

A. S. GAY.  
HORSESHOE CALK,  
APPLICATION FILED MAR. 3, 1908.

915,285.

Patented Mar. 16, 1909.

Fig 1

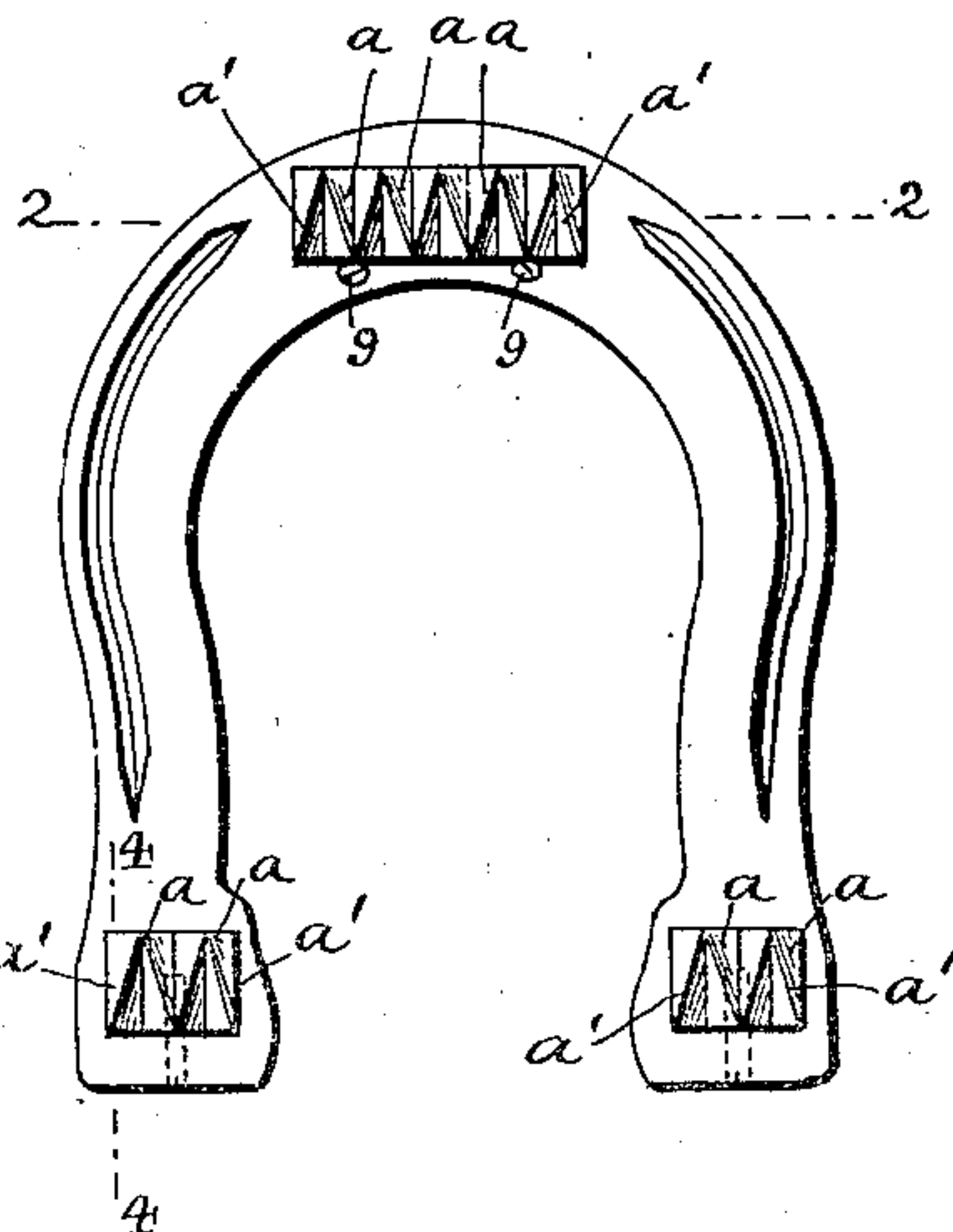


Fig 2

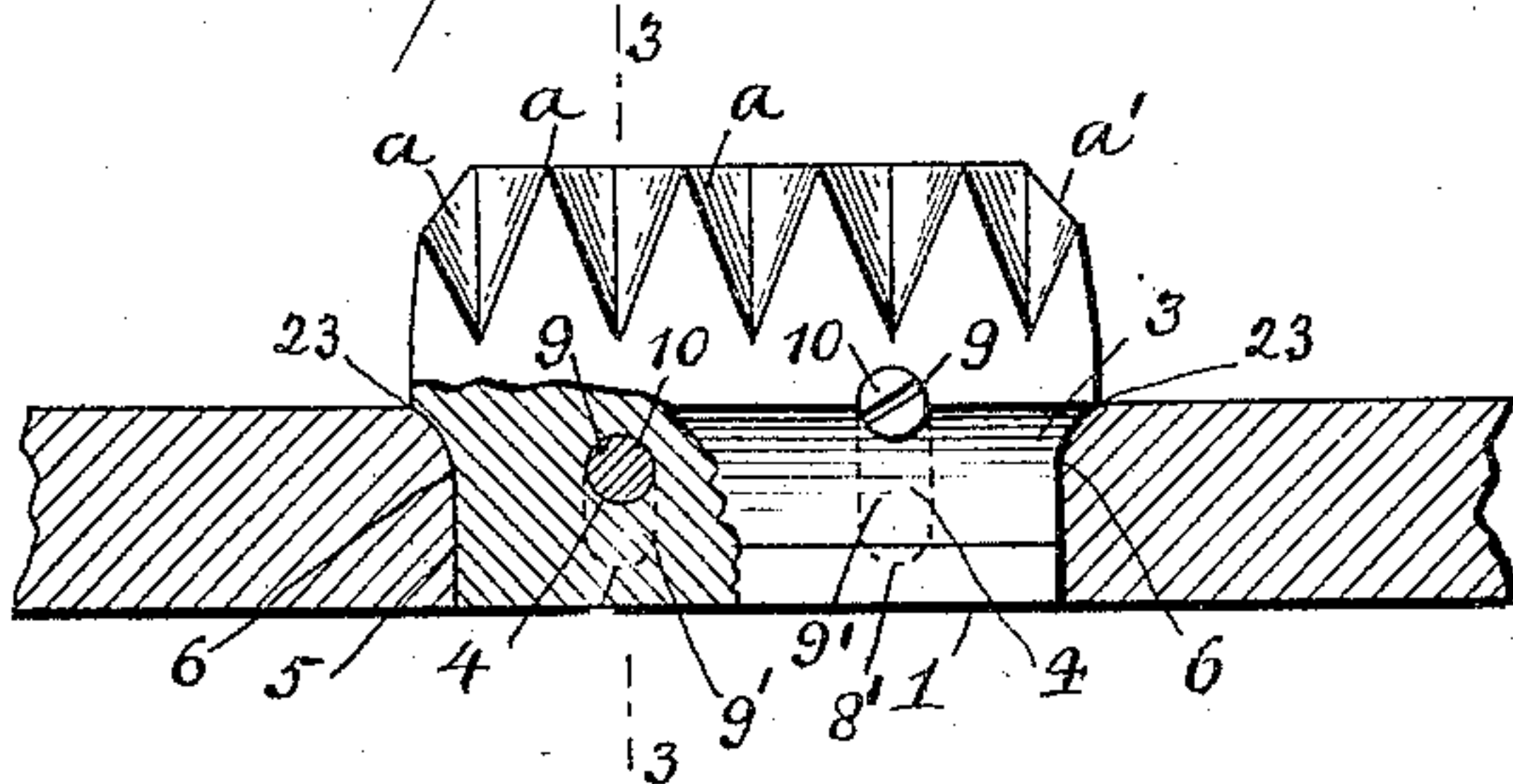


Fig 3

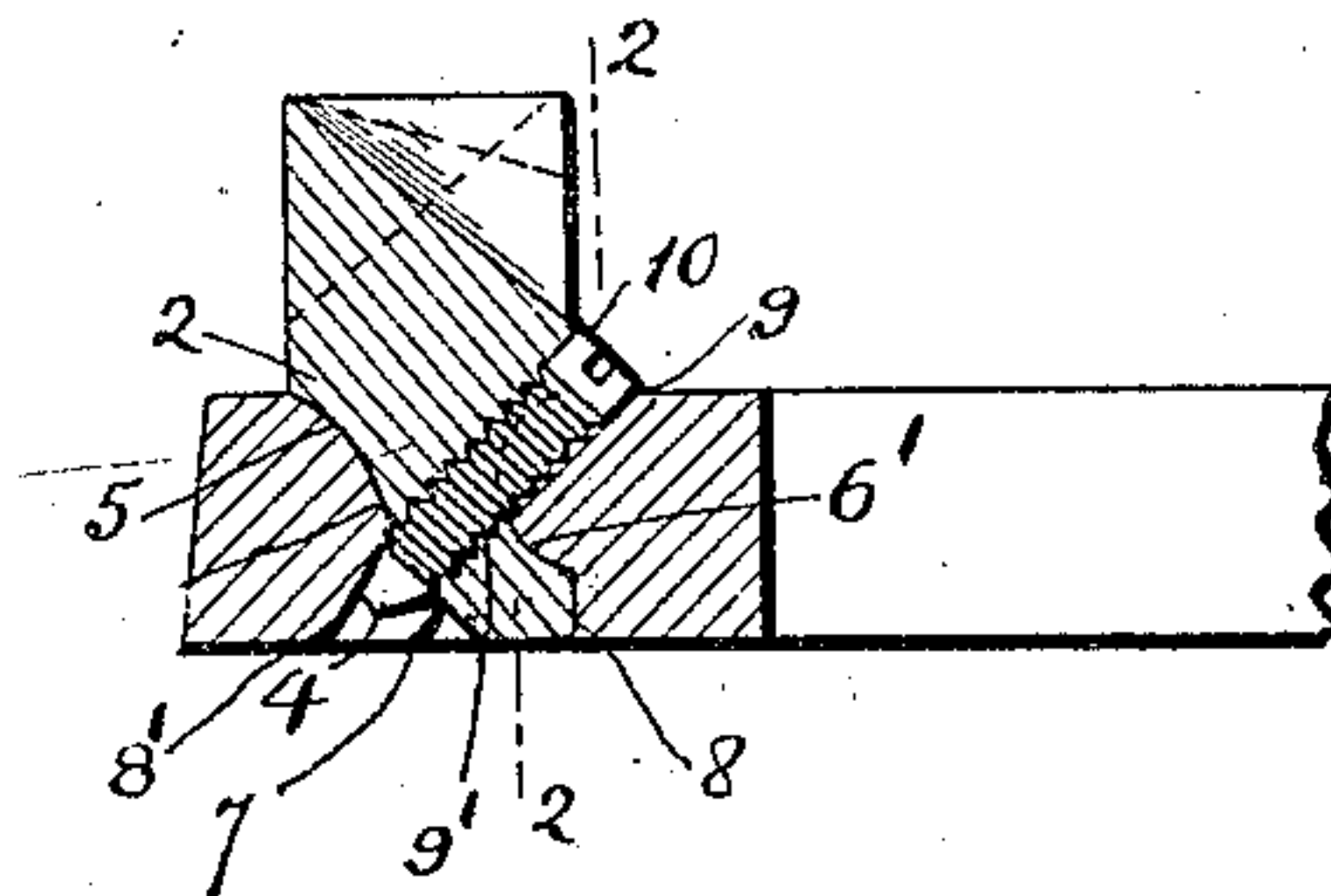


Fig 4

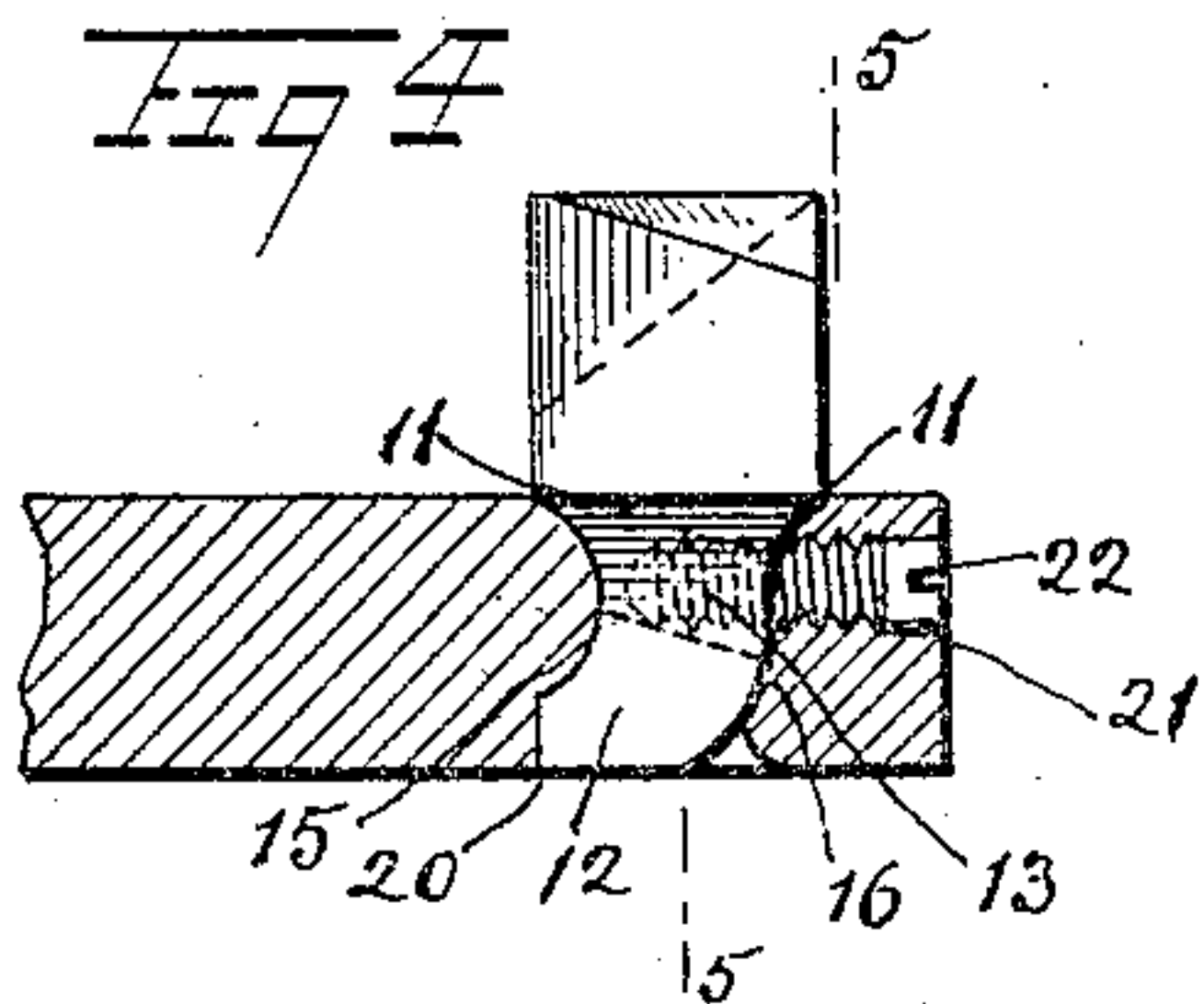


Fig 5

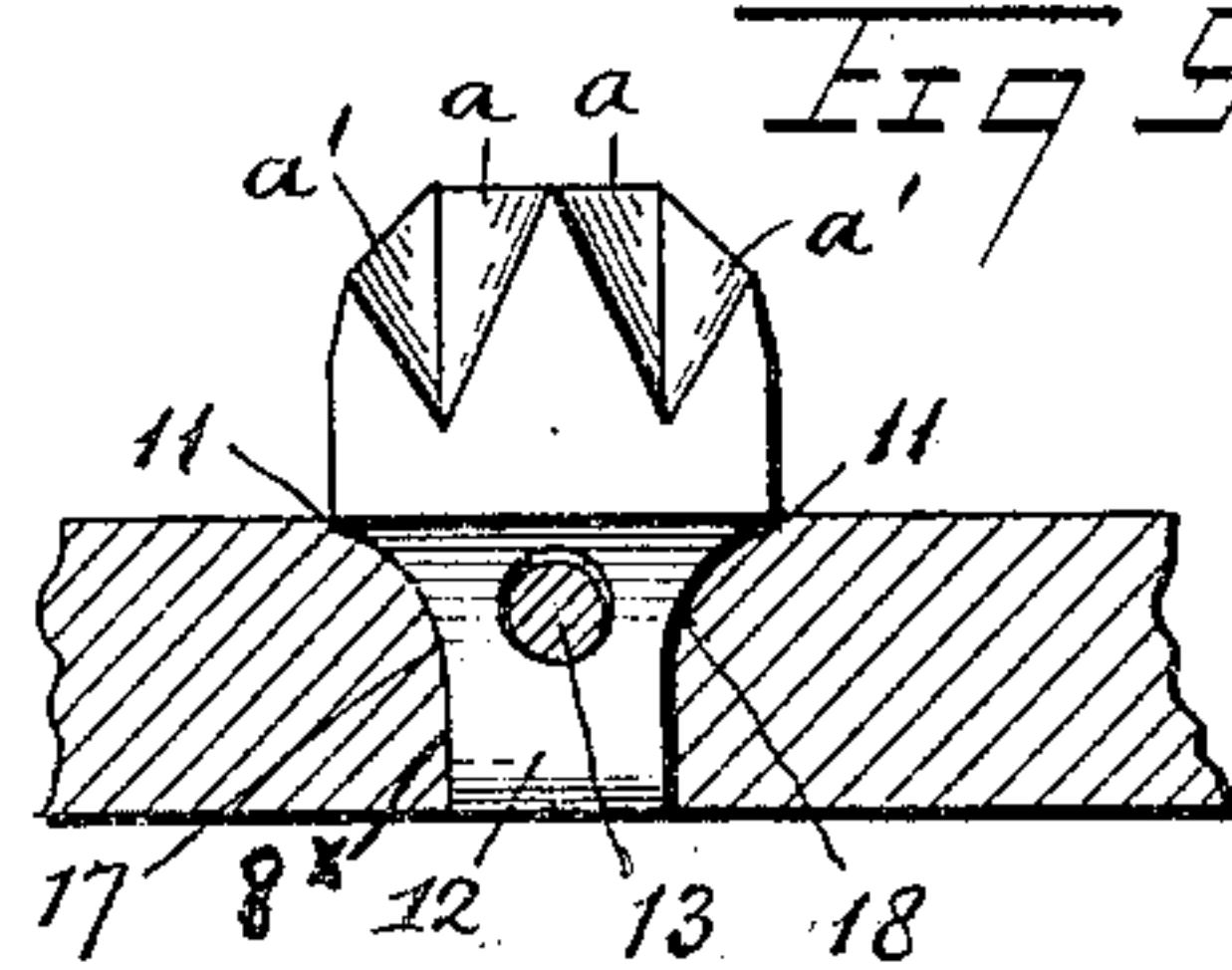
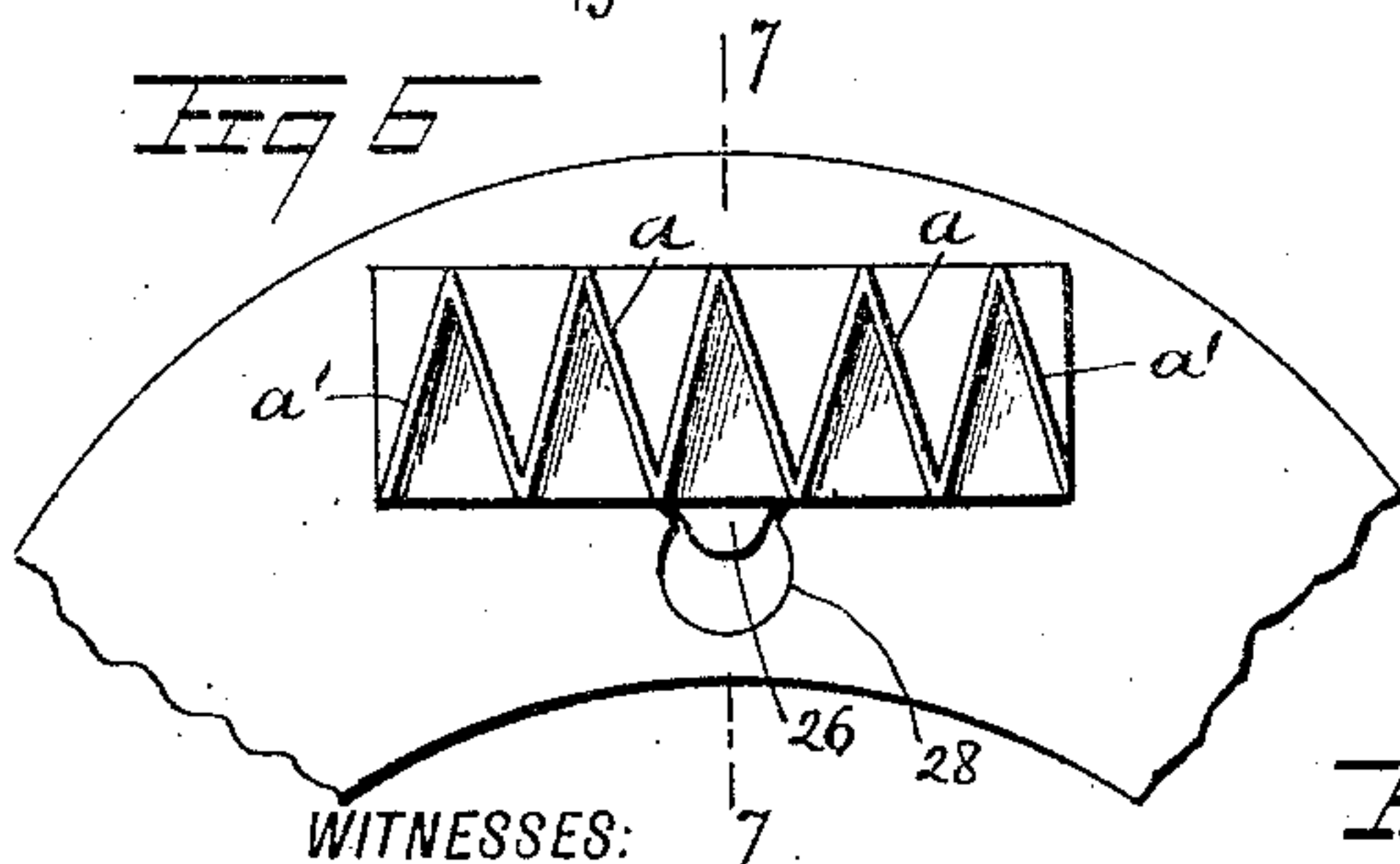


Fig 6



WITNESSES:

*H. Ward*  
*G. R. Freeman*

Fig 8

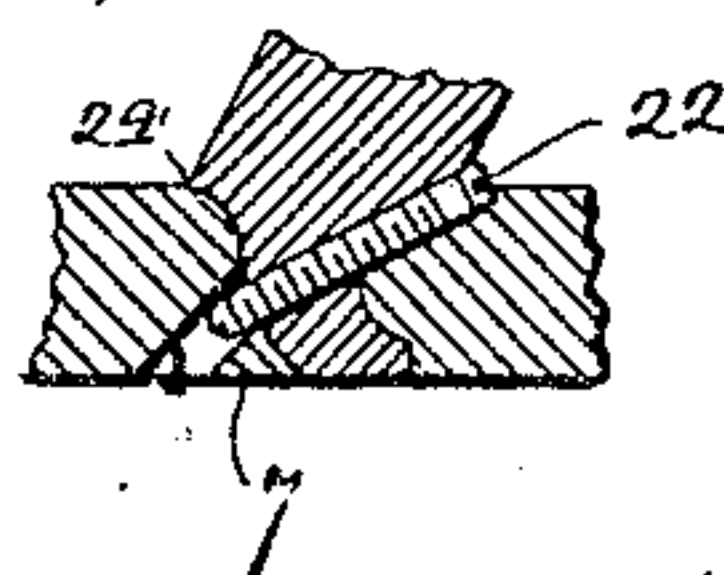
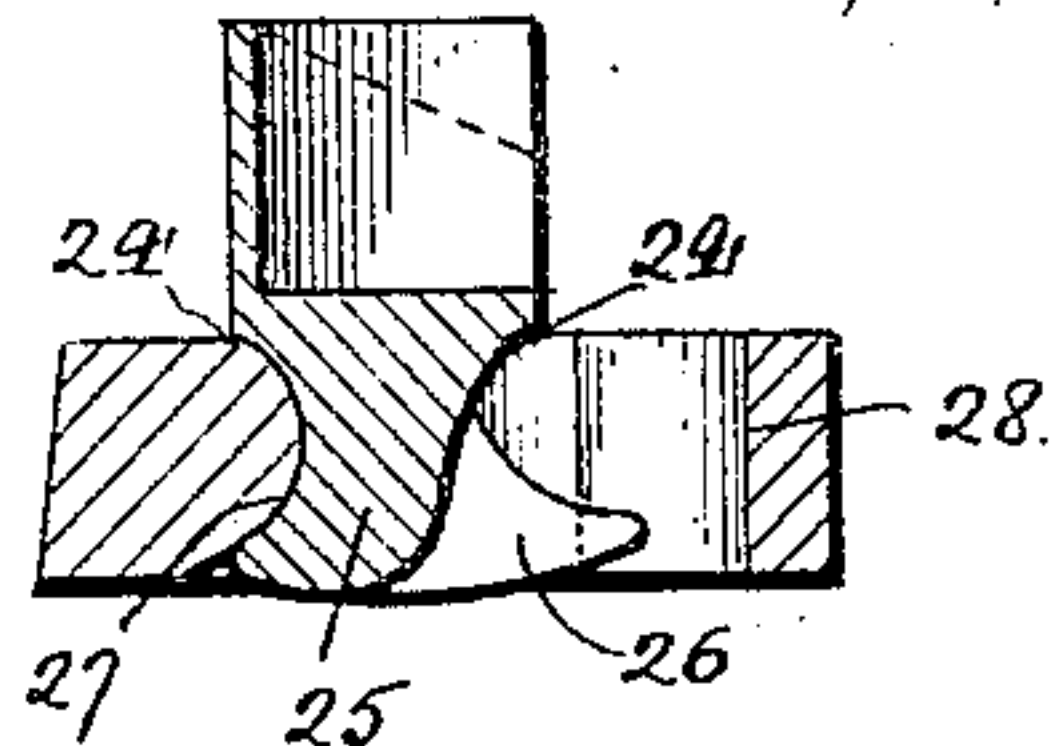


Fig 7



INVENTOR  
*Adelbert S. Gay*  
BY  
*F. N. Gillett*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

ADELBERT S. GAY, OF BINGHAMTON, NEW YORK.

## HORSESHOE-CALK.

No. 915,285.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed March 3, 1908. Serial No. 419,051.

*To all whom it may concern:*

Be it known that I, ADELBERT S. GAY, 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 Horseshoe-Calks, of which the following is a specification.

My invention relates to improvements in horse-shoe calks and to the means of holding the calks in a horse-shoe.

The objects of my improvements are 1st, to provide a secure means for holding in a horse-shoe, adjustable or removable horse-shoe calks, 2nd, to provide adjustable horse-shoe calks for a horse-shoe which calks have a ribbed surface, so as to prevent the horse from slipping in any direction. I attain these objects by the device illustrated in the accompanying drawing in which:

Figure 1. is an inverted plan view of a horse-shoe according to my invention. Fig. 2. is an enlarged longitudinal section of the toe calk when taken on line 2, 2, of Fig. 1. Fig. 3. is a transverse section of same on line 3, 3, of Fig. 2. Fig. 4. is a sectional view taken on line 4, 4, of Fig. 1. showing one of the heel calks. Fig. 5. is a sectional view of the same taken on line 5, 5, of Fig. 4. Fig. 6. is an inverted plan view of a modified form of the calk. Fig. 7. is a transverse section on line 7, 7, of Fig. 6. Fig. 8. is a sectional view of a modification of my invention.

Similar characters refer to similar parts throughout the several views.

In my device the toe calk and heel calks are described as follows.

The toe calk is provided with a base, 23, and from which base 23, projects a curved tenon 1. This curved tenon is provided with two screw holes 4, 4. The edge of the toe calks is provided with ribs *a, a, a, a'* and *a'* as shown in Figs. 2 and 6. These ribs project from the outer surface of the calk and run alternately from the outer to the inner and from the latter to the outer edge of the calk, as it stands in position on the horse-shoe plate. These ribs *a, a, a,* present a longitudinal level surface, parallel with the inner surface of the shoe plate while the surface of the two outer ribs *a', a',* of the calk project on an incline downward and backward from the front edge of the calk as shown in Figs. 2, 3 and 6. The toe of the horse-shoe is provided with a mortise 5, into which the tenon 1 is adapted to fit snugly. The sides 6 and 6' of

this tenon are curved as shown in Figs. 2 and 3. The side 6 of the mortise is vertical from its upper edge downward to near its lower edge, and is then curved outward and downward toward the lower edge while the side 6' extends upward first in a curve and then in a vertical line 8 to the upper surface of the shoe. The tenon 1 of the calk slips into place by a curved movement around the curved side 6' of the mortise. In order to insert the calk in place it is tipped slightly back toward the arch of the shoe.

The curved side 6 of the mortise is provided with two indentations or holes 8', 8', projected in a diagonal direction into the ledge 7. Through the curved side 6' of the mortise are projected diagonally two screw holes 9, 9, extending likewise diagonally through the tenon as shown by 9' 9'. Through these screw holes are inserted the screws 10, 10 which screws pass through the surface of the shoe and through the tenon of the calk and into the indentations 8', 8', and thus aid in securing the calk tenon firmly within the mortise.

The heel calks are described as follows, a description of one sufficing for both. The heel calk is provided with a base 11, 11, and from this base projects the curved tenon 12. This curved tenon 12 is provided with a screw hole 13. Each heel of the shoe is provided with the mortise, having the curved sides 15 and 16 and 17 and 18 as shown in Figs. 4 and 5. The sides 15 and 16 of mortise 8<sup>x</sup> are curved or flared at their lower end toward the lower edge of said mortise and then curved upwardly in approximate J-form with the upper end of the leg of the J terminating vertically as at 20, the rear upper extremity thereof curving somewhat rearwardly. The tenon of the heel calk slips into place by a curved movement around the curved side 15 of the mortise in order to insert either of the heel calks into place, the calk is tipped slightly back toward or in the direction of the crown of the shoe plate. Through the end of each heel of the shoe plate is projected the screw hole 21 and into this is inserted the screw 22 on a line parallel with the upper and lower surfaces of the shoe plate. This screw 22 thus extends through the heel of the shoe plate but by means of the screw hole 21 extends into the tenon body of the heel calk as shown in Fig. 4. This operates to hold the tenon of the heel calk firmly



in its mortised position. This construction of the tenon of the heel calk enables it to be inserted into the shoe plate in the same manner that the toe calk is inserted. The upper surface or edge of the heel calk is provided likewise with the ribs *a*, *a*, and *a'*, *a'* as shown in Fig. 5. These ribs project from the upper or outer surface of the heel calk and run alternately from the back to the front side of the calk and from the latter to the back side of the calk in a zig-zag line as it stands in position on the horse shoe plate.

Attention is called to the angle of the inner screw hole 8' in ledge 7 of the mortise as shown in Figs. 3 and 8 and to the angle of the screw hole 13 in the heel calk as shown in Fig. 4. The screw hole 8' in ledge 7 of the mortise is at a different angle from that of the screw hole 4 in tenon 1. Hence as the point of the screw 10 enters hole 8' in ledge 7, it is forced against the upper side of hole 8' and the screw is thereby held down firmly against the shoulder of the calk. Hence by further turning of screw 10 it is tightened against the upper side of hole 8'. The screw hole 13 in tenon 12 of the heel calk as shown in Fig. 4, is at a different angle from that of screw hole 21 in the heel and the screw 22 as it is turned down to place, bears against the upper side of screw hole 13 in tenon 12 of the heel calk thereby drawing the shoulder of the calk up firmly against the lower surface of the shoe plate.

As a modified form of my invention I have the toe calk shown in Fig. 6 and Fig. 7. This toe calk is provided with a base 24, and from which base 24 projects a curved tenon 25. In the center of this curved tenon and curving in an opposite direction from the curve of tenon 25, there is projected the curved tongue 26; the edge of the toe calk in this form of my invention is provided with ribs *a*, *a* and *a'*, *a'* the same as shown in Figs. 1 and 2. These ribs project from the outer surface of the calk and run alternately from the inner to the outer edge of the calk in a zig-zag course as it stands in position on the horse shoe plate. These ribs *a*, *a* present a longitudinally level surface parallel with the inner surface of the shoe plate while the surface of the two outer ribs *a'*, *a'* of the calk, project on an incline downward and backward from the front edge of the calk as shown in Fig. 7. In this modified form of my device the toe of the horse shoe is provided with the mortise 27, the front side of the mortise having extended through it the semi-circular opening 28. The tenon 25 of the toe calk of this modified form of my invention, slips into place by a curved movement around the curved side of the mortise 27; but in order to insert the toe calk in place it is tipped slightly forward toward the crown of the shoe as the tenon moves down to its place the tongue 26 passes down through the

opening 28 and when the calk is in place it is in the position as shown in Fig. 7. Through the opening 28 may be inserted a screw or plug which, when in place, will bear down upon the tongue 26 and thus aid in holding the toe calk firmly in place.

By this peculiar construction of the tenons in the first form of my invention described herein, it renders it impossible for them to be pulled out or the calks loosened.

Having thus described my invention, what I claim as new and for which I desire Letters Patent is as follows:—

1. In a horse shoe, the combination with a shoe having a mortise having curved sides; of a calk provided with a ribbed outer surface, the ribs projecting in zig-zag lines across the outer surface of the calk and provided with a tenon extending in a curved form from the base of the calk and said tenon having extending diagonally through it, screw holes; holes let into one side of the mortise opposite the holes in the tenon and screw holes passing diagonally through the outer side of the mortise; screws inserted in the screw holes and holding the tenon securely in position outside of the mortise.

2. A horse shoe, provided with a mortise having curved sides, a calk provided with a series of beveled ribs running in a zig-zag line across its outer surface, the two outer ribs extending on an incline from the front edge; the calk provided with a tenon extending on a curve from its base, the tenon being adapted for reception in the mortise and also the tenon being penetrated by two parallel screw holes extending diagonally from the back side of the tenon down through it to the front side; screws extending through holes in the rear side of the mortise and through the holes in the tenon and into the opposite side of the mortise and screwing the tenon to the shoe.

3. In combination with a horseshoe having mortises therein with curved walls, of calks having curved tenons to enter said mortises, screw openings in the walls of the mortises and in the tenons, the said openings being slightly out of line, and screws entered in said openings and binding therein to lock the calks in place.

4. In combination with a horseshoe having mortises therein with curved walls, calks having curved tenons to match the curved walls of the mortises, there being openings passing diagonally through the walls of each mortise and tenon, and securing screws engaged in said openings, the openings in the walls of the mortise and in the tenon being out of alinement so as to cause binding action of the screws.

5. A horseshoe having mortises therein with curved walls, one of said walls terminating in a straight shoulder, a calk having a tenon curved to closely fit the mortises in



the shoe and terminating in a straight portion to abut against the shoulder of the mortise, there being screw openings in the walls of the mortise and in the tenon and securing  
5 screws in said openings, the openings in the shoe and in the tenon being out of alinement, whereby the screws bind the tenons in place and force the straight portion of the calk against the shoulder of the mortise.  
10 6. A horse-shoe having a mortise therein of approximately J-form, the upper forward end of said mortise having a vertical shoulder-forming outline, and the opposite por-

tion thereof being oppositely curved, a calk having a tenon at its upper end, of corresponding outline as said mortise and provided with an angular opening, and a screw-fastening threaded into said shoe and adapted to bear upon the wall of said opening.

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

ADELBERT S. GAY.

Witnesses:

JAMES E. BURLEIGH,  
F. M. FOX.