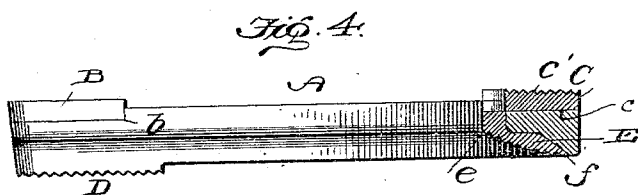
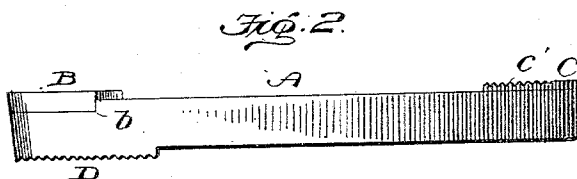
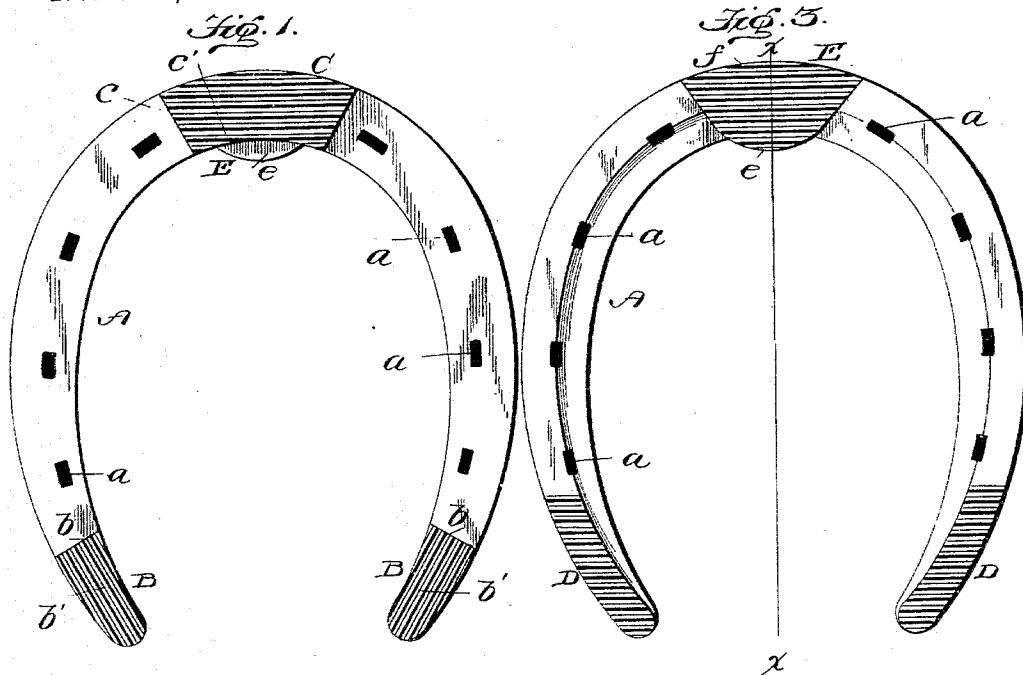


(No Model.)

G. CUSTER.
HORSESHOE.

No. 546,227.

Patented Sept. 10, 1895.



Witnesses
Wm. E. Ashiey
H. J. Bernhard

— George Custer —
Inventor

— BY — *Edson Prot.*
Atty's.

UNITED STATES PATENT OFFICE.

GEORGE CUSTER, OF BREMOND, TEXAS.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 546,227, dated September 10, 1895.

Application filed December 4, 1894. Serial No. 530,320. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CUSTER, a citizen of the United States, residing at Bremond, in the county of Robertson and State of Texas, have invented certain new and useful Improvements in Horseshoes; and I 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.

The object of the present invention is to provide an improved construction of horseshoe which will be more durable and lasting in use than the common type of shoes, will hold itself securely on the hoof, and prevent the heel of the hoof from contracting, thus overcoming the serious defect in other common types of shoes of permitting the horse to have a "narrow heel," as it is called, and to prevent slipping of the shoe on the icy surfaces.

With these ends in view my invention consists of a horseshoe provided on its top surface with heel-plates which are longitudinally corrugated and with a toe-plate that extends the full width of the front of the shoe, has a convex outer edge and a concave inner edge, which are flush with the front and back edges, respectively, of the toe of the shoe, and is corrugated in a direction substantially at right angles to the corrugations of the heel-plates, said toe and heel plates projecting above the top surface of the shoe, whereby as the shoe is applied to the hoof the corrugated heel and toe plates first come in contact with the hoof, and when the nails are driven through the shoe into the hoof the shoe will gradually settle and conform to the hoof. The corrugated plates serve to firmly hold the shoe to the hoof, particularly at the heel thereof, and as the corrugations or ridges of the heel-plates settle into the sides of the hoof at the heel the hoof cannot slip on the shoe and become contracted, thereby preventing the horse from acquiring a narrow heel.

The invention further consists in a horseshoe provided with corrugated heel-calks on its lower side and with a toe-calk which extends the full width of the toe, has convex front and rear edges and tapered down to the shoe, and formed with corrugations on its lower surface. The corrugated heel and toe

calks prevent the shoe from slipping on the ice and the toe-calk strengthens and reinforces the shoe at the toe (which is the weakest point of the shoe) and renders the shoe more durable and lasting, because this toe-calk presents a comparatively large metal surface, as distinguished from the narrow toe-calks, with straight rear edges within the inner boundary edge of the toe, usually formed on the common type of horseshoes.

To enable others to more readily understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view of the top or hoof side of my improved horseshoe. Fig. 2 is a side elevation thereof. Fig. 3 is a plan view looking at the bottom or ground side of the shoe, and Fig. 4 is a vertical section on the line xx of Fig. 3.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates my improved horseshoe, made as is usual from a bar of metal of appropriate channeled form in cross-section and provided with the usual transverse nail-receiving apertures a . On its top or hoof surface the shoe A is provided with the two recesses $b b$ and with a third recess c , the recesses $b b$ being provided at the heel ends of the shoe and the remaining recess c at the toe, the sides of the recess c extending through the front and back edges at the toe of the shoe A.

B B designate the heel-plates, which are fitted in the recesses $b b$ at the heel ends of the shoe, and the top surfaces of said plates are provided with longitudinal corrugations or ridges $b' b'$, said exposed corrugated surfaces of these plates projecting above the plane of the top surface of the shoe, as shown by Fig. 2.

C is the toe-plate fitted in the front recess c of the shoe, and this plate extends the full width of the metal bar, forming the body of the shoe, the front and rear edges of said plate C being convex and concave, respectively, and lying flush with the front and back edges of the toe of the shoe, as shown. This plate C is of a thickness greater than the depth of the recess, so that its exposed top surface pro-

trudes above the top surface of the shoe, and this exposed top face of the plate C is corrugated or ridged at *c'*, said ridges extending in a direction substantially at right angles to the direction of the corrugations *b' b'* of the heel-plates B B, as clearly shown by Fig. 1. These heel and toe plates B B C are united to the shoe A in any improved manner, although in making the shoe it is designed that the blacksmith shall weld the plates to the shoe and subsequently corrugate them by subjecting them to the action of suitable dies.

In manufacturing the shoes in large quantities it may be found expedient and desirable on the score of economy in the manufacture to dispense with the recesses *b b c* and step of welding the plates to the recessed parts of the shoe, in which event the bar from which the shoe is to be produced is forged or treated in a manner to produce integral enlargements at the toe and heels of the shoe, and these enlargements are ridged or corrugated to produce equivalents of the toe and heel plates, whereby the shoe is made with holding-surfaces B B C, which form an integral part of the shoe.

In applying my improved shoe as constructed with holding plates or surfaces B B C to the hoof of a horse the corrugated or ridged surfaces B B C first come in contact with or impinge against the bottom of the hoof, with the top surface of the shoe A between these surfaces or plates practically out of contact with the hoof in the initial application of the shoe thereto. When the nails are driven through the apertures *a* into the hoof, the shoe settles to the hoof and the corrugations or ridges *b' b' c'* are forced or settle into the hoof, whereby the shoe is held firmly to the hoof. As the corrugated or ridged surfaces or plates B B take into and are intimately joined to the heel of the hoof, the hoof cannot slip and contract on the shoe during the growth of the hoof, and thus the heel is prevented from contracting and the horse prevented from acquiring a narrow heel. This objection is a serious one to the use of many of the ordinary types of horse-shoes, because many horses are made lame by narrow heels, and it is entirely avoided by the use of a shoe constructed in accordance with this invention. Another advantage attending the use of my improved shoe is that it can be securely fastened to the hoof by a smaller number of nails than is ordinarily required, as I have found that four nails will effectually hold my shoe in place, whereas ordinary shoes require no less than eight nails to fasten them to the foot.

To prevent the shoe from slipping on the ice the lower surface of the shoe is corrugated or roughened transversely to produce the heel-calks D D and the toe is provided with a corrugated toe-calk E. It is well understood by those skilled in the art to which this invention relates that the toe is the weakest

part of a horseshoe, and that it wears down more quickly than any other part of the shoe. It is my purpose to construct the toe-calk in a way to strengthen or reinforce this part of the shoe, and at the same time render it more durable and lasting. To these ends I make the toe-calk of a single solid piece of metal, the width of which is equal to or even greater than the width of the bar from which the shoe is produced, and this toe-calk is convex on both its back and front edges, as at *e f*, the front edge *f* being practically flush with the front edge of the toe of the shoe, while the convex back edge *e* of the calk may be flush with or extend in rear of the back edge of the toe of the shoe. The toe-calk is tapered in cross-section, so that it is thin at its convex front edge *f* and thicker at its convex back edge *e*, to enable the calk to stand the wear and render the shoe more durable. This calk E is united permanently to the shoe by welding it to the lower side at the toe thereof, or said calk may be formed as an integral part of the toe of the shoe.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a horse shoe wrought in a single piece from a bar of appropriate cross sectional form, and provided, on its lower or ground surface, with the transverse tapered toe-calk E which is united with its thin edge flush with the front convex of the shoe, said toe-calk having a thickened convex edge projecting beyond the concave back edge of the toe-portion of the shoe, substantially as and for the purposes described.

2. A toe-calk for horse shoes wrought in a single piece of metal which tapers in cross section, and which is thinner at its convex front edge than at its convex rear edge, the width of the calk at its middle portion, between the convex edges thereof, being greater than the width of the toe of the shoe to which the calk is to be united, substantially as and for the purposes described.

3. As a new article of manufacture, a horse shoe having its upper hoof-surface provided with corrugations B, B, and C arranged substantially at right angles to each other, the transverse corrugated heel calks D, D on the lower ground surface, and the tapered corrugated toe-calk E united rigidly to the ground surface of the shoe, the width of said calk E exceeding the width of the toe, its thin convex edge being flush with the toe of the shoe, and its thick convex edge protruding beyond the inner concave edge of the shoe, substantially as and for the purposes described.

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

GEORGE CUSTER.

Witnesses:

J. P. BAILEY,
J. W. TURNER.