J. CROSSLEY.

ICE-CREEPERS.

No. 189,703. Patented April 17, 1877.

Fig: 1.

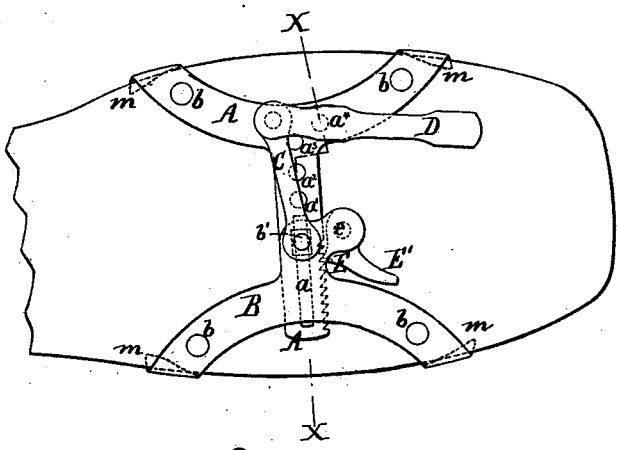
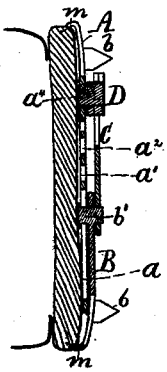



Fig: 2.




Witnesses.

A. Henry Gentner Jr.

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by his attorney

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# UNITED STATES PATENT OFFICE.

JOSEPH CROSSLEY, OF TRENTON, NEW JERSEY.

## IMPROVEMENT IN ICE-CREEPERS.

Specification forming part of Letters Patent No. **189,703**, dated April 17, 1877; application filed March 1, 1877.

*To all whom it may concern:*

Be it known that I, JOSEPH CROSSLEY, of Trenton, Mercer county, in the State of New Jersey, have invented certain new and useful improvements relating to creepers to be worn on the feet in icy weather; and I do hereby declare that the following is a full and exact description thereof.

I provide a light metallic frame in two parts, adapted to slide upon each other, and to clamp upon the bottom of the boot or shoe by being drawn together, and pressing upon and slightly into the edges of the sole. The force required to clamp a creeper upon a boot is much less than to clamp a skate. One or both parts of the metal frame carry points which prick into the ice. The two parts of the metallic frame, when properly forced together, are held by a pawl, which engages with a rack in the side of one of the parts.

The parts may be drawn together with proper force by the aid of a lever, which is detachable, and may be carried separately in the pocket. The preferable construction is to provide the lever with a link, which aids to engage the parts.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 represents a bottom view of the device as attached to a sole, with the lever and link attached for operating it; and Fig. 2 is a cross-section on the broken line *x x* in Fig. 1.

Similar letters of reference indicate like parts in both figures.

A and B are the two parts of the metal frame. The points *b* on each are properly formed to prick into the ice, and secure the wearer against slipping. The part A is formed with a long slot, (indicated by *a*,) and with a series of holes, (marked, respectively, $a^1$, $a^2$, &c.) The part A, furthermore, is formed with a notched edge, as shown. The part B is united with the part A by means of a fixed pin, *b'*, which is tapped through or otherwise firmly set in the part, and extends through the slot *a* in the part A. It is permanently engaged with the part A by means of a head formed on the pin, as indicated. The pin *b'* is also extended through the part B, and forms a projection, with which the link C may readily engage to draw the parts together by the force of the lever D, which latter is formed with a pin adapted to engage in any of the holes $a^1$, $a^2$, &c. It is represented as engaged in a hole, $a^4$, and the link C being jointed to the lever D near the fulcrum allows the lever to be moved with much force to draw the parts together by exerting a tension on the link C. A pawl, E, is permanently pivoted to a short arm on the part B. The pivot is marked *e*. The pawl is formed with a long thumb-piece, E', which allows it to be operated by the thumb or finger.

After the device has been once worn upon the boot the projections or edges *m* will have formed slight indentations in the edge of the boot-sole, and care should be taken to apply the device again in the same position. In any case a sufficient force can be exerted by the lever D to draw the points *m* forcibly into the leather at the edge of the sole, and thus to secure the device without requiring any other fastening. After it is secured the lever D and link C are disconnected from the other parts of the device, the pin being drawn out from the hole $a^4$ in the part A, and the hole in the link C being disconnected from the projecting part of the pin *b'*. The parts D and C may then be folded closely together, and placed in the pocket until again needed. They are required each time the creeper is applied or removed. One lever, D, and link C will, of course, suffice for both or all the creepers of a set.

It will be understood that there may be one creeper for the ball and another for the heel of each boot, if desired.

The thumb-piece on the pawl allows the fingers to aid it in becoming engaged and disengaged, as required.

The form and proportions of all the parts may be varied within wide limits. I prefer the light skeleton formed, as represented, with two points, *b*, on the part A, and a like number on the part B. The pawl E may be a friction-pawl, smooth, or roughened like a file, and it may act against a surface not notched, if desired.

I claim as my invention—

1. The parts A B, adapted to engage with the sole of the boot or shoe, and provided with the points *b*, in combination with an intermediate pawl-and-ratchet mechanism to render the parts adjustable, as herein specified.

2. The creeper described, having the two parts A B and pawl E connected by the pin *b'*, and provided with slot *a* and holes $a^1$ $a^2$, in combination with each other and with a detachable lever, D, and link C, as herein specified.

In testimony whereof I have hereunto set my hand this 23d day of February, 1877, in the presence of two subscribing witnesses.

JOSEPH CROSSLEY.

Witnesses:
JOHN BRINDLEY,
M. E. GOLDING.