

1,179,652.

Patented Apr. 18, 1916.

Fig. 1.

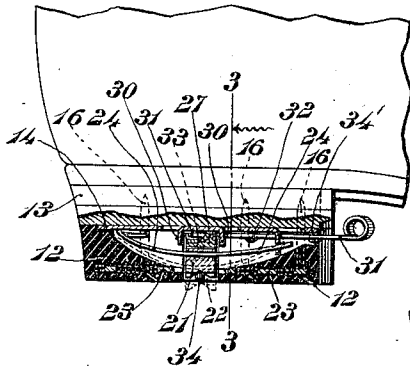


Fig. 7.

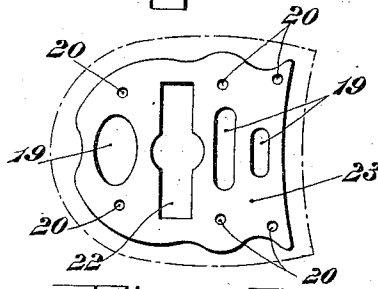


Fig. 3.

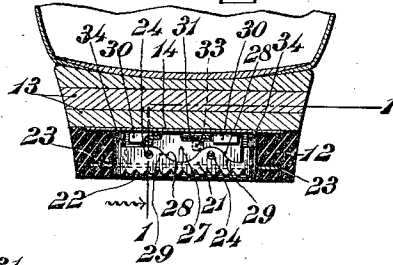


Fig. 2.

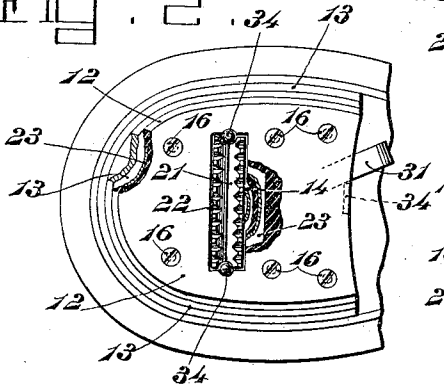


Fig. 4.

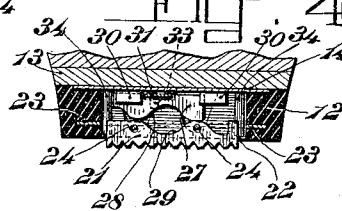


Fig. 5.

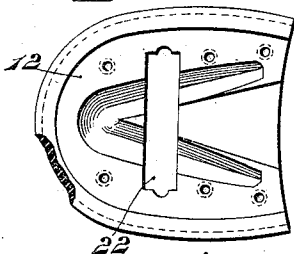
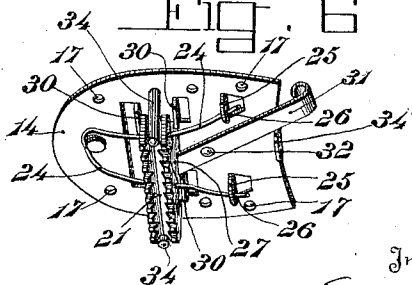


Fig. 6.



Witness:

*Harry King*

Inventor:

*Albert C. Rightor*

By

*Robert Salvo*

Attorneys

# UNITED STATES PATENT OFFICE:

ALBERT C. RIGHTOR, OF PITTSBURGH, PENNSYLVANIA.

## SAFETY-HEEL.

Specification of Letters Patent.

Patented Apr. 18, 1916.

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*To all whom it may concern:*

Be it known that I, ALBERT C. RIGHTOR, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Safety-Heels, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to anti-slipping devices for boots and shoes, particularly those capable of being thrown into and out of operative position to engage the surface walked upon at the will of the user, and has for its objects to provide a simple, inexpensive, practical, efficient and convenient device of this character, one which is well adapted for use in connection with rubber and other resilient heels, and one which may be readily applied to an existing boot or shoe without other modification of the heel thereof than the removal of the usual number of lifts incidental to the application of a rubber heel or lift of ordinary form.

In the accompanying drawings Figure 1 is a longitudinal vertical section of a safety heel or auxiliary lift and associated devices constructed in accordance with the invention, a portion of the regular heel lifts and other parts of the shoe being shown in side elevation. Fig. 2 is a bottom plan view partly broken away. Fig. 3 is a section on the line 3—3, Fig. 1, showing the anti-slipping device in retracted or inoperative position. Fig. 4 is a similar view showing the anti-slipping device in projected or operative position. Fig. 5 is a top view of the auxiliary lift. Fig. 6 is a perspective view of the plate associated with the auxiliary lift and carrying the operating means for the anti-slipping device. Fig. 7 is a plan view of the insert or anchoring plate.

The complete device constituting the present invention comprises an auxiliary heel or outer lift 12, preferably of rubber or other suitable resilient material, and certain associated parts, said complete device being adapted for application to the regular heel 13 of an ordinary boot or shoe in substitution for one or more of the outer lifts of said regular heel in a manner similar to the

application of the well-known rubber heels or lifts now in extensive use. Associated with the auxiliary lift and interposed between the same and the heel 13 is a plate 14, preferably of metal. The plate 14 is provided on its under side with transversely arranged guide flanges 30 for a purpose presently to be explained. The flanges 30 are preferably formed integral with the plate 14, being struck up from the body of said plate. The auxiliary heel or lift 12, together with the plate 14, is secured to the heel 13, after the removal of the necessary number of lifts from said heel, by means of screws or nails 16 which pass through the holes 17 suitably disposed in the plate 14, said screws or nails 16 entering the heel 13.

The creeper, calk, or antislipping device 21 preferably comprises a block or plate having a roughened outer surface or edge and is arranged for vertical movement in a slot 22 extending through the auxiliary lift 12 and arranged transversely thereof. When said auxiliary lift is composed of rubber or the like there is preferably embedded therein an anchoring plate 23 having a central opening 18 registering with the slot 22 in the lift 12, to receive the calk or antislipping device 21, thereby guiding said antislipping device for vertical movement and preventing lateral displacement thereof. The plate 23 is also preferably formed with suitably disposed openings 19 through which sections of rubber may pass to join the rubber together above and below said plate, the latter having also holes 20 through which the screws 16 pass in securing the outer lift 12 to the heel 13.

The anti-slipping device or calk block 21 is moved upwardly into its inoperative position within the heel by means of a U-shaped wire spring 24 secured to the under side of the plate 14 adjacent the rear end thereof and passing through the anti-slipping device 21, the free ends of said spring being received in slotted openings in lugs 25 struck out from the plate 14. Said spring 24 is received in a recess 26 formed in the upper surface of the auxiliary lift 12 and extending forwardly and rearwardly from the slot 22.

The means for projecting the anti-slipping device 21 downwardly into its operative position against the tension of the spring 24, and for retaining said device in said position, comprises a cam slide or block 27 having a lower cam surface 28 engaging and coöperating with an upper cam surface 29 on the anti-slipping device 21. The cam slide or block 27 is guided for lateral movement by the flanges 30 on the plate 14 which extend into the slot 22, and the anti-slipping device or calk-block 21 is guided in its vertical movements by pins 34 riveted to the plate 14 and received in recesses at the ends of said calk block 21, said pins also serving as stops to limit the movements of the sliding cam block 27.

The cam block 27 is operated to project or release the antislipping device 21 by means of a lever 31 pivoted adjacent its center, as at 32, to the plate 14, and engaging at its rear end a pin or stud 33 on said cam block. To hold the lever 31 positively in either of the positions which it is to occupy the plate 14 is provided at its front end at the breast of the heel edge with a small lug 34' over which said lever, which is of spring steel, may be lifted when being moved, said lever springing into contact with the plate 14, close to said lug, when released by the user of the device. Thus the anti-slipping device or calk-block 21 may be positively retained either in its inoperative or housed position, or in its operative or projected lowered position, and the lever 31 will also be held positively in either position to which it may be moved, and thus cannot rattle about when the calk-block is in its inoperative position.

The normal or inoperative position of the parts is as shown in Figs. 2, 3 and 6 and in full lines in Fig. 1, in which position the anti-slipping device 21, under the influence of the spring 24, is lifted into a position entirely within the lift 12 and above the lower surface thereof, so as to be out of engagement with the surface walked on. At this time the position of the cam block 27 is such as to permit such lifting of the antislipping device 21 by its spring 24, *i. e.* the high portions of the cam surface 28 are opposite low portions of the cam surface 29, and vice versa. In order to project the anti-slipping device into operative position, as shown in Fig. 4 and in dotted lines in Fig. 1, for use on slippery surfaces, the forward end of the lever 31, which is extended to a convenient point in front of the breast of the heel and beneath the instep, is moved transversely of the heel, thereby swinging said lever on its pivot 32, and moving the cam block 27 from the position shown in Fig. 3 into that shown in Fig. 4. During this movement of the cam block 27 engagement of the cam surface 28 with the cam

surface 29 causes the antislipping device 21 to be projected downwardly into operative position against the tension of the spring 24. The cam surfaces 28 and 29 are so formed that when the cam block 27 is moved into the extreme position shown in Fig. 4, interengagement of high portions of said surfaces will cause said antislipping device to be positively held in its operative position, upward thrust of said antislipping device being transmitted through said cam block to the plate 14 and heel 13. At this time the lug 34' will positively retain the lever in such position that said lever, acting through the pin or stud 33 on the cam block 27, will lock said block in place to hold the calk block in projected or operative position.

The guiding and anchoring plate 23, embedded in the outer lift 12, and which is of a size or extent nearly equal to the lift 12, serves primarily to anchor the heads of the nails or screws 16 and prevent them from pulling through the relatively soft material, as rubber, composing the said outer lift, but also serves to guide the anti-slipping device or calk-block in its vertical movements.

Having thus described my invention I claim and desire to secure by Letters Patent:—

1. A device of the character described comprising a plate arranged for attachment to the heel of a boot or shoe, a rubber outer lift beneath said plate provided with a slot extending therethrough from top to bottom, a guiding and anchoring plate embedded in said resilient lift between the top and bottom thereof and having an extent nearly equal to said lift, said last-named plate being disconnected from said first-named plate and having a slot registering with said first named slot and having also an opening to receive connecting parts of rubber, and an anti-slipping device movable in said slots into and out of operative position.

2. An anti-slipping device adapted for attachment to the heel of a boot or shoe and comprising a calk-block movable into and out of operative position, a plate carrying said calk-block, and a U-shaped wire spring attached near its middle to said plate and having parts passing through said calk-block, the said plate having lugs provided with slotted openings entered by the free ends of said spring.

3. An anti-slipping device adapted for attachment to the heel of a boot or shoe and comprising an outer heel lift, a plate, a vertically movable calk-block carried by said plate, a horizontally sliding cam-block co-operating with said calk-block, and pins attached to said plate and serving to limit the endwise movements of said cam block.

4. An anti-slipping device adapted for attachment to the heel of a boot or shoe and comprising a plate, a calk-block vertically

movable relative to said plate, a sliding cam-block and coöperating spring for moving said calk-block vertically, and a spring lever for operating said cam block, said plate  
5 being provided at the breast of the heel with a lug or stop for positively holding said lever in the operative and inoperative positions of said calk-block, said spring lever being adapted to be sprung so as to pass by said lug in moving it from one side thereof 10 to the other.

In testimony whereof I affix my signature.

ALBERT C. RIGHTOR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."