

(No Model.)

W. S. HITCH.
HORSESHOE.

No. 602,046.

Patented Apr. 5, 1898.

Fig. 1.

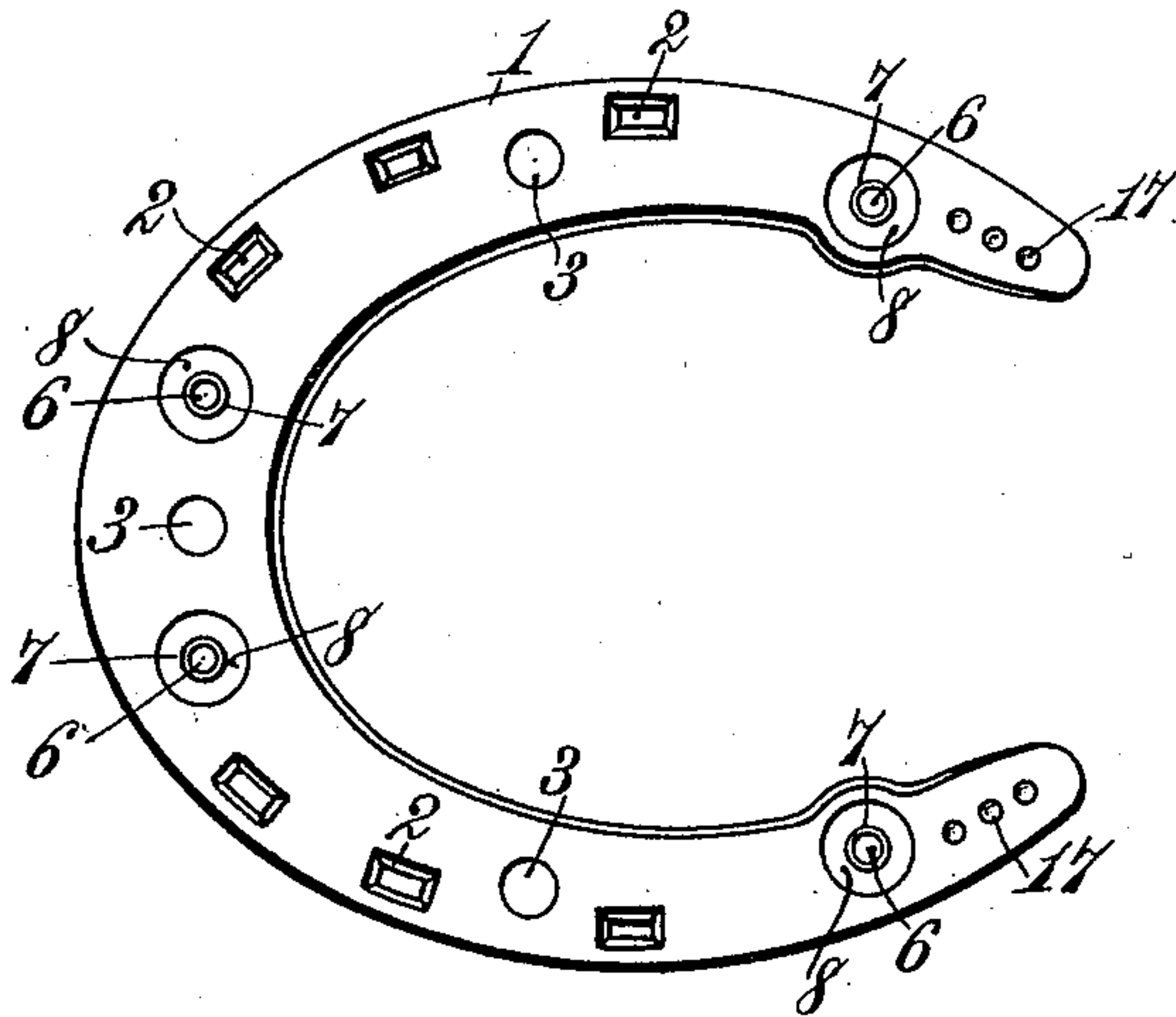


Fig. 2.

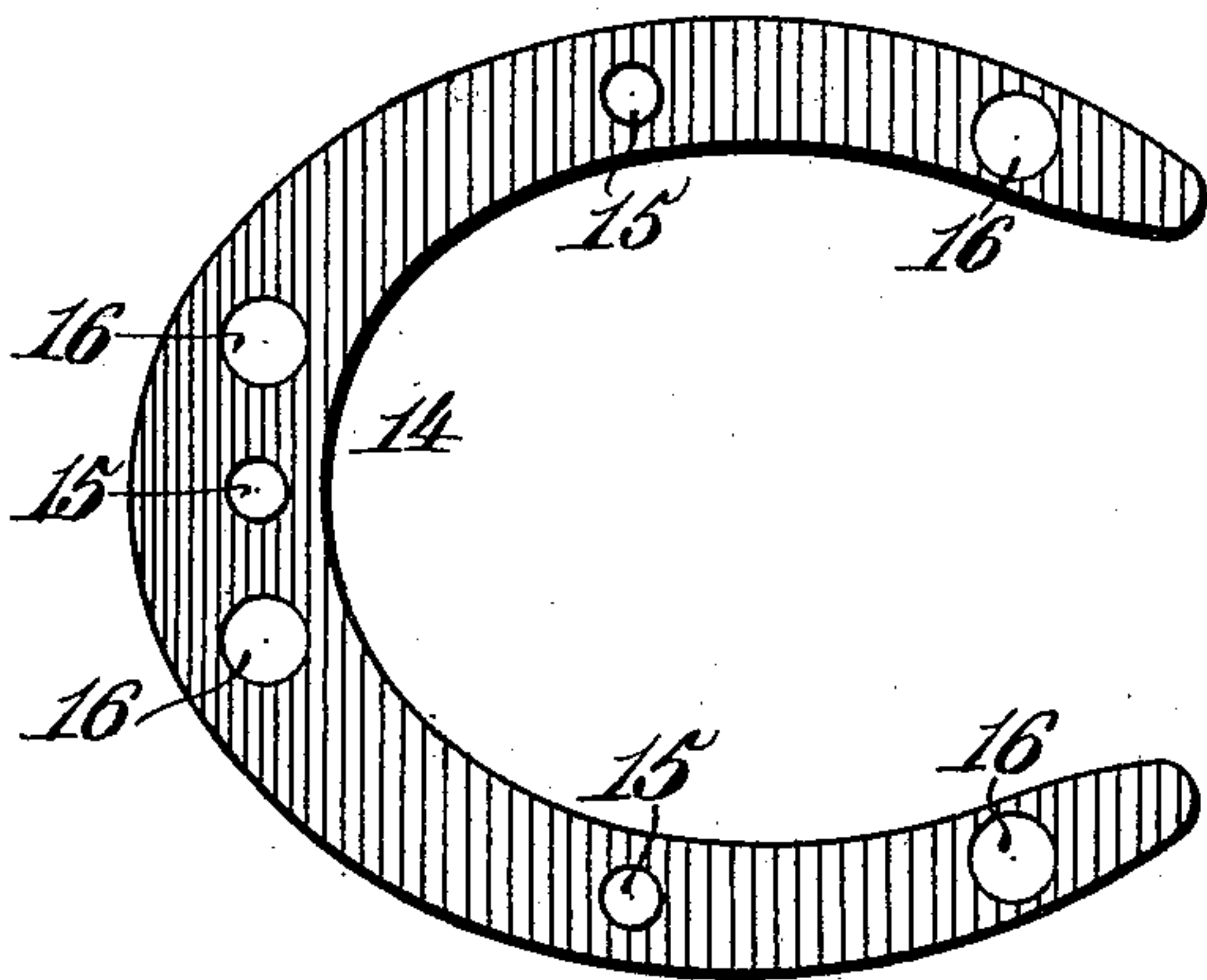


Fig. 3.

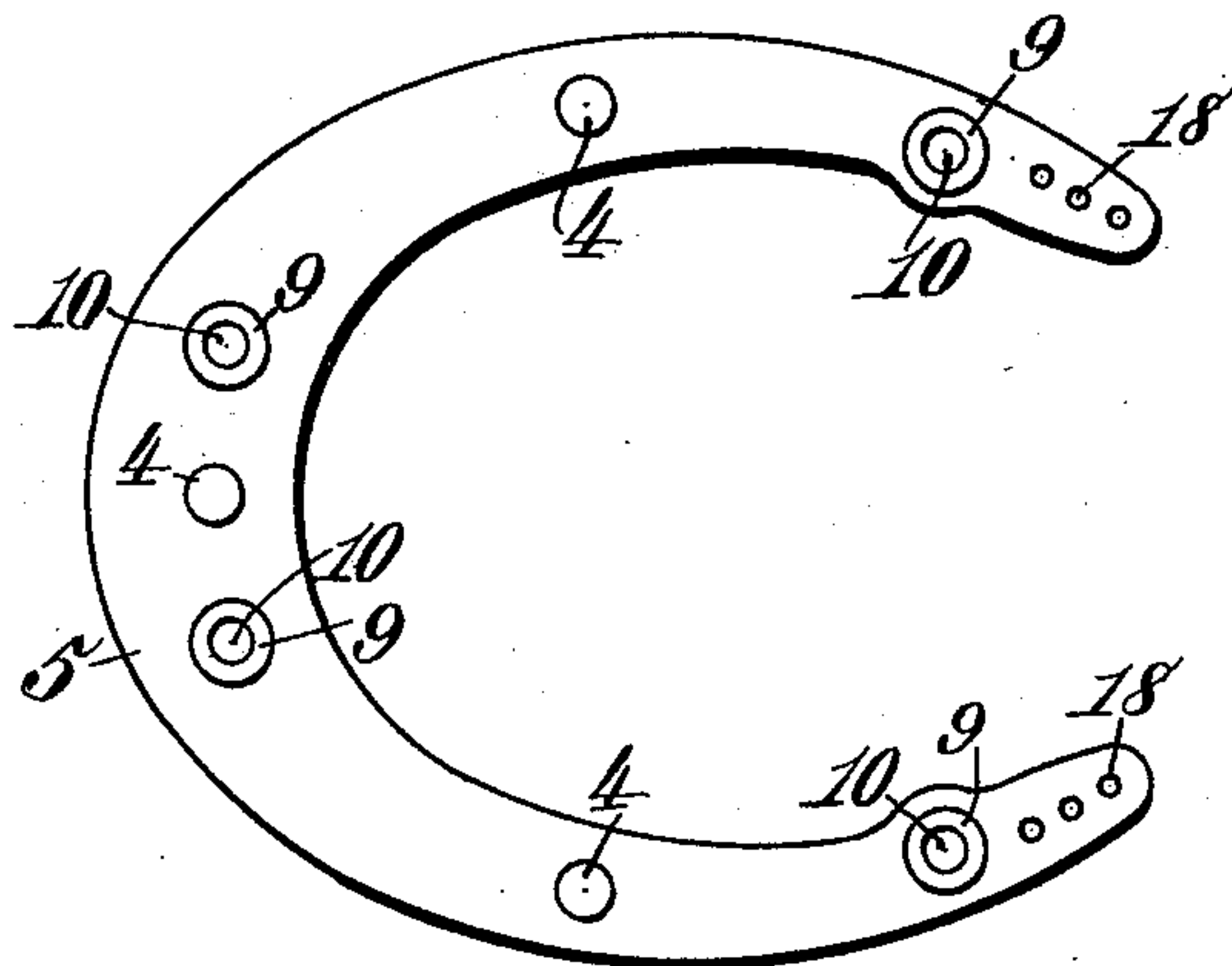


Fig. 4.

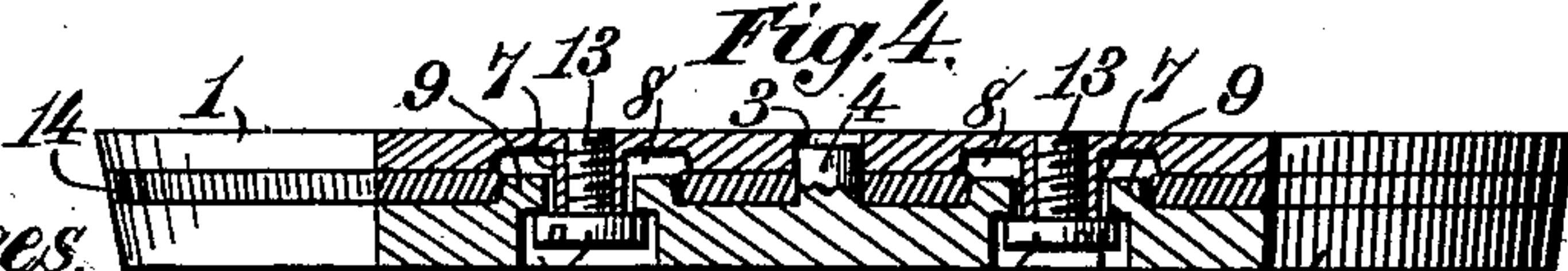
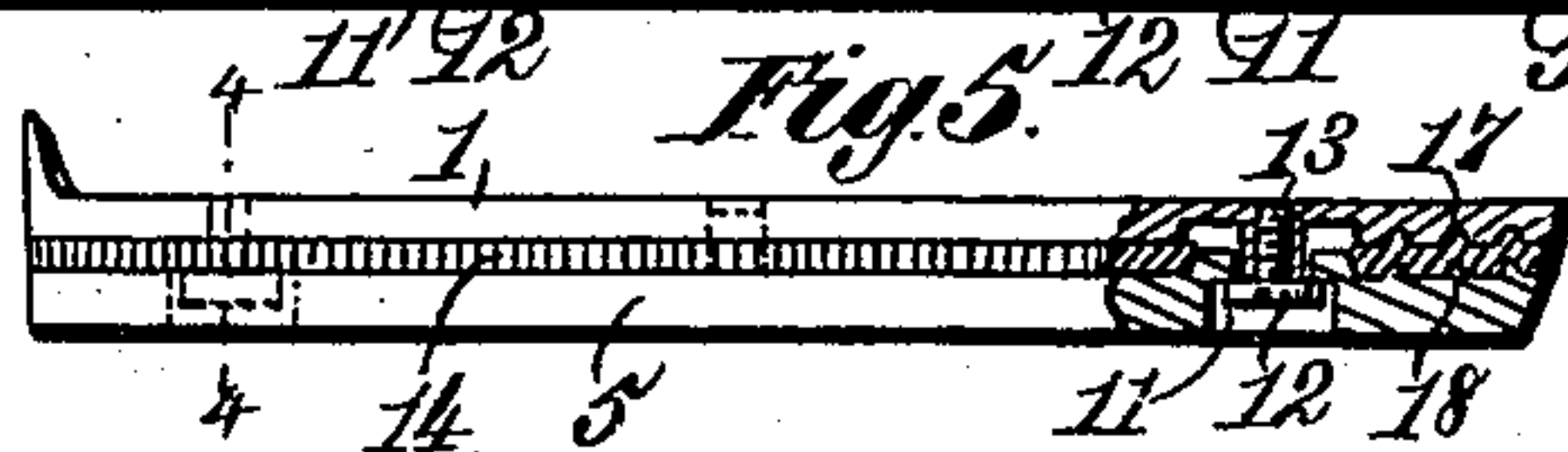


Fig. 5.



Witnesses.
Robert G. Smith,
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Inventor.
William S. Hitch,
By *James L. Norris*
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM S. HITCH, OF DOVER, MARYLAND, ASSIGNOR OF ONE-HALF TO
JAMES H. WILSON, OF SAME PLACE.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 602,046, dated April 5, 1898.

Application filed November 3, 1897. Serial No. 657,265. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HITCH, a citizen of the United States, residing at Dover, in the county of Kent and State of Maryland, have invented new and useful Improvements in Horseshoes, of which the following is a specification.

This invention relates to that class of horseshoes in which there is combined an upper shoe-plate to be nailed to the hoof, a lower detachable shoe-plate that can be readily removed and replaced whether for smooth or rough shod, and an intermediate elastic pad or plate composed of rubber or other elastic material adapted to take up the shock of impact on hard roads and relieve the joints and extremities from the injurious effects of jar and concussion.

It is among the objects of my invention to provide simple and improved means for preventing strain upon the screw-bolts that hold the parts of the shoe together, and to thus obviate risk of breakage or the working loose of said bolts, and also to effectually prevent any liability to displacement of the interposed elastic pad or plate from between the upper and lower shoe-plates.

My invention consists in the novel features of construction in an elastic or yielding horseshoe, as hereinafter more particularly described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a bottom view of the upper shoe-plate. Fig. 2 is a view of an elastic strip or plate to be placed intermediate the upper and lower plates of the shoe. Fig. 3 is a top view of the lower shoe-plate. Fig. 4 is an enlarged vertical transverse section of the shoe on the line 4 4 of Fig. 5; and Fig. 5 is a side elevation of the shoe, partly in section.

The reference-numeral 1 designates the upper shoe-plate, which is provided at suitable points with holes 2 for passage of nails by which the said plate is to be secured to the hoof, and the said nail-holes are appropriately countersunk on the lower side of said plate to accommodate the nail-heads. This upper shoe-plate 1 is also provided at its toe end and on each side with circular mortises 3 to receive studs or tenons 4 on the lower shoe-plate 5, as hereinafter described. In the up-

per shoe-plate 1 there is also provided a number of circular openings 6—say, for instance, two of said openings in the toe portion of said plate and two at the heel. On the under side of said upper shoe-plate the said openings 6 are each surrounded by a tubular and internally-screw-threaded boss 7, which is in turn surrounded by a concentric annular depression or recess 8, as shown in Figs. 1 and 4.

The lower shoe-plate 5 has its upper face provided with the tenons 4, that are to closely engage in the circular mortises 3 of the upper plate, as hereinbefore mentioned. On its said upper face the lower shoe-plate 5 is also provided with a number of annular bosses 9, Figs. 3 and 4, that are to somewhat loosely surround the ends of the tubular bosses 7, as shown in Fig. 4. The circular openings 10 through the said bosses 9 and lower plate 5 are each countersunk on the bottom side of said lower plate to afford enlarged circular recesses 11, Fig. 4, that are adapted to loosely receive the flat heads 12 of screw-bolts 13, which engage in the internally-screw-threaded tubular bosses 7 of the upper plate 1 to secure the lower plate 5 thereto after the said upper plate has been nailed to the hoof.

When the upper shoe-plate 1 has been nailed to the hoof in the usual manner, there is then placed against the bottom side of this upper shoe-plate 1 an elastic strip or plate 14, Fig. 2, which is preferably composed of rubber or some suitably-yielding material that will be adapted to counteract the effects of concussion and prevent jar or strain in the joints and extremities. This elastic pad, plate, or layer 14 is provided with circular openings 15, corresponding with the studs or tenons 4 of the lower shoe-plate 5, and it also has larger circular openings 16, corresponding in position with the annular recesses 8 of the upper shoe-plate 1 and with the annular bosses 9 of the lower plate. Thus when the said elastic pad or plate 14 is in place and the lower shoe-plate 5 securely bolted in position the said intermediate elastic plate will be prevented from lateral displacement by reason of the engagement therewith of the said tenons and bosses. At their heel portions the opposing faces of the upper shoe-plate 1 and lower shoe-plate 5 are respectively provided with a se-

ries of depressions 17 and spurs 18, Fig. 5, through which a gripping action is exerted on the interposed heel portions of the elastic plate 14 to prevent any displacement thereof.

5 As hereinbefore remarked, the tenons 4 of the one shoe-plate are intended to have a close-fitting engagement in the circular mortises 3 of the other plate; but the tubular bosses 7 of one plate and the annular bosses 9 of the other plate are constructed and de-
10 signed to engage each other loosely, and, furthermore, it is another important feature of my invention that the countersunk portions or recesses 11 in the bottom face of the lower shoe-plate should be sufficiently large to
15 loosely receive the heads 12 of the screw-bolts 13, that secure the two shoe-plates together. By these features of construction all strain is taken off from the fastening screw-bolts 13,
20 so that they are not liable to break or to work loose. Consequently the lower shoe-plate will be always securely fastened to the upper shoe-plate. It will be also noticed by reference to Figs. 4 and 5 that these bolt-heads 12
25 are so fully inclosed in the recesses 11 as to present no cutting projections with which the horse might injure himself. The play afforded through the loose fitting of the bosses 7 and 9 will also contribute to the elastic qualities
30 of the shoe in obviating jar and concussion. The screw-bolts 13 are readily accessible to permit their withdrawal whenever it is desired to detach the lower shoe-plate, as for replacing smooth shod with rough shod or for other
35 purposes.

By reference to Figs. 4 and 5 it will be seen that the depth of the annular recesses 8 is sufficient to permit approach of the annular bosses 9 toward the upper shoe-plate when
40 the elastic pad or plate 14 is compressed by impact of the lower shoe-plate on a hard road or pavement. The mortises 3 and tenons 4 are also arranged with reference to compression of the elastic pad or cushion.

What I claim as my invention is--

1. A horseshoe composed of an upper plate and a lower plate respectively provided with close-fitting mortises and tenons, the said upper plate being provided on its bottom with tubular internally-screw-threaded bosses, and
50 the said lower plate having on its top annular bosses to loosely engage the said tubular bosses of the upper plate, and provided on its bottom with recesses, an elastic plate interposed between the said upper shoe-plate and
55 lower shoe-plate, and screw-bolts engaged in the tubular bosses of the upper plate and having the heads of said bolts loosely inclosed in the recesses in the bottom side of the lower plate, substantially as and for the purposes
60 described.

2. In a horseshoe, the combination of an upper shoe-plate adapted to be nailed to the hoof and provided with a number of mortises and with circular openings that are surround-
65 ed on the bottom of said plate by tubular internally-screw-threaded bosses and concentric annular recesses, a lower shoe-plate having its top provided with tenons to closely engage said mortises and with annular bosses to
70 loosely engage said tubular bosses, and having circular recesses in its bottom, an elastic and perforated plate interposed between the said upper shoe-plate and lower shoe-plate, and screw-bolts to secure the said plates to-
75 gether, the said screw-bolts being engaged in the tubular internally-screw-threaded bosses of the upper plate and having their heads loosely inclosed in the recesses in the bottom of the lower plate, substantially as and for the
80 purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WM. S. HITCH.

Witnesses:

EWELL A. DICK,
F. B. KEEFER.

It is hereby certified that the residence of the patentee in Letters Patent No. 602,046, granted April 5, 1898, upon the application of William S. Hitch, for an improvement in "Horseshoes," was erroneously written and printed "Dover, Maryland;" that said residence should have been written and printed *Dover, Delaware*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 7th day of June, A. D., 1898.

[SEAL.]

WEBSTER DAVIS,
Assistant Secretary of the Interior.

Countersigned:

C. H. DUELL,
Commissioner of Patents.