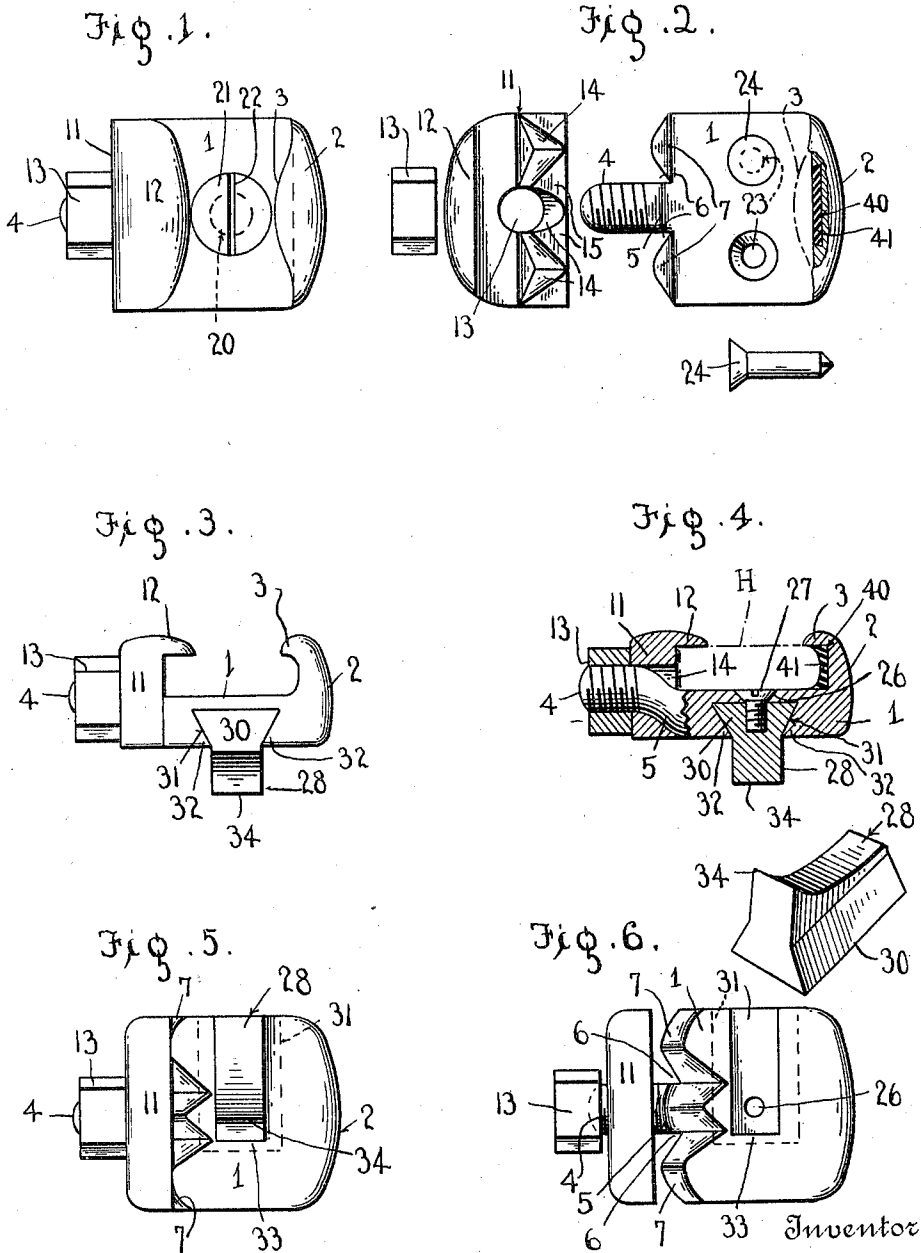


G. J. HELFRICH.
CLAMP FOR HORSESHOE CALKS.
APPLICATION FILED DEC. 14, 1911.

1,038,883.

Patented Sept. 17, 1912.



Witnesses
L. B. James
N. L. Colamer

G. J. Helfrich
Inventor
by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE J. HELFRICH, OF CINCINNATI, OHIO.

CLAMP FOR HORSESHOE-CALKS.

1,038,883.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed December 14, 1911. Serial No. 665,696.

To all whom it may concern:

Be it known that I, GEORGE J. HELFRICH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Clamps for Horseshoe-Calks; and I do 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 apper-
tains to make and use the same.

This invention relates to farriery, and more especially to calks which are removably clamped to the horseshoe; and the object of the same is to improve the construction of the clamp whereby it is rendered applicable to shoes of various sizes, is easily removed and replaced as when the calk itself needs changing, and yet is not likely to become accidentally loose. These objects are accomplished by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a plan view of one form of my improved clamp, showing a screw as used as a calk. Fig. 2 is a plan view of the parts of another form of my improved clamp, the same being slightly separated from each other, and in this form two pins are used as the twin calk and one of them is shown in place in its hole in the base member while the other is shown removed. The washer member in this view has been totally removed from the screw and laid over on its back so that its inner face is exposed. Fig. 3 is a rear end elevation of a third form of my improved clamp with its dove-tailed calk in place, and Fig. 4 is a vertical cross section through this form, giving an elevation of the screw on the base member and the screw which holds the dove-tailed calk in place. Fig. 5 is a bottom plan view of this form of my invention, with all parts assembled, and Fig. 6 is a similar view with the nut run out on the screw and the two members drawn slightly apart, and with the calk entirely removed and viewed in separate perspective.

As a horse shoe calk is, strictly speaking, the sharp point intended to be embedded in the ice or a slippery roadway, this invention in effect embraces means for connecting the calk with the shoe. I employ clamping means including a base member having a screw, a washer member movable loosely on the latter, and a nut; and in the preferred form of

my invention I provide the base member with means for detachably holding the body of the calk which is here shown as made of dove-tailed cross section as will be more fully explained below. Clamps of this character are old for this purpose, and the use of a screw and nut is also old; but all forms of my present invention possess details of construction whereby the clamp is improved in the matter of its strength, ease of application, adaptability to horse shoes of various sizes, its firm grip thereon when in place, and the fact that the nut is raised out of contact with the earth's surface or the ice and snow so that it is not likely to become lost; but the sizes, proportions and materials of parts may be varied to suit the manufacturer and user.

Coming now to a detailed description of the invention illustrated on the accompanying drawings, the numeral 1 designates the body of the base member of this improved clamp, preferably made flat on its upper face so as to underlie the horse shoe, indicated in dotted lines at H in Fig. 4, and 2 is an upstanding lip along the outer edge of the body adapted to rest against the outer edge of the horse shoe and by preference having its upper extremity inturned as at 3 to pass over the horse shoe and under or into the outer side of the hoof. Formed on or cast integral with the body at the inner side thereof is a screw 4 whose threaded portion stands horizontal with its axis about on a line even with the upper face of the body and whose shank 5 is inclined downward and outward from the threaded portion and merges into the body as seen; and at either side of said shank are oblique grooves 6 in the inner edge of the body so that said edge is beveled upward and inward and provided with two inclined grooves between three ribs whereof the central one is the shank 5 and the outermost numbered 7 are at the outer sides of said grooves 6. The washer member of this improved clamp has a body 11 which stands upright and an inturned lip 12 at its upper extremity. Its outer face is by preference made flat so that the nut 13 may bear squarely against it, and the upper portion of its inner face is also flat to bear squarely against the inner edge of the horse shoe H, its center being pierced with a large hole 13' for rather loosely embracing the screw and its shank. The lower portion of the inner

face of this washer is provided with three grooves 14 between which are two ribs 15, the central groove sliding against the shank 5 of the screw and the endmost grooves engaging the endmost ribs of the base member, while the ribs in the washer member engage the grooves in the base member. The construction of parts is such that when these members are assembled and the screw tightened up, the washer member moves inward toward the base member along the screw until the lower outer ends of its inclined ribs strike the upper portions of the two grooves in the base member, after which further tightening up of the screw causes the washer member to move inward and obliquely downward so that in effect the horse shoe is clamped both edgewise and vertically—the lip on the washer member passing over the upper inner corner of the horseshoe and in beneath the hoof. Particular attention is directed to the oblique disposition of the grooves and ribs on both members of this clamp and to the size of the hole which loosely embraces the screw and its shank, this detail of construction permitting the washer member as it is forced toward the base member to move obliquely downward so that its lip has the clamping action on the upper side of the horse shoe just described. The calk may be variously constructed so long as it is capable of being easily attached to and removed from this clamp. In Fig. 1 the body 1 of the base member is pierced with a hole 20 through which is screwed a calk having its lower end pointed as usual and its upper end 21 headed and by preference made conical so as to be countersunk into the body 1 flush with the upper face thereof, and provided with a transverse nick 22 to receive a screw driver. In Fig. 2 two such holes 23 are provided through the body 1, and into them are dropped pins having pointed lower ends and by preference conical heads 24 which here again are countersunk into the body 1 flush with its upper face—the obvious purpose of the flush arrangement in both views being to permit the flat lower face of the horse shoe to hold these calks in position. In the other views of the drawings is illustrated what might be called my preferred form of calk. Herein a similar hole 26 receives a screw 27 for holding the calk 28 in place, and this calk like all others is of hardened steel whereas the screw in this instance may be of other metal. The calk has a dove-tailed body 30 engaging a dove-tailed recess 31 formed by flanges 32 depending from the body 1 of the base member along its sides and around its front end as at 33 so that of necessity the calk must be inserted from the rear end into this recess; and when in place the screw is passed downward through the hole in the body and into the

calk to prevent its dislocation. The dove-tailed body may have any suitable form of point 34, preferably located near the front end of the body as shown. In the use of this preferred form of calk, when the horse steps on this shoe the point is embedded in the ice or frozen ground, and when he moves forward and the foot tends to move to the rear the calk is pushed forward against the closed end of the recess which resists the strain. Therefore the screw is useful only for holding the calk against falling out of place rearwardly, and the undercut or beveled side flanges are useful only for holding the calk from falling out of place vertically, while the flange across the front end of the recess receives the strain which exists when this device is in use.

In any form of calk, the latter is obviously applied or removed while the clamp is off the shoe, and the application of the clamp to the shoe later but holds the fastening means more firmly in position; or in other words it would be impossible for the calk to become dislodged from the clamp so long as the nut holds the washer member in place, or so long, in fact, as any means perform this function.

Coöperating with the nut and washer constituting the movable member of the clamp I may employ a cushion 40 of leather or rubber on the fixed or body member, and in Figs. 2 and 4 is shown a recess 41 in the inner face of the lip 2 for receiving said cushion. If the latter be of rubber it may in fact be molded into this recess, for which purpose the recess is shown as slightly dove-tailed, but I do not limit myself to the means for securing the cushion in place. Although illustrated in only two of the views, this cushion might be employed on any form of my invention. When used, its obvious purpose is to bear against the outer edge of the horse shoe so that when the nut is tightened and the movable member presses against the inner edge of said shoe, the latter is clamped between the parts of this device with a certain yielding force which tends to prevent the loosening of the nut.

What is claimed as new is:

1. The herein described clamp for horse-shoe calks comprising a base member having a flat body with an upturned lip along its outer edge, means on this member for detachably carrying the calk, a screw whose axis stands on a horizontal plane above the vertical center of said base member and whose shank inclines downward and outward and merges into the inner edge of this member, a nut on said screw; and a washer member having an upright body with an in-turned lip at its upper edge, said body being pierced with a hole loosely embracing said screw and its shank.

2. The herein described clamp for horse-

shoe calks comprising a base member having a flat body with an upturned lip along its outer edge, means on this member for detachably carrying the calk, a screw whose
5 axis stands on a horizontal plane above the vertical center of said base member and whose shank inclines downward and outward and merges into the inner edge of this member, the inner edge of the body having
10 grooves at opposite sides of said rib and ribs outside said grooves, a nut on said screw; and a washer member having an upright body with an inturned lip at its upper edge,
15 said body being pierced with a hole loosely embracing said screw and its shank, the upper portion of the inner face of this member being flat to engage the edge of the horseshoe and its lower portion having three oblique grooves with two interposed ribs to
20 respectively engage the shank and ribs on

and the two interposed grooves in the inner edge of the body member.

3. In a clamp for horse shoe calks, the combination with a base member underlying the shoe and having an upturned lip along
25 the outer edge of the latter, the inner face of the lip being recessed, and a screw projecting inward from the inner edge of said member; of a cushion disposed within said recess, a washer member movably mounted
30 on the shank of the screw, and a nut on the threads of the latter.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE J. HELFRICH.

Witnesses:

PAUL P. ROVER,
B. C. SPENCER.

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