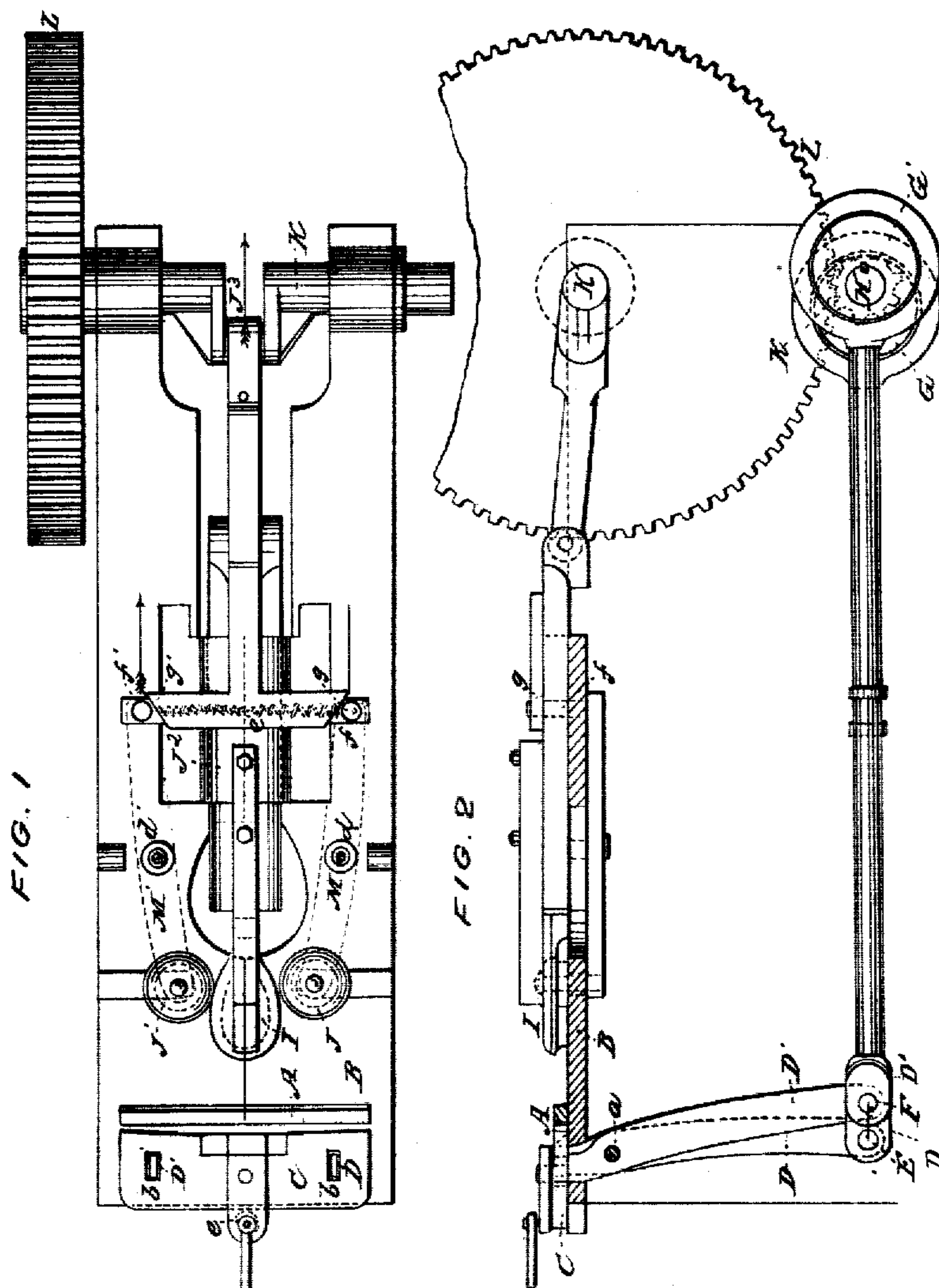


PERKINS & COMSTOCK.

Horseshoe Machine.

No. 64,903.

Patented May 21, 1867.



WITNESSES:

T. B. Vincent
W. W. Rusk

INVENTORS:

Charles H. Perkins
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United States Patent Office.

CHARLES H. PERKINS AND RICHARD W. COMSTOCK, OF PROVIDENCE,
RHODE ISLAND.

Letters Patent No. 64,903, dated May 21, 1867.

IMPROVED MACHINE FOR SWAGING HORSE-SHOE BLANKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, CHARLES H. PERKINS and RICHARD W. COMSTOCK, both of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful improvements in Machines for Bending Horse-Shoe Blanks and for thickening the ends of the same; and we do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a top view.

Figure 2 is a side elevation.

In the accompanying drawings there is exhibited the means which constitute our invention for, first, thickening the ends of a bar of iron, and, second, for bending the same into the form of a horse-shoe, which operation, as well as that of forming the creases for the nail-heads, it is usual to perform before the blank is finally hammered into the exact shape of shoe required.

The apparatus for thickening the ends of the blanks consists of a stationary bar of steel, A, firmly fixed to the bed or platform B of the machine, and a vibrating swaging-bar of steel, C, working in connection therewith. The length of both those bars should be equal at least to the length of the blank of iron to form the shoe. The vibrating swaging-bar C is made to vibrate on a point midway between its extremities by means of the levers D D', of equal length, whose fulcras are at *a*, underneath the platform of the bed, and whose upper ends enter mortises *b b'* cut in the bar. The lower ends of these levers are jointed respectively to the rods F F, which are worked by the eccentrics G G' upon the driving-shaft H, such eccentrics being set opposite to each other, so that by the rotation of the driving-shaft the swaging-bar C will have the proper vibratory motion given to it, so that when a blank is placed between the edge of the stationary bar A and the vibrating bar C, its ends which are to form the heels will be swaged into the required shape. To accommodate blanks for different sizes of shoes we govern the distance of the swaging-bar from the stationary bar by means of an eccentric, *c*, the edge of which bears against the edge of the platform of the bed, and by turning such eccentric to any desired position the relative distances of the two bars apart can be regulated. After the blank has been formed as described, the next operation is to bend it into the form of a shoe. To effect this object we make use of a movable pattern-block, I, in combination with the laterally moving bending-rollers J J'. The pattern-block projects from the end of a sliding head, J², which is connected by means of a shackle-bar or other suitable means with the crank J³ upon the shaft K. This shaft obtains its motion from the gear-wheel K² upon the driving-shaft, the teeth of which engage with the teeth of the large wheel L, keyed to shaft K. The bending-rollers J J' are respectively fitted to turn upon axles which are fixed upon the ends of the levers M M'. These levers are arranged beneath the platform of the bed and have their fulcras at *d d'*, the rollers being above the top surface of the platform and the axles upon which they turn being accommodated by suitable slots cut through the platform. The opposite ends of the levers M M' are united by an elastic band or coiled spring, *e*, or are so arranged by the application of springs to them that the rollers J J' will remain at their greatest distance apart until the levers are influenced to bring them nearer to each other. The ends of the levers M M', opposite to the rollers, are provided with stud-pins *f f'*, which project through appropriate slots cut in the platform above the surface of the latter; and projecting from the sliding head J², and at right angles therewith, are bars with inclined planes *g g'*, the surface of which, as the sliding head moves forward, will come into contact with the stud-pins *f f'*.

It is quite apparent from the foregoing that if a blank be placed in front of the pattern-block and against the edges of the bending-rollers, the forward movement of the pattern-block will in the first instance cause the blank to be bent around the end of the block in the form of the letter U, but inasmuch as it is desired that the form should be more elliptical and correspond with the outline of the pattern-block, the rollers J J' are made to approach each other as the width of the pattern diminishes by means of the action of the inclined planes *g g'* upon the levers M M', already explained, and cause the blank to conform precisely to the shape of the pattern.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the vibrating swaging-bar C, operated as described, with the stationary bar A, for swaging the heels of horse-shoe blanks, substantially as described.

CHARLES H. PERKINS,
RICHARD W. COMSTOCK.

Witnesses:

W. B. VINCENT,
W. W. RICKARD.