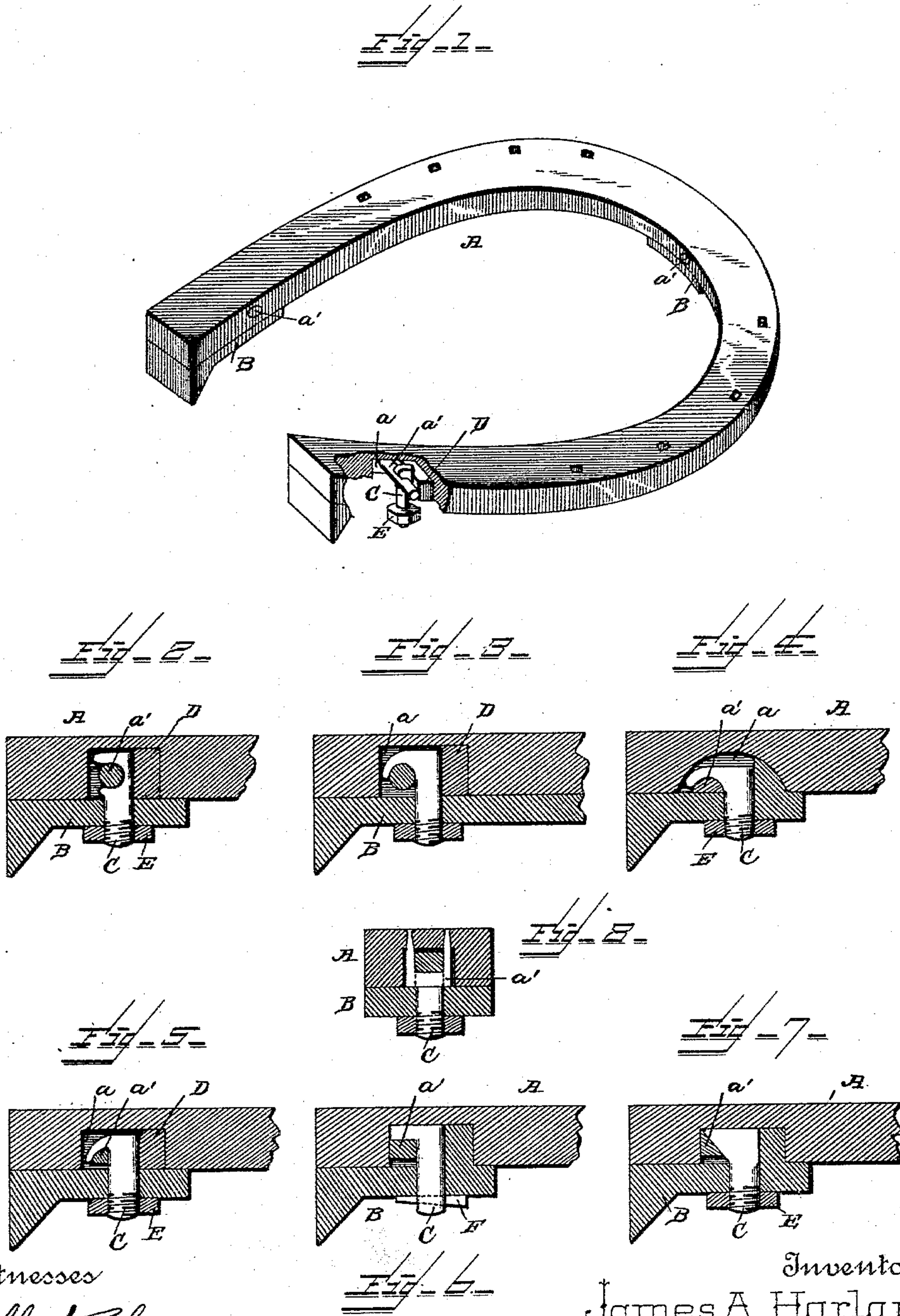


(No Model.)

J. A. HARLAN.
HORSESHOE.

No. 411,961.

Patented Oct. 1, 1889.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. HARLAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 411,961, dated October 1, 1889.

Application filed January 5, 1889. Serial No. 295,494. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HARLAN, a citizen of the United States of America, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to means for securing a removable horseshoe or calks to a base-plate permanently attached to a horse's hoof.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

Figure 1 is a perspective view of a base-plate having calks removably secured thereto in accordance with my invention, broken out for clear illustration. Fig. 2 is a broken longitudinal section of Fig. 1, enlarged. Figs. 3, 4, 5, 6, and 7 are enlarged broken longitudinal sectional views illustrating modifications of the means for securing the shoe or calks to the base-plate, Fig. 3 representing the attachment of a shoe. Fig. 8 is a transverse sectional view illustrating another modification.

In the drawings, A represents the base-plate, which is made in the shape of a horseshoe without calks, and which is nailed to the horse's hoof in the usual manner. In the under side of this plate at the toe and heel, are formed recesses *a*, (only one of which is shown,) in each of which is located a pintle *a'*, which is passed transversely through the recess, as clearly seen in Fig. 1; or the pintle may be formed integral with the base-plate, as seen in Fig. 4; or it may be in the form of a staple, the prongs of which pass through the base-plate and are clinched on the upper side, as seen in Fig. 8.

B in Figs. 1, 2, 4, 5, 6, 7, and 8 represents a removable calk, and in Fig. 3 a removable shoe, which latter, it will be understood, extends all the way around the base-plate.

C represents the fastening-bolt, which passes through the calk or shoe. The upper end of this bolt, which enters the recess in the base-plate, is shaped to engage with the pintle *a'*, so as to be held within the recess. It is shown in Figs. 1 and 2 as notched for that purpose;

in Figs. 3, 4, and 5, hook-shaped; in Figs. 6 and 8, L-shaped, and in Fig. 7 half-dovetail shaped. Whatever may be the shape of this end of the fastening-bolt the recess *a* in the base-plate must be large enough to permit the necessary movement of the bolt to properly engage the pintle.

For the purpose of holding the bolt in engagement with the pintle, I employ a filling-block D, to fill the space in the recess alongside the bolt. Instead, however, of using a separate block for this purpose, as shown in Figs. 1, 2, 3, and 5 the block may be formed integral with the removable portion, as seen in Figs. 4, 6, and 7.

The lower end of the fastening-bolt extends through the shoe or calk, and a nut E is screwed thereon by which the parts may be forced tightly together; but instead of using a nut I may put a hole through the lower end of the bolt and insert a key F, as seen in Fig. 6. It will be seen that the recesses *a* in the base-plate do not extend through it, and that therefore the upper end of the fastening-bolt can in no event be pressed up against the horse's hoof, as might be the case were the recesses cut clear through, for then if the nut should work loose or the key fall out there would be nothing to prevent the bolt striking the hoof when trod upon.

The manner of attaching and removing the shoe or calk is so obvious as to need no description.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the base-plate, recessed as described, and a pintle within each recess, of a shoe or calk, a fastening-bolt whose upper end enters the recess in the base-plate and engages with the pintle, and whose lower end passes through the shoe or calk, and means, substantially as described, for tightening the bolt, for the purposes set forth.

2. The combination, with the base-plate, recessed as described, and a pintle within each recess, of a shoe or calk, a fastening-bolt whose upper end enters the recess in the base-plate and engages with the pintle, and whose lower end is screw-threaded and passes through the

shoe or calk, a filling-block in the recess alongside the bolt, and a nut on the bolt, for the purposes set forth.

3. The combination, with the base-plate, recessed as described, and a pintle within each
5 recess, of a shoe or calk having an integral filling-block on its upper surface, a fastening-bolt whose upper end enters the recess in the base-plate and engages with the pintle, and
10 whose lower end passes through the shoe or

calk, and means, substantially as described, for tightening the bolt, for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. HARLAN.

Witnesses:

C. E. McCLOSKEY,
JOHN F. TURNER.