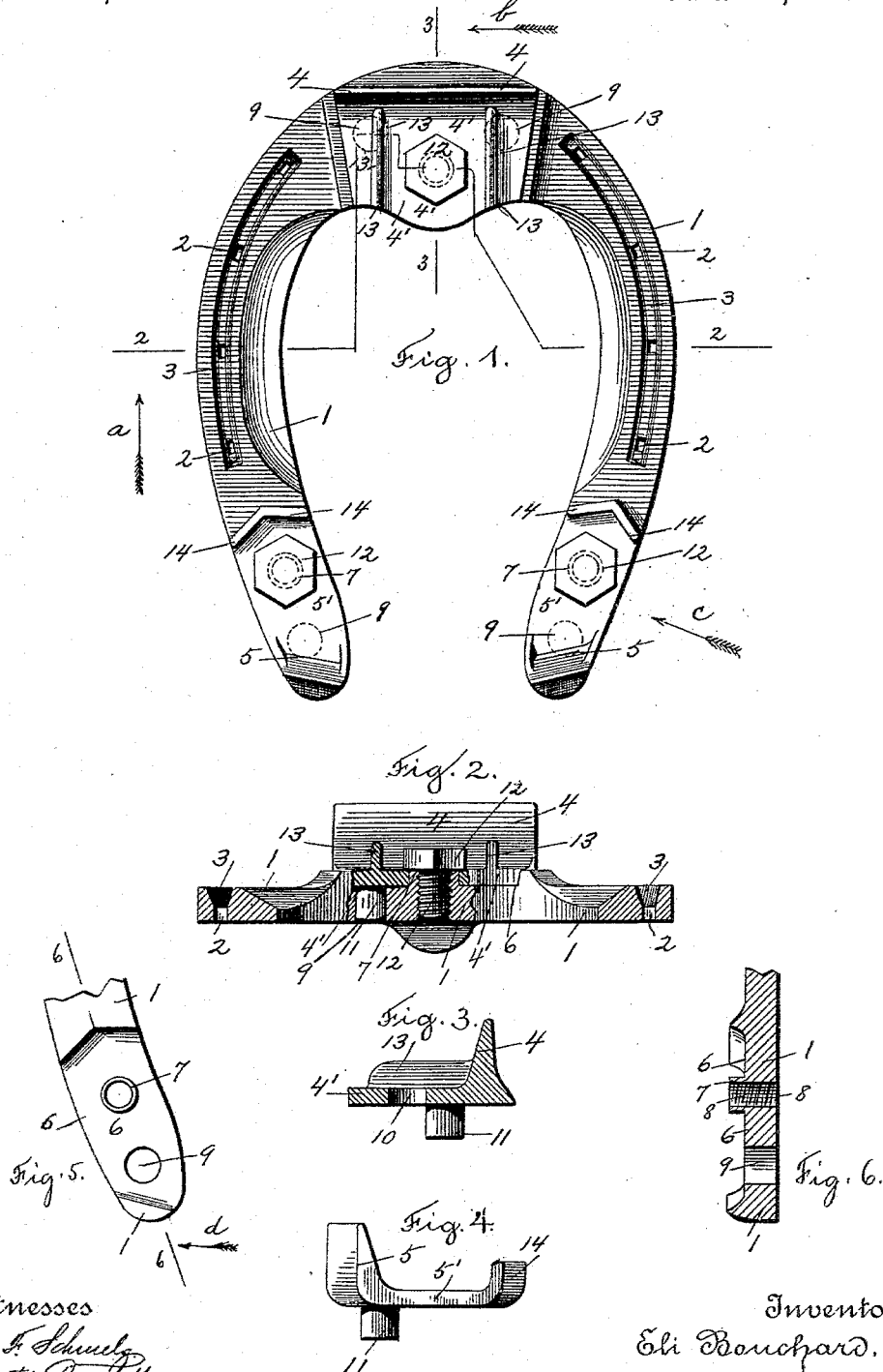


(No Model.)

E. BOUCHARD.
HORSESHOE.

No. 490,063.

Patented Jan. 17, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

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HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 490,063, dated January 17, 1893.

Application filed June 23, 1892. Serial No. 437,709. (No model.)

To all whom it may concern:

Be it known that I, ELI BOUCHARD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Horseshoes; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to horse shoes provided with removable calks, and more particularly to a certain improvement in the horse shoe, shown and described in the Letters Patent of the United States, No. 336,154. It has been found in using the horse shoe described in said Letters Patent, that the bolts or screws for holding the calks to the shoe, will be turned by a corner of the bolt head striking against a stone, or other hard substance, thus loosening the bolt and the calk which it holds in place on the shoe. By the construction of the calks shown in said Letters Patent, there is nothing to protect the heads of the bolts, which secure the calks to the shoe, or to prevent the corner of the bolt head from striking against a stone, or other hard substance, which is likely to turn the bolt, and loosen it.

The object of my present invention is to overcome this defect in the shoes, mentioned above, and to provide means to prevent the bolt heads from striking against a stone, &c. to turn and loosen them.

My invention consists in providing the removable toe and heel calks with ridges or extensions, extending on the sides of, and partially inclosing the heads of the bolts, which secure the calks to the shoe, and extending slightly beyond the bolt heads, as will be hereinafter fully described.

Referring to the drawings:—Figure 1 is a view of the bottom of a horse shoe, embodying my improvements, with the removable toe, and heel calks in place. Fig. 2 is a cross section, taken on line 2, 2, Fig. 1, looking in the direction of arrow *a*. Fig. 3 is a cross section of the toe calk, removed, taken on line 3, 3, Fig. 1, looking in the direction of arrow *b*.

Fig. 4 is a side view of the right hand heel calk, removed, looking in the direction of arrow *c*, Fig. 1. Fig. 5 is a plan view of the left hand heel portion of the shoe, with the calk removed, and, Fig. 6 is a longitudinal section on line 6, 6, Fig. 5, looking in the direction of arrow *d*.

In the accompanying drawings, 1 is the shoe, which may be of any ordinary shape, and provided with nail holes 2, and grooves 3, for the nail heads, in the ordinary way, 4 is the toe calk, and 5 the heel calks.

The shoe 1 is provided with a depression or recess 6, in the underside thereof, at the toe and heel portions, where the calks are attached to the shoe. The recess 6 at the toe portion, and also at the heel portion of the shoe, is preferably of a depth substantially equal to one-third or more of the thickness of the shoe, and of the same width as the width of the shoe, and of a length corresponding to the length of the base of the calks, which are fitted in said recess, so that the ends of the base of the calks will bear against the ends of the recess, as shown in the case of the toe calk, in Fig. 2.

In the recessed portion 6 of the shoe is a hole 9, extending through the shoe. In the heel portion of the shoe there is preferably one hole 9, see Figs. 5 and 6, and in the toe portion, two holes 9, as indicated by dotted lines Fig. 1.

The toe calk 4, and the heel calks 5 are provided with the base portions 4', and 5', adapted to fit into the recesses 6, said base portions have a hole 10 therein, to receive the thimble 7, and stud 11 on the underside thereof, to extend into the hole 9 in the shoe. In the case of the calk 4 there are preferably two studs 11, as shown in Fig. 2, while in the heel calks 5, there is preferably only one stud, 11, as shown in Fig. 4.

The toe calk 4, and heel calks 5 are secured in the recesses 6, and to the shoe, by screws or bolts 12, which are screwed into the threaded hole 8, in the thimble 7 and in the shoe, and have their heads bearing on the outer surface of the base of the calks, as shown in Fig. 2.

All of the above detail description of the horse shoe shown in the drawings, corresponds

substantially to the description of the horse shoe shown in said Letters Patent, and the two horse shoes are of substantially the same construction, as far as relates to what is set forth in said Letters Patent.

I will now proceed to describe my improvements, which as before stated, relate to means for protecting the bolt heads, and preventing them from turning, and getting loose.

The outer surface of the base portion of the calks is provided with ridges or extensions, made integral therewith. In the case of the toe calk 4 there are two ridges or extensions 13, one on each side of the bolt head 12, extending at right angles to the calk to inclose the bolt head, and in the case of the heel calks 5, there is one ridge or extension 14, on the inner end of the base portion 5', opposite from the calk end, which ridge 14 is preferably made angular as shown in Fig. 1, and partially incloses the head of the bolt 12. The ridges or extensions on the outer surface of the base portions of the calks, extend slightly beyond the outer surface of the bolt head 12, when the calks are secured to the shoe, as shown in Fig. 2. The ridges 13 and 14 in connection with the calks proper, form an inclosed space substantially inclosing the bolt head, which space will become filled up with dirt, &c., as the shoe is used. The dirt, &c., will serve to hold the bolt head, and prevent it from turning, and getting loose; and the ridges or extensions will also protect the bolt head and prevent it from striking on stones or hard substances, which might turn and loosen it. By making the walls of the ridges substantially straight and at right angles to the surface of the calks they will be substantially parallel with the sides of the bolt heads, and thus have a tendency to prevent the dirt

from dropping out when it is dry, as would be the case with a flaring walled hole or opening. Another advantage of this construction is that when it is desired to remove the dirt for taking out the bolt, one side, at least, of the cavity is open, and a tool may be inserted under the dirt at that side and it can be very easily loosened and removed.

The advantages of my improved horse shoe, will be readily appreciated by those skilled in the art.

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

In combination, a horseshoe having a recess in the toe and at each end, the bottom of each of said recesses being provided with holes, one of which is screw-threaded and has its walls extended up from the bottom of the recess to form a boss, and a calk in each recess, each calk having a perforation to fit over the boss and having a projection and angular ridges projecting from its outer face, the walls of said projections being at substantially right angles to the face of the calk, and a bolt in each screw threaded boss having its head within the cavity formed by the projections and the ridges and having its sides substantially parallel with the adjacent walls of the ridges, said cavity being open on at least one side, whereby the dirt that is retained by the parallel walls of the ridges and of the bolt, may be removed by means of an instrument inserted at the open side of the cavity, substantially as set forth.

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Witnesses:

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