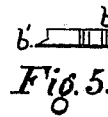
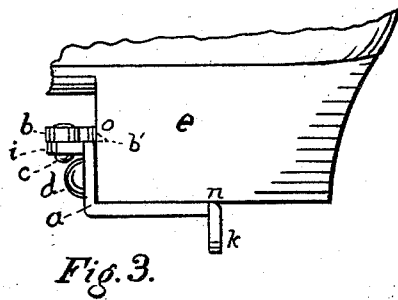
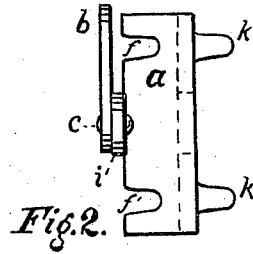
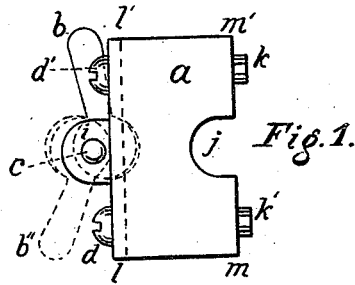


(No Model.)

T. J. CAIN.
ICE CREEPER.

No. 301,089.

Patented July 1, 1884.



Witnesses.

W. M. Vorce
L. Prouty

Inventor.

Thomas J. Cain

UNITED STATES PATENT OFFICE.

THOMAS J. CAIN, OF CLEVELAND, OHIO.

ICE-CREEPER.

SPECIFICATION forming part of Letters Patent No. 301,089, dated July 1, 1884.

Application filed December 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. CAIN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ice-Creepers, of which the following is a specification.

My invention relates to detachable ice-creepers; and the object of my improvement and invention is to dispense with the use of springs, which are liable to be clogged and broken and are not reliable in their action, and to reduce the number of separate parts necessary to the construction of an ice-creeper, whereby the cost of the article is proportionately reduced, and to afford the means of readily attaching and detaching the creeper to and from the heel of a boot or shoe, and holding it firmly in place when applied, so as to prevent its being accidentally detached while in use. I attain these objects by the mechanism and devices shown in the accompanying drawings, in which—

Figure 1 is a plan view of the device as it appears when the heel to which it is applied is inverted. Fig. 2 is a side view, omitting the screws $d d'$. Fig. 3 is an end view of the device attached to the heel of a boot or shoe, and Figs. 4, 5, and 6 are views of the cam-shaped lever b .

Similar letters refer to similar parts in all the views.

a is the frame or body of the device, and is made in a single piece, either cast or punched from sheet metal, which I consider the preferable method, for which reason the piece a is made of such a form that the projections $k k'$ exactly fill the slots $f f'$ and the projection i exactly fills the recess j , so that the side $l l'$ exactly fits into and is a counterpart of the side $m m'$. When the pieces of this shape are punched from the sheet, there is no waste of material whatever.

b is a cam-shaped lever fastened to the plate a by the rivet c , which forms a pivot on which the cam-shaped lever b turns. The rivet c may, if desired, be formed on the lever b or plate a and form a solid part thereof.

$d d'$ are screws or studs of suitable size placed in the front of the heel of a boot or shoe, so far apart and in such position that when the creeper is applied to the heel in the position shown in Fig. 3 the slots $f f'$ in the plate a

will fit upon the screws $d d'$. The slots $f f'$ may be dispensed with, if desired, and the screws or studs so placed that the plate a will fit between them; but in such case the plate a bears against the head of the screw or stud on one side only, and tends to bend or push aside the studs or screws, while by employing the slots, as shown, a bearing is obtained on both sides of the stud or screw and a firmer and better fastening is obtained.

In applying the ice-creeper to the heel the cam-shaped lever b is turned so that its narrow side is toward the heel, as shown by the dotted lines b'' in Fig. 1, and the creeper being pressed firmly into place, the cam-shaped lever b is then turned to the position shown in Figs. 1 and 2, so that its widest side is toward the heel, the effect of which is to press the cam-shaped lever b against the heel e at the point o , and thereby force the plate a firmly against the heads of the screws $d d'$ or studs, and against the heel e at the point n , thus holding the creeper rigidly in place, so that the points $k k'$, which are turned down, as shown in Fig. 3, afford a firm footing upon the ice.

To prevent any possibility of the creeper becoming loose through the wearing of the heel by the lever b at the point of contact with the heel, the cam-shaped lever b is provided with a thin projecting lip, b' , as shown in Figs. 4 and 5, which cuts slightly into the leather of the heel when the lever b is turned into place to clamp the creeper to the heel, as shown by dotted lines in Fig. 3. The same object may also be accomplished by forming the cam-shaped lever b of the shape shown in Fig. 6, whereby the point of the cam will engage with the leather of the heel and tend to hold the lever in place; or a locking device may be obtained by having a slight depression cast or stamped in the upper surface of the projection i , and a corresponding elevation cast or stamped upon the under surface of the cam-shaped lever b , at such a point that when the lever b is brought to the position shown in Figs. 2 and 3, to clamp the creeper in place, the elevation on the lever b will fall into the depression on the projection i , and thus lock the cam-shaped lever b in place.

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

1. In combination with a detachable ice-creeper, the knife-edged lever *b*, so adapted that its sharp edge shall enter the substance of the heel and hold the ice-creeper in place, substantially as described.

2. An ice-creeper consisting of an angular or bent metallic plate provided with suitable spurs or projecting points, and having a flanged portion provided with a locking cam-shaped lever, all adapted to operate substantially as shown and described.

3. In an improved ice-creeper, the angular or bent metallic plate adapted to rest upon the

bottom of the heel, and provided with points, and having a flanged portion provided with open slots, in combination with screws or their equivalents in the front of the heel, and a cam-shaped lever, whereby the plate may be locked upon the heel or removed therefrom without removing the screws, all substantially as set forth, shown, and described.

THOMAS J. CAIN.

Witnesses:

L. PRENTISS,
C. M. VORCEE.