(No Model.)

D. S. JAFFRAY.

HORSESHOE.

No. 589,129. Patented Aug. 31, 1897.

Fig-1

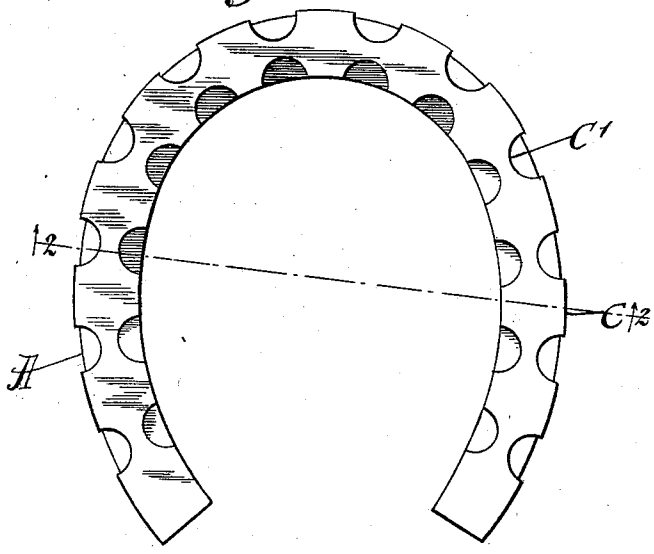


Fig-5.

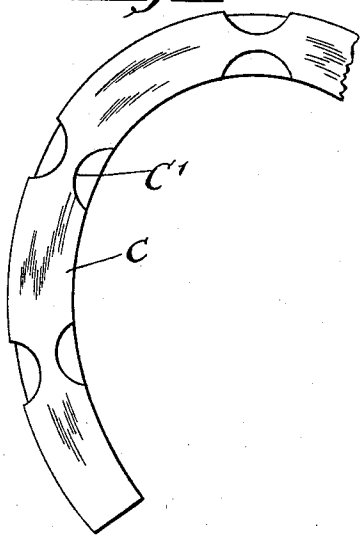


Fig-2

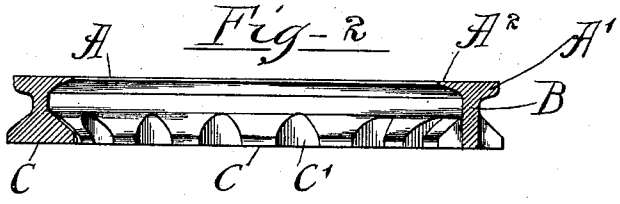


Fig-3

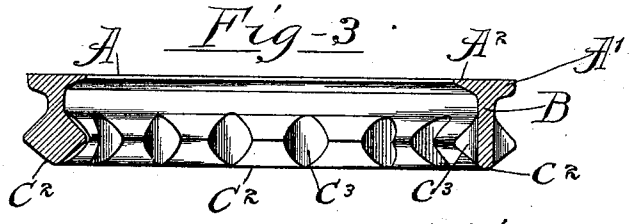
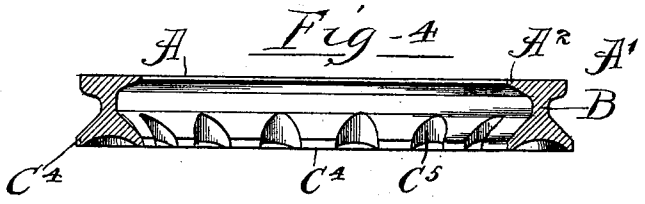


Fig-4



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID S. JAFFRAY, OF CHICAGO, ILLINOIS.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 589,129, dated August 31, 1897.

Application filed February 23, 1897. Serial No. 624,585. (No model.)

To all whom it may concern:

Be it known that I, DAVID S. JAFFRAY, of Chicago, in the county of Cook and State of Illinois, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in horseshoes of that class provided with a continuous or substantially continuous calk extending around the entire length of the same, and relates more specifically to improvements in such shoes whereby a broad tread and corresponding durability in wear may be secured, and at the same time the construction is such as to afford a firm foothold for the horse.

The invention embraces an improved construction in such shoes by which wear upon the under side or tread thereof will not tend to dull the calk and thus impair the efficiency or holding qualities of the same.

The invention relates to the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 illustrates in bottom plan view a horseshoe constructed in accordance with my invention. Fig. 2 is a cross-section of the same taken on line 2 2 thereof. Fig. 3 is a view similar to Fig. 2, showing a modified form of shoe. Fig. 4 is a view similar to Figs. 2 and 3, but showing another modification. Fig. 5 is a fragmentary view of another modification.

As shown in said Figs. 1 and 2, the shoe consists of the usual flat horizontal base A, by which it may be attached to a horse's foot, and an integral continuous calk consisting of a vertical web B and a longitudinally-arranged head or tread flange C. Said web B is herein shown as attached to the base A intermediate of the inner and outer edges thereof, forming on said outer edge a narrow flange A′, which will be made sufficiently strong and suitably apertured for the reception of the usual securing-nails and on its inner edge with an inwardly-extending supporting-flange A^2, which serves to give a broader support to the hoof of the horse's foot.

Preferably and as herein shown the inner flange is made wider than the outer one, the object of such construction being to afford a wider bearing-surface for contact with the hoof. Said nail-flange A′ is made of sufficient thickness to afford strength to hold the securing-nails, but the supporting-flange A^2 will desirably contain less stock to give lightness to the shoe.

The tread-flange C is herein shown and will desirably be attached to the vertical web B on a line equidistant from the outer edges thereof, so as to give an equal bearing-surface on each side of said web. Said flange C will desirably be of considerable relative thickness at its point of attachment with the web B on either side thereof, so as to give sufficient strength at this point, and will taper equally and gradually toward the opposite edges thereof, so that each side of said flange will contain an equal amount of stock.

The upper tapering surface of the tread-flange C will desirably not intersect the under horizontal surface or tread thereof; but the outer and inner edges of said flange will be left of some thickness, so as to increase the durability of the tread. By making the tread-flange with tapering surfaces acute angles will be present after the flange has been so far worn away as to bring the tread-surface above the lower edges of said tapering surfaces, and it follows that when the shoe is considerably worn the holding qualities will be increased rather than impaired. Moreover, should the shoe be worn away to the web B the latter would still form an effective calk; but obviously the shoe would no longer possess durability when that point had been reached and should be renewed.

In order to increase the holding-surface of the shoe, and especially in a direction longitudinally thereof, said tread-flange is provided on each side of the web B throughout its vertical width with a plurality of notches or recesses C′, herein shown as oppositely located on each side of said web and as extending at their inner edges to the plane of the web on each side thereof. Said notches are herein shown as of semicircular conformation; but such form may be varied as desired. The sides of said notches or recesses are so arranged as to present a square opposing surface to the line of longitudinal or lateral pres-

sure. Obviously the provision of said recesses or notches adds greatly to the efficiency of the shoe, as it increases the extent of vertical holding-surface thereof and forms in effect as many separate calks on each side of the web as there are notches. This is of special advantage when the roadway is of uneven or yielding character. Owing to the tapering construction of the upper walls of the flange C' the wearing away of the under surface of the flange does not diminish the holding qualities of the shoe, but rather increases the efficiency thereof, as above stated.

The shoe shown in Figs. 2 and 3 and above described is intended more especially for a summer shoe and for use upon roads of a yielding or uneven character. Such shoe is, however, much better than ordinary shoes for use as a winter shoe to be used on frozen and icy roadways. I have, moreover, shown in Fig. 3 a modified form of shoe which is better adapted for winter use when the ground is frozen or covered with ice. In said construction the base A and the web B are shown as made similar to the construction of Figs. 1 and 2. Said web is integrally attached at its lower end with the tread of the flange C^2, which flange has a narrow point of contact with the surface of the ground, whereby it may more readily penetrate such surface when weight is thrown thereon. Said flange is in this instance shown as made of diamond shape in cross-section and as being attached at one of its angles to the web B and having contact with the ground-surface at the opposite side thereof. Any form of tread, however, having a narrow edge for contact with the supporting-surface may obviously be employed. Such construction, as in the previously-described figures, is shown as provided throughout its vertical width with recesses or notches C^3, which extend inwardly to the plane of the web B. It will be obvious that the sharp tread of such shoe will more readily penetrate frozen ground or ice than the shoe shown in the previously-described construction. The arrangement of the notches laterally opposite each other upon each side of the web B leaves the width of the tread between the same equal to the width of the said web B, and as said web is exposed by the upwardly-diverging sides of the under surface of the tread it will act at such points as a sharp calk when resting upon an ice-covered road to penetrate the same and in conjunction with the notches or recesses C^3 will prevent any sliding movement of the shoe. Obviously such construction will more readily take hold of a smooth surface than the construction shown in Figs. 1 and 2, because of the shape of the tread and the relation of the notches to each other and to such tread.

In Fig. 4 I have shown still another modification, in which the tread is constructed so as to readily penetrate the surface upon which it rests and which therefore is designed more especially as a winter shoe and for use upon ice or ice-covered roadways. Said shoe is constructed similar to that shown in Figs. 1 and 2 with the exception that the under surface of the tread of the flange C^4 is made hollow or concave instead of flat, so that the outer edges thereof come in contact with the supporting-surface in advance of the middle portion of the tread. With this construction said outer edges will obviously readily penetrate such surface, which will prevent the shoe from slipping. Said flange, as in the other constructions, is provided with the usual notches or recesses C^5, which, as in the other constructions, are made to extend inwardly to the plane of the web on each side thereof. The shoe while possessing the desirable qualities of a winter shoe may be used with advantage on a smooth roadway, whether of yielding or hard material, as the construction of the under surface of the flange enables it to more readily obtain a hold on such roadway.

In Fig. 5 I have shown a modification of the construction shown in Figs. 1 and 2, wherein the tread-flange is provided with a less number of marginal notches or recesses and forming in the instance shown three calks on each side of the shoe. It may be desirable in some instances to make the shoe of this construction rather than that shown in Figs. 1 and 2.

It will of course be understood that the same modification may be applied to the forms shown in the remaining figures.

It will be seen that a shoe made in accordance with my invention possesses all the desirable qualities of such an article—namely, a shoe having a broad foundation and at the same time one which will prevent the horse from slipping when weight is thrown thereon and one in which the holding qualities of the calks are not impaired by wear. Such shoes therefore may be used for a greater length of time than a shoe of the ordinary construction, with the result of great saving in the expense of maintaining a horse.

While I have shown what for some reasons are preferable embodiments of my invention, it will be obvious that many changes may be made in the constructions herein illustrated without departing from the spirit of the invention. I do not wish to be limited to such constructions thereof except as made the subject of specific claims.

I claim as my invention—

1. A horseshoe comprising a base, a longitudinal vertical web attached thereto, and tread-flanges attached to said web and extending on opposite sides thereof.

2. A horseshoe provided between its edges with a longitudinal calk consisting of a web provided on its lower edge with oppositely-extending tread-flanges having inwardly inclined or tapered upper surfaces.

3. A horseshoe comprising a base, a vertical web attached thereto, and tread-flanges attached to said web and extending on opposite sides thereof, said flanges being provided

on opposite sides of the web with inwardly-extending marginal recesses.

4. A horseshoe comprising a base, a vertical web attached thereto, and tread-flanges attached to said web and extending on opposite sides thereof, said flanges being provided on opposite sides of the web with marginal recesses which extend at their inner sides to the plane of the web.

5. A horseshoe comprising a base, a vertical web attached thereto, and tread-flanges attached to said web and provided with converging lower surfaces which intersect each other and form a sharp tread.

6. A horseshoe comprising a base, a vertical web attached thereto, and tread-flanges attached to said web provided with converging lower surfaces which intersect each other and afford a sharp supporting-tread, said flange being provided on opposite sides thereof with marginal recesses which extend at their inner sides to the plane of the web.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 20th day of February, A. D. 1897.

DAVID S. JAFFRAY.

Witnesses:
C. CLARENCE POOLE,
WILLIAM L. HALL.