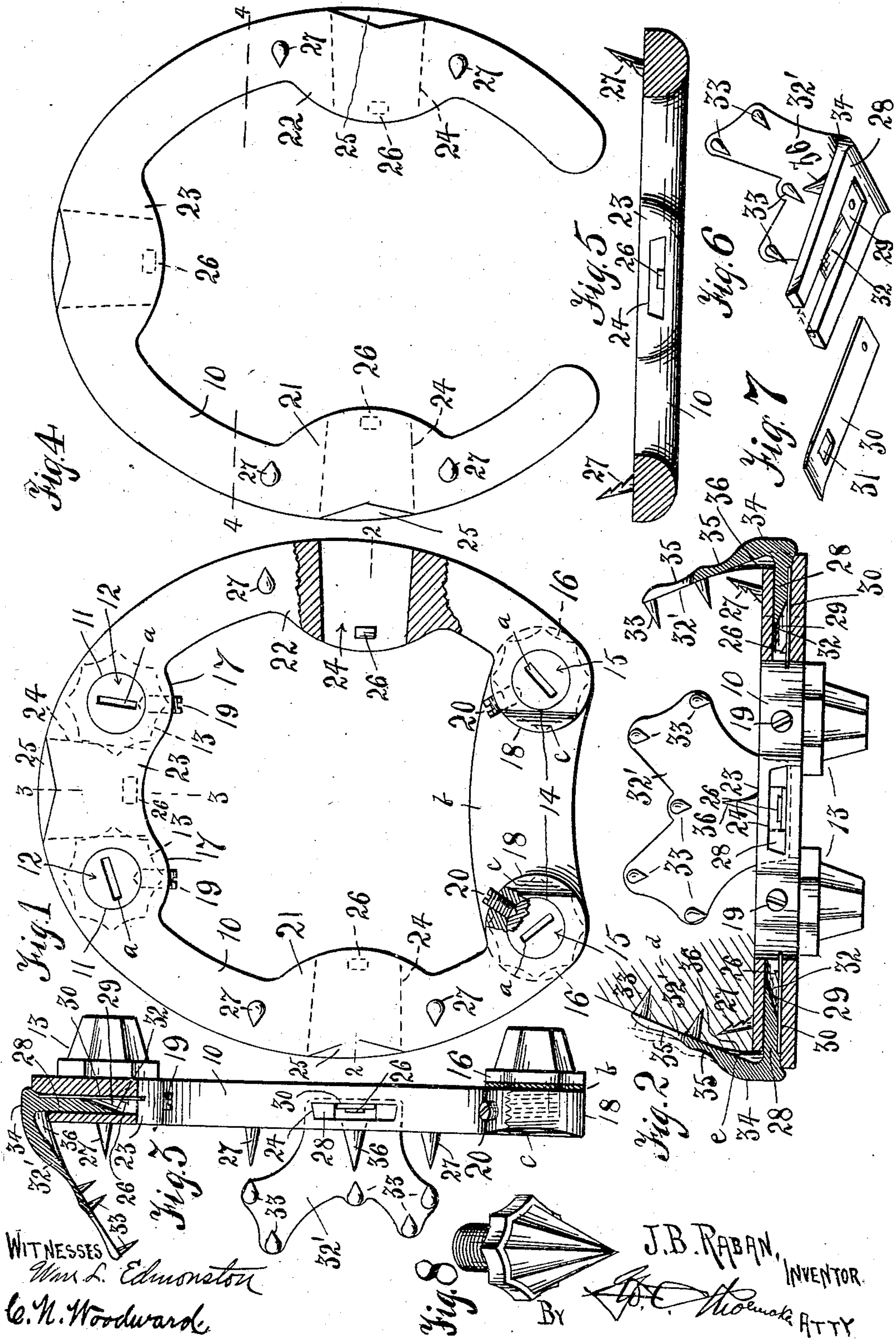


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PATENTED APR. 7, 1908.

J. B. RABAN.
HORSESHOE.

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WITNESSES
Wm. L. Edmonston
C. H. Woodward

Fig. 8
BY

J. B. RABAN, INVENTOR.
W. C. Holmwood, ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH B. RABAN, OF LOUISVILLE, KENTUCKY.

HORSESHOE.

No. 883,914.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH B. RABAN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Horse-shoes, of which the following is a specification.

This invention relates to certain improvements in horse shoes, and more particularly to the class wherein means are provided for detachably fastening the shoes to the hoofs without the use of the ordinary nails, and has for its object to improve the construction and increase the efficiency and utility of devices of this character.

With these and other objects in view, the invention consists in certain novel features of construction as hereafter shown and described and specifically pointed out in the claims, and in the drawings thus employed for illustrating the embodiment of the invention:—Figure 1 is a plan view of a horse shoe partly in section with the calks attached thereto, but the improved fastening means detached. Fig. 2 is a sectional view on the line 2—2 of Fig. 1 with the fastening means connected thereto and with two of the fastening means in section. Fig. 3 is a section on the line 3—3 of Fig. 1, two of the fastening devices connected thereto and with one of the fastening devices in section. Fig. 4 is a view similar to Fig. 1 of a calkless horse shoe with the fastening devices detached. Fig. 5 is a section on the line 4—4 of Fig. 4. Fig. 6 is an underneath perspective view of one of the fastening devices detached. Fig. 7 is a perspective view of one of the springs detached. Fig. 8 is a perspective view of a winter calk applied upon the improved shoe.

The body of the shoe is indicated at 10 of the usual form, and may be rectangular in cross section, as shown in Figs. 1, 2 and 3 or semi-circular in cross section, as shown in Fig. 5, as may be preferred.

At the toe portion of the form of shoe shown in Fig. 1 spaced threaded apertures 11 are formed to receive threaded studs 12 upon the toe calks 13, and formed through the heel portions of the shoe are threaded apertures 14 to receive the threaded studs 15 of the heel calks 16. The calks 13—16 are preferably formed with scalloped flanges bearing against the under side of the body 10 of the shoe and with conical scalloped continuations

to form the bearing portions of the calks. As shown in Figs. 2 and 3 the calks are shown in the form of truncated scalloped cones, and in Fig. 8 one of the calks is shown in perspective in complete scalloped cone shape for use in winter upon snow or ice, or as shown in Figs. 2 and 3 and employed in the summer, or in climates where there is no frost or ice.

At the points where the toe calks are inserted, the body of the shoe is enlarged as at 17, to increase the strength, or to prevent the insertion of the calk weakening the shoe, and the heel portions of the shoe are also enlarged, as at 18, for the same purpose. To obviate any danger of the calks working loose under the severe concussions to which they are subjected, set screws 19—20 are applied to the various calks, the set screws being tapped through the enlarged portion 17—18 and their inner ends conical and fitting into cavities in the stud portions 12—15 of the calks, as shown. The set screws thus serve to effectually lock the calks in the body of the shoe and prevent displacement, while at the same time the calks may be readily removed when required, by simply releasing the set screws and unscrewing the calks.

The body portion 10 of the shoe is increased in width at certain points at the sides, as shown at 21—22, and likewise increased in width at the toe portion, as indicated at 23, and formed transversely through the body of the shoe at these enlarged portions are sockets 24 open at their ends and with their side walls converging inwardly, and likewise inclined vertically, or in dove-tailed shape, as indicated. Opposite the outer ends of the sockets 24, the upper portion of the body 10 of the shoe is cut away in elongated V-shape, as shown at 25, and projecting from the bottoms of the sockets near their inner ends are studs 26, preferably inclined upon their upper faces. Projecting from the upper face of the body 10 are a plurality of spurs 27, inclining outwardly, as shown, these spikes designed to enter the hoofs of the animal and assist in retaining the body of the shoe in position.

The sockets are designed to receive the holding portions of the fastening devices, and these fastening devices are of novel form, one being employed at the toe and one at each side of the body of the shoe, and as these fastening devices are substantially the same, differing only to the slight extent to enable

them to be adapted to the different portions of the hoof against which they are caused to bear, the description of one will suffice for all.

The fastening devices are each formed in two parts, a supporting portion adapted to enter the sockets 24 and a clip or plate portion adapted to bear against the hoof, the plate portion having spurs to enter the hoof, and decreased in thickness at certain points to enable them to be readily bent to conform to the hoof, and with the edges made thin to enable them to be closely engaged with the hoof. The supporting portion of the fastening device is indicated at 28, and closely conforms to the interior area of the socket, that is to say, with converging sides and dove-tailed transversely. The portion 28 is provided with a longitudinal cavity 29 with the outer portion of the cavity extending through the portion 28 thereby forming the inner end of the portion 28 in bifurcated form, as shown more clearly in Fig. 6. Fitting into the recess 29 is a spring 30 having an elongated slot 31 near its outer end adapted to engage the stud 26 when the portion 28 is inserted into the socket. The spring will be fastened to the portion 28 in any suitable manner, preferably by riveting, and the inner terminal of the recess 29 is inclined, as at 32 to enable the spring to be readily elevated when the portion 28 is inserted or to enable the spring to be elevated to release it from the stud 26 when the fastening device is to be removed, the inner end of the spring being sufficiently elongated to project beyond the enlarged portions 21—22—23, as shown.

The hoof engaging plate or clip portion is represented at 32' and is provided with a plurality of spurs 33 adapted to enter the hoof and assist in retaining the fastening device in place. The plate 32' is formed relatively heavy at its lower portion, as at 34, and with thin intermediate portions, as indicated at 35, to enable the upper portion of the clip to be bent as required to cause it to closely engage the hoof and also to enable the plate to be bent to adapt it to any irregularities of the surface of the hoof. The edges of the plates are made thin or knife-edged to enable them to be also bent to closely engage the hoof, as will be obvious. Formed upon the inner surface of the plate 32' is a V-shaped web 36 conforming to and adapted to enter the depressions 25 heretofore described.

The web 36 performs two important functions:

First, to increase the thickness of the portion of the plate 32 adjacent to the body of the shoe, or at the point where the greatest strain occurs, and to enable the fastening device to withstand any shocks or blows to which it may be subjected. The fastening devices are disposed at points upon the shoe where they are very liable to be subjected to severe strains and blows, hence the necessity

for increasing the strength of the fastening means at the points where these severe strains will be applied.

Second, the web portion 36 fitting into the cavities 25 firmly supports the fastening devices from lateral movement, and thus relieve the portion 28 very largely from lateral strains.

The plate 32 is preferably formed of malleable material so that it can readily be bent to conform to the hoof, as before described, and may be formed originally with its inclination less relative to the portion 28 than will be afterwards required, as indicated by dotted lines at the left of Fig. 2, and then when the fastening device is to be applied it can be readily bent, as before described, to fit the hoof. The shoe can thus be adapted to various sizes and forms of hoofs, and to all the peculiar configurations of different hoofs, as will be obvious.

With a device of this description, the shoes may be readily applied by any person without previous skill, and as readily detached when required. Thus the services of the blacksmith may be entirely dispensed with.

In the event of wear the calks could be readily removed from their sockets through the instrumentality of a suitable wrench or other implement, and in the event that the calks should become broken off at the base of their shanks, and the shanks remain in their sockets, they could be readily removed from the sockets by means of a screw driver or other suitable implement engaged with the grooves *a* formed in the inner end of each shank, as clearly shown in the accompanying drawings.

The character *b* indicates a guard for the frog of the animal's foot and is provided with a perforation at each end whereby it may be held detachably to the heel of the shoe by the heel calks.

The inner edges of the enlarged parts of the heel portion of the body 10 of the shoe are cut away or beveled, as indicated at *c*, so as not to interfere with or come in contact with the frog of the foot.

The hoof, a portion of which is indicated at *d*, is cut away slightly opposite the webs 36, as indicated at *c*, to receive the portions of the webs which extend above the shoe and thus still further assist in supporting the shoe in position.

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

1. A horse shoe having transverse sockets and with a catch lug in each socket, fastening devices each comprising a supporting portion fitting one of said sockets and also having a plate extended for bearing against the hoof, and a spring connected to each of said supporting portions for cooperation with the corresponding lug of each socket, whereby

the fastening devices may be detachably secured to the shoe, each extended plate portion of each fastening device being decreased in thickness at points to render it bendable to conform to and closely engage the hoof.

2. A horse shoe having transverse sockets and with a catch lug in each socket, fastening devices each comprising a supporting portion fitting one of said sockets and with an integral plate extended for bearing against the hoof, and a spring connected to each of said supporting portions and provided with a slot adapted to detachably engage said catch lug.

3. A horse shoe having transverse sockets and recesses in the shoe opposite said sockets, a catch lug in each socket, fastening devices each comprising a supporting portion con-

forming to and fitting the socket and with a longitudinal recess, and a bifurcated inner end and with an integral plate extending from the supporting portion and adapted to bear against the hoof and with a web engaging the recess of the shoe, and a spring connected into the recess of the supporting portion and extending between the bifurcation thereof and in advance of the body of the shoe and provided with a slot for engaging said stop lug.

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

JOSEPH B. RABAN.

Witnesses:

GEO. C. SHOEMAKER,
C. N. WOODWARD.