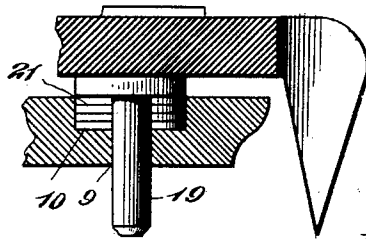
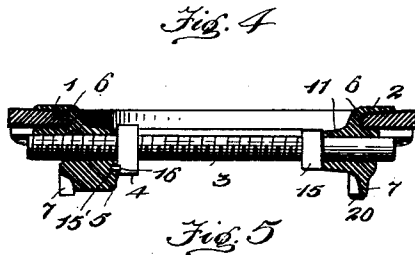
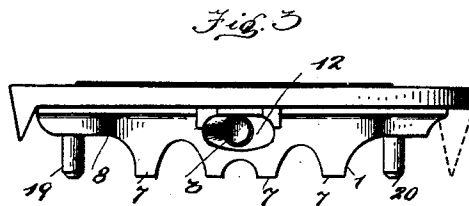
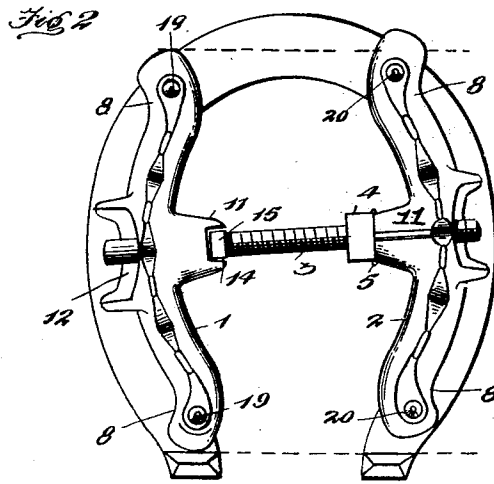
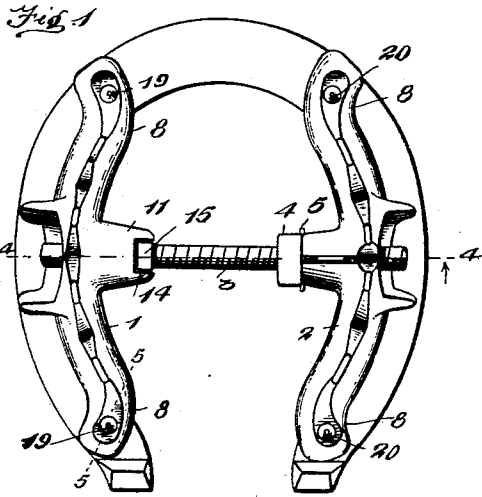


(No Model.)

G. C. HALE.
ICE CREEPER APPLIANCE FOR HORSESHOES.

No. 586,488.

Patented July 13, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE C. HALE, OF KANSAS CITY, MISSOURI.

ICE-CREEPER APPLIANCE FOR HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 586,488, dated July 13, 1897.

Application filed March 10, 1897. Serial No. 626,782. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. HALE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Horseshoes; 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 appertains to make and use the same.

My invention relates to improvements in ice-creeper appliances for horseshoes of the kind shown and described in my application for Letters Patent of the United States filed December 28, 1896, Serial No. 617,223; and the object of my present improvements is to render the creeper applicable to horseshoes without respect to the width of the shoe from side to side, or to the depth or thickness of the shoe, or to the position on the sides of the shoe which the creeper-plates may assume when they are applied or fitted to the shoe or when the shoe is in service.

In applying an ice-creeper to a horseshoe there are certain conditions which must be observed, among which the most important consists in arranging the elements of the creeper appliance to avoid interference and contact with the frog of the horse's foot. As is well known, horseshoes vary a great deal in shape and dimensions, and a creeper for use universally on shoes of different sizes and thicknesses must be adjustable not only as to the width but also as to the thickness of the shoe and without coming in contact with the frog in the hoof. It is also important in the provision of an ice-creeper appliance to overcome any tendency of the attachment from loosening owing to the "skuff" or slight sliding action of the shoe when the hoof strikes the ground; and a further requirement is to make the fastening device accommodate itself to any position which the side plates may assume on the shoe, either in service or when applied initially thereto, but without straining or bending the fastening appliance. These conditions I have sought to attain in my present improvement in ice-creeper appliances, which, generally speaking, consists of a pair of channeled plates provided at their central portions with elongated tapering or bell-shaped sockets, a single transverse bolt fitted

in said sockets to have long bearings therein and provided with means for holding itself and said plates rigidly in position, and insertible calks fitted in the side plates and having washers for building up the calks between the creeper-plates and the shoe to make the creeper applicable to shoes of different thicknesses. The channeled plates are to be applied to opposite sides of a shoe, and the bell-shaped or tapering sockets thereon enable the bolt to be canted or tilted sidewise, should the plates assume a position out of line with each other on the shoe, without straining or bending the bolt, the latter having long bearings in the sockets to overcome any tendency of the bolt freeing itself from the plates. The bolt and the sockets in the side plates are arranged on the creeper-plates to assume a position, when the creeper is applied to the shoe, well forward of the frog in the horse's hoof. And the invention further consists in the novel construction and arrangement of parts and in the combination of devices which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment of the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an inverted or bottom plan view of my creeper appliance in position on a horseshoe. Fig. 2 shows a similar view with the creeper-plate thrown out of alinement, illustrating the bearing of the bolt in the sockets in the plates. Fig. 3 is an edge view of a shoe with my creeper thereon. Fig. 4 is a transverse sectional elevation on the plane indicated by the dotted line 4 4 of Fig. 1. Fig. 5 is an enlarged sectional elevation through the shoe and creeper on the plane indicated by the dotted line 5 5 of Fig. 1, showing the manner of fastening one of the insertible calks and of "building up" the same to make the creeper applicable to shoes of different thicknesses. Fig. 6 is a detail perspective view of one of the creeper-plates.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 and 2 designate the plates of my ice-creeper appliance. 3 is the single cross-bolt. 4 is the nut thereon, and 5 is the locking-key

or pin for holding the nut 4 in place. No claim is made, broadly, to this general organization and combination, as such matter is embraced in my other application, to which reference has been made.

Each of the plates is channeled in one edge, as at 6, and on the lower face of the plate is provided a series of calks 7, which are integral with the plate and spaced at suitable intervals thereon. The ends of the plates are bent outward at an angle to the general curvature of the plate, as at 8, and these angular ends have vertical openings 9 formed therein, the upper ends of which openings are enlarged to form the cavities 10, for a purpose to be explained. The plate is further provided at about midway its length with the enlarged boss 11, that projects on the inner edge of the plate, and through the plate and its boss is formed the socket 12, the length of which is equal to the length of the boss and the width of the creeper-plate, whereby the socket is adapted to form an elongated bearing for one end of the bolt 3. The depth of the socket is slightly longer than the diameter of the bolt, but the socket is not of uniform width throughout its length because it is made tapering longitudinally, the smaller end of the socket opening through the boss 11, while the wide or flared end of the socket opens through the outer face or edge of the plate, as shown by Fig. 3. The boss 11 on the plate 1 has a notch 14 cut therein to accommodate a shoulder or fixed nut 15 on the bolt 3, which shoulder or nut is capable of a limited play in the notched seat 14 to permit the bolt 3 to assume the tilted or canted position in the flared or tapered sockets of the plates when the latter assume positions on the shoe where the two sockets of said plates do not exactly coincide or register with each other, but the shoulder or nut engages with said notched seat to such an extent as to hold the bolt against axial rotation. The boss 11 on the other plate 2 of the creeper has a groove or channel 15' provided in its end face, and the adjustable nut 4 likewise has one or more grooves 16 produced in its face that abuts against said channeled end of the boss or plate 2, whereby a locking pin or key 5 is adapted for insertion into said grooves 15' and 16 when they register, in order to hold the adjustable nut 4 in a positive fixed position.

Each plate of the creeper and its integral calks are to be made of cast-steel in a single piece and the integral calks are hardened and tempered to render them strong and durable in service.

In connection with the creeper-plates having the integral calks and the vertical openings 9 in the ends of said plates I use the insertible steel calks 19 and 20, a pair of insertible calks being provided for each creeper-plate. The insertible calk consists of a cylindrical steel pin having a pointed lower end and an integral enlarged disk-like head at its

upper end, such pin and head being smooth and unformed with screw-threads or other rough surfaces. The calks 19 20 are passed through the openings 9 in each plate and the heads thereof rest within the cavities 10 in the upper sides of the plates, thus making the heads of the calks bear against the lower face of the shoe. In case the plates are applied to a shoe the thickness of which is less than the depth of the channels in the plates and the plates fit loosely on the shoes to have a limited vertical play thereon I employ the washers 21, one or a series of which is fitted on the calk-pin below the head of the calk to lie in the cavity 10 of the plate, thus raising the head of the pin to bear against the shoe and building up the insertible calk to provide firm bearings for the plate and the insertible calks against the shoe.

To apply my creeper to a shoe, the side plates have their channeled edges fitted against the inner sides of a shoe, the bolt is placed in the sockets for the fixed shoulder or nut 15 thereon to engage the notched seat 14, the adjustable nut 4 is screwed against the boss 11 of plate 2 to force the plates away from each other and press them tightly against the shoe, and the key or pin engaged with the boss 11 and nut 4. In case the shoe is a light or thin one the washers 21 are fitted to the insertible calks and the space between the plates and shoe is built up by the washers to provide firm bearings and enable the plates to be held rigidly on the shoe.

It frequently happens that the side plates when fitted to a shoe cannot assume positions where the sockets in the plates are in alignment with each other, owing to differences in the shape and sizes of various shoes, but in my creeper it is not necessary that the sockets of said plates shall be in exact coincidence, because the flared elongated sockets enable the bolt to be fitted in and connected to the plates by long bearings irrespective of the positions of the plates relative to each other.

My improved construction provides for the use of ice-creeper on horseshoes of different sizes and thicknesses without changing the construction of the creeper appliance or necessitating the bending of the bolt. The creeper appliance may be easily and quickly applied to a shoe and held rigidly thereon, and it is simple and durable in construction and cheap of manufacture.

The calks on the creeper-plates may be sharpened, if desired, but this may not be necessary in view of the employment of the insertible calks, which when worn may be replaced at a trifling expense with new calks to provide an efficient holding-surface for the creeper on the horseshoe.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, an ice-creeper appliance consisting of plates having integral calks at intervals along their lengths

and sockets at the ends of said plates, and insertible calks adapted to be fitted in said sockets of the plates, as and for the purposes described.

2. As a new article of manufacture, an ice-creeper appliance consisting of cast-steel plates provided at their ends with sockets and at intervals along their lengths with integral hardened and tempered calks between said sockets, and insertible steel calks fitted in said sockets, for the purposes described, substantially as set forth.

3. The combination of creeper-plates provided with elongated flared sockets, a single bolt having its ends fitted in said sockets to have long bearings therein, and means for holding the bolt rigidly connected to said plates, as and for the purposes described.

4. The combination with creeper-plates, of a single transverse bolt connected to both plates by long bearings which permit the plates to lie one slightly in advance of the other, and means for connecting said bolt rigidly to both plates, as set forth.

5. The combination of a creeper-plate having a calk-socket, an insertible headed calk fitted in said socket, and washers fitted on the calk below its head and arranged in the

socket of the plate, as and for the purposes described.

6. The combination of creeper-plates each having at its ends the calk-openings and the cavities in the upper face of said plates, the headed calks fitted in said openings, the washers fitted on the calks and in the cavities of said plates, and a bolt connected rigidly to the plates, substantially as and for the purposes described.

7. The creeper-plates having calk-openings at their ends, the integral calks between said openings, and the transverse flared sockets, and the insertible calks and washers fitted in said openings in the ends of said plates, combined with a single bolt fitted at its ends in the flared sockets of said plates and connected rigidly but detachably to one plate, and an adjustable nut fitted on the bolt and adapted to be fastened to the other plate, as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE C. HALE.

Witnesses:

LOUIS ROBIDOUX,
R. R. JONES.