(No Model.)

W. J. KENT.

HORSESHOE.

No. 553,344. Patented Jan. 21, 1896.

FIG. 1.

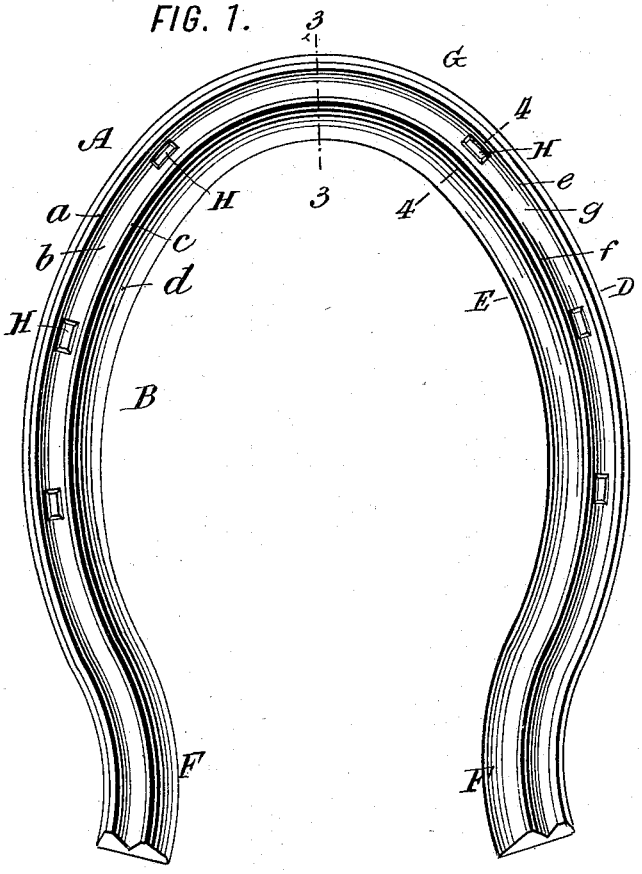


FIG. 2.

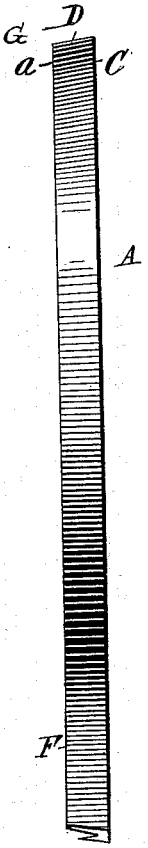


FIG. 3.

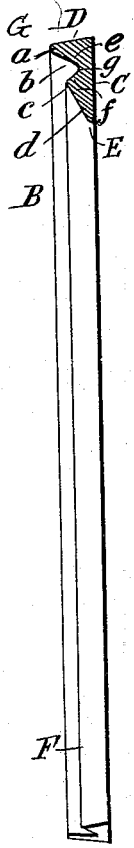


FIG. 4.

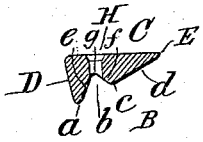
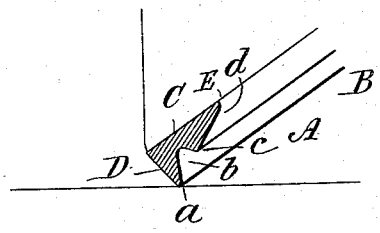


FIG. 5.



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HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 553,344, dated January 21, 1896.

Application filed April 27, 1895. Serial No. 547,300. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KENT, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification.

This invention relates to horseshoes, and may be employed in connection either with such shoes when constructed for general use or with those of special construction known as "racing-plates."

The invention aims to provide an improved horseshoe which shall afford a sufficient grip in use, possess great strength, and be of relatively light weight. To this end in carrying out the invention in its preferred form I construct the horseshoe with a longitudinal gripping edge at the outer side of its bottom face, an upwardly-extending groove at the inner side of said edge, nail-holes through the body of the shoe at said groove, a second or inner gripping edge at the inner side of said groove and of less projection than the outer gripping edge, and an upwardly and inwardly inclined bottom face between the inner gripping edge and the inner side of the shoe, and I provide certain other features of improvement, which will be hereinafter fully set forth.

In the accompanying drawings, which illustrate the preferred form of my invention as applied to a shoe or plate for the hind foot of a horse, Figure 1 is a bottom face view of the shoe. Fig. 2 is an edge view thereof. Fig. 3 is a section thereof on the line 3 3 of Fig. 1. Fig. 4 is a section thereof on the line 4 4 of Fig. 1; and Fig. 5 is a diagrammatic view showing the position of the shoe as it strikes the ground.

Referring to the drawings, let A indicate the body of the shoe; B, the bottom face thereof; C, the top face thereof; D, the front face thereof; E, the inner side thereof; F, the heels thereof; G, the toe thereof, and H the nail-holes through the body.

The body of the shoe may be constructed of any suitable metal or metals. Its bottom face contacts with the ground in use, and serves as the working face of the shoe, while its top face is a flat or otherwise suitably-formed face, adapted to seat against the horse's hoof, to which the shoe is fastened by nails traversing the holes H.

According to my present improvements I construct the bottom face, B, of the shoe with a longitudinal ridge or edge *a* at the outer side of the face and constituting the lowermost part thereof, which serves as the bearing and gripping edge for the bottom face of the shoe, and preferably is a continuous edge or calk extending throughout substantially the entire length of the shoe. In its preferred form the shoe is also constructed with a deep groove *b* immediately at the inner side of the edge *a*, which groove is preferably substantially V-shaped in cross-section, extends upwardly well into the body of the shoe, and is preferably a continuous groove extending longitudinally of the shoe throughout substantially its entire length. I also prefer, according to my present improvement, to construct the bottom face of the shoe with a second and inner gripping edge or bearing-ridge, *c*, which is preferably immediately at the inner side of the groove *b*, of slightly less downward projection than the outer edge, *a*, substantially parallel with the latter, and a continuous ridge or edge extending throughout substantially the entire length of the shoe. Inwardly of the second gripping edge, *c*, and between the latter and the inner side of the shoe, I prefer to provide a wide upwardly and inwardly inclining bottom wall *d*.

The outer edge, *a*, is at the outer side of the shoe, receives the greater portion of the wear and strains of use, and distributes the strains upwardly throughout the outer portion of the top face, C, while the inner edge, *c*, is disposed about centrally of the bottom face of the shoe, receives a minor portion of the strains and wear of use, and transmits such portion upwardly to the central part of the top face, and the wide inclined bottom wall, *d*, fills the space between the inner edge, *c*, and the inner side E of the shoe, affords a broad bearing when the shoe rests on soft or muddy ground, and by reason of its gradual inclination prevents mud from catching within the shoe. The groove *b* affords an advantageous point for the location of the nail-holes H, which are punched through the thin metal of the body between the top of the groove and the top face, and the

groove suffices to receive the nail-heads when the shoe is nailed to the hoof. The two walls of the groove are preferably oppositely inclined or diverging walls, *e* at its outer side and *f* at its inner side, connected at top by a flattened or rounded flat wall *g*. The nail-holes traverse the top wall of the groove, and its diverging side walls permit the inclination of the nail either outwardly or inwardly as it is being driven, whereby the particular direction of driving the nail can in each instance be adjusted to the requirements of the horse's hoof without the necessity of twisting or distorting the shoe.

The outer wall, *e*, is preferably more nearly vertical than the inner wall, *f*, as this affords a more advantageous surface at the rear of the gripping edge *a* and is better adapted to the necessary inclinations of the nails when being driven. The gripping edge *a* consists preferably of a narrow edge between the downwardly and usually inwardly inclined wall D of the shoe and the downwardly and usually outwardly inclined wall *e* of the groove, the edge being at or near the point where these walls converge, whereby between the upwardly-diverging portions of the walls there is above the gripping edge a mass of metal of substantially triangular cross-section, constituting the outer portion of the body of the shoe. The inner edge, *c*, is preferably formed by the downwardly and inwardly inclined rear wall, *f*, of the groove and the downwardly and outwardly inclined bottom wall, *d*, being disposed at or near the point at which these walls converge, so that above this edge there is a mass of metal of substantially triangular cross-section, constituting the body or inner portion of the shoe. The outer and inner portions of the body of the shoe are connected by the thin metal neck between the groove *b* and the top face. The bottom face, *d*, preferably extends in the plane of a line angular to the top and front faces and intersects the former and the gripping edge.

When it is desired that the shoe shall have projecting heel-calks, these may be provided in any manner—as, for example, by folding the heels of the shoe backward and welding the heel ends onto the body.

In operation the outer gripping edge will be subjected to the greater strains and perform most of the effective work in affording a firm grip on the ground. As the horse runs the gripping edge will strike the ground at the toe, as shown in Fig. 5. In thus striking, any tendency to overturning of the edge backward will be resisted by the inclined wall at its rear, the inclination of which will preferably be such as to then bring it into line with the direction of thrust as the hoof strikes the ground. At the forward thrust of the hoof the tendency to forward rolling of the edge will be resisted by the front wall, D, which for this purpose is preferably inclined slightly inwardly.

It will be seen that my invention provides improvements in horseshoes which can be conveniently and advantageously availed of for either shoes designed for ordinary or special uses, as either road-shoes or racing-plates, and which increase the effectiveness and strength of the shoe and the facility with which it can be applied without increasing its weight or cost.

It will be understood that the invention is not limited to the exact details of construction and arrangement set forth and shown as constituting its preferred form, since these can be modified as circumstances or the judgment of those skilled in the art may dictate without departing from the spirit of the invention.

What I claim is—

1. A horse-shoe having a top bearing and a bottom face, an outer wall extending from said bearing to its bottom face, and having on its bottom face a gripping edge at the outer wall of the shoe, an upwardly extending groove at the inner side of said edge, nail holes through the body of the shoe at said groove, and an inwardly and upwardly inclined bottom wall at the inner side of said groove, said gripping edge being of greater downward projection than said bottom wall, substantially as and for the purpose set forth.

2. A horse-shoe having a top bearing and a bottom face, an outer wall extending from said bearing to its bottom face, and having at the junction of said outer wall and the outer side of its bottom face a continuous longitudinal gripping edge, immediately within said edge a continuous longitudinal upwardly extending groove, nail holes through its body in the line of said groove, and at the inner side of said groove a second gripping edge of less downward projection than said outer gripping edge, substantially as and for the purpose set forth.

3. A horse-shoe having a substantially flat top face, a downwardly extending outer face, extending from said top face to the lowest part of the shoe, a narrow gripping edge at the lower extremity of said outer face, an upwardly and inwardly inclined wall extending from said gripping edge toward said top face, a downwardly and inwardly inclined wall extending from said wall downwardly, and an inwardly and upwardly inclined bottom face meeting said downwardly and inwardly inclined wall at a point above the plane of said gripping edge, and extending thence inwardly and upwardly, meeting the top face of the shoe and constituting the inner edge thereof, substantially as and for the purpose set forth.

4. A horse-shoe having on its bottom face two longitudinal gripping edges, the one inwardly of the other and substantially parallel therewith, diverging upwardly extending walls leading from said edges toward the top face of the shoe, and a groove between said edges, nail holes through the shoe in the line of said groove, said inner gripping edge being of less downward projection than said outer

gripping edge, and the latter being at the outer extremity of the outer side of the shoe, substantially as and for the purpose set forth.

5. A horse-shoe having a flat top face, a downwardly extending front face, a longitudinal gripping edge at the termination of said front face, a bottom face extending in the plane of a line angular to said top and front faces and intersecting the former and said gripping edge, an upwardly extending groove within said gripping edge and between the latter and said bottom face, and an inner gripping edge at the junction of said bottom face and groove, said outer face extending continuously and uninterruptedly from said top face to said gripping edge, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM J. KENT.

Witnesses:

GEORGE H. FRASER,

THOMAS F. WALLACE.