

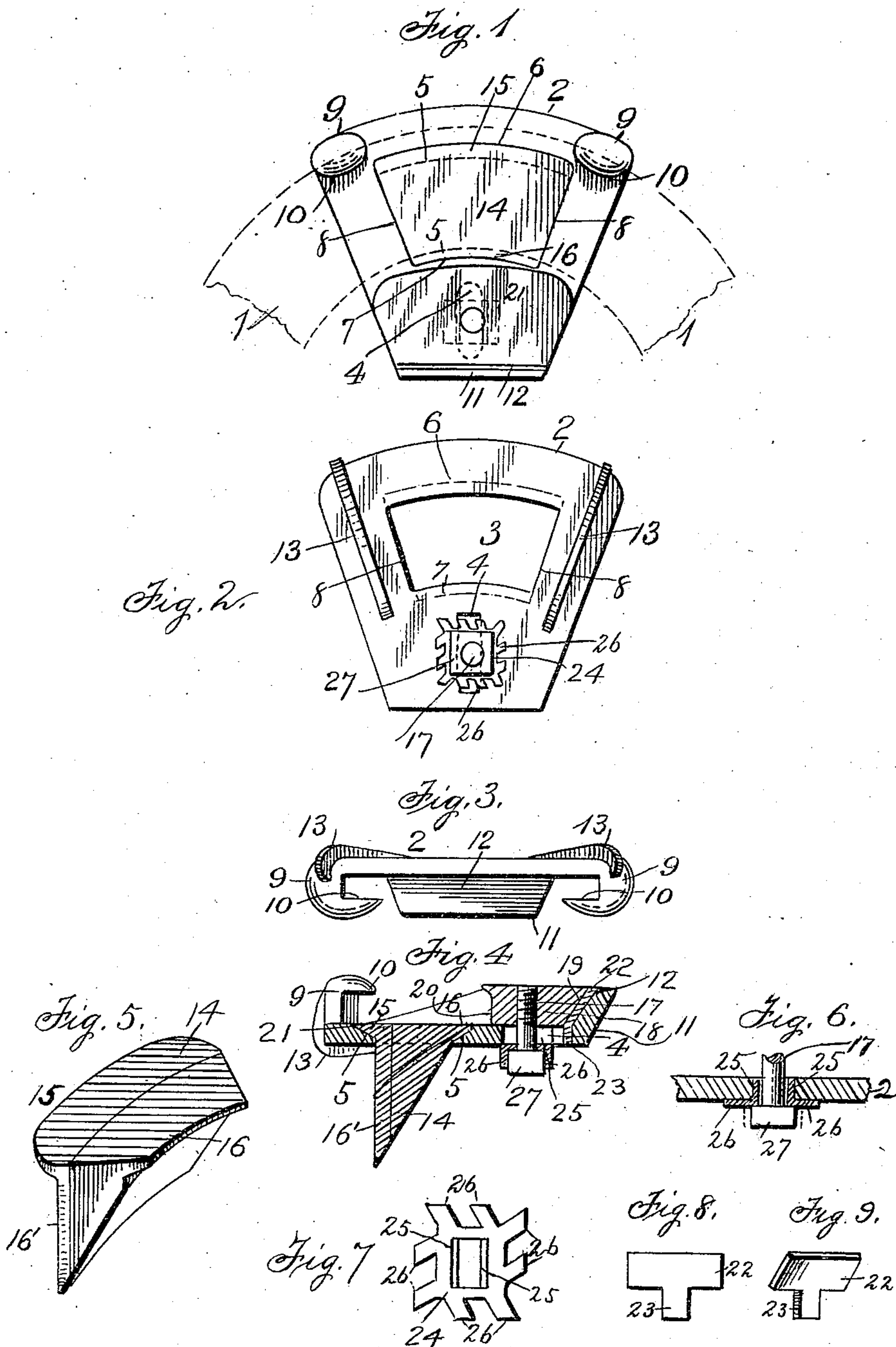
No. 855,245.

PATENTED MAY 28, 1907.

G. F. HAILMAN & E. S. HARNDEN.

HORSESHOE CALK.

APPLICATION FILED OCT. 3, 1906.



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# UNITED STATES PATENT OFFICE.

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## HORSESHOE-CALK.

No. 855,245.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed October 3, 1906. Serial No. 337,205.

*To all whom it may concern:*

Be it known that we, GEORGE F. HAILMAN and ENOS S. HARNDEN, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Horseshoe-Calks; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to horseshoe-calks adapted to be readily attached to and detached from a horseshoe, and consists in certain improvements in construction on the device shown in Letters Patent of the United States, # 798,582 granted to George F. Hailman, August 29th, 1905, which improvements will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification:—Figure 1 represents a plan view of a horseshoe and a toe-plate attached thereto. Fig. 2 an inverted plan view of the toe-plate. Fig. 3 a front end view with the calk removed. Fig. 4 a vertical longitudinal section of the toe-plate and the calk. Fig. 5 a perspective of the calk, detached. Fig. 6 a vertical section through the toe-plate partly in elevation. Fig. 7 a plan view of the locking-plate. Fig. 8 a plan view of the liner, and Fig. 9 a perspective of the same.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates a horseshoe, 2 a toe-plate in which is an elongated opening 3 to receive a calk, and a slot 4 to receive a bolt for clamping the toe-plate to a horseshoe. In the upper face or side of the toe-plate is a rabbet 5 having a front curved wall 6, a like curved rear wall 7 and angular end walls 8, 8. On the front of the toe-plate and at each end thereof is a lug 9 which engages the outer edge of a horseshoe, and on the ends of the lugs are inwardly projecting flanges 10, which engage the upper side of the shoe, as shown. The toe-plate is also provided with a lug 11 at its rear end having an inclined or outwardly beveled face 12 on the inside thereof.

On the lower or outer face of the toe-plate, at each end of the opening 3 are ribs or reinforces 13 which extend out over the lugs 9

and prevent the jar of the shoe, due to the impact of the horses foot, or strain on the calk, springing or buckling the plate along its sides and disengaging the lugs 9 from the shoe, while the body of the plate between the side walls on which the ribs are formed is slightly resilient, so that the bolt by which the toe-plate is secured to the shoe, springs or draws the center of the plate inward.

The toe-plate is preferably made segmental in form, with its sides converging inward, and may be made of any suitable metal, such as cast metal, or spring steel, stamped, or drop forged.

14 indicates the calk, which is of form and dimensions to fit the opening 3 in the toe-plate, and is preferably curved longitudinally as shown, and is provided with a flange 15 on the outside and a flange 16 on the inside curved to correspond with the walls 6 and 7 of the rabbet 5, and its ends correspond with the angular end walls 8, 8, of the rabbet. The flanges are of a thickness approximating the depth of the rabbet.

The calk is preferably made with an outer layer or stratum 16' of hard metal, such as steel, which includes the flange 15, to increase the wear and strength of the calk. The calk may be made by drop-forging, and the metal prepared therefor by rolling a layer or stratum of steel upon another layer of softer metal and being welded thereto in the act of rolling. Blanks are then cut from such a bar of metal and drop-forged. Or the calk may be made of cast steel and the outer surface chilled or hardened.

17 indicates the clamping-bolt, which is provided with a nut 18 on the inside of the toe-plate and is also provided with an inclined face 19, which corresponds with the angle of the face 12 of the lug 11, and engages therewith in use with large or wide shoes; and the opposite side of the nut is provided with a rounded or convex face 20, which conforms to the concave part of the shoe on the inner edge at the toe. The nut is also provided with a projecting horizontal flange 21 which engages the upper side of the shoe and forms a bearing therefor in securing the toe-plate to the shoe.

In the practical use of the invention, it has been found that horseshoes vary in width to such an extent that means must be provided



to secure the nut 18 against disengagement with the shoe, and for this purpose a liner having an elongated body 22, and a tongue 23 is used. The body of the liner conforms  
 5 with the faces 12 and 19 respectively of the lug 11 and the nut 18 and the tongue 23 is bent at an angle to the body 22 and enters the slot 4 to prevent lateral displacement of the liner. The liner may be made of differ-  
 10 ent thicknesses, or more than one liner may be inserted to back up the nut when used on narrow shoes.

The clamping-bolt 17, which passes through the slot 4 in the toe-plate and engages the  
 15 nut 18, is secured against turning in the nut by a locking plate 24, made of sheet metal and provided with flanges 25 which extend down into the slot 4 on opposite sides of the bolt, and with laterally extending fingers 26,  
 20 preferably projecting from the body of the plate at an angle and resembling saw teeth, which are bent up against the sides of the head 27 of the bolt and securely lock the bolt against turning in the nut.

25 Having thus fully described our invention, what we claim is

1. A toe-plate for horseshoes, provided with lugs to engage a shoe, an opening to receive a calk, a calk engaging said opening,  
 30 ribs or reinforces on the outer face of the plate at each end of the calk-opening and ex-

tending over the lugs which engage the shoe, a lug having an inclined face, and a clamping-bolt having a member engaging the inclined face of said lug.

2. A toe-plate for horseshoes, provided with means to engage a shoe, a slot to receive a calk, and a slot to receive a bolt, a lug having an inclined face, a calk, a clamping-bolt having a member provided with an inclined  
 40 surface on one side and engaging the shoe on the opposite side, and a liner between the inclined adjacent surfaces of said lug and said member, and provided with a tongue engaging the bolt-slot.

3. A toe-plate for horseshoes, provided with means to engage a shoe, a slot to receive a calk, a slot to receive a bolt, a lug having an inclined face, a calk, a clamping-bolt having a member provided with an inclined surface  
 50 engaging said lug on one side and the shoe on the opposite side, and a locking device having members engaging the bolt-slot in the toe-plate, and members engaging the head of the clamping-bolt.

In testimony whereof we affix our signatures, in presence of two witnesses.

GEORGE F. HAILMAN.  
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Witnesses:

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