is a transverse sectional view of the assembly of Fig. 4 as taken at line 5—5 of that figure;

Fig. 6 is a bottom view showing the assembly of Fig. 5 following a subsequent operation wherein the lining ply of the upper is marginally stitched to the outer ply of the upper;

Fig. 7 is a bottom view illustrating the assembly following insertion therein of a last, the incorporation of an insole, and the securement thereto of the upper plies;

Fig. 8 is a transverse sectional view taken at line 8—8 of Fig. 7 showing the structure with the outsole applied;

Fig. 9 is a plan view of a sock liner of modified form, and

Fig. 10 is a transverse sectional view similar to that of Fig. 5, and showing an upper assembly of modified form as combined with the sock liner of Fig. 9.

Referring now by numerals of reference to the drawing, the upper assembly illustrated in Figs. 1 and 2 includes an outer ply 10 and a lining ply 11, these parts being cut to suitable patterns and sewed together along the margins of the throat opening as indicated by the lines of stitching 12, and along edges which define openings in the upper, such as by stitching 13 and 14 at the margins of the heel and toe openings. As appears in Figs. 2 the lining ply is provided with trace marks 15 to indicate lines where the said lining ply, later in the process, is to be stitched to the sock liner 16. The lining ply 11 extends beyond the trace marks to provide a substantial marginal allowance, this bordering strip being desirably made one-quarter of an inch or greater in width for purposes which will hereinafter appear. In this respect the present construction differs from the customary construction, wherein the upper linings terminate approximately at the sock lining or sole level. The outer ply 10 also is extended to provide a bordering strip for lasting purposes, and such bordering strip preferably projects a short distance beyond the lower extremity of the lining ply, as shown.

The sock liner 16, of textile fabric, or thin plia-

ble leather or the like, is cut approximately to the conventional insole pattern for which the shoe is intended, with sufficient marginal allowance for stitching, and to the toe and heel portions of the liner 16 is attached a tab 17 and a rand 18 by means of stitching 19 and 20 respectively. As will be understood, the parts 17 and 18 serve to cover and give a finished appearance to edges of the sock liner and any other inner sole at such points where these edges would otherwise be exposed by reason of openings in the upper, as at the heel and toe in the present example.

The sock liner is attached to the lining ply 11 of the upper by stitches 21 which follow the trace marks 15 on the lining ply. The stitches 21 do not engage or pass through the outer ply 10. Thereafter the lining ply is secured to the outer ply by means of cement applied between and to the adjacent surfaces, or by a row of stitches 22 that extend along the lower edge of the lining ply, or both by cementing and stitching.

All of the foregoing steps are performed off the last and involve simple cutting, stitching and cementing operations. At this stage of the process (Fig. 6) the disposition or arrangement of the outer ply relative to the lining ply and the sock liner is fixed since the plies are secured together both at their top and bottom margins. Accordingly it may be said that the upper assembly is completely fashioned prior to the introduction therein of the last. The present method thus distinguishes from former methods wherein the lower margin of the outer ply is left free until after the last has been inserted. In such case the outer ply is required to be "molded" to the last and its marginal extension secured to the sole structure independently of the lining ply, which requires careful and painstaking manipulation by a highly skilled shoemaker.

Continuing now with the description of the method of the present invention, a last 23 is inserted in the pre-formed assembly of Fig. 6, and the bottom or exposed surface of the sock liner is given a coating of adhesive, adhesive being also applied to the inner surfaces of the marginal extensions of the upper and to that of the heel and toe tabs 17 and 18. If the shoe is to be provided with an insole or platform such member, indicated by numeral 24, is positioned on and secured to the exposed surface of the sock liner. Only a simple hand or machine operation is now necessary to wrap or pull the marginal extensions of the upper and the tabs 17 and 18 about the edge of the insole, and to adhesively secure them to the bottom surface thereof, in the manner illustrated in Figs. 7 and 8.

Although the provision of an insole in the described construction is desirable, such member is not essential and may be omitted, as where an extremely light, highly flexible sole structure is wanted. When omitted the marginal extensions of the upper are secured directly to the bottom surface of the sock liner. It is also desired to mention in this connection that certain types of shoes are constructed with an insole or platform that extends only in the forepart, and a piece of fibre or the like is provided in the heel and shank areas of the sole structure, as for bracing purposes. Shank stiffening members of this character occupy positions in the sole structure corresponding to that of an insole, which term is herein intended to include such members.

It is in connection with the last recited operation of pulling, turning under and securing the marginal extensions of the plies to the sole structure that the value of the earlier operation of uniting the marginal extensions of outer and lining plies is particularly manifest. Thus, when drawing and turning under the marginal extensions sufficient tension is exerted thereon to cause both plies to hug the surface of the last. Since the extensions are united, they may be manipulated as a unit in a simple manner and the tensioning force is imparted with like effect to both plies. This is conducive to the avoidance of wrinkles and distortion in the lining ply which otherwise results when the outer ply is manipulated individually as is the case in former proposed constructions. It will be understood that irregularities in the lining ply caused by unequal tensioning are not observable until the last is removed, and then it is too late to effect their correction.

In succeeding operations conventional methods may be employed to complete the shoe. Such operations may include the provision of filler material 25 between the turned-under marginal extensions of the upper to produce a flat surface to receive the outsole 26 which is adhesively secured in place in accordance with customary practices.

Although less desirable than the heretofore described method the same advantageous results may be obtained by a somewhat modified method, the essential features of which are illustrated in Figs. 9 and 10. In this modified construction the lining ply 11*a* terminates at the sock liner 16*a*. The dimensions of the latter member however are increased to provide the marginal extension 16*b*. Trace marks 15*a* outlining the border of the sock liner proper are provided, and the lower edges of the lining ply 11*a* are sewed to this sock liner by stitching 21*a* along the said trace marks. Thereafter the method is carried out in accordance with the method previously described, the only difference between the two constructions being lasting allowance for the lining ply is furnished by an integral extension of the sock liner instead of an extension of the lining ply of the upper.

Whereas in the constructions illustrated herein the entire lasting margins are shown to have marginal extensions for the purposes explained, it will be understood that these provisions may be limited, and the methods of the present invention applied to portions only of the lasting margins. Thus, for example, in one type of shoe a visible insole or platform is provided in the forepart and a concealed insole or the equivalent is provided in the shank and heel parts. In such shoes it may be desirable to use the methods of the present invention in connection with the lasting of shank and heel portions only, or in the regions where a non-visible insole and sole line stitchings are called for, and to employ the conventional slip-lasting methods in connection with the forepart construction.

We claim as our invention:

1. In a shoe, an upper having an outer ply and a lining ply, means securing together the lower marginal portions of said plies, a sock liner having its marginal portion stitched only to the lining ply of the upper along lines spaced inwardly from the lower margin of said lining ply, a member positioned beneath and adhesively secured to the sock liner, the secured together marginal portions of said upper plies extending about the

edge of said member and being secured to the bottom thereof, and an outsole secured to the bottom of said member.

2. In a shoe, an upper having an outer ply and a lining ply, a sock liner having its marginal portion stitched only to the lining ply of said upper, an insole positioned beneath said sock liner, the marginal portions of said outer and lining plies extending about the edge of said insole and being stitched together below said insole and secured to the bottom surface thereof, and an outsole secured to the bottom surface of said insole.

3. In a shoe, an upper having an outer ply and a lining ply, a sock liner stitched at its marginal portion to the lining ply only of said upper, said outer and lining plies having marginal portions extending beyond said sock liner stitching and being stitched together near their lower edges along lines spaced from said sock liner stitching, an insole adhesively secured to said sock liner, the extended marginal portion of said lining ply being adhesively secured to the bottom surface of said insole, the stitching which secures together the margins of said plies being spaced inwardly from the edge of said sock liner, and an outer sole secured to said insole.

4. In a method of making shoes, the steps which include producing an upper to have an outer ply and a liner, stitching a sock liner to the upper liner only such that a marginal portion of one of said liners projects beyond said stitching, securing said projecting marginal portion to the upper outer ply at points spaced beyond said stitching, inserting a last into the described assembly, turning under the projecting marginal portion of said one liner and the associated portion of the outer ply and securing the same beneath the sole liner, and adhesively securing an outsole to the turned under portion of said outer ply.

5. In a method of making shoes, the steps which include providing an upper to have outer

and lining plies, each provided with an extended lower marginal portion, stitching a sock liner to the upper lining ply only, such that the extended marginal portion of the lining ply projects beyond said stitching, securing together the marginal extensions of said upper plies at points spaced beyond said stitching, inserting a last into the described assembly, drawing, turning under and securing said marginal extensions beneath the sole liner, and adhesively securing an outsole to the turned under marginal extension of said outer ply.

6. In a method of making shoes, the steps including producing an upper having an outer ply and a lining ply each formed to provide an extended lower marginal portion, stitching a sock liner to the lining ply only, such that said marginal extensions project beyond said stitching, securing together the said marginal extensions, inserting a last into the foregoing assembly, securing an insole to the sock liner, drawing, turning under and securing said marginal extensions to the bottom surface of said insole and securing an outsole of said insole.

7. The herein described method of shoe manufacture which includes the steps of constructing an upper having an outer ply and a lining ply each formed to provide marginal portions that extend beyond the normal sole line, stitching a sock liner to the lining ply only, such that the said marginal extension of said ply projects beyond said stitching, stitching together the lower edges of the marginal extensions of said plies, inserting a last into the foregoing assembly, adhesively securing an insole to said sock liner, drawing the lasting allowance portions of said upper plies about the edges of said insole and adhesively securing the same to the bottom surface thereof, and thereafter securing an outsole to said insole.

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