April 6, 1943. C. L. WILPAN 2,315,759

SHOE AND OUTSOLE THEREFOR

Filed April 1, 1942

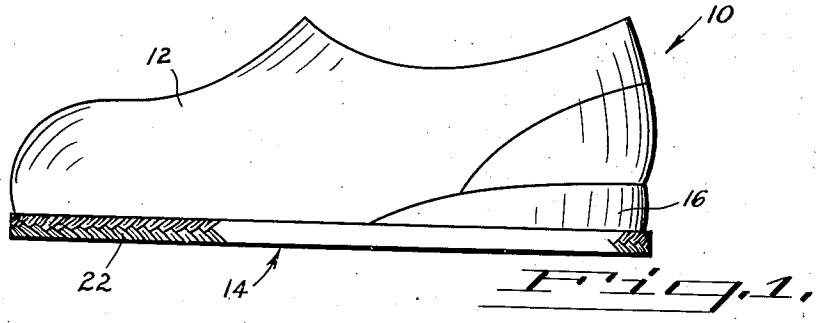


Fig. 1.

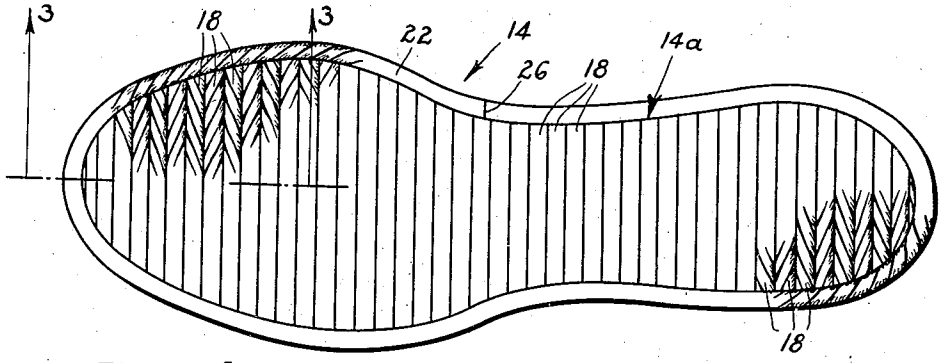
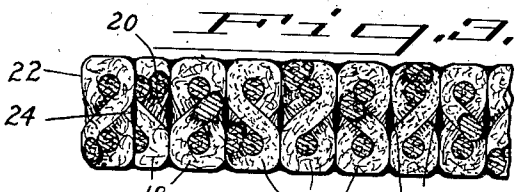


Fig. 2.

Fig. 3.



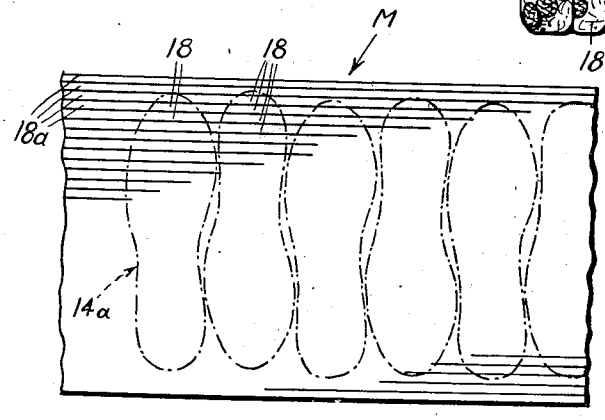


Fig. 4.

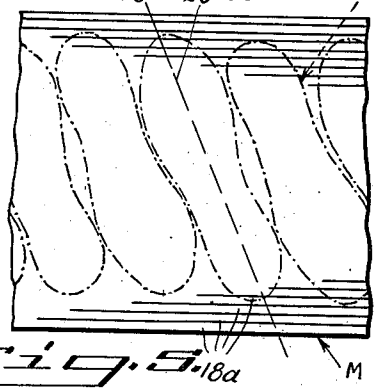


Fig. 5.

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SHOE AND OUTSOLE THEREFOR

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Application April 1, 1942, Serial No. 437,234

11 Claims. (Cl. 36—25)

This invention relates to improved outsoles for shoes.

One object of the invention is the provision of an outsole which possesses a high degree of flexibility at least in the forward portion thereof, say from the shank to the toe of the shoe, without, however, requiring the use of thin leather or thin leather substitutes. In other words, in accordance with the present invention the outsole may be of substantial thickness and yet possess great flexibility in the direction of the length of the shoe.

Another object of the invention is to provide an outsole formed of or comprising at least in the forward portion thereof a plurality of strips of suitable material disposed in adjacent side by side relation and extending transversely of the outsole and secured in said relation whereby at least said forward portion of the outsole is easily bendable about a plurality of transversely extending lines.

A further object of the invention is to provide a rope sole of such construction that it can be readily produced by die-stamping or otherwise cutting the same from sheet material, making it unnecessary to produce the rope sole by winding a length of rope in order to form the sole.

The above and other objects, features and advantages of the invention will be fully understood from the following description of the presently preferred embodiment of the invention, reference being had to the accompanying illustrative drawing.

In the drawing:

Fig. 1 is a side view of a shoe embodying the present invention;

Fig. 2 is a bottom view of the shoe showing the outsole;

Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a plan view of the sheet material utilized in producing the outsole illustrated in Figs. 1 to 3, the dotted lines showing the manner of cutting the outsole blanks from said sheet material, and

Fig. 5 is a view similar to Fig. 4, showing a modification.

Referring now to the drawing in detail, there is shown in Fig. 1 a shoe 10 having an upper 12, an outsole 14 and a mid-heel 16 of the wedge type, said outsole extending from toe to heel of the shoe in substantially a single plane. It will be understood that the style of the shoe may be different from that illustrated and that the shoe may be provided with any type of heel. As the invention resides primarily in the outsole and in the material used therefor, these aspects of the invention will now be described.

The outsole, as here shown, is formed of braided rope and comprises in the main part 14a thereof a plurality of strips 18 of braided rope disposed in adjacent side by side relation and extending transversely of the outsole and secured in said relation preferably adhesively by layers 20 of latex or other rubber interposed between the adjacent sides of adjacent strips 18 for the full length of said strips, respectively. Said strips 18 are preferably formed of braided rope and are greater in width than in thickness and are disposed in the outsole so that the widths of said strips extend in the direction of the thickness of the outsole, that is, in the direction extending between the opposite surfaces of the outsole. The interposed layers 20 of latex or other rubber are confined substantially to the spaces between the adjacent sides of adjacent strips and between the opposite surfaces of the outsole. Said latex or rubber is applied to both sides of the strips for the full length thereof and may be applied either in liquid or semi-liquid form or in plastic condition, and it will be understood also that the said latex or rubber may be applied to the strips by a frictioning operation, for which purpose any conventional or other suitable frictioning rollers may be used. The rubber may be applied for the full width of the strips but is preferably kept from the marginal edges extending longitudinally of the sides of the strips so that the opposite surfaces of the outsole will be substantially free of rubber. While the rubber impregnates a sufficient thickness of each strip adjacent the opposite surfaces thereof which are disposed in side by side relation in the outsole, whereby to obtain a secure union between adjacent strips, the major part of the thickness of each strip is preferably not impregnated with the rubber, so that the porous character of the strips remains substantially unimpaired.

It will be observed that strips 18 in main part or blank 14a of the outsole vary in length depending upon their location along the length of the outsole and are disposed in the outsole so that the opposite edges of said strips, considered as a unit, conform to the peripheral edge contour of the outsole. A covering strip 22 of braided rope is applied to the opposite edges of strips 18 and as here shown extends completely around the outsole. Strip 22 is preferably formed of braided rope of the same construction as strip 18 but if desired may be formed of any other suitable material. Said edging strip 22 is

secured to the edges of strips 18 by a layer 24 of latex or rubber interposed between the inner side of strip 22 and the adjacent edges of strips 18. As here shown strip 22 is formed in one length and has its edges located at the inner side of the outsole in the region of the shank as indicated at 26 in Fig. 2. While as here shown outsole 14 comprises strips 18 disposed therein for the full length of the outsole, it is within the scope of the present invention to form only certain parts of said outsole from said strips, for example, the forward portion of said outsole, namely, the part thereof extending from the forward part of the shank to the forward end or toe portion of the outsole, since the advantage of flexibility is valuable principally in the forward portion of the outsole while the shank and heel portions thereof can be stiff or comparatively stiff. Preferably, however, as here shown the outsole is of uniform construction as this facilitates the manufacture thereof and of the shoe provided therewith, and especially since the various parts of the shoe which are advantageously rigid or stiff can be provided with shank stiffeners or other devices with which the shoe manufacturing art is familiar.

The main part 14*a* of the outsole embodying the present invention, as described above, that is, the part which is constituted by said strips 18 united with each other in said side by side relation, is made from the sheet material M illustrated in Fig. 4. As here shown, said sheet material M comprises a plurality of lengths 18*a* of braided rope extending longitudinally of the sheet in side by side relation and secured together in the sheet in said relation by interposed layers of latex or rubber as described above in reference to Fig. 3. In other words, the strips 18 united with each other as described above are derived from lengths 18*a* of sheet M. This is accomplished by die-stamping or otherwise cutting the main part or outsole blank 14*a* from sheet M along spaced lines extending transversely of said sheet whereby the outsoles are provided with the united strips 18 which extend transversely of the outsole. Said sheet M is of sufficient width to permit the outsole blanks or main parts 14*a* to be cut therefrom with the lengths of the outsoles extending transversely of said sheet. While said sheet can be substantially wider than the lengths of the outsoles, said width need be only equal to or slightly greater than the length of the outsoles to be cut therefrom. Moreover, it will be understood that said sheet can vary in width depending upon the lengths of the outsole to be cut therefrom and that said sheets can be supplied in various minimum widths or can be supplied in widths which are large enough to permit soles of the longer lengths as well as of the shorter lengths to be cut therefrom. Further, it will be understood that while the sheet M has been illustrated as wide enough only for a single row of outsole blanks, it may be of any desired greater width so that a plurality of rows of outsole blanks can be cut therefrom.

It will be understood that after the outsole blanks 14*a* are cut from sheet M the edging strips 22 are applied to said blanks, respectively, as described above. Preferably, the outer side of edging strip 22, especially when the latter is formed of rope, is free of adhesive or any other coating or covering material so that the ornamental appearance of said edging strip is provided in the shoe comprising said outsole. After the outsoles are made they are attached to the shoe bottoms in any suitable way, preferably in accordance with any of the conventional methods of making cemented shoes. Further, it will be understood that the sole blanks 14*a* can be attached to the bottoms of the shoe before the edging strips 22 are applied and attached to said sole blanks.

While in Fig. 2, the strips 18 are shown arranged at right angles to the longitudinal median line of the sole, said strips can be arranged at a different angle to said median line, especially when it is desired to produce a sole which is less flexible than when said strips are in said right-angular relation. This can be easily accomplished by cutting the sole blanks from the sheet M in the manner illustrated in Fig. 5, i. e., by cutting the blanks indicated at 14*b* so that the longitudinal median line 26 of the sole blank is inclined at the desired angle to the longitudinal line of sheet M.

Thus, it is seen that the above described outsole and material utilized in making said outsole are well adapted to accomplish the several objects of the present invention. It will be understood, however, that while I have illustrated the preferred embodiment of my invention the latter may be embodied otherwise than as herein specifically shown or described, and further it will be understood that in the illustrated embodiment certain changes in the details of construction and in the arrangement of parts may be made. Therefore, I do not wish to be limited to the invention as herein specifically illustrated or described except to the extent which may be required by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a shoe, an outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending from one edge to the opposite edge of the outsole, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole and said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, and means securing said strips in said relation in the outsole.

2. In a shoe, an outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, from one side edge to the opposite side edge thereof, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole and said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, means securing said strips directly to each other in said relation in the outsole, and an edging strip secured to and covering said ends of said transversely extending strips.

3. A outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole at right angles to the longitudinally median line thereof, said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the ad-

jacent side edges, respectively, of adjacent strips for the full lengths of said strips, and means securing said strips in said relation in the outsole.

4. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, from one side edge to the opposite side edge thereof, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole and said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, means securing said strips in said relation in the outsole, and an edging strip of braided rope secured to and covering said ends of said transversely extending strips.

5. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole in inclined relation to the longitudinal median line of the sole, said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, the opposite ends of said strips lying adjacent the opposite side edges, respectively, of the outsole.

6. An outsole comprising a plurality of individual strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole and said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, an adhesive interposed between the adjacent side edges of adjacent strips serving to secure said strips in said relation in the outsole, and an edging strip secured to and covering said ends of said transversely extending strips.

7. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole and said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, an adhesive interposed between the adjacent side edges of adjacent strips serving to secure said strips in said relation in the outsole, and an edging strip of braided rope secured to and covering said ends of said transversely extending strips.

8. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, the opposite ends of said strips terminating near the opposite edges, respectively, of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, and layers of rubber interposed between the adjacent side edges of adjacent strips, respectively, serving to unite said strips in said relation to the outsole.

9. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending from one edge of the outsole to the opposite edge thereof, said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, and layers of rubber interposed between the adjacent side edges of adjacent strips, respectively, serving to unite said strips in said relation to the outsole, said rubber being confined substantially to the spaces between said strips and between the opposite surfaces of the outsole.

10. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, layers of rubber interposed between the adjacent side edges of adjacent strips, respectively, serving to unite said strips in said relation to the outsole, and an edging strip of braided rope secured to and covering said ends of said transversely extending strips.

11. An outsole comprising a plurality of individual cut strips of braided rope disposed in adjacent side by side relation and extending transversely of the outsole, said strips varying in length whereby the ends thereof conform to the peripheral contour of the outsole, the opposite side edges of said strips abutting the adjacent side edges, respectively, of adjacent strips for the full lengths of said strips, layers of rubber interposed between the adjacent side edges of adjacent strips, respectively, serving to unite said strips in said relation to the outsole, said rubber being confined substantially to the spaces between said strips and between the opposite surfaces of the outsole, and an edging strip of braided rope secured to and covering said edges of said transversely extending strips.

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