

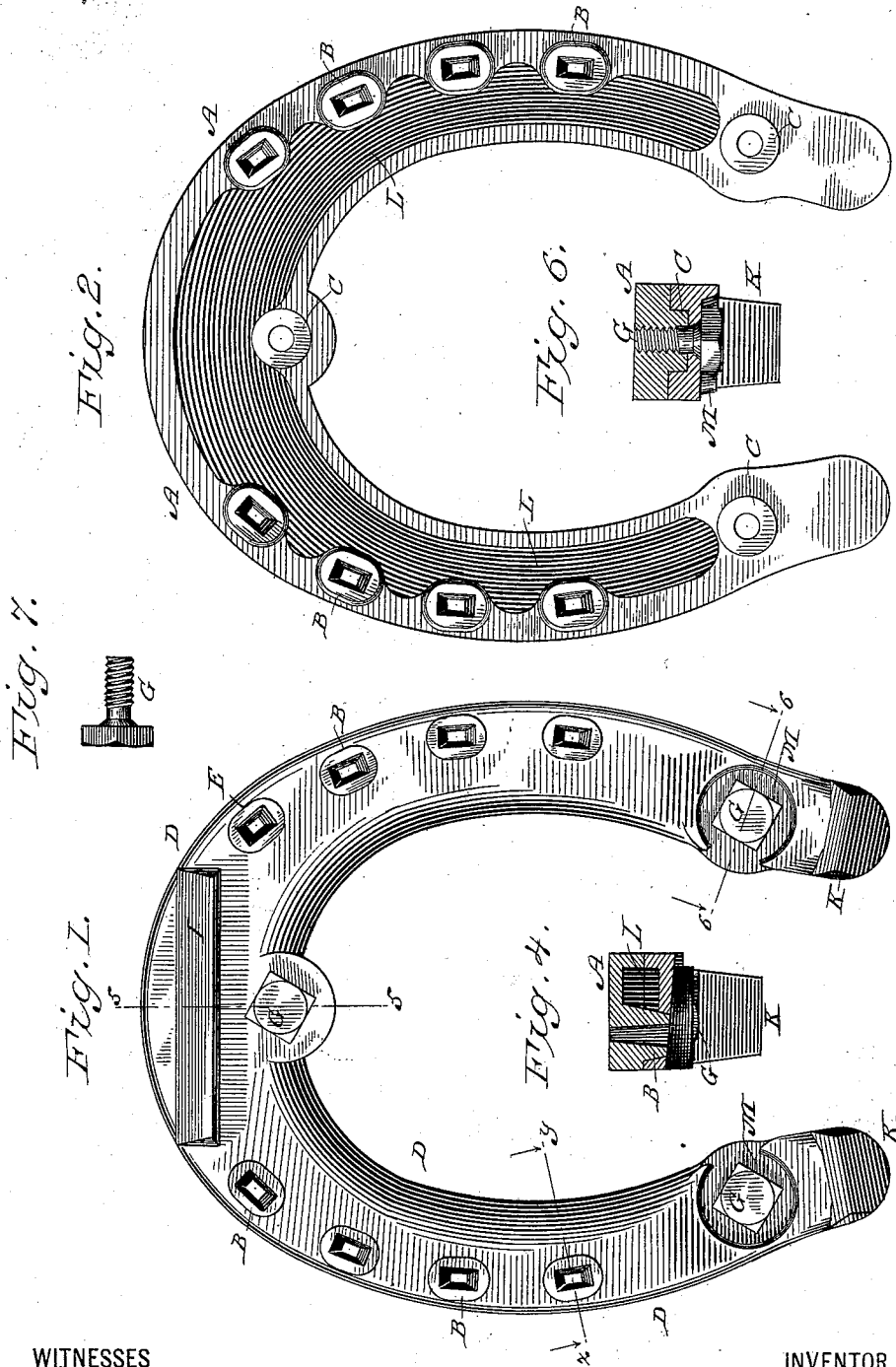
(No Model.)

2 Sheets—Sheet 1.

A. C. HAWES.
DUPLEX HORSESHOE.

No. 334,659.

Patented Jan. 19, 1886.



WITNESSES

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INVENTOR

Arnold C. Hawes

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Fig. 8.

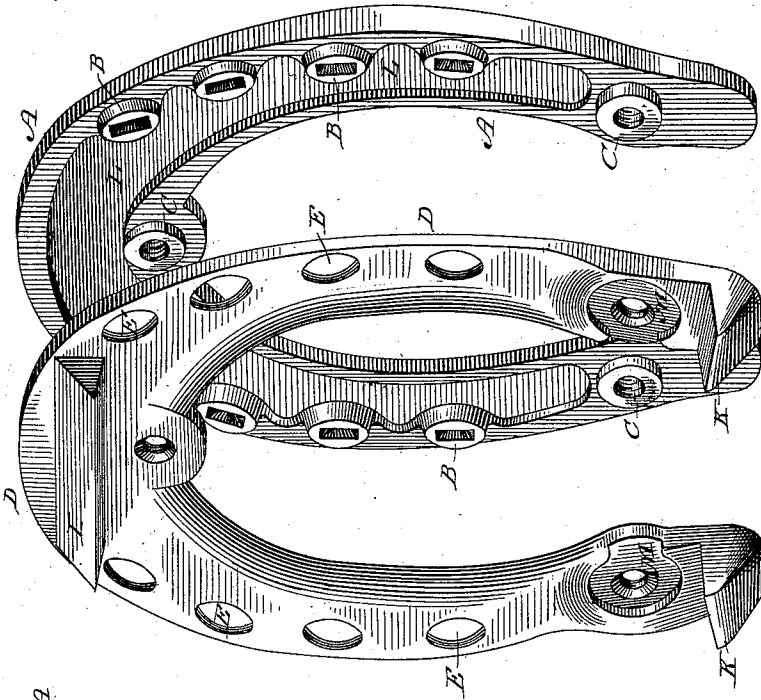


Fig. 5.

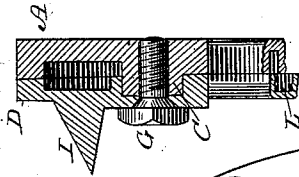
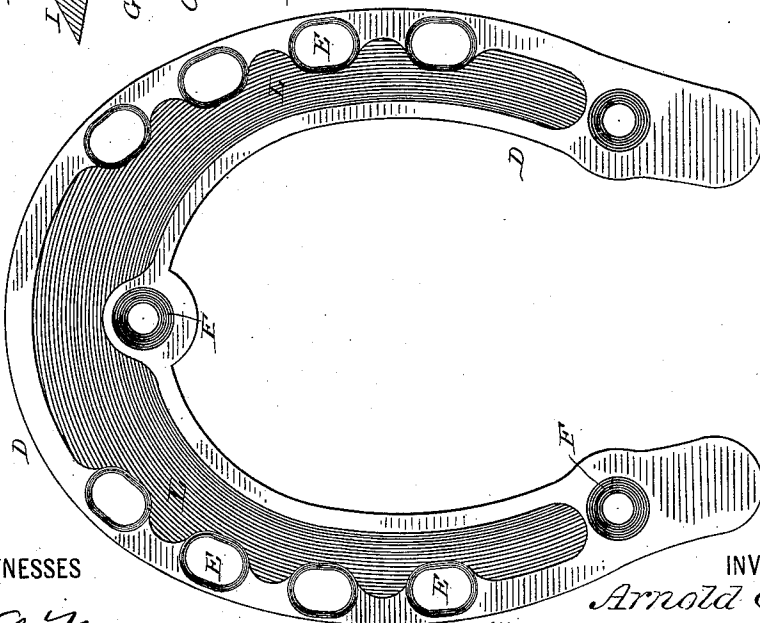


Fig. 3.



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UNITED STATES PATENT OFFICE.

ARNOLD C. HAWES, OF NOROTON, CONNECTICUT.

DUPLEX HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 334,659, dated January 19, 1886.

Application filed August 5, 1885. Serial No. 173,644. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD C. HAWES, of Noroton, Fairfield county, Connecticut, have invented certain Improvements in Duplex Horseshoes, of which the following is a specification, reference being made to the accompanying drawings.

My invention relates to the class of horseshoes which forms the subject of my Patent No. 280,816, granted July 10, 1883, and also of my pending patent application Serial No. 171,772, filed July 16, 1885, where the general features common to duplex horseshoes, and from which they derive their value, are clearly set forth.

The object of my present invention, which is an improvement on my earlier ones, is to obtain a duplex horseshoe in which the hoof-plate is entirely covered and protected by the shoe-plate, and which yet affords access to the nail-holes and nails while the two plates are united, so that it is not necessary to separate them in order to attach the shoe to the foot, which provides a more perfect support and protection for the head of each nail than has heretofore been possible, which utilizes the devices above referred to as a means for accomplishing a more perfect doweling together of the two plates composing the duplex shoe, and which, finally, permits the location of the nail-holes in any desired position upon the shoe.

Referring to the drawings, Figure 1 is a representation of the under side of my complete duplex horseshoe. Fig. 2 shows the under side of the hoof-plate, the shoe-plate being detached. Fig. 3 shows the upper side of the shoe-plate removed from the hoof-plate. Fig. 4 is a cross-section of the two plates on the line *xy* of Fig. 1. Fig. 5 is a sectional view taken through the center of the toe-bolt. Fig. 6 is a similar view taken through one of the heel-bolts. Fig. 7 is a view of one of the bolts detached, and Fig. 8 is a perspective view of the two plates of the shoe, one over the other and slightly separated.

A indicates the hoof-plate provided with the bosses B, having nail-holes through them, enlarged at one end, forming recesses for the nail-heads, as shown in Fig. 4.

C indicates circular bosses or projections having screw-threaded holes through them.

D indicates the shoe-plate, provided with holes E and with recesses F, which receive, respectively, the nail-head bosses B and the circular bosses C.

G indicates fastening-bolts, which secure the plates together in the same manner, by means of the circular bosses C and recesses F, as in my said pending application. One or more of these bolts may be used, as desired.

I indicates the toe-calk, and K the heel-calks upon the hoof-plate, which may of course be dispensed with for smooth shoeing, as usual.

L indicates a groove or panel, which may be formed in either or both of the plates, if desired, for the purpose of lightening them.

M indicates sockets in the shoe-plate, into which the heads of the fastening-bolts are received.

In the first of my previous inventions relating to duplex horseshoes the hoof-plate was thoroughly protected from wear by being entirely covered by the shoe-plate; but this construction involved the separation of the two plates to permit the fastening of the shoe to the foot of the horse.

In my subsequent invention, (for which application is now pending,) the shoe-plate was narrowed or cut away on its external edges so as to uncover the nails in the hoof-plate, thus enabling the shoe to be nailed to the horse's foot without separating the two plates composing it. In this way I obviated the difficulty above mentioned as appearing in my first construction, but in so doing exposed a portion of the hoof-plate to wear.

By the improved construction herein shown the difficulties and objections inherent in both of the prior constructions above referred to are obviated, while the good features of both are retained and combined. In this way I am enabled to produce a duplex horseshoe in which the shoe-plate conforms in size and contour to the hoof-plate both on its internal and external edges, thus thoroughly protecting its under surface from wear, and yet at the same time provision is made whereby the complete shoe can be nailed to the foot of the horse without separating the two plates of which it is composed.

An important feature of my present invention is that by which I am enabled to obtain

an improved support for each of the nails by which the shoe is fastened to the foot.

In the case of the shoe shown in my patent of July 10, 1883, the nail-hole is formed in a thin plate of metal, so that practically the nail-head is unsupported.

In my later invention already referred to, the heads of the nails are contained within a continuous groove which, if properly shaped, supports the nail-heads transversely to the foot, but leaves them unsupported in the direction of the length of the groove.

The device embodied in my present invention enables me to locate each of the nail-heads in a separate recess or socket which completely surrounds and supports the head in all directions. In this way each of the nail-heads is most perfectly protected against wear and also against shock and everything tending to loosen it in the hoof.

A further advantage of this construction is that it enables the several nail-holes to be placed in whatever position upon the shoe is found most desirable with reference to the structure of the hoof, instead of necessarily being placed upon the extreme outer edge, as in the case of my previous shoe, for which application for Letters Patent is now pending. Each of the hubs containing the recesses for the nail-heads serves also the additional useful purpose of most effectively doweling the two plates together, and thus helping to prevent any distortion of either plate relatively to the other in fastening the shoe to the foot. The function of the bolts is thus reduced to simply holding the two plates in close contact, the construction otherwise being such as to relieve the bolts of all lateral strain or shock.

By means of the several devices above referred to, constructed and combined substantially as I have described, I am enabled to produce a duplex horseshoe in which all of the following advantages are secured, viz: Its two plates are so constructed that the permanent part or hoof-plate is entirely covered by the removable part or shoe-plate, and is thus perfectly protected against wear. Each of the two plates supports and re-enforces the other at all points, and the two are thoroughly doweled together, so that when united the complete

shoe possesses a strength and stiffness practically equal to that of a solid shoe of equal weight. It affords the best possible support to each nail-head independently, and at the same time protects them against wear and shock. It permits each of the nails to be located in any desired position upon the shoe. It enables the shoe to be properly attached to the foot, and any of the nails securing it to the foot to be tightened or replaced with new ones without the necessity of separating the two plates. It provides most perfectly against the severe strains or shocks tending to shift the plates upon one another, and accomplishes this without permitting any of these strains to adversely affect the bolts. It permits the heel and toe calks or bearings to be placed as far apart from each other as in the common horseshoe.

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

1. A hoof-plate having a series of separate raised bosses pierced with nail-holes, substantially as described.

2. A duplex horseshoe composed of a hoof-plate having a series of separate raised bosses pierced with nail-holes, and a shoe-plate covering the whole surface of the hoof-plate and containing a series of holes adapted to receive the separate bosses on the hoof-plate, substantially as described.

3. A duplex horseshoe having in combination a hoof-plate provided with a series of separate raised bosses pierced with nail-holes, a shoe-plate covering the whole surface of the hoof-plate and containing a series of holes adapted to receive the separate bosses of the hoof plate, and one or more screw-bolts serving to hold the two plates together.

4. In a duplex horseshoe, the improved support for each nail-head, consisting of a raised boss which contains a nail-hole and an enlarged recess for the nail-head, substantially as described.

In testimony whereof I have hereunto subscribed my name.

ARNOLD C. HAWES.

Witnesses:

SCHUYLER MERRITT,
HOWARD L. UNDERHILL.