L. G. CLAUDE.
Horseshoe-Bars.

No. 208,295. Patented Sept. 24, 1878.

Fig. 1.

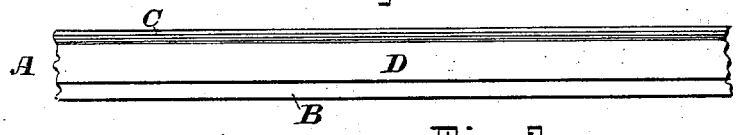


Fig. 2.

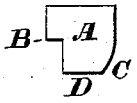


Fig. 3.

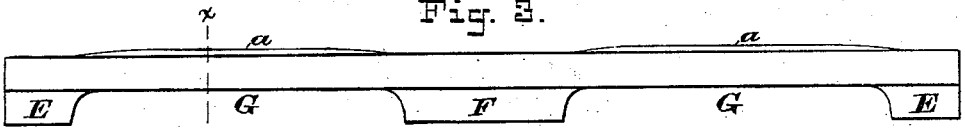


Fig. 4.

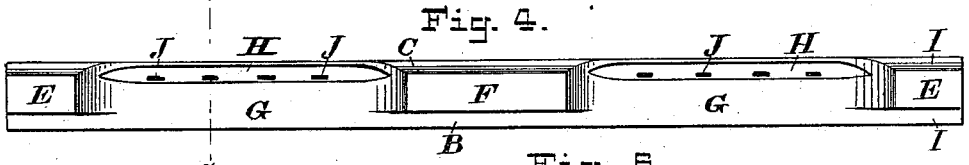


Fig. 5.

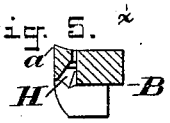


Fig. 6.

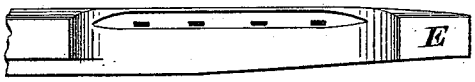


Fig. 7.

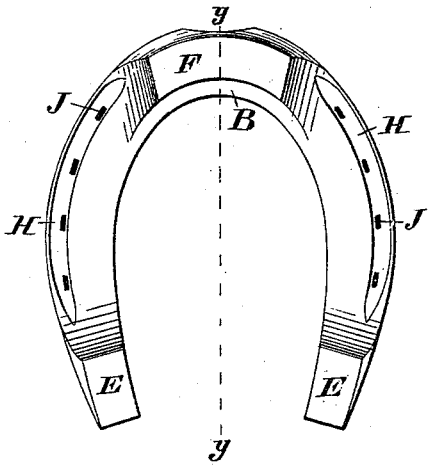


Fig. 8.

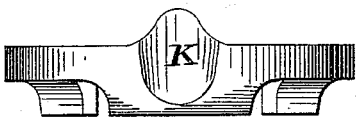
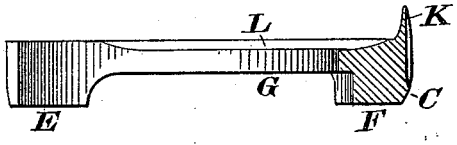


Fig. 9.



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Burke, Fraser & Connett

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HORSESHOE-BARS.

Specification forming part of Letters Patent No. **208,295**, dated September 24, 1878; application filed August 7, 1878.

To all whom it may concern:

Be it known that I, LOUIS G. CLAUDE, of the city, county, and State of New York, have invented an Improved Blank for Horseshoes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention consists in a blank for horseshoes with three solid calks upon it, and reduced to a flat web between the calks and inside of the toe-calk, being creased between the calks, and having elevated ridges opposite to the creases, substantially as hereinafter specified, by which construction I avoid a "fin" in rolling the blank, and supply metal to avoid a depression of the web, in bending the blank to form a shoe, at the outer contour of the shoe.

In the accompanying drawings, Figure 1 is a plan, and Fig. 2 is an end view, of the bar from which the blanks are formed. Fig. 3 is a rear or inside view, and Fig. 4 is a bottom view or plan, of the blank from which the shoe is formed. Fig. 5 is a cross-section taken in the plane of the line *x x* in Figs. 3 and 4. Fig. 6 is a plan, showing the end of the blank after it has been squeezed laterally. Fig. 7 is a plan of the bottom or under side of the finished shoe, and Fig. 8 is a front view of the same. Fig. 9 is a section taken in the plane of the line *y y* in Fig. 7.

The first step in the manufacture of the horseshoe blank or bar embodying my invention is to roll a bar, A, having a sectional or end contour, substantially as indicated in Fig. 2. The face of the bar which is destined to form the inner edge of the shoe is rabbeted, so as to form a ledge, B, which ledge is about the thickness prearranged for the web or body of the shoe after it is completed. The vertical face of this ledge represents the inner edge or wall of the shoe which presses against the die or form when the shoe is being bent. The object is to preserve this face in all its integrity and uniformity during the entire manufacture.

The lower outer corner of the bar is beveled or rounded off, as at C, leaving a plane surface, D, which serves to form the faces of the heel and toe calks E F. The bar of this contour may be of any convenient length, and its caliber will depend upon the weight of the shoe to be made.

The second step in the manufacture is to pass the bar through rolls or dies, which compress the metal, so as to develop the calks. By this compression the metal of the bar between the calks is brought down to the thickness of the ledge B, or nearly so, thus forming the web G. To prevent the blank from spreading during this operation, owing to the excess of metal to be disposed of in developing the solid calks from the mass, and to cause this excess to be utilized in elongating the blank, the bar fits between side walls or collars in the operation. The surplus metal is liable to rise up between these collars and the roll, so as to form the fin before spoken of. This, however, is entirely obviated by my method of manufacture by rabbeting the corner of the bar to a height equal to the height of the calks, or thereabout, leaving the ledge B of about the thickness of the web. In manipulating this form of bar to construct the blank, the ledge B is not compressed or in any way substantially altered in shape by the operation, and the surplus metal is absorbed into the elongation of the bar before it extends or is compressed so as to extend over the horizontal face of the ledge B to the side walls or collars of the roller or die. Thus the angle of the ledge B remains intact as it was in the bar, and no fin or ragged edge is formed thereon.

At the same time that the calks are developed the creases H, which serve to receive the heads of the nails, are formed, the beveling or rounding of the face at C tending in some degree to facilitate the operation by lessening the amount of metal to be displaced. The primary object of this rounding off is, however, to slightly undercut the calks and the outer edge of the web, so as to prevent the formation of a salient edge, whereby the horse, if he "interferes," might injure himself.

While the creases are being formed in the under side of the shoe by a suitably-formed roller or die the metal at the outer edge of the shoe above the crease, as at *a* in Figs. 3 and 5, is thrown up, substantially as shown. The object of this is to compensate for a drop-

ping or rounding of the edge at these points in the after process of bending the shoe. This elevation at *a* disappears when the blank is bent, and a level-surfaced shoe is produced.

The next step in the manufacture is to squeeze the blank at its ends laterally, so as to obliterate the parts I I of the ledge B and face C, and leave the extremities no wider than the calks E. This operation also slightly increases the height of the heel-calks, which is a desideratum. After this the holes J J are punched for the nails, and the blank is bent to the proper curve upon a form or die.

Having constructed the shoe proper, with solid calks formed from and in the same piece with the web, the next step is to form the clip K out of the solid metal of the calk and shoe at the toe of the same. This is done by means of a die or roller arranged to swage the clip, substantially of the shape and form indicated in the last three figures of the drawing.

The next and final step in the operation is to place the shoe under a drop and form the concave L, as indicated in Fig. 9, when the shoe will be complete, no grinding or finishing being required.

Having thus described my invention, I claim—

1. A horseshoe-blank with three solid calks upon it, and reduced to a flat web between the calks and inside of the toe-calk, and with creases between the calks, and elevated ridges opposite to the creases, substantially as herein shown and described.

2. A horseshoe blank or bar provided with elevated ridges or edges *a a*, to be utilized in bending the same to form a shoe, substantially as and for the purpose herein specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS G. CLAUDE.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.