

(No Model.)

2 Sheets—Sheet 1.

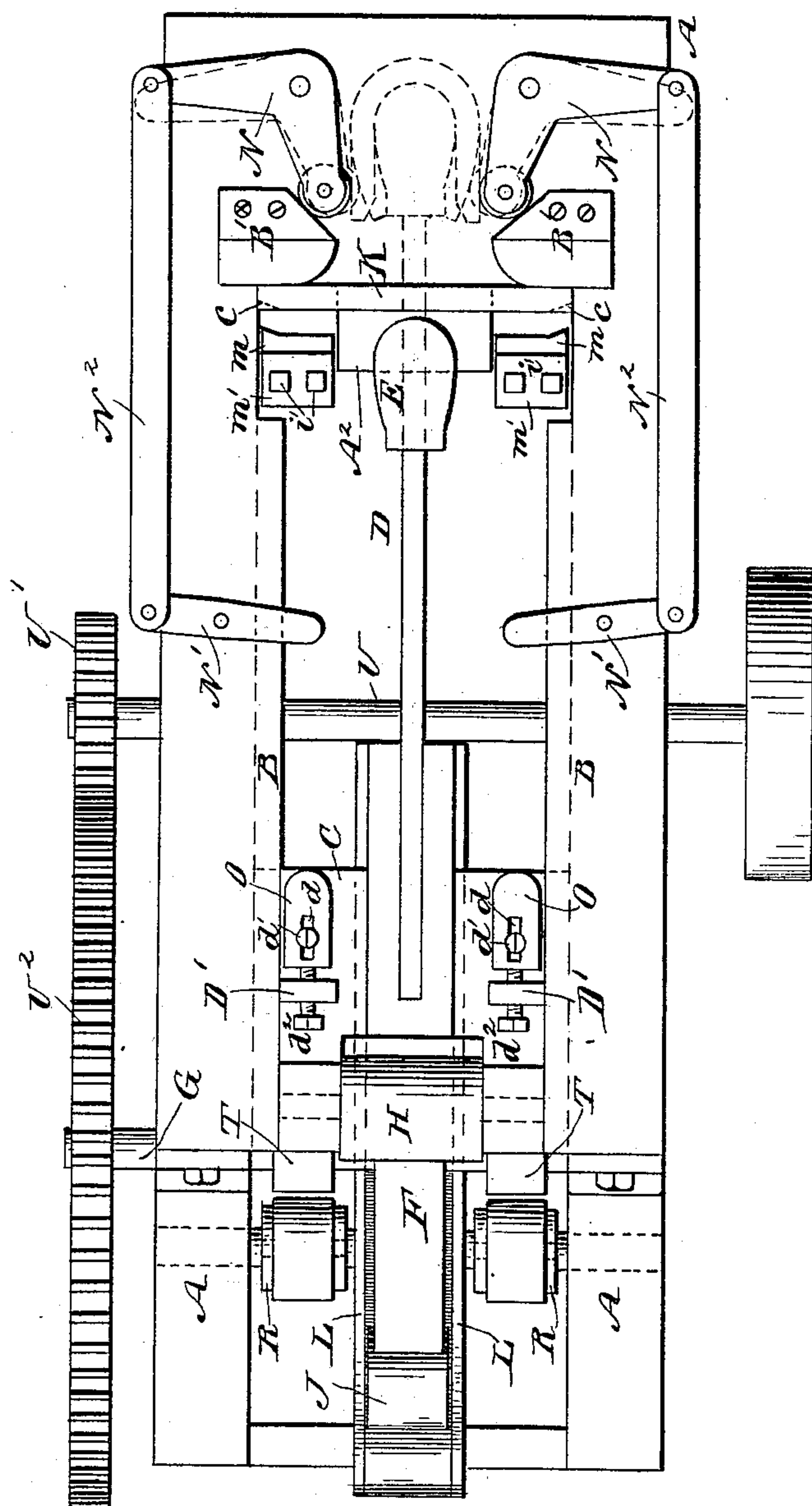
C. L. HAIGHT.

MACHINE FOR FORMING HORSESHOES.

No. 379,696.

Patented Mar. 20, 1888.

Fig. 1.



WITNESSES:

*John W. Dummer*  
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INVENTOR:

*C. L. Haight*  
BY *Munn & Co*

ATTORNEYS.

(No Model.)

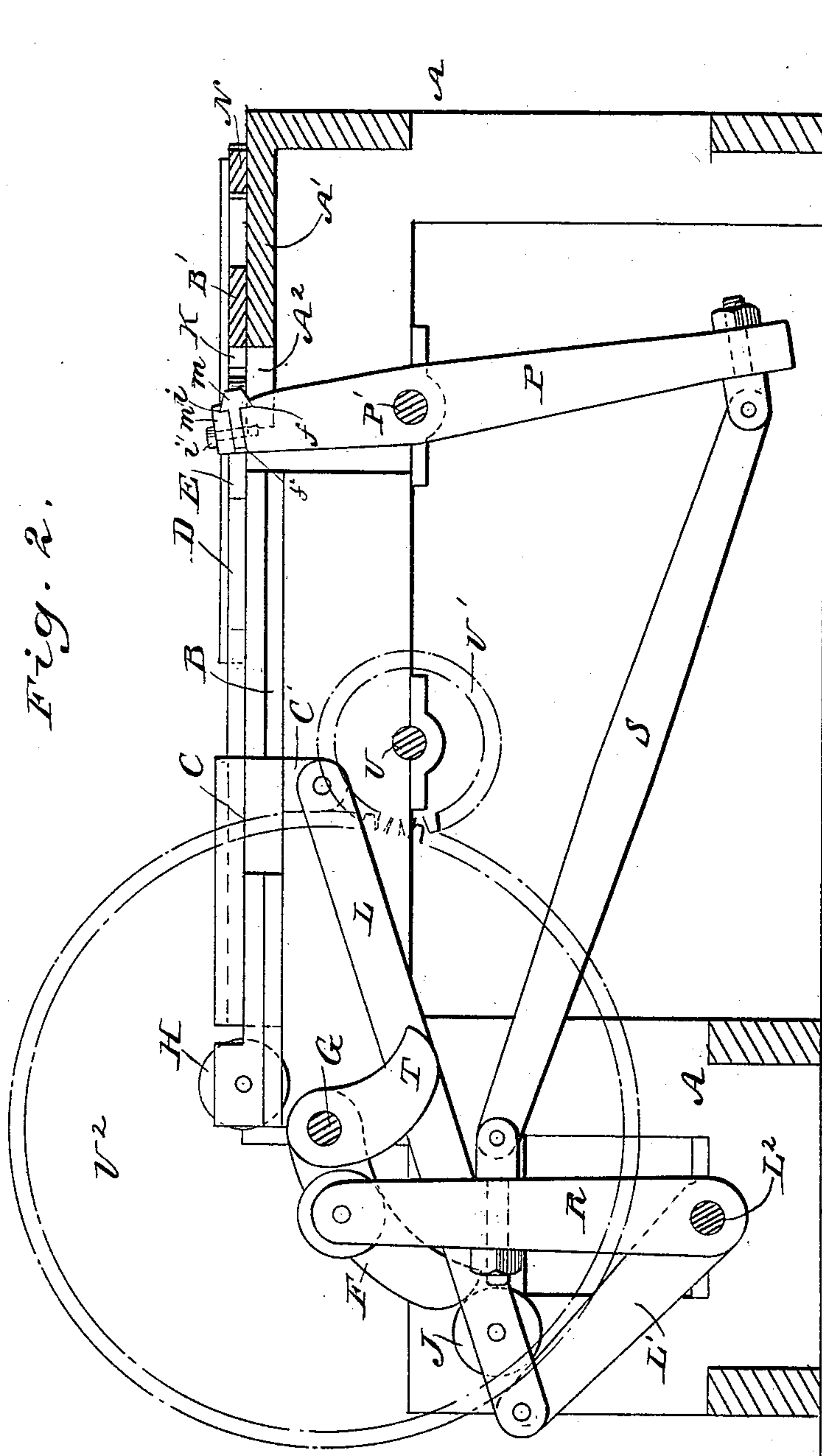
2 Sheets—Sheet 2.

C. L. HAIGHT.

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Patented Mar. 20, 1888.



WITNESSES:

John W. T. Deane  
C. Sedgwick

INVENTOR:

BY *C. L. Haught,*  
*Munn & Co*  
  
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# UNITED STATES PATENT OFFICE.

CHARLES LENARD HAIGHT, OF POUGHKEEPSIE, NEW YORK.

## MACHINE FOR FORMING HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 379,696, dated March 20, 1888.

Application filed November 19, 1887. Serial No. 255,565. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES LENARD HAIGHT, of Poughkeepsie, in the county of Dutchess and State of New York, have invented  
5 a new and Improved Machine for Forming Horseshoes, of which the following is a full, clear, and exact description.

My invention relates to a horseshoe-machine wherein the bar of iron from which the shoe is  
10 made is bent or folded around a reciprocating forming-die; and the invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying  
15 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a plan view of my new and improved horseshoe-machine; and Fig. 2 is a sectional elevation of the same, taken on the line  
20 *x x* of Fig. 1.

A represents the main frame of the machine, formed or provided with the guideways B B, in which is held the sliding plate C, to which  
25 is connected, by the rod D, the forming-die E, of the size and shape of the inner edge of a horseshoe. The plate C is reciprocated by the cam F, secured upon the shaft G, said cam acting against the roller H of the plate C for  
30 thrusting said plate and the forming-die E forward. The backward movement is effected by the contact of the cam F with the roller J, held between the two connecting rods or plates L, attached at their upper ends to a projection,  
35 C', at the under surface of the plate C and at their lower ends to the lever L', attached to the rod L<sup>2</sup>, near the bottom of the main frame, which lever L' supports the connecting rods in range with the cam F on its backward and up-  
40 ward stroke.

K represents the rod of iron to be formed into a horseshoe, placed upon a narrow projection, A<sup>2</sup>, of the table A', which forms a part  
45 of the main frame A of the machine. The ends of the rod K are held by the abutments B' B', secured upon the table A', as shown in Fig. 1, so that when the plate C and forming-die E are thrust forward by the cam F the die will strike the center of the rod K and force it forward  
50 between the abutments B', causing the bar to be bent around the front rounded end of the die, as illustrated in dotted lines in Fig. 1.

When the forming-die E reaches the position shown in dotted lines in Fig. 1, the ends of the bar K stand away from the heel of the die  
55 and adjacent to the ends of the bell-crank levers N N. While the die remains in the position shown in dotted lines, the said bell-crank levers are turned to close the ends of the bar K against the heel of the die, thus shaping  
60 the heel of the shoe.

The operation of the bell-crank levers N is effected by the cam F, plate C, levers N', and connecting-rods N<sup>2</sup>, which connect the outer  
65 ends of the levers N' with the outer ends of the bell-crank levers. The inner ends of the levers N' stand in front of the blocks O, secured upon the top of the plate C, so that when the plate C is thrust forward the said blocks strike the levers N' and operate them and the bell-crank  
70 levers, closing the heel of the horseshoe, as described.

The blocks O are each slotted, as shown at *d*, and held to the plate C by the bolts *d'*. In said slots, and back of the blocks O, are sta-  
75 tionary projections D', in which are fitted screws *d''*, by which the blocks O may be adjusted to move the levers N a greater or less distance, as circumstances require.

Before the table C and forming-die E are  
80 moved forward to bend the rod K, forming the shoe, the ends of the rod are compressed and reduced in thickness, as shown in dotted lines at *c* in Fig. 1. This is accomplished by the levers P, fulcrumed upon the shaft P', the le-  
85 vers R, fulcrumed upon the shaft L<sup>2</sup>, connecting-rods S, and the cams T, secured upon the power-shaft G. The upper ends of the levers P are each dovetailed, as shown at *f*, and formed with a shoulder, *f''*, Fig. 2, to receive  
90 the die-block *m* for shaping the ends of the rod K, and this die-block is held in place by a plate, *m'*, formed with an overlapping lip, *i*, and held upon the upper end of the lever by screws or bolts *i'*, so that by simply removing  
95 the screws *i'* the said plates may be easily removed and replaced for replacing the die-blocks.

The cams T in their revolution strike the anti-friction rollers at the upper ends of the  
100 lever R and force said levers backward, which movement draws backward the lower ends of the levers P and carries their upper ends correspondingly forward, so that the die-blocks



*m* compress and shape the ends of the rod *K* against the abutments *B'*.

Power is applied to the machine by means of the drive-shaft *U* and cog-wheels *U'* *U*<sup>2</sup>.  
5 (Shown clearly in Fig. 1.)

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

1. In a machine for forming horseshoes, the  
10 plate *C*, which supports and carries the forming-die *E*, in combination with the stationary abutments *B* and levers *N*, and means, substantially as described, for reciprocating the plate and die, and the said levers, substan-  
15 tially as described.

2. In a machine for forming horseshoes, the lever *P*, formed with a notch or shoulder, *f*, near its upper end, in combination with the die *n*, and holding-plate *m'*, held at the top of  
20 the lever by bolts or screws, substantially as described.

3. In a machine for forming horseshoes, the abutments *B'*, levers *P*, arranged to act against the same, the reciprocating plate *C*, forming-  
25 die *E*, means for reciprocating the plate and

die, and the levers *P*, in combination with the bell-crank levers *N*, levers *N'*, and rods *N*<sup>2</sup>, substantially as described.

4. In a machine for forming horseshoes, the bell-crank levers *N*, levers *N'*, and connecting-  
30 rods *N*<sup>2</sup>, in combination with the reciprocating plate *C*, substantially as described.

5. In a machine for forming horseshoes, the shaft *G*, provided with the large cam *F*, and provided also with the side cams, *T*, and the  
35 reciprocating plate *C*, in combination with the lever *L'*, connecting-rods *L*, levers *R*, connecting-rods *S*, and the lever *P*, all arranged to operate substantially as and for the purposes  
40 described.

6. In a machine for forming horseshoes, the reciprocating plate *C*, provided with the adjustable blocks *O*, in combination with the le-  
vers *N'*, connecting rods *N*<sup>2</sup>, and bell-crank levers *N*, substantially as described.

CHARLES LENARD HAIGHT.

Witnesses:

HENRY MARTEN, Jr.,  
LEWIS BEEKER.