Dec. 20, 1960 L. SILLMAN ET AL 2,964,766

METHOD OF MAKING STITCHDOWN SHOE

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FIG. 1.

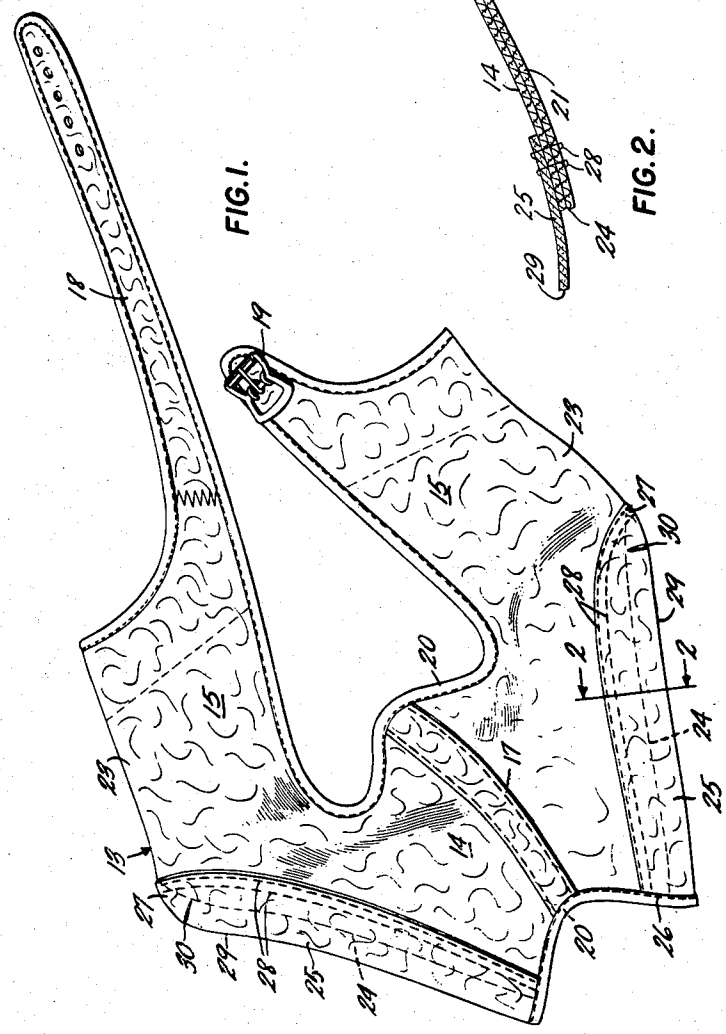


FIG. 2.

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FIG. 3.

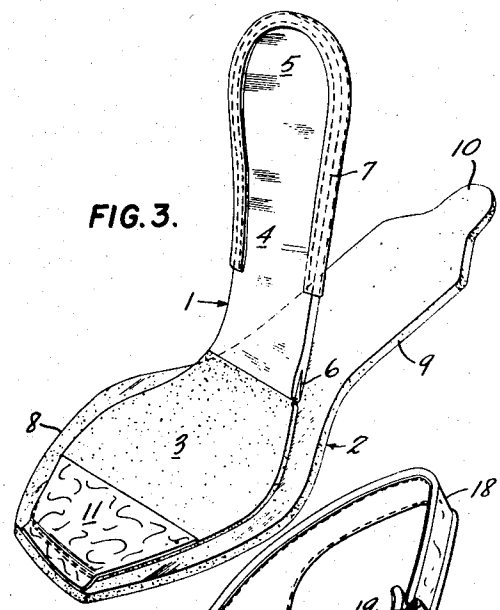
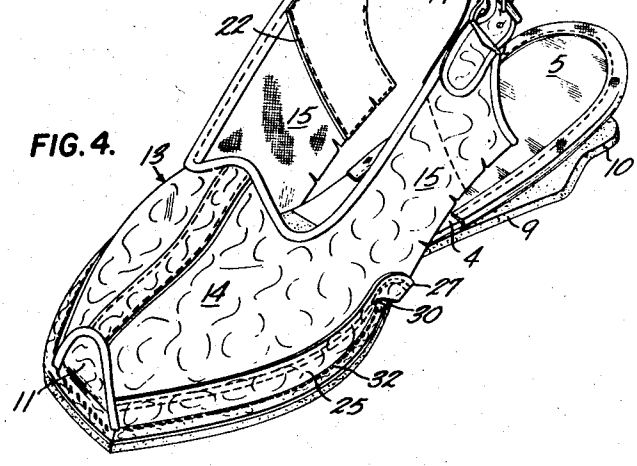


FIG. 4.



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FIG.5.

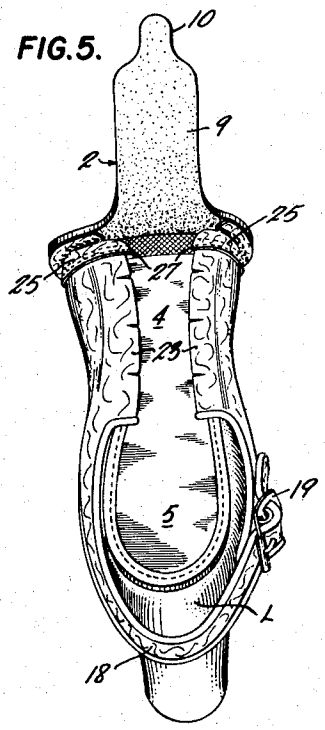
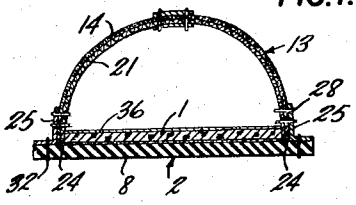


FIG.7.



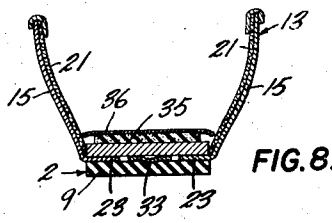


FIG.8.

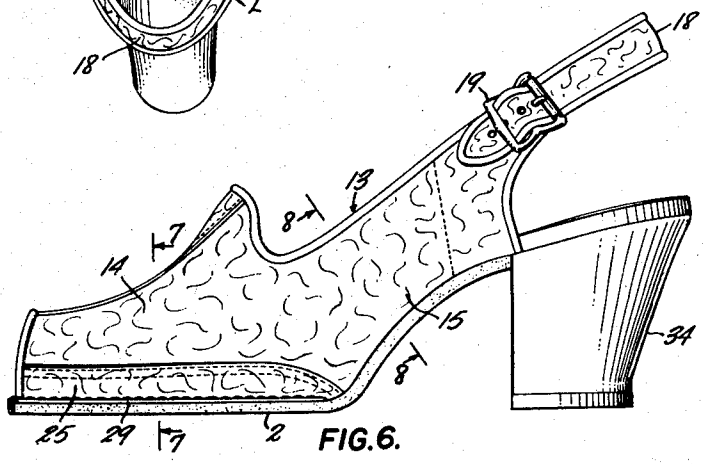


FIG.6.

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METHOD OF MAKING STITCHDOWN SHOE

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Original application Oct. 5, 1955, Ser. No. 538,666, now Patent No. 2,841,891, dated July 8, 1958. Divided and this application July 3, 1958, Ser. No. 746,417

3 Claims. (Cl. 12—142)

The present invention relates to making shoes particularly ladies' shoes of the type customarily referred to as walking shoes. This application is a division of our copending application, Serial No. 538,666, filed October 5, 1955, now Patent 2,841,891.

It is an object of the present invention to make a shoe which is flexible and lightweight and is yet of sturdy, long wearing construction. A further object of the invention is to produce serviceable and comfortable walking shoes that fit the foot snugly and have a neat light-looking appearance. The invention further provides an improved method of manufacture whereby quality shoes can be produced at a lower cost.

The nature, objects and advantages of the invention will be more fully understood from the following description and claims in conjunction with the accompanying drawings which illustrate a preferred embodiment. In the drawings:

Fig. 1 is a perspective view of an upper of a shoe made according to the invention.

Fig. 2 is a fragmentary section taken approximately on the line 2—2 in Fig. 1.

Fig. 3 is a perspective view of a preassembled insole-outsole unit.

Fig. 4 is a perspective view illustrating one step of attaching the upper to the sole unit.

Fig. 5 is a perspective view illustrating a further step, the partially completed shoe being shown on a last and inverted.

Fig. 6 is a side view of a completed shoe.

Figs. 7 and 8 are cross sections taken respectively on lines 7—7 and 8—8 in Fig. 6.

As illustrated in Fig. 3, an insole 1 and outsole 2 are preassembled by adhesively uniting them at their toe portions only. The insole 1 has a ball portion 3 formed of a cushion material for example a cork composition, and a shank portion 4 and a heel portion 5 formed integrally of a bendable, yet firm and relatively hard material for example fiber board or leather. The shank and ball portions are adhesively joined in a V-type dove tail joint 6 so that the entire insole is essentially of integral construction. Edges of the shank and heel portions of the insole are finished with a stitched-on binding 7. The outsole 2 is formed of flexible, firm wear-resisting material for example, leather or a plastic or rubber composition and comprises a ball portion 8, shank portion 9 and a tongue-like heel portion 10 of reduced width. The insole and outsole are united only at the toe and forward portion of the ball, the rear ball portions and shank portions being left free. The ball portion of the outsole is larger than that of the insole and projects beyond the edges of the insole approximately ¼ to ⅜ inch. The shank portions of the insole and outsole are approximately the same width. A cover 11 of "upper" material, for example leather, fabric or plastic, overlies the toe portion of the insole and the forwardly projecting toe portion of the outsole.

An upper 13 (Fig. 1) is fabricated from suitable "upper" material for example leather, fabric or plastic cut accurately to a selected pattern and comprises a vamp portion 14 and quarter portions 15. The upper is shown as being fabricated from two main pieces of material joined by a strip 17. A heel strap 18 attached to the rear of one of the pieces is received by a buckle 19 mounted on the upper rear portion of the other piece. Edges of the upper that are exposed in the completed shoe are suitably finished, for example by stitched binding 20. The upper preferably has a lining 21 (Fig. 7) and heel lining 22 (Fig. 4) formed of fabric, light leather or other suitable material. The quarter portions of the upper are cut to provide a lasting allowance 23 (see also Figs. 5 and 8). The vamp portion 14, on the contrary has no lasting allowance, opposite side edges 24 being cut accurately to pattern so that in the completed shoe (Fig. 7) they require little or no trimming.

The upper is shown as further comprising mudguard strips 25 (Figs. 1 and 2) secured to the opposite side edge portions of the vamp 14. The mudguard strips 25 extend from the open toe 26 to the junction of the vamp 14 with quarter portions 15 and are accurately cut from suitable "upper" material, being substantially straight and of uniform width except for tapered rear end portions 27. The strips 25 overlie side edge portions of the vamp 14 and are securely united with the vamp, for example by adhesive and by stitching 28. The outer edges 29 of the mudguard strips 25 project approximately ¼ inch beyond the lateral edges 24 of the vamp 14, it being understood that this distance may vary by perhaps ⅛ inch according to the particular style and size of the shoe being made. In cutting the mudguard strips 25, a slit 30 is formed approximately ½ inch from the rear end of the strip and extends inwardly from the outer edge 29 to approximately the respective lateral edge 24 of the vamp. The mudguard strips 25 are unlined. It will be understood that instead of having separate mudguard strips as shown in the drawings, the corresponding portions may be formed integrally with the vamp portion of the upper.

After completion of the upper as described, the upper 13 including the attached mudguard strips 25 as illustrated in Fig. 1, is assembled with the insole-outsole unit shown in Fig. 3. To facilitate assembly of the upper and sole units, the inner faces of the projecting mudguard strips 25 and the upper surfaces of the projecting outsole portions are coated with adhesive to make them tacky. The projecting portions of the guard strips forward of the slits 30 are bent outwardly and pressed into place along the outwardly projecting edge portions of the sole so as to hold the upper temporarily in place on the sole unit as illustrated in Fig. 4. The sole is provided with nicks to indicate where to place the upper. The vamp portion of the upper is then permanently attached to the ball portion of the sole by stitching 32 which passes through the outsole and the outturned edge portions of the mudguard strips 25 and extends from one of the slits 30 forwardly, across the toe and then rearwardly to the other of the slits 30. The slits 30 thus define the beginning and ending of the stitching and facilitate the stitching operation. It will be noted that at the toe of the shoe, the stitching 32 passes through the forward portion of the material 11 covering the toe portions of the insole and outsole, thereby further securing the covering material. As the edges of the vamp portion 14 and line 21 are not turned outwardly and stitched to the outsole with the guard strip 25, the edge of the sole and the finished shoe has a lighter, neater appearance and no moisture can soak in through the lining since the edge of the lining is not exposed. Moreover, since the vamp portion of the upper is not

lasted, the ball portions of the outsole and insole are not separated by lasting allowances of the upper but come directly together to provide a smooth, flat, lightweight and flexible construction. Moreover, the edges **24** of the vamp are not exposed but are held between the guard strips **25** and the edges of the insole **1**. The insole is sufficiently thick, for example ⅛ inch, to form with the mudguard strips a recess to receive the edges of the vamp. The inside of the upper as well as the sole thus presents a smooth surface which contributes to the wearer's comfort.

The upper and sole unit are assembled and stitched together as illustrated in Fig. 4 without lasting. A last L is then inserted in the partially completed shoe and the shank portion of the insole is temporarily tacked to the last. The lasting allowances **23** of the quarter portions of the upper are then lasted over the shank portion of the insole (Fig. 5) for example by a cement lasting process. During the lasting of the quarter portions of the upper the shank portion **9** of the outsole is bent up out of the way so that it does not interfere with the lasting operation. The lasting of the instep portion of the upper makes it possible to shape the shoe accurately to the last and obtain a much better fit than is possible with conventional stitched-down shoes. In stitched-down shoes, it is difficult to obtain proper fit and prevent bulging of the upper particularly in the shank portion of the shoe. This difficulty is overcome by the method in accordance with the invention since the lasting of the quarter portion assures accurate molding of the upper. Moreover, by eliminating in the shank portion of the shoe, the laterally projecting sole and out-turned edges of the upper that are typical of stitched-down construction, it is possible to reduce the width of the shank and give it a trim, smart appearance. As seen in Fig. 8, the shank portions of the insole and outsole are of substantially the same width. Although the lasting allowance **23** of the quarter portion of the upper is interposed between the insole and outsole, the material is of single thickness and does not objectionably thicken the shank portion of the shoe.

In the operation of lasting, the quarter portions of the upper, the rear end portions **27** of the mudguard strips **25** are brought in over the insole so that they point inwardly toward one another in a direction transverse to the length of the shoe, and approximately perpendicular to the edges of the sole. The rear end portions of the guard strips are secured in place, preferably by adhesive and are securely held between the insole and the outsole. The bringing of the rear end portions of the mudguard strips in toward one another at rear of the ball portion of the shoe as shown and described, further assists in shaping the upper in the important transition zone where the quarter portion merges into the vamp. It further assists in giving the shoe a neat and streamlined appearance and increases its strength and durability. The slits **30** in the mudguard strips provide a smooth and strong transition from one type of construction to the other, avoiding the possibility of strain and breakage.

The inturned rear end portions **27** of the mudguard strips **25** and the lasted edge portions **23** of the upper are then roughened, a steel or other shank reinforcing the strip **33** (Fig. 8) is placed between the shank portions of the insole and outsole and the rear ball and shank portions of the outsole are cemented down, using a suitable press. If a wedge heel is to be used, no reinforcing shank is required. The shoe is preferably left on the last 2 or 3 days to become molded to the last. A heel **34** (Fig. 6) is then affixed to the heel portions of the insole and outsole, the tongue-like portion **10** of the outsole being received in a recess in the heel. Sponge rubber padding **35** (Fig. 8) is positioned to cover the heel and shank portions of the insole and a sock lining **36** is cemented in place.

The shoes made in accordance with the method of the invention have a dressy appearance and yet are extremely serviceable and comfortable to wear. They thus help to rsolve the dilemma with which women have long been faced as to wearing shoes that are comfortable or shoes that are stylish.

While a preferred embodiment of the invention has been shown and described, it will be appreciated by those skilled in the art that the method in accordance with the invention can be used to produce a considerable variety of shoes. The invention is thus not limited to the manufacture of the particular embodiment shown by way of example in the drawings.

What we claim and desire to secure by Letters Patent is:

1. In a method of making a shoe, the combination of steps comprising assembling an outsole and insole by cementing the toe portions only of said soles together, with the edges of the toe and ball portions of the outsole projecting outwardly beyond corresponding edges of the insole and the edges of the shank portion of the outsole substantially coinciding with the corresponding edges of the insole, said soles remaining unattached except at said toe portions, providing an upper conforming closely to a selected pattern and having a vamp portion with rearwardly diverging side edges and opposite quarter portions having side edges that converge rearwardly and meet the side edges of the vamp portion at obtuse angles, the quarter portions only having a lasting allowance, the opposite side edges of the upper having slits provided therein at the junction of said vamp and quarter portions, positioning said upper on said outsole-insole assembly with side edge portions of the vamp turned outwardly and positioned on the projecting edge portion of the outsole with the edges of said vamp and outsole coinciding with one another, stitching out-turned side edges of said vamp portion to the projecting edge portion of the outsole with the inner face of the upper against the upper face of the outsole, said stitching extending forwardly from one slit, around the toe and rearwardly to the opposite slit, thereafter inserting a last in the partially completed shoe, cement lasting the quarter portions of the upper over the shank portion of said insole while bending the shank portion of the outsole out away from the insole, thereafter cementing the shank portion of the outsole to the insole and the lasting allowance of the upper, and affixing a heel to the rear portions of the insole and outsole.

2. A method of making a shoe comprising the combination of the steps of providing an insole having a cushion ball portion and harder shank and heel portion, assembling said insole and an outsole by cementing the toe portions of said soles together, the edges of the toe and ball portions of the insole being spaced inwardly from corresponding edges of the outsole and the shank and heel portions of the insole being free from the outsole, providing an upper conforming closely to a selected pattern and having vamp and quarter portions, the quarter portions only being provided with a lasting allowance, sewing mudguard strips to the opposite side edges of the vamp portion of said upper, said strips extending rearwardly from the toe to the junction of the vamp and instep portions and projecting approximately one quarter inch beyond the edges of the upper, providing a slit in each of said strips, said slit being disposed a short distance forwardly of the rear end of the strip and extending inwardly from the edge of the strip to the edge of the upper, turning the lower edges of said strips outwardly and cement tacking them to edge portions of the outsole, stitching the outturned edge portions of the mudguard strips to the outsole, the stitching extending from the toe rearwardly to said slits, the side edges of the vamp portion of said upper abutting the upper surface of the outsole and being disposed between the edges of the insole and said strips, cement lasting the quarter portions of the upper over the shank portion of said insole while bend-

ing the shank portion of the outsole outwardly away from the insole, the rear end portions of the mudguard strips being lasted in over the insole and extending inwardly toward one another, thereafter cementing the shank portion of the outsole to the insole with lasting allowance of the upper and the ends of said strips therebetween, and affixing a heel to the heel portions of the insole and outsole.

3. A method of making a shoe comprising the steps of assembling an outsole and insole by cementing the toe portions only of said soles together, with the edges of the toe and ball portions of the insole spaced inwardly from corresponding edges of the outsole and with the shank portion of the insole of substantially the same width as that of the outsole and free from the outsole, providing an upper conforming closely to a selected pattern and having vamp and quarter portions, the quarter portions only provided with a lasting allowance, said upper having mudguard strip portions having slits provided therein, said slits disposed intermediate of said vamp and quarter portions and extending inwardly from the lower edges of

said mudguard portions, positioning said upper on said outsole-insole assembly with edge portions of said mudguard portions turned outwardly and positioned on edge portions of the outsole with the edges of said strip and outsole coinciding with one another, stitching outturned edges of said mudguard portions to edge portions of the outsole, the stitching extending forwardly from one slit, around the toe and rearwardly to the opposite slit, thereafter inserting a last in the partially completed shoe, cement lasting the quarter portions of the upper over the shank portion of said insole while bending the shank portion of the outsole out away from the insole, thereafter cementing the shank portion of the outsole to the insole and lasting allowance of the upper and affixing a heel to the rear portions of the insole and outsole.

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