H. G. SCHMITT.

HEEL CLAMP.

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1,016,961.

Patented Feb. 13, 1912.

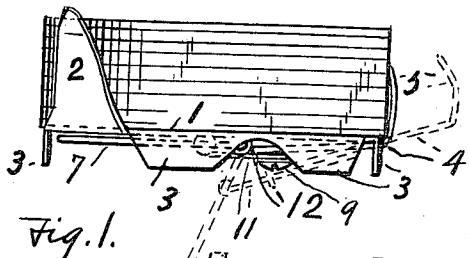


Fig. 1.

Fig. 2.

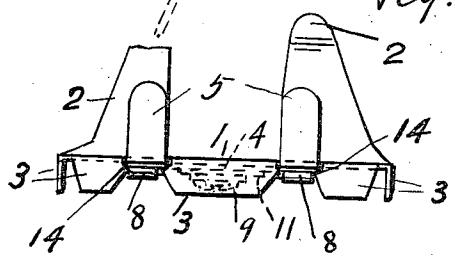
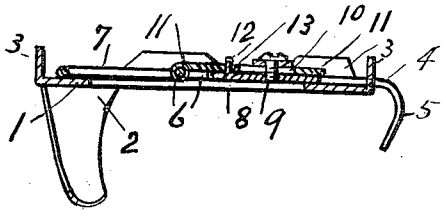


Fig. 5.

Fig. 3.

Fig. 4.



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HEEL-CLAMP.

1,016,961. Specification of Letters Patent. Patented Feb. 13, 1912.

Application filed July 22, 1911. Serial No. 639,878.

To all whom it may concern:

Be it known that I, HENRY G. SCHMITT, a resident of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Heel-Clamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to anti slipping heel clamps for use of hunters, engineers, tourists, and the like, when traveling in slippery places.

The object of the invention is to provide a simple and efficient device of the character indicated which can be readily clamped to and removed from an ordinary boot or shoe heel.

The invention consists in the construction hereinafter described and particularly pointed out in the claims.

In the accompanying drawing which illustrates the invention and forms a part of the specification;—Figure 1 is a side elevation, showing the device on a heel; Fig. 2 is a front end elevation of the same; Fig. 3 is a bottom plan view; Fig. 4 is a vertical section on line 4, 4 of Fig. 3; Fig. 5 is an elevation of an auxiliary anti slipping means.

The body 1 of the device is stamped from sheet steel or other suitable material, and comprises on its upper edge suitably shaped clamping lugs or fingers 2, adapted to bear against the rear edge of a boot or shoe heel. On the lower side of said plate, suitably spaced at the edge, are downwardly extending lugs 3, which, when the device is in use, form the anti slipping tread of the device. Evidently the number and shape of these lugs may be considerably varied without departing from the invention.

Within the box-like space inclosed or formed by said lugs 3, is mounted a movable clamp member 4 having suitable exterior clamping fingers 5 which extend upwardly sufficiently to bear against and clamp the front edge of the shoe heel.

A crank shaft and crank horizontal in position of use are denoted by 6 and a crank handle by 7, these being hinged to plate 1, preferably by tongues 8 integral with plate 1 and bent over the crank axle to form the bearings. The handle 7 is preferably in the form of a bail which extends from the shaft bearing on one side around to the bearing on the other side whereby it applies power equally to the opposite ends of the crank shaft. The crank extends in the same direction from its bearings as does the handle, that is, as shown, toward the rear. The result of this construction of the crank is that pressure on the device during use does not tend to throw the handle downward but such pressure on the crank portion coöperates with pressure on the handle to keep the latter close up to the plate.

The movable clamp member has a hole to receive a screw 9 which extends through an elongated slot 10 in a plate 11, one end of which is secured to the crank. This provides for adjusting the length of the clamp member 4 to fit different sized heels. When the device is only designed for heels of one size plate 11 may be omitted and part 4 connected directly to the crank 6. But it is preferable to retain plate 11. At the inner end of member 4 is a downwardly bent lug 12 adapted to enter slot 10 whereby the movable member 4 is located so as to receive the screw 9. Also at the part of the slot 10 corresponding to the normal or preferred adjustment of member 4, the slot may be so formed as to confine the lug 12, as by narrowing the slot at 13, whereby accidental slipping of member 4 on a loosening of screw 9 is avoided. Instead of the elongated slot 10 for adjustment, a series of holes, each adapted to receive lug 12, may be provided.

Preferably the tread lugs at the front of the plate are notched, as shown at 14, to form guide ways for the fingers of the movable clamp member.

The operation of the crank not only moves the movable clamping fingers to and from the heel but it gives said fingers a slight swinging movement, the tips of said fingers first being drawn against the heel on its forward side, and further movement of the handle draws said fingers throughout their length up against the heel, giving an easy and firm clamping action.

Threaded holes are denoted by 15, 15, at suitable points in the plate whereby when it is very icy and the lugs 3 are insufficient to surely prevent slipping, auxiliary threaded pins 16, a little longer than said lugs, may be temporarily inserted.

When handle 7 is in the position shown in Fig. 1 in broken lines the device can be placed on a heel; the handle then being

pressed up flat against the plate draws in on the clamp member 4 and strongly clamps the device to the heel. When desired the handle can be pulled down and the device removed.

When the device is in use the greater part of the weight will be borne by the tread lugs 3. Some pressure will however be put on the described mechanism within the wall of lugs, but this will not be such as to injure the same. Indeed it will help hold the handle up though this naturally is held by friction.

Having thus described the invention what I desire to secure by Letters Patent is;—

1. A removable anti-slipping heel device comprising a sheet metal heel plate having downwardly extending integral tread lugs, and having also upwardly extending fixed clamping lugs at one end, coöperating clamping lugs at the opposite end, the latter lugs being movable longitudinally of the plate and also having a slight up and down swinging movement around an edge of said heel plate, a crank shaft having horizontal bearings on said plate, a connection between the crank shaft and the movable clamping lugs, and a handle for the shaft swinging in a vertical plane and giving movement to the movable clamping fingers.

2. A removable anti-slipping heel device comprising a heel plate having downwardly extending tread lugs and having fixed upwardly extending clamping lugs at one end, coöperating clamping lugs at the opposite end, the latter lugs being movable longitudinally of the plate and also having a slight swinging movement around an edge of said heel plate, a crank shaft having horizontal bearings on said plate, a connection between the crank shaft and the movable clamping lugs, and a handle for the shaft swinging in a vertical plane and giving movement to the movable clamping fingers, the movable fingers being guided between and by the lugs at one end of the plate.

3. A removable anti-slipping heel plate comprising tread lugs and fixed clamping lugs, combined with coöperating movable clamping lugs, a crank shaft and crank for moving the latter lugs, and a handle for operating the crank shaft, said handle being in the form of a bail and connected to both ends of the shaft.

4. A heel plate having fixed clamping fingers, movable clamping fingers, a crank shaft in bearings on the plate, a crank, and a handle for moving the shaft, crank, and movable fingers, said crank and handle extending on the same side of the bearings and adapted to swing from and toward said plate, as set forth.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

HENRY G. SCHMITT.

Witnesses:
GEO. S. NESSING,
E. G. CROWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."