

APPLICATION FILED SEPT. 25, 1908.

924,694.

Patented June 15, 1909.

2 SHEETS—SHEET 1.



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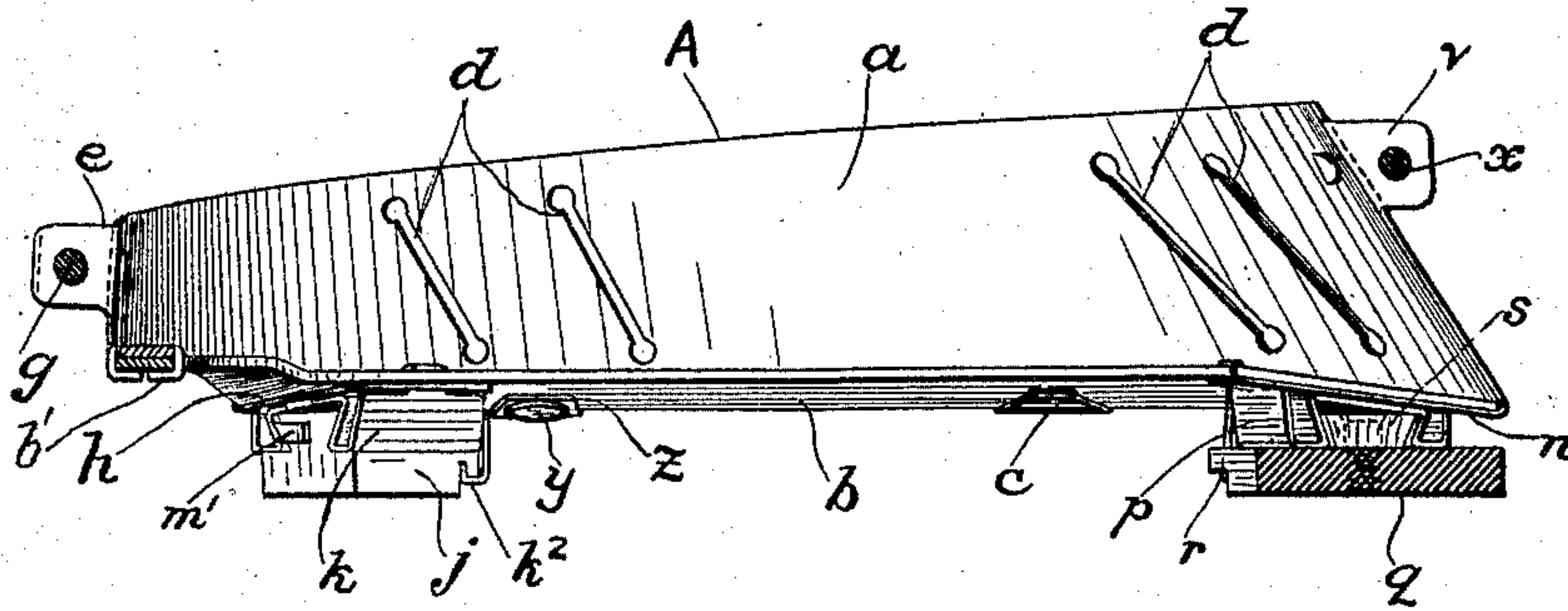


FIG. 3.

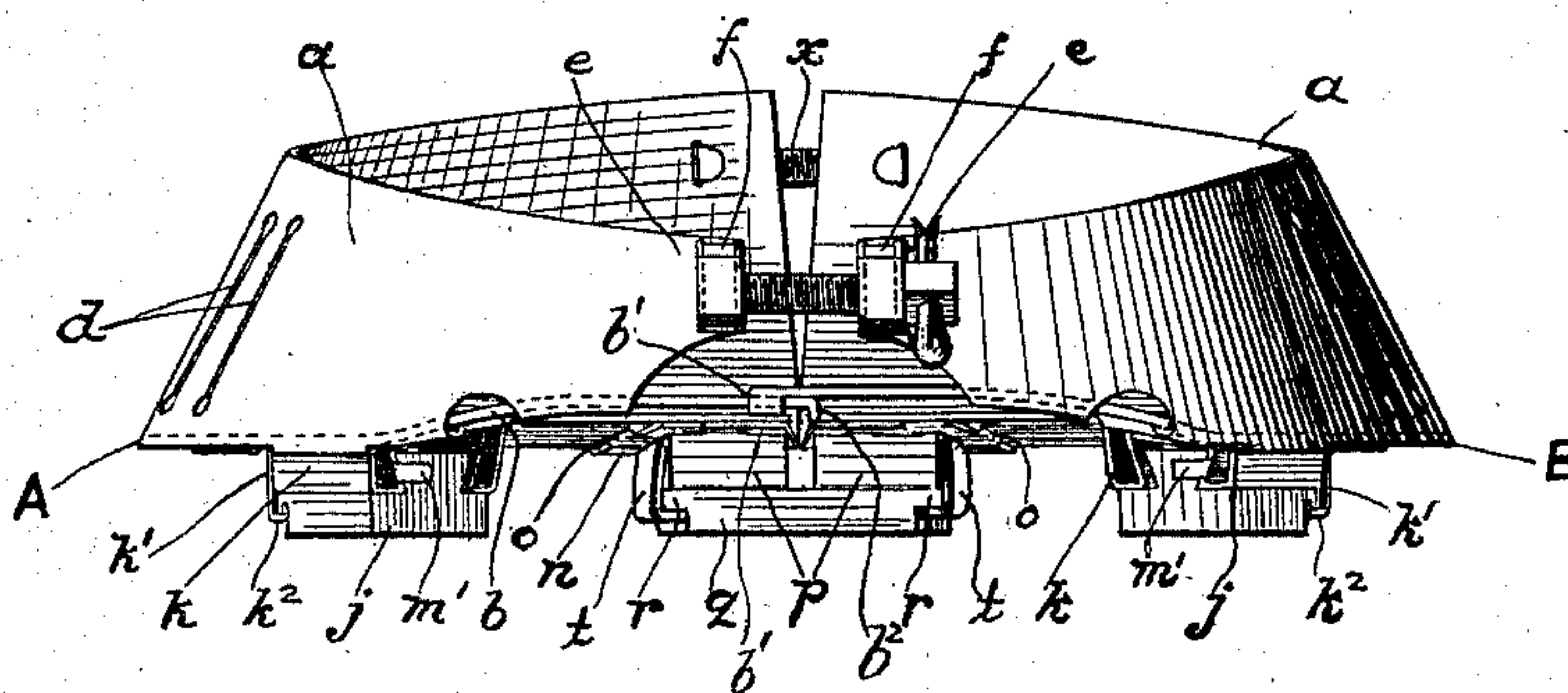


FIG. 4.

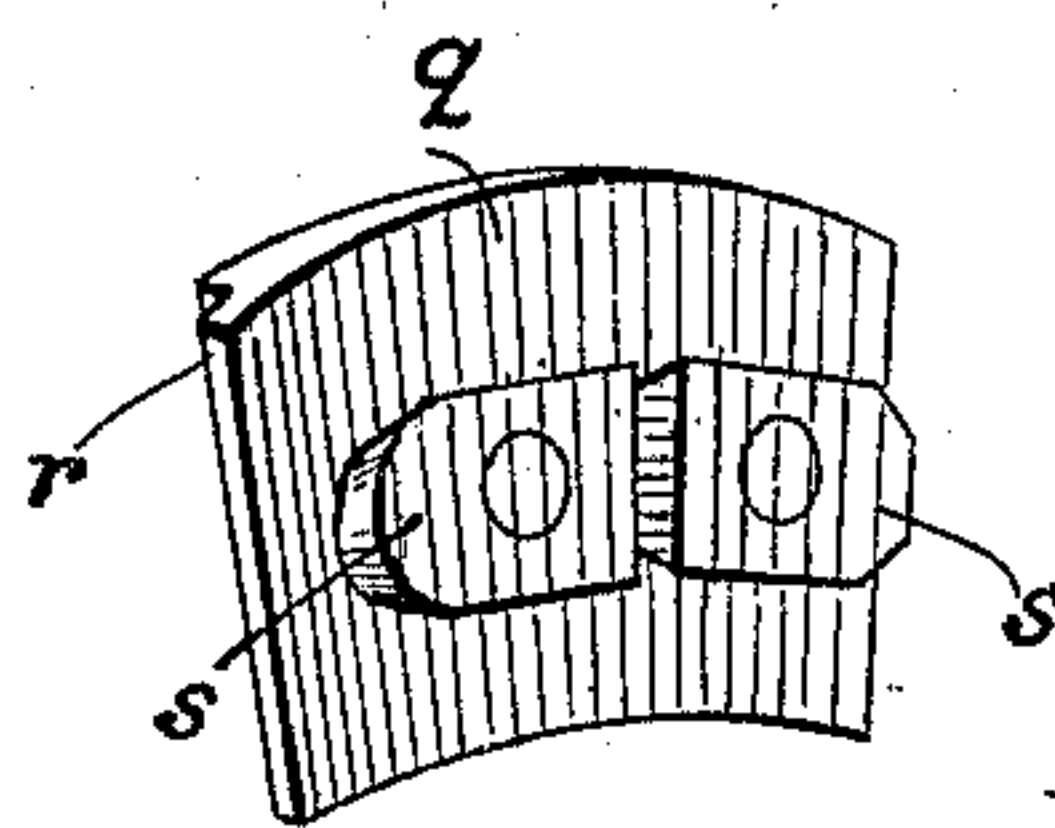


FIG. 5.

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NAILLESS HORSESHOE.

No. 924,694.

Specification of Letters Patent.

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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 Nailless 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 a new and 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 invention is an improvement on the horseshoe set forth and claimed in Letters Patent No. 596,248, issued to me December 28, 1898.

The invention comprises various features of construction by means of which the weight of the shoe is substantially reduced, a shoe of a given size may be secured to different sized hoofs, provision is made for the unobstructed growth of the hoof while the shoe is on the hoof, the application and removal of the shoe is facilitated, the separable calks are held in place without screws, and many other advantages secured; all of which novel features are hereinafter described in detail.

In the drawings: Figure 1 is a plan view of a shoe embodying my invention. Fig. 2 is an inverted plan view of the same. Fig. 3 is a side elevation of the same. Fig. 4 is a rear elevation of the same. Fig. 5 is a perspective view of the toe-calk.

A, B designates the two parts or halves of the shoe. Each of the two parts or halves comprises an upwardly and inwardly extending side or upper flange *a* arranged so as to rest against the outer surface of the hoof and base flange *b* extending inwardly and somewhat upwardly from the outer edge of the flange *a* and shaped to fit the concave under surface of the hoof. The two flanges are made separately, the base flange, upon which the greatest strain occurs in operation, being made substantially heavier than the upper flange. The side flange is provided with one or more projections *c*, which extend inwardly from its lower edge, underlie the base flange and thence extend through slots in the base flange, the ends of the projections being bent outwardly so as to

overlie the base flange; by which the two flanges of a half or part are held securely together.

Each side flange is provided with a series of slots *d*, these slots preferably extending downwardly and inclined somewhat forwardly and being enlarged at their ends. The provision of these slots allows more or less growth of the hoof while the shoe is on the hoof, even without the projections *z* and rivets *y*, hereinafter described, as the upper flanges, being of thin material, will expand or bulge outwardly between the slots as the hoof grows. The shoe may thus remain on the hoof for an indefinite time without injuring the hoof. Each side flange is also provided with one or more slotted projections *z*, which extends inwardly from its lower edge, and underlies the base flange, being held in place by a rivet *y* extending through the slot of the projection and the metal of the base flange. This construction not only holds the base and side flanges together, but permits the hoof to grow while in the shoe, the great pressure produced by this growth forcing the side flange outwardly, the projection *z* sliding on the rivet notwithstanding that the head of the rivet is forced against the projection and normally restrains the side flange from sliding.

At the rear of the hoof each side flange is entirely disconnected from its corresponding base flange, so that when the rear ends of the upper flanges of the two halves of the shoe are brought toward each other in the application of the shoe to the hoof (as will be hereinafter more fully described), they will be expanded or contracted independently of the rest of the shoe so as to hold the shoe on the hoof with the desired tightness notwithstanding variations in shape among different hoofs of approximately the same size.

The rear ends of the upper flanges *b* are brought toward each other, as in the shoe of Patent No. 596,248, by means of rearwardly projecting lugs engaged by a bolt or screw. In my improved shoe, each lug is formed by bending a rear wing *e* of the corresponding side flange backwardly, thence forwardly, thence for a short distance along the outer face of the flange and thence inwardly through a slot in the flange, the projecting end of the wing being thence bent against the inner face of the flange. Between the forwardly and inwardly extend-

ing parts of the wing *e* is confined a comparatively thick plate *f*, thereby giving rigidity to the lug. One of the lugs, *e*, *f*, thus formed is threaded, while the other lug is
5 provided with a plain hole. A bolt or screw *g* extends through the latter lug and engages the threaded hole of the former. By turning this bolt, the two parts or halves of the shoe may be brought together.

10 The rear ends of the base flanges *b*, *b*, of the two parts or halves are slidably connected together by means of two projections *b'*, *b'*, bent downwardly, and toward each other, on the rear end of one flange, forming a guide for the rear end of the other
15 flange; the latter having a downwardly bent rear end *b*² that limits the movement away from each other of the two parts or halves and prevents their disengagement.

20 Each side flange is provided with an integral wing *h* extending inwardly from its lower edge and underlying the base flange, being secured thereto by means of one or more projections *i* thereon extending through
25 slots in the base flange and bent downwardly against the upper face of the same. Under and upon this wing is the seat *k* for the heel-calk *j*. This seat *k* is made from a single piece of sheet metal, being bent so as
30 to form a dovetail, forwardly extending, horizontal groove (adapted to receive a dovetail projection on the heel-calk *j*) and a front plate *k'* (against which the front of the heel-calks abuts) having a rearwardly
35 extending flange *k*² underlying a shoulder formed at the front of the calk and having a projection extending into a traverse groove formed in the lower face of the calk just to the rear of the shoulder. The seat *k*
40 is provided with projections *m* that extend through slots in the base flange and are bent downwardly against the upper face of the same. The seat *k* is also provided with a projection *m'* that is bent against the rear
45 end of the heel calk and assists in holding it in position.

Each side flange is provided, at its forward end, with an integral wing *n* extending inwardly from its lower edge and underlying
50 ing the front end of the base flange, being secured thereto by projections *o* thereon extending through a slot in the base flange and bent downwardly against the upper face of the same. Under and upon these wings are
55 the seats *p* for the single toe calk *q* shown in detail in Fig. 5. This toe calk consists of a flat piece of metal curved on an arc corresponding to the arc of curvature of the front of the shoe, and cut away at the ends in its
60 lower face to form shoulders *r*. Swiveled on the lower face of the toe calk are two dovetail plates *s*. Each seat *p* is made from a single piece of sheet metal, being bent so as to form a dove-tail groove open at the front
65 end (adapted to receive one of the swiveled

plates *s*) and a rear plate *t* (against which the end of the corresponding swiveled plate *s* abuts) having a forwardly extending flange underlying the corresponding shoulder *r* of the toe-calk. The seats *p* are provided with
70 projections *u* that extend through slots in the base flange and are bent downwardly against the upper face of the same.

The front ends of the shoe are brought toward each other by means of forwardly
75 projecting lugs engaged by a bolt or screw. These lugs are constructed substantially like the lugs *e*, *f* at the rear of the shoe; that is, each lug comprises a wing *v* and a plate *w*, the former, which is integral with the cor-
80 responding side flange, being bent so as to confine the corresponding plate between two of its bends and projecting through a slot in the side flange and bent against its inner face. One of the lugs *v*, *w* is threaded while
85 the other is provided with a plain hole, and a bolt or screw *x* extends through the latter lug and engages the threaded hole of the former.

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

1. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest
95 against the under surface of the hoof and a separable upwardly and inwardly extending side flange adapted for engagement with the outer surface of the hoof, and a projection on the side flange, for securing the two
100 flanges of a part or half together, extending inwardly against one face of the lower flange and thence extending through a slot in the lower flange and bent against the opposite face of the lower flange. 105

2. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and
110 an upwardly and inwardly extending side flange adapted for engagement with the outer surface of the hoof, the latter flange being provided with a series of elongated perforations extending substantially transversely of the flange and enlarged at their
115 ends.

3. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and
120 an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, each side flange having at one end an integral wing bent upon itself, plates, one confined between the
125 reverse bends of each wing, and a bolt or screw extending through one plate and wing and in threaded engagement with the other plate and wing.

4. A horseshoe comprising two parts or 130

halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, projections at the rear part of one base flange between which the rear part of the other base flange is adapted to slide, and a projection on the end of the latter base flange adapted to engage the other projections and limiting the mutual retractable movement of said parts or halves, and means for approximating the rear ends of the side flanges.

5. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, the said base flanges overlapping at their rear ends, projections, on the rear end of one base flange, extending from its side edges and bent inwardly toward each other under the rear part of the other base flange, thus forming a guide for the latter, and a projection extending from the rear end edge of the latter base flange and which, by engaging the first named projections, limits the mutual retractable movement of the two parts or halves.

6. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, a sheet metal seat, bent to form a dovetail recess, secured against the lower face of the base flange, and a calk having a dovetailed projection extending into said recess, and projections on the seat by which it is secured to the base flange and projections on the seat by which the calk is retained in its recess.

7. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, a calk provided with a projection and having one end cut

away to form a shoulder, a sheet metal seat bent to form a recess for said projection and an end plate having a flange adapted to overlie said shoulder.

8. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, a wing, integral with the side flange, bent against the base flange, projections on said wing engaging the base flange, a sheet metal calk seat, projections thereon engaging the base flange, a calk in said seat, and projections on the seat engaging said calk.

9. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and an inwardly and upwardly extending side flange adapted for engagement with the outer surface of the hoof, a toe-calk, plates on the upper face of said calk, one at least of said plates being swiveled on a vertical axis, one secured to the front end of each base flange, said seats having recesses for the reception of said plates respectively.

10. A horseshoe comprising two parts or halves, each part or half comprising an inwardly extending base flange adapted to rest against the under surface of the hoof and a separable upwardly and inwardly extending side flange adapted for engagement with the outer surface of the hoof, a slotted projection on the side flange overlying the base flange, and a headed rivet, extending through said slot and the metal of the base flange, for holding the two flanges of a part or half together, the head of said rivet being forced against the projection and normally restraining the side flange from sliding laterally relative to the base flange, while permitting such relative lateral movement under sufficient pressure.

In testimony of which invention, I have hereunto set my hand, at Philadelphia, on this 22nd day of September, 1908.

HARRY D. SHAIFFER.

Witnesses:

M. M. HAMILTON,
E. E. WALL.