



# UNITED STATES PATENT OFFICE.

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HORSESHOE AND CALK THEREFOR.

984,385.

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*To all whom it may concern:*

Be it known that I, JESSE WILLIAM MILLER, a citizen of the United States, and a resident of Red Wing, in the county of Goodhue and State of Minnesota, have invented new and useful Improvements in Horseshoes and Calks Therefor, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide calks for the heels and toe of a horseshoe, having novel form; and further to provide novel means for attaching the calks to the shoe in a manner that will permit the calks to be readily removed when worn out, and be replaced by others of similar construction that are new or have been repaired so as to be capable of renewed service.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a bottom plan view of a horseshoe constructed in accordance with the invention. Fig. 2 is a side view of a shoe having the improved calks secured thereon, and showing one form of said calks; Fig. 3 is a transverse sectional view of a toe calk and toe of a shoe whereon the calk is secured, the section being taken substantially on the line 3—3 in Fig. 1; Fig. 4 is a reversed plan view of the front portion of a horseshoe, and of a toe calk such as shown in Figs. 5 and 10, secured thereon; Fig. 5 is a side view of the details shown in Fig. 4, seen in the direction of the arrow in said view; Fig. 6 is a reversed plan view of a horseshoe and of a calk such as is shown in Figs. 7 and 11; Fig. 7 is a side view of the portion of the horseshoe and style of toe calk secured thereon, such as shown in Figs. 6 and 11; Fig. 8 is a perspective view of a toe calk somewhat different in form from those shown in the figures previously described; Fig. 9 is a perspective view of a heel calk that embodies details of the invention; Fig. 10 is a perspective view of a toe calk having the improvements, and a

wedge-shaped body presenting a sharp lower edge for engaging an icy roadbed; Fig. 11 is a perspective view of a toe calk similar to that shown applied in Fig. 6; and Fig. 12 is a perspective view of a further modified form of a toe calk.

In the drawings, 15 represents a horseshoe of usual form in contour, which may be of any desired size, having on the lower side thereof the ordinary indented kerfs *a* for the embedment of nail heads, the bodies of which are passed through holes *a'* formed in the shoe and intersecting the kerfs.

On the lower side of the toe portion of the shoe 15 that is curved edgewise in conventional form, and at equal distances from a median line, two similar lugs *b*, *b*, are formed, which project away from said side of the shoe and have suitable width and thickness. The lugs *b* are preferably curved on their peripheries and have a diametrical size about equal with the width of the shoe at its toe. In the lower side of the shoe, a recess *c* is formed that extends between the inner sides of the lugs *b*, *b*, said recess having a flat bottom and parallel side walls, as is indicated in Fig. 3.

The toe piece 16 for the shoe 15, as shown in Figs. 1, 3 and 8, is in the form of a metal block, having a length that adapts it to fit neatly between the lugs *b*, *b*, said block on one side that seats upon the shoe, having a rectangular rib *d* that fits closely in the recess *c* when the toe block is driven into place between the lugs *b*. The toe block 16 is scalloped on the inner side, as shown at *e* in Figs. 3 and 8, producing a thin flange *e'* on the inner side thereof, which is concaved on its edge to conform with the inner edge of the shoe at the toe, as is represented in Fig. 1. The outer side of the toe block 16, is convexed to correspond with the outer wall of the toe of the shoe 15, as appears in Fig. 1, and as represented in Figs. 3 and 8, the bottom or tread surface of the toe block or calk 16 is flat, and of suitable area to adapt it for hard wear on a stony roadbed.

The feature of invention shown in Figs. 3 and 8 for the toe calk 16 consists in the means for securing the rectangular rib *d* in the recess *c*. It will be noted in the views mentioned, that the rib *d* is longitudinally



perforated, as shown at  $d'$ , leaving comparatively thin side walls and a top wall, said top wall having a longitudinal slot  $d^2$  therein.

5 As shown by dotted lines in Fig. 1, the lugs  $b, b$ , are perforated in alinement with the perforation in the body of the calk 16 and when the latter is properly embedded in the recess  $c$ , a rod-like key  $g$  is driven  
10 through the ears  $b$  and the rib  $d$ . The perforation in the rib  $d$  is slightly less in diameter than those in the lugs  $b$ , so that the key  $g$ , when driven through the rib and lugs, will cause the resilient side walls of the rib  
15 to yield laterally, and be forcibly impinged upon the side walls of the recess  $c$ , which will hold the calk firmly secured on the toe of the shoe 15.

In Figs. 6, 7 and 11, the construction of  
20 the toe calk 17 is substantially similar to that of the toe calk 16, the slight change consisting in giving the body of the calk greater height and length, so that it will overlap the ears  $b, b$ , when in position for service,  
25 this form of the toe calk being serviceable in traversing sandy or earthy road-beds.

In Figs. 5 and 10, the body of the toe calk 18 is concaved on the inner side thereof and reduced in thickness toward the bottom, thus  
30 giving the calk a wedge-shape in cross section, which adapts it for the traverse of icy roads, as the calks will cut into the roadbed and prevent slipping thereon.

In Fig. 12, there is but a minor change in  
35 shape shown, consisting in providing a thin front flange  $h$  and a corresponding thin flange  $h'$  at the rear of the toe block 19, the thickness of the latter being such as adapts it for travel on solid roadbeds, this form of  
40 the toe calk adapting it for use on light horseshoes worn by horses having speedy gaits.

It will be understood that the different  
45 forms of the toe calks that have been described, are all attachable to horseshoes having the lugs  $b, b$ , thereon and a flat-bottomed recess in the lower side of the shoe between said lugs.

As shown, each style of toe calk has a rib  
50  $d$  thereon, which is longitudinally perforated at  $d'$ , leaving a top wall which is slotted, as at  $d^2$ , which enables said calks to be firmly but detachably secured on a horseshoe constructed according to my in-  
55 vention. The improvement further embodies a novel construction for the heels of a horseshoe and for heel calks adapted for detachable connection therewith.

As appears in Figs. 1 and 2, each heel on  
60 a shoe 15, is thickened by the formation of two transverse ribs  $i$  thereon, which are spaced apart, and between said ribs a rectangular flat-bottomed recess  $i'$  is formed of suitable depth, the side walls of the recess

being slightly inclined toward the bottom, 65 as is indicated for one recess at the left in Fig. 2.

The heel calks 20 for the horseshoe 15 are of similar form, each consisting of a metal block that is rectangular in its lower portion. 70 The front side of the heel calk 20 is scalloped, as shown in Fig. 1 at the left and also in Fig. 9, thus affording proper area for the heel calk at its point of engagement with the heel of the horseshoe. On the upper side of 75 the heel calk 20, a transverse rib  $m$  is formed, which fits neatly between the ribs  $i$  on the heel portion of the shoe, and as shown in Fig. 9, the rib  $m$  is cut away at each side of the calk at a point about one-half of its 80 height, thus producing a rectangular top portion  $m'$  thereon that fits snugly in the recess  $i'$  when the heel calk is forced into position so as to seat it upon the ribs  $i$ . At the transverse center of the rib  $m$ , a perfora- 85 tion  $m^2$  is formed that extends through the same, leaving a top wall intact with the sides of said rib, and as shown in Fig. 9 at  $n$ , the top wall is slotted, thus providing two separated side walls for the rib  $m$ . The ribs  $i$  90 are transversely perforated in alinement with the perforations  $m^2$  in the rib  $m$ , and through these alined perforations, a rod-like key  $n'$  is driven, thus securing the heel calk in position on the heel of the horseshoe. 95

It is to be understood that both of the heel calks are of similar form, and in a like manner are respectively secured on the heel portions of a horseshoe having the heels thereof constructed as herein described. 100

The toe calk and heel calks may be made of steel and hardened, which will adapt them to withstand the hard service they are subjected to, and when worn so as to require repair or replacement by others of a like character, the calks may be detached by the removal of the keys that secure them in place and new ones secured on the shoe, as hereinbefore explained. 105

Having thus described my invention, I 110 claim as new and desire to secure by Letters Patent:

1. The combination with a horseshoe provided at its toe with spaced lugs, and with a groove extending between the lugs, of a toe 115 calk fitting between the lugs and having a longitudinal rib for engaging the groove, the rib having a longitudinal perforation and the lugs having perforations registering therewith, said rib being slotted on its upper 120 face, the slot communicating with the perforation, and a pin traversing the registering opening, and of larger diameter than the perforation of the rib for the purpose set forth. 125

2. The combination with a horseshoe having at its heel and toe portions spaced lugs, and a groove extending between the lugs, of

a calk fitting between each pair of lugs, each of said calks having a rib for engaging the groove, the rib and the lugs having registering perforations and a pin for securing the calk in place, said rib being longitudinally slotted, the slot communicating with the perforation, the said perforation being of lesser diameter than the pin.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

JESSE WILLIAM MILLER.

Witnesses:

WM. I. MILLER,  
J. C. McCLUER.