

No. 610,212.

Patented Sept. 6, 1898.

R. WHITAKER.
HORSESHOE CALK.

(Application filed Mar. 23, 1898.)

(No Model.)

Fig. 1.

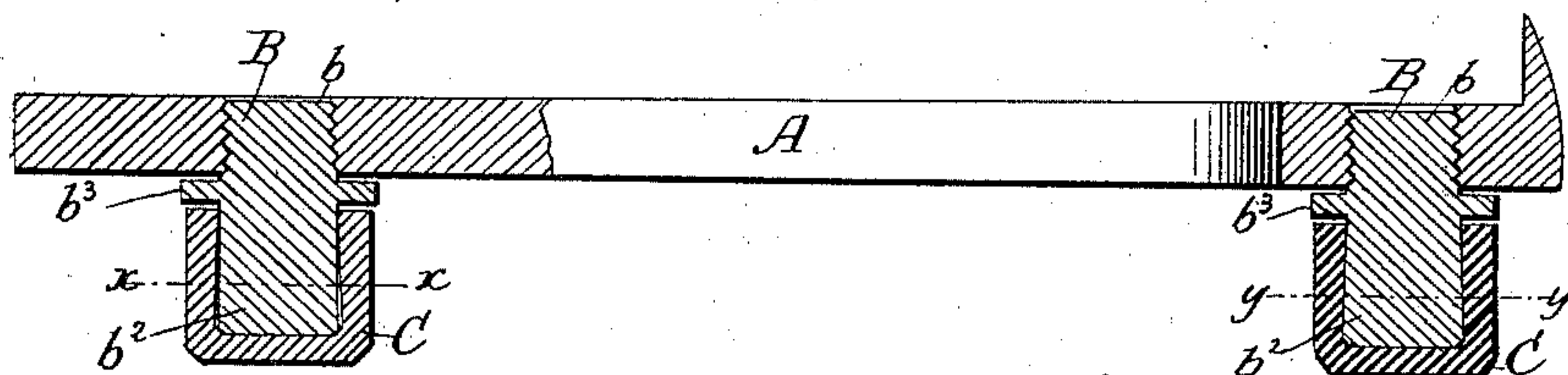


Fig. 2.

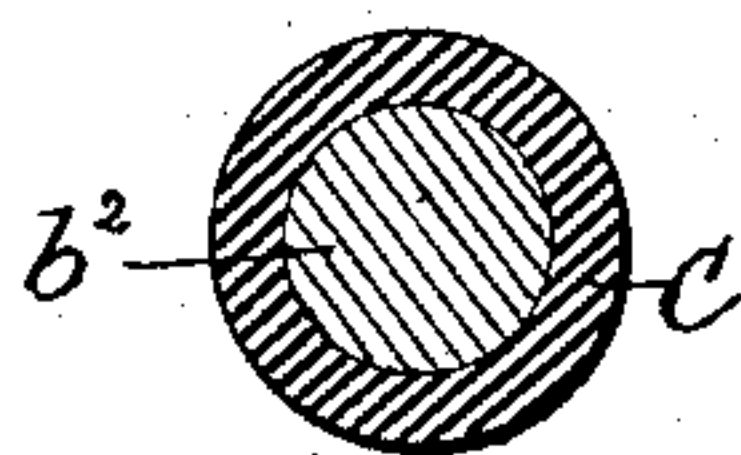


Fig. 4.

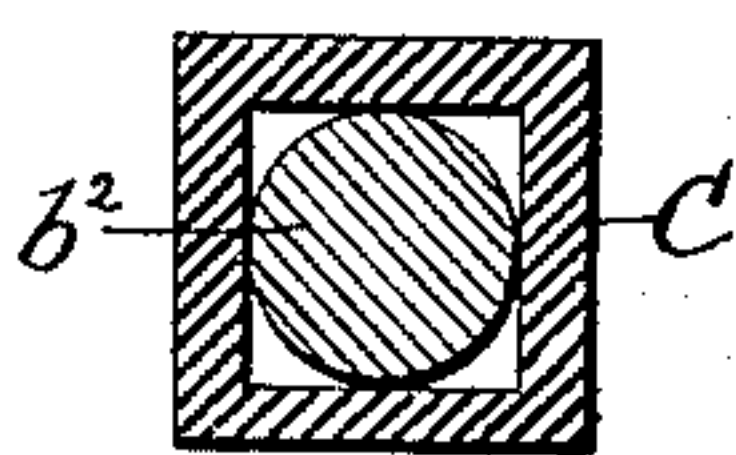


Fig. 3.

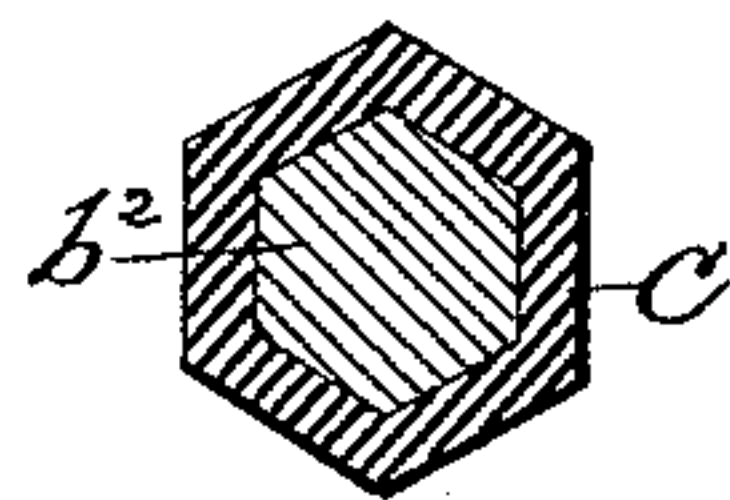


Fig. 5.

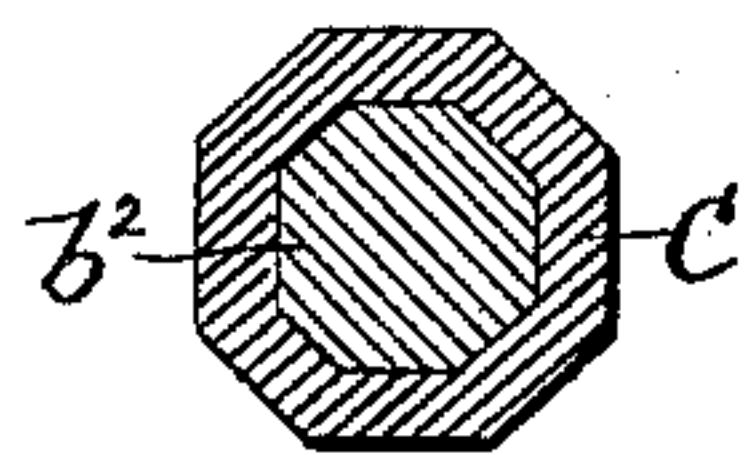


Fig. 6.

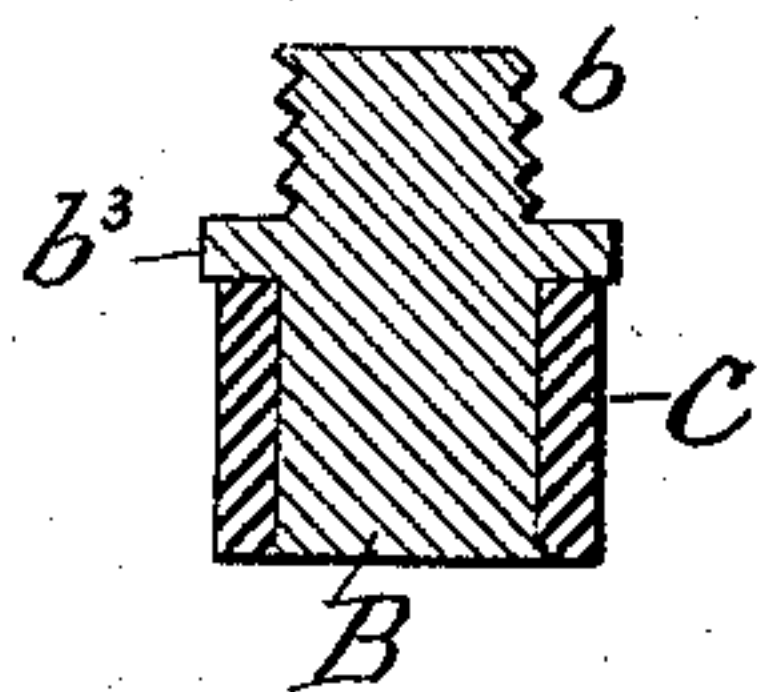


Fig. 7.

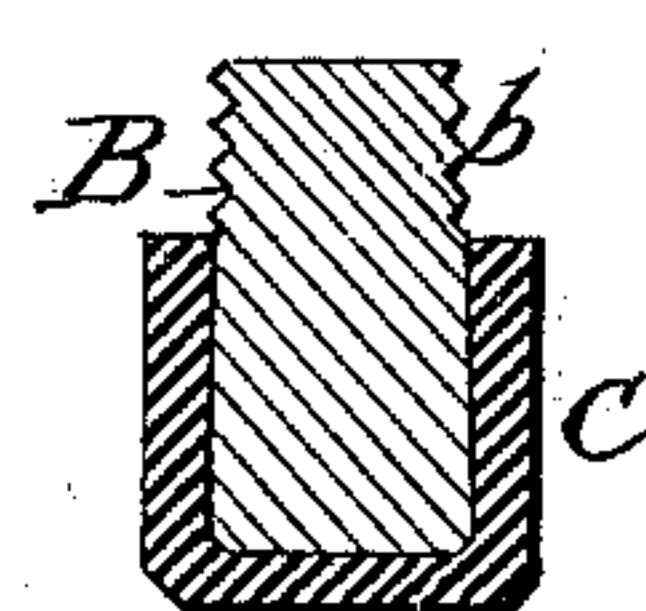
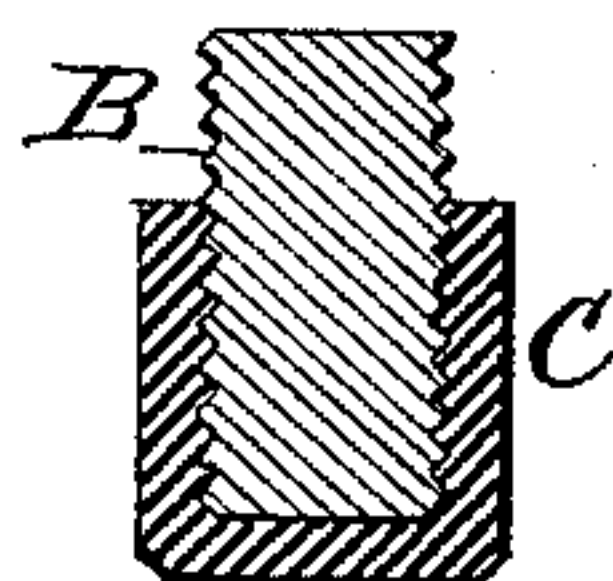


Fig. 8.



WITNESSES

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RICHARD WHITAKER, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNOR TO
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HORSESHOE-CALK.

SPECIFICATION forming part of Letters Patent No. 610,212, dated September 6, 1898.

Application filed March 23, 1898. Serial No. 674,871. (No model.)

To all whom it may concern:

Be it known that I, RICHARD WHITAKER, a citizen of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Horseshoe-Calks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to removable horseshoe-calks; and its objects are to provide a strong and lasting calk designed mainly to meet the conditions existing on hard paved streets, whereon the calks should have a large
15 wearing-surface of steel, and their connecting-body, with the shoe, should be of soft iron to prevent breaking of the neck of the calk at that point when striking the edges of paving-stones, but tapering, with its widest part
20 at its outer end, to permanently retain the steel casing. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 represents, partly in side view and
25 partly in section, a horseshoe, showing in vertical section one heel-calk and one toe-calk constructed in accordance with my invention. Fig. 2 is a horizontal section, on line $x x$ of Fig. 1, of the cylindrical soft-iron plug
30 and cylindrical steel shell, shown secured to the heel of the shoe in said Fig. 1. Fig. 3 is a horizontal section, on line $y y$, of the calk, shown secured to the toe of the shoe in Fig. 1. Fig. 4 is a horizontal section of a slightly-
35 modified form of calk constructed in accordance with my invention. Fig. 5 is a horizontal section through an octagonal calk constructed in accordance with my invention. Fig. 6 is a vertical section through a slightly-
40 modified form of calk in which the steel shell is without an end. Fig. 7 is a vertical section of a modified calk in which the soft-iron plug has no collar. Fig. 8 is a vertical section of a modified calk in which the soft-iron
45 plug is screw-threaded the whole length and capped at one end.

In said drawings, A represents a horseshoe of any suitable and well-known form, to which is shown secured to one of the heels a
50 central plug B, of soft iron, substantially cylindrical its whole length. Its upper por-

tion b is screw-threaded. Its lower portion b^2 is primarily made cylindrical or prismatic, and between them is a collar b^3 , that may be made either cylindrical or polygonal to facilitate screwing the screw-threaded portion of
55 the plug into the screw-tapped holes in the shoe with either a pipe-wrench or a nut-wrench. Upon the lower portion b^2 of the soft-iron plug B is placed a steel shell C,
60 much harder than the plug B, but made to fit tightly upon said plug. For this purpose the internal surface of the shell is preferably made with a slight taper, wider in the bottom of its cavity, and the length of the por-
65 tion b^2 of the plug is slightly more than the depth of said cavity, so that after the shell C has been placed upon the lower portion of the plug if heavy pressure is made to bear upon
70 the end of the shell the portion b^2 , of soft iron, becomes upset, and it takes a slight taper wider at its lower end, and thus the shell becomes immovably secured to the plug. The collar b^3 of the plug (shown in the heel of the shoe in Fig. 1) is of slightly larger diameter
75 than the diameter of the shell C to receive the calk-screwing wrench without disturbing the adhesion of the shell to the plug, as in that calk the part b^2 and the shell are not
80 prismatic; but in the calk shown secured to the toe of the shoe in Fig. 1 and also in Fig. 3 both the part b^2 of the plug and the shell are hexagonal, and there is no danger of disturbing their relations while rotating them, and, furthermore, the part b^2 being upset
85 within the cavity of the shell by heavy pressure, said parts remain perfectly united to each other until the lower portion of the plug and the shell are entirely worn away.

In Figs. 3 and 5 the lower portion of the
90 soft-iron plug and the steel shell are shown polygonal and are forced together in close engagement by heavy pressure.

In Fig. 4 the soft-iron plug is shown cylindrical and the shell polygonal; but they are
95 also forced together into close engagement, and in use the interstices will soon become filled with earth and sand and iron-rust to additionally lock them to each other.

In Fig. 6 the soft-iron plug is similar to
100 that shown in Fig. 1; but the steel shell is shown open at both ends, the lower end of the

soft-iron plug being slightly upset or riveted to the surrounding steel shell. This form is also the form acquired by the calks shown in Fig. 1 after they have been in use for some time and the end of the steel shell has become worn away.

In the calk shown in Fig. 7 the soft-iron plug is shown as made without a collar; but the bottom portion is, as in Fig. 1, either cylindrical or polygonal, preferably polygonal, to be received in a correspondingly-formed steel shell, the latter being of convenient use to facilitate the screwing of the calk to the shoe.

In either of the forms shown the soft-iron internal plug is protected against rapid wear by the steel shell surrounding or inclosing it.

I am aware that horseshoe-calks have been made in two parts of metals of different hardness, the central part being screw-threaded the whole length and the encircling part screwed thereon and provided with means to lock it to the shoe, and I do not claim, broadly, the use of these two metals in a horseshoe-calk.

Having now fully described my invention, I claim—

1. A removable horseshoe-calk consisting of a central plug having one end screw-thread-

ed and its opposite end received into a shell internally wider in its wearing end and adhering thereto, substantially as described.

2. A removable horseshoe-calk consisting of a central plug of soft iron having one end screw-threaded and its opposite end received into a shell of harder metal internally wider at its wearing end and secured thereto, substantially as described.

3. A removable horseshoe-calk consisting of a central plug of soft iron having its periphery screw-threaded in combination with a shell of harder metal encircling and covering one end of said plug and secured thereto, substantially as described.

4. A removable horseshoe-calk consisting of a central plug of iron having a collar about half-way of its length and the end above said collar screw-threaded, in combination with a shell of steel internally wider in its wearing end covering and encircling the end of said plug under its collar and secured to said plug, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD WHITAKER.

Witnesses:

GEO. MCCORMICK,
FRANK E. FISHER.