(No Model.)

W. J. KENT.

TOE CALK FOR HORSESHOES.

No. 553,345. Patented Jan. 21, 1896.

FIG. 1.

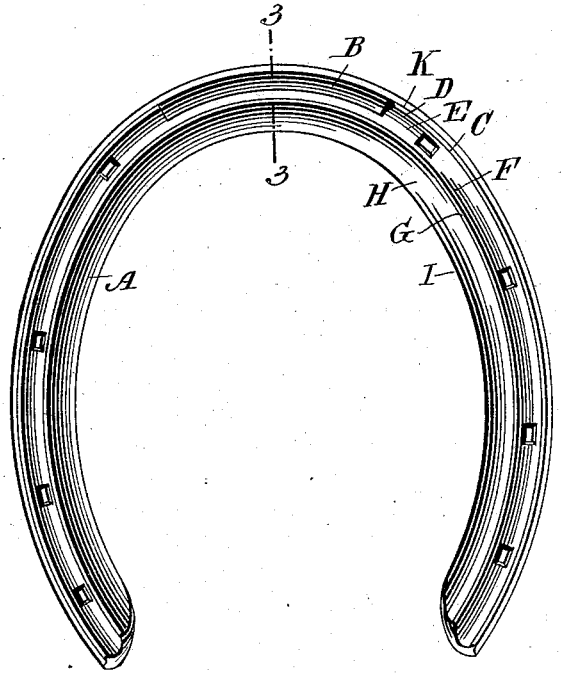


FIG 2

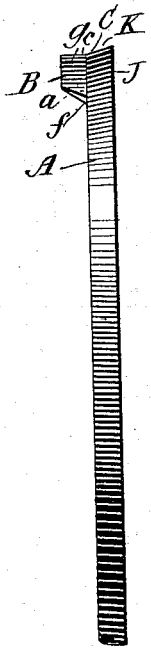


FIG. 3

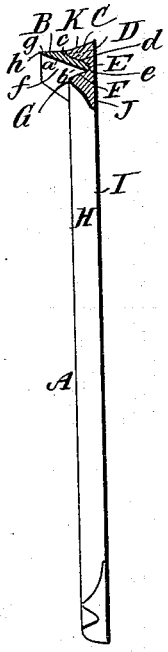


FIG. 4.

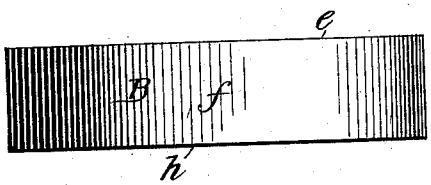


FIG. 5.

FIG. 6.

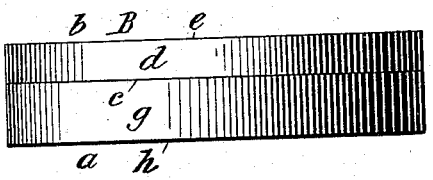
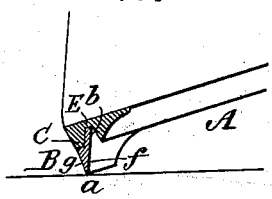


FIG. 7.



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UNITED STATES PATENT OFFICE.

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TOE-CALK FOR HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 553,345, dated January 21, 1896.

Application filed May 23, 1895. Serial No. 550,309. (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 Toe-Calks for Horseshoes, of which the following is a specification.

This invention relates to horseshoes, and is applicable either to those known as "ordinary" or "road" shoes or to those known as "racing" shoes or plates.

The invention relates particularly to shoes having a wearing or gripping face or edge at the outer part of the bottom face, a longitudinal groove at rear of said face or edge, having an upwardly and rearwardly inclined wall extending from said edge upwardly into the body of the shoe, and a rearwardly-extending top for said groove above and at rear of said gripping-edge, one example of a shoe of this character being shown in my application for Letters Patent, filed April 27, 1895, Serial No. 547,300; and the invention aims to provide an improved toe-calk, especially applicable for attachment to such shoe.

To this end in carrying out the preferred form of my invention I provide a toe-calk consisting of a single metallic piece adapted to be applied to the bottom face of a shoe, having a downwardly-projecting part constituting a working portion, a longitudinal rearwardly-extending bearing or shoulder at top of said part adapted to bear on the bottom face or gripping-edge of the shoe, an upwardly and rearwardly inclined wall above said shoulder, adapted to embrace a corresponding wall on the shoe and be attached thereto, and a longitudinal bearing at the upper edge of said wall adapted to bear on an upper portion of said shoe, said shoulder and bearing serving to support the shoe from the calk, and said wall to connect the calk to the shoe, and I provide said calk with a rear side extending from said upper bearing downwardly to said working portion, and preferably forwardly to the front part thereof, so that the latter consists of a narrow working or gripping edge for the calk.

In the accompanying drawings, which illustrate the preferred form of the invention. Figure 1 is a bottom face view of a shoe and toe-calk embodying my improvements. Fig. 2 is a side elevation thereof. Fig. 3 is a cross-section thereof on the line 3 3 in Fig. 1. Fig. 4 is a rear elevation of the calk alone. Fig. 5 is a cross-sectional view thereof. Fig. 6 is a front elevation thereof, and Fig. 7 is a diagrammatic view showing how the calk strikes the ground.

Referring to the drawings, let A indicate the shoe, and B the toe-calk. The shoe A has an elongated body of any suitable construction and material, having on its bottom face an outer bearing or gripping edge or portion C, immediately at rear thereof an upwardly and rearwardly inclined wall D, at top of the latter a rearwardly-extending face E, inwardly of the latter a downwardly and rearwardly inclined wall F, a second or inner gripping or bearing edge G at the bottom of said wall, and a rearwardly and upwardly inclined bottom face H extending from said second edge G to the inner side I of the body. From its inner side I the body has a flat outwardly-extending top face J, and at its outer side an outer downwardly and usually rearwardly inclined front wall K. The edge or bearing C, inclined wall D, and face E are preferably continuous parts extending throughout substantially the length of the shoe, and substantially parallel relatively each to the other in their extension. The space between the walls D and F constitutes an upwardly-extending groove in the bottom face of the shoe.

The calk B according to my invention consists of a metallic piece having a lower or working portion *a* below the shoe, an upper or fastening portion *b* for attachment to the shoe, a bearing or shoulder *c* at its front side between said portions bearing on the gripping or wearing edge or face of the shoe, an upwardly and rearwardly inclined face *d* above said bearing adapted to fit a corresponding face D on the body of the shoe, a rearwardly-extending bearing or edge *e* above said face adapted to fit a corresponding portion, as the portion E of the shoe, and a rear wall *f* extending from said bearing or edge *e* downwardly and forwardly to said working portion. The bearing or shoulder *c* is adapted to support the calk on the wearing or gripping face or edge C of the shoe, by bearing thereon or being attached thereto. The rearwardly-inclined face *d* is curved longitudi-

nally and proportioned vertically to substantially fit the upwardly and rearwardly inclined face D of the shoe, and adapted to be attached thereto, and serves to retain the toe-calk in connection with the shoe. The upper bearing or edge *e* is shaped to fit the part E of the shoe and bear thereagainst, thereby in part supporting the calk on the upper and inner portion of the body of the shoe near the middle thereof. When the part E of the shoe is terminated by a downwardly-extending wall F the edge *e* of the calk may be extended rearwardly into contact with this wall, as shown, thereby assisting in preventing displacement of the calk relatively to the shoe. The rear wall *f* of the calk extends downwardly and forwardly to the working portion of the latter. By preference this wall is a substantially straight wall extending from the upper part of the calk to the forward part of the lower part or bearing, or wearing, portion thereof, and the calk is constructed with a downwardly-extending, and preferably substantially vertical front wall *g* extending from the front bearing or shoulder *c* downwardly and meeting the rear wall *f* at a point or edge *h*, serving as the wearing-edge of the calk, and sufficiently narrow or sharp to serve as a gripping-edge therefor. The walls *g* and *f* diverge upwardly from the edge *h*, thus giving the calk a triangular cross-section for its wearing portion, which is thickest at the point where the shoulder *c* is located. From this point the portion *b* of the calk extends diagonally rearwardly and upwardly in the form of a thin wing or flange, of uniform or slightly-tapering cross-section, depending on whether the walls *d* and *f* are parallel or slightly diverging, as shown.

In operation, the calk having been suitably attached to the shoe—as, for example, by brazing its face *d* to the face D of the shoe, with its bearing-shoulder *c* bearing on the bottom face or edge C of the latter, and its bearing-edge *e* bearing in the top of the groove formed by the walls D, E, and F—the calk will support the shoe at two points, the one at its front lower outer edge C and the other at its upper middle portion E, its fastening to the shoe will be mainly intermediate of these points and at the points of engagement of the face *d* and wall D, and the wearing portion of the calk will project downwardly, either substantially vertically or slightly inclined, as desired. In striking the ground the strains will be transmitted through the calk to the two parts of the shoe to which its bearings are applied, and the tendency to backward displacement of the calk will be resisted by the rearwardly-inclined portion *b* of the latter, the inclination of which and of the rear wall *f* and the affixing-face *d* will be substantially in the direction of thrust as the calk strikes the ground when the horse is running.

The calk is preferably constructed of a single piece of solid metal, rolled or otherwise formed of the described or desired cross-section, elongated longitudinally to give it the desired breadth, and curved to conform to the curvature of the shoe to which it is to be applied.

It will be seen that my invention provides improvements in toe-calks for horseshoes which can be easily availed of and successfully used, and it will be understood that the invention is not confined to the exact details of construction and arrangement set forth and shown as constituting its preferred form, since it may be adopted according to such modifications 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 toe calk for horse-shoes consisting of an elongated metallic piece adapted to be applied to the bottom face of a shoe and having a downwardly projecting part constituting a working portion, a longitudinal shoulder on its front side adapted to bear on an adjacent portion of the shoe, an upwardly and rearwardly inclined wall above said shoulder adapted to embrace a reciprocal portion of a shoe, and a longitudinal bearing at its upper edge adapted to bear on another portion of the shoe, said shoulder and bearing serving in use to support the shoe from the calk, and said wall serving to connect the calk to the shoe, substantially as and for the purpose set forth.

2. A calk for horse-shoes consisting of an elongated piece of metal having a downwardly extending body constituting at its lower edge a wearing portion, an upwardly extending front wall, a substantially horizontal rearwardly extending bearing shoulder at top of said wall, an upwardly and rearwardly extending face at top of said shoulder, a rearwardly extending bearing edge at top of said face, and a downwardly and forwardly extending rear wall between said bearing edge and wearing portion, substantially as and for the purpose set forth.

3. A toe calk for horse-shoes having a substantially vertical body constituting a wearing portion, a bearing shoulder at top of said body extending from its front face rearwardly, an upwardly and rearwardly inclined seating face above said shoulder, a rearwardly extending bearing portion at top of said face, and a downwardly and forwardly extending rear wall between said bearing portion and wearing portion, substantially as and for the purpose set forth.

4. In toe calks for horse-shoes, the combination with a horse-shoe having a gripping edge on its bottom face, and a longitudinal groove having an upwardly and rearwardly inclined wall at rear of said edge, of a toe calk consisting of an elongated piece of metal having a downwardly extending body portion terminating in a wearing face, an upwardly extending front face between said wearing face and the bottom face of the shoe, a rear-

wardly extending bearing shoulder at the bottom face of the shoe bearing on said gripping edge, an upwardly and rearwardly inclined face embracing the front face of said groove, a rearwardly extending bearing edge above said face bearing on the top of said groove, and a downwardly extending rear face extending from the top of said groove to said wearing portion, said calk and shoe fixed together substantially as and for the purpose set forth.

5. A toe calk for horseshoes consisting of an elongated metallic piece adapted to be applied to the bottom face of a shoe and having a downwardly projecting part constituting a working portion, an upwardly and rearwardly inclined wall above said working portion adapted to embrace a reciprocal portion of a shoe, and a longitudinal bearing at its upper edge adapted to bear on an upper portion of the shoe, said bearing serving in use to support the shoe from the calk, and said wall serving to connect the calk to the shoe, 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.