

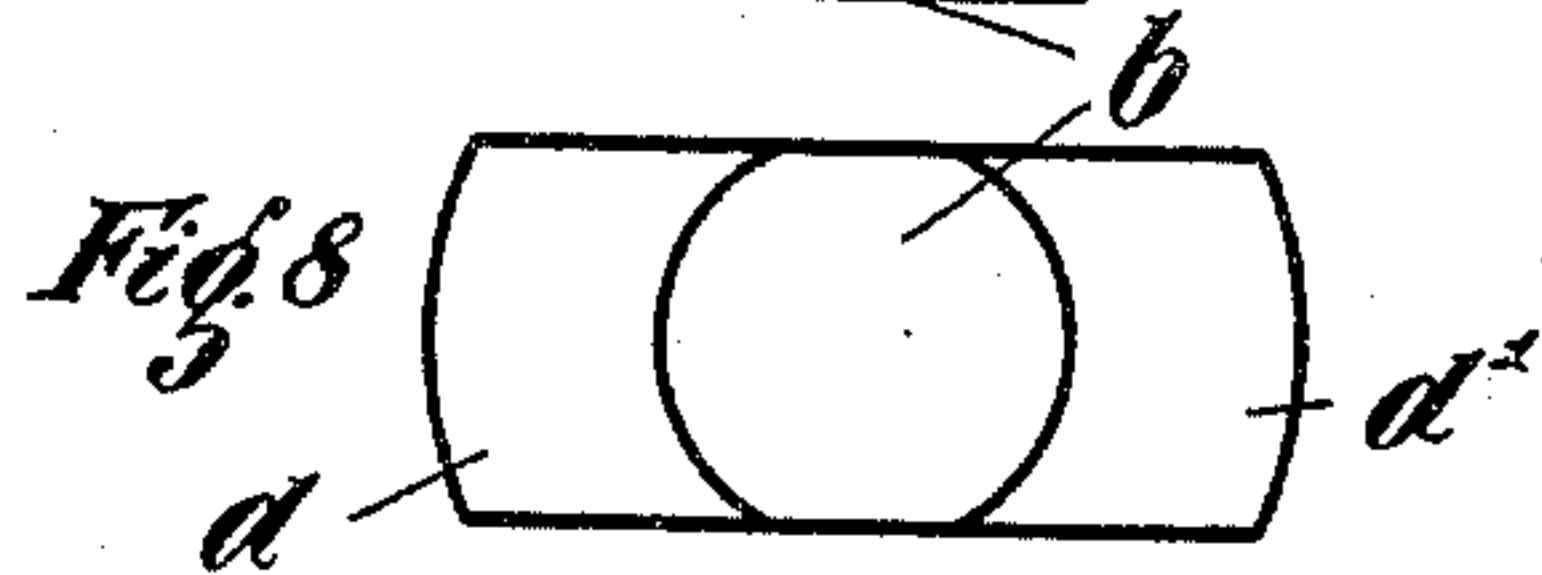
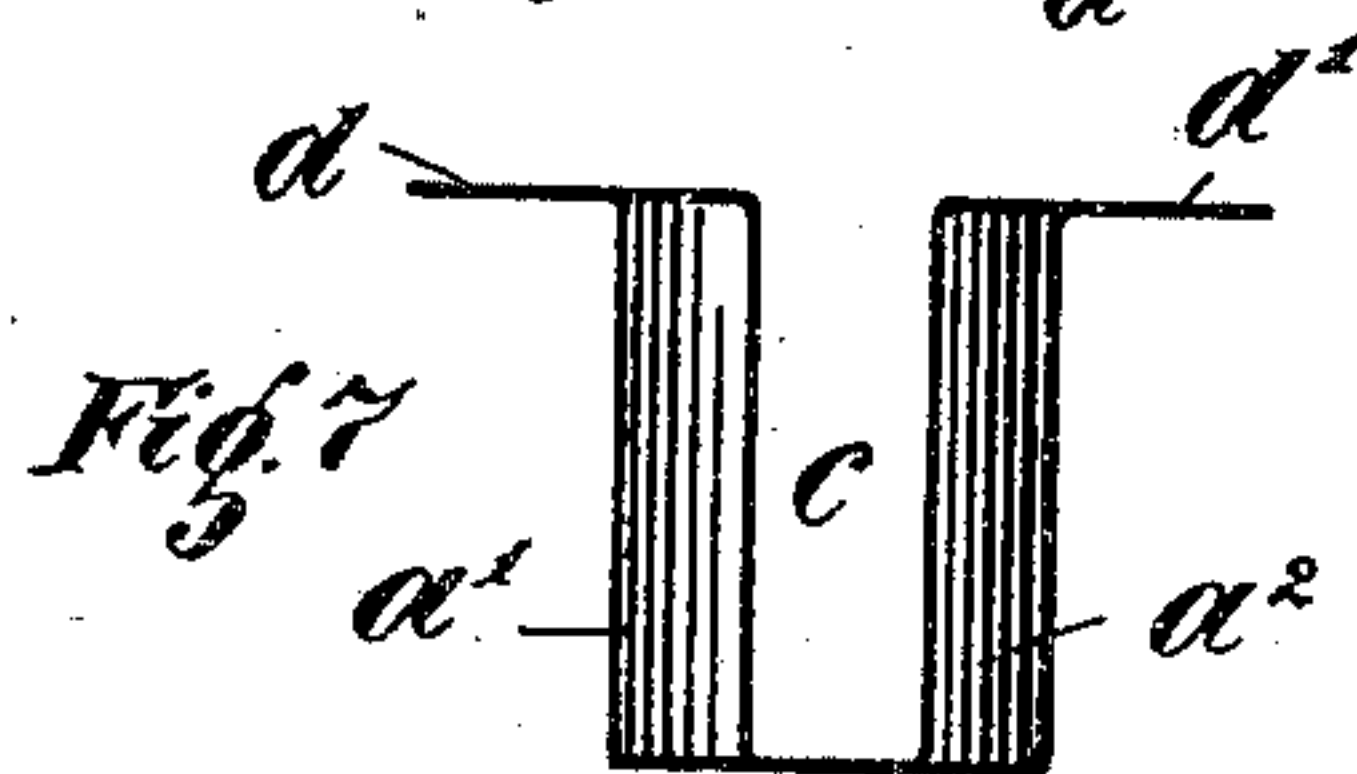
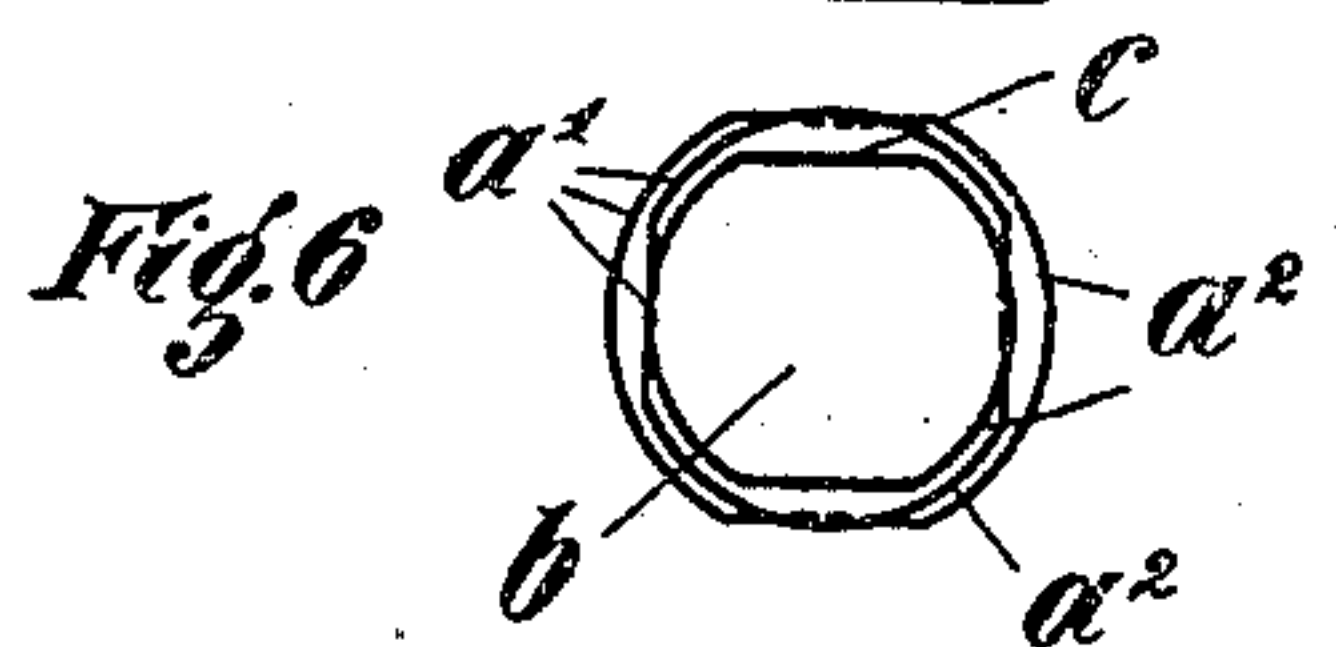
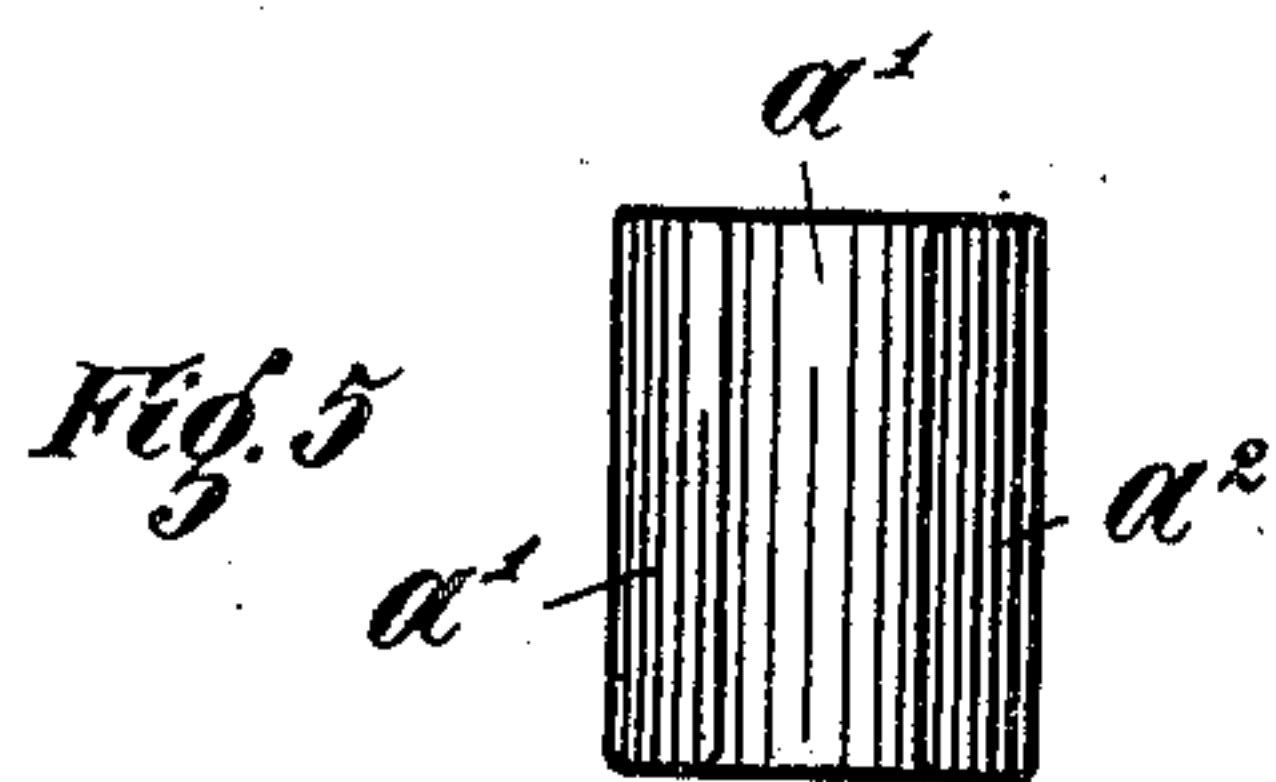
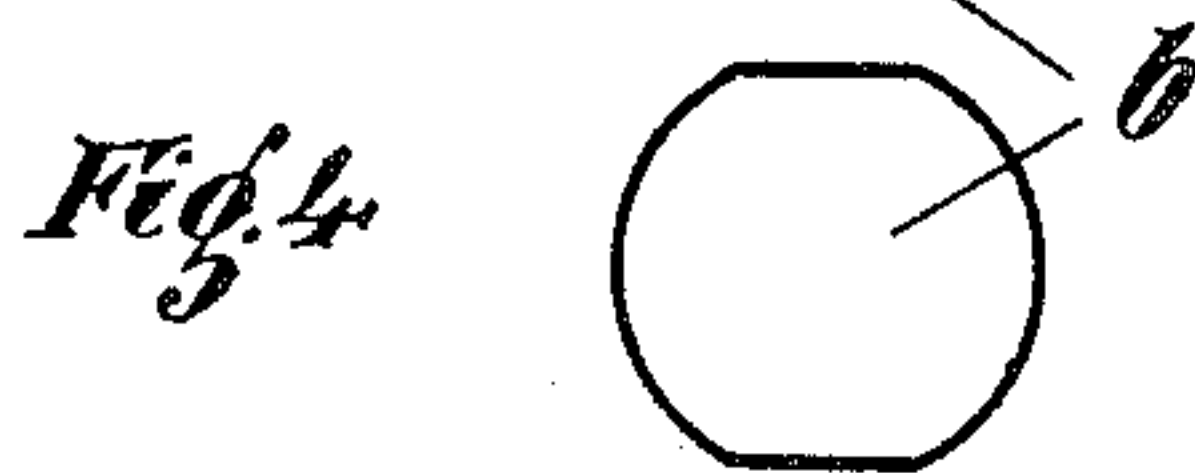
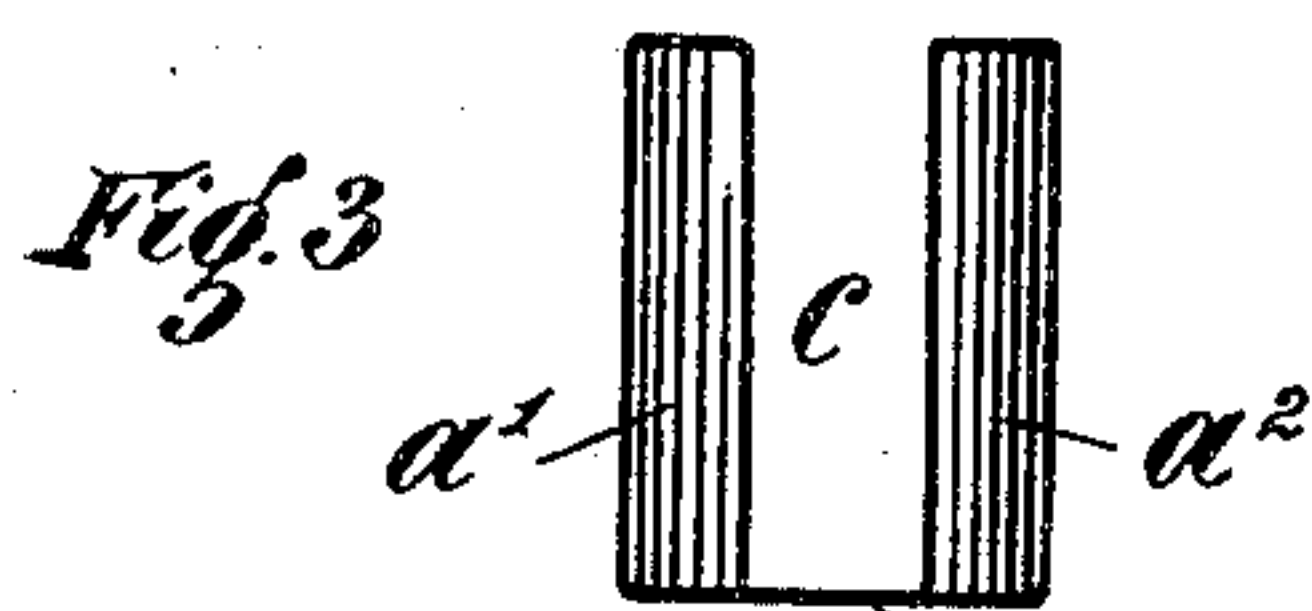
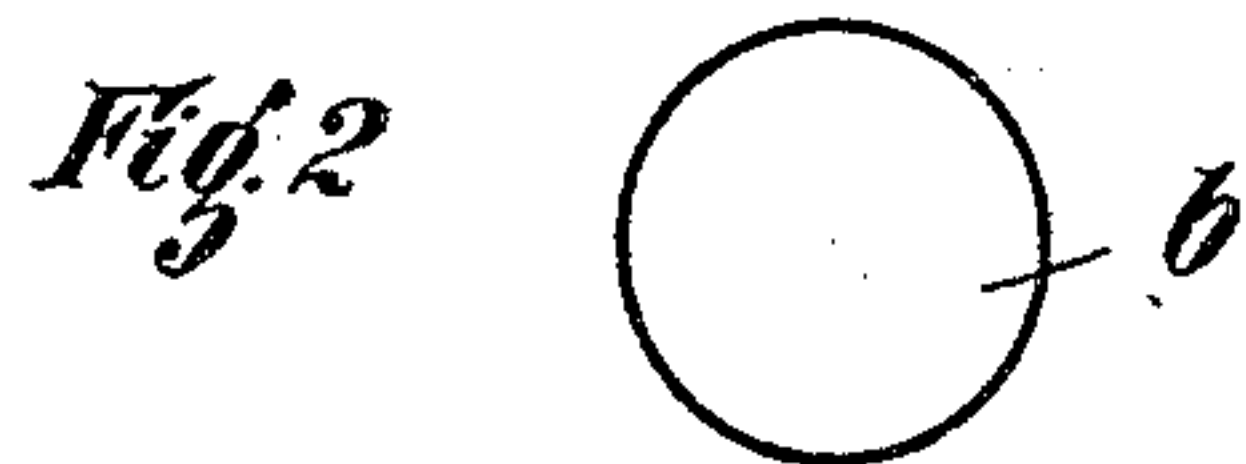
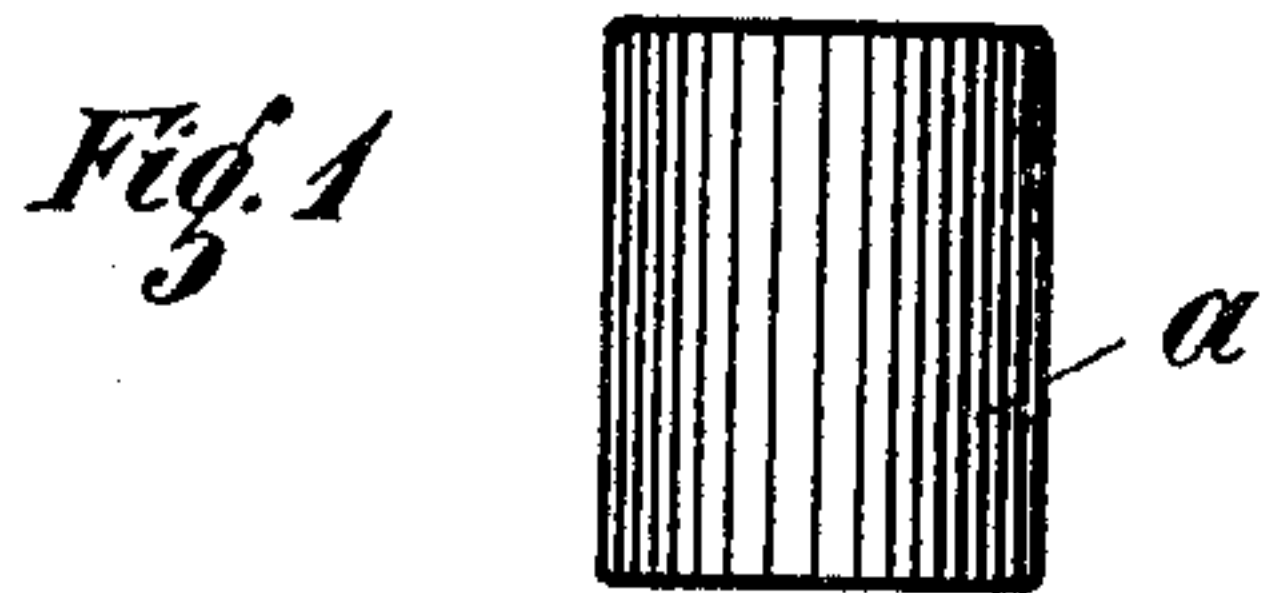
No. 682,465.

Patented Sept. 10, 1901.

E. HAMMESFAHR.  
FASTENING DEVICE FOR HORSESHOE CALKS.

(Application filed June 9, 1900.)

(No Model.)



Witnesses:  
Paul Kühne  
Otto Wegener.

Inventor:  
Ernst Hammesfahr  
by Carl Gronert  
Attorney

# UNITED STATES PATENT OFFICE.

ERNST HAMMESFAHR, OF FOCHE, GERMANY.

## FASTENING DEVICE FOR HORSESHOE-CALKS.

SPECIFICATION forming part of Letters Patent No. 682,465, dated September 10, 1901.

Application filed June 9, 1900. Serial No. 19,697. (No model.)

*To all whom it may concern:*

Be it known that I, ERNST HAMMESFAHR, a subject of the King of Prussia, German Emperor, residing at Foche, near Solingen, in the Kingdom of Prussia, German Empire, have invented a new and Improved Fastening Device for Horseshoe-Calks, of which the following is a specification.

A serious drawback in horseshoes of the kind in which the calks have smooth shanks adapted to be put into smooth-walled holes of the shoe consists in the gradually-occurring increase in the diameter of these holes and in the gradually-occurring decrease in the diameter of said shanks. To securely fasten the calks in the horseshoe in spite of such an increase or decrease or both increase and decrease, I propose the employment of a particular kind of metallic box adapted to be put upon the shank of the calk or into the hole of the shoe.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views, and in which—

Figure 1 is a side view of a box or small hollow casing of sheet metal. Fig. 2 is a bottom view of said box or casing. Fig. 3 is a side view of a slightly-modified form of box. Fig. 4 is a bottom view of this form. Fig. 5 is a side view of two (or rather three) boxes of the kind represented in Figs. 3 and 4, one box being put into the other. Fig. 6 is an upper view of the telescopically-collapsed three boxes. Fig. 7 is a side view of another modification, and Fig. 8 is a bottom view of this modification.

Referring to Figs. 1 and 2, *a* is the side wall of a sheet-metal box and *b* the bottom of the same. The outer diameter of the box corresponds to the diameter of the hole in the horseshoe, and the inner diameter is such that the box may be put upon the shank of the calk after the same has somewhat been worn out. There are a number of different sizes of such boxes corresponding in general to the different diameters of the shanks as well as of the holes, but being preferably so dimensioned that one box may be put into or upon the other if two or perhaps three boxes are necessary to make up for the difference in the

diameters of a shank and the hole belonging thereto.

An essential feature of my improved means for fastening loose horseshoe-calks with smooth shanks consists in the annular parts *a*, having bottoms *b*, turning them into boxes instead of letting them remain sleeves. I am well aware that sleeves have been used in connection with smooth-shanked horseshoe-calks, but such sleeves when shoved upon a shank and driven into a hole together with the shank are easily torn or folded up, remaining partly or wholly outside of the annular space between shank and hole instead of filling it properly up. By providing such a sleeve with a fixed bottom I cause the latter to draw the sleeve, or more precisely the side wall, with it, so as to compel this to fill up the aforementioned annular space. This result is absolutely necessary if the fastening shall be actually practically useful.

In the form of construction shown in Figs. 3 to 6 the side wall is provided with recesses *c*, affording space for a lateral extension of the remaining parts *a'* *a''* of the side wall. When putting two or more of such boxes together, I prefer to cover the recesses of one box by the remaining parts of the side wall of the other box, as represented in Figs. 5 and 6. It is important that these boxes should be well annealed in order to properly soften the metal, thus permitting the boxes to adapt themselves to any irregularities in shape of the calk or the hole therefor. Boxes of this kind, as well as of the kind first described, may also be provided with a flange or flanges *d* *d'*, Figs. 7 and 8, extending from the parts *a'* *a''* of the side wall. Such forms are used when the box is first put into the hole of the horseshoe instead of first upon the shank of the calk, the object of the flanges being to prevent the box from completely passing through the hole, especially when the calk is being driven in.

Having now described my invention, what I desire to secure by a patent of the United States is—

1. A fastening device for horseshoe-calks, comprising a metallic boxing provided with a bottom arranged to engage the upper end of the stem of the calk, the interior diameter



of the boxing being substantially equal to the diameter of the stem of the calk and the exterior diameter of said boxing being substantially equal to the diameter of the opening in the horseshoe.

5 2. A fastening device for horseshoe-calks, comprising a metallic boxing having a bottom and two sides separated from each other, the interior diameter of the boxing being  
10 substantially equal to the diameter of the stem of the calk and the exterior diameter of said boxing being substantially equal to the diameter of the opening in the horseshoe.

3. A fastening device for horseshoe-calks,  
15 comprising a metallic boxing having a bottom arranged to be engaged by the end of the stem of the calk, said boxing being provided with flanges arranged to engage the under face of the horseshoe, the interior di-  
20 ameter of the boxing being substantially equal to the diameter of the stem of the calk and the exterior diameter of said boxing being substantially equal to the diameter of the opening in the horseshoe.

25 4. A fastening device for horseshoe-calks,

comprising a metallic boxing having a bottom arranged to be engaged by the end of the stem of the calk, and having two sides separated from each other and provided with flanges arranged to engage the under face of  
30 the horseshoe, the interior diameter of the boxing being substantially equal to the diameter of the stem of the calk and the exterior diameter of said boxing being substantially equal to the diameter of the opening  
35 in the horseshoe.

5. The combination with a horseshoe having a calk-opening, of a calk having a stem, and a boxing having a depth equal to that  
40 of the stem provided with a bottom arranged to engage the end of the stem, the boxing fitting tightly between the calk-stem and the walls of the calk-opening.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ERNST HAMMESFAHR.

Witnesses:

H. ROTH,

E. WORSBACH.