(No Model.)

C. VOORHIS & W. E. STARR.

ICE CREEPER.

No. 418,830. Patented Jan. 7, 1890.

Fig. 1.

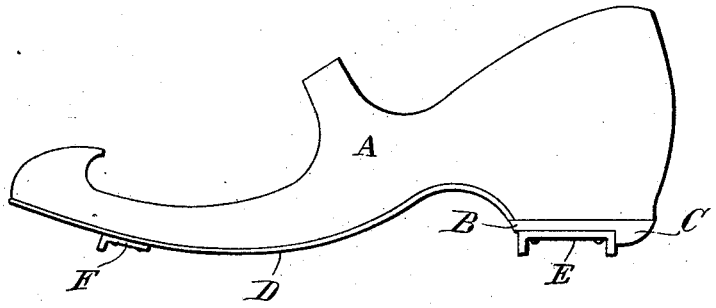


Fig. 2.

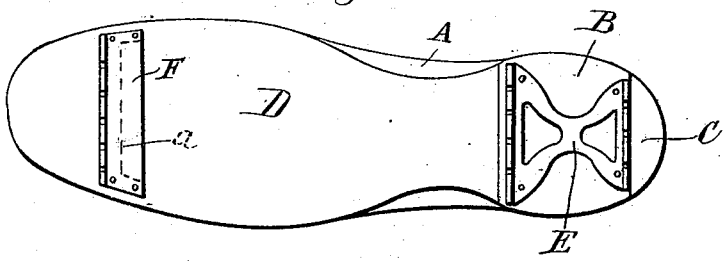
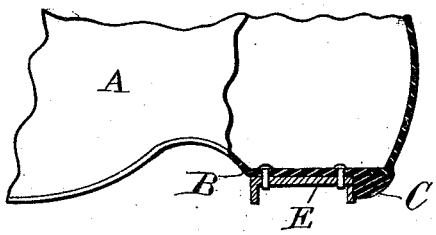


Fig. 3.



Witnesses:
Philip E. Reavey
W. J. Hart

Inventors:
Calvin Voorhis
William E. Starr

UNITED STATES PATENT OFFICE.

CALVIN VOORHIS AND WILLIAM EDWARD STARR, OF CRANFORD, NEW JERSEY.

ICE-CREEPER.

SPECIFICATION forming part of Letters Patent No. 418,830, dated January 7, 1890.

Application filed July 12, 1889. Serial No. 317,368. (No model.)

To all whom it may concern:

Be it known that we, CALVIN VOORHIS and WILLIAM EDWARD STARR, citizens of the United States, and residents of Cranford, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Ice-Creepers, of which the following is a specification.

Our invention relates to improvements in creepers intended more especially for use on icy surfaces, the object being to provide an inexpensive, reliable, easily-adjusted, and comfortable set of spurs or calks which will take a firm hold of such said surfaces in whatever position the foot may naturally be placed during the process of locomotion; and it consists in attaching independent plates, with calks or spurs formed on them, to both the heel and sole of a shoe or boot, as hereinafter more fully described.

In the drawings, Figure 1 represents a side view of a rubber shoe having our improved creepers attached. Fig. 2 is a bottom plan view of the heel and sole of same. Fig. 3 is a sectional view of the heel portion of same, showing the rear portion of the heel formed into a cushion, against the forward edge of which the rear portion of the heel-plate abuts.

The letter A in the drawings represents a rubber shoe. B is its heel; C, a portion of said heel formed into a cushion; D, the sole; E, the heel-plate, and F the toe-plate.

The heel B has attached to its face a metal plate E by means of rivets, screws, or clamps, (the latter may be formed from and integral with the plate,) which fastenings pass through the body of said heel. Said plate is substantially rectangular in shape, having two parallel straight edges, which are bent at about a right angle to the body of the plate, both edges being bent in the same direction, thus forming calks or spurs. The other two edges, for the purpose of decreasing weight, are cut or hollowed out, as shown. This plate is placed on the heel with the two rows of calks or spurs running transversely across the full width of said heel. One row of said calks or spurs rests adjacent and parallel to the front edge of the heel, while the other row rests against the face of a cushion formed and depending from and integral with the rear portion of the heel, as shown at C in Fig. 3. The purpose of this cushion is that it may in the process of walking come into contact with the surface at about the same time as the adjacent calk or spurs, thus tending to obviate any jar from and injury to the latter by its being the first to strike.

To the front or toe portion of the sole D is attached a plate F, substantially oblong in shape, but which, as in case of the heel-plate, to lessen weight, may be cut or hollowed out, as shown by broken lines at *a* in Fig. 2. This plate has only one edge bent to form a calk or spurs, and is placed about midway between the ball and toe portions of the sole, with the bent edge forward and running transversely across the full width of the sole at that point. It may be seen on referring to F, Fig. 1, that with the toe-plate so placed the weight of a person standing in the shoe rests not on the calk, but (exclusive of the heel) entirely on the ball of the shoe. Consequently there can be no obstruction or inconvenience felt from the presence of the plate. If said person starts to walk, the heel will naturally be raised and the toe depressed, when immediately the toe-calk F bites into the surface, remaining so while the foot takes a rocking motion over it in the act of advancing the opposite foot forward. The said toe plate or creeper is fastened to the shoe or boot in a manner similar to the heel-plate before mentioned, and it may be noticed that when in use either creeper is always biting into the surface except when the foot is entirely raised, as in walking, in which case the creepers on the other foot are performing the duty required. The bent edges of the plates may be formed into continuous calks or serrated to form teeth or spurs which, running transversely across the entire width of the sole and heel, impart stability and freedom from a sidewise rolling motion of the foot, as well as a sure foothold and confidence to the wearer when traversing the most glassy surface. Being permanently attached to overshoes, no adjusting straps or clamps are required, as in detachable creepers, thus rendering them adjustable for use in a fraction of the time required by the latter, while if used on a wet icy or snowy surface the benefit of their combination with rubber shoes

or boots is apparent. The creepers also serve to protect the sole and heel of the shoe or boot from wearing away, and in case the said creepers wear out before the shoe or boot a new set of the same can be expeditiously and economically substituted.

We claim—

The combination, with a rubber shoe or boot, of a creeper permanently attached to its heel, and an abutment on the heel in the rear thereof, said creeper having two or more rows of calks or spurs running across the full width of said heel, and a creeper similarly attached to the sole of said shoe or boot at a point about midway between the ball and toe portions of same, said creeper having a calk or row of spurs running across the full width of said sole, substantially as specified.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 3d day of July, 1889.

CALVIN VOORHIS.
WILLIAM EDWARD STARR.

Witnesses:
CHARLES BARR,
C. B. HARTOUGH.