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C. JENCO

2,289,016

RUBBER HEEL

Filed July 8, 1941

Fig. 1.

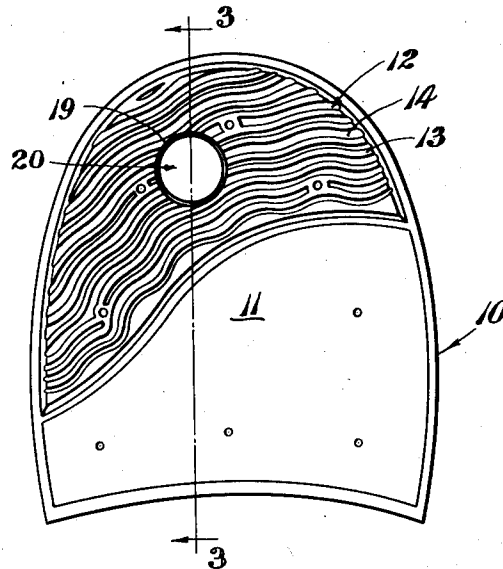
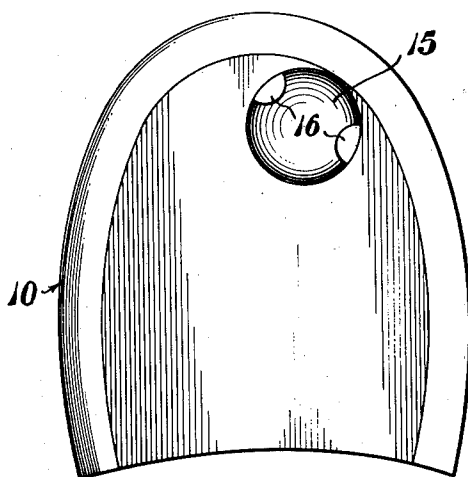


Fig. 2.

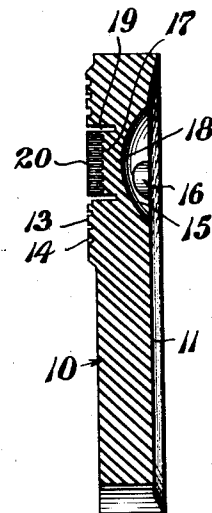


Fig. 3.

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RUBBER HEEL

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3 Claims. (Cl. 36—35)

This invention relates to rubber heels and includes among its objects:

To provide a rubber heel of that type utilizing a resiliently mounted plug at the base of a suction cavity wherein the plug is so mounted in conjunction with the adjacent material of the heel as to enable the plug to function efficiently throughout the life of the heel to prevent slipping or skidding and add springiness to the heel;

To provide a rubber heel of the type utilizing a resiliently mounted plug and coacting suction cavity wherein the cavity is constructed to promote the proper amount of "give" to the plug while at the same time being reinforced in a manner such as to resist breakdown throughout the life of the heel;

To provide a rubber heel having a tread surface which is highly effective to minimize slipping and skidding by the user of the heel and which at the same time resists wear so as to prolong the life of the tread.

The foregoing and other objects and advantages will become apparent in view of the following description taken in conjunction with the drawing, wherein:

Fig. 1 is a bottom plan or tread-surface view of a heel constructed in accordance with the invention;

Fig. 2 is a top plan or attaching-surface view of the heel of Fig. 1; and

Fig. 3 is a section taken on the line 3—3, Fig. 1.

As above noted, the present improved heel is of the type utilizing a resiliently mounted plug at the base of a suction cavity. In heels of this type, one of the difficulties heretofore experienced has been to provide a plug having a free depressing action and which at the same time would perform efficiently throughout the normal life of the heel without breakdown of the rubber in the region of the suction cavity. If the plug is made of a separate piece and fitted into a recess or hole, some means must be provided to retain it in place, and this has generally been accomplished by an undercut recess or an enlarged plug head fitting into a correspondingly shaped recess. Such construction necessitates flush contact of the plug with the adjacent side walls of the recess, which retards free movement of the plug during initial use, after which play or looseness develops with a resultant annoying action of the plug in the recess. The construction of the heel as herein disclosed effectively overcomes the foregoing objections.

Referring to the drawing, a rubber heel is generally indicated at 10 and is formed with a tread

surface 11 having a non-skid portion or area 12 located at the point where it receives heaviest wear and consisting of a series of ridges 13 of wavy configuration, said ridges being arranged in pairs with the ridges of each pair spaced relatively close to one another leaving a series of relatively wide grooves 14 between the pairs. This type of non-skid surface has proven through actual experience to be highly effective.

Located on the back or attaching surface of the heel and preferably at a point in line with the tread area 12 in a suction cavity 15. Adjacent the perimeter of this cavity are a plurality of reinforcing bosses 16. In the example shown and as actually used in service there are two bosses arranged substantially diametrically opposite and slightly off center with respect to the vertical axis of the cavity. The function of these bosses primarily is to reinforce the cavity, the walls of which are being constantly flexed throughout the life of the heel. These bosses thus prevent a breakdown of the cavity which has been found to take place in instances where the cavity is not so reinforced. While there are only two bosses shown it will be understood that others may be added and arranged in any suitable relation. If desired, the bosses 16 may have imbedded therein washers for attaching nails and the heel secured to the leather lift at diametrically opposite points with respect to the cavity.

The central portion of the cavity is continued downwardly in the form of a plug 17, the plug preferably being of a diameter considerably less than the diameter of the cavity so that a diaphragm 18 is provided at the base of the plug and which diaphragm may be considered as defining the peak of the cavity. By referring to Fig. 3, it will be noted that there is a clearance space 19 between the circumferential surface of the plug and the adjacent walls of the recess in which the plug has movement. Thus the plug at its top is joined to the diaphragm 18 which in turn constitutes part of the material of the heel, while at the same time it is spaced from the surrounding material, permitting the plug to depress freely and without binding throughout the life of the heel. Since the plug is joined to or is integral with the material of the heel, it always remains aligned and can never become loose. While the diaphragm is continually subjected to flexing, the bosses 16 reinforce the diaphragm and prevent a breakdown at this point.

It is preferred to cap the plug with corded material or some other efficient non-skid material which will readily vulcanize or join with the ma-

terial of the plug, such cap being indicated at 20. The cap in turn is formed with a non-skid surface in the form of a circular ridge or the like.

Not only has a plug type of heel such as that disclosed herein proven highly efficient in service, but the construction of the plug facilitates the molding and vulcanizing operation, it not being necessary to provide a separate plug for insertion in a recess or for vulcanization onto the material of the heel. If desired, the cap 20 may be omitted to lower the cost of the heel, in which event the plug in its entirety would be formed of the same material as the heel. In actual construction, the tread surface of the plug is substantially flush with the adjacent tread surface of the heel, although it may be constructed to project beyond the adjacent surface, since the reinforced diaphragm 18 will stand severe flexing over relatively long periods of use.

It will be understood that certain limited changes in construction and design of the improved heel may be adopted without departing from the spirit or scope of the invention as defined by the appended claims.

What is claimed is:

1. A rubber heel formed with a suction cavity in the attaching surface thereof, the central portion of the cavity wall being extended downwardly and being separated from the adjacent material of the heel defining a depressible plug, there being a clearance space between the plug and the adjacent material of the heel to permit free movement of the plug and flexing of the cavity walls, and one or more reinforcing bosses

formed in the walls of the cavity adjacent the perimeter of the latter to minimize breakdown strains when the heel is in service.

2. A rubber heel formed with a tread surface having a non-skid area at the rear of the heel, the attaching surface of the heel being formed with a suction cavity in the region of said non-skid area, the bottom wall at the center of the cavity being extended downwardly and separated from the adjacent material of the heel to define a solid depressible plug, there being a clearance space formed around the plug to permit free movement of the plug and flexing of the walls of the cavity, the diameter of the plug being substantially less than the diameter of the cavity, said plug being formed with a tread surface substantially flush with the non-skid surface of the heel, and means located adjacent the perimeter of the cavity for reinforcing the walls of the latter.

3. A rubber heel formed with a suction cavity in the attaching surface thereof, the central portion of the cavity being extended downwardly and separated from the adjacent material of the heel to define a solid depressible plug, there being a clearance space formed in the material of the heel around the plug to permit free movement of the plug and flexing of the cavity, the diameter of the plug being substantially less than that of the cavity, and means reinforcing the walls of said cavity to minimize breakdown strains when the heel is in service.

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