E. G. PERKINS.

NON-SLIPPING RUBBER HEEL.

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1,068,073. Patented July 22, 1913.

Fig. 1.

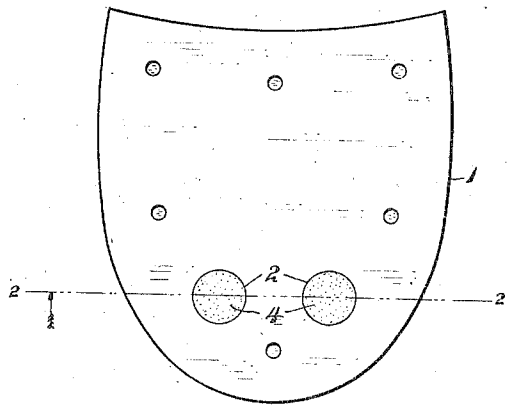
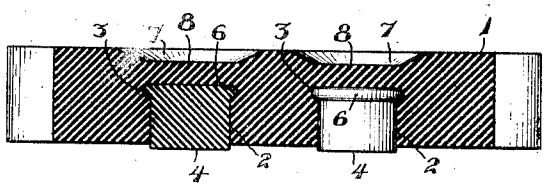


Fig. 2.



WITNESSES

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NON-SLIPPING RUBBER HEEL.

1,068,073. Specification of Letters Patent. Patented July 22, 1913.

Application filed January 9, 1913. Serial No. 740,939.

To all whom it may concern:

Be it known that I, ELBERT G. PERKINS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Non-Slipping Rubber Heels, of which the following is a specification.

The object of the present invention is to provide means, in a rubber heel, to prevent slipping, which will not impair the resiliency of the rubber heel.

A further object is to provide a non-slipping rubber heel which will wear uniformly throughout its entire bearing surface.

In the accompanying drawing, Figure 1 is a bottom plan view of the rubber heel; Fig. 2 is an enlarged vertical section on the line 2—2 of Fig. 1.

Referring to the drawing, 1 indicates my improved rubber heel. In the rear portion there are formed two cylindrical recesses 2, in a line extending transversely of the heel, each recess being formed in the under side of said heel, and extending up through the greater part of its depth. The upper or closed end of the recess is formed with an annular enlargement 3. In each recess is contained a plug 4, which, for the greater part of its length, is cylindrical in form to fit snugly in the recess, but of which the upper end has a flange or enlargement 6 which fits in the enlargement 3 of the recess, and holds the plug securely in the recess. Said plug projects below said recess a short distance, say one-thirty-second of an inch. The upper side of the heel is formed with two cavities 7, each located axially above a recess, so that there is formed between the bottom of each cavity and the top of the corresponding recess a wall or diaphragm 8 of rubber.

In walking, the plugs 4 contact with the ground before the main tread surface of the rubber heel, and, although said plugs are formed of practically non-resilient material, nevertheless the contact of said plugs with the ground is not unyielding, because of the elasticity afforded by the walls or diaphragms 8, the cavities 7 permitting said walls or diaphragms to resiliently move upward, whereupon the under surface of the rubber heel also comes in contact with the ground. When the heel is lifted from the ground, the pressure of said diaphragm will again force the plug outward, so that its under surface will again project below the surface of the heel. The thickness of said wall or diaphragm will be such that the bottom surface of the plug will be pressed against the ground with sufficient pressure to prevent slipping of the heel.

The following conditions are necessary for the success of a plug of this character. The operation of the plug depends upon its ability to slide vertically within the inclosing rubber; hence the part which so slides must have a smooth surface, and the part 6 which does not slide, but is held fast in the rubber must be as small as possible in relation to the height of the plug itself. I have herein shown it as only about one-fifth of the height of the plug. The diaphragm 8, which yields only when pressure is applied to the bottom of the plug, must be comparatively thin, much less than the height of the plug, and must be depressed below the upper surface of the rubber heel, and the area of its upper surface must be not less than that of the top of the plug.

While my invention includes a non-slipping plug of any material held in a rubber heel in the manner above described, I have discovered that the gum known as balata possesses properties which peculiarly adapt it for a non-slipping plug for a rubber heel. Its coefficient of friction with ordinary smooth surfaces is very great, and yet the contact thereof with the ground is practically noiseless.

I claim:—

In combination with a rubber heel having in the lower portion thereof a socket enlarged at the top, a plug of non-slipping material loosely and slidably contained in said socket and having a comparatively nar-

row flange fitting in said enlargement, and a smooth surface below said flange, the rubber heel being formed to provide a comparatively thin diaphragm immediately above said recess and depressed below the surface of the heel, and of an area, not less than that of the top of the plug.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELBERT G. PERKINS.

Witnesses:
F. M. WRIGHT,
D. B. RICHARDS.