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H. WESTLING

1,989,902

SHOE AND SOLE THEREFOR

Filed April 5, 1933

Fig. 1.

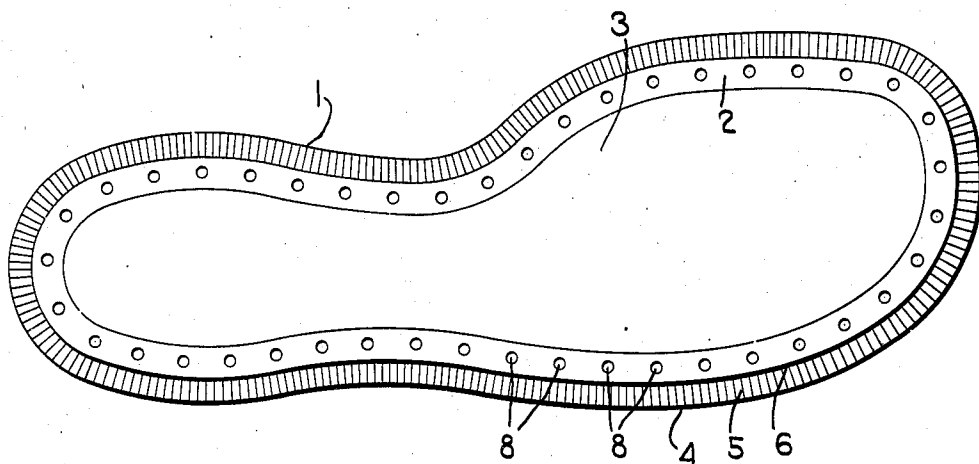


Fig. 2.

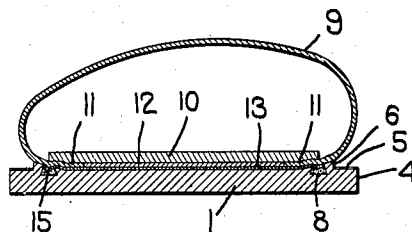
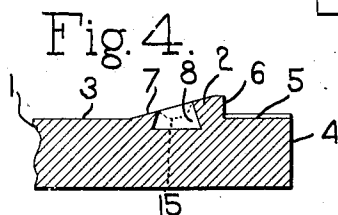
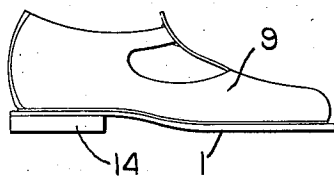


Fig. 3.



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UNITED STATES PATENT OFFICE

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SHOE AND SOLE THEREFOR

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3 Claims. (Cl. 36-14)

This invention relates to a rubber sole for shoes and to a shoe embodying such a sole.

The object of the invention is to provide a construction in which the shoe parts are held together by cement, in which no vulcanization is required during or subsequent to the cementing of the parts into a complete shoe, in which a pleasing appearance is imparted to the shoe particularly at the exterior of the juncture between the upper and the outer sole, in which in particular the shoe has an appearance of a welted shoe, and in which the union between the shoe upper and the outer sole is of great strength.

These and other objects and features of the invention will appear more fully from the accompanying description and drawing and will be particularly pointed out in the claims.

In the drawing:

Fig. 1 is a top plan view of a vulcanized rubber outer sole embodying a preferred form of the invention.

Fig. 2 is a vertical cross section taken through the fore part of a completed shoe embodying the invention.

Fig. 3 is a side elevation showing one form of shoe embodying the invention.

Fig. 4 is an enlarged detail in vertical cross section of a portion of the outer sole.

The outer sole of the shoe is molded and vulcanized from rubber, by which term is included the usual rubber compounds, to present the shape and construction required by the shoe of which it is to form a part and to embody the features of the present invention. The body portion of this outer sole is preferably of the same thickness throughout and its outer configuration is determined by the size and shape of the shoe of which it is to form a part. The main novel feature of the outer sole is a bead 2 which is molded integral with the body of the sole and projects above the upper surface 3 of the body. This bead is spaced from the peripheral edge 4 of the sole so as to leave an exposed margin 5 entirely around the periphery of the sole or that portion of the periphery around which the bead extends. This exposed margin 5 corresponds in width, and is made by molding to correspond in appearance, to the exposed portion of the welt in a similar shoe of the welted type. This appearance may be given by the fluted construction illustrated.

The bead 2 is distinctive in that it has a cross section throughout which is substantially that of a right triangle with the shortest side 6 extending vertical to the surface of the sole and with the hypotenuse 7 extending downward and inward.

In the preferred form of the invention, a series of depressions 8 are formed in the sole extending downward from the upper surface of the bead. These depressions are spaced apart, preferably at regular intervals, about as shown in the drawing, and extend throughout that portion of the bead where the greatest strain comes between the outer sole and the shoe upper. Preferably, as illustrated, they extend entirely throughout the bead. These depressions 8 are preferably substantially in the form of truncated cones with the smaller ends at the upper surface of the bead.

The advantages of this construction of vulcanized rubber outer sole appear in connection with the description of the shoe of which it forms a part.

The upper 9 of the shoe will, of course, take the shape and size desired. This upper is preferably made of a suitable woven fabric.

In the construction of the shoe, a suitable inner sole 10 is provided and the upper 9 is pulled over a last in the usual manner, with the edges of the upper presenting intumed flanges 11. A suitable filler 12 fills in the space between the flanges and over all is laid a fabric base 13. These parts, the inner sole, the intumed flanges, the filler, and the fabric base, are all cemented together by a suitable adhesive such as rubber cement and form the complete upper of the shoe. The upper is then cemented to the outer sole with a suitable rubber cement which is applied to the upper surface of the bead 2 and the upper surface of the body of the outer sole within the bead and also to the bottom of the upper. The shoe upper is shaped so that when in place on the outer sole, it conforms to the bead.

After the parts have been cemented, dried and placed together, a heavy pressure is applied, as by a well-known type of hydraulic shoe press, to press the shoe upper and the outer sole together in a firm union. A heel 14 may be cemented or otherwise attached to the outer sole when desired.

The relative position of the various parts is shown in the cross section of Fig. 2 of the drawing.

The depressions 8 in the bead fill with cement and, under the heavy pressure exercised in producing the shoe, small areas 15 of the bottom of the upper are forced into these depressions, thus forming an interlocking engagement therewith. Thus an extremely firm union due to the cement and the interlocking engagement of the shoe upper with the depressions is formed be-

tween the upper and the outer sole, particularly throughout the area of the bead, rendering it well-nigh impossible to separate the upper from the outer sole without destruction of the one or the other.

5 The peculiar construction of the bead practically limits the disposition of the cement and prevents the cement from producing an unsightly appearance on the exposed portion of the upper and of the outer sole. The sharply defined vertical edge 6 of the bead gives a distinctive appearance to the shoe and with the exposed margin of the outer sole gives a similar appearance to that which characterizes a welted shoe.

10 It will thus be seen that the construction provided by this invention enables a shoe of this type of great strength and of highly pleasing and finished appearance to be economically and readily manufactured by simple methods.

15 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

20 1. A vulcanized rubber outer shoe sole having a vulcanized bead integral therewith and projecting above the upper surface thereof and spaced from the edge thereof to leave an exposed margin of the sole corresponding to the welt in a similar shoe of the welted type, said bead having a cross section substantially that of a right angle with the shortest side extending vertical to the surface of the sole and with the hypotenuse extending downward and inward, and presenting extending downward from the upper surface of the bead a series of spaced depressions having the shape substantially of truncated cones with the smaller ends at said surface.

25 2. A shoe comprising a vulcanized rubber outer

sole having a vulcanized bead integral therewith and projecting above the upper surface thereof and spaced from the edge thereof to leave an exposed margin of the sole corresponding to the welt in a similar shoe of the welted type, the said bead having a cross section substantially that of a right triangle with the shortest side extending vertical to the surface of the sole and with the hypotenuse extending downward and inward and the said bead having a series of spaced depressions extending downward from its upper surface, and an upper having an intumed flange at the bottom conforming to and cemented to said vulcanized bead and projecting into said depressions thus forming an interlocking engagement therewith.

3. A shoe comprising a vulcanized rubber outer sole having a vulcanized bead integral therewith and projecting above the upper surface thereof and spaced from the edge thereof to leave an exposed margin of the sole corresponding to the welt in a similar shoe of the welted type, the said bead having a cross section substantially that of a right triangle with the shortest side extending vertical to the surface of the sole and with the hypotenuse extending downward and inward and the said bead having a series of spaced depressions extending downward from its upper surface and having the shape substantially of truncated cones with the smaller ends at said surface, and the upper having an intumed flange and a fabric base at the bottom cemented to said flange with the bottom of the upper conforming to and cemented to said vulcanized bead and projecting into said depressions thus forming an interlocking engagement therewith.

HERMAN WESTLING.