O. A. NORLUND.

CREEPER.

APPLICATION FILED MAY 25, 1909.

962,042.

Patented June 21, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

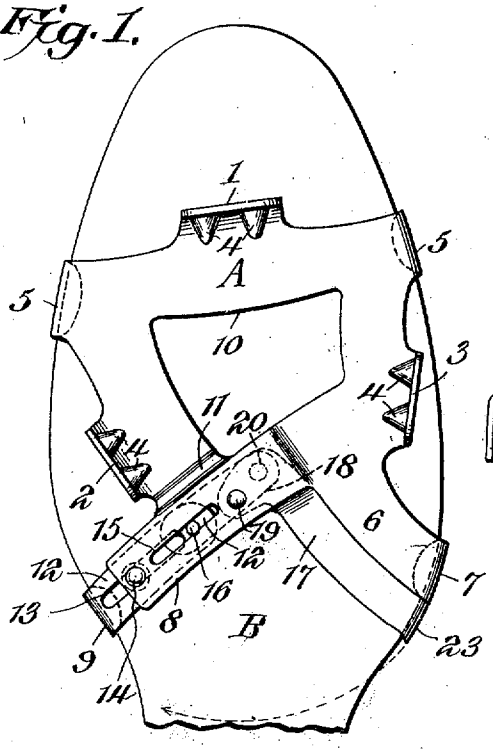


Fig. 3.

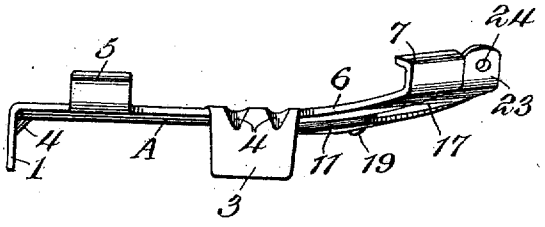


Fig. 2.

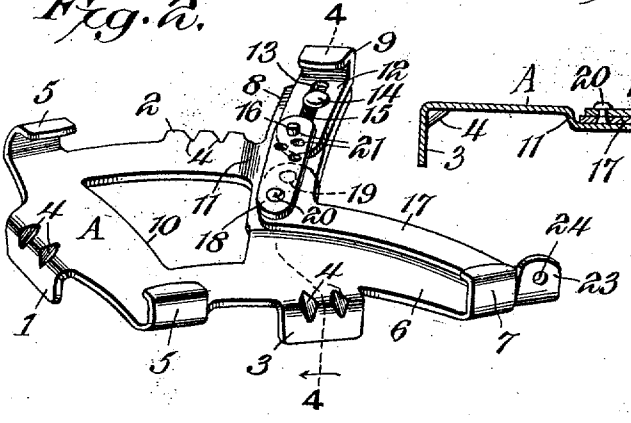
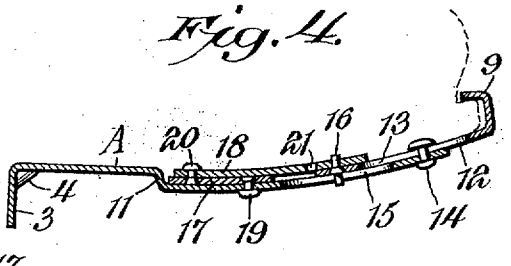


Fig. 4.



Witnesses

Howard D. Orr.

C. Bradway.

Olof A. Norlund, Inventor,

By E. G. Siggers

Attorney

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 5.

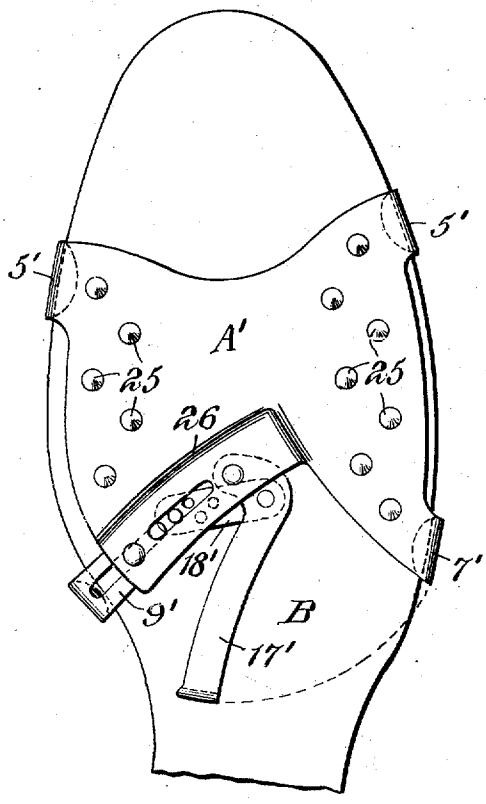


Fig. 6.

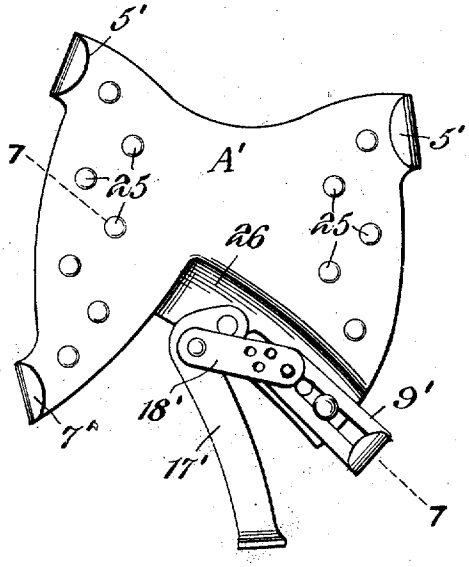
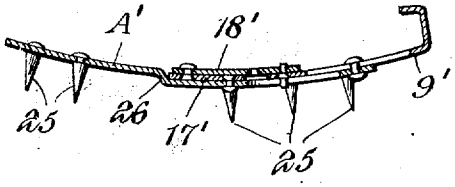


Fig. 7.



Witnesses
Howard D. Ort
C. Bradway.

Olof A. Norlund, Inventor,
By E. G. Siggers.
Attorney

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OLOF A. NORLUND, OF WILLIAMSPORT, PENNSYLVANIA.

CREEPER.

962,042. Specification of Letters Patent. **Patented June 21, 1910.**

Application filed May 25, 1909. Serial No. 498,222.

To all whom it may concern:

Be it known that I, OLOF A. NORLUND, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Creeper, of which the following is a specification.

This invention relates to creepers of that type adapted to be removably attached to the sole of a shoe for affording a sure footing for pedestrians, athletes, and such persons, and the invention has for one of its objects to improve and simplify the construction of devices of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and readily applied or detached.

Another object of the invention is the provision of an improved calk-carrying plate having sole-engaging hooks whereby the creeper is carried entirely by the sole, one of the hooks being movable and operated by a clamping lever to clamp or unclamp the plate on the sole.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate certain embodiments of the invention, Figure 1 is a bottom plan view of the creeper applied to a shoe. Fig. 2 is a perspective view of the creeper removed. Fig. 3 is a side view thereof. Fig. 4 is a transverse section on line 4—4, Fig. 2. Fig. 5 is a bottom plan view of a modified form of creeper intended more especially for icy surfaces. Fig. 6 is a top plan view of the creeper. Fig. 7 is a sectional view on line 7—7, Fig. 6.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates the plate of the creeper, which is preferably a sheet metal punching of suitable gage and formed with a front calk 1 and side calks 2 and 3, adjacent the rear of the plate, said calks being in the form of lugs bent substantially at right angles to the plane of the plate and having their flat faces disposed in angular relation so as to prevent slipping in different directions. It is preferable to construct the plate of light steel so as not to be too heavy for the user, and in order to stiffen the calks, the metal at the point of bend is indented at 4 so as to form bracing ribs between the inner faces of the calks and plate, the bending of the calks and forming of the bracing ribs 4 being preferably done when the steel is soft and afterward, the plate is tempered. At the front corners of the plate A are upwardly-extending and oppositely-curved sole-engaging hooks 5, and projecting from the rear portion of the plate is a laterally-curved arm 6 terminating in a sole-engaging hook 7 disposed behind the calk 3 and arranged to engage the sole B of the shoe at the curved portion where the sole merges into the shank.

The plate is provided with a second arm 8 disposed approximately at right angles to the arm 6 and extending rearwardly and to the opposite side of the sole. This arm 8 carries a movable sole-engaging hook 9 that is disposed to grip the sole at the portion thereof where the same curves inwardly to merge into the shank, the front hooks 5 being disposed to grip the sole close to the toe portion thereof so that four points of engagement are provided between the creeper and shoe sole, whereby the creeper is firmly held in place. The calks 2 and 3 are arranged between the front side hooks 5 and the rear hooks 7 and 9. In order to lighten the weight, the central portion of the plate A is cut away at 10 and the arm 8 is depressed out of the plane, as at 11, of the plate, so as to be offset from the bottom face of the sole in order to accommodate the slidable hook 9 and the means for operating the same. The hook 9 has a base portion 12 provided with a longitudinal slot 13 through which extends a headed rivet 14 fastened to the arm 8, and the arm 8 itself has a longitudinal slot 15 in which engages a pin or projection 16 on the base 12 of the hook 9 whereby the pin and rivet coöperate to guide the hook inwardly and outwardly during the operation of clamping or unclamping the creeper. At the inner end or root of the arm 8 is pivoted an operating lever 17 that is connected by a link 18 with the sliding hook 9. The lever is attached to the plate A by a rivet 19, and the link is connected by a pivot 20 to the lever and to the sliding hook 9 by the guide pin 16 that forms a pivot. The link 18 is in the form

of a flat spring and is provided with spaced apertures 21 for engagement with the pin 16 to thus permit the sliding hook 16 to be adjusted inwardly or outwardly to accommodate the clamp to soles of different sizes, and the resiliency of the link will hold the same engaged with the pin 16 without the need of any fastening, so that a ready adjustment of the link is always afforded. When the creeper is applied to the sole, the link, the inner portion of the lever and the base of the sliding hook, are housed between the bottom of the sole and the offset portion or arm 8 of the plate, so that the parts are protected from injury. The lever 17, which is resilient, has its outer end formed into an upstanding lug 23 so arranged as to engage the side edge of the sole immediately adjacent the sole-engaging hook 7, and when the creeper is fully clamped, the lever 17 will bear against the arm 6 that forms a stop for the lever.

In applying the creeper to the sole, the lever is swung close to the arm 8 of the plate A so as to thereby move the sliding sole-gripping member outwardly to its full extent. The creeper is then adjusted to the sole in such a manner as to grip the hooks 5 and 7 to the edges of the sole, as shown, and the lever 17 is then thrown in the opposite direction to move the hook 9 inwardly for gripping the sole. As soon as the free end of the lever, which rides on the bottom surface of the sole during the clamping movement, reaches the edge of the sole, it springs upwardly so that it will lie in the same plane as the arm 6 of the plate. The arm 6 prevents the lever from being moved too far, while the lug 23 on the extremity of the lever engages the sole so as to prevent the lever from opening. The lug 23 may be provided with an aperture 24 for engagement with any suitable instrument, if found necessary, for unclamping the creeper. In unclamping the creeper, the lever is first sprung downwardly out of the plane of the arm 6 so as to withdraw the lug 23 from the sole to ride over the latter during the opening movement of the lever. This opening movement projects the clamping hook 9 away from the sole so as to permit the fixed hooks 5 and 7 to be disengaged. The creeper, above described, is especially adapted for baseball players, runners and other athletes, although it can be used as an ice creeper, if desired.

The preferred form of the invention, as adapted for an ice creeper, is disclosed in Figs. 5 to 7, inclusive, in which the plate A′ is provided with groups of calks in the form of pointed spurs 25 depending from the bottom side of the plate. The plate is provided with the front hooks 5′ and a rear hook 7′. The rear part of the plate is offset at 26 out of the plane of the plate for accommodating the sliding hook 9′, operating lever 17′, and link 18′. The operation of this form of creeper is substantially the same as that already described, so that further description is deemed unnecessary.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

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

1. A creeper comprising a calk-carrying plate having hooks at its front corners for engaging opposite sides of the sole of a shoe at points forward of the widest part, a rear hook at one side for engaging the sole at a point rearwardly from the widest part thereof, the said plate and front and rear hooks being formed of a single piece of metal extending across the sole, a second rear hook disposed to engage the opposite side of the sole behind its widest portion and movable in a direction toward the front hook at the opposite side of the plate, means for slidably mounting the last-mentioned hook on the plate and a device mounted on the plate and connected with the movable hook to draw the plate rearwardly and the movable hook forwardly for clamping the creeper.

2. A creeper comprising a calk-carrying plate, a pair of hooks fixed on the plate at one side adjacent the front and rear and arranged to engage the sole of a shoe at points in front of and behind the widest part of the sole, a hook fixed on the front part of the plate at the side thereof opposite from the first-mentioned hooks, a movable sole-engaging hook mounted in the plate opposite the other rear hook, an actuating means, and connections between the actuating means and plate and movable hook for moving the plate to grip the three fixed hooks on the sole and for moving the last-mentioned hook to grip the sole.

3. A creeper comprising a calk-carrying plate, a plurality of sole-engaging members one of which is movable, and a lever mounted on the plate and operatively connected with the movable member and disposed in the plane of the plate when in locking position and sprung out of the plane of the plate in moving to and from locking position.

4. A creeper comprising a calk-carrying plate, a plurality of sole-engaging members one of which is movable, and a lever mounted on the plate and operatively connected with the movable member and disposed in the plane of the plate to be flush therewith when in locking position and sprung out of the plane of the plate in moving to and from locking position, said lever having a terminal lug to engage the sole of a shoe for preventing unlocking movement of the lever.

5. A creeper comprising a calk-carrying plate, a pair of front sole-engaging members fixed on the plate, a rear sole-engaging member fixed on the plate, a movable rear sole-engaging member mounted on top of the plate and slidably carried thereby, means on the plate for guiding the movable member, and a clamping lever operatively connected with the movable member and mounted on the plate to engage the rear fixed member to lie flush therewith when in locking position.

6. A creeper comprising a calk-carrying plate, a pair of front sole-engaging members fixed on the plate, a rear sole-engaging member fixed on the plate, a movable rear sole-engaging member mounted on the plate, a clamping lever operatively connected with the movable member and mounted on the plate to engage and lie in the same plane with the rear fixed member when in locking position, said lever having a terminal lug arranged to engage the edge of the shoe sole to prevent unclamping movement of the lever while the said rear sole-engaging member forms a stop for limiting the lever on its clamping movement.

7. A creeper comprising a calk-carrying plate, sole-engaging members at the front thereof, the rear edge of the plate having a V-shaped recess providing fixed rearwardly oppositely-diverging arms on the plate, a fixed sole-engaging member on one arm, a movable sole-engaging member on the other arm, a lever mounted on the plate and movable between the arms to and from clamping position, and means for operatively connecting the lever with the movable sole-engaging member.

8. A creeper comprising a calk-carrying plate, sole-engaging members fixed on the plate at the front thereof, rearwardly oppositely-diverging arms on the plate, a fixed sole-engaging member on one arm, a movable sole-engaging member on the other arm, a lever mounted on the plate and movable between the arms to and from clamping position, means for operatively connecting the lever with the movable sole-engaging member, said lever being flush with the arm that carries the fixed sole-engaging member and an upwardly-projecting lug on the free extremity of the lever arranged to engage the edge of the shoe sole when the lever is in clamping position against the said arm carrying the fixed sole-engaging member.

9. A creeper comprising a calk-carrying plate having rearwardly-projecting divergent arms, one arranged in offset relation and depressed out of the plane of the plate, a fixed sole-engaging member on one arm, a movable sole-engaging member on the other arm, a lever fulcrumed on the plate, and a link pivotally connected with the lever and adjustably and pivotally connected with the movable member.

10. A creeper comprising a calk-carrying plate, sole-engaging members at the forward part thereof, said plate having a rear portion offset from the plane of the plate, a movable sole-engaging member slidably mounted on the offset portion and under the same, a link connected with the said movable member, an operating lever fulcrumed on the offset portion of the plate and connected with the link, and a rearwardly-extending sole-engaging member disposed opposite from the movable member and forming a stop for limiting the clamping movement of the lever, said lever having an upstanding sole-engaging lug coöperating with the said stop for preventing the displacement of the lever in either direction.

11. A creeper comprising a plate having integral upstanding sole-engaging hooks and having also depending marginal lugs bent downwardly from the plate to form calks, the plate and calks being depressed at the bends to form stiffening ribs between the calks, integral rearwardly-extending divergent arms on the plate, one of the arms having an upstanding sole-engaging hook, the other arm being provided with a slot, in combination with a movable sole-engaging member provided with a slot, pins on the slotted arm and member engaging in the slots of each other for guiding the movable member, a lever mounted on the plate and arranged to swing between the said arms, and a link connected with the lever and said movable member, said link and movable member being so disposed as to lie between the slotted arm and the shoe to which the creeper is attached.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

OLOF A. NORLUND.

Witnesses:
J. F. STRIEBY,
J. S. MCDIVITT.