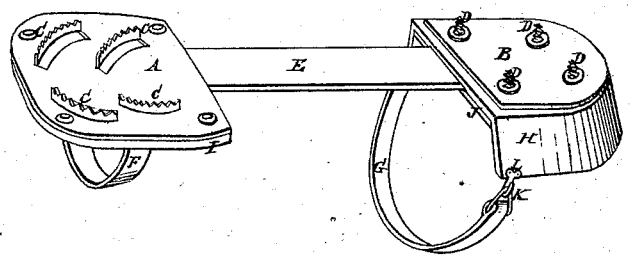
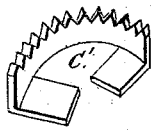
A. L. WILLIS.

Ice-Creepers.

No. 160,804. Patented March 16, 1875.

Fig. 1.





Witnesses.

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UNITED STATES PATENT OFFICE.

AUGUSTUS L. WILLIS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ICE-CREEPERS.

Specification forming part of Letters Patent No. **160,804**, dated March 16, 1875; application filed February 5, 1875.

To all whom it may concern:

Be it known that I, AUGUSTUS L. WILLIS, of the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Ice-Creepers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making part hereof.

My invention consists of the combination, in an ice-creeper, of two disks, united by a longitudinally self-adjusting elastic and flexible band, projecting points beneath to bite the ice, and straps for securing said disks to the foot; also, in an ice-creeper composed of two disks, one for the heel and one for the sole, the combination of separate straight points for the heel, with curved serrated ridges for the sole; also, in an ice-creeper, the curved serrated ridge-plate C′, stamped up or formed in one piece, having a curved set or ridge of pointed teeth, and base-plates for securing it to the disk.

The drawing shows a perspective view of my invention.

A is the sole-plate of the creeper; B, the heel-plate; C D, the teeth or points. C′ is a curved serrated ridge-plate, showing the teeth, like saw-teeth, and base-plates for securing it to the removable sole-disk. It is stamped up from one piece of sheet metal; E, a rubber strip, connecting the sole and heel pieces; F, a rubber strap, to pass over the toe of the boot to secure the sole-piece; G, a rubber strap passing around the instep, and secured to the heel clasp or socket—at one end rigidly, and at the other end by hook L and loop K—to secure the heel-piece to the heel; H, a clasp or socket, to receive the heel of the boot; I, a cushion of rubber or leather, to intervene between the boot and plate A; J, a similar cushion for the heel.

The elastic strap E may be secured, as shown at J, between two layers of cushions, or, at I, between the plate A and the cushion, with rubber, paste, or glue, or by rivets. The teeth or points C and D, respectively, may be cast in one piece with the respective plates A and B, of cast-steel; or they may be struck up by a stamp or die, as shown at C, and afterward sharpened; or the die may strike them up with the ragged edges. In such case the plates are secured to the respective cushions by riveting; or they may be screwed through washers, as at D, where the screw is passed through the cushion J, the head remaining on the inside, and the thread of the screw passing through a screw-thread in the washers.

The advantage of a screw over other methods is, that as the point wears down, there is always a sharp ridge on the side of the screw, which, as the point sinks into the ice, always catches and prevents slipping.

This ridge, instead of being spiral, as in the case of the screw, may be straight down, in which case the point has to be riveted, instead of being secured in place by the thread in the washers.

The elastic or rubber band E enables the creeper to be fitted to shoes of different sizes, and by its tension assists in keeping the parts in place.

The elastic or rubber band G possesses the same advantage of fitting a larger or smaller instep, and the arrangement of the hook L and loop K prevents its tearing.

The heel clasp or socket H fits neatly around the heel, and adds much to the security of the plate B in place, as well as to prevent the snow and dirt from getting between cushion J and the heel of the boot.

The ridges or teeth C are curved for greater strength, and their being placed diagonally across the bottom of plate A in different directions is a feature which, in itself, assists materially in preventing the wearer from slipping, for no matter in which direction there is a tendency to slide, some of the ridges oppose an edge to prevent it.

The disks and straps or bands are made of rubber of about the density and strength of that used in ordinary rubber shoes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an ice-creeper, the combination of two disks, united by a longitudinally self-adjusting elastic and flexible band, projecting points beneath to bite the ice, and straps for securing said disks to the foot, substantially as described.

2. In an ice-creeper composed of two disks, one for the heel and one for the sole, the combination of separate straight points for the heel with curved serrated ridges for the sole, substantially as described.

3. In an ice-creeper, the curved serrated ridge-plate C′, stamped up or formed in one piece, having a curved set or ridge of pointed teeth, and base-plates for securing it to the disk, substantially as described.

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Witnesses:

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