No. 819,086. PATENTED MAY 1, 1906.

H. D. SHAIFFER.

HORSESHOE.

APPLICATION FILED AUG. 9, 1904.

Fig. 1.

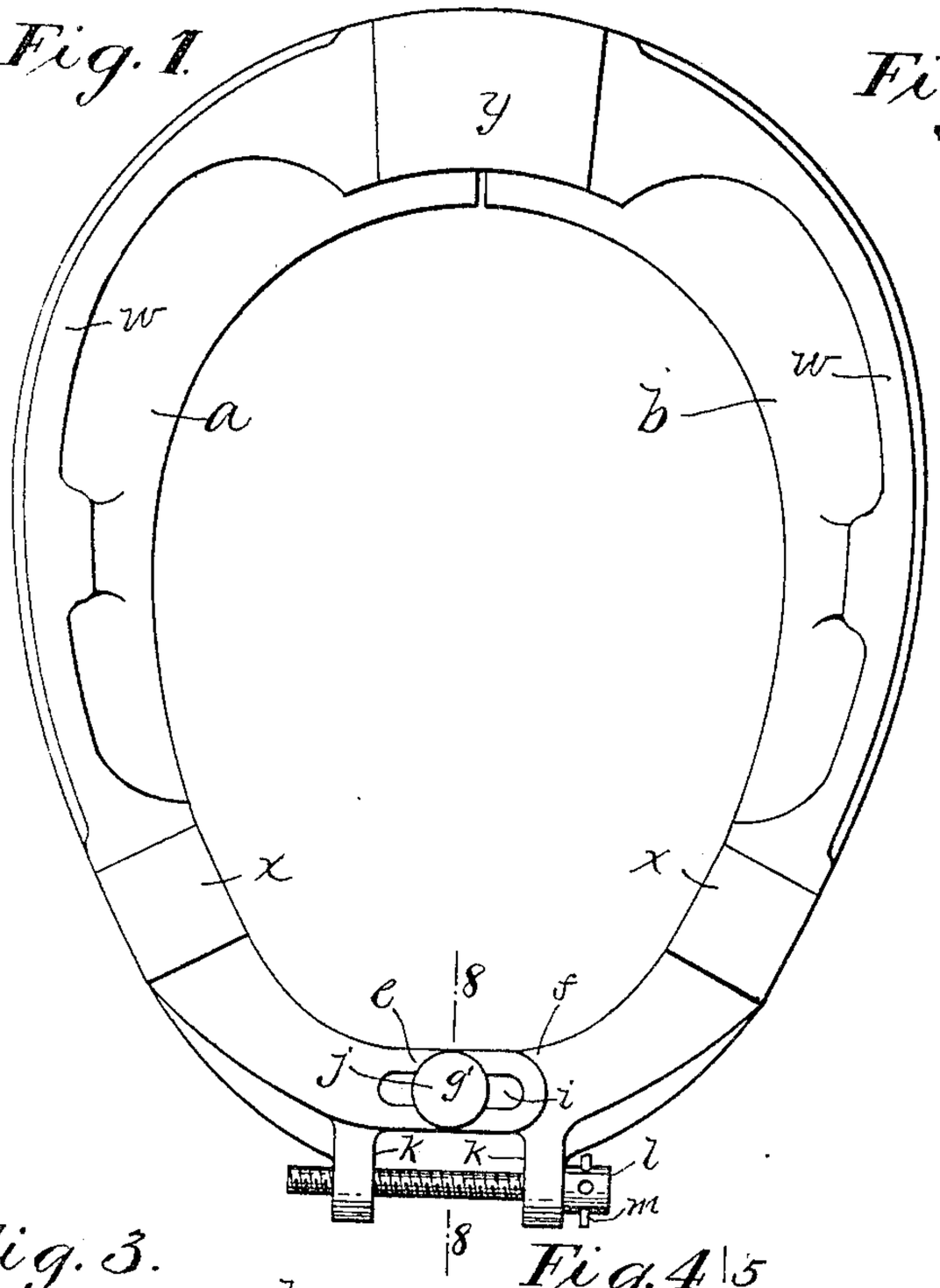


Fig. 2.

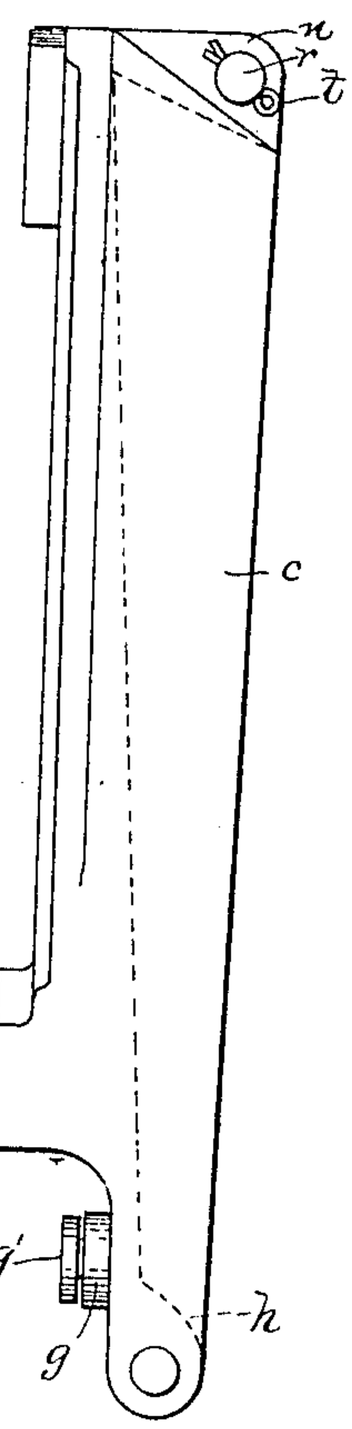


Fig. 3.

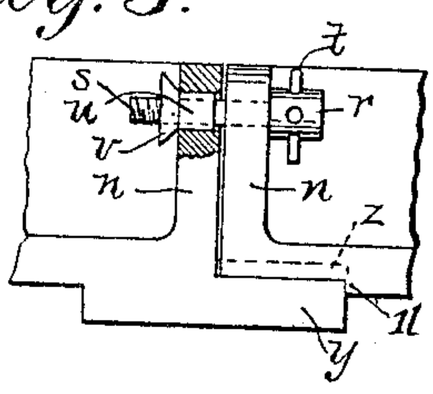


Fig. 4.

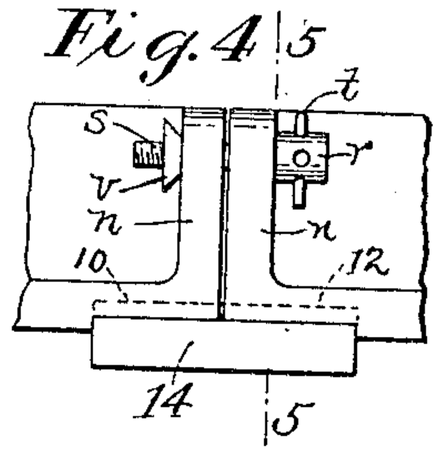


Fig. 5.

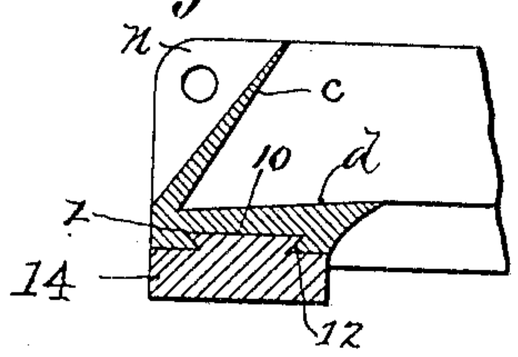


Fig. 6.

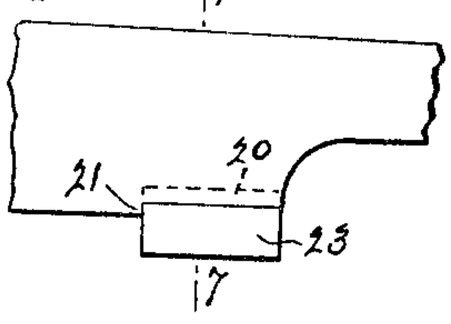


Fig. 7.

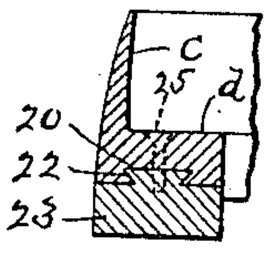
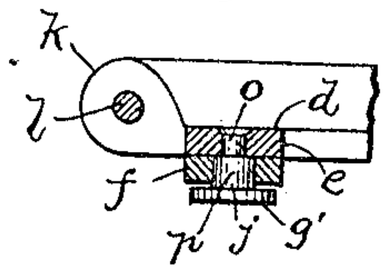


Fig. 8.



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HORSESHOE.

No. 819,086. Specification of Letters Patent. Patented May 1, 1906.

Application filed August 9, 1904. Serial No. 220,060.

To all whom it may concern:

Be it known that I, HARRY D. SHAIFFER, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Horseshoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to horseshoes, and has for its object to provide an improved form of horseshoe that may be secured to the hoof without the use of nails and that may be readily removed when desired.

The object of the invention is to improve the details of construction of the horseshoe described in Letters Patent granted to me December 28, 1897, No. 596,248.

More specifically, the object of the invention is to prevent loosening or accidental detachment of the parts and to provide a stronger and more durable shoe.

The invention consists in certain novel details of construction hereinafter fully described, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a bottom view of the shoe. Fig. 2 is a side view of Fig. 1. Fig. 3 is a front view of the calk and shoe with a portion of flange broken away to show locking device at front of shoe. Fig. 4 shows a detachable toe-calk. Fig. 5 is a section on line 5 5, Fig. 4. Fig. 6 shows a detachable heel-calk. Fig. 7 is a section on the line 7 7, Fig. 6. Fig. 8 is a section on line 8 8, Fig. 1.

a and *b* designate the two parts or halves of the shoe, which is made of different shapes and sizes to fit different hoofs. Within a certain limited range, however, and in cases of emergency within a fairly wide range a shoe of any given shape or size may be accommodated to different hoofs by means of the adjusting means hereinafter described.

Each of the parts or halves is provided with an upwardly and inwardly extending flange *c*, arranged so as to rest against the outer surface of the hoof, and a flange *d*, extending inwardly and somewhat upwardly and suitably shaped to fit the concave under surface of the hoof. An extension *e* extends from the rear end of the part or half *a*, and a similar extension *f* extends from the rear end of the part or half *b*. Each extension consists of a substantially flat flange *g*, which is practically a continuation of the flange *d*, and an approximately vertical flange *h*, which is practically a continuation of the flange *c*. The end of the flange *g* of extension *e* overlies the end of flange *g* of extension *f*. The latter is provided with a slot *i*, and a pin *j* extends through the flange *g* of extension *e* and enters the slot *i*. The rear ends of flanges *h* are provided with rearwardly-extending lugs *k*, one of which has a threaded orifice engaged by a thread-bolt *l*, which also extends through a plain orifice in the other lug. A cotter-pin *m* is adapted to extend through orifices in the head of the bolt. Lugs *n* extend from the front of flanges *c* and are provided with plain orifices, through which extends a pin *r*.

Considerable difficulty having been experienced in holding in position the pin *j*, I have devised the following form of pin: The pin consists of a comparatively contracted end portion *o*, a comparatively enlarged intermediate portion *p*, and a flat disk-shaped head *q*. The portion *p* extends through the slot *i*. The shoulder formed by the junction of the enlarged and contracted portions of the pin *j* rests against the flat under face of the flange *g* of extension *e*. The upper end of the contracted end of the pin is upset within the orifice in the extension *e*, through which the pin extends. By the foregoing means the pin is firmly held in position. To remedy a similar difficulty in holding in position the pin at the front of the shoe, I provide the following construction. The pin consists of a shank *s*, threaded at one end and provided with an orificed head *r* at the other end, through which a cotter-pin *t* is adapted to pass. A threaded sleeve works on the threaded shank and consists of the shank *u* and a conically-shaped head *v*. To fasten the lugs *n* together, the pin is placed in position and the threaded sleeve screwed up tight, entering the opening in the adjacent lug until the head of the sleeve engages the lug. The cotter-pin *t* is then passed through the head *s*. The pin is thus held firmly in position and the threaded end of the pin is protected from wear by the inclosing sleeve.

While the inner face of the flange *d* of each part or half is inclined inwardly and somewhat upwardly nearly or quite throughout its length, as hereinbefore described, the outer face of this flange at its junction with the flange *c* is flat or horizontal. This horizon-

tal base *w* of the shoe is of varying width, being widened out to nearly or quite the width of the shoe at its front and rear ends and comparatively narrow between its ends. This narrow portion is of uniform width except at a point approximately midway of the shoe, where it is for a short distance somewhat wider than the narrow portion of the base, although of less width than the flange *d*, forming, in fact, a reinforcing or strengthening lug.

The heel-calks are preferably made integral with the shoe, which is effected by thickening the rear ends of the flange *d* of each part or half, as at *x*. The calks *x* are preferably formed at the extreme rear of the base or at the point where the flanges *d d* merge into or unite with the flanges *g g*. The toe-calk is also preferably made integral with the shoe, being constructed as follows: The extreme front of the flange *d* of the part or half *b* is made substantially thicker than the remainder of the flange, and projecting from the extreme front of the flange is lug *y*, integral with the flange. The lower face of this lug is flush with the bottom of the thickened front of flange *d*. The lug is of such thickness that its upper face is somewhat above the level of the lower face of that portion of the flange *d* back of its thickened front end. Integral with and above the lug *y* is a projection *z*, which is of dovetail shape—that is, having side walls inclining upwardly and outwardly. The width of lug *y* is the same as the width of flange *d*—that is, its side walls are flush with the side walls of the front end of flange *d*. The projection *z*, however, is of substantially less width than the lug *y* and flange *d*. The lug *y* and the thickened front end of flange *d* form the toe-calk.

The extreme front end of flange *d* of part *a* of the shoe is provided with an inset 10 in its lower face, forming a shoulder 11 at the junction of the inset with the base of the flange *d* immediately back of the inset. This inset is of a depth equal to the distance between the plane of the upper face of lug *y* and the plane of the base *w* and is of a length substantially equal to the length of lug *y*. Formed in the flange *d* of part *a* above the inset 10 is a recess 12, of substantially the form and dimensions of the projection *z*.

It will be understood that in bringing together the two parts or halves of the shoe the lug *y* enters the inset 10 and the projection *z* enters the recess 12.

If it is desired to make the calks separate from the shoe, I adopt the construction shown in Figs. 4, 5, 6, and 7. The front of flange *d* of part *a* is inset and recessed, as before described. The front of flange *d* of part *b* is inset and recessed the same as the flange *d* of part *a*. The toe-calk is of a length slightly less than the combined length of the two insets 10 and recesses 12 and consists of a base 13, substantially thicker than the depth of insets 10 and adapted to fit therein, and a projection 14, corresponding substantially in cross-section with the cross-section of recesses 12 and adapted to fit therein. The toe-calk may, if desired, be driven tightly within the inset and recess of one of the flanges *d* or it may be entirely loose. The recesses 10 and shoulders 11 prevent the calk from being accidentally stripped off by forcible sidewise contact. The same principle is adopted in attaching separate heel-calks—that is, the rear of each flange *d* is inset at 20, forming a shoulder 21 at the junction of the inset with the base of the flange *d* immediately in front of the inset. Formed in the flange *d*, above the inset 20, is a dovetail recess 22, similar in shape to the recesses 12 for the toe-calk. The heel-calk is of a length substantially or nearly equal to the length of inset 20 and recess 22 and consists of a base 23, substantially thicker than the depth of inset 20 and adapted to fit therein, and a projection corresponding substantially in cross-section with the cross-section of recess 22 and adapted to fit therein. The heel-calk may be held in place by being tightly driven within its inset and recess, or it may be held in place by means of a screw or rivet 25, extending through the flange *d* and entering the calk.

The shoe is preferably beveled off at the junction of the outer faces of flanges *c* and *d*, so as to avoid a sharp corner.

In practice the shoe is placed on the horse's hoof preferably in the following manner: The overgrowth of the horny substance at the edge of the base of the hoof is pared or trimmed off level, and the shoe is then placed loosely on the hoof by swinging the sections toward each other, the center of oscillation being the pin *j*. The sleeve *u v* is then turned to bring the front ends of the parts or halves together, clamping the front ends with a moderate pressure upon the hoof, while the rear ends of the parts or halves fit comparatively loosely on the hoof. The threaded bolt *l* is then turned to bring the rear ends of the sections toward each other, thus exerting a clamping pressure upon the whole hoof, but a greater pressure upon the back thereof, and at the same time exerting a forward pressure upon the hoof, or more correctly causing a backward, upward, and lateral pressure of the shoe upon the hoof. The threaded bolt *l* and sleeve *u v* may be alternately turned, if desired, until the shoe is clamped with the desired firmness upon the hoof. The cotter-pins *t* and *m* are then placed in position, thereby holding the threaded bolt *l* and the pin *s* from turning.

The foregoing construction is such that the danger of loosening of the parts or halves from each other or from the hoof is reduced to a minimum if not altogether eliminated.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. A horseshoe comprising two parts or halves, each part or half having an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the under surface of one of the inwardly-extending flanges being cut away at its front end to form a shallow inset and a recess above the inset, the inwardly-extending flange of the other part being thickened at its front end, a lug, extending beyond the front end of the last-named flange, whose under face is substantially flush with the under face of said thickened portion and whose side walls are substantially flush with the side walls of said thickened portions, a projection above said lug, said lug being adapted to extend within and project below said inset and the projection being adapted to extend within said recess, substantially as described.

2. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the last-named flange comprising a horizontal base, widened out at its front and rear ends, and an upwardly-inclined portion within the base and between the latter's widened ends, substantially as described.

3. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the last-named flange comprising first, a horizontal base of substantially the width of the flange at its front and rear ends, relatively narrow between its ends and somewhat widened at a point substantially midway of its ends, and secondly, an upwardly-inclined portion adjacent to its inner edge, substantially as described.

4. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, each part or half being provided with a rearward extension, one of which is slotted, and a pin having a relatively contracted upper end engaging the other extension, a disk-shaped head at its lower end, and a relatively enlarged intermediate portion extending through the slot, substantially as described.

5. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, each part or half being provided with a rearward extension, one of which is slotted while the other of which is orificed, and a pin having a disk-shaped head underlying the slotted extension, a relatively enlarged portion above the head and extending through the slot, and a relatively contracted upper end extending into said orifice and upset therein, substantially as described.

6. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a threaded pin extending through the orifices in said lugs, and a threaded sleeve on said pin adapted to extend within one of said orifices, substantially as described.

7. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a headed pin extending through the orifices in said lugs, the end opposite the head being threaded, and a threaded sleeve engaging said pin and having a shank adapted to enter the orifice in one of said lugs and a conically-shaped head adapted to abut against said lug, substantially as described.

8. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a pin extending through the orifices in said lugs, one end of said pin being threaded, a threaded sleeve on said pin having a shank adapted to extend within the orifice in, and a head adapted to abut against, one of said lugs, an orificed head at the other end of said pin adapted to abut against the other of said lugs, and a cotter-pin adapted to extend through said orificed head, substantially as described.

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 27th day of July, 1904.

HARRY D. SHAIFFER.

Witnesses:
M. M. HAMILTON,
WILLIAM B. MARKS.