

O. C. DAVIS.
 REINFORCED RUBBER SOLE.
 APPLICATION FILED DEC. 21, 1916.

1,232,509.

Patented July 10, 1917.

FIG. 1.

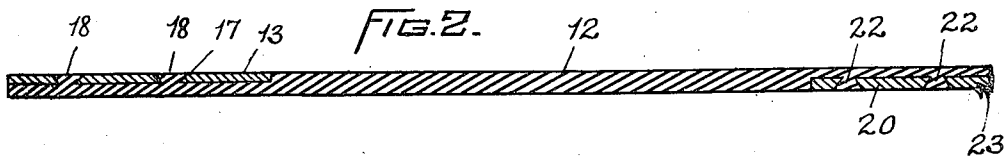
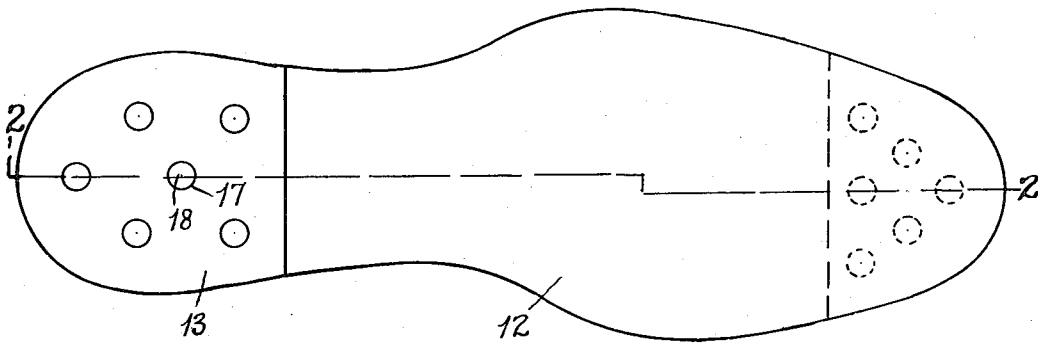


FIG. 3.

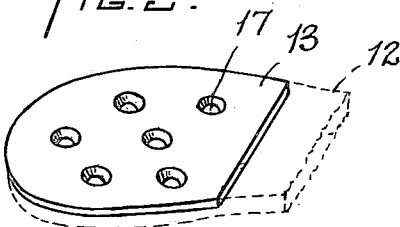


FIG. 4.

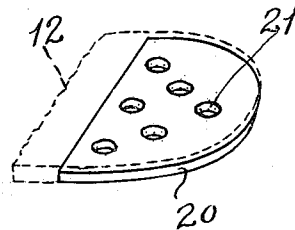


FIG. 5.

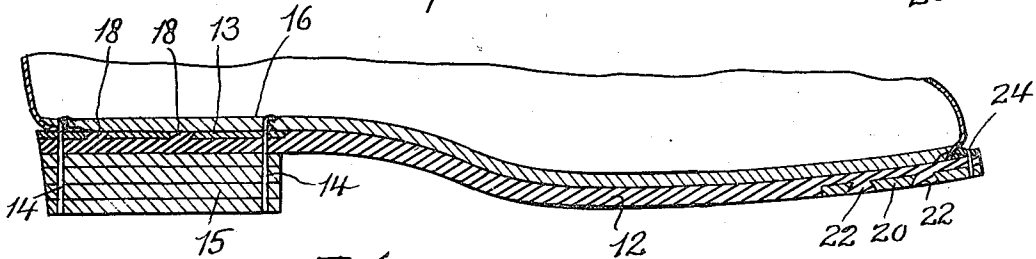
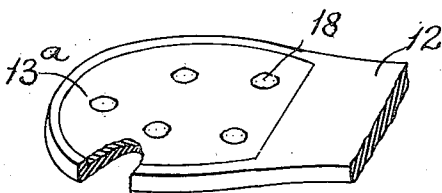


FIG. 6.



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UNITED STATES PATENT OFFICE.

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REINFORCED RUBBER SOLE.

1,232,509.

Specification of Letters Patent.

Patented July 10, 1917.

Application filed December 21, 1916. Serial No. 138,181.

To all whom it may concern:

Be it known that I, OSCAR C. DAVIS, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Reinforced Rubber Soles, of which the following is a specification.

This invention relates to a full length rubber outsole, the heel portion of which constitutes a seat for a heel body attached to the heel seat by nails, or other suitable fastenings, the rubber outsole being attachable to component parts of the shoe by any suitable fastenings according to the make of the shoe.

The object of the invention is to provide a rubber outsole adapted to be handled and applied as a single part and having flexible fore and shank portions, and a heel portion of sufficient strength and rigidity to enable it to be held by heel-attaching nails, or other fastenings, without liability of stretching or yielding at the points where said nails pass through it.

To this end the invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification,—

Figure 1 is a plan view of the upper side of a sole embodying my invention.

Fig. 2 is a section on line 2—2 of Fig. 1.

Figs. 3 and 4 are perspective views of the reinforcing members shown by Figs. 1 and 2.

Fig. 5 is a longitudinal section showing my improved outsole incorporated in a shoe.

Fig. 6 is a fragmentary perspective view, showing a modification.

The same reference characters indicate the same or similar parts in all the figures.

In the drawings, 12 represents a sole body made of elastic rubber, this term including any vulcanizable composition commonly employed in making elastic soles. Said body includes a fore portion, a shank portion, and a heel portion all formed in one piece.

To the upper side of the heel portion of the body 12 I attach a reinforcing heel-shaped member 13, formed to engage the nails 14 which secure the heel body 15 to the sole body and to the heel seat portion of the shoe, said heel seat portion including a part of the usual inner sole 16. The member 13 may be of any suitably strong and relatively unyielding material, such as leather

or leather-board, adapted to be penetrated by the nails and having sufficient tensile strength to prevent liability of enlargement of the holes formed by the nails, said member therefore reinforcing the heel portion of the rubber sole body so that said portion is adapted to be securely held by the heel-attaching nails. If desired, the member 13 may be made of one or more layers of frictioned duck or canvas. The member 13 is intimately united to the heel portion of the rubber body by vulcanization, said member being applied to the body before the same is vulcanized. The strength of the union may be increased by forming openings 17 in the member 13, said openings receiving portions of the material of the rubber body in the form of tongues or plugs 18 filling the openings and vulcanized to the walls thereof. The openings should be spaced from the margin of the member so that a continuous or imperforate marginal portion is provided, adapted to receive the nails 14. The member 13 preferably occupies a recess in the upper side of the body 12, so that its upper side is flush with the upper side of the shank and fore portions of the body.

The sole is adapted to be handled and incorporated in the shoe as a single piece or part, there being no separate member requiring independent handling. If desired, the body 12 may be provided with a tread member 20 applied to the under side of the toe portion of the body and united thereto in the same manner that the heel shaped member 13 is united to the heel portion, the tread member occupying a recess in the under side of the body so that its under side forms a part of the tread surface of the sole, and is flush with the rubber portion of said tread surface.

The tread member 20 may be provided with openings 21 receiving portions 22 of the material of the rubber body, and with a channel 23 (Fig. 2), adapted to receive stitches 24 securing the fore part of the outsole including the member 20, to the welt, or other part of the shoe to which the fore portion of the outsole is attached.

I prefer to make the tread member 20 of chrome-tanned leather, this being a material adapted to resist wear to a satisfactory extent, and to be united by vulcanization to the rubber body.

As shown by Fig. 6, a reinforcing heel-shaped member 13^a may be employed, the

margin of which is within the margin of the heel portion of the outsole body. In each case the heel-shaped member forms the upper side of the heel end of the sole and is substantially coextensive with the elastic heel portion of the rubber body, and with the heel body 15, so that the flexibility of the fore and shank portions of the outsole is not affected by said member.

10 I claim:—

A full length outsole having flexible fore and shank portions, and a relatively inflexible reinforced heel portion, adapted to receive attaching nails, and free from liability
15 to tear away from such nails, said outsole comprising a one-piece elastic rubber body, the elastic heel portion of which forms a

seat for a heel body, and a relatively inflexible heel-shaped reinforcing member of greater tensile strength, intimately united
20 with said elastic heel portion and forming the upper side of the heel-end of the sole, said reinforcing member being formed and arranged to receive nails connecting a heel
25 body, the heel-end of the outsole, and the heel-seat portion of a shoe, and being substantially coextensive with the said elastic heel portion, so that the flexibility of the shank and fore portions of the sole is unaffected.

In testimony whereof I have affixed my
signature.

OSCAR C. DAVIS.