

(No Model.)

C. HAMMELMANN.
HORSESHOE.

No. 472,262.

Patented Apr. 5, 1892.

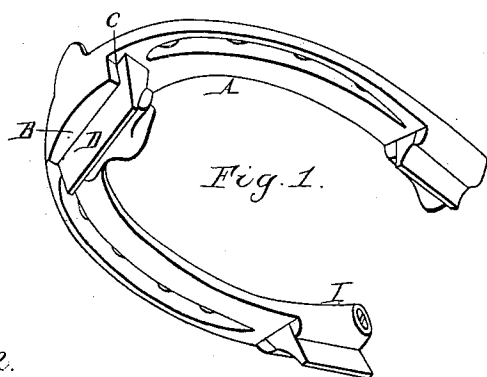


Fig. 3.

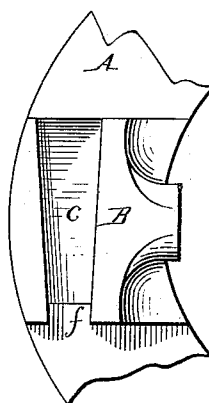


Fig. 2.

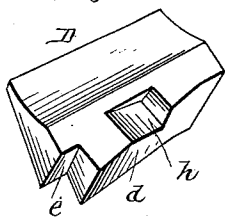


Fig. 4.

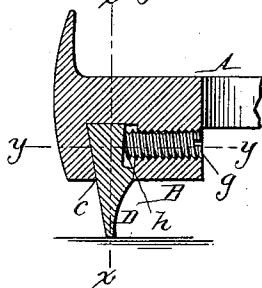


Fig. 5.

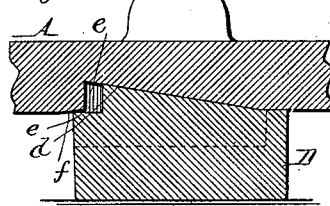


Fig. 6.

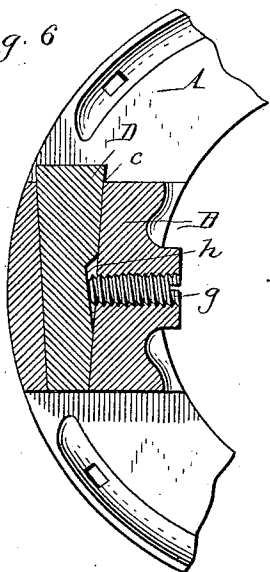


Fig. 7.

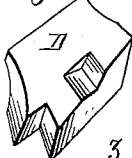


Fig. 8.

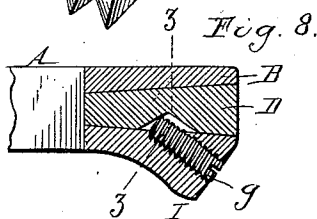
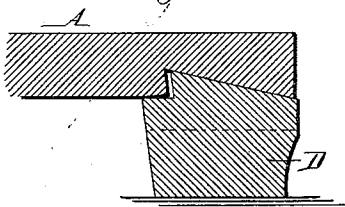
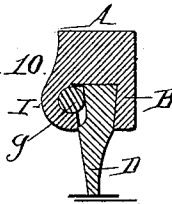


Fig. 10.



Witnesses:

Emil Neuhart
Fred. C. Geyer

Chas. Hammelmann Inventor.

By Wilhelm Stöckert,

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES HAMMELMANN, OF BUFFALO, NEW YORK.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 472,262, dated April 5, 1892.

Application filed September 28, 1891. Serial No. 406,995. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HAMMELMANN, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Horseshoes, of which the following is a specification.

This invention relates to horseshoes which are provided with removable calks; and it has for its object to fasten the calk in its seat in the shoe in a convenient and reliable manner and to so construct the interlocked parts that the impact of the calk against the pavement tends to tighten the calk and lock it in place.

In the accompanying drawings, Figure 1 is a perspective view of my improved horseshoe. Fig. 2 is a similar view of the toe-calk. Fig. 3 is a bottom plan view of the front portion of the shoe with the toe-calk removed. Fig. 4 is a cross-section of the shoe through the toe-calk. Fig. 5 is a longitudinal section thereof in line *xx*, Fig. 4. Fig. 6 is a horizontal section in line *yy*, Fig. 4. Fig. 7 is a perspective view of one of the heel-calks. Fig. 8 is a horizontal section of the horseshoe through one of the heel-calks. Fig. 9 is a vertical longitudinal section through one of the heel-calks. Fig. 10 is a cross-section in line *zz*, Fig. 8.

Like letters of reference refer to like parts in the several figures.

A represents the body of the horseshoe, which is constructed in the ordinary form and provided with the usual nail-holes for securing the shoe to the hoof.

B is a transverse lug arranged at the front end of the shoe on the underside thereof and having a slot or groove *c* formed lengthwise therein. The bottom or horizontal wall of this groove slopes or inclines from the front toward the rear end thereof, as shown in Fig. 5, and the groove tapers from its front end toward its rear end, as shown in Fig. 6.

D is the removable toe-calk, which is arranged in the slot or groove *c* and tapered lengthwise to fit the groove. The upper or inner edge of the calk is inclined to correspond to the slope of the inclined bottom of the groove, as shown at *d*, while its outer sharp edge is made straight in the ordinary manner. By thus inclining the contiguous

faces of the shoe and calk the blow or impact of the calk tends to drive the same into the groove, forcing it firmly against the converging sides of the groove and wedging it more tightly into the same the greater the impact of the shoe against the pavement. The groove *c* and the calk are preferably constructed of dovetail cross-section to confine the calk against outward or downward withdrawal, and in order to still further wedge the calk into its seat the calk is provided at its rear portion with a shoulder, lug, or raised face *e*, which rides upon an incline *f*, arranged on the body of the horseshoe at the rear end of the groove, when the calk has been almost fully driven into its groove, thereby forcing the calk outward and downward in its groove and causing its dovetail sides to firmly wedge against the outwardly-tapering walls of the dovetail groove. The calk is thus wedged into its seat both lengthwise and transversely between the tapering and dovetail walls of the groove, forming a double lock, whereby the calk is securely held in place. It is obvious that the inclined face *f* could be arranged on the shoulder *e* and the contiguous face of the body be made straight instead of forming the incline on the body and the straight face on the shoulder.

To render the lock still more reliable a set-screw *g* is preferably employed, which is arranged in a horizontal opening in the front portion of the body. The inner end of the set-screw enters a recess or depression formed in the adjacent side of the calk and having an inclined or receding bearing-face *h* for the end of the set-screw, as shown in Figs. 2 and 6. This bearing-face is inclined at the proper angle to remain in contact with the end of the set-screw at all times, whether the calk is driven into the groove to a greater or less extent, so as to prevent loosening of the screw so far as practicable. The sloping bottom of the groove *c* does not extend to the rear end thereof, but terminates at a short distance from its rear end, so that a portion of the body extends into the groove, as shown in Fig. 3, whereby the reduced thickness of the metal near the deep part of the groove is compensated for and weakening of the shoe at this point is avoided. The removable heel-calks are secured to the horseshoe in the same way

as the toe-calk, the only structural difference being that the set-screws of the heel-calks are arranged obliquely to the calks and engage in threaded openings formed in bosses I, arranged on the inner sides of the shoe, as shown in Fig. 8.

In my improved shoe the calks are locked in their seats by the impact or blows of the calks against the pavement, whereby such blows, instead of loosening the calks, have a tendency to wedge the calks tighter into their seats the heavier the blows. A very simple and compact fastening is thus obtained, which does not depend for its security upon screws or other separate fastenings which are liable to become loose or lost.

I claim as my invention—

1. The combination, with the body of a horseshoe provided with a tapering groove having an inclined and sloping bottom, of a tapering calk arranged in said groove and having an inclined edge which bears against the inclined bottom of the groove, substantially as set forth.

2. The combination, with the body of a horseshoe provided with a tapering dovetail groove having an inclined bottom, of a tapering dovetail calk arranged in said groove and having an inclined edge bearing against the inclined bottom of said groove, substantially as set forth.

3. The combination, with the body of a horseshoe provided with a groove having an inclined or sloping bottom, of a calk arranged in said groove and having an inclined edge which bears against the inclined bottom of the groove, and a set-screw bearing against the calk, substantially as set forth.

4. The combination, with the body of a horseshoe provided with a tapering groove having an inclined or sloping bottom, of a tapering calk arranged in said groove and having an inclined edge which bears against the inclined bottom of the groove and in its side a recess having an inclined bearing-face, and a set-screw bearing against the inclined face of the recess, substantially as set forth.

5. The combination, with the body of the horseshoe having a groove provided with a sloping bottom and near the front end of said groove with an incline, of a calk having a sloping edge bearing against the corresponding bottom of the groove and at its front end a raised face or shoulder bearing against the incline of the body, substantially as set forth.

Witness my hand this 24th day of September, 1891.

CHARLES HAMMELMANN.

Witnesses:

CARL F. GEYER,

ALICE G. CONNELLY.