No. 809,553. PATENTED JAN. 9, 1906.

C. A. CAMPBELL & J. REAGAN.

HORSESHOE.

APPLICATION FILED JAN. 16, 1905.

FIG 1

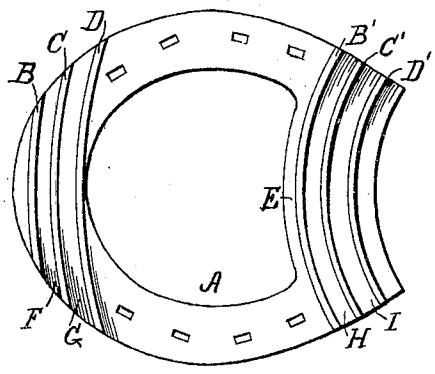


FIG 2

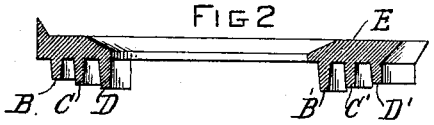


FIG 9

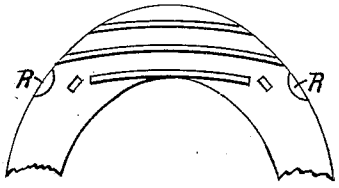


FIG 3

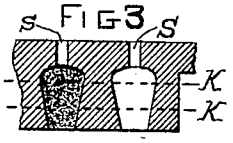


FIG 4

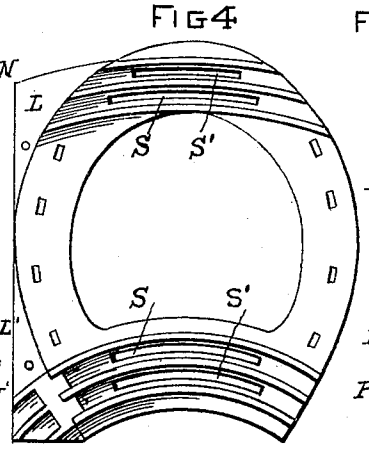


FIG 5

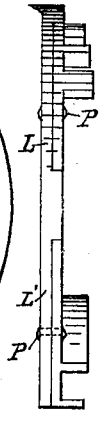


FIG 6

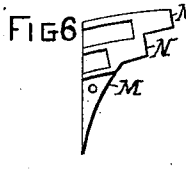


FIG 7

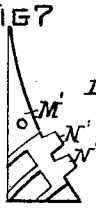
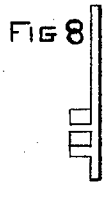


FIG 8



WITNESSES:

Geo. Hholey

Emerson Cowan

INVENTORS:

Charles A. Campbell

James Reagan.

By Isaac R. Oakford.

Their Attorney.

UNITED STATES PATENT OFFICE

CHARLES A. CAMPBELL AND JAMES REAGAN, OF PHILADELPHIA, PENNSYLVANIA.

HORSESHOE.

No. 809,553. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed January 16, 1905. Serial No. 241,192.

To all whom it may concern:

Be it known that we, CHARLES A. CAMPBELL and JAMES REAGAN, citizens of the United States of America, and residents of the city and county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Horseshoes, of which the following is a specification.

It is an established fact that the usefulness of the horse is greatly increased by preserving the natural shape of the foot. It is well known that of the very many causes that produce lameness and the various imperfections of gait or movement have their origin in shoeing.

The object of our invention is to provide a horseshoe which will have a low, broad, and even foundation for the horse to stand or walk on and which will not only fit the hoof perfectly but will contribute to the ease and comfort of the animal in traveling. To accomplish this, we construct a shoe with a bar across the heels and a series of curved calks or cleats extending transversely across the lower face of the shoe at the front and rear. The said calks, which are of uneven height, are so located that the one nearest the heel is lower than the adjoining ones, thus lessening the force of the jar when the foot is placed on the ground, and the calk at the toe is lower than the one next to it, thus permitting a rolling motion which adds to the ease of movement in the horse. To prevent slipping, the intervening grooves or channels between the calks are arranged for the retention of dirt, sand, or any gritty material.

Reference is had to the accompanying drawings, in which—

Figure 1 is a plan view of the lower face of a horseshoe embodying our invention. Fig. 2 is a longitudinal section of same. Fig. 3 is a sectional view, enlarged, of a different form of groove to effectually retain dirt or grit to prevent slipping. Fig. 4 is a plan view of our invention, showing side plates placed on the outside edge of shoe to compensate for uneven wear. Fig. 5 is an edge view of same. Figs. 6, 7, and 8 are views of the supplementary side plates. Fig. 9 is a plan view showing the toe or front part of a shoe with two sides instead of one toe-clip for horses that strike the toes or forge in traveling.

The horseshoe A, Figs. 1 and 2, is furnished on the lower face at the front or toe portion of same with downward-projecting curved calks or cleats B, C, and D, and across the rear or heel portion is formed a broad bar E, which bears on its lower surface similar curved calks B′ C′ D′. These calks are of any suitable curvature extending transversely on the lower face of the shoe and are spaced so as to leave intervening grooves or channels F G and H I. Referring to Fig. 2, it will be seen that the toe-calks B and the heel-calk I are the shortest, the other calks being slightly longer in proportion. This construction will lessen the force of the jar when the foot is placed on the ground and will permit of an easy rolling motion. When the horse is in motion, the heels come in contact with the ground first. With a bar placed as in this shoe the frog receives the force of the pressure, as in the unshod hoof, instead of wholly by the heel, conceded the weakest part of the hoof, in the open shoe or one without the bar. The adoption of this shoe guarantees a precisely similar shaped shoe with every shoeing, thus insuring comfort and ease to the hoof and the parts belonging thereto.

In the ordinary shoe with two heel and one toe calk the horse stands upon three points. Should two of these wear away or strike upon an uneven surface, the strain would be thrown entirely upon the nails and cause the shoe to wrench or twist out of place, whereas in our invention a low, flat, and broad foundation is given to the shoe, and with the calks or cleats a firm footing or foothold is insured, which will prevent slipping and the consequent extra strain upon the limb, which is such an additional burden upon the horse in traveling.

In the much-traveled paved streets of cities, where necessarily the streets present an uneven surface, only one heel-calk in the ordinary open shoe reaches the ground, producing an uneven and injurious strain on the leg and hoof and causing the horse to cut his ankle or other parts; but with the bar across the heels, as we have shown, the frog receives the force and weight of compact, as nature intended.

The shoe constructed as in our invention with the bar E across the heels will be made in size to shoe the various kinds of feet, and the bar insures uniformity of shape. The form of the shoe will be that of a perfectly-balanced foot, thus avoiding the probable injury caused by the innumerable systems

adapted by farriers in adjusting shoes to the hoof. The shoe is nearly a continuation of the natural foot, so that no undue strain is put upon any particular part of the foot or leg, which is likely to occur with a shoe having simply two heel-calks.

The calks or cleats B, C, and D and cleats B′, C′, and D′, extending across the toe and heel portions, respectively, of the shoe, are curved and so spaced as to leave grooves or channels F G and H I between them, and owing to the curved or arched form of these grooves or channels the dirt, sand, or other gritty material will become wedged within the same, and being thus supported it will have better cohesion between the walls of the calks and will not be liable to drop out or become displaced by the jar incident to the movement of the animal's foot, which would likely be the case if the grooves were straight.

The object in making the calks and intervening grooves curved is twofold. In the first place the material which collects within the grooves to form a roughened surface to prevent the horse slipping on smooth or icy pavements is retained, and, in the second place, to prevent the shoe being caught in the joints of car-tracks, curved switches, or joints of Belgian blocks. As the calks lie in a plane crosswise with these joints, all possibility of the horse being thrown or a shoe cast is avoided.

In Fig. 3 it will be seen that the grooves or channels between the calks are of a different formation, being wider at the base than at the entrance in order that the dirt or sand may become packed or dovetailed within the same to increase the tenacity and prevent falling out and also to expose more of the roughened surface as the iron wears away, as shown by dotted lines K K.

Some horses wear the shoe off at the toe and heel on the outside edge, as shown in Fig. 4. To obviate this, we form projections L and L′ on the edge of the shoe at the toe and heel and provide supplement plates M M′, Figs. 6 and 7, which are furnished on one edge with spurs N N′ to interlock with the grooves F G and H I, the said plates M M′ being further secured to the projections L L′ by means of rivets P P, Fig. 5.

The toe portion of a shoe (shown in Fig. 9) is intended for horses which strike the toe or forge, in which case side clips R R are used instead of one single toe-clip.

At the bottom of each groove or channel F G H I are formed, through the body of the shoe, elongated slots S S′, as shown in Figs. 3 and 4, to form receptacles for dirt, sand, or grit to accumulate in case the calks are worn away smooth with the bottom of the shoe. By this means a roughened surface is still maintained until the shoe is entirely worn out.

The grooves or channels between the calks can be filled with a composition consisting of tar, asbestos, earth, or any gritty material that will produce a roughened surface.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A horseshoe provided on the lower face, at the toe and heel, with a series of curved calks extending entirely across the shoe from side to side, and spaced to allow channels or grooves therebetween the grooves or channels being made narrower, in cross-section, at the bottom than at the top, to permit sand or dirt to enter the decreased entrance and become packed within the same, and to leave more of the roughened surface exposed as the calks wear away, substantially as specified.

2. In a horseshoe provided on the edge at the toe and heel, with projections extending laterally, in combination with grooves and channels and interlocking spurs and further secured to the shoe by means of rivets, substantially as shown and described.

3. A horseshoe provided with curved calks or cleats forming grooves or channels between said calks, and a series of elongated slots made through the body of the shoe at the bottom of each groove, to retain dirt, sand or grit, to prevent slipping, substantially as shown and set forth.

Signed at Philadelphia, State of Pennsylvania, this 14th day of January, 1905.

CHARLES A. CAMPBELL.
JAMES REAGAN.

Witnesses:
J. GEO. WHOLEY,
EMERSON CONRAD.