No. 817,977. PATENTED APR. 17, 1906.

O. F. LEIBERT.

ICE CREEPER.

APPLICATION FILED JULY 15, 1903.

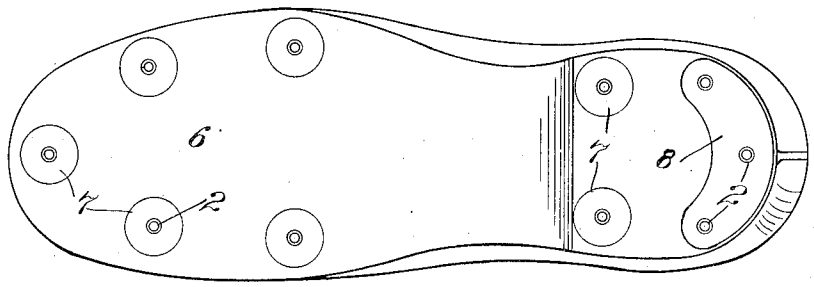


Fig. 1.

Fig. 2.

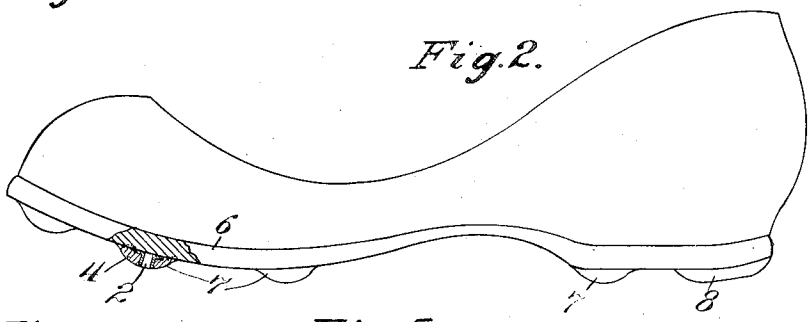


Fig. 3.

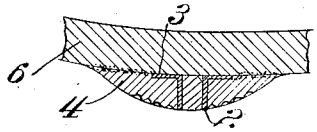


Fig. 4.

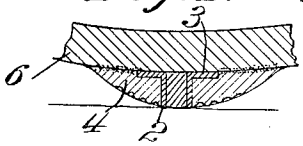


Fig. 5.

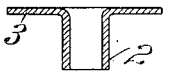


Fig. 6.

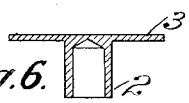


Fig. 7.

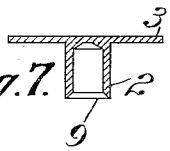


Fig. 10.

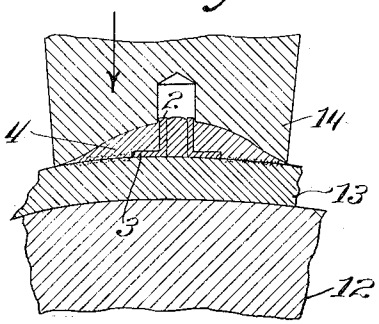


Fig. 8.

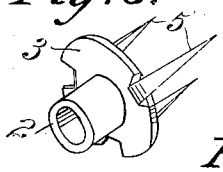
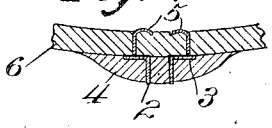


Fig. 9.



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UNITED STATES PATENT OFFICE.

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ICE-CREEPER.

No. 817,977. Specification of Letters Patent. Patented April 17, 1906.

Application filed July 15, 1903. Serial No. 165,571.

To all whom it may concern:

Be it known that I, OWEN F. LEIBERT, a citizen of the United States, residing in Bethlehem, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Creepers, of which the following is a specification.

The present improved ice-creeper may be built into the structure of the overshoe or other foot-apparel at the time of manufacture of the latter; but it is also capable of being applied to the sole of a finished shoe, boot, rubber, &c., should it be desired to particularly fit a pair of these articles for use in walking on ice.

An ice-creeper embodying the present improvements comprises a two-part structure, one of the parts being designed to take a firm hold upon the ice and for this purpose being made of a hard and durable nature, ordinarily metallic, while the other of said parts is made from a softer material capable of wearing away faster than the metallic portion of the creeper. This softer part serves the purpose not only of supporting the metallic portion, as will appear, but may be utilized for the attachment of the creeper in place on the bottom face of the boot or shoe.

One of the principal features characterizing the present creeper embodies a construction whereby the exposure of an effective biting non-slipping part continues despite the fact that the creeper may be worn away to a considerable extent with use.

In the drawings accompanying the present specification, Figure 1 is a plan view of an overshoe, showing ice-creepers secured to the sole and heel thereof and in the construction of which creepers the present improvements are embodied. Fig. 2 is an elevational view, part being in section. Fig. 3 is a sectional view illustrating the creeper construction, this view and the remaining figures being upon a somewhat larger scale than Figs. 1 and 2. Fig. 4 is a sectional view illustrating the manner in which the softer portion of the creeper is compressed and the metallic portion permitted to penetrate the surface of the ice. Figs. 5, 6, and 7 are sectional views illustrating various forms of the metallic portion. Fig. 8 is a perspective view illustrating prongs or keepers extending from the head of the metallic portion. Fig. 9 is a sectional view illustrating a creeper having a metallic portion such as indicated in Fig. 8 secured in place. Fig. 10 is a sectional view illustrating a means whereby a keeper may be secured in place on the sole of the shoe.

Similar characters of reference designate corresponding parts in all the figures.

An ice-creeper embodying the present improvements comprises as one of its principal features a portion of a hard and durable nature for direct contact with the ice. One or more of such parts project below the lower face of the sole or heel, or both, of the shoe to which the creeper is applied, extending a sufficient distance therebeyond to allow for a reasonable amount of wear.

According to the present invention such metallic part is of a form such that continued wear will not materially impair its efficiency for penetrating the ice. Such result may be attained by making the metallic portion in the form of a tube-section or thimble as distinguished from a solid rod, which tends to become blunted by use and less capable of entering or denting the surface of the ice under the weight of the individual. Such is the form of the metallic part illustrated in the drawings, this part being designated thereon by 2 and being secured to the sole (or heel) by suitable means either at the time of manufacture of the shoe or subsequently, so as to project beyond the sole, (or heel.) To assist in its attachment, it will usually be provided with a head, such as 3, and in making the metallic part the latter may be struck up from metal, as indicated in Fig. 5, or be formed from a solid piece by properly recessing to form a thimble, as indicated in Fig. 6.

In the preferred construction the metallic part is combined with a part of softer and more easily wearable nature and which part may be in the nature of a washer, such as 4, surrounding the metallic part, the latter extending through the washer. Such washer tends to support the metallic thimble and prevent the collapse or crushing over of the thimble. It may also be utilized for securing the creeper in place, especially when applied to the exterior of the sole of the shoe, the attachment ordinarily being made by some adhesive, such as rubber-cement. (Indicated by stippling in Figs. 3 and 4.) The washer 4 being of softer material than the thimble—for instance, of rubber—wears away more rapidly than the thimble and leaves the lower annular edge of the latter exposed for

direct contact with the ice. This washer may be roughened, as indicated in Figs. 3 and 4, to increase its friction.

As an additional security the metallic portion of the thimble may be provided with keepers or prongs, such as 5, which after being passed through the sole of the shoe are bent over, as indicated in Fig. 9. Ordinarily a number of such creepers are secured to the sole of the shoe. (See, for instance, Figs. 1 and 2, in which 6 designates the shoe and 7 the creepers, each as an entirety.) Fig. 1 illustrates also a single washer 8 applied to the heel and with which are combined a number of the metallic thimbles comprised in the creeper. Obviously the lower annular edge of the thimble may be sharpened, as indicated at 9 in Fig. 7.

Fig. 10 illustrates a method which may be used for attaching the creeper in place, 12 designating a last within the shoe, the sole being indicated in part and designated by 13, while a plunger 14 is used for pressing the washer of the creeper against the face of the shoe in cementing the creeper to the latter.

The present creeper is not only of utility in facilitating walking on the ice, but is also of benefit to the pedestrian on wet and slippery surfaces, since the protruding end of the metallic portion tends to increase the friction against slipping. Moreover, the surrounding rubber tends to prevent the tearing and injury of carpets by inclosing the operative edge of the thimble and preventing too great a projection of such edge beyond the face of the rubber. The rubber within the tube portion of the tubular form of device operates to prevent the same from filling with dirt and also coöperates with the material outside of the tube for protecting the same.

Having described my invention, I claim—

1. An ice-creeper comprising a metal body, and a yieldable annular cushion of substantially plano-convex shape, the body being composed of a base-plate and a tubular part projecting perpendicular to the base, the cushion being fitted on the tubular part with its plane face in engagement with the base of the plate, and extending beyond the base and attached to the shoe-bottom, the tube projecting through the cushion whereby when the device is applied to the bottom of a shoe engagement with the ground will compress the cushion and permit the tube to enter the ground.

2. The combination with a shoe, of an ice-creeper comprising a metal body and a yieldable annular cushion of substantially plano-convex shape, the body being composed of a base-plate provided with prongs, whereby it is secured to the shoe-bottom, the base-plate also having a tubular part projecting perpendicular to the base, the cushion being fitted on the tubular part with its plane face partly in engagement with the base of the plate and extending beyond the base, and thereby attached to the shoe-bottom, the tube projecting through the cushion whereby engagement with the ground will compress the cushion and permit the tube to enter the ground.

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