Nov. 21, 1944. W. C. WRIGHT 2,363,456

SEWING RIB FOR WELT INSOLES

Filed April 8, 1942

Fig. 1.

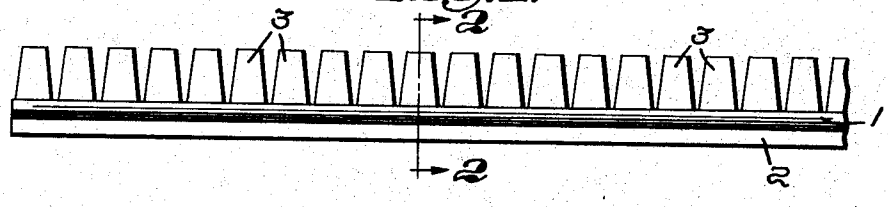


Fig. 2.

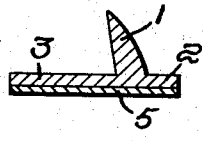


Fig. 3

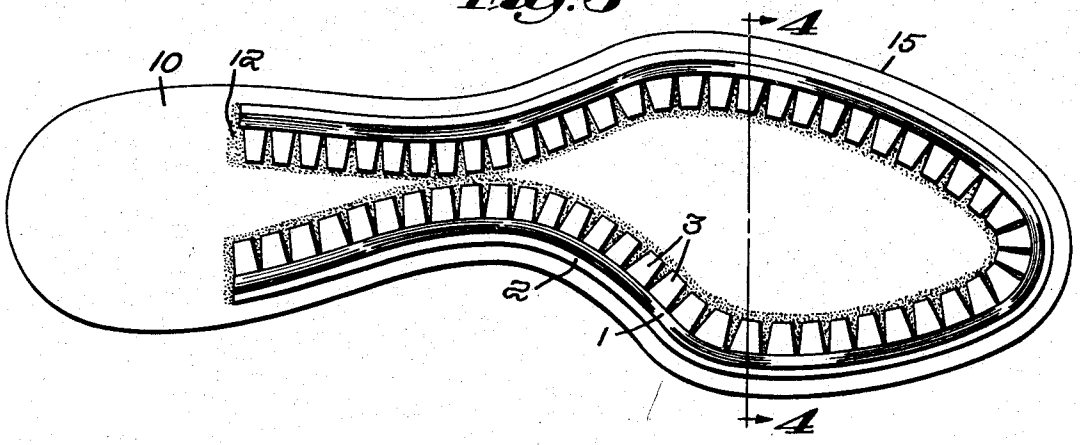
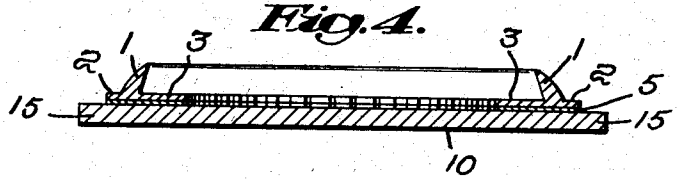


Fig. 4.



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SEWING RIB FOR WELT INSOLES

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Application April 8, 1942, Serial No. 438,096

3 Claims. (Cl. 36—22)

My present invention is a novel and improved welt insole for use in the manufacture of boots and shoes, which insole comprises a blank of leather or the like, and a sewing rib of Koroseal, Vinylite, or the like synthetic plastic material, secured to the marginal portion of the insole for stitch-retaining and for stiffening the edge of the insole blank.

In my prior and copending applications, showing a welt insole utilizing a sewing rib of plastic material, such for example as application Ser. No. 413,500, a continuation in part of Ser. No. 348,387, filed July 30, 1940, I have explained and claimed broadly the advantages of the novel combination secured by an unchanneled insole with a sewing rib in the form of an upstanding rib and integral horizontal flange extruded integral therewith.

In my present application I find that a most advantageous plastic material for such purpose consists in such standard plastic substances as Koroseal, Vinylite, or the like, which plastics have a permanent resiliency and a toughness or hardness which hardness or toughness as measured on a Shore durometer is approximately from 80 to 82.

Such material is peculiarly suitable since it not only maintains its resiliency and toughness of uniform degree much longer than leather, but also constitutes a reinforcing or stiffening element for the marginal edge of the insole blank, to which marginal portion the rib and flange are secured, preferably by adhesive.

This latter feature is most important as it enables me to employ for the material of the insole blank relatively thin and flexible leather or compound, such for example as a laminated blank, of which various kinds are available, for McKay and sport work as well as the Unco blank material which I can utilize for welt shoe work, because of the reinforcing and stiffening of the marginal edge accorded by the addition of my rib and flange of Koroseal, Vinylite, or the like equivalent plastic.

Thus the edge portion of the insole is stiffened to withstand lasting and inseaming; whereas, in the usual type of welt insole blanks, the marginal portion is split, channeled, cut, and weakened.

A difficulty in the effort to unite a plastic material with a leather insole, particularly if the leather of the insole blank is greasy, or the like, has been to secure a suitable adhesive which will bond the plastic and the insole together. For this purpose I have developed a rib structure, wherein a fibrous reinforcement is incorporated in the attaching flange of the plastic rib material, such as shown in my copending application Ser. No. 399,049, filed June 21, 1941.

In my present invention I prefer to utilize this fibrous layer as applied directly to the Koroseal, Vinylite, or the like material as the same is molded or extruded and while in a heated or plastic stage so that the fibrous material or tape is incorporated in the bottom of the attaching flange during the process of manufacturing the rib and flange and, hence, presents a surface ideally prepared for attachment by an adhesive with the marginal surface of an insole blank, whether leather, Unco, or other material.

In carrying out my present process, I supply a quantity of the plastic in a molten condition as in a heated die, extrude the same, and as the material comes out of the die I incorporate the bottom layer of tape, fibre, or textile material. Preferably, this is formed as a double rib and flange construction and, thereupon, is cut along a serrated line to produce two rows of separate rib material, as shown in my said prior application Ser. No. 399,049.

This method also provides a pinked inner edge to the attaching flange to facilitate the attachment of the rib and flange around the contour of the insole.

Referring to the drawing, Fig. 1 is a fragmentary plan view of my novel rib or Koroseal, Vinylite, or the like;

Fig. 2 is an enlarged cross-sectional view on the line 2—2 of Fig. 1 showing the plastic material and its attached textile layer, the latter being overdrawn in thickness for illustrative purposes;

Fig. 3 shows a plan view of my welt insole with rib of Koroseal, Vinylite, or the like attached to the marginal surface by adhesive, and

Fig. 4 is a cross-sectional view on the line 4—4 of Fig. 3.

As shown in the drawing, my rib, as above explained, comprises an upstanding rib 1 and horizontal attaching flange 2, said rib being preferably inclined inwardly somewhat to facilitate the inseaming operation, and with the attached flange 2 extending horizontally at the base of the rib 2 and preferably on either side, with the inner flange portion 3 being pinked or formed as shown in Fig. 1; or when the material is extruded or molded from a die in double formation, viz., with a rib on each side and then the

pinking is effected by separating the two lines of ribs. The pinking would then be even, as shown in said copending application 399,049.

Incorporated in the bottom surface of the flange is a fibrous textile or tape layer 5, shown overdrawn in thickness as previously noted, and to facilitate attachment of the flange to the insole blank 10 around the marginal portion of shank and forepart of the insole, which blank, or the layer 5, or both, may be coated with adhesive 12.

The resulting insole does not need to be gemmed, although in very heavy shoes such gemming could be applied, if desired, and the weight and thickness of the rib and its attaching flange of Koroseal, Vinylite, or the like plastic may be increased in thickness for strength for men's heavy welt shoes, or may be relatively light and thin for women's shoes, which is an important advantage.

In either case the rib and flange, while increasing the permanent resiliency and, hence, flexibility of the shoe in which the same is incorporated, also reinforces and adds sufficient strength to the extreme marginal edge 15 of the insole blank to reinforce the same and enable even thin and flexible leather or other blank material to be employed and still withstand the lasting operation, wherein the upper and lining are worked over the marginal edge of the insole and the subsequent shoe manufacturing operations.

While I have mentioned specifically the standard type of plastics known as Koroseal and Vinylite, I can of course use similar synthetic materials, preferably with a hardness of 80–82 as measured by a Shore durometer, and with a tensile strength at rupture of from 2500 pounds to 3500 pounds per square inch. I find that such material gives the proper strength to maintain the sewing rib and flange throughout the lasting and inseaming operations and retain stitching with a suitable degree of resiliency, both initially and permanently in the rib structure and, hence, in the shoe. This resiliency, largely because of the horizontal attaching flange, eliminates the danger of "guttering" the insole during wear.

The plastic material, when compounded to the degree of hardness and strength as above indicated for illustrative purposes, is considerably stiffer and less elastic material than a rubber compound of equivalent tensile strength and maintains its strength and elasticity more permanently than any rubber compound of similar characteristics.

I claim:

1. As a new article of manufacture, a sewing rib for attachment to an insole blank for use in the manufacture of welt insoles, comprising a preformed, continuous, unscarfed plastic material, having an upstanding rib and horizontal attaching flange, said material being of Koroseal, Vinylite, or the like, and with a hardness of approximately 80 to 82 as measured on a Shore durometer, and a tensile strength at rupture at approximately 2500 to 3500 pounds per square inch.

2. As a new article of manufacture, a sewing rib for attachment to an insole blank for use in the manufacture of welt insoles, comprising a preformed, continuous, unscarfed plastic material, having an upstanding rib and horizontal attaching flange formed only of said plastic material, having a toughness and flexibility substantially equivalent to Koroseal, Vinylite, or the like.

3. As a new article of manufacture, a sewing rib for attachment to an insole blank, for use in the manufacture of welt insoles, comprising a preformed, continuous, unscarfed plastic material, having an upstanding rib and horizontal attaching flange formed solely of said plastic material and being united with, a layer of textile material embedded in the lower face of said attaching flange, said material consisting in a stitch-retaining, permanently flexible, synthetic plastic material having characteristics of hardness, toughness, and flexibility substantially equal to Koroseal, Vinylite, or the like.

WALLACE C. WRIGHT.