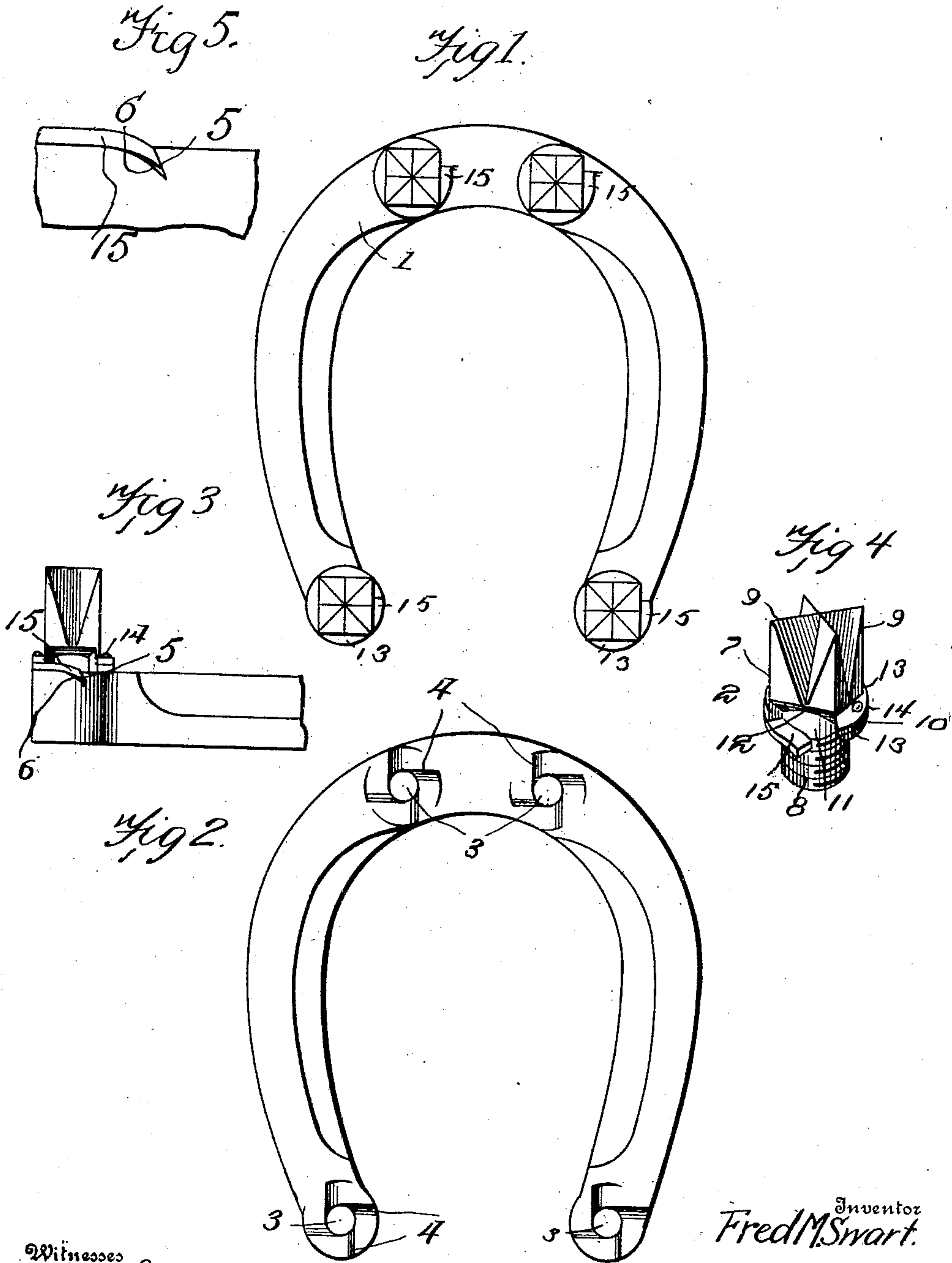


F. M. SWART.
HORSESHOE AND CALK.
APPLICATION FILED JAN. 28, 1908.

908,352.

Patented Dec. 29, 1908.



Witnesses
Hugh H. Ott.

C. C. Hines.

Inventor
Fred M. Swart.

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

FRED M. SWART, OF MARGARETVILLE, NEW YORK.

HORSESHOE AND CALK.

No. 908,352.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed January 28, 1908. Serial No. 413,098.

To all whom it may concern:

Be it known that I, FRED M. SWART, a citizen of the United States, residing at Margaretville, in the county of Delaware and State of New York, have invented new and useful Improvements in Horseshoes and Calks, of which the following is a specification.

This invention relates to improvements in 10 horseshoes and horseshoe calks, the main object of the invention being to provide calks of novel construction adapted to serve equally well as heel or toe calks and to present tread surfaces whereby the horse will be prevented 15 from slipping in any direction upon icy or snowy roads or streets, such surfaces being self-sharpening in action as well as self-clearing, by which the accumulation of snow, ice or other substances therein will be 20 obviated.

A further object of the invention is to provide a calk in which the tread surface consists of a group of blades so relatively disposed as to secure the above-mentioned results, and in addition to strengthen the 25 calk to a material degree and avoid the formation at any period during the lifetime of the calk of rounded surfaces or corners which would tend to turn the foot of the animal and cause a sprain when the foot is not 30 placed evenly or perpendicularly upon uneven surfaces.

A still further object of the invention is to provide novel means for securing the calks to 35 the shoe, by which the calks will be firmly and securely locked in position and yet may be readily removed when occasion requires for the substitution of new calks.

With these and other objects in view, the 40 invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

45 Figure 1 is a bottom plan view of a horseshoe equipped with my invention. Fig. 2 is a similar view of the shoe with the calks removed. Fig. 3 is a view in side elevation of the forepart of the shoe. Fig. 4 is a perspective view of one of the calks detached. Fig. 50 5 is a detail illustrating the construction of the ratchet teeth and pawl.

Referring now more particularly to the 55 drawing, the numeral 1 designates the body of the shoe which may be in general of ordinary construction, it being designed in prac-

tice to make the shoes of established sizes, to provide them with the usual nail grooves and channels, and so construct them that they may be slightly varied in contour in the ac- 60 customed manner to conform to the shape of a particular hoof without affecting the calk holding portions thereof. In the present instance, the shoe shown is of conventional form except that it is circularly enlarged or 65 widened at the heel end to form extended supports for the heel calks and modified in construction at such portions and at the toe for the application of the improved calk, as hereinafter described. In the illustrated dis- 70 closure, a calk 2 is employed upon each heel portion of the shoe and a pair of corresponding calks upon the toe portion, said toe calks being disposed on opposite sides of the longitudinal center of the shoe, but this arrange- 75 ment respecting the toe calks may be modified and more or less calks may be employed as desired.

Each calk-receiving portion of the shoe is formed with a threaded opening 3 and upon 80 the underside of the shoe around each opening is provided a series of ratchet teeth 4, formed by cutting into the material of the shoe, each of said teeth having an inclined or undercut shoulder 5 and a beveled face 85 6 leading thereto, the shoulders and beveled faces of the teeth of the series facing in the same directions. It will be observed that the teeth are tangentially grouped around the opening 3, whereby a certain advantage is 90 obtained, as hereinafter set forth.

Each calk 2 comprises a smooth cylindrical body portion 7 extended upwardly to provide a screw shank 8 to enter the threaded opening 3 in the shoe, and provided with a 95 tread surface comprising a group or series of downwardly extending blades 9. This tread surface is of novel construction, being in general outline of square or rectangular form and in cross-section of cruciform, the inner 100 edges of the blades being integral with each other at the center of the calk. The blades are substantially of wedge form, differing from the conventional wedge in having their sides not only tapering downward to a point 105 or edge but also tapering inwardly from their outer surfaces toward the center of the calk at the point where the blades are united, the broad bases of the blades being of sufficient solidity to withstand a maximum amount of 110 strain and made integral with the body portion 7. As a result of this construction the

blades are rendered self-sharpening in action and self-clearing, and the beveled sides will prevent the retention of snow, ice or other matter tending to accumulate in the spaces
 5 between the blades, while the disposition of the blades gives an increased gripping action at different angles upon a street or road surface to firmly support the foot whether placed down squarely or at an angle and prevents slipping of the foot either forwardly,
 10 rearwardly or laterally in either direction. If in use, the outer edges of the blades should be broken off, the remaining portions thereof will still form an effective support which increases in area as the calk wears down.

The body portion 7 is formed with an outwardly extending head or flange 10 which partially encircles the same, the spaced ends of said flange providing an intervening slot
 20 11 which communicates with a tapered recess 12 formed in the adjacent side of the body portion. Arranged upon the upper surface of said flange is a curved spring strip 13 which surrounds the body portion 7 and is of greater length than the circular length
 25 of the flange 10. The strip is secured to the flange by one or more rivets 14 or equivalent fastening devices and is projected at one end above the slot 11 to form a spring tongue or
 30 dog 15 to engage the ratchet teeth 4. The tongue is adapted under pressure to bend downward through the slot 11 into the recess 12 to permit the screw shank to be readily threaded into the opening 3 without objectionable resistance therefrom. It will be
 35 observed that the tongue has a beveled tip to engage the shoulder 5, by which, through the tangential arrangement of the ratchet teeth engaged thereby, said tongue will be pressed inwardly and upwardly or wedged into the
 40 space between the shoulder 5 and face 6 and forced into securer engagement with the shoulder 5 when through pressure the shank tends to unscrew or turn in a retrograde direction in the opening 3.

In the operation of applying the calks to the shoe, it will be understood that the shank 8 is inserted into the particular threaded opening 3 and rotated to the right, the spring
 50 tongue in this operation sliding over the ratchet teeth, and that when the shank is screwed in to the desired extent the tongue will slip down into engagement with one of said teeth and bear against the shoulder 5
 55 thereof to lock the calk against retrograde rotation, by which it will be secured firmly in position. It will be apparent that in this operation of applying the calk the tongue is free to recede into the slot 11 and recess 12
 60 as it rides in contact with the bottom face of the shoe, thus allowing the calk to be fully screwed without objectionable resistance. The calk will accordingly be locked against

any possible liability of displacement upon the shoe, but by inserting a suitable tool between the beveled surface 6 of the tooth with
 65 which the tongue is engaged and the latter, said tongue may be forced out into the slot 11 and the calk then conveniently unscrewed, whereby a worn calk may be easily removed
 70 for the substitution of a new one therefor. The rectangular outline of the tread portion formed by the blades 9 provides a surface which may be engaged by an ordinary wrench for turning the calk in either direction,
 75 thus obviating the necessity of specially constructing the calk for the application of an applying and removing tool.

Having thus fully described the invention, what is claimed as new is:—

1. A horseshoe provided with an opening and a series of ratchet teeth arranged tangentially around the opening, in combination with a calk provided with a screw-shank to enter the opening and a marginal flange
 85 upon its body portion adjacent said shank, said flange being partially cut away to provide a slot at one side thereof, and a spring strip secured at one end to the flange and having its opposite or free end extended in
 90 line with the slot, said extended end being bent at an angle to provide a tongue free for movement in said slot to engage and interlock with said ratchet teeth.

2. A horseshoe provided with a threaded
 95 opening and having a series of tangential ratchet teeth surrounding the opening, each tooth being provided with an undercut shoulder and a beveled surface leading thereto, a calk having a body portion to bear
 100 against the underside of the shoe and a threaded shank to engage said threaded opening in the shoe, said body portion being slotted at one side, and a partially circular spring dog secured to the upper side of said
 105 body portion and provided at one of its free ends with a tongue disposed opposite said slot and bent upwardly at an angle to engage either of said ratchet teeth, said tongue having a beveled end to engage the beveled
 110 shoulder of a tooth and being of less depth than the space between the shoulder and contacting beveled face of the tooth, whereby it is adapted to wedge between said surfaces upon retrograde movement of the calk, the
 115 arrangement of the tongue opposite the slot in the calk adapting said tongue to be depressed for disengagement from the ratchet tooth with which it is engaged.

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

FRED M. SWART.

Witnesses:

H. D. SWART,
 N. D. OLMSTEAD.