(No Model.)

L. B. MELINS.

HORSESHOE.

No. 344,452. Patented June 29, 1886.

Fig. 1.

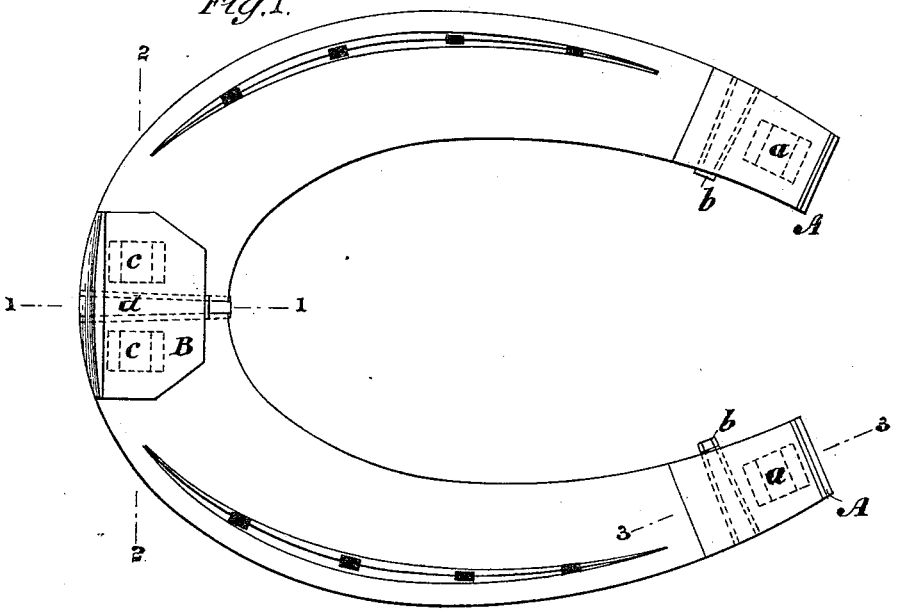


Fig. 2.

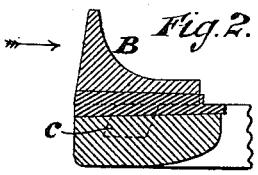


Fig. 3.

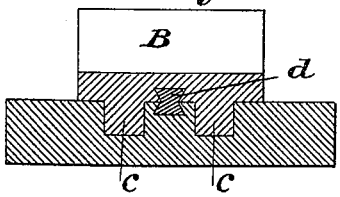


Fig. 4.

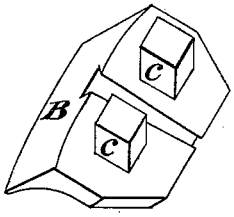


Fig. 5.

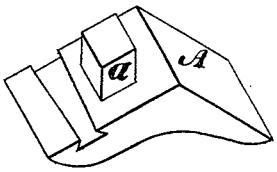
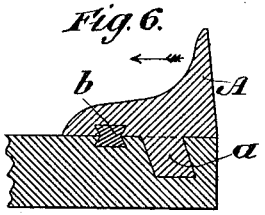


Fig. 6.



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HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 344,452, dated June 29, 1886.

Application filed April 8, 1885. Serial No. 161,521. (No model.)

To all whom it may concern:

Be it known that I, LYMAN B. MELIUS, of Copake, Columbia county, State of New York, have invented a new and useful Improvement in Horseshoes, of which the following is a specification, reference being had to the drawings forming part of the same.

My invention consists in an improved method of attaching the calks to a horseshoe, and the adaptation of the calks and the horseshoe for that purpose.

In the drawings, Figure 1 represents a bottom view of a horseshoe with the calks attached, the means of attachment being indicated by dotted lines. Fig. 2 represents a section through the line 1 1 of Fig. 1. Fig. 3 represents a section through the line 2 2 of Fig. 1. Fig. 4 is an isometric view showing the side of the toe-calk next the shoe. Fig. 5 is a similar view of one of the heel-calks. Fig. 6 is a section through the line 3 3 of Fig. 1.

In practice the shoe and calks are manufactured and may be sold separately.

The heel-calks A are made of the form shown in Figs. 5 and 6, their wearing-surface being of any of the usual forms. On the under side the heel-calk is provided with a projection or lug, *a*. This projection or lug is shown as square; but that form is not essential. The object of this projection or lug is to fit into a corresponding recess formed in the shoe and receive substantially all of the strain which occurs between the calk and the shoe. In order the better to sustain this strain, the lug is to be preferably inclined toward the heel of the shoe, so that the strain which occurs in the direction of the arrow, Fig. 6, will meet with greater resistance between the lug and the shoe than would be the case if the lug were not inclined.

In order to hold the lug in place within the shoe, and prevent the calk and shoe from falling apart, I provide a tapering pin, *b*, which forms a dovetail joint both with the calk and with the shoe, as shown in Fig. 6. The larger end of this pin, when in position, is flush with the outside surface of the shoe and of the calk; but the smaller end projects sufficiently beyond the inside surface of the shoe and the calk to be turned over and riveted or clinched, so as to prevent the pin from falling out. The calk, as shown in Fig. 5, and also the shoe, are of course provided with suitable dovetail recesses to receive the pin *b*.

The toe-calk is shown at B, Fig. 1, and in Figs. 2, 3, and 4. The exposed surfaces of this toe-calk are of any of the usual forms. *c c* are two lugs on the surface of this calk, next the shoe, which are formed like the lug *a* of the heel-calk, but are preferably inclined toward the toe of the shoe. The object of preferably inclining them toward the toe of the shoe is so that in case the horse should suddenly stub his toe, and thus produce a severe strain in the direction of the arrow, Fig. 2, the inclination of the lugs will cause them to better sustain the strain between the calk and the shoe.

Between the two lugs *c c* is a tapering pin, *d*, similar to the pin *b*, and adapted to form a dovetail joint both with the shoe and with the calk B. The large end of this pin, when in position, is about flush with the shoe and with the calk on the outer surface, and the smaller end of the pin extends sufficiently beyond the inner surface of the shoe and the calk to enable it to be riveted or clinched, so as to be held in position.

In practice I expect that the shoe and the calk and the connecting-pin will be manufactured and sold separately, and that they will be purchased in lots and combined by the horseshoer.

I am aware that attempts have been made to construct a horseshoe in which the calks and the main portion of the shoe were separate, and I therefore do not claim, broadly, a shoe in which the calks are separate from the main portion of the shoe.

The advantages of my improvement over horseshoes in which the calks and the shoe are in one piece are obvious, and the advantages which my invention has over those shoes in which the calks and the shoe have been separate, arise from the efficiency of the means of connection which I have provided both as to durability and facility of attachment and cheapness of manufacture.

I am aware that horseshoes have heretofore been constructed with removable calks secured

to the shoe by a dovetailed tenon fitting into a dovetailed recess in the shoe, the tenon being inserted into the recess from the edge of the shoe by a sidewise movement, and being held there by a retaining-key, and reliance being placed upon the tenon to prevent vertical displacement and upon the key to prevent lateral displacement. In other cases the calk was made in two parts, each part being provided with a tenon so constructed that when the two parts were brought together their respective tenons inclined away from each other. These tenons fitted into corresponding mortises in the shoe, and the calk was held in place by a pin inserted between its two parts. In other cases the calk was provided with a tenon fitting into a mortise in the shoe, and held therein by set-screw and pin passing through the shoe and entering countersinks in the tenon. I am also aware that in general mechanics it is not new to unite two parts by a pin forming a dovetail joint with each. I do not claim any of such constructions, but limit myself to substantially the construction and arrangement of my tenon and pin with relation to the shoe and calk, which I believe to be new.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a horseshoe, of a removable calk, the said shoe and said calk being secured together by an angular lug having substantially parallel sides and formed in one piece with the calk and extending into the shoe, and a pin located between the opposing faces of the shoe and calk on one side of lug and forming a dovetail joint both with the shoe and the calk, substantially as described.

2. The combination, with a horseshoe, of a removable calk, the said shoe and said calk being secured together by an angular inclined lug having substantially parallel sides and formed in one piece with the calk and extending into the shoe, and a pin located between the opposing faces of the shoe and calk and forming a dovetail joint both with the shoe and the calk, substantially as described.

LYMAN B. MELIUS.

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