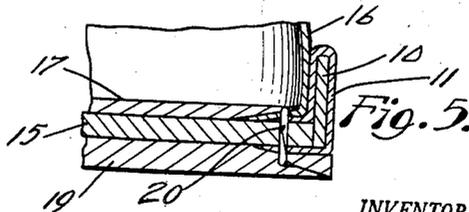
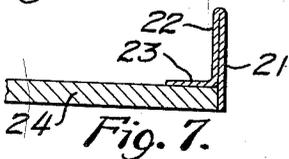
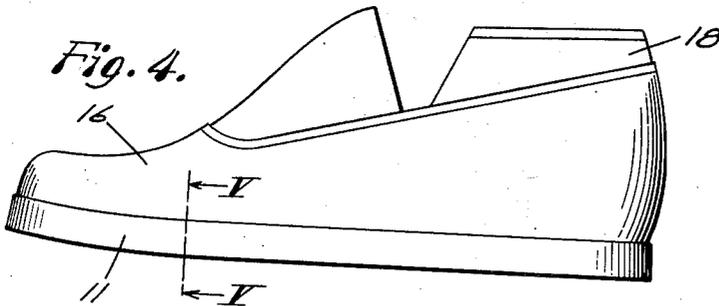
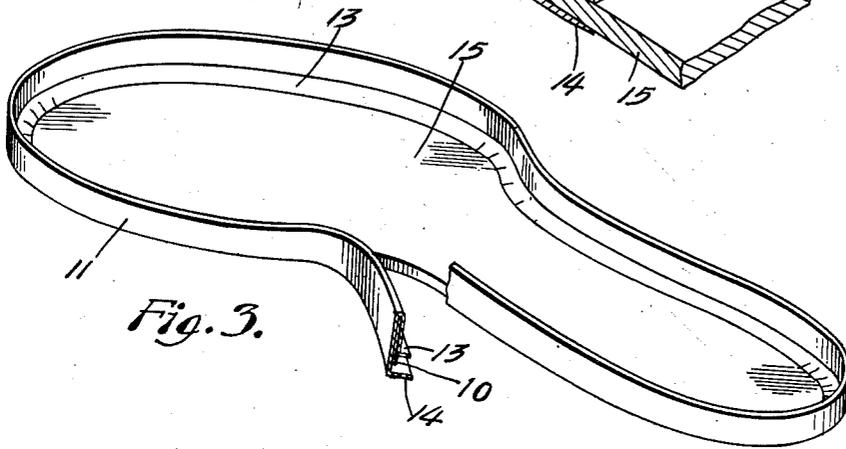
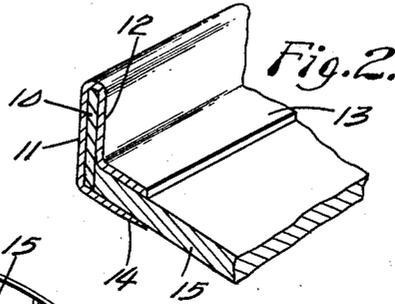
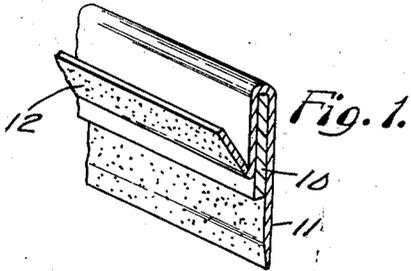


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PROCESS OF MAKING PLATFORM SOLES

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# UNITED STATES PATENT OFFICE

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## PROCESS OF MAKING PLATFORM SOLES

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3 Claims. (Cl. 12-146)

1

This invention comprises a new and improved process of making platform soles or shells of the type comprising a flat sole blank having an upstanding marginal wall which is designed to fit upon and enclose the lasted upper of the shoe.

Platform shoes as heretofore made have usually included a solid platform sole of substantially uniform thickness throughout. Such soles have been constructed of cork composition, sponge rubber, multi-ply felt or other fibrous or cushion materials, and have heretofore been a costly item for the shoe manufacturer and an objectionably heavy element in the finished shoes. However, platform shoes have taken the public fancy and are in great demand at the present time.

I have discovered a process of making a platform shell which at once makes available a light-weight platform at reduced cost and facilitates a wide range of variety in color, style, texture and finish of the shoe in which it is incorporated. Not only has the shell these advantages but it simplifies and reduces the cost of manufacturing shoes of the platform type by eliminating a number of manufacturing steps heretofore required in properly locating the platform in the bottom of the lasted shoe.

In one respect the process of my invention comprises the steps of preforming of binding material by coating one face of a ribbon or strip with an adhesive, folding into laminations and turning up the margin of one fold so as to expose either an enclosed core or the body of the strip if no core is employed. Then either the core or the body of the strip is brought into continuous contact with the marginal edge of a sole blank and adhesively secured thereto while one or both margins of the strip are turned in and secured to either or both faces of the sole blank.

The sole blank may be of inexpensive material, for example, fibreboard approximately 3 irons in thickness. One preferred procedure for erecting the upstanding wall is to provide a binding strip having a stiff but flexible ribbon-like laminated body, or a core partially enclosed in an adhesive cover of that material. The wall thus erected may have an over-all height of one-half inch for example or whatever height is required by the style of shoe in hand.

The platform shell constructed as described is then fitted upon the bottom of the lasted upper and is frictionally retained thereon accurately and in exactly the proper position for the sole; that is, it is impossible for the operator to assemble the lasted shoe with the platform shell except

2

in exactly the proper relation. The bottom of the shoe may then be completed by uniting the insole and the sole blank and in this operation an outsole may be conveniently included if desired.

The characteristics of my novel process will best be understood and appreciated from the following description of preferred procedures for carrying it into effect, selected for purposes of illustration and shown in the accompanying drawings in which:

Fig. 1 is a fragmentary view in perspective on an enlarged scale of a binding strip including a core,

Fig. 2 is a fragmentary view in section showing how the binding strip is attached to the margin of a sole blank,

Fig. 3 is a view in perspective of the completed platform shell showing a portion of the binding strip as detached from the sole blank,

Fig. 4 is a view in elevation of a completed shoe in which the platform shell is embodied,

Fig. 5 is a fragmentary sectional view on the line 5-5 of Fig. 4,

Fig. 6 is a fragmentary view in perspective of a binding strip without a core, and

Fig. 7 is a fragmentary view in section showing how this binding strip is attached to the margin of a sole blank.

The preferred form of binding strip for making the novel platform sole of my invention is well shown in Figs. 1 and 2. It comprises a core 10 of stiff but flexible ribbon-like material. This may be formed from several plies of strong, tough paper, or from fibreboard or any other fibrous material having the desired characteristics. In one satisfactory commercial form the core is about  $\frac{1}{2}$ " in depth,  $\frac{1}{8}$ " in thickness, and is made up of kraft paper folded or laminated in three or four plies. The core 10 is enclosed in a flexible cover strip of thin leather, or plastic or textile material, one face of which has been coated with an adhesive which may be activated by heat or pressure as desired. The binding is supplied to the manufacturer in the form shown in Fig. 1, that is to say, the outer portion or lamination 11 of the cover is adhesively attached to one face of the core and extends beyond it while the inner portion 12 of the cover is adhesively attached to the other face of the core throughout a portion only of its width and is then folded upwardly so that a portion of the core is exposed which approximates in width the thickness of the sole blank with which it is to be subsequently assembled. It will be seen

3

that the binding as a whole thus provided presents one surface which is free of adhesive, while the other face of the binding, as indicated by stippling in Fig. 1, has a coating of latent adhesive. This permits the binding strip to be wound in a coil for distribution without blocking and thus supplied to the manufacturer preformed and ready for immediate application to a sole blank.

In constructing the platform sole, a sole blank 15 is prepared which is substantially identical in shape to the insole or the bottom of the lasted upper with which the platform sole is to be used. The exposed portion of the core 10 is then brought progressively into contact with the edge of the sole blank 15, disposed at right angles thereto and in flush relation with the lower face of the blank. As this relation of core and blank is established, the lower margin of the outer portion 11 of the cover is folded inwardly over the bottom face of the sole blank 15 and adhesively attached thereto, and simultaneously the lower margin 13 of the inner portion 12 of the cover is conformed and adhesively secured to the upper face of the sole blank as indicated in Fig. 2. The binding strip as a whole is thus very securely attached to the sole blank and provides an upstanding wall which is stiff, somewhat resilient and self-sustaining, and which encloses a sole-shaped area accurately determined by the contour of the sole blank 15.

The completed platform sole is shown in Fig. 3, although in this figure a portion of the binding strip in the inside shank of the sole is represented as being pulled away to expose the edge of the sole blank 15 and the inturned flanges 13 and 14 of the cover. The operation of attaching the binding strip may be conveniently carried out in a continuous manner, starting at about the heel breast line at the inside shank edge of the sole blank, progressing about the contour of the sole blank, and returning to the starting point where either a lapped or a butted joint may be formed so that the wall presents a continuous smooth and unbroken appearance.

The platform sole above described may be incorporated in the finished shoe as suggested in Figs. 4 and 5. In these figures, an upper 16 is represented as being cement lasted to the bottom of an insole 17 upon a last 18. As already noted, the space enclosed by the upstanding wall of the platform sole coincides exactly with the contour of the lasted upper 16. The operator has now only to force the lasted upper into the space enclosed by the wall of the platform sole, and when the operation has proceeded as above outlined, it will be found that the lasted upper fits snugly within the wall of the platform sole so that these parts are temporarily held together in exactly the desired relation. If desired the insole 17 may be adhesively secured to the upper or inner face of the sole blank 15 and the interposed inturned margin 13 of the cover strip. Subsequently an outsole 19 may be laid and incorporated in the shoe bottom in any desired manner. As herein shown, however, the bottom is completed by withdrawing the last 18 and uniting the insole 17, the sole blank 15, and the outsole 19 by a line of McKay stitching 20 which shows inside the shoe and is concealed in a channel formed in the outer face of the outsole. It will be apparent that by assembling the binding strip with its core 10 directly and continuously engaged with the outer marginal edge of the sole blank, the upstanding wall is gauged accurately to the

4

exact contour of the sole, whereas if the core is located upon the flat face of the sole blank it is likely to be displaced transversely and may either overhang the edge of the sole or fall inside it with the result that a wrinkle appears in the exposed face of the platform.

The upstanding wall may be formed in very satisfactory manner from a binding strip such as that shown in Figs. 6 and 7 which is formed, without a core, from a flat ribbon or strip of heavy kraft paper or the like. This is first coated on one face with an adhesive, preferably a pressure sensitive adhesive, and the folded longitudinally into laminations 21 and 22. The fold is made so that the lamination 21 is of substantially less width or height than the lamination 22 together with the margin thereof which is shown in Fig. 6 as being turned outwardly and upwardly.

One entire flat face of the strip is initially coated with pressure sensitive cement and the plies 22 and 21 are thus permanently united when folded together while the under face of the margin flange 23 and the inner face of the lamination 21 are both exposed and are adhesive in character as indicated by the stippling in Fig. 6. In general the exposed width of the inner face of the lamination 21 is approximately equal to the edge thickness of the sole blank with which it is to be eventually assembled while the out-turned marginal flange 23 is of sufficient width to afford adequate adhesive area in the finished shell.

A special advantage of preparing the binding strip in this manner is that it may be coiled upon itself without juxtaposition of two adhesive surfaces. In a coil the outer nonadhesive face of the lamination 21 will rest upon the composite surface presented by the adhesive face of the flange 23 and the exposed adhesive inner face of the lamination 21. This facilitates the application by machinery of the binding strip to the edge of the sole blank.

In employing the binding strip of Fig. 6 to form an upright marginal wall in the platform shell the exposed inner adhesive face of the lamination 21 is brought continuously and progressively into contact with the marginal edge of a sole blank 24 which has previously had applied to its edge and to one face adjacent thereto a corresponding coating of adhesive. The exposed face of the lamination 21 is first pressed progressively into adhesive union with the edge of the sole blank 24 and the lower face of the longitudinal flange 23 is pressed into adhesive union with the top marginal face of the sole blank. The binding strip is thus securely held in erected position and when the entire periphery of the sole blank has been thus equipped the ends of the binding strip are cut off and butted to form a smooth continuous wall.

While the binding strip has been referred to as providing an upstanding wall approximately  $\frac{1}{2}$ " in height, it will be understood that the binding may be made  $\frac{3}{4}$ " or any desired height in accordance with the style of the shoe in which the platform sole is to be incorporated. As a further advantage of the construction herein disclosed and claimed, it will be noted that the binding strip may be applied to a sole blank of any desired thickness and that variations in the thickness of the blank may be accommodated without change of structure in the binding strip.

The binding strip may be applied to the sole blank progressively in a step by step manner by hand or preferably with the assistance of the machine disclosed and claimed in my copending

5

application Serial No. 177,187, filed August 2, 1950.

The precise manner of incorporating the shell of my invention into the shoe is of secondary importance and it may be cemented, stitched or wrapped in any desired part of the shoe bottom or upper in accordance with the type of shoe in which it is employed.

The present application is filed as a continuation-in-part of my copending application Serial No. 139,025, filed January 17, 1950, in which is claimed the shoe embodying the platform shell constructed in accordance with the process of this application.

Having thus disclosed my invention and described in detail illustrative procedures by which it may be carried out I desire to secure by Letters Patent:

1. The process of making platform soles characterized by the steps of presenting to the marginal edge of a flat sole blank a preformed binding which comprises a cover strip folded longitudinally and providing an intermediate body portion of at least double thickness and two edge free marginal portions coated with pressure-sensitive adhesive, contacting the edge of the sole blank with the body portion of the binding, adhesively securing one of the edge free portions to the upper face of the sole blank, and adhesively securing the other of said edge free portions to the lower face of the blank.

2. The process of making platform shells which is characterized by the steps of presenting to a flat sole blank a preformed binding comprising a flat strip folded longitudinally to form two

6

laminations adhesively united in an intermediate body portion and having two edge free margins adhesively coated and facing in the same direction, contacting the inner face of one lamination with the marginal edge of the sole blank and adhesively attaching it thereto, and simultaneously adhesively attaching the margin of the other lamination to the inner flat face of the blank, thereby erecting an upstanding self-sustaining wall about the blank.

3. The process of making platform shells which is characterized by the steps of presenting to a flat sole blank a preformed binding comprising a flat ribbon of tough sheet material folded longitudinally about a relatively stiff core and united thereto to form a solid body portion with edge free margins coated with adhesive and one folded to overlie the said body portion and expose the lower portion of the core, contacting the exposed portion of the core with the marginal edge of the sole blank, and adhesively attaching the coated margin of the cover strip of the opposite flat faces of the blank.

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