

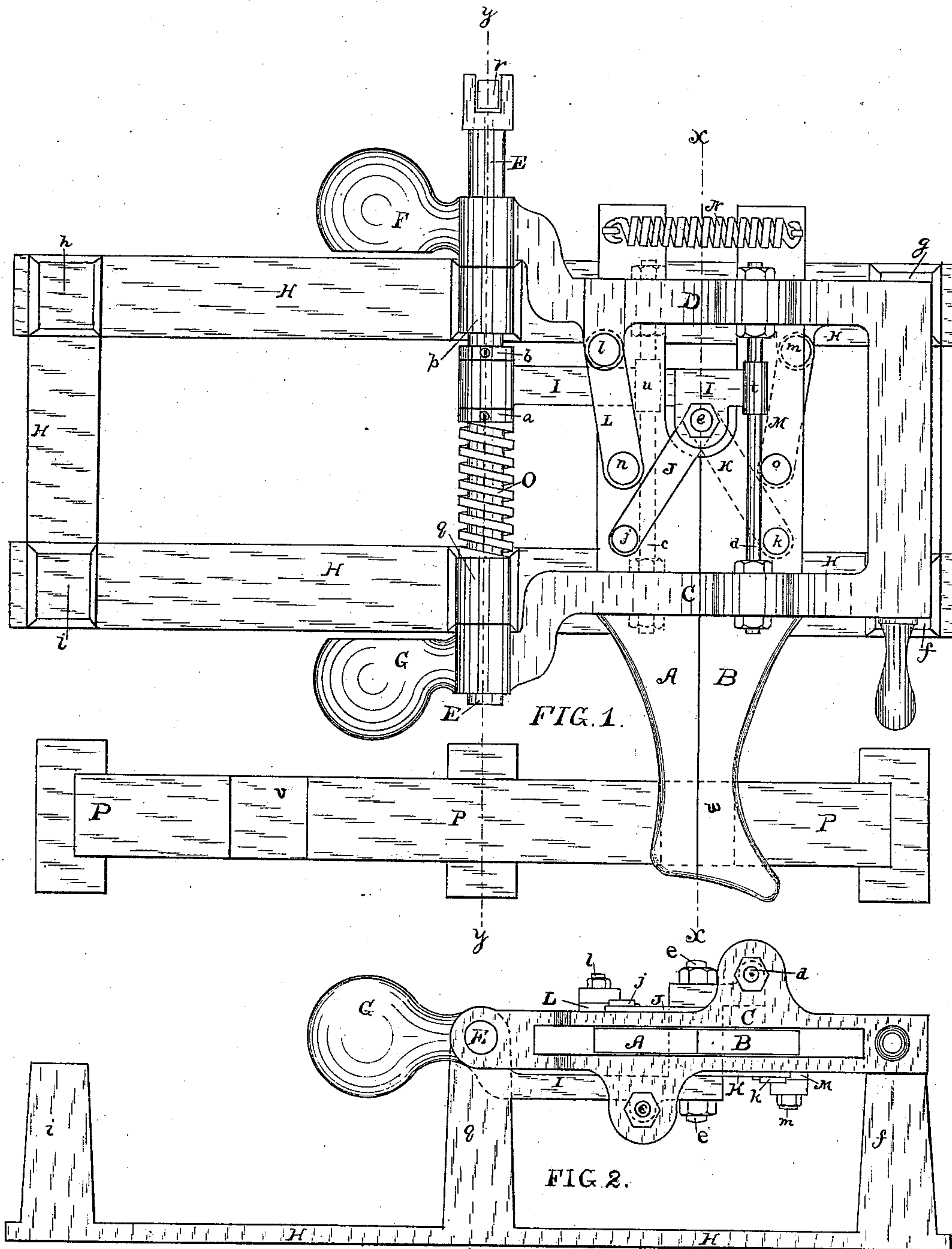
(No Model.)

2 Sheets—Sheet 1.

I. E. BOOTH.
SHOE STRETCHING MACHINE.

No. 364,889.

Patented June 14, 1887.



Witnesses:
L. W. Booth.
H. H. Robinson

Inventor.
Irving E. Booth.

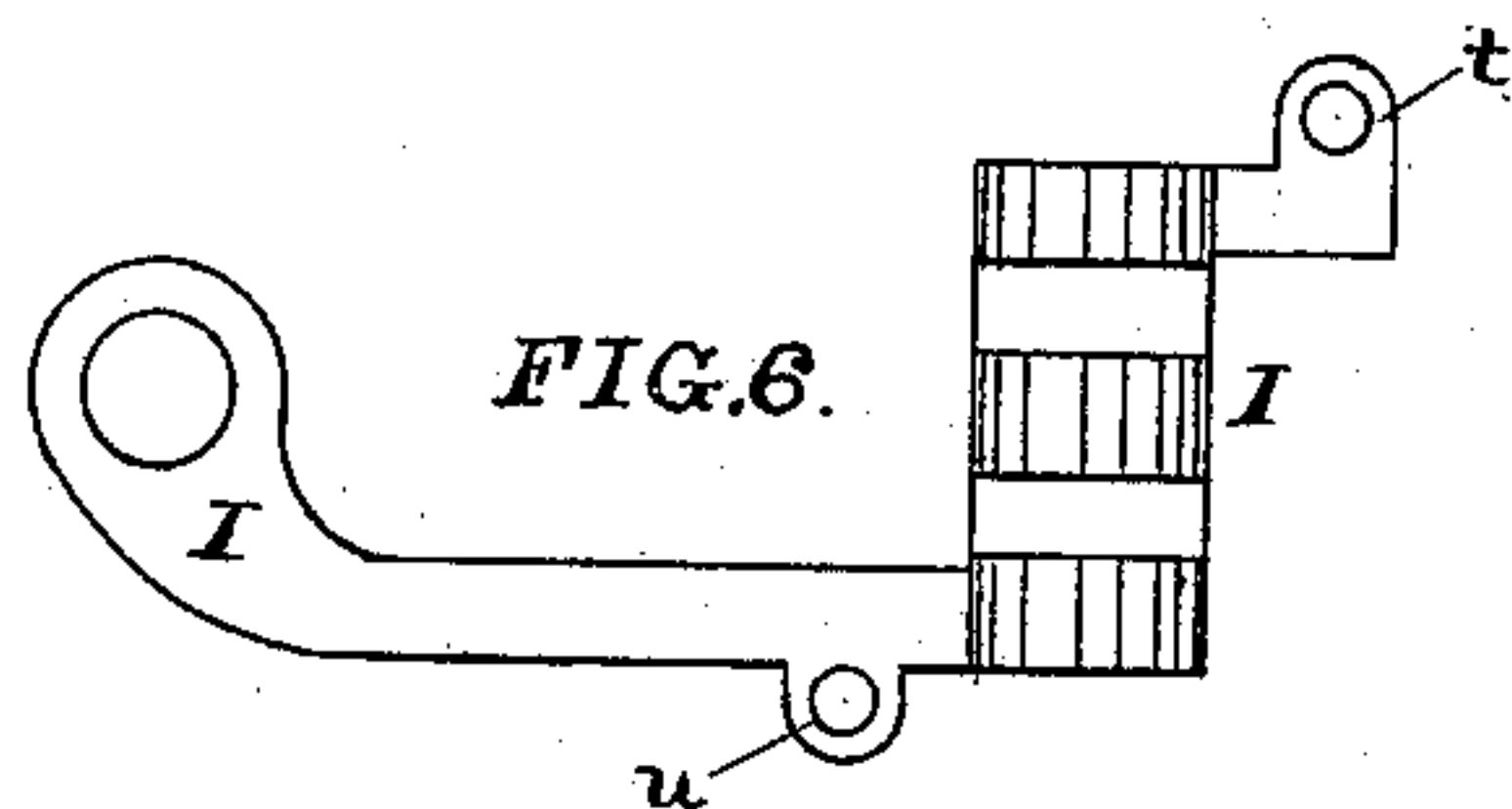
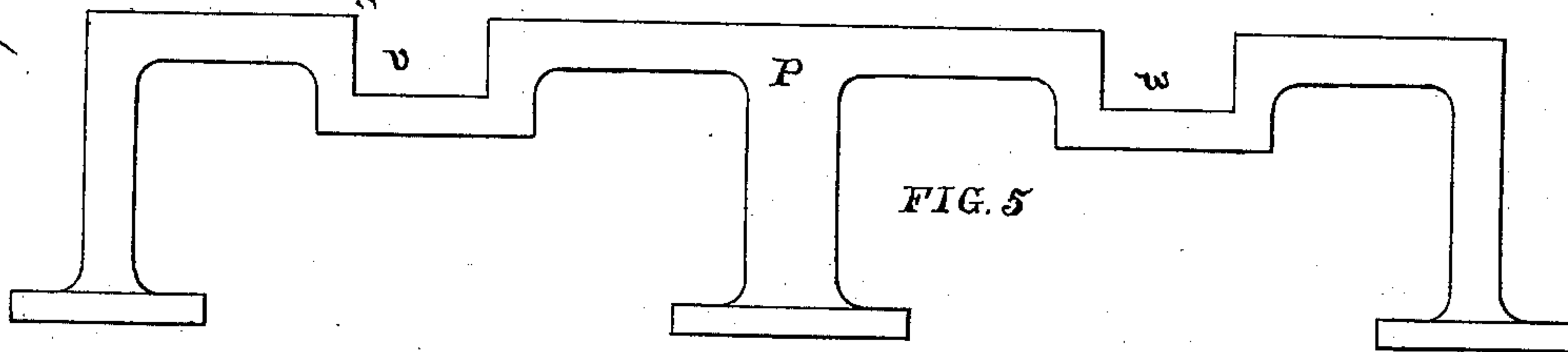
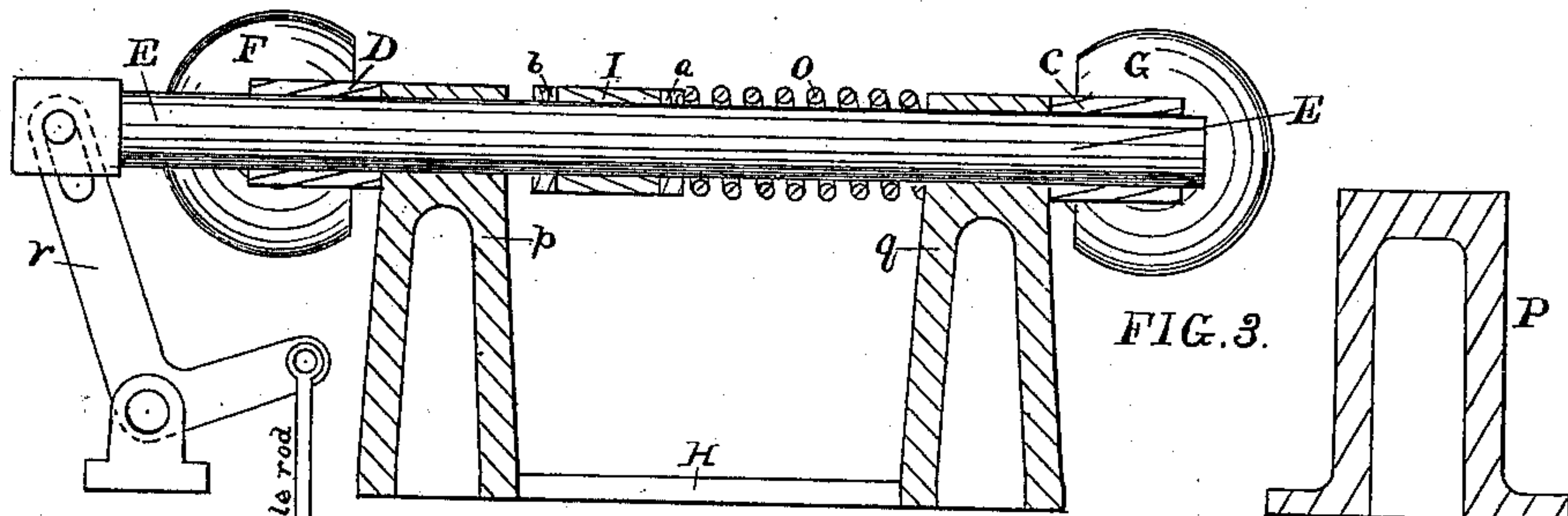
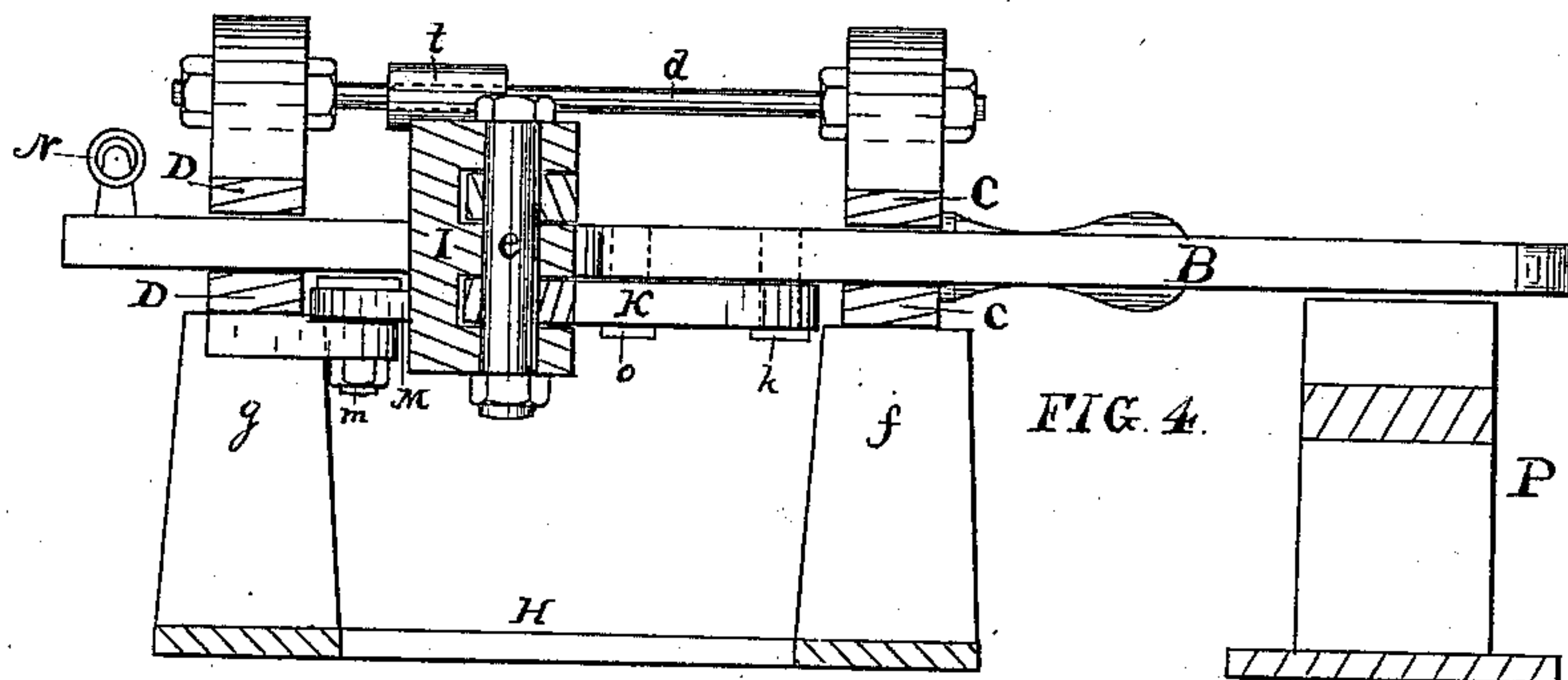
(No Model.)

2 Sheets—Sheet 2.

I. E. BOOTH.
SHOE STRETCHING MACHINE.

No. 364,889.

Patented June 14, 1887.



Witnesses:
L. W. Booth.
H. H. Robinson

Inventor:
Irving E. Booth.

UNITED STATES PATENT OFFICE.

IRVING E. BOOTH, OF ROCHESTER, NEW YORK.

SHOE-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 364,889, dated June 14, 1887.

Application filed January 3, 1887. Serial No. 223,183. (No model.)

To all whom it may concern:

Be it known that I, IRVING E. BOOTH, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Machines for Stretching and Finishing Shoes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification.

My improvements relate to stretching-machines of that class in which the stretching-jaws may be inverted or turned over while still separated; and the principal object of my invention is to provide a simple means to accomplish this object.

A further object is to simplify the construction and operation of such a machine by the details of construction, hereinafter more fully described and definitely claimed.

This invention is an improvement on my stretching-machine for which Letters Patent were issued January 11, 1887, No. 355,966, to which reference may be had.

In the accompanying drawings, Figure 1 is a top plan view of the stretching-machine embodying my invention. Fig. 2 is an end view of the same with the supporting-bar removed. Fig. 3 is a longitudinal section through the line *y y* of Fig. 1. Fig. 4 is a longitudinal section through the line *x x* of Fig. 1. Fig. 5 is a longitudinal view of the supporting-bar, and Fig. 6 is a front view of the cross-bar.

Similar letters of reference indicate the same parts in the several figures of the drawings.

The jaws A B are placed loosely in the supports C D, which are preferably made in one piece, as shown. These supports C D are held on one side by the rod E, about which they can revolve freely. The opposite sides of the supports C D rest by their own weight upon the uprights *f g* of the frame H when in the position shown, and upon the uprights *h i* when the supports are revolved about the rod E to invert the jaws.

F and G are counter-weights to partly balance the weight of the supports and the jaws and their attachments about the rod E. The rod E, which slides freely in the bearings *p q* of the frame H, receives motion in the direction of its length by means of the bell-crank

r, one arm of which is connected to the rod E, as shown in Fig. 3, and the other arm connected by a rod to a treadle, (not shown,) to be operated by the foot in the usual manner. This treadle is maintained in an elevated position, the rod E at the limit of its backward stroke, and the jaws in a closed position by means of the spring O, placed around the rod E, one end pressing against the collar *a*, which is firmly fastened to the rod, and the other end against the bearing *q*.

Fitted loosely to the rod E, and extending out from it at right angles to its axis, is the cross-bar I. This cross-bar is free to revolve about the rod E, but is compelled to move longitudinally with it by means of the collars *a b*, which are securely fastened to the rod E. The outer end of the cross-bar I is supported and guided in its movements by the guide-rods *d e*, which pass through the lugs *t u* in the cross-bar I and are fastened at their ends to the supports C D.

J and K are links pivoted at one end to the pin *e* of the cross-bar I, and the other ends attached to the jaws A B by the pins *j k*. The links L M are each pivoted at one end to the support D by the pins *l m*, the other ends being attached to the jaws by the pins *n o*. These links L M serve to hold the jaws in position in the direction of their length, and answer the same purpose as the pins and cross-slots of my former patent before referred to, and are an improvement on them, as they operate with less friction and are more easily constructed. They can be used in connection with the back disk in place of the pins and cross-slots in said machine.

As shown in Figs. 1 and 4, a coil-spring, N, is attached by suitable lugs to the rear portion of the jaws A B, and tends to retain the rear portion of said jaws in a closed position, but is sufficiently yielding to permit the jaws to be spread apart in the operation of the machine.

Extending under the jaws A B across the front of the machine and serving as a support for the outer ends of the jaws A B is a bar, P, which is provided with depressions *v w*, into which the buttons of the shoe may be projected to prevent their being compressed or strained in the treeing operation. This bar

is not essential to the machine, but is desirable on some classes of work where heavy malleting is to be done.

In operation the boot-leg is sleeved over the shaping-jaws while in the closed position, as shown in Fig. 1. When the boot is in the proper position, the treadle is depressed, and the shaping-jaws thereby separated until the boot-leg is stretched to the desired degree, in which position the jaws are maintained by the means usually employed in boot-trees. When the treeing operation has been completed on one side of the boot, the jaws are rotated, while still separated, about the rod E, thus bringing the other side of the boot in position to be operated upon.

This invention differs from that described and shown in my former patent, inasmuch as the supports for the jaws, instead of turning axially or on their own center to invert the jaws, are attached to bearings on one side of the center and swing bodily from one side to the other, and are supported in the opposite positions by suitable stops. By this means some advantages are attained, as the work is more readily handled and is held in more convenient position for operation. The bearings are also lighter, and by the use of counterweights, as described, they are accurately balanced, so that the frame can be easily turned from one side to the other, which is a matter of importance to facilitate rapid work.

Having described my invention, I do not claim, broadly, rotating jaws capable of being inverted in position; neither do I claim, broadly, toggle arms or levers for expanding the jaw.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for stretching and finishing shoes, the combination, with a sliding shaft, of bearings on the shaft extending out laterally on one side and a pair of stretching-jaws supported in the bearings, the whole arranged, as described, so that the jaws can be reversed and thrown from side to side, as specified.

2. In a machine for stretching and finishing shoes, the combination of a sliding shaft, bearings extending out laterally from the shaft, a

pair of stretching-jaws supported in the bearings, and stops on opposite sides on which the bearings strike to limit the motion in either direction, as set forth.

3. In a machine for stretching and finishing shoes, the combination of a sliding shaft, bearings extending out laterally from the shaft, a pair of stretching-jaws supported in the bearings, and a bar resting under the jaws, with cavities on opposite sides to receive the buttons of the shoes when the jaws are thrown from one side to the other, as described.

4. In a machine for stretching and finishing shoes, the combination of a pair of stretching-jaws, bearings for the jaws capable of being reversed in position, a shaft capable of end movement, and means, substantially as described, connected with the shaft for spreading the jaws, as set forth.

5. In a machine for stretching and finishing shoes, the combination of a pair of stretching-jaws, bearings for the jaws capable of being reversed in position, a shaft capable of end movement, a cross-bar attached to the shaft, links connecting the cross-bar with the jaws for spreading the same, and links connecting the jaws with one of the bearings in which the jaws rest, as and for the purpose specified.

6. In a machine for stretching and finishing shoes, the combination of the supporting-bar P, the stretching-jaws A B, the jaw-supports C D, the pivot around which the supports revolve, and means, substantially as described, for spreading the jaws, as set forth.

7. In a machine for stretching and finishing shoes, the combination of a pair of stretching-jaws, bearings for the jaws capable of being swung bodily from side to side, a shaft on which the bearings turn, said shaft capable of end movement, means, substantially as described, connected with the shaft for spreading the jaws, a bell-crank for producing end movement of the shaft, and a spring for retracting the same, as set forth.

IRVING E. BOOTH.

Witnesses:

Q. W. BOOTH,
H. H. ROBINSON.