

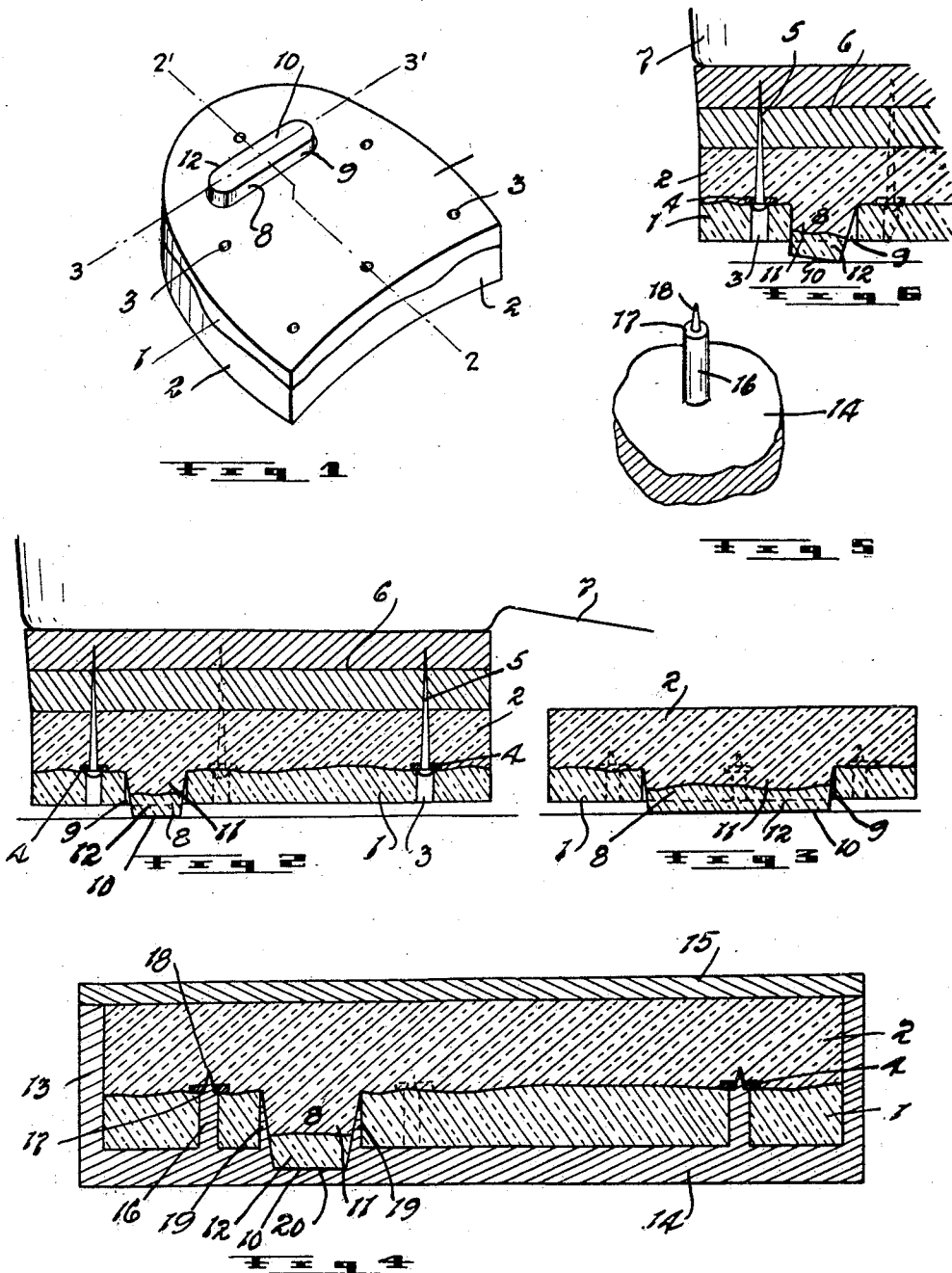
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ANTISKID DEVICE

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Inventor

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[Signature]

UNITED STATES PATENT OFFICE

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ANTISKID DEVICE

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The invention relates to improvements in anti-skid devices and an object of the invention is to provide an anti-skid device particularly adapted for use on boots or shoes and which will effectively and automatically act to prevent slipping, thereby insuring of safe footing to the wearer.

A further object is to provide a device which can be manufactured at a relatively small cost, which is not unsightly and which interferes in no way with normal walking and is not uncomfortable to the wearer.

A further and more specific object is to provide an anti-skid device, particularly adaptable for use on rubber heels, although the article can be used to equal advantage on other parts of the boot or shoe.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:—

Fig. 1 is a perspective view of a rubber heel embodying my invention.

Fig. 2 is an enlarged detailed vertical sectional view through the heel, the section being taken in the plane denoted by the line 2—2' Figure 1.

Fig. 3 is a vertical cross sectional view through the heel at 3—3' Figure 1.

Fig. 4 is an enlarged detailed vertical sectional view through the mould in which the heel is made, the heel being shown in longitudinal section therein.

Fig. 5 is a perspective view of one of the pins carried by the mould.

Fig. 6 is a vertical sectional view through a portion of the heel as it appears in Figure 2 but showing the anti-skid device in the position it occupies when resisting slipping in a forward direction.

In the drawing like characters of reference indicate corresponding parts in the several figures.

I have herein shown my invention as utilized on a rubber heel of a particular type but I wish it to be understood that it could be utilized to advantage on any type of heel or could be introduced in the sole if desired.

The special heel on which I have herein shown the invention is one previously invented by me and as fully set forth and described in my co-pending application No. 237,082 filed the 1st day of December, 1927 and wherein the heel presents a tread face 1 as ordinarily employed in rubber heels and having the desirable wearing qualities and an inner layer or portion 2 of softer and more resilient rubber, such structure providing a heel which will wear for an indefinite period and will absorb to a marked degree the jar occasioned in walking.

The heel so made is provided with nail holes 3 passing through the outer layer of rubber and terminating at washers 4 imbedded within the soft rubber layer approximately at the point where the two layers meet. Nails 5 are passed through the holes 3 and washers and are driven into the customary leather layers 6 of the reduced heel of the boot or shoe 7. Obviously the washers give a relatively large bearing for the heads of the nails and act to effectively hold the rubber heel in place.

In carrying out my invention on this special or particular type of heel, I equip the heel with a transversely extending elongated neck 8 which is surrounded by a channel 9 formed in the heel and has the base or exposed face 10 thereof contained in a lower horizontal plane than that containing the lower face of the heel proper. The neck protrudes through the lower layer 1 of the heel and embodies a soft rubber portion 11 of the same consistency as that of 2 and a harder rubber tread portion 12 of the same consistency as that of 1.

The soft rubber part of the neck permits the neck to flex readily forwardly or rearwardly and allows, together with the clearance space provided by the channel, the tread portion 12 to take a canted position as shown in Figure 6 to act as an anti-skid device when the foot slips suddenly ahead. The tread portion 12 would obviously take a canted position in the reverse direction if the foot slipped suddenly backwardly. In connection with the above, it will be obvious that the forward lower corner of the anti-

skid device will grip the ground surface and roll back due to the forward abrupt thrust of the foot as occasioned in slipping and will accordingly quickly arrest the slipping movement. Under normal walking conditions, the soft rubber inner portion of the neck allows the harder tread portion 12 to move in under the weight of the foot and forces it out when the weight of the foot is relieved. Upon the foot slipping, however, the action is as above explained.

I might here mention also that it is not entirely essential that the channel pass all the way around although I think it desirable. If the channel passes across the forward side of the neck and around the ends only, the tread portion 12 would normally be in an inclined position and would act the same as before to resist forward slipping but not backward.

In Figure 4, I have shown the manner in which this particular heel is made in a mould, the mould comprising an open topped body 13 having a closed bottom 14 and a cover plate 15. It will be observed that the bottom of the body carries suitably positioned moulding pins 16 which present an elevated shoulder 17 and terminate in a point 18 thereabove. The length of the pins to the shoulder is approximately the thickness of the outer layer 1 of the finished heel and the shoulder 17 is utilized to support the washer so that it will be imbedded in the soft rubber portion 2 of the heel when the heel is moulded.

The bottom 14 of the mould is provided also with a continuous upstanding flange 19 which is substantially V-shaped in vertical section and is utilized to form the channel 9 in the moulded heel as will be readily understood. The base 14 is also supplied with an oval-shaped pocket 20 continuous with the inner face of the flange, the base of the pocket being contained in a lower horizontal plane than the inner face of the base 14.

When the rubber layers which have been previously cemented together are placed in the mould and pressed down under the pressure of the applied top plate, the rubber moulds around the pins and is also forced down into the cavity provided within the continuous flange and into the pocket 20, the compressed rubber filling the mould as above shown in Figure 4. Subsequently the mould is heated to vulcanize the contained heel and after treatment, the heel is removed and presents the appearance shown in the other figures of the drawing.

One or more of these anti-skid devices could obviously be utilized on a heel or even on the sole of a boot or shoe for that matter and will continually prevent disastrous slipping.

I am aware that changes in the form and proportions of parts and details of construc-

tion of the device herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of the same.

What I claim as my invention is:—

1. The combination with a rubber heel, of an anti-skid device comprising a member normally extending beyond the tread face of the heel and separated from the body of the heel by a recess extending inwardly from the tread face of the heel, the part of the member within the recess being formed from relatively soft rubber and the ground engaging part of the member being formed from a wear resisting material.

2. A rubber heel formed from an inner layer of relatively soft rubber and an outer layer of relatively hard wear resisting rubber carried thereby and provided with a neck projecting outwardly beyond the tread surface of the heel and separated from the body of the heel by an inwardly extending recess, that part of the neck exposed beyond the tread face of the heel being formed from the same type of rubber as the outer layer of the heel and that non-exposed part of the neck within the recess being of the same type of rubber as the inner layer of the heel and integrally formed therewith.

3. The combination with a rubber heel, of an anti-skid device comprising a plug like member having the base thereof integrally formed with the heel and the body thereof formed from relatively soft rubber and separated from the body of the heel by a substantially V-shaped circumscribing channel and the outer end thereof projecting beyond the tread face of the heel and formed from relatively hard rubber.

Signed at Winnipeg, this 6th day of February, 1928.

PERCY H. LETCHFORD.