April 23, 1946. W. C. WRIGHT 2,399,086

WELT FOR USE IN STITCH-DOWN SHOES

Filed March 20, 1945

Fig. 1.

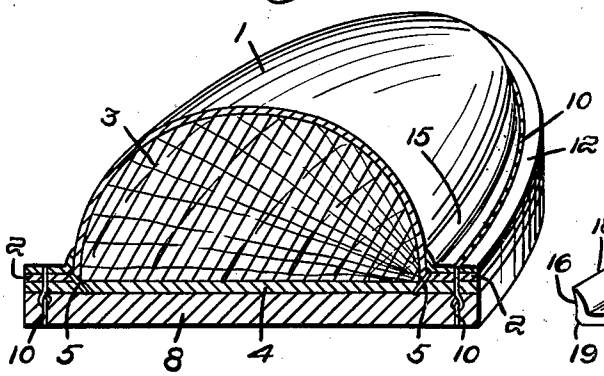


Fig. 2.

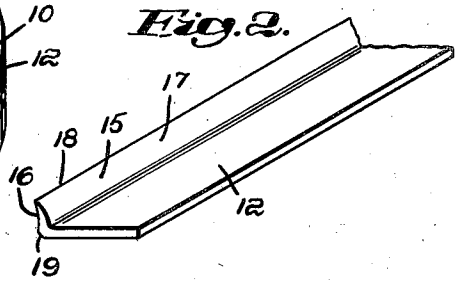


Fig. 3.

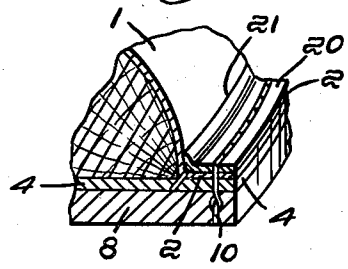


Fig. 4.

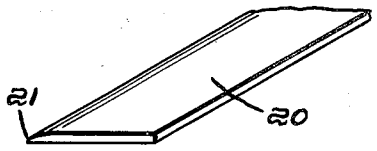


Fig. 5.

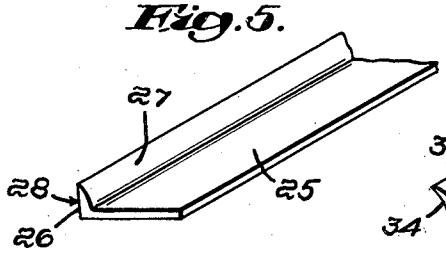
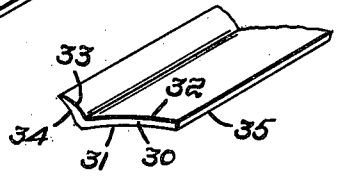


Fig. 6.



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UNITED STATES PATENT OFFICE

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WELT FOR USE IN STITCHDOWN SHOES

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Application March 20, 1945, Serial No. 583,688

1 Claim. (Cl. 36—78)

My present invention is directed to improve and perfect footwear of the so-called "stitch-down" type, and more particularly to an improved welt construction for use therewith.

The stitch-down type of shoe construction is an extremely simple and strong method of making footwear, and involves few and simple methods of manufacture and a minimum of machine operations.

The upper may be either molded or fitted on to a last and, thereupon, the marginal edge portion of the upper is turned outwardly and an insole, usually of thin sheet material, canvas, leather, leatherboard, synthetic plastic or other suitable material is applied and stitched to the folded corner or crease of the outturned flange of the upper by a simple stapling or straight needle thru-and-thru stitching operation. Thereupon an outsole is applied and, heretofore, a thin welt strip has been laid on top of the outturned flange of the upper, and the outsole stitching applied therethru. The resultant shoe, however, as heretofore made and as above briefly explained has been limited to cheap shoes and usually for children's footwear.

Such prior constructions have been extremely objectionable in showing the line of stitching or stapling in the crease or fold of the outurned flange and insole, it being impractical to lay the ordinary stitch-down welt close enough to cover these stitches. Also, such prior stitch-down welts being of thin and usually cheap material could not be laid and held tight enough to the upstanding lip of the upper materials to present a tight joint or an attractive appearance throughout the uneven contour of the periphery of the shoe.

A further objection was that rain or moisture, as well as dust and dirt, would seep directly into the opening between the inner edge of the flat stitch-down welt and the upper and, hence, the constant flexing of the shoe during walking would tend to loosen the welt, as well as the insole stitching.

My present invention is directed to obviate the difficulties above briefly noted and to provide a novel type of welt which will effectually cover and protect the insole stitching, will present an attractive and desirable tight contact between the upper materials above the outturned flange, and will contact with and "hug" the upper entirely around the periphery of the shoe irrespective of the varying contour of the shoe.

It will be appreciated that stitch-down footwear usually has the outturned flange entirely around both forepart and heel portion, and that the upper presents a varying contour, being substantially vertical relatively with the welt portion at certain parts of the shoe, while receding at the toe and overhanging at the arch and parts of the heel.

A difficult problem is thus presented, which, with the flat welt as heretofore employed, has proven unsatisfactory as above noted. In my present invention I have eliminated the difficulties above briefly outlined and have produced an improved stitch-down type of footwear which will insure a tight joint between the inner edge of the welt and the surface of the upper and will cover and protect the insole stitching against moisture or dust, as well as to hide the stitches at any exposed portion either where the upper recedes, overhangs, or is vertical and which will greatly improve the appearance of the shoe.

In fact, my improved stitch-down welt and shoe construction will enable this desirable type of simple method of making footwear to be utilized in the better grades and more expensive shoes, rather than to be limited, as heretofore, to children's and the cheaper grades of footwear.

In carrying out my invention I provide a novel form of welt, having an upstanding rib or lip adapted to bear against the outer surface of the upper materials above the outflanged upper and above the normal thickness of the body portion of the welt which is laid upon the outturned flange. Preferably, also, I form this upstanding lip portion either at a slight inwardly extending angle or with a concave face, so that the upper edge portion of the upstanding lip will engage the surface of the upper under a slight pressure or forced contact.

Preferably, also, I make this improved and novel type of stitch-down welt of a suitable synthetic plastic material which lends itself advantageously to impart a tight contact with the upper above the normal level of the body portion of the welt in contact with the outturned flange. Experiments with various modern synthetic plastics, such for example as Geon, Vinylite, or the like have been found suitable for this purpose and as these afford great strength and stitch-retaining capacity, as well as being capable of having the color match with that of any finish desired of the shoe, and can be made in continuous lengths without scarfs or overlapping ends, my novel welt of these materials gives an added finish to the shoe.

In fact, I may so form the welt of such synthetic plastic material that it may be formed either with or without the upstanding lip, as the

elasticity and resiliency of such material would enable a flat welt to be formed of greater width than normally needed and, thereupon, with the inner edge preferably bevelled for the purpose could be laid directly against the outer surface of the upper and held in position by any suitable adhesive or by the outsole stitching itself.

Referring to the drawing illustrating preferred embodiments:

Fig. 1 is a diagrammatic view partly in cross-section of my improved stitchdown welt shoe construction;

Fig. 2 is a perspective view of a fragment of my novel form of stitch-down welt with upstanding lip having a slightly concavo-convex contour;

Fig. 3 is a fragmentary cross-sectional view illustrating a flat type of welt in position;

Fig. 4 illustrating in perspective the fragment of a flat type of welt as shown in Fig. 3, and

Fig. 5 is a perspective view of a further modification wherein the upstanding lip has a substantially flat surface in contact with the shoe upper.

Fig. 6 is a perspective view of a further modification.

As shown in the drawing, upper materials 1 are formed with an outturned marginal flange 2, which upper and flange may be either molded or may be fitted on a last 3 and then the flange 2 outturned, or the last 3 may be a follower put in for finishing the shoe, if desired. With the upper and its marginal flange 2 thus outturned, an insole 4 is applied and secured by stapling or insole-stitching 5, such stitching being set by a straight needle thru the fold or bend of the upper at the outturned flange as shown, such stitching being usually set somewhat at an angle to hold the lasted upper and insole in position.

Thereupon, the outsole 8 is applied and my improved welt laid on top of the outturned flange 2 and the outsole stitching 10, usually a lock-stitch type, is set.

Referring to Fig. 2 illustrating one of my preferred forms of stitch-down welt, this comprises a body portion 12 of suitable width to fit the outturned flange 2 of the type and size of shoe being made, together with an upstanding lip 15, said lip being formed on the inner side of the body portion 12 and for contact with the adjacent part of the upper 2 on a level with and above the body portion 12. Preferably, the inner surface of the lip 15 is shown slightly concave at 16, the outer surface 17 being convex and terminating in a relatively narrow ridge 18.

I may also form a slight bevel 19 to allow for the projection of the insole stitching 5 and thus enable the entire welt structure and lip 15 to be fitted in snugly to the outer surface of the upper and allow a tight and, preferably, pressure contact between the lip and the upper throughout its entire periphery, irrespective of the varying contour of the upper.

Thus, it will be appreciated that I have devised an improved construction for stitch-down shoes which will effectually and efficiently cover and protect the inseam stitching from being exposed to sight, dirt, or moisture, and provide an added finish to the shoe.

In Figs. 3 and 4, I have illustrated the substantially flat type of stitch-down welt 20 having greater width than would normally be required for the particular style and size of shoe with which it is to be incorporated and, preferably, I form the inner edge bevelled or curved as shown at 21. This welt, being preferably of synthetic plastic material, can be laid against both the upper and outturned flange 2, the inherent resiliency permitting it to thus be laid with both the flat or body portion in contact with the flange and the remaining marginal portion upstanding against the surface of the upper.

As shown in Fig. 5, I have illustrated a still further modification wherein the body portion 25 has an upstanding flange 26, with the outer surface slightly convex, as shown at 27, and the inner face 28 substantially flat for contact with the shoe upper.

This upstanding flange 27 may be slightly inclined toward the upper with which it is to contact to give a hugging or tensioning contact therewith.

In Fig. 6 I have illustrated a further modification wherein I form the body portion of my improved stitch-down welt of a slightly concavo-convex contour. The upstanding lip may have a substantially straight face, as shown at 28, Fig. 5, or may be curved similar to the contour 16 of Fig. 2 and thus, preferably, the lip also is concavo-convex.

Referring to Fig. 6, the body portion 30 has the concave surface 31 for contact with the outturned flange 2 of the upper, and the upper surface 32 convex, with the upstanding lip 33 formed with a concave face 34. Thus, when the stitch-down welt, being of resilient and plastic material, is secured to the outturned flange, insole, and outsole of the shoe, the body portion of the welt having the concavo-convex contour is forced into flat contact with the flange, and the outer edge 35 of the welt is in pressure contact with the flange 2, and the extreme edge of the lip 33 is also in pressure contact with the surface of the upper, the concave face 34 being hollowed sufficiently to secure this desirable result, thereby getting a pressure contact at the inner and outer edge portions of the welt.

The welt being, preferably, of synthetic plastic material is waterproof and for all practical purposes in shoe construction permanently resilient and flexible and, therefore, maintains this pressure contact at these outer edge portions, thus resulting in a tighter, snugger, better fitting and better appearing construction of this type of footwear.

While I prefer to make the form of stitch-down welt as herein shown and the improved shoe construction as above illustrated and explained, with the welt of synthetic plastic material or equivalent resilient substance, I consider the form and design of the various modifications of my improved stitch-down welt a distinct novelty in this art, and they may be of any suitable stitch-retaining and, preferably, moldable material although other substances may be cut, trimmed, or otherwise formed into the resultant contour and for the same purpose in stitch-down footwear, which materials are contemplated to be included in my invention.

I claim:

As an improved article of manufacture, a welt pre-formed from stitch-retaining, resilient, waterproof, synthetic plastic material, having a body portion of concavo-convex contour widthwise of the body portion, and an integral upstanding lip on the inner edge of the body portion, said lip having a convex upper surface, and a concave inner surface of divergent contours.

WALLACE C. WRIGHT.