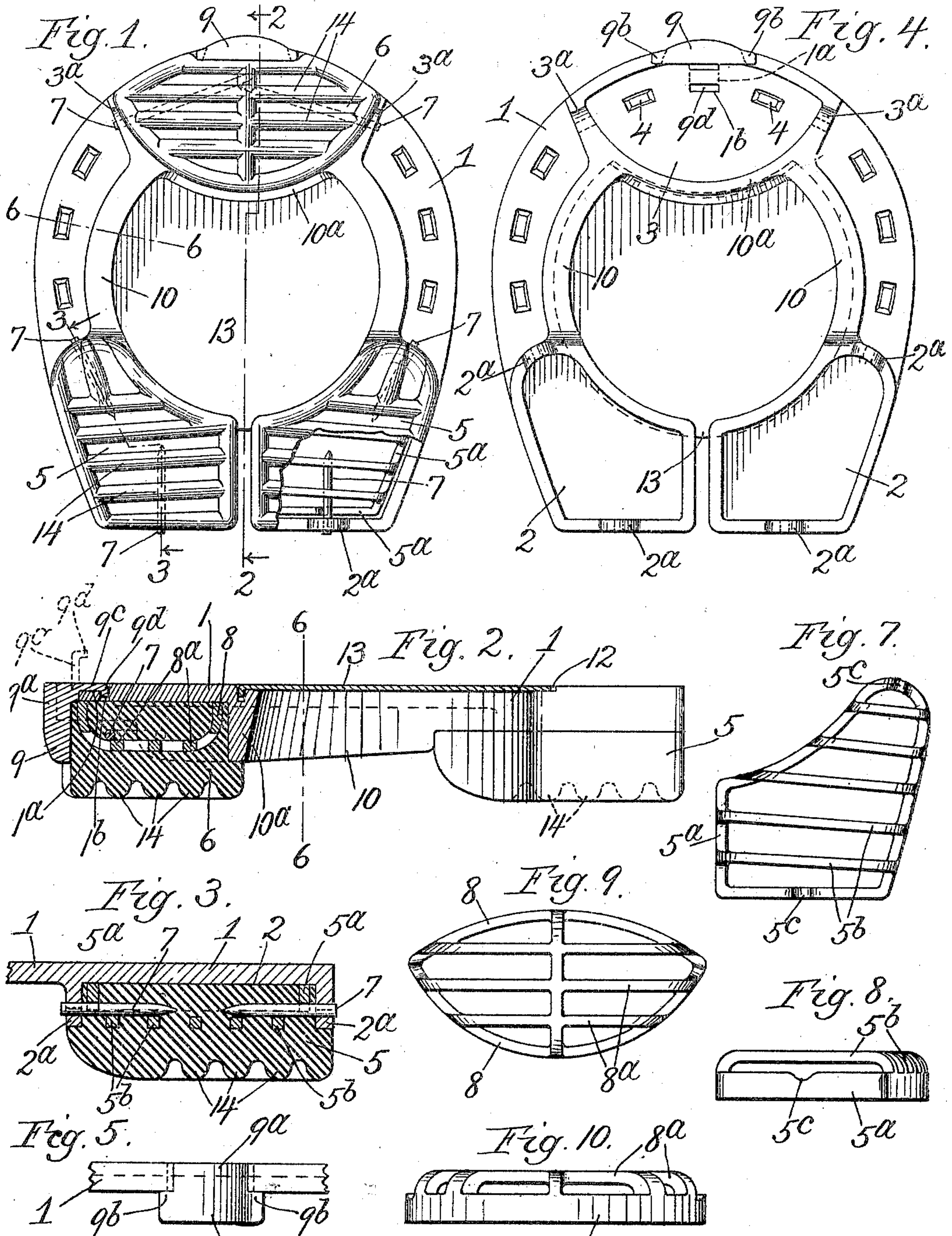


No. 811,619.

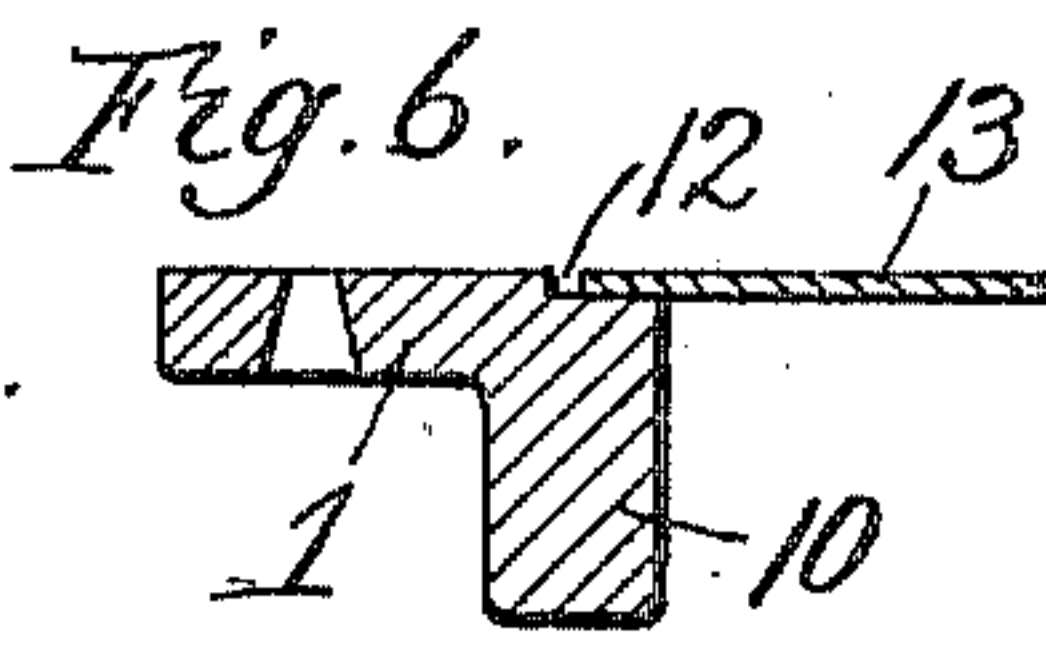
PATENTED FEB. 6, 1906.

F. N. CLINE.  
HORSESHOE.

APPLICATION FILED MAY 2, 1904.



Witnesses.  
Edward T. Wray.  
Fred B. Fischer



Inventor.  
Fred N. Cline  
by Burton Burton  
his Attys.



# UNITED STATES PATENT OFFICE.

FRED N. CLINE, OF CHICAGO, ILLINOIS.

## HORSESHOE.

No. 811,619.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed May 2, 1904. Serial No. 205,858.

*To all whom it may concern:*

Be it known that I, FRED N. CLINE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Horseshoes, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to horseshoes having removable heel and toe cushioning calks.

It consists of the features of construction set out in the claims.

In the drawings, Figure 1 is a bottom plan of a horseshoe embodying this invention, one of the heel-calks having the rubber partly broken away. Fig. 2 is a section at the line 2 2 on Fig. 1. Fig. 3 is a section at the line 3 3 on Fig. 1. Fig. 4 is a top plan view. Fig. 5 is a detail elevation of the toe of the shoe. Fig. 6 is a section at the line 6 6 on Figs. 1 and 2. Fig. 7 is a perspective view of the metal spider or frame on which the heel-calk is molded. Fig. 8 is a rear side elevation of the same. Fig. 9 is a plan view of the metal frame for the toe-calk. Fig. 10 is a rear side elevation of the same.

The metal body of the shoe 1 has in its under face pockets 2 2 for the heel-calks and a pocket 3 for the toe-calk. Nail-holes 4 4 are formed through the web of the shoe within the pocket 3 for securing the shoe at the toe before inserting and securing the toe-calk. The heel-calks 5 are molded upon a metal skeleton or spider which comprises an outline-bar 5<sup>a</sup>, inclosing a space which is spanned in a direction transverse with respect to the shoe as a whole by bars 5<sup>b</sup> 5<sup>b</sup>, which are curved upward from the plane of the outline-bar, leaving a cavity between them and the plane of said outline-bar. On this skeleton or spider 5 there is molded the rubber body of the calk, in which the skeleton is thereby completely embedded. The flange which bounds the pocket 2 has upstanding lugs 2<sup>a</sup> 2<sup>a</sup> at the rear and at the forward end, respectively, which are provided with an aperture for a headless nail 7, and in line with these apertures the outline-bar 5<sup>a</sup> of the spider has notches 5<sup>c</sup> 5<sup>c</sup>, at which the nails 7, entered through the front and rear lugs, may pass in across said bar. Such nails being driven into the rubber in the path determined by the aperture in the lug and the bottom of the notch pass close under the upwardly-curved transverse bars 5<sup>b</sup> of the spider, and are thereby checked

both above and below, so that any tendency of the calk to escape from the pocket is resisted by the nails, which must be bent before such escape can occur or absolutely sheared off at the inner face of the lugs. The toe-calk 6 is molded upon a metal skeleton comprising an outline-bar 8 and bars 8<sup>a</sup>, spanning the space inclosed by the outline-bar in a direction transverse to the calk as a whole, the rubber body of the shoe being molded about the spider, so as to completely embed the transverse bars, leaving the outline-bar exposed only at its upper edge for seating on the shoe-body 1 in the pocket. This toe-calk is secured in the pocket by nails 7 taking through pierced lugs 3<sup>a</sup>, upstanding from the margin of the pocket 3, such nails passing across the outline-bar 8 of the toe-calk spider, which is notched to make a path for the nails similarly to the outline-bars of the heel-calks. The shoe-body 1 has a guard 9 for the toe-calk at the forward end. This guard is preferably made in a separate piece from the body of the shoe and is secured to the body by means of a dovetailed tang 9<sup>a</sup>, which is driven into a corresponding dovetailed aperture or notch at the forward end of the shoe-body 1 and stopped by the shoulders 9<sup>b</sup> 9<sup>b</sup>, at which the dovetailed tang terminates. From the tang 9<sup>a</sup> a clenching-lug 9<sup>c</sup> projects directly upward, so that it stands up from the top of the shoe when the tang is driven into place, and on the top of the shoe-body there is a recess 1<sup>a</sup> leading back from the dovetailed notch, which receives the tang, and at the rear or inner end of said recess there is an aperture 1<sup>b</sup> extending through the web of the shoe-plate and opening into the cavity 3. The entire guard 9 is made of malleable iron or steel forging, and after the guard is driven into the plate, as described, the clenching-lug 9<sup>c</sup> is designed to be bent at right angles near the end to form a hook 9<sup>d</sup> and then bent down close to the body of the tang, so that it shall fold into the recess 1<sup>a</sup>, engaging the aperture 1<sup>b</sup>. The entire lug 9<sup>c</sup> is thus accommodated in the recess 1<sup>a</sup> and aperture 1<sup>b</sup>, lying flush with the top of the shoe-plate and holding the guard 9 securely against disengagement from the shoe-plate.

In order to prevent the rubber calks from being mashed down by continuous pressure or heavy treading of the horse, the central aperture of the shoe-plate within the circle in which the calks stand has a marginal flange 10,



extending nearly two-thirds of the height of the calks and connected by a flange 10<sup>a</sup> of the same height at the rear of the pocket 3. These flanges 10 are designed to support the animal positively when they strike the pavement for irregularities thereof before the calks are crushed or worn down back to the flanges, so that while the calks cushion the tread of the animal they will not upon any irregular pavement, as cobblestone or the like, carry the entire weight, because wherever the flanges 10 reach support they will take the weight positively.

In order to guard the frog of the hoof of the animal against nails and the like, it may sometimes be deemed advisable to close the central aperture of the shoe-plate 1, and for this purpose the upper side of the plate is rabbeted throughout the periphery of the central aperture, and in such rabbet 12 a frog-plate 13 may be lodged and will be securely retained in place when the shoe is secured on the hoof.

When the calks become worn so as to require replacing, they may be detached by merely driving in the headless nails 7 until they are clear of the pierced lugs through which they extend. The entire calk may be then taken out and a new one replaced in the same manner.

The wearing-surfaces of the calks have ribs or corrugations 14 14 extending transversely with respect to the shoe as a whole and corresponding in position substantially with the position of the bars of the spiders upon which the calks are molded.

I claim—

1. A horseshoe comprising, in combination with the body or plate having on the under side calk-pockets, calks therein comprising a rubber-embedded metal skeleton, such skeleton having an outline-bar and cross-bars spanning it deflected from the plane of the outline-bar, and nails securing the calk in the pocket entering through the pockets' mar-

ginal wall and extending over the outline-bar and under cross-bar.

2. In a horseshoe, in combination with a shoe-plate having on the under side calk-pockets; calks comprising a rubber-embedded metal skeleton lodged in the pockets, and headless nails entered through the marginal wall of the pockets engaging the metal skeleton and driven into the rubber in which the skeleton is embedded with a range for further penetration therein sufficient to clear the marginal wall.

3. In a horseshoe, in combination with the body or plate, a toe-guard, 9, having a tang, 9<sup>a</sup>, and a clenching-lug, 9<sup>c</sup>, the plate having at the forward side a notch to receive the tang, and a recess in the upper surface to seat the clenching-lug.

4. In a horseshoe, in combination with the metal body or plate, a toe-guard, 9, having a tang, 9<sup>a</sup>, and shoulders, 9<sup>b</sup>, limiting the thrust of the tang across the plate, and a clenching-lug, 9<sup>c</sup>, the plate notched at the forward side to receive the tang, and recessed at the upper surface to receive the clenching-lug.

5. In a horseshoe, in combination with the metal body or plate, a toe-guard, 9, having a tang, 9<sup>a</sup>, and a clenching-lug, 9<sup>c</sup>, the plate having at the forward side a notch extending across its entire thickness adapted to receive the tang from below and having a recess in the upper surface to seat the clenching-lug, the lug having a terminal turned inward at right angles and the recess having a pocket at the inner end to receive such intumed terminal when the lug is folded into the recess.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 26th day of April, 1904.

FRED N. CLINE.

In presence of—

FRED. G. FISCHER,  
J. S. ABBOTT.