(No Model.)

I. M. BILLINGS

HORSESHOE.

No. 589,803. Patented Sept. 7, 1897.

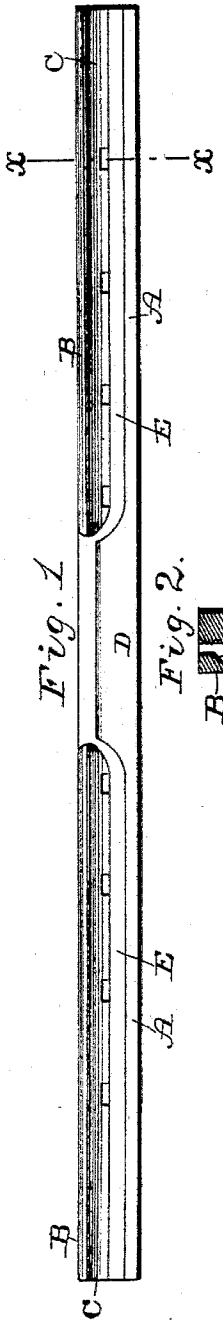


Fig. 1.



Fig. 2.

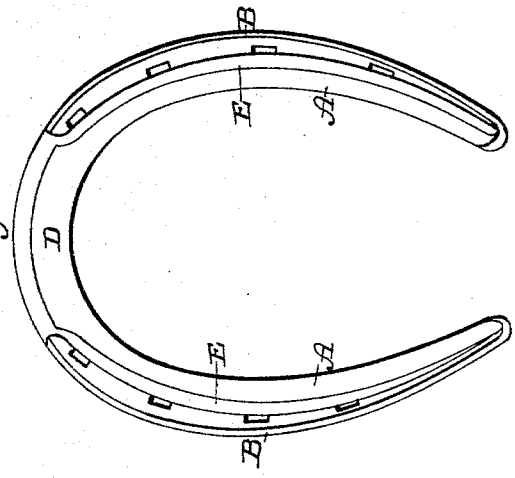


Fig. 3.

WITNESSES:

Ramsey Williams

Carrie S. Liggett

INVENTOR

I. M. Billings,

BY

Geo. H. Holgate,

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

IDA M. BILLINGS, OF CHICAGO, ILLINOIS.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 589,803, dated September 7, 1897.

Application filed May 22, 1896. Serial No. 592,552. (No model.)

To all whom it may concern:

Be it known that I, IDA M. BILLINGS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification.

My invention relates to a new and useful improvement in horseshoes and blanks for forming the same; and it consists in the construction of parts that will be more fully described hereinafter.

In providing a shoe for a horse's foot it is essential that the crust and sole of the hoof have a plane surface of sufficient width to afford a perfect bearing for that part of the hoof best adapted for sustaining the horse's weight and that the toe-calk shall be of such a shape as to permit the natural rolling movement of the hoof without interfering, and also that said calk shall have sufficient wearing-surface relative to the front contact-surfaces of the shoe to compensate for the increasing wear brought thereon; and, further, it is advantageous to provide a fullering-groove of sufficient depth to protect the heads of the nails used in securing the shoe to the hoof from contact with the road-bed, so that they may not be disturbed by the travel of the horse, and it is of importance that these grooves shall be of such shape and bear such relation to the rest of the shoe that the nails may be inserted and driven home without injury to the contact-surfaces of the shoe. All of these advantages I have gained in the construction shown in the accompanying drawings, in which—

Figure 1 represents the bar rolled into a proper shape to form a completed shoe with a continuous calk. Fig. 2 is a section on the line *x x* of Fig. 1. Fig. 3 shows a completed shoe produced from the bar shown in Fig. 1.

In carrying out my invention the bars are rolled from suitable billets through and by a continuous train of rolls, the grooves in said rolls being properly turned and shaped to make the blank shoe-bar the special shape and size desired.

The billet when rolled down into the blank shoe-bar will be from fifteen to twenty feet in length, according to the weight and size of the billet. This bar is then cut up into the required lengths for the blank shoe-bars, each of these blank shoe-bars being adapted for making one shoe. The blank shoe-bars are shaped as follows: The blank shoe-bars shown in Fig. 1, when completed by the said rolling process, have a continuous calk A the whole length of the blank, the bead or fullering B, of less height than the calk for the forming of the groove C for the nail-holes, extending from either side of the toe-calk and the heel ends of the blank.

The toe-calk D is from one and one-half to three and one-half inches in length, according to the size and weight of the shoe, leaving the full width of the blank shoe-bar at the base of said toe-calk and curved upon the front surface. The continuous calk on either side of the toe-calk and running back to the heels has a shoulder E, which starts from the bottom of the head and extends half-way up the continuous calk from the ground-surface, the said calk being beveled from this point to the bottom thereof and inwardly. The result of this construction is that a blank or a shoe is formed having a continuous calk along its inner edge and a bead on its outer edge of less height than the calk, forming a groove between the calk and the bead. The calk is beveled from the bearing-surface toward the groove to a point above or about on a line with the level of the bead and the groove is arranged to receive the nail-head flush with the bead, the face of the calk next to the groove serving as a guide to the flat face of the nail-head while the nail is being driven. These features are important and are for three purposes: first, to hold the nails firm when driven in the nail-holes and prevent the nails from losing their hold in the hoof; second, to enable the shoer to drive in and down into the groove formed by the bead, leaving the top surface of the head of the nail even with the edge of said bead, so that the head of the nail will come in contact with the ground as the calk wears down; third, to enable the shoer to drive the nail without striking the edges of the continuous calk.

The object of forming the front edges of the toe-calk upon a curve is to permit the rolling motion of the foot, so as to give the horse a more natural movement than would otherwise be the case. The friction of the wear

on the toe of the shoe is twice as much as at the heels, and it is desirable that the bottom of the shoe wear down evenly in order that the horse may at all times rest upon the natural surface, and that having once been properly shod may not be compelled to use a surface for traction, the plane of which is constantly changing.

When shoes of ordinary construction are used, considerable difficulty is experienced in driving the nails home without injuring the contact-surfaces of the shoe-calk by the hammer, and it has therefore been customary to call into use the steel punch to aid the hammer in driving a nail home into the fullering-groove, as the shoer could not prevent the hammer from hitting the outward perpendicular edges of the continuous calk. The forming of the blank so as to leave the toe-calk, as described, the full width of the bar, with its front edge curved to permit the rolling motion, and a continuous calk on either side thereof running rearward to the heels and about one-half the width of the toe-calk instead of tapering, as has heretofore been the case, gives the animal the full bottom surface-bearing of the shoe on the road-bed, which is the only natural method.

Having thus fully described my invention, what I claim as new and useful is—

1. A horseshoe blank or bar formed with a continuous calk along its inner edge, a bead on the outer edge of less height than the calk, forming between the calk and the bead a groove, the calk being beveled from the bearing-surface toward the groove to a point above the level of the bead, said groove being arranged to receive the nail-heads flush with the bead, and the face of the calk next to the groove to guide the flat face of the nail-head in the operation of driving, as described.

2. A horseshoe formed with a continuous calk along its inner edge, a bead on the outer edge of less height than the calk, forming between the calk and the bead a groove, the calk being beveled from the bearing-surface toward the groove to a point above the level of the bead, said groove being arranged to receive the nail-head flush with the bead, and the face of the calk next the groove to guide the flat face of the nail-head in the operation of driving, as shown.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

IDA M. BILLINGS.

Witnesses:
S. S. WILLIAMSON,
JAS. DEMPSEY.