

(No Model.)

2 Sheets—Sheet 1.

H. F. WHEELER.
HORSESHOE MACHINE.

No. 417,960.

Patented Dec. 24, 1889.

Fig. 1

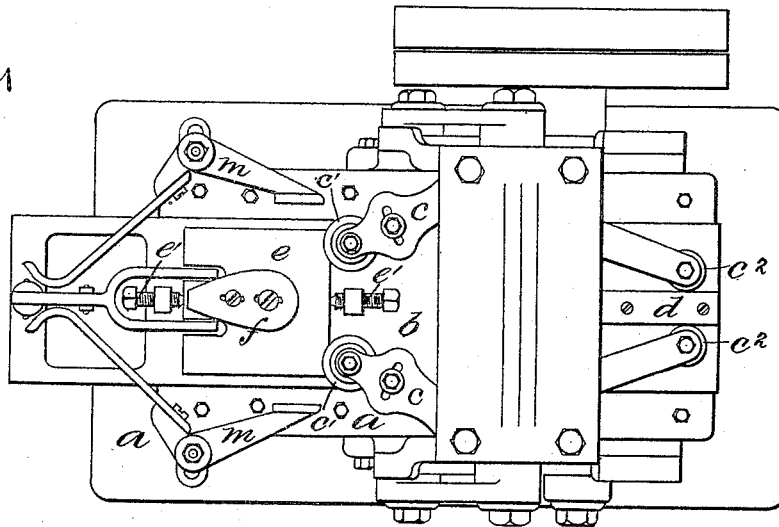


Fig. 2

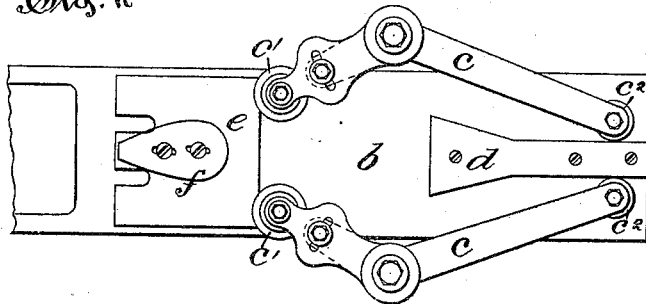


Fig. 3

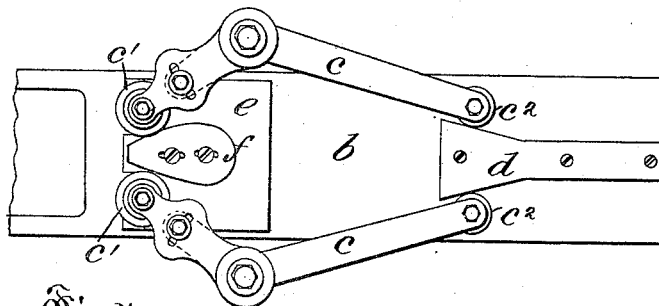
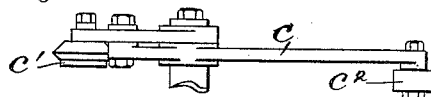


Fig. 4



Witnesses:

A. B. Jenkins.
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Inventor,

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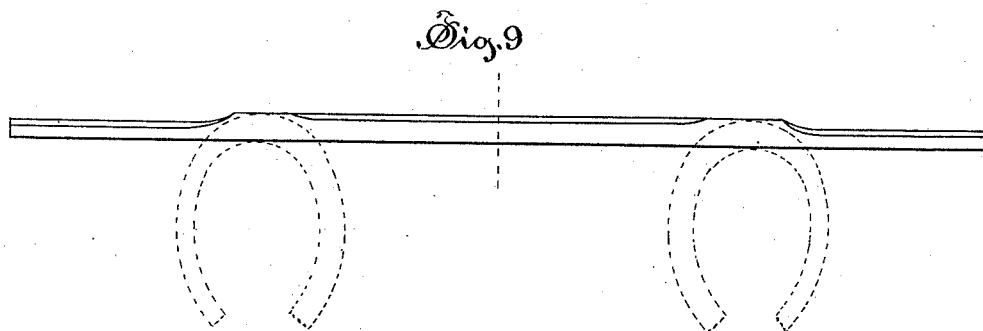
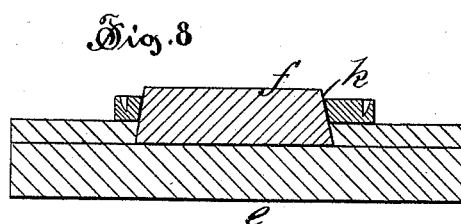
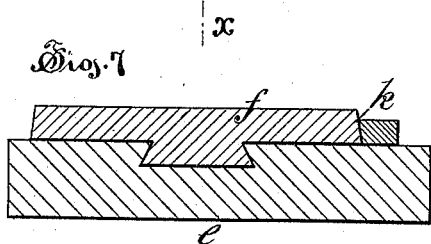
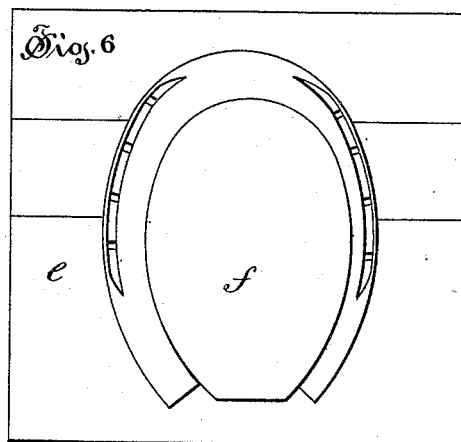
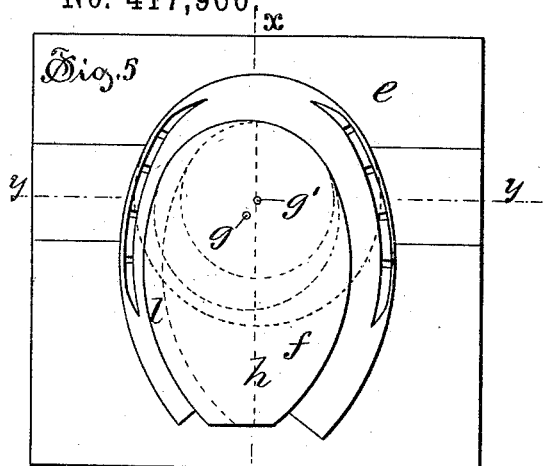
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C. E. Buckland.

Inventor,

Henry F. Wheeler, by
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UNITED STATES PATENT OFFICE.

HENRY F. WHEELER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO GEORGE BRYDEN, OF HARTFORD, CONNECTICUT.

HORSESHOE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 417,960, dated December 24, 1889.

Application filed April 5, 1889. Serial No. 306,076. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. WHEELER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Forming Devices for Horseshoes, of which the following is a specification.

My invention relates to the forming devices used in machines to bend a metal blank into the shape of a horseshoe.

The object of the invention is to provide for machines a forming-block, around which a blank of varying widths may be bent to make a shoe with its exterior outline regular and conforming to the contour of a hoof, so that the shoe-nails may be properly driven, but which has a larger wearing-surface upon one leg than the other, in order that a light and lasting shoe may be provided for horses which step unevenly upon their hoofs and wear away their shoes on one side.

In the accompanying drawings, Figure 1 is a plan view of a horseshoe-machine provided with one of my formers. Fig. 2 is a plan view of the carriage and bending-levers of the machine shown in Fig. 1. Fig. 3 is a plan view illustrating the operation of the bending-levers. Fig. 4 is an edge view of a bending-lever. Fig. 5 is a plan view, on an enlarged scale, of one of the forming-blocks with a shoe bent around it. Fig. 6 is a similar view of the block for forming the mate to the shoe shown in Fig. 5. Fig. 7 is a sectional view on plane denoted by broken lines xx of Fig. 5. Fig. 8 is a sectional view on plane denoted by broken line yy of Fig. 5. Fig. 9 is a plan view, on reduced scale, of the blank from which the shoes are bent.

In the drawings, the letter a denotes the bed of a machine upon which the carriage b is reciprocated by any desired and convenient mechanism. Pivoted to the bed of the machine are the angle-levers c , which bear upon one end the bending-rolls c' and on the other the friction-rolls c'' , which travel along the opposite faces of the wedge d , that is fast to the bed as it moves between them. A block e is attached to the carriage b , so that it can be adjusted forward and backward by the adjusting-screws e' , and secured to this block,

preferably by a mortise-and-tenon joint, is the former f , around which the metal is bent to form a shoe.

Nearly all horses wear their shoes away more on one side than on the other, so the shoes should be made with a light leg and heel on the side that wears the slower and a heavier leg on the side which wears the faster to make the horse step evenly and the shoe wear properly, and a correctly-fitting shoe must be so made that the exterior outline will conform to the periphery of the bottom of the hoof to which it is secured. It must also be so creased and punched that the nails can be driven at the proper angle, ordinarily in a good hoof about forty-five degrees, and pass just inside of the outer shell of the hoof without cracking the shell or entering the flesh beneath. To do this the crease must be formed on an arc a little smaller than the periphery of the hoof, and as the angles of hoofs vary these creases have to be made as near as possible to the edge of the shoe, in order that the holes may be punched so as to allow the nails to be driven into the hoofs at different angles; also, to provide as wide a wearing-surface as possible on the bottom of the shoe. In order to accomplish this, in the construction of my former the center g of the circle upon which the front is formed is removed some distance to one side and back of the center g' of the circle upon which the toe of the shoe is formed. (See Fig. 5.) This provides more metal for the former upon one side of the axis h of the former and shoe than on the other. In the drawings this excess or filling out of the former is represented by the strip l in Fig. 5. By thus separating the centers of the circles of the toe of the shoe and the toe of the former f a blank having one leg wider than the other can be bent around the former and make a shoe with a regular outside edge that can be properly creased close to the front edge and punched so that nails can be correctly driven into a hoof.

The blanks used with my improved former are usually rolled from a bar into continuous sections, two of which are shown in Fig. 9, the narrower lengths forming the lighter legs and the wide lengths the heavier legs of the shoe.

The forming-blocks *f* preferably have their edges inclined, as at *k*, as the blanks are usually beveled off on the inside, so that when formed the shoe will have a wide surface on the wearing side, but will have a narrower surface against the hoof, which will not press on and hurt the sole.

In the machine shown the blanks are placed upon the block *e* between the ends of the centering-levers *m* in front of the former *f*, and as the carriage bearing the block *e* moves forward the bending-rolls *c'* upon the end of the levers *c* bend the blank around the former *f*, the friction-rolls *c''* on the other end of the levers *c* riding up on the wedge *d* to pinch in the heels of the shoe. After the carriage has moved sufficiently far forward it is stopped and the blank creased by mechanism. (Not shown.) Then the carriage is returned and the shoe removed. Of course the blank may be creased before it is bent around the former.

In practicing my invention I prefer to make the former *f* in two parts, one part being the shape of the inside of the ordinary shoe, and the other being a segmental strip conforming to the excess strip *l*, Fig. 5, adapted to fit onto

a portion of the side of the regular former and fill it out. With this construction but one former is needed on a machine, the segmental strips being attached by clamp-screws to the desired side of this regular former to shape a right or left shoe.

I claim as my invention—

1. In combination with a horseshoe-machine, a former the front of which is formed on a circle, the center of which is on one side of the center of the circle upon which the outside of the toe of the shoe is to be formed, substantially as described, and for the purpose specified.

2. In combination with a horseshoe-machine, a former the front of which is formed on a circle, the center of which is on one side and back of the center of the circle upon which the outside of the toe of the shoe is to be formed, substantially as described, and for the purpose specified.

HENRY F. WHEELER.

Witnesses:

JOHN BROWNEY,
JAMES L. WALSH.