June 21, 1938. H. R. HUSTAD 2,121,353

RUBBER HEEL

Filed Dec. 8, 1936

Fig. 1.

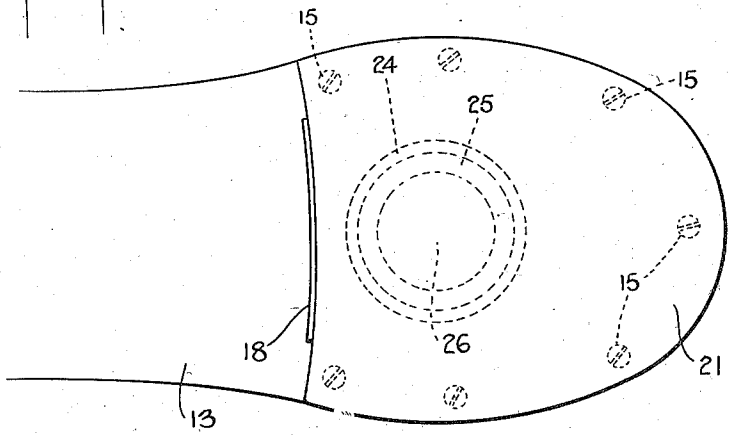


Fig. 2.

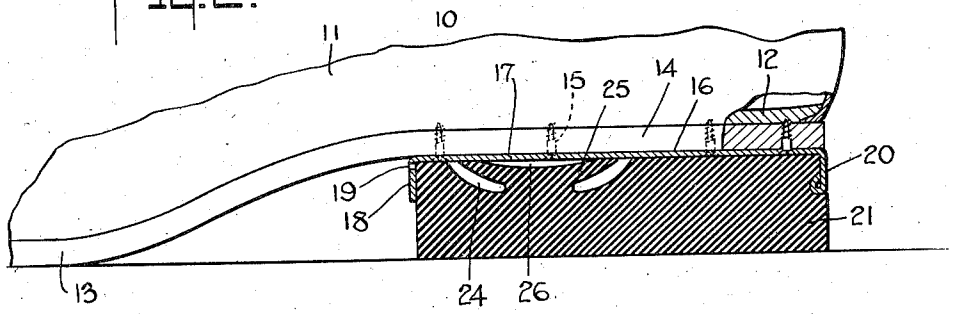


Fig. 3.

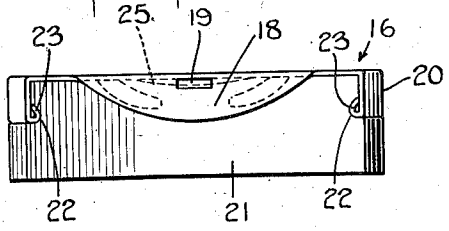
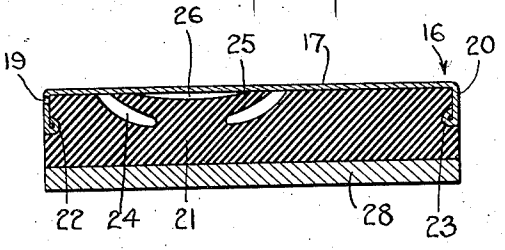


Fig. 4.



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RUBBER HEEL

Hugo R. Hustad, New York, N. Y.

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4 Claims. (Cl. 36—36)

My present invention relates to heels for footwear and more particularly to a removable replaceable heel.

My present invention contemplates the use of a removable replaceable heel of suitable material, preferably resilient, and advantageously of rubber and which may readily be attached to or removed from a shoe structure at will and which when in position on the shoe structure is firmly attached thereto against accidental displacement.

A feature of my invention is an improved rigid, preferably metallic, positioning means for a removable replaceable heel.

A feature of my invention is a suction means associated with a heel of suitable material for attaching the heel to a shoe structure.

A feature of my invention is a rigid positioning means for a heel and therewith associated suction means for holding the heel in position with the positioning means constructed to permit the insertion of means for breaking the suction to permit ready removal of the heel therefrom.

In the accompanying drawing,

Fig. 1 is a bottom plan view of a portion of a shoe structure showing my improved heel in position thereon;

Fig. 2 is a side elevation of the structure shown in Fig. 1, the shoe structure being shown partly in section and with my improved heel and positioning means shown in section;

Fig. 3 is an elevation of my improved invention appearing from the front thereof; and

Fig. 4 is a sectional view similar to my heel structure shown in Fig. 2, but illustrating another embodiment of my invention.

Referring to the drawing, 10 designates generally a shoe structure composed of the upper 11, insole 12, and the outer sole 13 which may be carried backwardly to the end of the heel portion of the shoe to form the heel base 14. Secured to the heel base 14 by a plurality of screws 15 is a positioning device 16 of rigid material and having the outline generally of the contour of the heel base 14. The positioning means 16 comprises the plate portion 17 in engagement with the under face of the heel base 14 and through which the attaching screws 15 pass. At the front portion of the plate 17 is arranged a downwardly extending flange 18 provided with a slot 19 through which may pass a device for a purpose to be hereinafter described. In the drawing and particularly in Fig. 3 the depending flange 18 is shown as a segment of a circle and the slot 19 is formed in the flange 18. This is but one form which such flange 18 may take and I may if desired form the flange 18 of two separate portions spaced apart from each other to provide for the equivalent of such slot 19.

Around the periphery of the plate 17 excepting the front portion of the plate 17 there is formed a depending skirt 20 and within which the upper portion of the replaceable removable heel 21 is positioned. The removable replaceable heel 21 is of any suitable resilient material, advantageously of rubber, and is provided around its peripheral face—except the front face—with a groove 22, such groove lying in a plane in which lies the lower edge of the skirt 20. Advantageously the skirt 20 has its lower edge folded inwardly as indicated by the reference numeral 23, such inturned lower edge 23 fitting into the peripheral groove 22 in the removable replaceable heel 21.

In the upper face of the removable replaceable heel 21 and adjacent to the front end of such heel 21 is formed a cavity 24. Formed integral with or attached to the material of the heel 21 and at the lower central portion of the cavity 24 is an upwardly and outwardly flaring resilient member 25, the upper surface of which is dished or cupped as indicated by the reference numeral 26 and which acts as a suction cup when the same is forced into engagement with the adjacent lower surface of the plate 17 of the positioning means 16. Referring to Fig. 2 the suction cup 25 is shown in operable relation with respect to the lower face of the plate 17 and securely holds the removable replaceable heel 21 in position with its upper face in engagement with the lower face of the plate 17. When in this position it will be apparent that there remains a full clearance between the outer edge of the suction member 25 and the rim of the cavity 24, thus affording limited self-adjustability in any direction of the suction member 25 relative to the material of the heel. The suction means 25 is assisted in holding the heel 21 in position with respect to the positioning means 16 by the interengagement of the inturned portion 23 of the skirt 21 and the peripheral groove 22 in the heel. Displacement of the heel 21 with respect to the positioning means 16 is prevented by the downwardly extending flange 18 above referred to. The heel 21 is therefore securely held against accidental displacement and relative to the positioning means 16.

The embodiment of my invention shown in Fig. 4 corresponds generally to the embodiment illustrated in Figs. 1, 2 and 3, and like parts are designated by like reference characters. How-

ever, in the embodiment shown in Fig. 4, the skirt 20 extends completely around the periphery of the plate 17, of the positioning means 16, and the groove 22 or equivalent is provided around the heel 21. The portion of the material of the heel 21 which fits into the positioning means 16 is preferably of suitable yieldable material. The wearing face portion 28 of the heel may be relatively hard, and may be of material separate from that of the body of the heel 21, or of the same material and suitably treated to provide the desired degree of hardness.

In the embodiment of my invention shown in Fig. 4, the instep end portion of the depending skirt 20 is provided with a slot 19 for affording entry of a suitable tool for breaking suction relationship of the suction means 25.

In the various embodiments of my invention, the skirt 20 may possess sufficient yieldability to effect satisfactory engagement of the inturned edge 23 with the groove 22, or in lieu of a groove 22 formed in the material of the heel 21, the material of the heel at the location of engagement with the inturned edge 23 of the skirt 20 may possess sufficient yieldability to effect satisfactory engagement with the inturned edge 23.

In placing the removable replaceable heel 21 in the positioning means 16 the rear of such heel 21 is first positioned with the inturned portion 23 of the skirt 20 engaging in the peripheral groove 22 of the heel. The heel 21 is then moved rearwardly so as to have the front face thereof set behind the downwardly extending flange 18 whereupon the suction means 25 will engage with the under face of the plate 17 and on pressure being applied to the bottom of the heel opposite the suction means 25 the suction means 25 is caused to adhere with the under face of the plate 17.

Should it be desired to remove the heel 21 from the positioning means 16 a knife blade or other thin tool is inserted through the slot 19 or its equivalent and forced between the plate 17 and the upper front portion of the top of such heel and the end of such tool forced within the suction device 25 so as to break the suction and permit the heel 21 to be removed from the positioning means 16, namely by reversal of the above stated operation of attaching the same to the positioning means.

Whereas I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. In an improved heel comprising a body of suitable material and suction cup means secured at one face of the material of said body, to provide clearance between said suction cup means and the material of said body, thus affording limited self-adjustability of said suction cup means relative to the material of said body, the engaging cup face of said suction cup means lying substantially in the plane of the upper face of said body.

2. In an improved heel structure for footwear, the combination of a heel comprising a body of material, means for positioning said body of material relative to the footwear, suction cup means arranged to secure said heel relative to said positioning means, means for securing said suction cup means to the material of said body to provide clearance between said suction cup means and the material of said body, thus affording limited self-adjustability of said suction cup means relative to the material of said body, said positioning means being provided with an opening for the insertion of a suitable tool to release suction relationship of said suction cup means.

3. In an improved heel structure for footwear, the combination of a rigid plate, a downwardly depending flange formed integral with the plate and at the front end thereof, a slot formed in said downwardly depending flange at its junction with the plate, a skirt formed integral with and extending downwardly from the periphery of the sides and rear of the plate, an inwardly extending lip formed at the lower end of the skirt, a heel comprising a body including a portion provided with a peripheral groove for engagement with the inwardly extending lip of the skirt, and the forward end of the body engaging with the downwardly extending flange, a cavity formed in the upper surface of the body, a suction cup device located in said cavity and adapted to engage with the under surface of the plate, said suction cup device being attached to the body of the heel to provide clearance between said suction cup device and the material of said body, to afford limited self-adjustability of said suction cup device relative to the material of said body, said suction cup device maintaining the heel in position with respect to the plate against accidental movement, and an opening in said positioning means for affording entry of a suitable tool for releasing the suction cup device.

4. In an improved heel of suitable material provided at one face with a cavity, suction cup means disposed in said cavity and secured to the body of the heel, to provide clearance between said suction means and the body of the heel, said face of the body of the heel being adapted for securement to the heel structure of footwear, said suction cup means functioning to secure the heel to the footwear independently of the securement of the body of the heel to the footwear.

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