

UNITED STATES PATENT OFFICE.

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HORSESHOE-CALK.

SPECIFICATION forming part of Letters Patent No. 665,485, dated January 8, 1901.

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To all whom it may concern:

Be it known that we, ELMER E. TAGGART and HENRY T. BAYNES, citizens of the United States, residing at Buffalo, New York, have

invented certain new and useful Improvements in Horseshoe-Calks, of which the following is a full, clear, and exact description. Our invention relates to horseshoe-calks, but more particularly to removable and adjustable calks—"removable" in the ordinary sense of the word and "adjustable" in the sense that they may be fitted readily to any part of the shoe, singly, in pairs, or three or four in number to each shoe, as hereinafter more fully set forth.

The object of our invention has been to provide a horseshoe-calk simple in construction and free from all liability to bend or loosen when used, as well as one provided with no external protruding parts likely to injure the horse when in use, and one that could be easily attached to and detached from the shoe while it is on the horse's foot by any one without the use of specially-made tools and wrenches. To this end we have devised a calk which fits any horseshoe with or without integral calks, which may be applied by any person, which requires no tools but an ordinary wrench, which has no external protruding parts, which is composed of few parts, and which will neither bend nor loosen when in use.

Referring now to the drawings herewith, Figure 1 is a plan view of a shoe provided with two of our calks. Fig. 2 is a section on the axis of the bolt D.

A represents a shoe.

B is the calk proper, which is carried by the plate F.

C is our clamping-lug or balancing-washer.

D is the bolt or threaded stem of the calk, which takes through the balancing-washer.

E is the nut for securing the calk in place.

The calk B we preferably construct with a gouge-shaped bit or edge, as this shape best adapts the calk to use in any position upon the shoe. An extension B' (see Fig. 2) engages over the outer edge of the shoe, and a sharp-pointed lip or projection b inserts sufficiently far between the shoe and hoof to hold the calk to the shoe.

The bolt or threaded stem D, which we make integral with the calk, as well as the

nut E, should be provided with fine threads; as it is well known that such a thread tends to prevent loosening of the nut when the parts are jarred and strained in use.

A most important feature of our invention is the peculiar construction of the balancing-washer C. This washer bears against the inner edge of the shoe and has an outwardly-projecting sharp-pointed lip c, as clearly shown in Fig. 2, which engages the shoe on its face adjacent to the hoof and, with the extension b, holds the calk to the shoe; but with any other means of retaining the washer the same would not hold fast and the calk would become loose. Such loosening is due to the bending of the lug and also to the fact that the bearing-points would be substantially directly opposite each other. To remedy this difficulty, we provide the washer C with arms or brackets a. These arms project outwardly at diverging angles from the body of the washer C and rest down flat upon the face of the shoe. With these arms the washer will stay in place and grip the shoe firmly and prevent any strain upon or bending of the bolt D.

Another important feature of our device is the location of the bit B upon the plate F. The bit B is placed at a little distance back from the outer edge of the shoe, so that the pressure of the weight of the horse will be exerted in a large measure directly against the shoe rather than upon the lugs b and c and the other parts of the calk. When the shoe strikes the pavement in a flat position, the plate F and the bit B tend to throw the strain of the pressure directly against the shoe, and but little of the strain is felt by the other parts of the calk. When the front of the shoe strikes the pavement first, were it not for the plate F and the arms a of the washer C the principal strain would be upon the lug b and the bolt D, and that strain would tend to bend the bolt D and the lug b and work the whole calk loose. In such a case, however, the plate F and the diverging arms a tend to relieve the bolt D and the lug b, and they distribute the strain so that it is not greatly felt by the other parts of our calk. The function of the arms a is again plainly evident when there is a tendency for the horse to slip. In such a case were it not for the

arms *a* the greatest strain would come upon the lug *c*, but with the arms *a* the lug *c* is relieved of the greater part of the strain. It is to be noted that by this construction the
5 calk may be used singly where there is no toe-calk. A pair may be used, as shown in Fig. 1, where there is or is not a toe-calk. Three may be used, one as a toe-calk and the remaining two as heel-calks. Four may be
10 used, two as toe-calks and two as heel-calks. The device is thus rendered universal in its application.

Having thus described our invention, what we claim is—

15 1. A horseshoe-calk, comprising a lug adapted to engage over the outer edge and back of a shoe, a plate adapted to extend flat on the face of the shoe and back from its outer edge, a bit integral with said plate and
20 formed thereon a suitable distance back from the outer edge of the shoe, a balancing-washer formed with a lug adapted to engage over the inner edge and back of the shoe and with diverging arms adapted to engage with the
25 face of the shoe, and a bolt and nut for uniting the two members, substantially as and for the purposes set forth.

2. A horseshoe-calk formed with a lug adapted to engage over the outer edge and back of a shoe, and a plate adapted to extend
30 flat on the face of the shoe and back from its outer edge, which carries integral therewith a bit adapted to grip the pavement when in use, and a screw-threaded bolt, together with a balancing-washer formed with a lug adapted
35 to engage over the inner edge and back of a horseshoe and with arms resting flat on the face of the shoe and projecting forwardly from the inner edge of the shoe at diverging angles and also formed with a perforation
40 through which said bolt can be inserted and by means of a nut screwed thereon, whereby the calk proper and the balancing-washer may be firmly united and held in place on the shoe, substantially as and for the pur-
45 poses set forth.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

ELMER E. TAGGART.
HENRY T. BAYNE.

Witnesses:

M. E. SNYDER,
A. W. PLUMLEY.