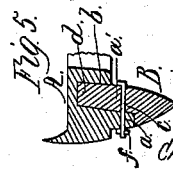
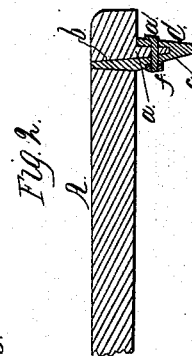
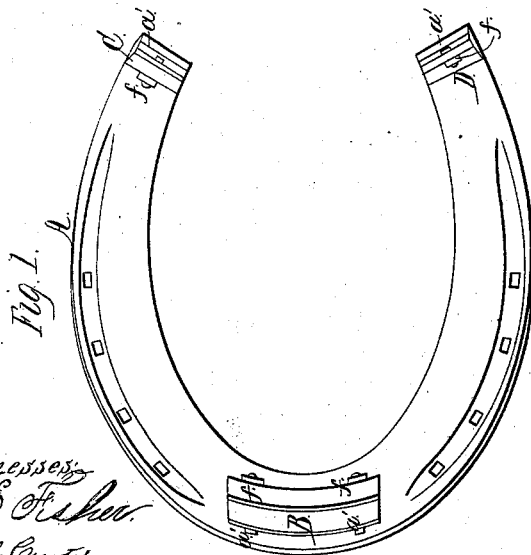
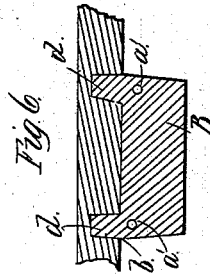
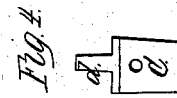
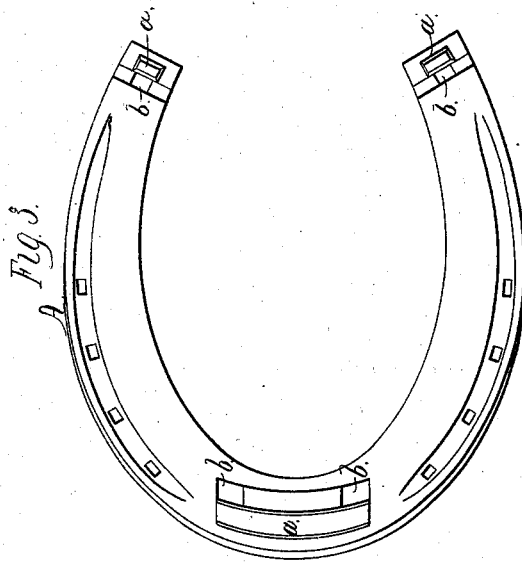


C. H. Johnson,

Horseshoe.

N^o 47,495.

Patented Apr. 25, 1865.



*Witnesses,
R. C. Fisher.
Frederick Carter.*

*Inventor,
Charles H. Johnson.
by his attorney
R. C. Fisher.*

UNITED STATES PATENT OFFICE.

CHARLES H. JOHNSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHAS. E. WOODMAN, OF SAME PLACE.

IMPROVEMENT IN HORSESHOES AND CALKS.

Specification forming part of Letters Patent No. 47,495, dated April 5, 1865.

To all whom it may concern:

Be it known that I, CHARLES H. JOHNSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Horseshoes and their Calks; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a bottom view of a horseshoe provided with calks applied to it in accordance with my invention. Fig. 2 is a section taken crosswise through one of the heel-calks. Fig. 3 is a bottom view of the shoe as it appears without its calks. Fig. 4 is a rear side view of one of the heel-calks. Fig. 5 is a transverse section of the toe-calk and the part of the shoe to which it is applied. Fig. 6 is a section taken crosswise of the shoe and through the toe-calk. Fig. 7 is a section taken crosswise through the shoe and one of the heel-calks.

In carrying out my invention I provide the shoe A at the toe as well as at each of the heels with a flange, *a*, to extend below the lower surface of the shoe, and next adjacent to the inner side of such flange I make in the shoe a mortise, *b*. Each of the calks B C D, I construct with a lateral recess, *c*, to receive the flange. Besides the said recess, I provide the calks with one or more tenons, *d d'*, to enter and fill the mortise or mortises *b*. Through the flange and the calk I pass one or more headed screw-bolts, *a'*, on which I screw one or more nuts, *f*. In Fig. 2 the flange is exhibited as extend-

ing into a socket made in the calk, and so as to be entirely covered on all sides by the calk. While the flange serves to support the calk, it also answers, with the screw bolt or bolts, as a means of confining it to the shoe. So in respect to the tenon and mortise, they contribute, like the prong and socket of a tooth, to hold the calk in place and relieve its bolt or bolts from strain. With my invention, whenever the calks may have become dulled by wear, they may be easily removed from the shoe and fresh or sharp ones substituted for them, it not being necessary to remove the shoe from the foot of the horse in order to accomplish this.

It is well known that frequent removals of shoes from a horse's feet for the purpose of sharpening the calks is often attended with or is liable to produce injury to the hoof, all of which may be avoided by the use of my invention.

I am aware that shoes have been made with removable calks; therefore I do not claim such.

What I claim as my invention is—

The combination of the fastening-flange *a* and the mortise *b* with the corresponding socket, *c*, and tenon *d* of the calk, and with one or more bolts, *a'*, or equivalents, extending through the flange and the calk, substantially as specified.

C. H. JOHNSON.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.