H. Burden,

Horseshoe Machine,

No. 3,261. Patented Sep. 14, 1843.

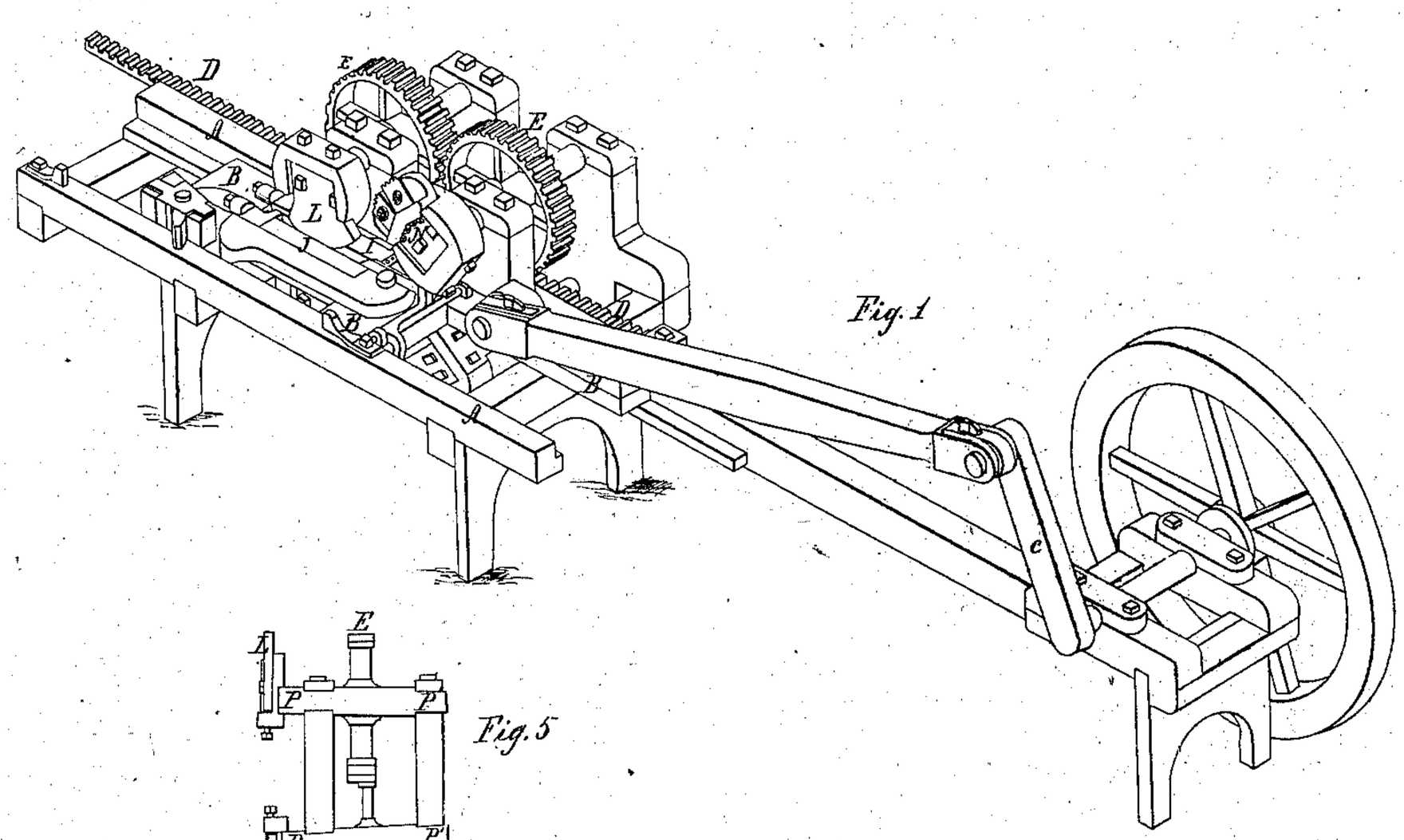

Fig. 1

Fig. 5

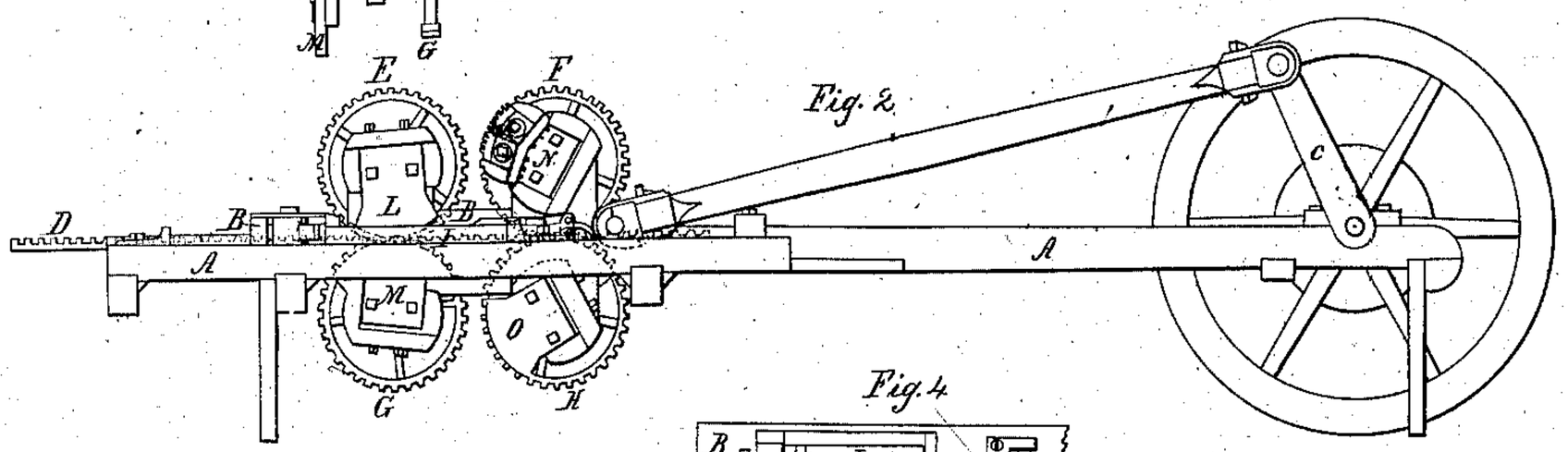

Fig. 2

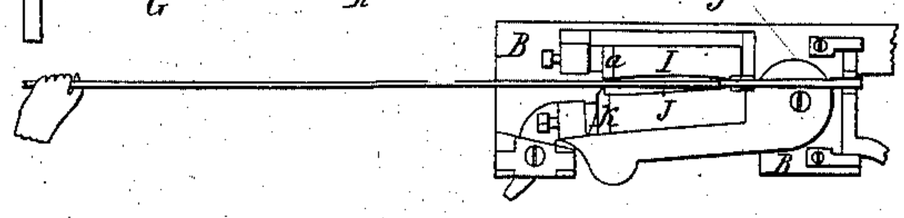

Fig. 4

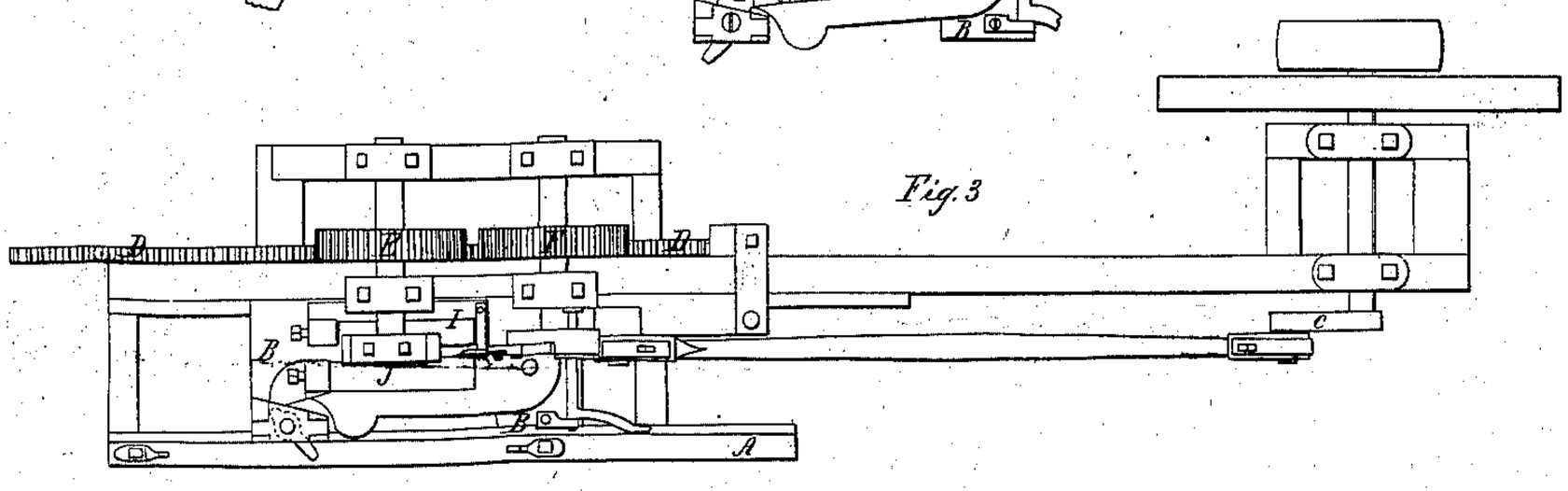

Fig. 3

UNITED STATES PATENT OFFICE.

HENRY BURDEN, OF TROY, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOES.

Specification forming part of Letters Patent No. **3,261**, dated September 14, 1843.

To all whom it may concern:

Be it known that I, HENRY BURDEN, of the city of Troy, in the county of Rensselaer and State of New York, have made certain Improvements in the Machine for Manufacturing Horseshoes, (for which machine I originally obtained Letters Patent of the United States, under date of the 23d day of November, 1835;) and I do hereby declare that the following is a full and exact description of my said improvements thereon.

In the machine as originally patented by me the rod or bar of iron from which a shoe was to be made was cut off above the gripping-dies or side steels between which it was to be gripped and held while it was roiled and fashioned by the segment-swages, and after being cut off it was allowed to fall between them. In my improved machine the rod or bar is passed directly in between the gripping-dies, and is cut off by a cutter on a level with and at the outer end of said dies. It was found impracticable, also, in the machine as originally constructed to draw out and distribute the metal by the action of the segment-dies used in that machine so as effectually to fill the space between the gripping-pieces, and thereby to give the metal the proportionate thickness and width requisite in its different parts. In my improved machine this difficulty is obviated by giving to the swages a somewhat greater extent of motion than is given in the same time to the sliding frame, by which means they exert a rubbing or drawing power on the metal, drawing it from the cutting end toward the rear, and thereby fill the space between the gripping-dies.

In my original plan the machine by which the iron was grooved and punched was distinct from that by which the rolling and drawing were effected. In my improved machine both of these operations are performed in succession on the same machine, thereby greatly diminishing the time required for their performance, preventing the loss of heat, and insuring greater accuracy in the work.

In the accompanying drawings, Figure 1 is a perspective view of the whole machine. Fig. 2 is a side elevation, and Fig. 3 a top view or plan thereof.

A A is the main frame, and B B, a sliding rame, which is made to traverse back and forth upon the main frame by the action of the crank C. This and the general construction of my machine are similar to that first patented by me; but the sliding frame is longer and moves to a considerably greater distance.

D D is the rack, which is bolted into the sliding frame, and into this rack the wheels E F mesh, as they do likewise into the lower wheels, G and H, the wheels E and F being wide enough on the face to engage both with the rack and the lower wheels.

I is the stationary and J the movable gripping-die, which are shown separately in Fig. 4, the movable die being represented as open.

K is the cutter on the movable die J, which, operating against the end *a* of the stationary die I, cuts off the iron rod.

In the position of the machine shown in Figs. 1, 2, and 3 the cut-off piece is being acted upon by the rolling and drawing segment-dies L and M, and after passing these it is to be acted on by the grooving and punching dies N, the piece being sustained by the lower segment-die, O. When the piece has thus passed these segment-dies the gripping-dies will open, and the iron will be then prepared for the bending-machine, which is the same with that formerly used by me and fully described in the specification of the above-named Letters Patent. The opening and closing of the dies are effected in substantially the same manner as in my original machine.

To give to the segment-dies L and M the requisite drawing action I, in general, arrange the shafts of the wheels G and H so that they shall not be parallel to each other, as shown in the segment, Fig. 5. In doing this the inner ends, P P, of the shafts which carry the segment-dies L and M, are to be at a greater distance from each other than their opposite ends, P′ P′. The distance of the peripheries of the segment-dies from their centers is to be proportionately increased, and the desired end will be thereby accomplished, as the peripheries of the segment-dies thus constructed will be made to travel somewhat faster than the sliding frame. A like end may be attained by placing the shafts of the segment-dies parallel to each other, and so gearing the wheels and rack as that the segment-dies shall move faster than the carriage; but the former method is the most simple and is perfectly effective.

Having thus fully described the nature of my improvements in the machine for manufacturing horseshoes, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The manner of combining and arranging the cutters and gripping-dies in the said machine so that the former be in the same plane with the latter, thereby allowing the bar of iron to be passed directly in between them, as herein described and represented.

2. The causing of the peripheries of the segment-dies L and M to travel faster than the sliding frame and the gripping-dies, for the purpose and in the manner above made known.

3. The manner of combining the segment-dies for drawing out and distributing the metal with those for grooving and punching it, so that the piece of metal shall be carried directly from the former to the latter by a continued movement of the sliding frame.

And for a full description of those parts of the said machine which it has not been thought necessary to present in the present specification I hereby refer to the original patent above named.

HENRY BURDEN

Witnesses:
THOS. P. JONES,
EDWIN L. BRUNDAGE.