Oct. 20, 1959 A. BERKE 2,908,983

SELF-ROTATABLE AND REPLACEABLE HEEL

Filed Sept. 19, 1958

FIG. 1

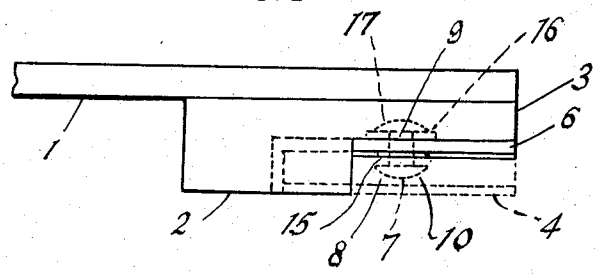


FIG. 2

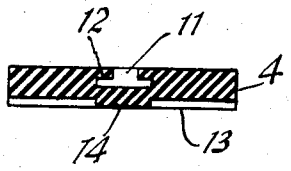


FIG. 3

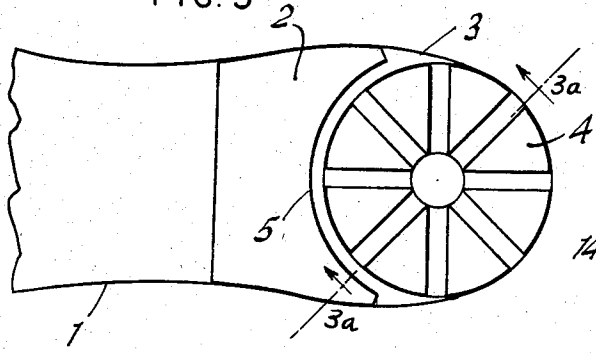


FIG. 4

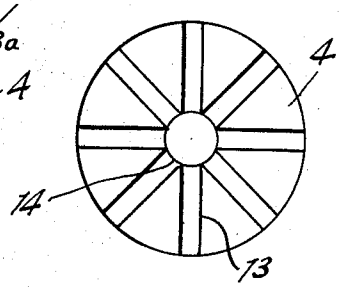


FIG. 5

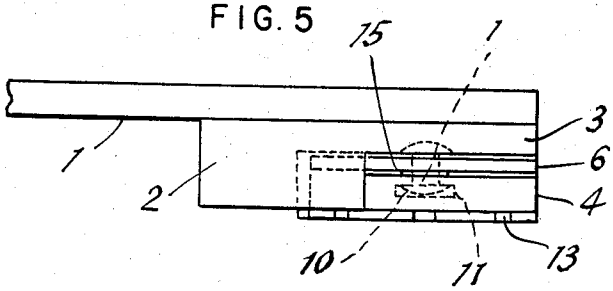
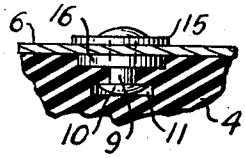


FIG. 3a



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SELF-ROTATABLE AND REPLACEABLE HEEL

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2 Claims. (Cl. 36—39)

I have invented an improvement in heels for shoes; especially a heel having a part or member which can be replaced with a minimum of mechanical effort, without implements or tools when it is deformed because of prolonged use.

An object of the invention is to provide a heel having a replaceable member which is so attached to the body of the heel on a shoe that it will revolve continually bit by bit, as the wearer of the shoe takes successive steps, thus bringing a small separate portion of the surface of said member into position at each step, and distributing the wear due to the friction of the heel against the sidewalk or other surface evenly over the entire periphery of said member. Hence erosion at any particular part of the replaceable member is thus avoided. The heel thus retains its shape, in addition and walking is made easier and more comfortable.

As is well known, heels on shoes usually wear down at the back, and the wear is not confined to the middle of the heel at the rear portion thereof. Instead, the erosive effect is more pronounced along one side of the heel; in most cases the outer side at the rear end. Such a heel thus not only becomes unsightly, but also it imposes stresses upon the foot of the wearer, and often very troublesome anatomical effects on the bones of the foot and leg are entailed.

My invention eliminates these drawbacks by providing a heel with a replaceable member, so connected to the heel that not only can it be easily replaced when worn away with use, but also is united to the heel in such a way that it can turn by degrees, thus always presenting a different area to the part of the heel that receives most of the abrasive action. The erosion or wearing away of the heel is thus spread over the entire outline of the replaceable member, and the height of the heel remains substantially constant for virtually the whole length of the rear edge on both sides of the shoe to which the heel is attached. All stresses on the wearer's foot are thus eliminated.

These and other objects and the complete advantages of my improvement are clearly set forth hereinafter, and the novel characteristics are defined in the appended claims. The drawings illustrate an embodiment of my invention, but this disclosure is by way of example only, and changes in various respects can be made without departure or deviation from the general design in which the invention resides.

On the drawings:

Figure 1 is a side view of a cushion heel with a rotatable and replaceable member attached to the rear portion thereof.

Figure 2 is a view in cross-section of the replaceable member.

Figure 3 is a bottom plan of the heel that is shown in Figure 1.

Figure 3A is a cross-section on the line 3*a*—3*a* of Figure 3 showing the relationship of the stud and the washers.

Figure 4 is a bottom plans of the portion of the replaceable member of the heel shown in Figure 2.

Figure 5 is a view similar to Figure 1 showing the replaceable member in full side elevation.

Referring first to Figures 1 to 4, I indicate at 1 the part of the outer sole of the shoe having at the rear end a heel comprising a thick front portion 2, a reduced relatively thin extension 3, and a replaceable member 4, which is substantially circular in outline. The high part 2 of the heel is concave on the side adjacent the member 4, so as to conform to the shape of this member as indicated at 5.

When the section 4 is joined to the heel, it lies under the lower face of the extension 3. It is united to the heel with a thin layer of leather or other material 6 between the upper face of the member 4 and the lower face of the extension 3; and as the member 4 is generally made of some cushioning substance or material, such as rubber, the weight of the wearer of the shoe as he lets his full weight come down upon it, usually presses the member 4 more or less forcibly against the layer 6. But just before this, as the heel engages the surface on which the wearer of the shoe is treading, the replaceable member 4 is usually rotated through a short arc generally in a forward direction, along the edge at the outer side of the shoe. This partial rotation, which is repeated from step to step, brings a new part of the member 4 into position at the point where the most wear takes place, and the erosion wear is thus evenly distributed over the entire outline of the member, besides giving the walker greater comfort and freedom from the tiring effects that he would sooner or later otherwise feel, if the member 4 remained stationary and did not rotate at all.

To attach the member 4 to the reduced portion of the heel 3, a stud 9 is made fast to the layer 6 which is secured to the extension 3. This stud 9 has an enlarged rounded head 10, the edge of which forms an extended shoulder with the stud 9; and the member 4 has a central cavity 11 with an incut groove forming a shoulder 12 at its inner end. As the member 4 will stretch, it can be easily forced against the layer 6 so that the stud 9 will enter the cavity 11, which is no wider than the thickness of the stud 9, but less wide than the head 10, and the portions around the aperture 11 will stretch and permit the head 10 to enter the groove 12 at the inner end of the cavity 11, and the shoulder on the head will engage with the incut shoulder 12 of the member 4. The member 4 is thus free to rotate and whenever it should be replaced, it can easily be pulled off the stud 9; but in ordinary use it will remain affixed rotatably to the layer 6.

The end or outer surface of the member 4 is provided with a radial ribs 13 extending outward from a central projection 14. The spaces between these ribs 14 are open around the circumference of the member 4, so that in ordinary use the under-surface of the member 4 cannot be pressed against the surface of the walk and stick thereto by vacuum-cup effect.

The face of the layer 6 adjacent the member 4 bears a metal washer 15 surrounding the stud 9. On the opposite face of this layer is a washer 16, against which the adjacent end of the stud is riveted, as shown at 19. The layer may be nailed or otherwise affixed to the section 3 around the stud 9. The layer 6 is firmly attached to the thin extension 3 by nails or other fastening means and it holds the stud 9 firmly and tightly in position. The thin extension 3 may be recessed on its outer face to provide a seat for the stud 9, if desired.

The stud is affixed to the layer 6, which is between the two washers 15 and 16. This washer is therefore spaced slightly from the member 4 so that, when the weight of the wearer of the shoe is pressed down upon the member 4, this member is not only free to rotate but can bend

slightly against the layer 6, and as this layer 6 is of leather, which is flexible, the layer can be bent against the extension 3. This construction thus adds to the cushioning effect of the material of which the member 4 is made; the stud 9 being secured to the layer 6 and this layer being secured to the extension 3, both the stud and the layer are thus tightly affixed to the heel and the member 4 can be pulled off for replacement and a new member attached easily and quickly, without detaching or loosening the stud.

Having described my invention, what I believe to be new is:

1. A heel having a relatively thin extension adjacent its rear end, a layer disposed under said extension, a stud in said layer and projecting from the lower surface thereof, said stud having a head on its upper end and a washer thereon adjacent said head, the washer and head being located between the upper face of said layer and said extension, a replaceable yieldable member adjacent the lower face of said layer, said stud also having an enlarged head with surrounding shoulder projecting sideways from the stud at its lower end, a second washer surrounding said stud adjacent its lower end, but spaced from said enlarged head, the layer being located between said washers, the layer being secured to said extension, said member having a cavity to receive the lower end of said stud and be detachably secured to said layer and extension, and free to rotate automatically at each step taken by the wearer of the shoe, said cavity having a relatively large recess with an undercut shoulder at the inner end of said cavity, the enlarged head of said stud fitting said recess with the said enlarged head engaging said shoulder, said member having a central projection and radial ribs on its lower surface.

2. A heel having a relatively thin extension adjacent its rear end, a stud secured to the heel adjacent said extension, and projecting below the extension, said stud having a head on its upper end and a washer thereon under said head, the washer and head being located adjacent said extension, a replaceable yieldable member adjacent the lower face of said extension, said stud also having an enlarged head with surrounding shoulder projecting sideways from the stud at its lower end, a second washer surrounding said stud adjacent its lower end, but spaced from said enlarged head, said member having a cavity closed on the outer face of said member to receive the lower end of said stud and be detachably secured to said extension, and free to rotate automatically at each step taken by the wearer of the shoe, said cavity having a relatively large recess with an undercut shoulder at the inner end of said cavity, the enlarged head of said stud fitting said recess with the said enlarged head engaging said shoulder, said member having a central projection and radial ribs on its lower surface.

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