(No Model.)

M. S. WELLER.

ICE CREEPER.

No. 351,415. Patented Oct. 26, 1886.

Fig. 1.

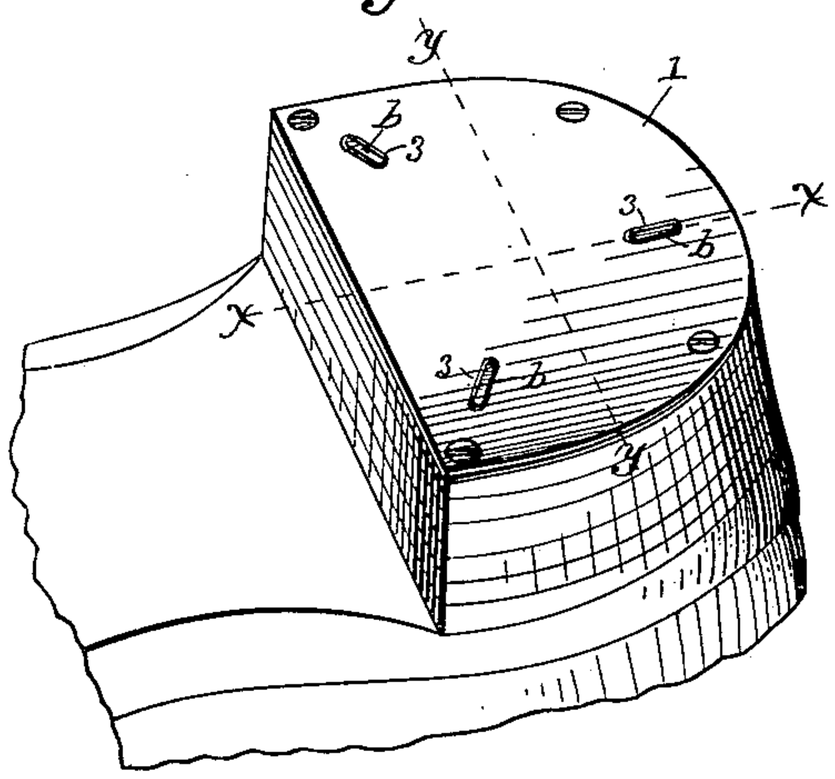


Fig. 2.

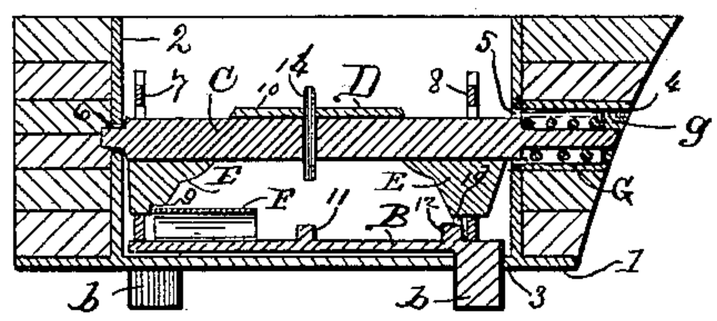


Fig. 3.

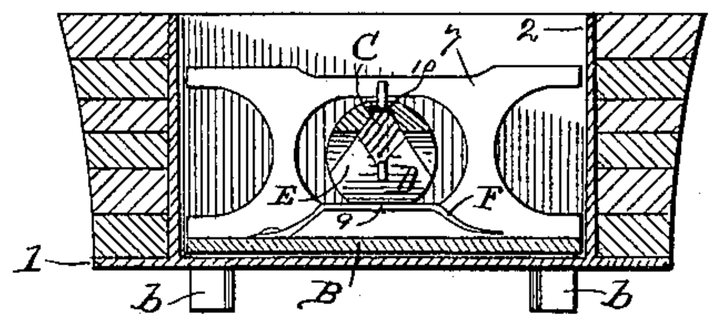


Fig. 4.

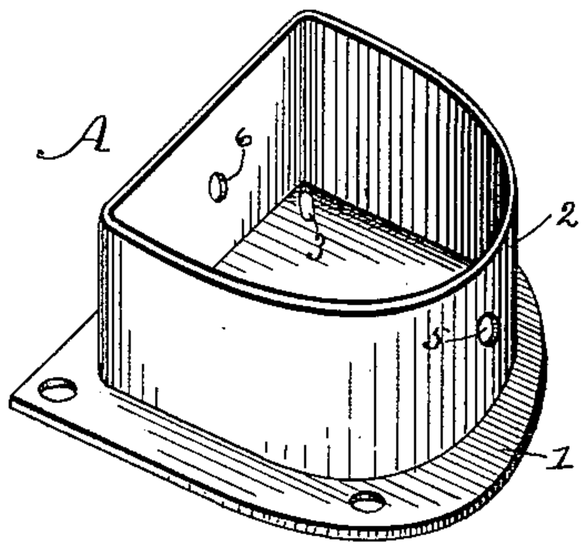


Fig. 5.

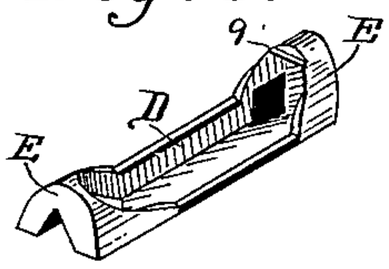


Fig. 6.

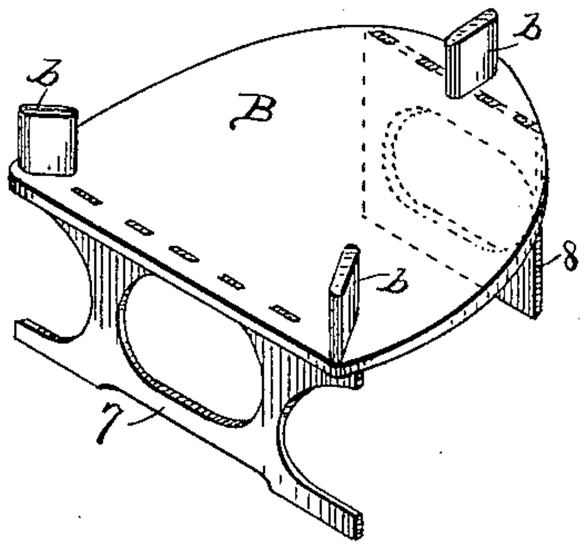


Fig. 7.

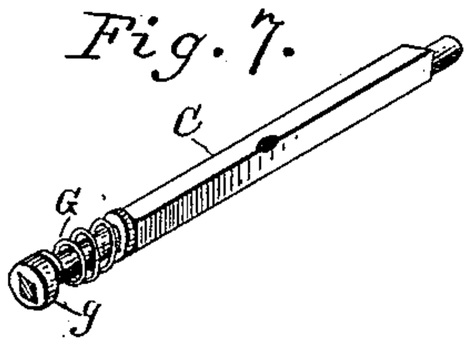


Fig. 8.

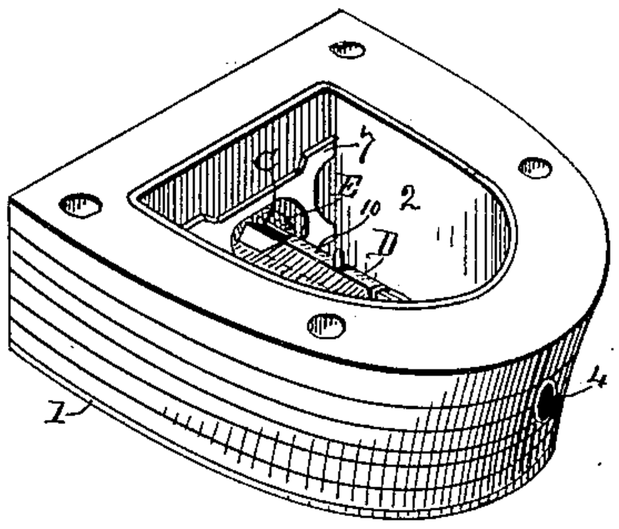
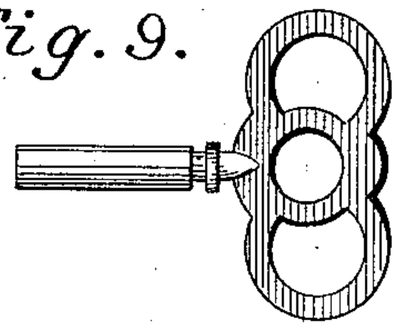


Fig. 9.



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UNITED STATES PATENT OFFICE.

MICHAEL SCOTT WELLER, OF CHARLESTOWN, WEST VIRGINIA.

ICE-CREEPER.

SPECIFICATION forming part of Letters Patent No. 351,415, dated October 26, 1886.

Application filed February 20, 1886. Serial No. 192,660. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL SCOTT WELLER, of Charlestown, in the county of Jefferson and State of West Virginia, have invented a new and useful Improvement in Ice-Creepers, of which the following is a specification.

Figure 1 is a perspective view of a heel constructed according to my invention. Figs. 2 and 3 are sections thereof on, respectively, lines *x x* and *y y*, Fig. 1. Fig. 4 is a detail perspective view of the casing. Fig. 5 is a detail perspective view of the eccentric. Fig. 6 is a detail perspective view of the pin-support. Fig. 7 is a detail perspective view of the shaft. Fig. 8 is a perspective view of the heel, looking into the interior thereof; and Fig. 9 shows the key.

The invention consists in certain features of construction and novel combinations of parts, as will be hereinafter described.

In carrying out my invention I provide a case, A, comprising a base or tread plate, 1, and a tubular portion, 2. This case serves to support the several other parts of my improvement, and in practice the several layers or lifts of leather are applied thereto, the operating parts properly placed, and the heel secured to the shoe, preferably by screws, in order that it may be conveniently removed as may be desired. Through the base-plate and leading out of the portion 2, I form an opening or openings, 3, and a tube, 4, is passed horizontally through the leather and secured in an opening, 5, formed in the portion 2, preferably by threads, as shown. Opposite the opening 5 I form an opening, 6, said openings 5 and 6 forming bearings for the eccentric-shaft, presently described.

The pin-carrying plate B is provided on one side with one or more pins, *b*, corresponding with the holes 3 in the plate 1. On the opposite side of such plate I secure the plates 7 and 8, having openings for the eccentrics and forming yokes therefor. These plates 7 and 8 have their outer edges extended to slide flush against the sides of the case, in order to guide the movements of the pin-plate and prevent the same from any twisting or turning, as will be understood from the drawings. The eccentric-shaft is preferably formed of the shaft proper C and the eccentric-box D. This construction, as stated, is preferred for convenience in placing the eccentric-shaft in the case. The box D has eccentrics E, and is provided with an angular opening in the direction of its length, into which fits a correspondingly angular portion of shaft proper, thus keeping the parts together. At 9 and 10, on its upper and lower sides, the eccentric-box is flattened, forming bearings, which are pressed upon by the spring F in the different positions of the box. This spring prevents any rattling of the parts, and is shown secured to the pin-plate. To this plate are also secured or on it are formed stops 11 and 12, which are engaged by projections 13 and 14 on the eccentric-shaft The projection 14 is the extended end of a pin, which passes through the shaft proper and eccentric-box and secures such parts from independent longitudinal movement.

At its inner end the shaft is journaled in bearing 6, while its opposite end extends through opening 5 into the tube 4. This end of the shaft has an angular point to receive a key, by which it may be turned, and to such end and back from its point I secure one end of a spring, G, the opposite end of which carries a guard-plate, *g*, which is held by the spring normally at or close to the point of the shaft, to prevent ingress of dirt or mud, and may be pushed back by the key in the application of the latter. The key may be an ordinary clock-key, as will be understood.

In operation, by turning the shaft in one direction, when the pins are within the heel, the eccentrics, acting on the pin-plate, will move the same to cause the pins to project from the heel to form an ice-creeper.

Now, it will be understood that it would involve no departure from the broad features of my invention to omit the case 2 and journal the eccentric-shaft directly in the lifts of the heel; neither would it be a departure to use one instead of two eccentrics. It is also evident that instead of moving the pin-plate vertically such plate might be pivotally secured or supported at one end and have its other end provided with a pin and moved by a single eccentric; also, the shaft, instead of being arranged in the direction of length of the shoe, might be arranged transversely. I prefer, however, to employ the several parts described and to construct them as shown.

In constructing the case A the portions 1 and 2 are preferably cast in one piece, while the carrier-plate and the yokes for the eccentrics are formed separately and the yokes provided with projections fitting and riveted in holes formed in the carrier-plate. It is also preferred to arrange the pins, as shown, one at each forward corner of the heel and one near the rear end of same, and to arrange such pins, which are slightly elongated, at angles to each other to prevent any slipping thereon and so that the pins will prevent each other from bending.

While I prefer to form the yokes to encircle the eccentrics so the latter may adjust the pins in as well as out, it will be understood that the eccentric may be caused to bear against the plate to force the pins out and a spring be disposed to force the plate in when the eccentrics are properly adjusted within the heel.

Having thus described my invention, what I claim as new is—

1. In an ice-creeper substantially as described, the combination of a pin-supporting plate adapted in use to be movably supported in the heel, whereby its pins may be projected out of or incased within the heel, and a shaft adapted to be journaled within the heel and provided with an eccentric arranged to engage the pin-support, whereby the pins of the latter may be thrown out of the heel, substantially as and for the purposes specified.

2. In an ice-creeper substantially as described, the combination, with a heel having a socket, of a pin-support movably supported in said socket and having a yoke, said yoke being extended, whereby to rest against the opposite walls of the socket and thereby guide the motion of the pin-support, and a shaft journaled within said heel and having an eccentric operating in said yoke, substantially as set forth.

3. In an ice-creeper, substantially as described, adapted for use within a socketed heel, the combination, with a pin-support, of a shaft, and an eccentric fitted removably to said shaft, whereby to facilitate the application of the shaft and eccentric to the heel, said eccentric being arranged to engage the pin-support, whereby to actuate the latter out of the heel, substantially as set forth.

4. In an ice-creeper, the combination, with the pin-carrying plate and the shaft having an eccentric whereby to operate said plate, of a spring whereby to secure such parts from rattling, substantially as set forth.

5. In combination with the pin-carrying plate and the eccentric-shaft having an angular point fitted to receive a key, a guard-plate fitted on and movable along the angular point of the shaft, and a spring whereby said guard-plate is held normally at or close to the extremity of such angular point, substantially as and for the purposes specified.

6. The combination, with the case having base-plate and tubular portion having bearings 5 and 6, the shaft consisting of the eccentric-box, and the shaft proper fitting into the latter and journaled in the bearings 5 and 6, and the pin-carrying plate provided with eccentric-yokes fitting the eccentrics of the shaft, substantially as set forth.

7. The improved ice-creeper herein described, consisting of the case A, having plate 1 and portion 2, the tube 4, the pin-carrying plate provided with yokes extended to form guides, the box having eccentrics fitted to engage the yokes, the shaft proper, the spring bearing between the pin-carrying plate and the shaft, the guard-plate fitted on the point of the shaft proper, and a spring supporting said guard-plate, substantially as set forth.

MICHAEL SCOTT WELLER.

Witnesses:

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H. O. TALBOTT.