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A. GREENBAUM ET AL

1,998,988

RUBBER HEEL

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Fig. 1

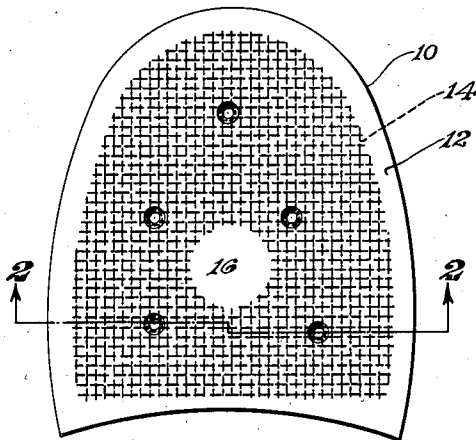


Fig. 2

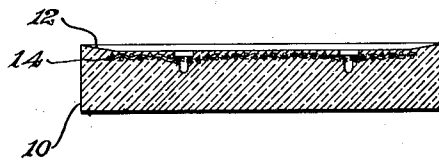
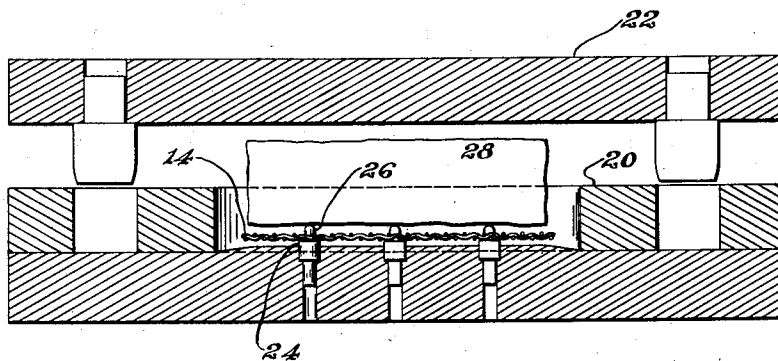


Fig. 3



Witness

Paul F. Bryant

Inventor

Arthur Greenbaum

Frank J. Kelley

by their Attorneys

Van Curen Fish Gilchrist & Co.

UNITED STATES PATENT OFFICE

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RUBBER HEEL

Arthur Greenbaum, Beachmont, Mass., and
Frank J. Kelley, Milwaukee, Wis., assignors, by
mesne assignments, to Panther-Panco Rubber
Co. Inc., Chelsea, Mass., a corporation of
Massachusetts

Application April 22, 1932, Serial No. 606,956

1 Claim. (Cl. 36—35)

The present invention relates to rubber heels, and is particularly adapted for rubber heels designed for attachment by shoe manufacturers in the production of boots and shoes.

6 The object of the present invention is to produce in a satisfactory and economical manner a rubber heel or rubber top lift which may be permanently attached to a heel base in a manner to produce a tight edge without the necessity for accurate location of the attaching nails or their equivalent, and in addition to produce a maximum available depth of wearing area before the attaching members are encountered.

10 With these and other objects in view, the various features of the invention consist in certain novel features of construction, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description.

15 In the accompanying drawing illustrating the preferred form of the invention, Fig. 1 represents a plan full scale view of a man's heel embodying the invention, illustrating the nail-holding insert therein; Fig. 2 is a cross-section of the heel shown in Fig. 1, taken upon the line 2—2; and Fig. 3 is a section of a mold for producing the improved heel, illustrating the method of supporting the attaching mesh with a rubber blank in place thereover.

20 According to the illustrated embodiment of the invention, a heel 10, which may be generally flat in cross-section with a raised margin or the like 12 about the attaching face, is provided adjacent the attaching face with a nail-holding insert 14, in the form of a wire mesh screen having a contour corresponding to that of the heel and of lesser dimensions than the heel in order to lie generally within the raised margin 12. The screen may and preferably is provided with a centrally disposed cut-away portion 16 to facilitate flow of rubber therethrough in the formation of the heel. As indicated, the screen lies essentially at the attaching face, and is merely covered with a sufficient amount of rubber to insure a bond and protect the metal screen through the flow of rubber thereabouts.

25 The woven wire screen is penetrated by the shanks of the heel lift attaching nails, the heads of such nails contacting with the screen which transmits the holding stresses of the nails due to the inherent stability of the screen outwardly to the entire margin of the heel for the promotion of sealing pressure. A screen such as that shown in the drawing in which the mesh openings ap-

proximate 14 to the inch, and are comparable in size to the shanks of the attaching nails is well suited for the purpose providing that such a screen has the necessary inherent stiffness and stability due to its woven structure and the wire employed to transmit the holding power outwardly of the attaching area in all directions to the margin. A screen having a mesh opening comparable to the shanks of the nails and with the necessary inherent stability is capable of penetration without destruction, and of properly engaging the nail heads for the purpose of transmitting stresses imposed thereby. Such a screen, in the holding power and sealing function which it exerts, differs markedly from the fabric insertions or substitutes therefor which have no substantial stability against bending, and which are necessarily ruptured and destroyed in the area of penetration.

30 In the manufacture of this heel a two-part mold is preferably employed, having a cavity portion 20 and a top plate 22. The cavity portion is provided with supporting pins 24 having shouldered portions 26 upon which the screen 14 is supported at a slight elevation from the bottom of the mold. A rubber biscuit indicated at 28 is placed thereover, and due to the pressure within the mold is forced downwardly to completely fill the cavity and through and about the screen, leaving the screen as indicated in Figs. 1 and 2 embedded within the heel at the attaching face. By so locating the screen, a minimum amount of rubber is compelled to be forced through the screen, which would otherwise cause distortion and interfere with the molding operation. Furthermore, the heel need not be made in two parts, which would likewise interfere and render impractical the molding operation. In this connection, however, it is to be understood that the bond secured by supporting the screen slightly removed from the bottom cavity of the mold is quite different and much better than any bond which could possibly be secured by supporting the screen or its equivalent directly on the bottom of the mold cavity, and relying upon the bond secured through engagement of the rubber with the top surface.

35 The finished heel provided with the reinforced attaching surface may be readily attached to a heel base by driving the usual heel-lift-attaching nails therethrough within the area encompassed by the screen until the heads contact with the screen. The screen has sufficient lateral stability against bending out of its plane to aid in compressing the marginal edge and secure the

necessary tight seal and attractive appearance, and at the same time due to its location permits the heads of the attaching members to be located adjacent and in proximity to the attaching face, leaving a maximum of heel depth available for wearing purposes. Furthermore, the entire heel body substantially to its complete depth has the yielding property of the rubber from which it is formed, giving qualities of resilience and a feel not possible of attainment with the ordinary attaching members embedded midway between the tread and attaching faces of the heel, whether these members be in the form of separated washers, or an embedded plate or the like of substantial area.

The metal screen located at the attaching face with its inherent stability is much superior to fabric inserts which have been heretofore suggested, as these inserts lack the stiffness necessary for aiding the maintenance of a tight edge, and require complete reliance upon a concavo-convex heel or the like to insure sealing properties through a distortion of the heel body in cross-section.

What is claimed is:

A heel for boots and shoes comprising a body portion of rubber provided with an attaching face having a raised marginal portion designed to be compressed upon attachment of the heel to the flat surface of a heel base and a woven wire screen embedded in the heel body substantially at the attaching face and smaller than the heel body to lie generally inside of the marginal portion, the mesh of the screen comparing with the shanks of the usual heel lift attaching nails and the wire being of sufficient strength to provide for penetration without destruction in the area of penetration by the shanks and to provide for holding engagement with the heads, the woven screen structure having sufficient stability against bending to adequately transmit the holding stress of the attaching nails outwardly to the entire margin of the heel and augment the sealing pressure throughout the periphery.

ARTHUR GREENBAUM.
FRANK J. KELLEY.