July 4, 1950 H. S. LYNESS 2,513,501

MANUFACTURE OF FLEXIBLE SOLE SHOES

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Fig. 1

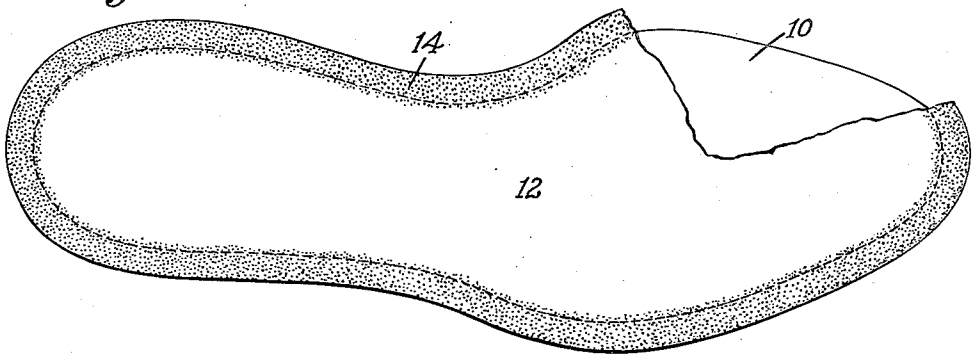
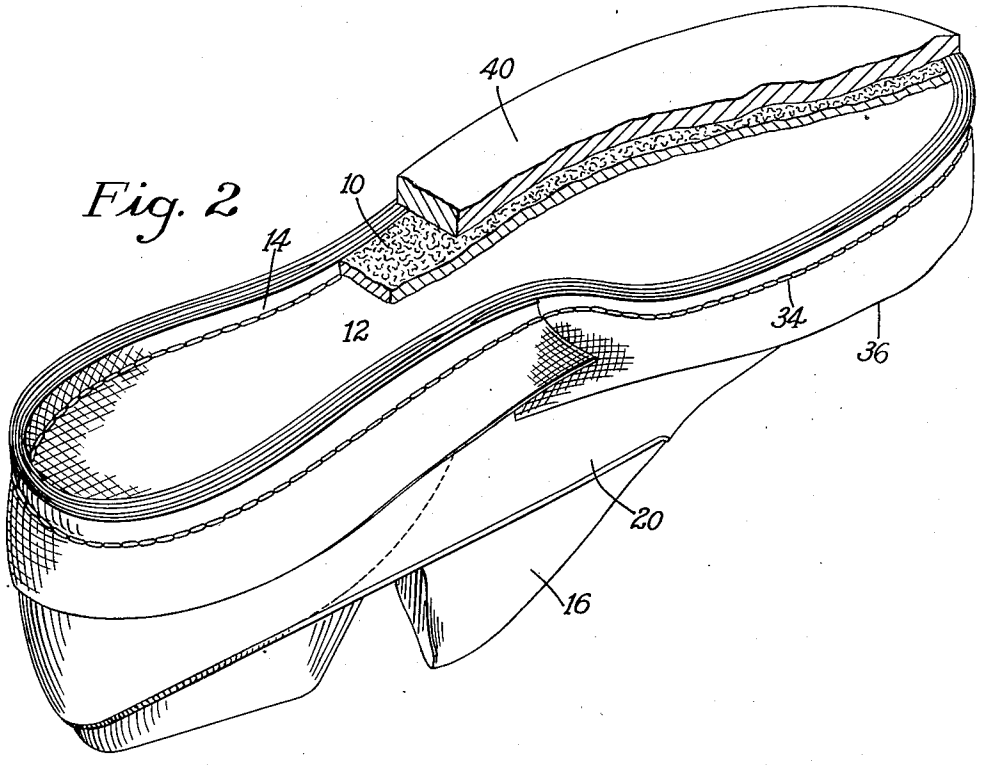


Fig. 2



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Fig. 3

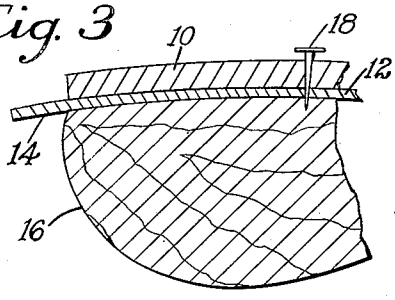


Fig. 4

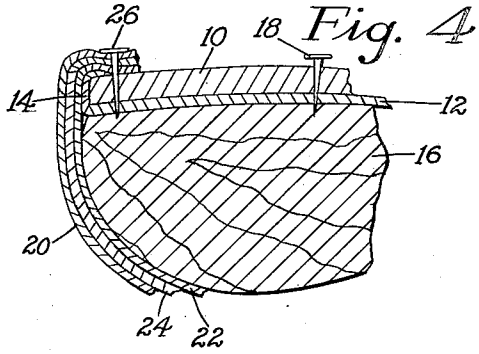


Fig. 5

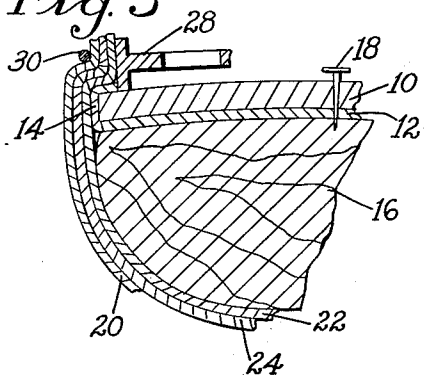


Fig. 6

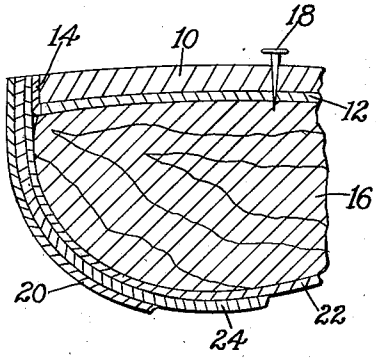


Fig. 7

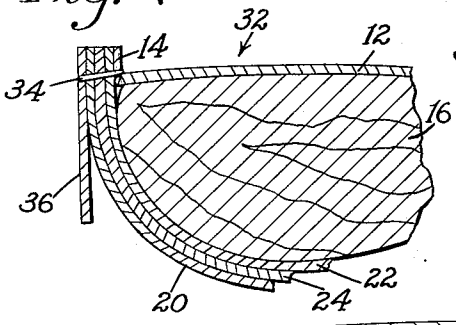


Fig. 8

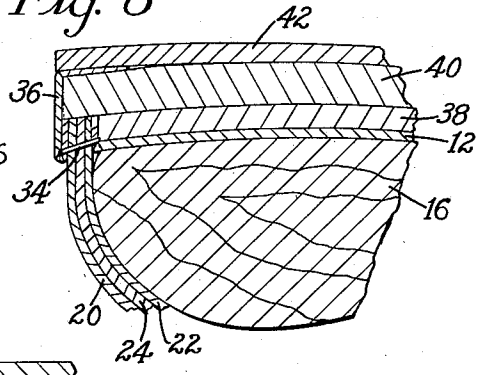
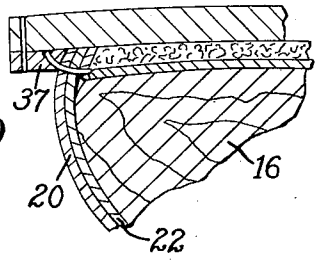


Fig. 9



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UNITED STATES PATENT OFFICE

2,513,501

MANUFACTURE OF FLEXIBLE SOLE SHOES

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Application March 5, 1948, Serial No. 13,128

3 Claims. (Cl. 12—142)

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This invention relates to the manufacture of shoes and is herein illustrated in its application to methods of making shoes characterized by the comfort and flexibility of the shoe bottom constructions.

In the manufacture of slip-lasted shoes so called, the usual leather insole is omitted and a thin innersole, usually referred to as a sock lining, is employed, said sock lining being stitched to the bottom margin of the upper. Shoes of this type are commonly provided with resilient bottom filler members or cushion soles and are characterized by their comfort and flexibility. This type of shoe manufacture does not lend itself readily to the construction of shoes having closed uppers. Furthermore, slip-lasted shoes usually lack the shapely appearance characteristic of lasted footwear, and largely for that reason, they have been regarded as a low grade product.

It is an object of the present invention to achieve in lasted shoe constructions the same degree of comfort and flexibility which has been provided heretofore in slip-lasted shoes.

With this object in view the present invention, in one aspect thereof, consists in an improved method of making shoes which comprises assembling together a filler which has the shape and dimensions of a last bottom and a sock lining which is preferably of the type employed in the manufacture of slip-lasted shoes and has a margin extending outwardly from the edge of the filler when assembled therewith. After attaching the filler and sock lining assembly temporarily to a last bottom an upper, preferably a closed upper having a box toe and a counter, is assembled on the last in any approved manner, whereupon the upper is shaped over the last in accordance with any suitable practice. In the upper shaping operations, the outwardly extending marginal portion of the sock lining is wiped inwardly over the margin of the filler with the lasting margin of the upper, and said marginal materials are held in overwiped position, for example, by temporary lasting fastenings, until suitable adhesive stiffening means applied to or incorporated in the upper and the margin of the sock lining has hardened or set to retain the disposition of said marginal materials. After the stiffening means has set, the temporary fastenings are removed and the marginal materials are trimmed flush with the exposed surface of the filler. The filler is then removed from the shoe bottom to permit the marginal materials to be permanently secured together, preferably

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by stitches. This is followed by the insertion into the shoe bottom of a filler which may be the filler which was previously removed therefrom or, if desired, may be another filler made of a flexible and resilient material which would not provide a suitably firm margin over which to last the marginal materials of the upper and the sock lining but would provide a highly desirable filler material. From this point the construction of the shoe proceeds in accordance with any established practice. For stiffening the lasted margins of the upper and the sock lining I prefer to employ in the toe portion of the shoe a stiffener or box toe of the type which is initially flaccid and ultimately sets to the shape of the last and becomes adhesively attached to the upper and the sock lining, and at the side portions of the shoe the stiffening effect is produced by the adhesive provided for attaching the margin of the sock lining to the upper. In shaping the upper over the last and the filler piece I prefer to employ conventional machines now provided for that purpose and I secure the upper in shaped position in any approved manner by temporary fastenings which may be readily removed preparatory to the trimming operation. Shoes made in accordance with the method above described may, if desired, be provided with platform soles in which case a suitable wrapper is attached to the margin of the upper, preferably by the fastenings which secure the upper to the sock lining. If a full length platform sole is to be provided the wrapper extends about the entire periphery of the shoe. If, on the other hand, the platform is to terminate at the ball line, the wrapper extends about the forepart and toe portion of the shoe only. It will be understood that the shoe may be completed by the Goodyear welt process, if desired, in which case an outsole attaching welt, rather than a platform wrapper, is attached to the margins of the upper and the sock lining.

The invention will now be described with reference to the accompanying drawings which illustrate various steps in the manufacture of a platform shoe in accordance with my preferred method.

In the drawings,

Fig. 1 is a plan view illustrating an assembly of a sock lining and a filler employed in the practice of the present invention;

Fig. 2 is a perspective view illustrating a partially completed shoe in which the filler and the platform sole are broken away;

Fig. 3 is a cross section through the forepart

of a last having attached thereto the assembly illustrated in Fig. 1;

Fig. 4 is a cross section similar to Fig. 3 showing a portion of an upper pulled over the last;

Fig. 5 is a cross section at the toe similar to Fig. 4 showing the work as it appears at the end of the lasting operation;

Fig. 6 is a cross sectional view showing the upper and sock lining as they appear after the trimming operation;

Fig. 7 is a cross sectional view showing the shoe without the filler and showing the margins of the upper materials, the sock lining and a wrapper attached together by stitches;

Fig. 8 is a cross sectional view through the forepart of the completed shoe; and

Fig. 9 is a cross sectional view through the forepart of a completed shoe having an outsole-attaching welt secured to the margins of the upper materials in place of the wrapper shown in Figs. 7 and 8.

Referring to Fig. 1 the numeral 10 identifies a filler having the same shape and the same dimensions as the bottom of a last of a corresponding foot size. Assembled with the filler and adhesively attached thereto is a sock lining 12 having an outwardly extending margin 14 the upper attaching surface of which is coated with cement. In the practice of my preferred method the assembly illustrated in Fig. 1 is mounted on the bottom of an inverted last 16 (Fig. 3) with the filler uppermost and with the edge face of the filler arranged to register accurately with the edge of the last bottom. The filler and sock lining assembly is temporarily attached to the last by means of tacks one of which is identified by the numeral 18 in Fig. 3. A closed upper provided with a box toe and a molded unflanged counter is now assembled on the last 16. As shown in Fig. 4, the upper comprises an outer portion 20, a lining 22, and a box toe 24 positioned between the outer portion 20 and the lining 22. Preferably the box toe is of the type which is flaccid when inserted into the upper and gradually stiffens after the upper has been mounted on the last and in so stiffening becomes adhesively attached to the upper and the lining.

After assembling the upper on the last the upper is pulled over in any known manner and secured in pulled over position by means of tacks one of which is identified by the numeral 26 in Fig. 4. The toe portion of the upper is then lasted either manually or by any suitable toe lasting machine and secured in lasted position by temporary or removable fastening means. In Fig. 5 the toe portion of the upper is shown lasted against an abutment member 28 and held against said abutment member by a removable binding wire 30. The side portions and the heel end portion of the upper are then lasted in any known manner and are secured in lasted position by tacks or other suitable removable fastening means.

In the course of the pulling over and lasting operations the margin 14 of the sock lining projecting outwardly from the edge face of the filler is bent upwardly against the edge face of the filler and inwardly over the exposed bottom surface thereof into its position illustrated in Figs. 4 and 5. The margin of the upper lining 22 which engages the margin of the sock lining is treated with cement to cause said parts to adhere to each other. At the toe portion of the upper the outer portion 20 and the lining 22 adhere to the box toe 24 and similarly in the heel portion of the shoe a molded unflanged counter (not shown) is coated with paste which causes it to adhere to the lining and the outer portion of the upper. Along the side portions of the shoe between the box toe and the counter the margins of the outer portion of the upper and the lining are secured together by cement applied to their mutually contacting surfaces. After the box toe has set and the counter attaching paste and the cement along the side portions of the upper have set and hardened to secure the shoe parts together permanently the lasting fastenings are removed and the upwardly projecting margins of the shoe upper materials are trimmed substantially flush with the exposed surface of the filler 10, as shown in Fig. 6, the trimming operation being performed manually or by any suitable machine. The tacks which temporarily attach the filler and the sock lining to the last bottom are then pulled whereupon the filler is removed from the shoe bottom leaving the recess or cavity 32 shown in Fig. 7. The upwardly projecting margins of the sock lining and the shoe upper materials are then permanently secured together by stitches 34. In the course of the stitching operation a wrapper 36 (Fig. 7) may be secured to the outer portion of the upper, or if desired an outsole-attaching welt 37 (Fig. 9) (not shown) may be secured to the upper. A filler 38 (Fig. 8) is now inserted into the recess in the shoe bottom. This may be the same filler which was previously removed from the shoe bottom or it may, if desired, be a filler of a different type from that employed in the lasting operations. For example, the filler 38 may, if desired, be a cushion material such, for example, as felt which would not provide a suitably firm margin for the previous lasting operations but would enhance shoe comfort and flexibility. The shoe may be completed by wiping the wrapper 36 inwardly over the edges of the upper materials and the sock lining and the margin of the filler 38 and attaching an outsole to the shoe bottom or, alternatively, a platform sole 40 having a margin extending outwardly to the wrapper 36 may be laid on the shoe bottom as shown in Fig. 8. In this case the wrapper 36 is wiped upwardly against the edge face of the platform sole and inwardly over the bottom margin thereof whereupon an outsole 42 is cement attached or otherwise secured to the shoe bottom.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. That method of making shoes which comprises assembling a filler of last bottom dimensions and a sock lining having a margin extending outwardly beyond the edge face of the filler and coated with adhesive on its upper-attaching surface, temporarily attaching the assembly to a last bottom, assembling an upper on the last, shaping the upper over the last, wiping the bottom margin of the upper together with the margin of the sock lining over the margin of the filler, holding the upper in shaped position on the last until the adhesive applied to the margin of the sock lining sets to retain the adhesively united margins in lasted position, trimming the upper and the sock lining flush with the exposed surface of the filler, removing the filler from the shoe bottom, sewing together the sock lining and the upper, inserting a filler, and completing the shoe.

2. That method of making shoes which comprises assembling a filler of last bottom dimen-

sions and a sock lining having a margin which extends outwardly beyond the edge face of the filler when assembled therewith, temporarily attaching the assembly to a last bottom, assembling on the last an upper provided with a stiffener of the type which is initially flaccid and ultimately sets to the shape of the last and becomes adhesively attached to the upper, shaping the upper over the last, wiping the bottom margin of the upper together with the margin of the sock lining over the margin of the filler, holding the upper in shaped position on the last until the stiffener sets, trimming the upper and the sock lining flush with the exposed surface of the filler removing the filler from the shoe bottom, permanently fastening together the upper and the sock lining, inserting a filler into the shoe bottom, and completing the shoe.

3. That method of making shoes which comprises assembling a filler of last bottom dimensions and a sock lining having a margin extending outwardly beyond the edge face of the filler

when assembled therewith, said margin having been coated with adhesive, temporarily attaching the assembly to a last bottom, assembling on the last a lined upper provided with a stiffener which is initially flaccid and ultimately stiffens to the shape of the last and becomes adhesively attached to the upper and the lining, shaping the upper over the last, wiping the bottom margin of the upper together with the margin of the sock lining over the margin of the filler, holding the upper in shaped position on the last until the stiffener sets and until the adhesive applied to the margin of the sock lining has bonded said margin to the upper lining, trimming the upper and the socking lining flush with the exposed surface of the filler, removing the filler from the shoe bottom, fastening together the sock lining and the upper, inserting a filler, and completing the shoe.

HORATIO S. LYNESS.

No references cited.