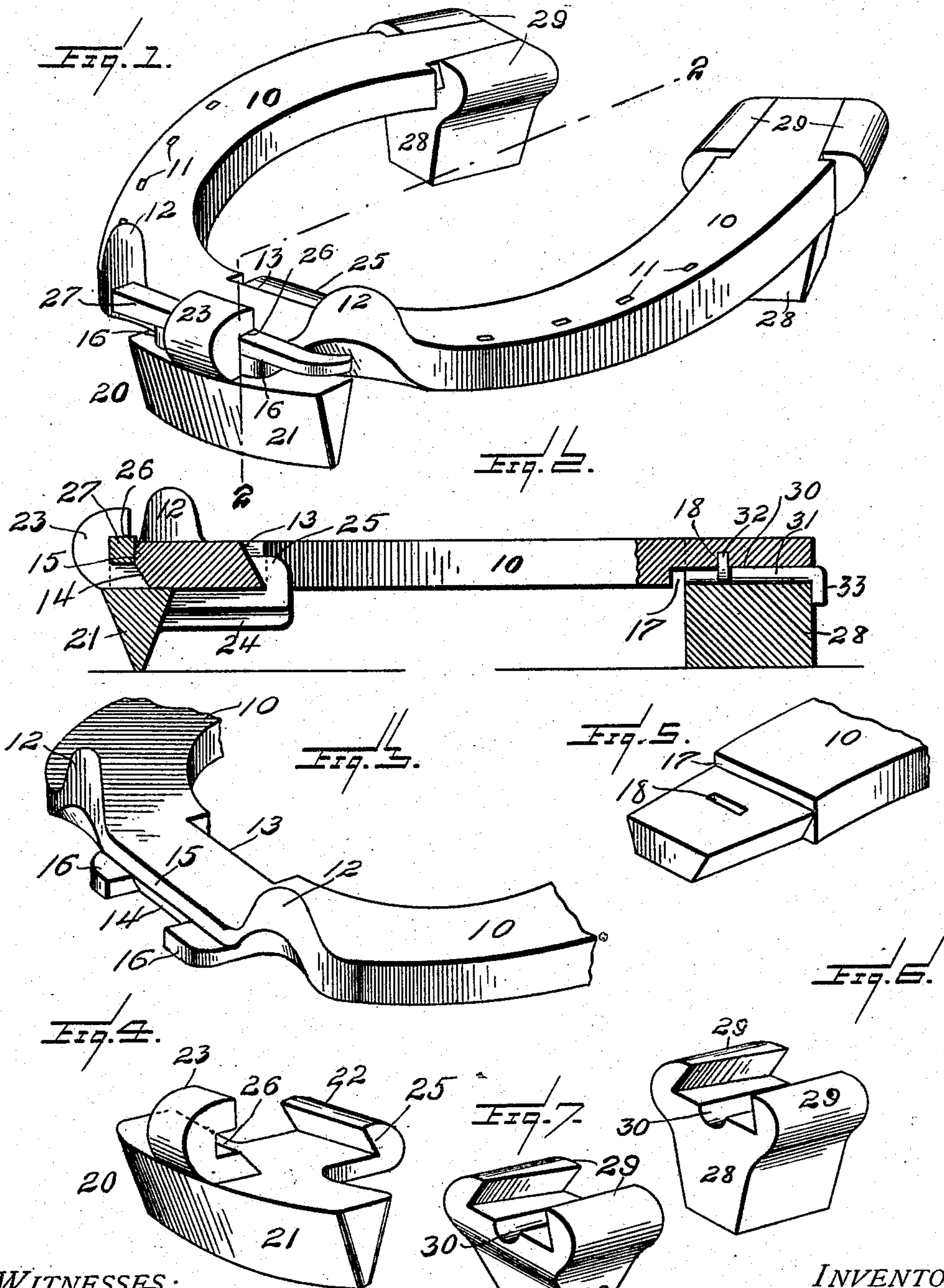


T. J. LEVEY.
HORSESHOE.
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WITNESSES:

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HORSESHOE.

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To all whom it may concern:

Be it known that I, THOMAS J. LEVEY, a citizen of the United States of America, residing at Washington, in the District of Columbia, United States of America, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in horseshoes, and particularly constructions having removable heel and toe calks.

Among the objects of my invention, are the provision of a horseshoe of this type in which the calks are readily attached and detached; in which the calks, when in position, are securely locked against movement relative to the main portion of the shoe; in which the locking means for each calk consists of a single metallic element; in which the shoe and calks have complementary surfaces adapted to position the calks in proper location to receive the locking means; in which the calks may be attached to or detached from the shoe while the shoe is in position, on the animal's foot, and in which there is no liability of any of the removable parts of the shoe being forced into contact with the foot of the animal in use.

Other objects are to provide a construction of shoe and calk which is simple and efficient in operation, durable in construction, and which is of relatively low cost of manufacture.

To these and other ends, the nature of which will be readily understood as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, in which similar reference characters indicate similar parts in each of the views—Figure 1 is a perspective view showing a horseshoe and calks constructed in accordance with my invention, the calks being shown in operative po-

sition. Fig. 2 is a sectional view thereof, taken in line 2—2 of Fig. 1, and also showing the heel of the shoe and its heel calk in section. Fig. 3 is a perspective detail view of the toe portion of the body of the shoe. Fig. 4 is a perspective view of the toe calk. Fig. 5 is a perspective view of one of the heel portions of the body of the shoe. Fig. 6 is a perspective view of one of the heel calks. Fig. 7 is a detail view of a modified form of heel calk.

10 designates the body portion of the shoe having a substantially flat upper surface and being of substantially equal thickness throughout its length, the shoe being provided with the usual nail-openings 11. The toe portion of the body 10 is provided on its periphery with two vertically - extending portions 12, the inner faces of which are adapted to contact with the foot of the animal, said portions being spaced substantially equi-distant from a line drawn centrally through the shoe from toe to heel, said portions serving the purpose of the single projection generally found on shoes.

For the purpose of receiving the toe-calk presently described, the toe of the body portion has its inner face beveled, as at 13, the inclination extending forwardly toward the top plane of the shoe, thereby forming two surfaces having their planes crossing each other on the bottom plane of the shoe, said surface planes extending at acute angles relatively to each other. The outer face of the toe of the body portion is also beveled, as at 14, said beveled face being substantially parallel with the face 13, said face, however, being of less width from its bottom to its upper edge than the width of the face 13, the upper edge of the face 14 being at a point intermediate the top and bottom planes of the shoe. That portion of the outer face of the toe located above the upper edge of the face 14 and indicated at 15, extends vertically in a line at direct right angles to the plane of the top surface of the shoe. Each of the beveled faces is located substantially central of the toe portion, the face 14 being

of less length than that of the face 13. The toe portion is further provided with two forwardly extending lugs 16 spaced apart a distance equal to the length of the face 14, said lugs having a width equal to the distance between the top and bottom edges of the face 14, the opposing faces of said lugs being parallel with each other and extending in directions at right angles to the plane of the face 15. By this construction, the inner and outer faces of the toe of the shoe are provided with opposing shoulders on opposite sides of a line drawn centrally and lengthwise of the shoe, said shoulders forming abutments against a lateral movement of the toe calk, as presently described.

Each heel portion of the shoe is cut-away, as at 17, on its bottom face, and has its inner and outer face beveled both vertically and longitudinally, the inclination being inwardly from the bottom to the top planes of the shoe and from the forward to the rear planes of the cut-away portion of the heel, the inclinations of the inner face being in opposition to those of the outer face, thereby providing one member of a dovetail construction, the opposing member being carried by the heel calk, as presently described. The under face of the heel portion is also provided with a recess 18 for a purpose presently described.

The toe calk 20 consists of the body portion 21 and the positioning and securing portions 22 and 23. The main portion has a generally flat upper surface which is adapted to contact with the bottom face of the toe portion of the shoe as shown in Fig. 2, the front of the portion 21 having a downwardly-extending portion of suitable configuration to form the calk proper, that part of the portion 21 lying in the rear of the calk proper being of sufficient thickness to support the portion 22 and of a width substantially equal to the distance between the opposing shoulders located on the inner face of the toe of the shoe heretofore described. For the purpose of further strengthening the rear part of the portion 21, a web or rib 24 (shown in Fig. 2) is provided. The portions 22 and 23 are formed integral with the portion 21, the portion 22 being in the form of a vertically-extending lip 25 the inner face of which is inclined to complementally fit the face 13 of the shoe, said lip, however, having the vertical length of its inclined face less than the similar length of the face 13, as shown in Fig. 2, thereby retaining the lip entirely below the top plane of the shoe. The portion 23 is in the form of a vertical extension having a laterally extending recess or groove 26, said groove approximately corresponding in vertical width and opposing the face 15 of the shoe, the portion of the extension below the groove being beveled to complementally fit

the inclined face 14. The portion of the extension above the groove is of sufficient thickness to provide sufficient support to the fastening pin 27 which is adapted to extend through the groove as presently described. The groove 26 may be formed wedge-shaped, or, if desired, may have its walls extend in parallel planes; in either case the pin 27 is formed to correspond with the configuration of the groove. The length of the extension 23 is equal to the length of the distance between the opposing shoulders formed on the outer face of the toe portion of the shoe. The extension is shown as of less length than the length of the lip; the amount of difference in these lengths does not affect the operation of the shoe, and it will be understood that this difference may be more or less than that shown in the drawings.

In placing the toe calk in position, the calk is slipped under the toe of the shoe and the complementary faces of the shoe and lip brought into contact. The calk is then operated to bring the upper face of the calk into contact with the bottom face of the shoe, during which operation the inclined faces of the extension and shoe cooperate to properly position the lip in contact with the shoe; this positioning placing the lower plane of the groove 26 in alinement with the upper face of lugs 16. The pin 27 is now inserted through the groove and locked in position by having its thinner end (if the pin be wedge-shaped) bent into the recess of the shoe formed during the upsetting of the metal of the latter to form the portion 12. In case the pin is equal in size from end to end, both ends of the pin are bent into the recesses, this latter operation being provided for the purpose of preventing the pin from being withdrawn.

By this construction it will be seen that there is no portion of the calk which projects above the plane of the top of the shoe with the exception of the extension portion 23 and this is located in a position where contact is not made with the periphery of the foot of the animal; that the configuration of the calk and shoe is such that the operation of moving the calk to its seat properly positions it and at the same time tightens the fastening portion of the calk on to the shoe, and that in placing the calk in position no portion thereof is required to pass into the plane of the top of the shoe or into contact with the foot of the animal; that the calk is held against lateral displacement by reason of the shoulders formed on the front as well as the back of the toe of the shoe, this feature also preventing any liability of rocking laterally under excessive strain in use; that the calk is held against vertical movement relative to the shoe by reason of the inclined faces of the lip and shoe and the placing of the pin across the top of the lugs 16; and that the pressure placed

on the calk in use causes the parts to more firmly engage by reason of the inclined faces of the extension and the shoe.

To remove the calk it is necessary only to remove the pin 27; should the calk have become so tight, as by rust, as to prevent its dropping off upon the removal of the pin, a tap of a hammer on the front of the calk will loosen it owing to the inclined faces.

The heel calks, designated as 28, are formed of the main calk portion, which may be of desired form, and the securing portion, the latter being provided mainly by the vertically-extending lips 29 opposing each other and having inner inclined faces formed to complementally engage the inclined faces of the heel of the shoe. The upper face of the calk portion is formed with a groove or recess 30. The heel calk is secured in position by a pin 31.

To secure the heel calk in position, the pin 31 is first placed in position in contact with the bottom face of the shoe with the head 32 extending within the recess 18, thereby providing a projecting rib for the bottom of the shoe over which the calk is slipped, the pin (or rib) lying within the recess 30, the groove and pin having complemental configuration to permit of such slipping movement. When the calk has been slipped into position where the inclined faces of the lips and shoe engage, a tap of a hammer on the end of the calk (if a tighter fit is desired) can be given, after which the exposed end of the pin is bent downward as at 33, thereby locking the calk against movement in a direction to withdraw it, movement in the opposite direction being prevented by the wedge-shape form of the shoe and calk-lips.

While the lips 29 are shown as extending to the plane of the top of the shoe, it will be obvious that by decreasing the vertical length of the inclined faces of these lips, the plane of the top of the shoe may be permanently located above that of the calk without materially affecting the engagement of the calk and shoe.

To disengage the heel calks it is necessary only to straighten the pin 31, whereupon the calk can be slipped off, the tap of a hammer releasing any tendency of the calk to bind.

By reason of the manner of mounting the heel calks, it will be readily understood that the position of the calks on the foot of the animal can be had with accuracy, the distance between the inclined faces of the lips 29 determining what portion of the heel of the shoe will be occupied by the calk. And it will be readily understood that each of the calks can be placed in position, or removed, without affecting the position of the shoe on the animal, while the fact that all portions of the shoe which cooperate with the calks to retain the latter in position are protected

from wear by the calks, permits of the use of the shoe for a greater length of time, the wear of the intermediate portions of the shoe, if there be any wear, not affecting the retaining portion of the calks or shoe.

Obvious additional advantages, such as the ease with which the calks may be inserted or removed, the durability of the shoe, the positive locking of the calks, and low cost of manufacture are not set forth in greater detail.

While I have described a preferred form of construction of parts, it is to be understood that modifications may be made therein as by changes in the proportion of parts, etc., and I desire it to be understood that I may make such changes and modifications therein as may fall within the spirit and scope of the invention as expressed in the accompanying claims.

Having now described my invention, what I claim as new is:

1. In a horseshoe, a shoe body-portion, a toe-calk therefor, said calk having opposing surfaces extending in parallelism with each other and formed to engage complemental faces of the front and rear of the toe of the body-portion, said opposing surfaces being located entirely below the top plane of the body-portion, and means carried by the calk for securing the calk when in position, said means being located entirely without the normal peripheral face of the body-portion.

2. In a horseshoe, a shoe body-portion having the inner and outer faces of its toe portion formed with inclined surfaces extending in parallelism, said faces being of unequal vertical length, a toe calk having faces complemental to said inclined surfaces, lugs carried by the body-portion and extending over the calk, and means extending within the calk and over the lugs for securing the calk in position.

3. In a horseshoe, a shoe body-portion having the inner face of its toe portion formed with an inclined surface and having the outer face of said toe portion formed with an inclined and a vertical surface, said inclined faces being in parallelism, lugs projecting from the outer face of the toe-portion, the upper and lower faces of the lugs being in alignment with the similar edges of the inclined face on the outer face of the toe-portion, a toe calk having inclined faces complemental to the inclined surfaces of the body-portion, said calk having a recess opposing the vertical surface of the toe-portion, and a pin extending through said recess and over the lugs for securing the calk in position.

4. A toe-calk for horseshoes, comprising a calk portion, a lip extending vertically from the rear thereof, said lip having a face inclined inwardly from its bottom to its top

edge, said calk also having a vertical extension in opposition to said lip, said extension having an inclined face extending in parallelism with the inclined face of the lip.

- 5 5. A toe-calk for horseshoes, comprising a calk portion, a lip extending vertically from the rear thereof, said lip having a face inclined inwardly from its bottom to its top edge, said calk also having a vertical extension in opposition to said lip, said extension

having an inclined face extending in parallelism with the inclined face of the lip, the inclined faces of said lip portion and extension being of different lengths.

In testimony whereof I affix my signature 15
in the presence of two witnesses.

THOMAS J. LEVEY.

Witnesses:

RICHARD A. EDELIN,
N. LOUIS BOGAN.