May 18, 1926. 1,585,220

H. S. WILLIS

RUBBER SHOE HEEL

Original Filed Nov. 1, 1922

Fig. 1.

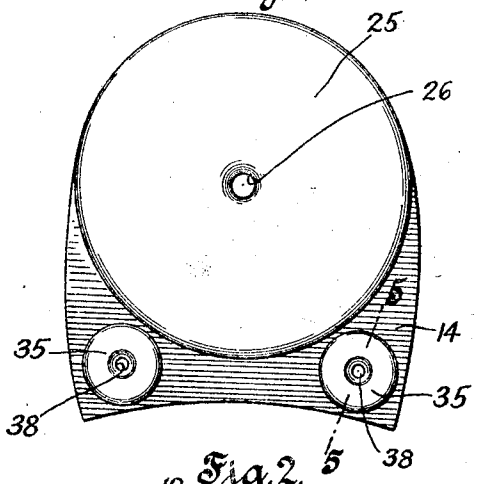


Fig. 3.

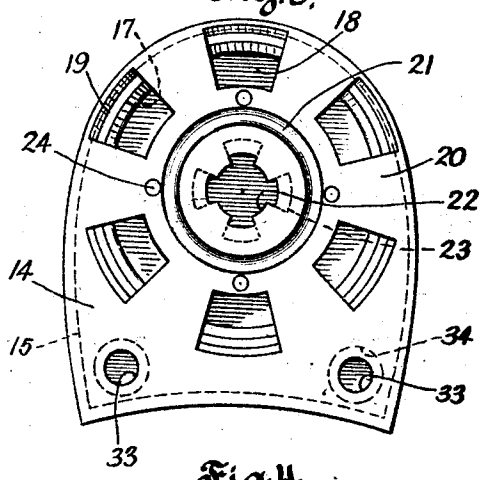


Fig. 2.

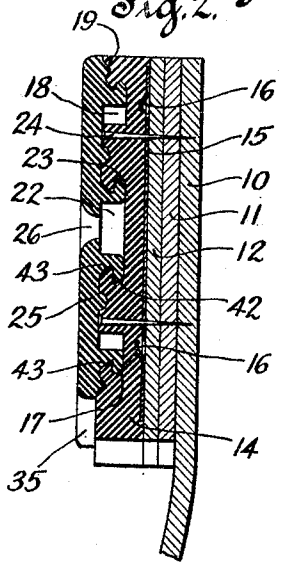


Fig. 4.

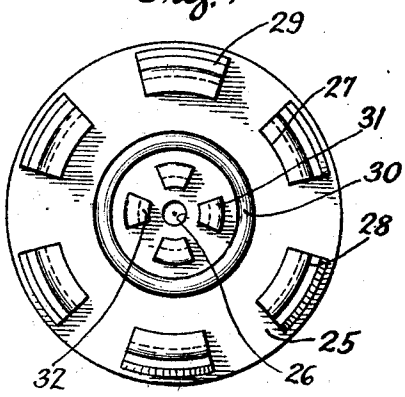


Fig. 6.

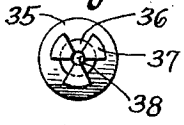


Fig. 7.

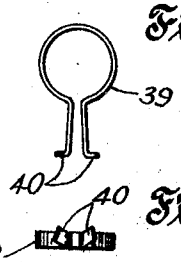


Fig. 5.

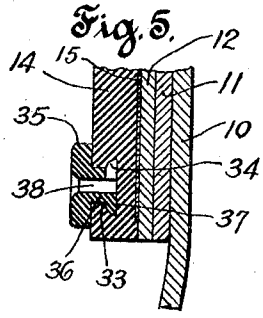
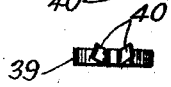


Fig. 8.



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UNITED STATES PATENT OFFICE.

HARRY S. WILLIS, OF PHILADELPHIA, PENNSYLVANIA.

RUBBER SHOE HEEL.

Application filed November 1, 1922, Serial No. 598,269. Renewed January 21, 1926.

This invention relates to improvements in heels of foot wear and the main object is to provide a heel having detachable elements, preferably of resilient nature, adapted to cushion the boots or shoes in walking upon hard pavements or like surfaces.

Another purpose is to provide means whereby the contact elements may be rotated or turned from one position to another thereby equalizing the wear to which they are subjected.

A further aim is in the provision of a heel structure that can be readily applied to ordinary shoes, either when first made or at the time of repair, said structure being so contrived that the appearance of the heel can be maintained in its original integrity.

It is well known that rubber heels have long been in use and attained a degree of deserved popularity, and further, that heels having rotatable inserts have been tried with indifferent success.

The present invention is an attempt to combine the practical features of each in a new and original manner, the outer lift or wear receiving element being interengaged with the next adjacent member so that it may be turned relatively to it or removed wholly for replacement at will.

These and other similar aims, objects and purposes are accomplished by the novel construction and arrangement of parts, hereinafter described and shown in the accompanying drawing, forming a material part of this disclosure, and in which:—

Figure 1 is a plan view showing an embodiment of a heel made in accordance with the invention.

Figure 2 is a central longitudinal sectional view of the same.

Figure 3 is a top plan view of the heel the upper elements being removed.

Figure 4 is a bottom plan view of the outer lift.

Figure 5 is a fragmentary sectional view of the heel taken on line 5—5 of Fig. 1.

Figure 6 is a bottom plan view of one of the lesser lift elements.

Figure 7 is a side view of the lifter used in removing the wear elements.

Figure 8 is an end view of the same.

As shown in the drawing, the numeral 10 designates the sole of a shoe to which are attached intermediate lifts 11 and 12 respectively.

Seated on the outer lift 12 is a cushion plate 14, made to conform in profile with the heel, of rubber or resilient composition and interposed therebetween is a metal plate 15 having integral raised prongs 16 embedded in the under surface of the cushion plate 14 and secured by vulcanization.

The upper surface of the plate 14 contains a series of segmental shaped, undercut recesses 17 arranged in a circular row and open outwardly at their inner portions 18, the material beyond the recesses being corrugated as at 19 as shown, the spaces 20 between the recesses, being the full height or thickness of the plate.

A depressed ring 21 is formed in the plate 14 concentrically within the space included by the circular series of recesses and at the center of the plate is another recess 22 having outwardly extending radial undercut extensions 23, the plate being secured to the lifts by a plurality of fasteners 24, the heads of the same being preferably set below the surface of the plate.

Fitting the plate 24 is a disc 25 having a level outer surface and containing a central opening 26, the edges of the disc conforming to the rear of the heel as shown.

On the inner contacting side of the disc 25 are a plurality of projections 27 shaped in conformity with and adapted to enter the recesses 18 and having outer marginal extensions 28 to correspondingly enter the undercut portions 17, the material of which the disc is made permitting such springing and bending as may be required.

Raised arcuate elements 29 on the disc enter the depressed ring portion 19 of the plate and a corresponding raised ring 30 fits the depression 21 producing an essentially solid structure, the small openings 18 being the only portion not filled.

At the central portion of the disc are extensions 31 joined by solid elements 32, the same being adapted to pass through the openings 22 and engage below the undercut portions 23 and embedded therein, holding the disc in firm engagement with the plate 14.

In the front corners of the plate 14 are openings 33 leading to annular recesses 34 and seated on the surface surrounding the openings are resilient buttons 35 formed with stems 36 from the ends of which extend projections 37 adapted to be pressed

together to pass through the openings and then spring outwardly into the recesses 34, holding the buttons in firm engagement.

These buttons are provided with central passages 38 extending through the stems and are adapted to receive key members 39 having opposed prongs 40 suited to engage in recesses 34 and provide means for extracting the button in a manner which will be understood.

A larger key of the same general character is used to enter the recess 22, through the opening 26, in removing the disc when desired to rotate the same into a new position.

In order to facilitate entering the engaging portions of the disc it will be seen that the contacting portion of both disc and plate are bevelled in correspondence as at 42 and 43 respectively, so that a minimum of pressure causes interengagement and due to the resiliency of the parts, when engaged a solid structure is attained.

Although I have described my improvements with considerable detail and with respect to certain particular forms of my invention, I do not desire to be limited to such details since many changes and modifications may well be made without departing from the spirit and scope of my invention in its broadest aspect.

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

A rubber heel comprising a cushion member having a series of undercut recesses arranged in a circular row, a circular tread member extending coincident with the cushion member at the rear and sides thereof, projections having cam faces adapted to engage in the mentioned recesses, and corrugations formed co-operatively in the adjacent faces of said tread and cushion members.

In testimony whereof I have signed my name to this application.

HARRY S. WILLIS.