

L. H. BIGELOW.
HORSESHOE MACHINE.

No. 50,440.

Patented Oct. 17, 1865.

Fig. 1.

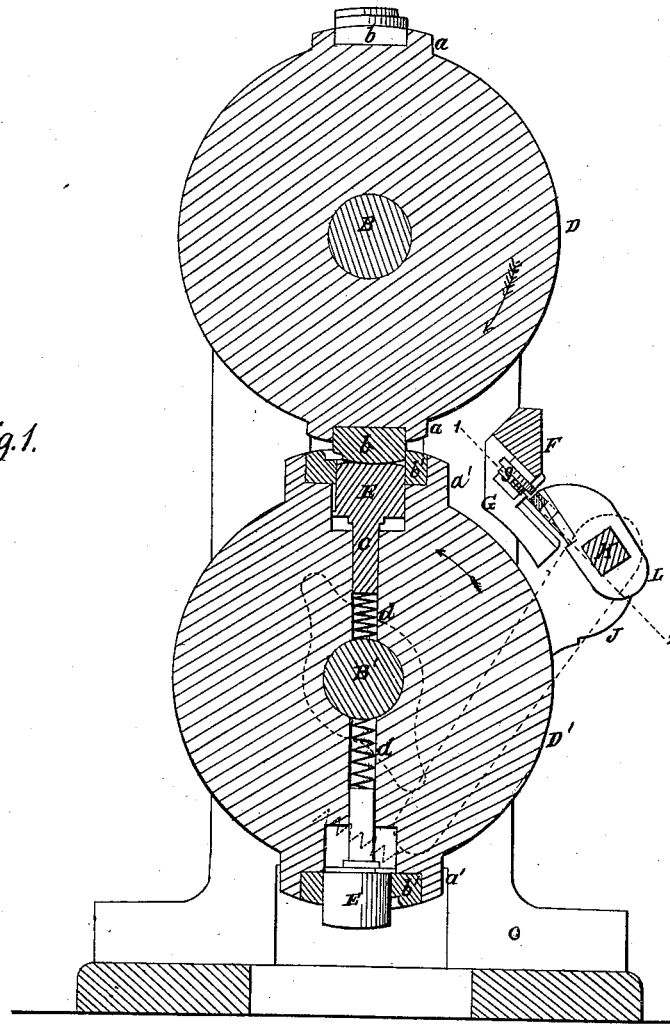
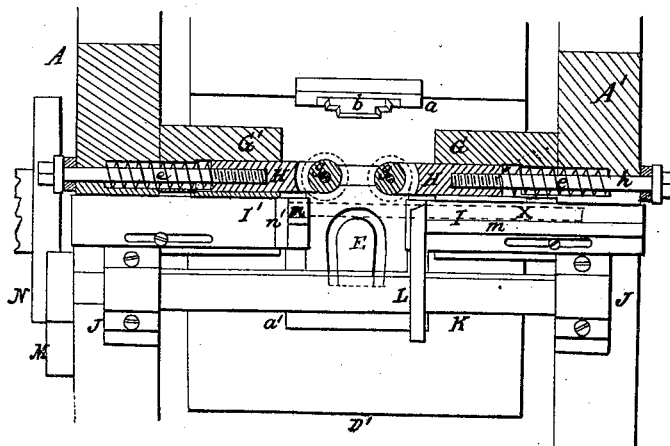


Fig. 2.



Witnesses.

Wm. Albert Steel.
Chas. B. Price.

Inventor.

L. H. Bigelow
by his Attorney

J. Howson

UNITED STATES PATENT OFFICE.

LEWIS H. BIGELOW, OF PHILADELPHIA, PENNSYLVANIA.

HORSESHOE-MACHINES.

Specification forming part of Letters Patent No. 50,440, dated October 17, 1865.

To all whom it may concern:

Be it known that I, LEWIS H. BIGELOW, of Philadelphia, Pennsylvania, have invented certain Improvements in Horseshoe-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of certain simple mechanism, fully described hereinafter, for rapidly shaping pieces of heated bar-iron into the form of horseshoes.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a sectional elevation of my improved machine for making horseshoes; and Fig. 2 a section on the line 1 2, Fig. 1, looking in the direction of the arrow.

A and A' are the opposite side frames of the machine, having suitable bearings, in which turn the shafts B B', and to the latter, which are geared together, are secured the metal cylinders or rollers D and D'. On the face of the upper cylinder, D, are two projections, *a* and *a'*, in each of which is fitted a die, *b*, and on opposite sides of the lower cylinder, D', are projections *a'*, in each of which fits a counter-die, *b'*. In the center of each counter-die, as well as in the cylinder, is a recess for the reception of the sliding block E, a rod, *c*, projecting from the said block into an opening in which is a coiled spring, *d*, the latter tending to force the block outward from the cylinder.

To a cross-piece, F, secured to the two side frames, A and A', are secured hollow brackets G and G', in each of which slides a bar, H, carrying at its outer end a flanged pulley, *g*. A bolt, *h*, with a square or other suitably shaped head, passes through each of the side frames and through the opening in the adjacent bracket G; and screws into the bar H, a spring, *i*, coiled round the bolt, tending to maintain the bar and its pulley *g* in the position shown in Fig. 2.

To the bracket G, below the bar H, is secured an adjustable plate, I, on which is a rib, *m*, a similar adjustable plate, I', with a rib, *m'*, and a projection, *n*, on its outer end, being secured to the bracket G'.

In brackets J J, secured to the side frames, is hung a shaft, K, on which is an adjustable knife, L, the edge of the latter passing in close proximity to the end of the rib *m* on the plate I, and to one end of the shaft is secured an arm, M, which is operated by a cam, N, secured to the shaft B'.

The bars H are so adjusted that each of the pulleys *g*, as the cylinders D D' revolve in the direction of the arrows, shall bear against one side of the block E when the latter passes between them, and the plates I and I' are so adjusted that a bar of iron, extending from the projection *n* to the inner end of the rib *m*, shall be of the length required to form a horseshoe. A rotary motion in the direction of the arrow, Fig. 1, is imparted to each of the cylinders D D', and a bar, X, of red-hot iron (shown in red lines, Fig. 2) is laid on the plates I and I' so as to rest on the ribs *m m'*, its outer end being against the projection *n*, when the operation of the machine will be as follows: As one of the projections, *a'*, is brought by the revolution of the cylinder D' opposite the shaft K the latter vibrates so as to cause the edge of the knife to sever the bar X. As the cylinders continue to revolve the rounded edge of the sliding block E is brought against the bar X, and the latter is carried against the sides of and between the pulleys *g g*, which bend the iron onto and press it against the sides of the said block, thus giving it the shape of the same. As the continued revolution of the cylinders brings their projections *a a'* opposite to each other the block E is depressed by the die *b* to the position shown in Fig. 1, while the bent bar of metal is compressed between the die and counter-die *b'*, which are of such a shape as to impart the desired form to the piece of heated iron, the dies immediately passing from contact with each other, and the newly-formed shoe being thrown from the die *b'* by the block E as it is forced outward by the spring *c*. As the opposite projection *a* approaches the plates I I' the bar X is moved forward until its end strikes the projection *n*, when another section will be detached, bent, stamped, and discharged as before.

If desired, the cylinder D may be made to receive a single die or more than two dies, the cylinder D' having a corresponding number of counter-dies.

It will be seen that this machine is simple in its construction and operation, and that shoes may be formed by it with rapidity.

I claim as my invention and desire to secure by Letters Patent—

1. The revolving cylinder D and its dies *b*, in combination with the cylinder D', its counter-dies *b'*, sliding blocks E, and springs *d*, or the equivalents to the said springs, the whole being arranged and operating substantially as and for the purpose herein set forth.

2. The spring-bars H H, with their flanged pulleys *g*, in combination with the sliding blocks

E and cylinder D', the whole being arranged and operating substantially as and for the purpose herein set forth.

3. The adjustable plates I I', in combination with the adjustable vibrating cutter L.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEWIS H. BIGELOW.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.