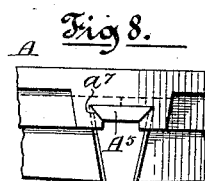
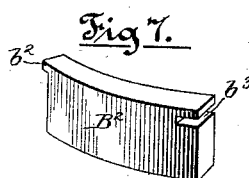
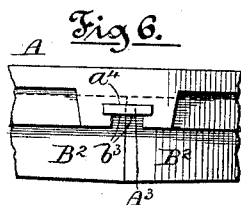
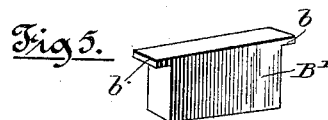
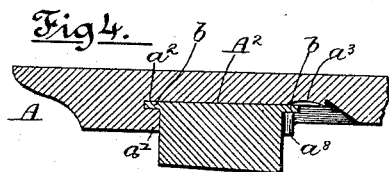
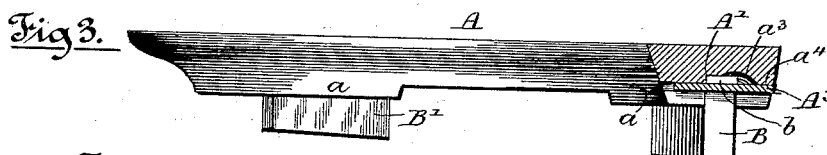
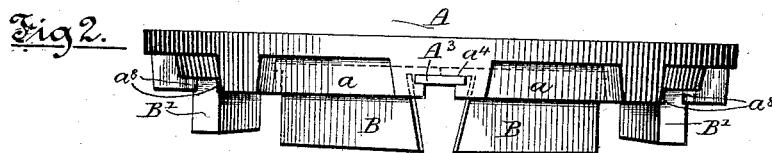
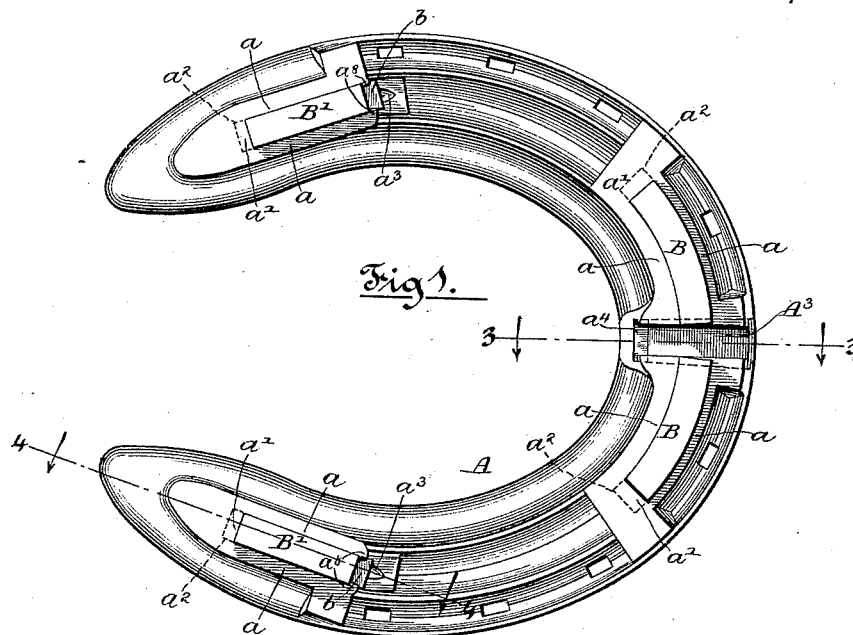


(No Model.)

D. S. JAFFRAY.
HORSESHOE.

No. 423,162.

Patented Mar. 11, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID S. JAFFRAY, OF CHICAGO, ILLINOIS.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 423,162, dated March 11, 1890.

Application filed November 7, 1889. Serial No. 329,531. (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 a novel construction in horseshoes; and it consists in the features of construction and combination of parts hereinafter fully described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a bottom plan view of a horseshoe constructed in accordance with my invention. Fig. 2 is a front end elevation of the same. Fig. 3 is a side elevation of a half of the shoe and partly in section taken on the line 3 3 of Fig. 1. Fig. 4 is a fragmentary sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is a detail perspective view of one of the removable calks. Fig. 6 is a fragmentary view, in front elevation, of the toe portion of the shoe, illustrating a modified form of construction embodying my invention. Fig. 7 is a detail view illustrating the form of calk shown in Fig. 6. Fig. 8 is another modified form of construction for securing the toe-calks in position.

In the drawings, Figs. 1 to 5, both inclusive, A indicates a horseshoe, which is by preference made of cast malleable iron. Upon the lower face of said shoe are provided four grooves or depressions A' A' and A² A². The grooves A' are formed in the toe of the shoe, are curved slightly, while the grooves A² are straight and are formed in the heels of the shoe. Each of the said grooves is formed by side walls *a a* upon the shoe A and are open at one end, while the other end is closed by means of rear walls *a' a'*. In the upper rear end of each of said grooves A' and A² a rearwardly-extending recess *a²* is found, whose upper wall forms a continuation of the upper wall of the groove. The said upper walls of the grooves are made straight, but are provided adjacent to their open ends with slight depressions *a³ a³*, as shown clearly in Figs. 1, 3,

and 4, hereinafter referred to. As far as has been described, the said grooves A' and A² are constructed in a similar manner, but the upper ends of said grooves are of a different construction, as will be now pointed out. The inner ends of the grooves A' A' are arranged or located adjacent to each other, and at the toe of the shoe the said grooves are arranged in the same curved line and have their upper walls in alignment. The depressions *a³* are arranged next to each other, and practically form one depression. As shown in said drawings, Figs. 1 and 3, the walls *a a* of the grooves A' do not meet at their inner ends, but are somewhat separated.

a⁴ indicates a transverse slot or key-seat cut in the inner ends of the said walls *a* of the grooves A', and through which the key or pin A³ is adapted to pass. The said key-seat does not extend to the upper wall of the groove A', as shown most clearly in Fig. 3. The side walls of said key-seat *a⁴* incline toward each other gradually from front to rear, so that the said key A³ can be wedged therein.

B B and B' B' indicate the calks, which are adapted to be removably secured within the grooves A' A² of the shoe. The calks B are toe-calks and are curved slightly to conform to the curvature of the grooves A'. All of said calks are provided at their upper ends with horizontal projecting flanges or lips *b*, said flanges being made of a length equal to the length of the recess *a²*, formed in the rear of each of said grooves A' and A². The heel-calks B' B' are made straight, so that they will fit within the grooves A² in the heels of the shoe. The side walls of the said grooves A² are made of a length so that they will project slightly beyond the ends of the calk B' at the forward end thereof, as shown at *a³ a³*.

The manner of securing the calks in place is as follows: In setting the toe-calks B they will be inserted within one of the grooves A', so that one of the flanges *b* thereon will enter the recess *a²*, formed in the rear end of said groove. After being so situated the said calk will be pushed farther inwardly into the slot, so that its upper face will lie flat against the upper wall of the said groove. When the calks are in this position, they will project a

considerable distance below the walls a of the grooves, so as to form considerable bearing-surface for the shoe. When both of the toe-calks are placed within the grooves A' , the inner and adjacent flanges b therein will meet about half-way when between the ends of the wall a , and the lower face of said flanges b will be approximately in alignment with the upper face of the key seat or slot a^4 .

The key or pin A^3 is then inserted into the key-seat a^4 , and is driven therein with considerable force, so that it will be wedged and thus prevented from falling out. The said key will engage the lower face of the said flanges and the calks B , so that the same will be prevented from falling out of their grooves. On the other hand, when it is desired to remove said calks, the said key can be forced outwardly out of its seat by striking the same on its rear end, whereupon said calks will be free to be moved; but it is obvious that it will require a considerable force to dislodge the same. This can be accomplished by inserting a pointed or sharp tool within the depression a^3 , so that it will engage the upper face of the flanges on the inner adjacent ends of the calks, and then by operating the said tool as a lever the calks can be forced out of their grooves.

The manner of securing the heel-calks in their grooves is somewhat different. It will be noted that the walls a of the grooves A^2 project a little distance beyond the front of the calks B' , as at a^8 . The said calks are inserted in the same manner as the calks B' after the same are in place. The projecting ends a^8 of the said walls a are struck from the outside with a suitable tool, so that they are forced inwardly and embrace the forward ends of the said calks, as shown clearly in Fig. 1. This construction has been found practical for this purpose and securely holds the said calks in place, it being obvious that there is no force to dislodge them, owing to the fact that all the strain applied to said heel-calks is in a direction to force them back into their grooves—that is to say, the feet of the horse in striking the ground apply such a strain to said calks as to accomplish this purpose. For removing these heel-calks it is only necessary to strike the said projection ends a^8 of the walls a and force them outwardly out of engagement with the calks B' , and then by inserting a suitable tool, as before described, in the depression a^3 the said calk can be dislodged from its seat in the manner before described in relation to the toe-calks.

In Figs. 6 and 7 is shown a modified form of construction embodying my invention in the manner of securing the toe-calks in place. The grooves or depressions in the shoe and the transverse slot are constructed as before described. The calks B^2 , Fig. 7, are each provided with a rearwardly-extending flange or shoulder b^2 , which is a little shorter than the recesses in the grooves. The length of the calks B^2 is such that their inner ends will be

in contact with each other when they are in place within the grooves.

b^3 b^3 indicate slots or notches provided in the inner ends of the calks B^2 . The said slots b^3 are located so that they will coincide with each other and with the transverse slot a^4 in the shoe when said calks are in place. It is obvious that in inserting said calks in place they must be forced or wedged into position, as the flanges b^2 are first inserted in their recesses and the calk then thrown into position. Therefore in inserting the calks the flanges b^2 b^2 of both are placed in the recesses and the calks turned upon the same as pivots until their inner ends come into contact with each other. Then by forcibly striking said calks on their inner ends the same will obviously be sprung or wedged into position. The flanges b^2 b^2 are shorter, to permit them to turn within the recesses, it being obvious that if they were the same length as the recesses they could not be inserted in the manner above described. After the calks are in position within the grooves the key A^3 is driven into the transverse slot a^4 , and consequently engages the slots b^3 b^3 of the calks. It is manifest that the said key A^3 acts more as an auxiliary means for securing the calks, as the same are securely held in place by reason of their being wedged in, and also owing to the fact that whatever strain is applied to them when the shoe strikes the ground is in a position to drive them farther into the grooves.

In Fig. 8 is shown a modified form of construction in the key or pin for holding the calks in place. This form of construction comprises a dovetailed transverse slot or key-seat, as shown at a^7 , and a dovetailed key or pin A^5 , which is to be driven therein.

A horseshoe constructed as above described possesses the advantage of being light and comparatively inexpensive. It is intended to construct the calks of steel, so as to make them as durable as possible. It will be noted that the said calks are not provided with any side flanges, but are held securely in place by means of the flanges on their ends. The sides of said calks being perfectly straight, it will be seen that the grooves in the shoe for their reception can be made comparatively small, so that additional strength can be put into the body of the shoe.

The shoe comprises relatively few parts, so that it can be easily constructed and will possess good wearing qualities.

I claim as my invention—

1. The combination, with a horseshoe provided with grooves or depressions in the toe portion thereof, having straight and parallel upright side walls, said grooves extending rearwardly approximately from the middle of the shoe, the front ends of said grooves being open and located adjacent to each other, a transverse slot in the toe portion of said shoe and extending into the end walls of said grooves, and longitudinally-extending recesses in the rear ends of said grooves, of

the calks having straight and parallel upright side walls adapted to fit into said grooves, longitudinally-extending flanges or shoulders on the rear end of said calks, adapted to enter
5 said recesses, longitudinally-extending flanges or shoulders on the front ends of said calks, located to project into said transverse slot when the same are in place, and a key or pin for insertion into said slot to engage the said
10 shoulders on the front ends of said calks, substantially as described.

2. The combination, with a horseshoe provided with grooves or depressions in the toe portion thereof, having straight and parallel
15 upright side walls, said grooves extending rearwardly approximately from the middle of the shoe, the front ends of said grooves being open and located adjacent to each other, a transverse slot in the toe portion of said
20 shoe and extending into the end walls of said grooves, and longitudinally-extending recesses in the rear ends of said grooves, of the

calks having straight and parallel upright side walls adapted to fit into said grooves, longitudinally-extending flanges or shoulders
25 on the rear ends of said calks, said flanges or shoulders being of a length slightly less than and adapted to enter said recesses, said calks being of such a length that when they are seated in the grooves their front ends will
30 abut against each other, notches in the front ends of said calks, located in alignment with said transverse slot, and a key or pin for insertion into said slot to engage the said
35 notches on the front ends of the calks, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

DAVID S. JAFFRAY.

Witnesses:

TAYLOR E. BROWN,

HARRY COBB KENNEDY.