Feb. 23, 1965 R. PATRICK 3,170,251

ANTISKID ATTACHMENT FOR SHOES

Filed May 3, 1963 2 Sheets-Sheet 1

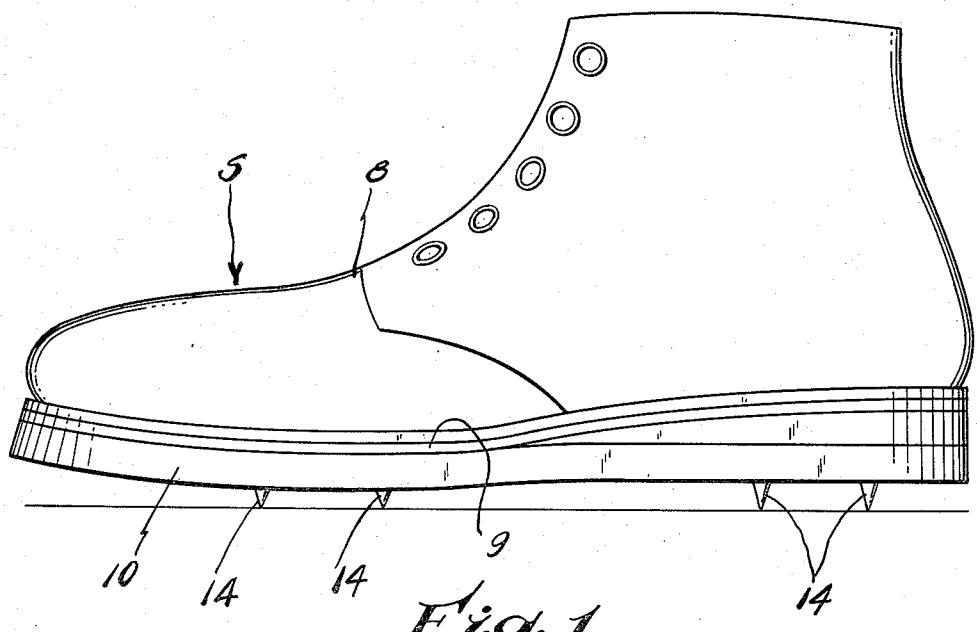


Fig. 1

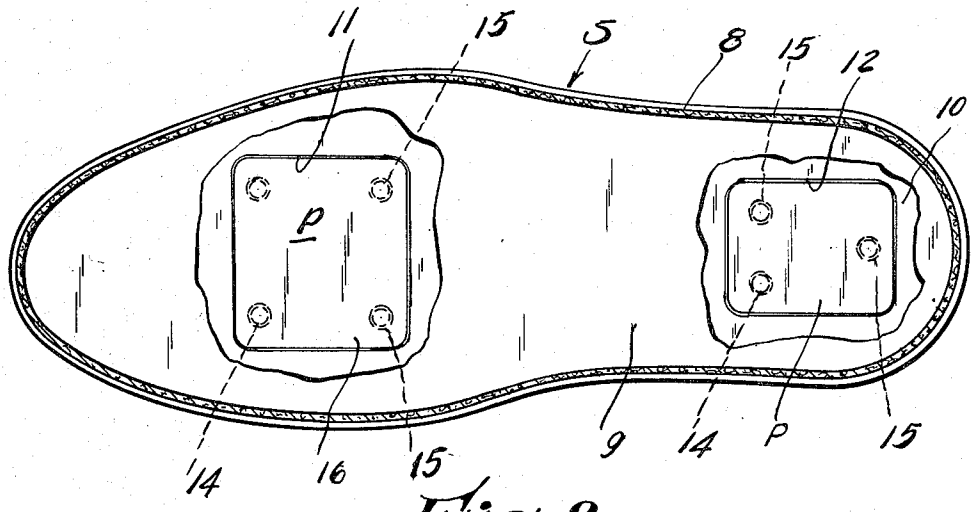


Fig. 2

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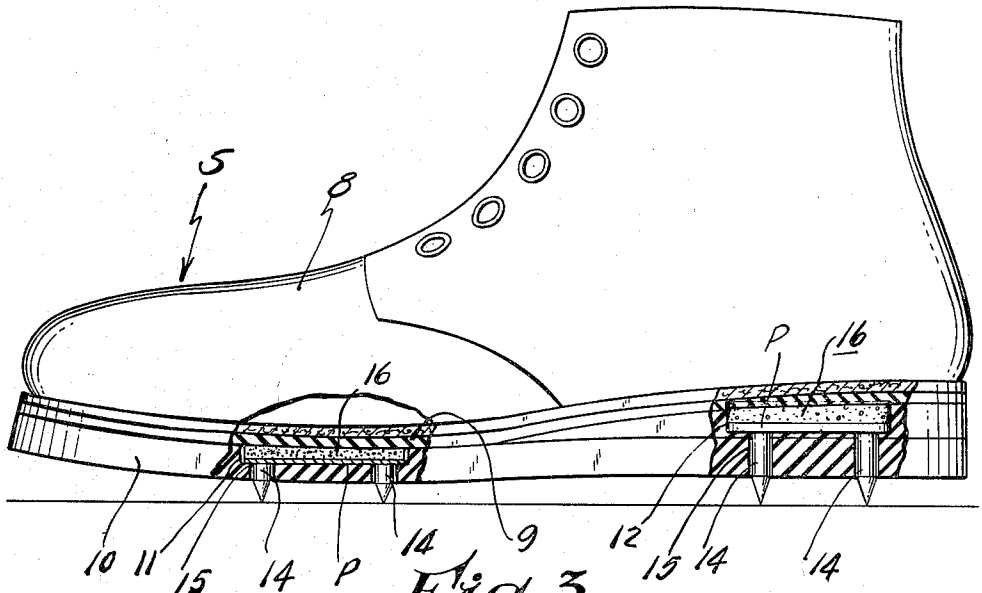


Fig. 3

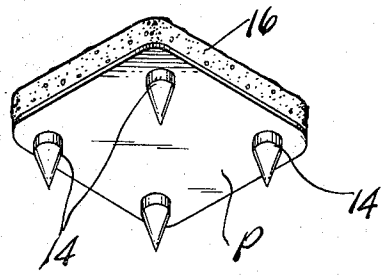


Fig. 4

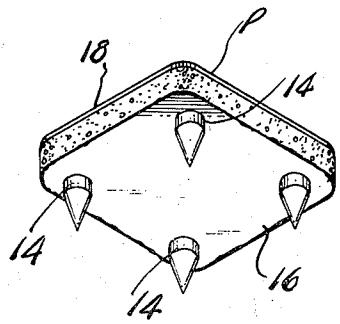


Fig. 5

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ANTISKID ATTACHMENT FOR SHOES

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3 Claims. (Cl. 36—59)

This invention relates in general to anti-skid shoes and boots designed for walking on ice and other slippery surfaces. Normally, anti-skid shoes provided with studs are used for walking on snow, ice, and other slippery surfaces, and ofttimes the snow and ice builds up on the shoe sole to form a hard cake of approximately the same thickness as the projecting studs, thus eliminating the gripping feature which normally prevents slipping or falling when walking on ice.

One of the prime objects of the invention is to design an anti-skid shoe of simple, practical, and inexpensive construction, the spikes of which are automatically self-cleaning as the wearer walks.

Another object of the invention is to provide recessed areas in the shoe soles and heels in which the anti-skid means is resiliently mounted, so that the flexing of the shoe sole, when the wearer walks, produces a reciprocating movement of the anti-skid means, as the body weight is shifted from one foot to the other. This walking movement automatically forces the anti-skid spikes downwardly when the body weight is impressed on the one foot, and the spikes are then retracted a predetermined distance into the sole of the shoe, when the body weight is transferred to the other foot.

A further object is to provide an anti-skid means which can be readily attached to shoes when manufactured, or to shoes already in general use.

A still further object is to provide anti-skid means which are of neat and pleasing appearance, which can be easily and quickly applied, and in which anti-skid means is actuated as the wearer walks, to force the spikes into gripping engagement with the ice or ground when the body weight is imposed on the foot, said spikes being automatically retractable inwardly when weight is shifted to the opposite foot, so that the spikes are self-cleaning when the body weight is removed from the foot and the resilient means expands, thus providing a pulsating movement of the spikes in the sole of the shoe.

With the above, and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter and more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appending claims, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawing:

FIGURE 1 is a side elevational view of a shoe showing my novel anti-skid means in place thereon.

FIGURE 2 is a sectional top plan view, the inner sole being broken away to show the mounting.

FIGURE 3 is a view similar to FIGURE 1, parts being broken away to show the construction.

FIGURE 4 is a perspective view of one of the creeper assemblies used mostly by children and small, lightweight persons in general.

FIGURE 5 is a view similar to FIGURE 4 showing the resilient pad mounted on the lower face of the creeper plate, and used mostly by large persons of average or heavy weight.

Referring now more particularly to the drawing in which I have shown the preferred embodiment of my invention. The letter S indicates a conventional shoe to which my anti-skid means is attached, the upper body of

the shoe being indicated by the numeral **8**, and is sewed or otherwise secured to an intermediate sole **9** in the usual manner, and a heavy outer anti-skid sole **10** is glued or otherwise secured to the bottom face of the intermediate sole **9**, and recessed areas **11** and **12**, respectively, are formed in the upper face and heel section of said anti-skid sole, the area **12** being formed in the heel as shown. Rigid plates P are mounted in the recesses **11** and **12**, and a plurality of spaced apart steel spike members **14** are rigidly mounted on each plate, with the free ends of the spikes projecting through openings **15** provided in the anti-skid sole **10**, and through similar openings provided in the heel section of the sole.

A resilient pad **16** is glued or otherwise secured to the upper face of each plate P, and form a unit of a size to freely fit in the recesses **11** and **12**, and it will be noted that the plate P is rigid and the spikes **14** are solidly mounted therein; and in walking, the body weight on the foot and flexing of the shoe when walking compresses the pads **16** and forces the spikes outwardly and downwardly for piercing engagement with the ice. When the body weight is removed, the pads retract and the sole returns to original position, forcing the plate P upwardly and this retracts the spikes into the sole and performs a self-cleaning action at each step.

The anti-skid assembly for the heel of the shoe is formed in exactly the same way as that above described, excepting that the plate P has but three spikes arranged in triangular relation (see FIG. 3 of the drawings), otherwise the construction is exactly the same. The in and out travel of the spikes, caused by the act of walking, which shifts the body weight from one foot to the other, eliminates any possibility of building up and packing cakes of ice and snow between the spikes, as such cakes would make the contact on ice more slippery than absence of spikes entirely, as the spikes in such instance would serve to anchor and hold the cake around the spikes on the sole.

The anti-skid arrangement above described is preferable for adults of average or heavy weight. For adults of average or heavy weight, the resilient pad is mounted on the underside of the plate P with the spikes projecting through the pad, see FIGS. 3 and 5 of the drawings. With this arrangement, the spikes project a very limited disance below the outer face of the sole **10**, the flexing of the foot and sole of the shoe exposing the spikes which are then drawn substantially flush with the face of the sole when the weight is shifted to the opposite foot. The heel pad arrangement, shown in FIGS. 3 and 4 of the drawings, is the same for both children and adults.

From the foregoing description, it will be obvious that I have perfected a very simple, practical, and effective anti-skid shoe for walking on ice and other slippery surfaces.

I claim:

1. An anti-skid shoe provided with a sole having recessed areas in the upper face thereof; a pattern of passages in each recessed area extending through said sole, anti-skid plates movable vertically in said recessed areas and formed with a plurality of sharpened spikes slidable in said passages as the wearer's weight is shifted from one foot to the other; resilient pads secured to said plates; said spikes having reciprocal movement in said sole passages to clean the surface of the spikes when the wearer is walking.

2. An anti-skid shoe, including a shoe sole; an anti-skid sole secured to the shoe sole and having a recessed area in the upper face thereof; a rigid plate mounted in said recessed area and formed with a plurality of sharpened spikes on the lower face thereof, said spikes pro-

jecting a predetermined distance beyond the lower face of the anti-skid sole; a resilient pad glued to the upper face of said plate; said pad normally projecting slightly above the upper face of the recessed sole, and spike passages in said anti-skid sole in alignment with and accommodating said spikes.

3. An anti-skid sole for a shoe provided with a recessed area in the upper face thereof, a plate mounted in the recessed area, a resilient pad glued to the lower face of said plate, a plurality of downwardly projecting spikes on the lower face of said plate and projecting through said pad, said plate being mounted for vertical movement in said recessed area, and openings in the recessed are of the sole for accommodating said spikes.

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