Oct. 11, 1949. H. W. ROLLMAN ET AL 2,484,743

METHOD FOR MAKING SLIP-LASTED FOOTWEAR

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Fig. 1

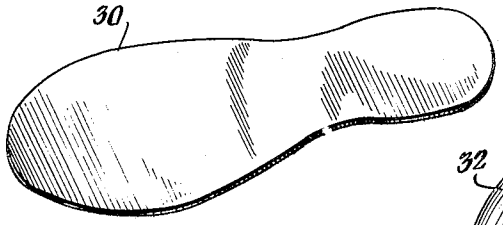


Fig. 2

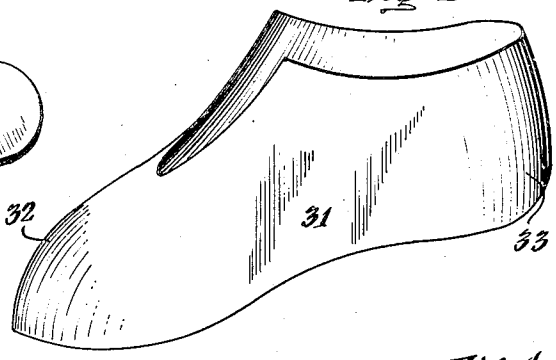


Fig. 3

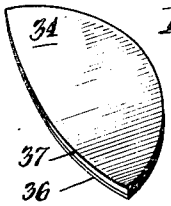


Fig. 5



Fig. 4

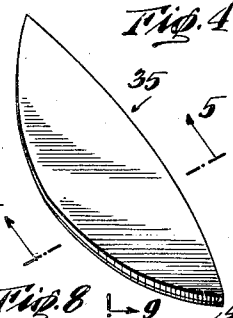


Fig. 6

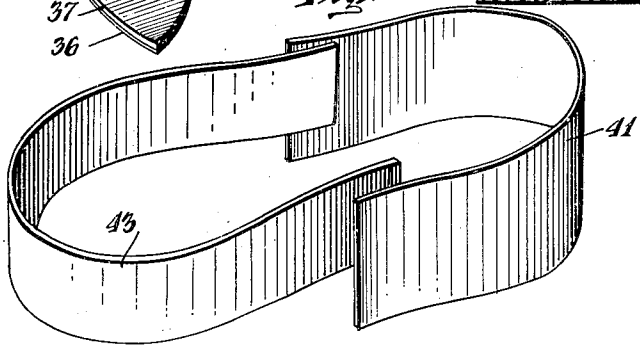


Fig. 8

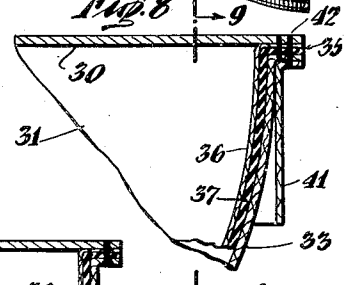


Fig. 7

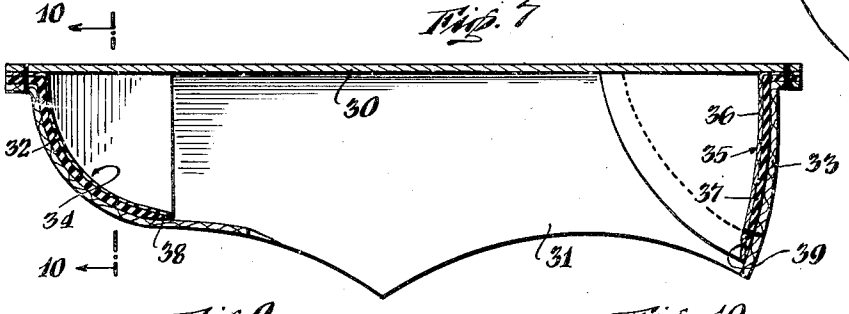


Fig. 9

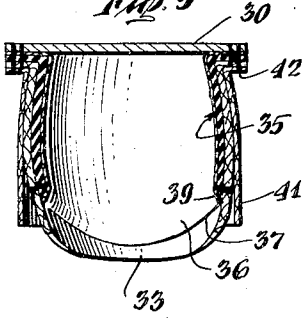
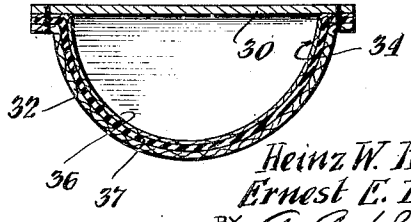


Fig. 10



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Fig. 11

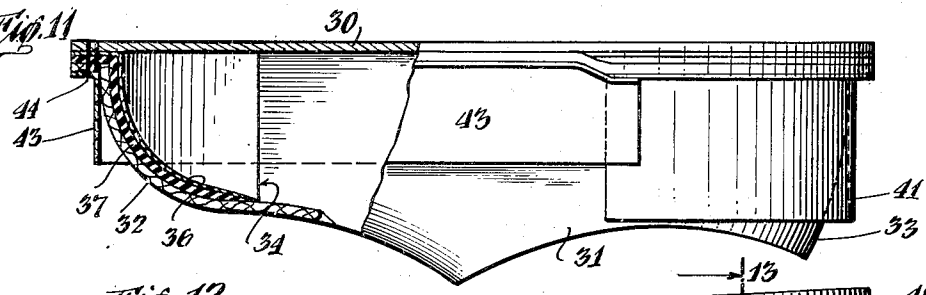


Fig. 12

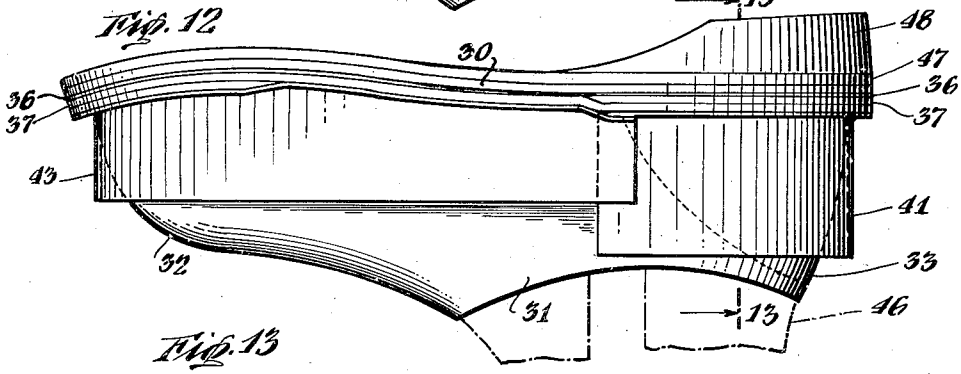


Fig. 13

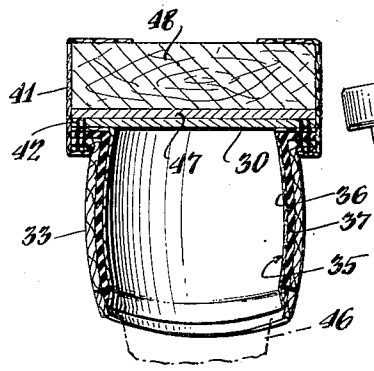


Fig. 14

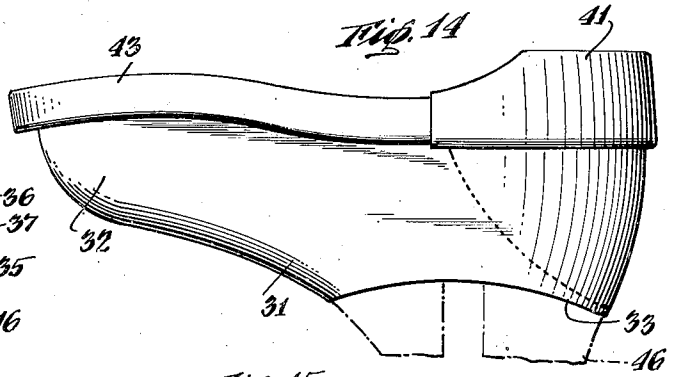
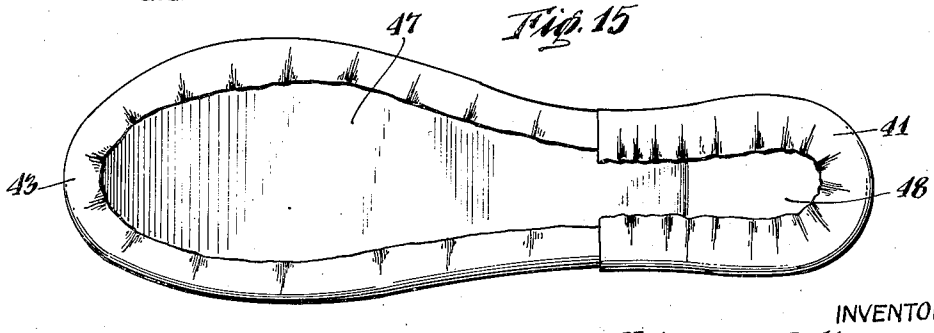


Fig. 15



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METHOD FOR MAKING SLIP-LASTED FOOTWEAR

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Application April 2, 1946, Serial No. 658,998

7 Claims. (Cl. 12—142)

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This invention relates to improvements in method for making slip-lasted footwear, and has for its principal object to provide an improved, resilient counter reinforcement therefor.

In the "slip-lasted" type of shoe, the body thereof is for the most part manufactured without the use of a last, being pre-formed of material previously cut to size and stitched together by conventional sewing machine operations, the last being employed as a support, rather than as a forming member, for applying the platform and sole to the inner sole or sock lining and for drawing the wrapper over the platform member and securing it thereto. In this type of shoe it is known to employ at the heel region around the back of the shoe a stiff or rigid counter which, while satisfactory to a certain degree, would be more suitable were the counter better conformed to the shape of the wearer's heel.

Accordingly, another object of the invention is to provide a moldable counter that is conformable in contour with the wearer's heel.

Still another object of the invention is to provide a thermo-setting counter which can be vulcanized to the upper more in conformity with the contour of the wearer's heel.

It is necessary, insofar as applicant is aware, in the manufacture of "slip-lasted" shoes of the closed-toe type, to form the shape of the toe in the upper by providing a seam longitudinally along the upper toe portion. This seam, in some instances, detracts from the appearance of the shoe and, accordingly, it is a further object of the invention to provide a seamless closed-toe in a "slip-lasted" shoe.

With the above objects in view, one embodiment of the invention discloses a closed-toe shoe of the "slip-lasted" type in which the heel and toe portions of the upper are each reinforced with a thermo-setting element, which is initially stitched to the upper and sock lining, the partially completed shoe then being placed on an adjustable last, which is adapted to heat or vulcanize the elements in conformity with the outline of the toe and heel portions of the last, the thermal operation at the same time also removing the stretch in the upper.

The invention may be more readily understood by reference to the following detailed description in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of an inner sole or sock lining;

Fig. 2 is a perspective view of an upper;

Fig. 3 is a perspective view of a flat, thermo-setting plastic element prior to attachment to the toe cap of the shoe;

Fig. 4 is a perspective view of a flat, thermo-setting plastic counter prior to attachment to the heel portion of the shoe;

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Fig. 5 is a sectional view taken along lines 5—5 of the thermo-setting plastic counter of Fig. 4;

Fig. 6 is a perspective view of front and rear platform cover strips shown in overlapping relationship at the ends thereof and as viewed from the sole side of the shoe;

Fig. 7 is a longitudinal sectional view showing the members of Figs. 1, 2, 3, and 4 in their assembled and stitched relationship;

Fig. 8 is a sectional view of the rear portion of Fig. 7 showing the rear cover strip stitched to the assemblage;

Fig. 9 is a sectional view of the heel portion of the shoe taken along line 9—9 of Fig. 8;

Fig. 10 is a sectional view of the toe portion taken along line 10—10 of Fig. 7;

Fig. 11 is a view, partially in section, showing the members of Figs. 1, 2, 3, 4, and 6 in assembled and attached relationship;

Fig. 12 is a side view of the shoe, which is shown mounted upon an adjustable last and which illustrates the shoe after the intermediate sole or platform member and intermediate heel have been added;

Fig. 13 is a sectional view taken along line 13—13 of Fig. 12 illustrating one phase of the manufacturing operation after the cover strips of Fig. 6 have been drawn about the edges and secured to the margin of the platform and intermediate heel;

Fig. 14 is a side view further illustrating the arrangement shown in Fig. 13;

Fig. 15 is a bottom plan view showing the platform member and intermediate heel with the cover strips drawn about the edges and secured to the margins thereof.

Referring now to the drawings, there is shown in Fig. 1 an inner sole or sock lining 30 consisting of a properly-shaped piece of thin, pliable fabric, or any other suitable material, upon which is superposed an upper 31, the material of which is cut and fabricated in accordance with well-known principles in the shape shown in Fig. 2. The upper 31 comprises a toe portion 32, preferably of the closed-toe type, and a back or heel portion 33, the open bottom edge of the upper being complementary with the outline of the inner sole 30. To preserve the outline or shape of the toe cap and to avoid the necessity of the conventional longitudinal seam, a resilient member 34 (Fig. 3) is added in a manner to be described hereinafter, while the heel portion 33 is reinforced by a resilient counter element 35 (Fig. 4). As shown sectionally in Fig. 5, the resilient counter 35, as well as the resilient toe element 34, comprises a fabric 36 secured, in any suitable manner, to a thermo-setting element 37, as by application of heat thereto. The element 37 may consist of calendered rubber, vulcanized to the fabric 36. It is desirable to use a resilient mate-

rial which may also be vulcanized and which is adapted, in the vulcanizing process, to be molded to conform with any particular shape and, after the molding operation, provide at the same time a resilient or flexible reinforcing member.

As shown particularly in Fig. 7, the ends 38 and 39 of the resilient elements 34 and 35, respectively, are skived to provide a smoother wearing surface at their points of engagement with the upper 31. The skived portion 39 of the counter 35 is first stitched to the upper 31 to provide the above-mentioned smooth surface at the joint. The inner sole or sock lining 30 is next stitched, preferably in one operation of a sewing machine to the resilient counter 35 and upper 31 at the heel, and thence stitched to the resilient toe element 34 and upper 31 at the toe portion (Fig. 10), the portion intermediate the toe cap and heel consisting merely of the upper 31 sewed to the inner sole 30. It is to be noted that the bare thermo-setting elements 37 of the members 34 and 35 are disposed next to the upper material 31 for ready adhesion thereto, as will be described hereinafter, the fabric 36 being exposed to the wearer's foot. From an appearance standpoint it is preferable that the fabric on the inside of the upper 31 and inner sole 30 be identical in design with that of the counter fabric 36. It will be further noted that the resilient elements 34 and 35 are, in their initial state, cut out of flat pieces of material and are then forced into position during the stitching operations, the free or intermediate portions thereof assuming an arbitrary contour or bulge not necessarily that of the shape of the upper 31 or wearer's heel. It is, of course, understood that the edge 39 of the counter 35 could be sealed to the upper 31 by say, a short application (two seconds) of heat under slight pressure, instead of the stitching operation.

The next step, as shown in Figs. 8 and 9, comprises adding a wrapper or platform covering strip 41 for the heel portion of the shoe, which extends from one side near the shank, around the back of the shoe, and thence to a corresponding point opposite the beginning. This wrapper 41, which has its outer or finished surface disposed inwardly to face the inter-surface of the upper 31, is secured by a second stitch 42, which combines the sock lining 30, counter 35, and upper 31 in one assembly. A front wrapper or platform covering strip 43 is next added (see Fig. 11) and is secured by a stitch 44 to the assembly comprising resilient element 34 and upper 31. As shown in Figs. 11 and 12, the ends of the wrapper 43 overlap the ends of the wrapper 41. While separate stitches may be employed in securing the two wrappers to the body of the shoe, it may be preferable to secure one portion of the rear wrapper 41 and then, by a separate stitch, entirely secure both wrappers in one stitching operation.

It is thus seen that up to and including the preceding step in the manufacture of "slip-lasted" shoes, the shape and size of the shoe is predetermined particularly by the size and shape of the sock lining, upper, counter, etc., which have been prepared on the conventional sewing machine. No last is, therefore, necessary to determine size of the shoe in this method of fabrication.

In order to add the remaining elements to the shoe body and to facilitate the further operations, the assemblage in Fig. 11 is then placed upon a last 46. This last 46, as will be described hereinafter in greater detail, is of an adjustable type to facilitate placing the assemblage thereover without unduly stretching the component parts, particularly the upper 31. Heretofore, with an integral last of predetermined size, it has been customary to stretch the upper 31 and other component parts thereover with consequent harmful results. Accordingly, the last 46 is first reduced in length, the shoe assembly fitted thereover, and the last expanded to its normal length, as determined by the size of shoe being manufactured.

After the assemblage has been placed on the above-mentioned adjustable last 46, a platform element 47 of any suitable material, such as felt or the like, is suitably secured to the outer side of the sock lining 30. The platform 47 preferably conforms with the size and shape of the sock lining 30. Superposed upon the platform 47, extending from the back and ending approximately at the shank of the shoe, is an intermediate tapered heel member 48, preferably of light and inexpensive material, such as wood, which is adhesively secured to the platform member 47. In the next step, the wrapper elements 41 and 43 are drawn tightly over the sides of the platform 47 and intermediate heel 48, respectively, and the free ends thereof are then adhesively secured to margins of the platforms 47 and heel 48, resulting in the arrangement shown in Figs. 13, 14, and 15.

Returning now to the resilient or thermo-setting elements 34 and 35, the next step is preferably to integrate or mold these elements to the upper 31 in conformity with the shape or contour of the last, the toe and heel portions of which conform with that of the wearer. This is done by heating the last in any suitable manner, as will be explained hereinafter, to a predetermined temperature of approximately 250° to 300° F. This temperature, which is substantially lower than the vulcanizing temperature normally employed in practice, is particularly adapted for molding the thermo-setting material to the shape and contour of the last 46. In other words, the material, after having been heated and molded to the contour of the last, will provide a resilient reinforcing element for supporting the upper at both the toe and heel portions. At the same time the stretching characteristic of the upper 31 is removed, i. e. the material is shrunk, during the heating operation. Explained otherwise, the combination of the heat with the stretch produces a blocking effect, similar to that found in hat blocking.

While the above description pertains to that of a closed-toe type of "slip-lasted" shoe, it is, of course, understood that in the open-toe type of "slip-lasted" shoe the resilient element 34 would not be required, resilient counter 35 being only employed. It is thus seen that use of a resilient counter provides an improved support for the heel portion of the shoe, while the resilient reinforcement for the toe cap eliminates the longitudinal seam heretofore required.

Thus, it will be apparent that among others the objects of the invention, as especially aforementioned, are achieved. Obviously, changes in the fabrication of the shoe and in the construction and rearrangement of the parts of the shoe last might be resorted to without departing from the spirit of the invention, as defined by the claims. For example, a pocket could be provided in the heel portion of the upper for the resilient counter stiffener by stitching the upper edge of a leather counter, slightly larger than the resilient counter stiffener, to the upper and then slipping in from

the bottom a resilient counted stiffener, after which the upper is attached to the sock lining. In this case, the resilient counter does not require the textile reinforcement.

What is claimed is:

1. The method of manufacturing a slip-lasted shoe having a closed-toe which comprises the steps of sewing the upper portion of the thermo-setting counter of vulcanizable material to the rear portion of an upper, sewing to the margin of an inner sole the lower edges of the upper, a toe-cap reinforcing element of thermo-setting vulcanizable material, and the thermo-setting counter, thereafter mounting the assembly upon an adjustable last and expanding the last and imparting heat through said last to the assembly, whereby said thermo-setting reinforcing element and counter are vulcanized to the upper and whereby the stretch in said upper is removed.

2. The method of manufacturing a slip-lasted shoe which comprises providing an upper, an inner sole, and a resilient counter of vulcanizable material; sewing the lower edges of the upper and counter to a margin of the inner sole; stitching a platform wrapper around the previously sewed stitch; placing the above assembly over a last, which is capable of imparting heat to the assembly; securing a platform to the outer surface of the inner sole; drawing the wrapper over the platform, securing the edges of the wrapper to the platform, and vulcanizing the counter to the upper.

3. The method of manufacturing a slip-lasted shoe which comprises providing an upper, an inner sole, and a resilient counter of vulcanizable material; sewing the lower edges of the upper and counter to a margin of the inner sole; stitching a platform wrapper around the lower portion of the upper; placing the above assembly over a last, which is capable of imparting heat to the assembly; adhesively securing a platform to the outer surface of the inner sole; adhesively securing an intermediate heel to the platform, drawing the wrapper over the platform and heel, securing the edges thereof to the platform and heel margins, and vulcanizing the counter to the upper.

4. The method of manufacturing a slip-lasted shoe of the closed-toe type which comprises the steps of stitching to an inner sole the lower edges of an upper, a thermo-setting counter of vulcanizable material for the heel portion, and a thermo-setting reinforcing element of vulcanizable material for the toe cap; stitching a platform wrapper to and completely around the lower edge of the upper, with the outer face of said wrapper contacting the outer face of said upper; mounting the above assembly on a last, which is adapted to apply heat thereto; applying heat to the thermo-setting counter and element until they have been vulcanized to the upper; securing a platform to the bottom surface of said inner sole; drawing the platform wrapper tightly about the edges of said platform and adhesively securing them thereto; and thereafter securing sole and heel members in underlying relation to the platform.

5. The method of manufacturing a slip-lasted shoe of the closed-toe type which comprises the steps of stitching the upper portion of a thermo-setting counter of vulcanizable material to an upper; stitching to an inner sole the lower edges

of the upper, the thermo-setting counter, and a thermo-setting plastic reinforcing element of vulcanizable material for the toe cap; stitching platform wrapper portions to the lower edge of the upper, with the outer face of said wrapper portions contacting the outer face of said upper; mounting the above assembly on an adjustable last, which is adapted to apply heat thereto; applying heat to the thermo-setting counter and element until they have been vulcanized to the upper; adhesively securing a platform to the bottom surface of said inner sole; adhesively securing an intermediate heel to the platform; drawing the platform wrapper portion about the edges of said platform and heel and adhesively securing them thereto; and thereafter securing sole and heel members in underlying relation to the platform and intermediate heel.

6. The method of manufacturing a slip-lasted shoe comprising the steps of stitching associated edges of an inner sole, an upper, and a counter of thermo-setting vulcanizable material together to form the body of a shoe, stitching a wrapper to said upper and inner sole, placing said shoe body upon a longitudinally adjustable last, which is first shortened and then set to the proper size in order to prevent undue stretching of the body, adhesively securing a platform member to the outer surface of said inner sole, securing an intermediate heel member to said platform, drawing said wrapper over the edges of said platform and heel member and adhesively securing the free edges thereof to the margins of the platform and heel member, applying heat to the counter for vulcanizing it to the upper, thereby providing a resilient reinforcement conforming in contour with the last, and thereafter applying a sole and heel to the platform and intermediate heel member.

7. The method of manufacturing a slip-lasted shoe which comprises providing an upper, an inner sole, and a resilient counter of vulcanizable material; sewing the lower edges of the upper and the reinforcing member to a margin of the inner sole; stitching a platform wrapper around the previously sewed stitch; placing the above assembly over a last, which is capable of imparting heat to the assembly; securing a platform to the outer surface of the inner sole; drawing the wrapper over the platform, securing the edges of the wrapper to the platform, and vulcanizing the reinforcing member to the upper.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
939,212	Buch	Nov. 9, 1909
1,788,389	Garrett	Jan. 13, 1931
1,823,232	Beckwith	Sept. 15, 1931
2,215,924	Grundman	Sept. 24, 1940
2,354,797	Cocozella	Aug. 1, 1944
2,370,502	Stratton	Feb. 27, 1945
2,394,707	Maling	Feb. 12, 1946
2,402,727	Bonyhady	June 25, 1946
2,404,586	Maling	July 23, 1946
2,406,738	Brophy	Sept. 3, 1946
2,414,104	Kamborian	Jan. 14, 1947