

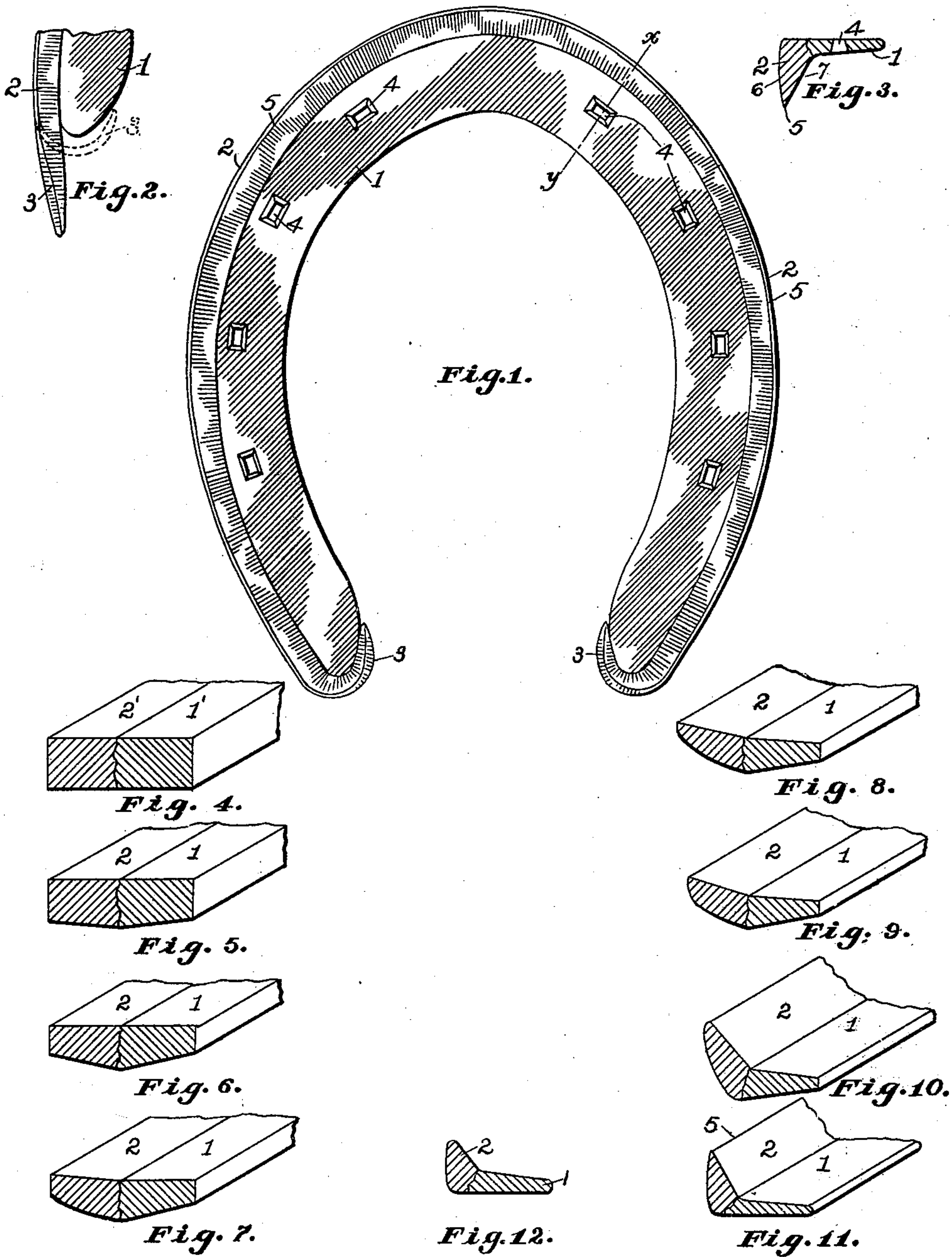
No. 713,137.

Patented Nov. 11, 1902.

G. D. NASH.  
HORSESHOE.

(Application filed Mar. 8, 1902.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE D. NASH, OF BINGHAMTON, NEW YORK, ASSIGNOR OF ONE-HALF  
TO IRWIN M. GRAY, OF BINGHAMTON, NEW YORK.

## HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 713,137, dated November 11, 1902.

Application filed March 8, 1902. Serial No. 97,255. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE D. NASH, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to horseshoes constructed with a continuous ground-flange, serving the purpose of the usual calks set at the heels and toes of ordinary shoes.

15 The objects of the invention are to provide a shoe of the kind with a ground-flange constructed from much harder metal than the rest of the shoe, to improve the form of the ground-flange, and other objects, as herein specified, and pointed out in the claim:

20 To these ends the invention consists of the construction, arrangement, and combination of the several parts, as are herein specified and illustrated in the accompanying drawings.

25 In the drawings, Figure 1 shows an under side view of a horseshoe embodying my invention. Fig. 2 is a detail view illustrating the method of forming a heel-calk on my improved shoe. Fig. 3 is a cross-section taken on the line  $xy$  of Fig. 1. Fig. 4 illustrates the first stage of constructing the stock from which my shoes are made. Figs. 5, 6, 7, 8, 9, and 10 illustrate, respectively, successive and consecutive stages in rolling out the stock. Fig. 11 illustrates the stock in the condition in which it is ready for the construction of horseshoes. Fig. 12 shows a modification of the ground-flange for summer use.

40 Similar characters of reference denote like and corresponding parts throughout the several views.

Referring to the drawings, 1 denotes the hoof-flange of a horseshoe embodying my invention, and 2 denotes the ground-flange integrally made therewith or, more properly speaking, solidly welded thereto and drawn to an edge 5, extending continuously throughout the circumference of the shoe and terminating in the hooked portions 3 3 at the heels. The ground-flange is in general at almost

right angles with the hoof-flange. The outer exposed surface is spherically convexed, as shown in cross-section in Fig. 3 at 6. The inner surface of the ground-flange is straight, as shown at 7. The two surfaces meet in an edge at 5 and have a general divergence of about fifteen degrees. This particular construction is important and must be observed in the construction of my improved horse-shoe to get the proper result. By convexing the exterior surface it is rendered more firm, and at the same time the cutting edge is directed somewhat inward, so as not to be obtrusive and cause interference, and I have ascertained that when the inner slope is constructed at an angle of about fifteen degrees it gives sufficient support to prevent the edge from breaking off and at the same time is of a slope sufficient to avoid the claspings of mud or snow within the ring of the flange, and, further, I have noted that where the free discharge of snow and mud is thus provided for the action of the sand and gravel against the inner surface of the shoe, against which it is crowded when the shoe is used, causes sufficient wearing on the inner surface 7 to keep the shoe in a sharp condition.

The stock or material from which my improved shoe is made is specially constructed by rolling together two pieces of metal 1' and 2', 1' being preferably of soft iron and 2' of hard steel. They may be welded throughout their length or otherwise suitably joined and are then passed through successive rolls, bringing them gradually from the form shown in Fig. 4 to the various stages shown in Figs. 5, 6, 7, 8, 9, and 10 until the form shown in Fig. 11 is arrived at. In cutting out the stock the soft flange 1 is cut shorter than the hard flange 2 and a point 3 is forged on the hard portion, after which it is hooked inward and solidly welded to the ends of the ground-flange to serve as a heel-calk, as at 3 3. Nail-holes 4 4, &c., are then formed for the hoof-flange, as required, and the shoe is attached to the hoof in the usual manner.

When this shoe is attached to a horse's hoof, it will be observed that the support is equal all around the hoof, and the knife-edge of the ground-flange serves to prevent slipping on ice or smooth surfaces. No rocking

of the hoof can take place, because it is equally supported on all edges in like manner, as nature has provided a hard edge around the circumference of a horse's hoof. Furthermore,  
5 if the hoof should strike on the heel or rock backward the hooked portions 3 3 will serve the usual purpose of heel-calks by engaging with the ice or other smooth surface with all the tenacity and force of the most approved  
10 heel-calks.

I am aware that many horseshoes have heretofore been constructed with a ground-flange and a hoof-flange, and I do not broadly claim such construction as new.

15 What I do claim as new, and desire to secure by Letters Patent, is—

A horseshoe comprising a hoof-flange con-

structed from relatively soft metal, and a ground-flange of relatively harder metal integrally made therewith, and set at right angles thereto, the outer exposed surface of said ground-flange being spherically convexed, and being recurved around the heels of said shoe, whereby all of the outer exposed parts of the shoe are constituted in the said hardened ground-flange, substantially as specified.  
20  
25

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

GEORGE D. NASH.

Witnesses:

I. M. GRAY,

E. W. VANSLYKE.