

J. RUSSELL.

Horseshoe.

No. 166,226.

Patented Aug. 3, 1875.

Fig 2.

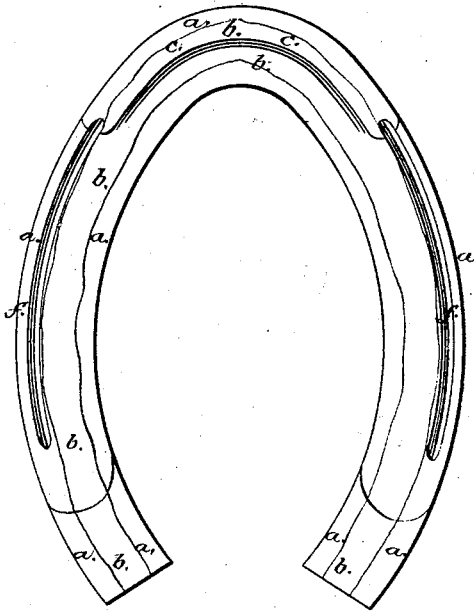


Fig 1

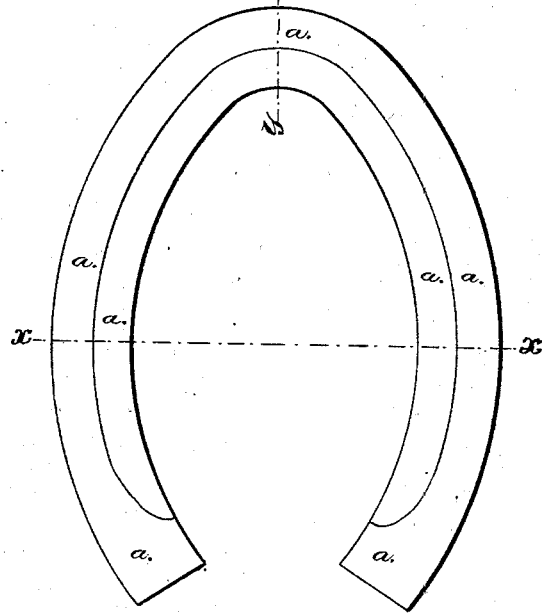


Fig 3.

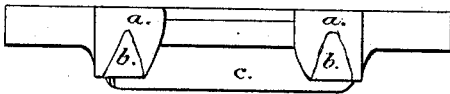


Fig 4.

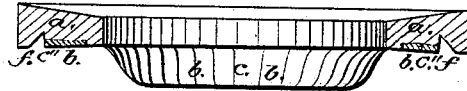
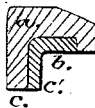


Fig 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN HORSESHOES.

Specification forming part of Letters Patent No. **166,226**, dated August 3, 1875; application filed April 12, 1875.

*To all whom it may concern:*

Be it known that I, JACOB RUSSELL, of the city, county, and State of New York, have invented an Improvement in Horseshoes, of which the following is a specification:

The object of this invention is to provide a horseshoe that, while capable of being made with the same ease and convenience as a shoe wholly of iron, shall possess greater strength and elasticity, and in which the calks or wearing-surfaces shall be of steel inwrought in the structure of the shoe itself, instead of first made separately and attached by welding, as in the ordinary manner of calking.

The invention consists in the new article of manufacture, a horseshoe constructed with an inwrought central or internal rib of steel extending continuously from one heel extremity of the shoe to the other, and projecting at the toe and heel of the shoe, to provide the wearing-surfaces or portions included in or constituted by the calks.

Figure 1 is a plan view of a horseshoe made according to my invention. Fig. 2 is an inverted plan view of the same. Fig. 3 is a rear or heel end view of the same. Fig. 4 is a transverse sectional view of the same, taken in the line *x x* of Figs. 1 and 2; and Fig. 5 is a longitudinal sectional view taken in the line *y y* of Fig. 1.

This my improved horseshoe is, preferably, to be made from the compound steel and iron blank made as set forth in my application, filed of even date with this, for a patent on improvements in piles for the manufacture of horseshoes; but my aforesaid shoe may also be made from blanks of different construction, provided always that such blanks have steel so disposed within a bar of wrought-iron that suitable manipulation will cause the steel to be kept at the lower and inner portion of the shoe, continuous throughout the length thereof, and at the same time brought to the wearing-surfaces of the toe and heel calks.

The main portion of the shoe is of wrought-iron of the kind and qualities commonly used in the manufacture of horseshoes, this iron

portion being indicated at *a* in the drawing. The lower and inner portions of the shoe, including the calks, are of steel, as shown at *b*. The steel is welded to the iron in the formation of the blank from which the shoe is made, or in the manufacture of the bar from which the blank is taken. The steel extends from end to end of the shoe—that is to say, from one heel end, *a*, to the other, as represented in Fig. 2, and also in dotted outline in Fig. 1. At the front or toe the steel is turned down on the inner side of the toe-calk *c*, as shown at *c'* in Fig. 5. At the heel ends of the shoe the steel broadens toward the lower surfaces of the calks, forming the central and main portions of the same, as represented in Fig. 3. Throughout those portions of the shoe between the heel and toe calks the shape and proportion of the steel is about that indicated at *c''* in Fig. 4, the outer edges of the steel extending along the inner sides of the grooves *f*, along which latter are formed the usual rows of holes for the nails used in attaching the shoe to the hoof. The steel, welded to and embedded in the iron, as described, forms an internal rib, wrought firmly into the shoe, and giving it much greater strength, stiffness, and elasticity than is possible of attainment in a shoe made wholly of iron, while, the steel being brought down to form the wearing-surfaces of the calks, the necessity of separately-formed calks welded to the shoe after the fabrication of the latter, as is the usual practice, is dispensed with, and a shoe of superior quality and endurance, at a greatly reduced cost, is produced.

What I claim as my invention is—

A horseshoe constructed with an inwrought central or internal rib of steel, continuous from one heel extremity to the other, and projecting at the toe and heel to provide wearing-surfaces of the calks, substantially as herein set forth.

JACOB RUSSELL.

Witnesses:

JAMES A. WHITNEY,  
W. M. EDWARD.