

(No Model.)

E. S. BABCOCK.

COMPOUND METAL WORKING MACHINE.

No. 377,976.

Patented Feb. 14, 1888.

Fig. 1.

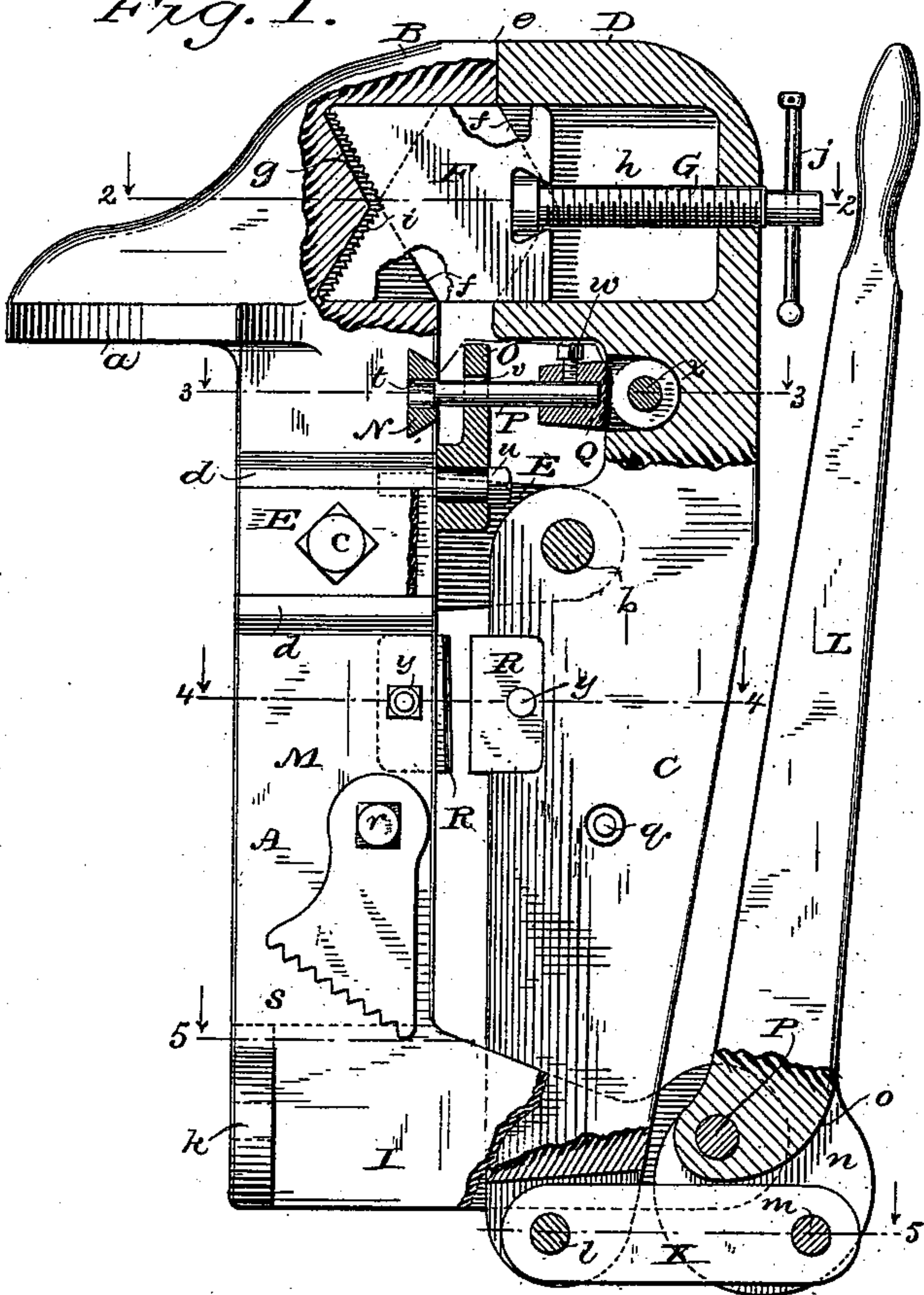


Fig. 2.

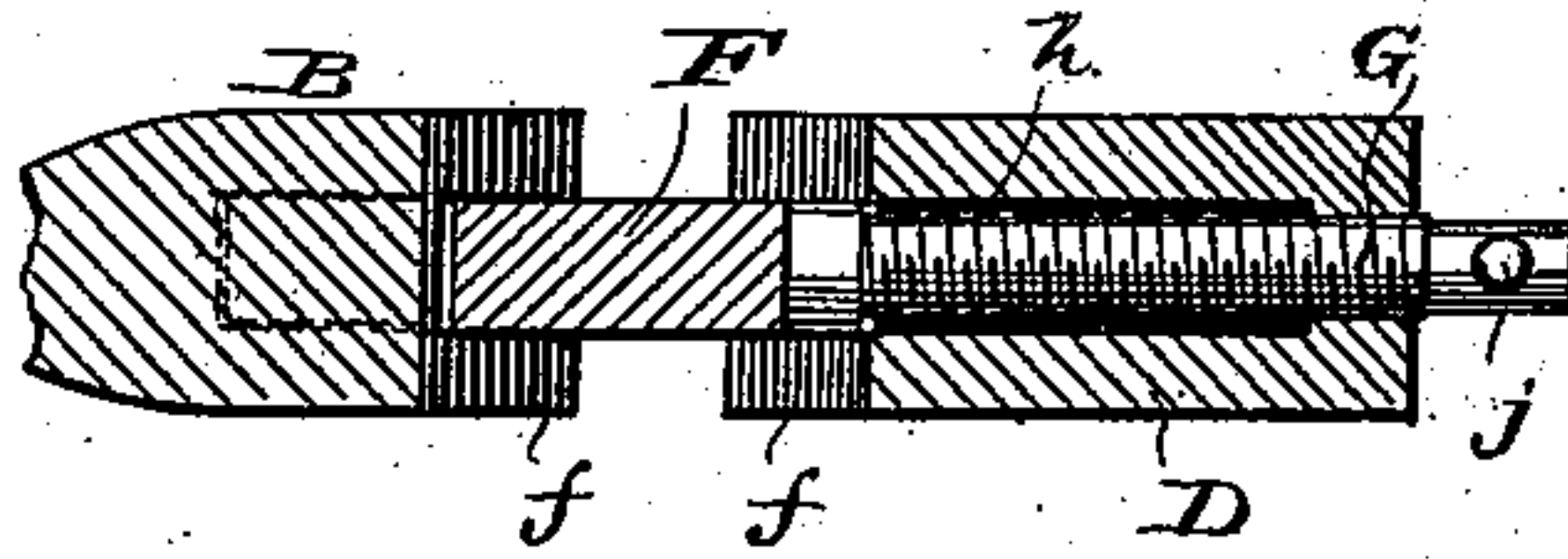


Fig. 3.

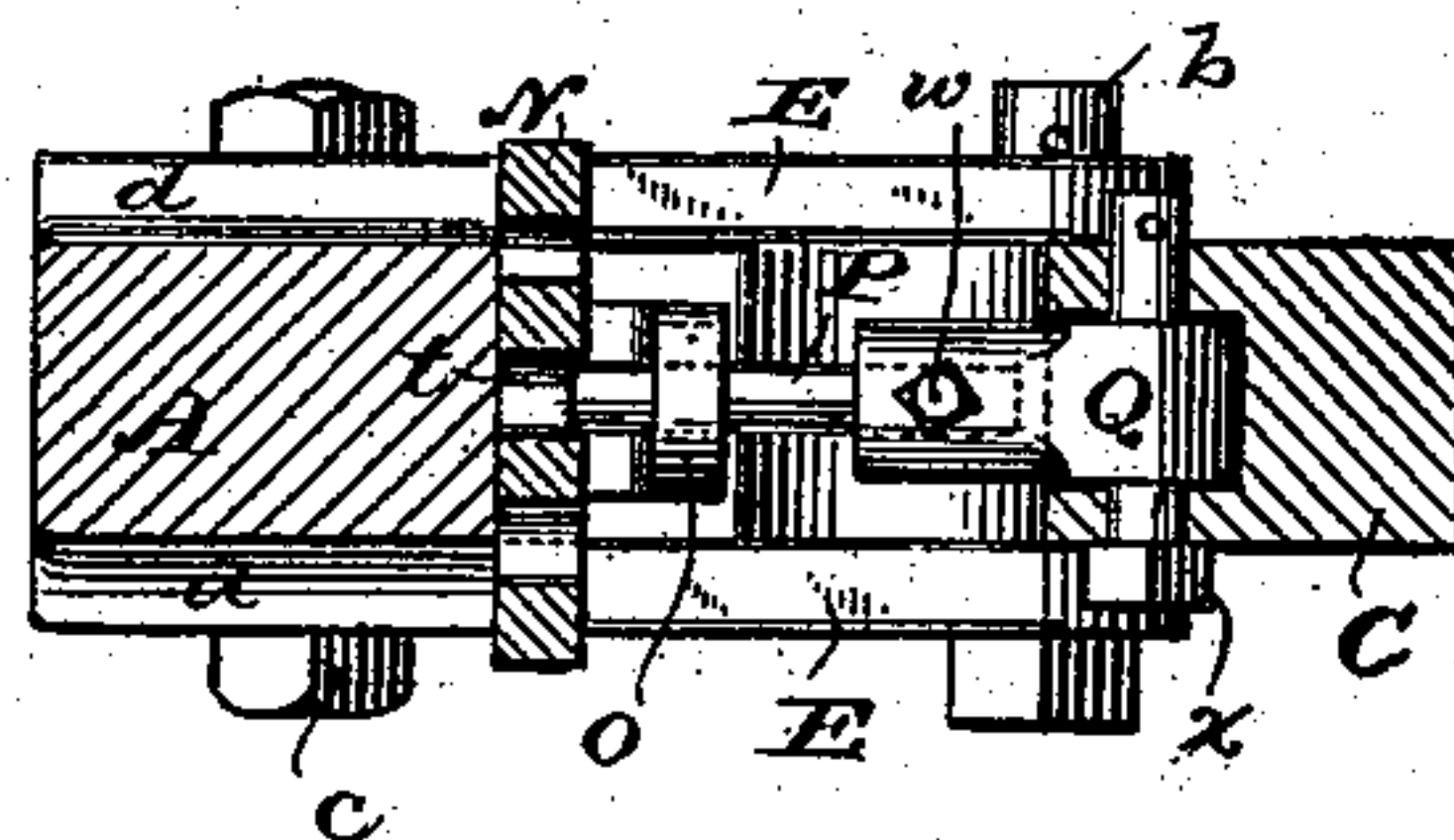


Fig. 4.

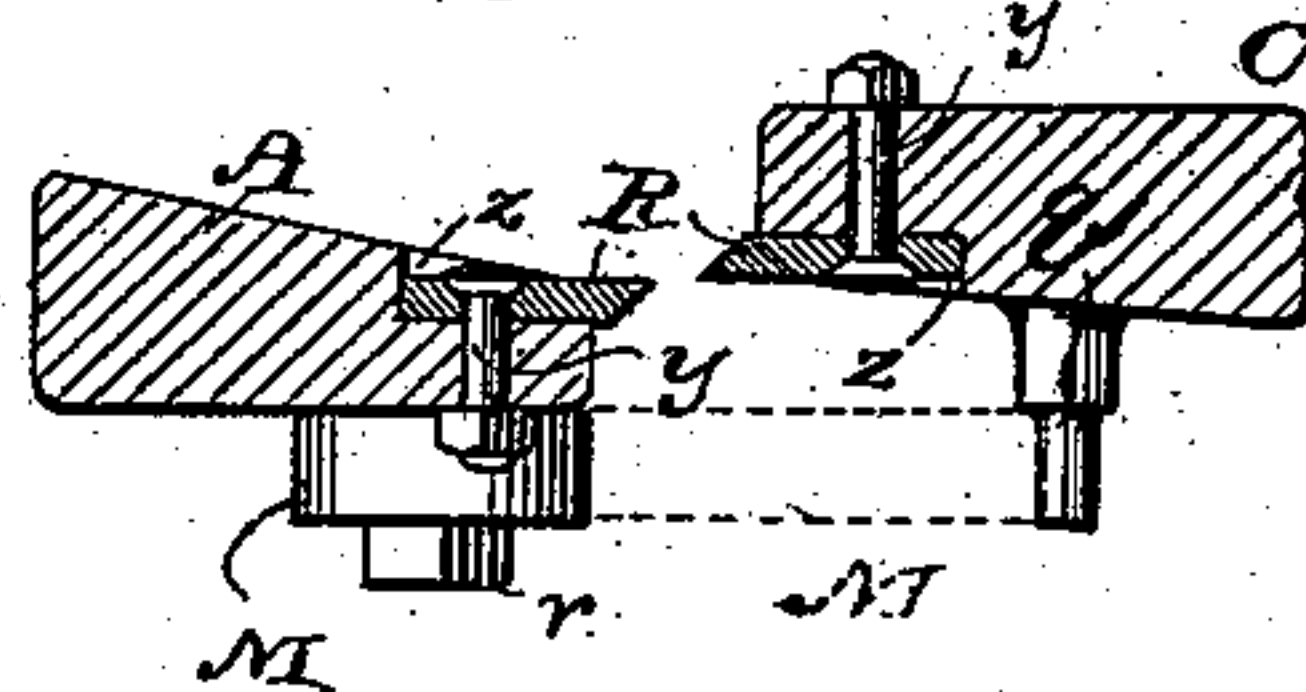


Fig. 5.

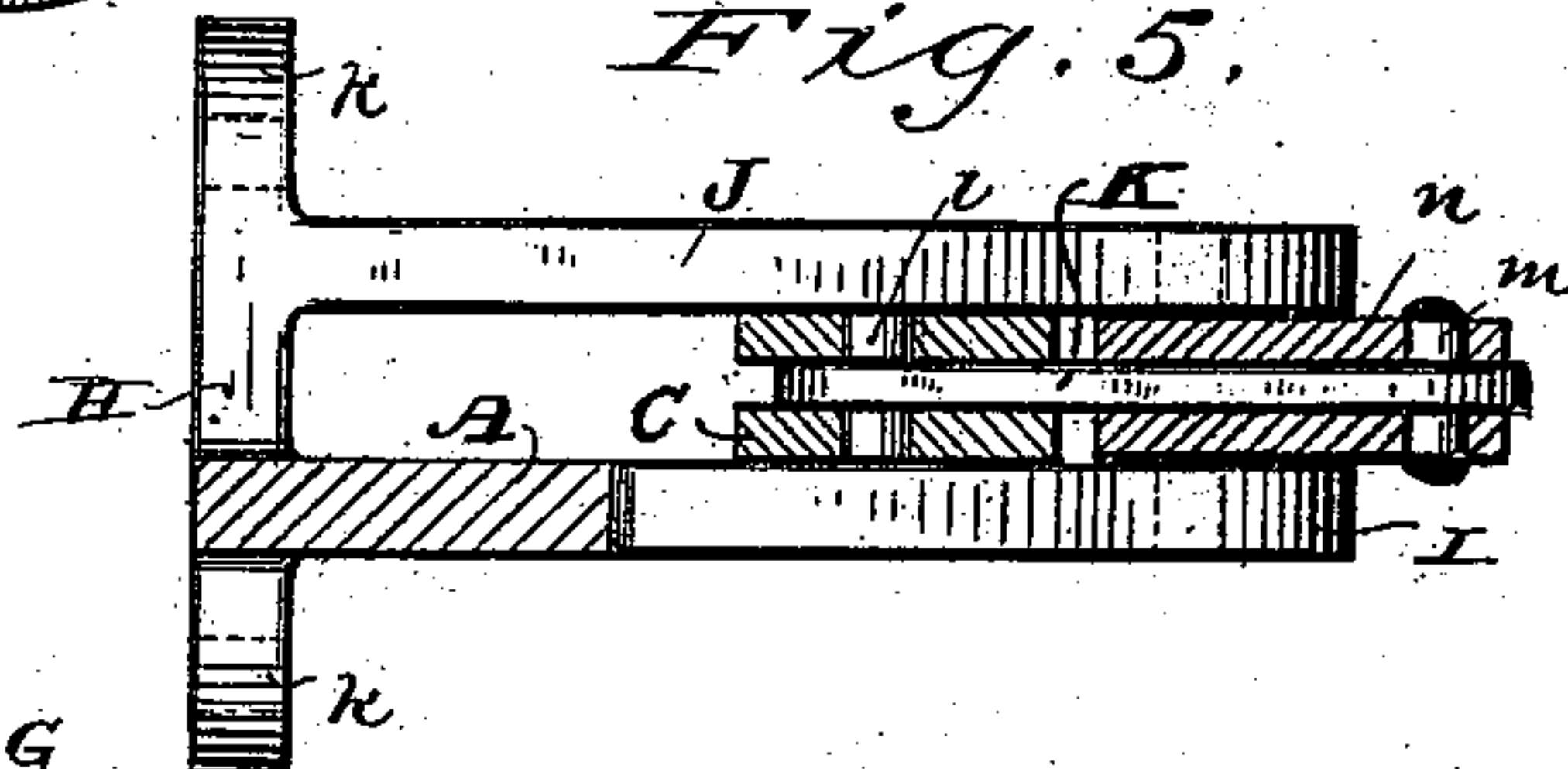


Fig. 6.

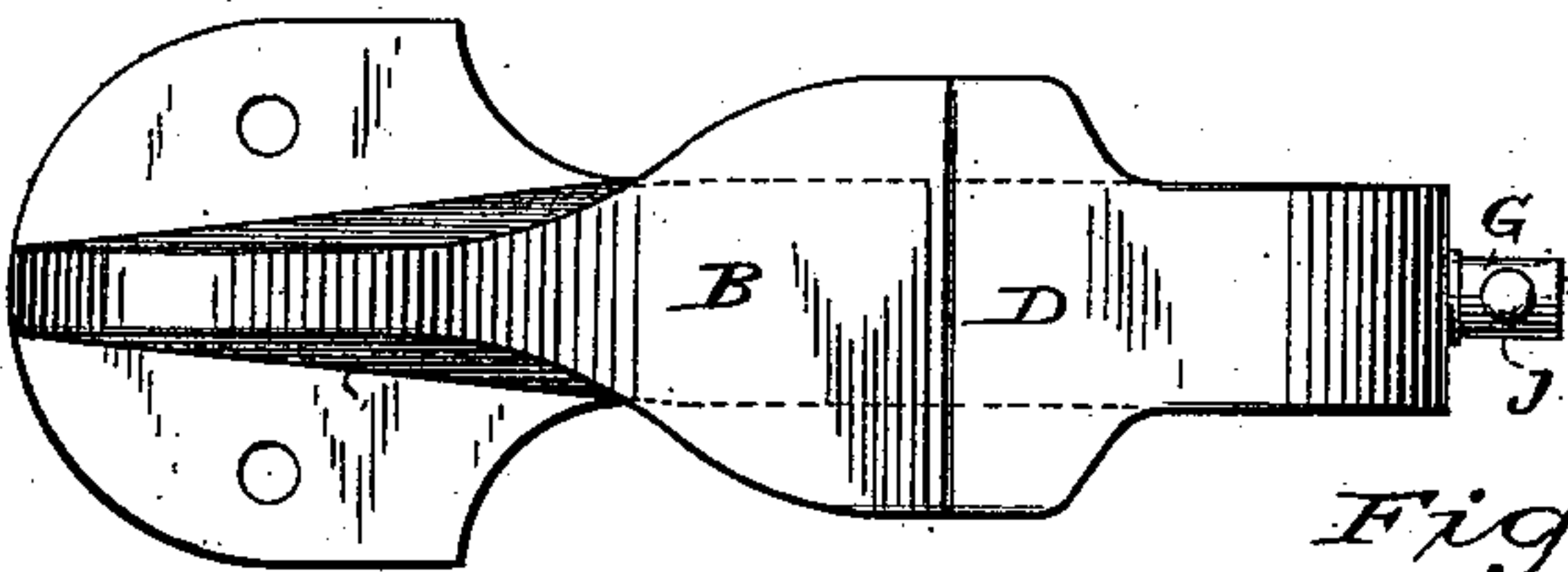
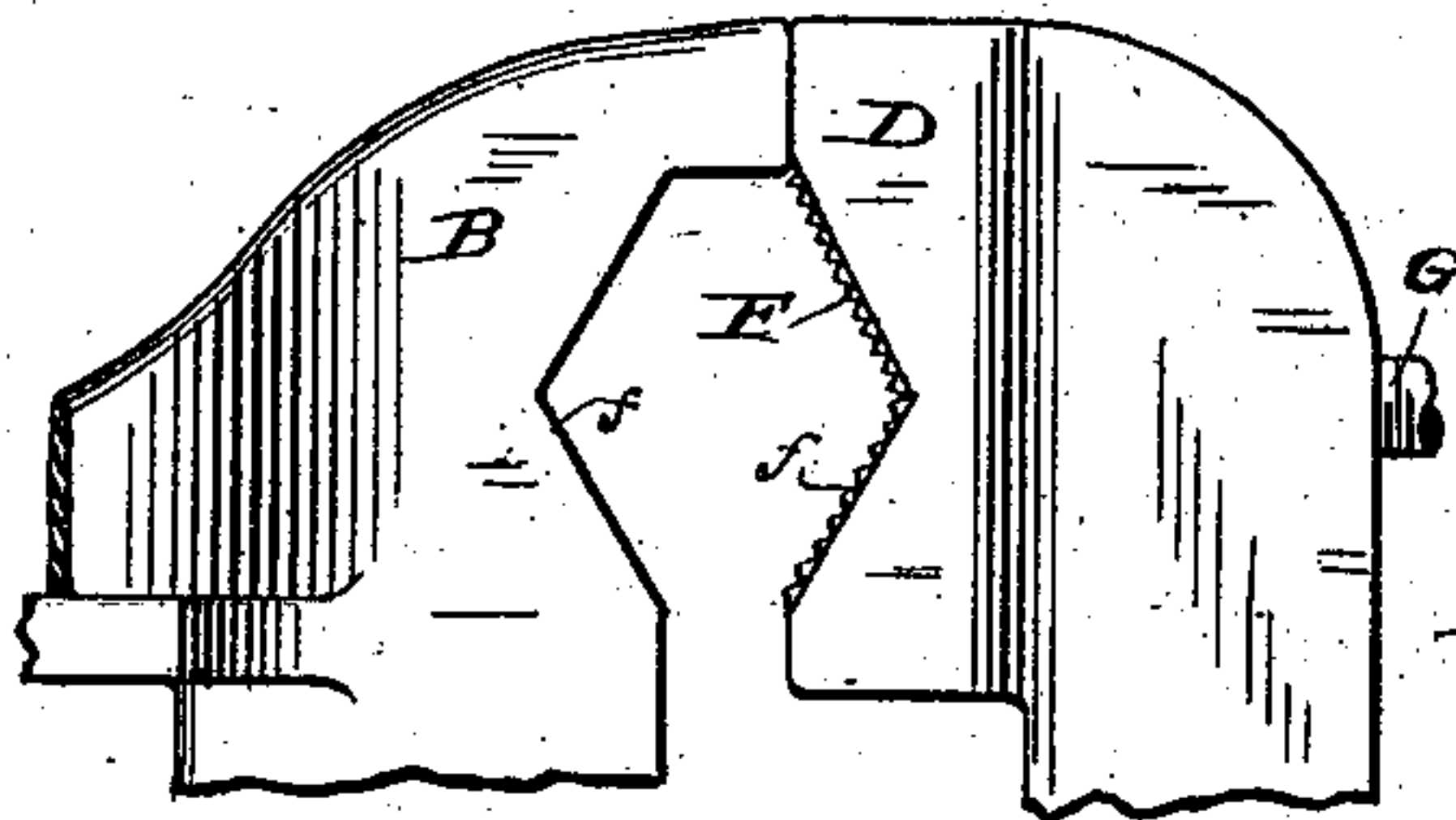


Fig. 7.



Witnesses.

Geo. W. Young
N. E. Oliphant

Inventor.

E. Stillman Babcock.

By J. H. Underwood
Attorneys.

UNITED STATES PATENT OFFICE.

E. STILLMAN BABCOCK, OF MILTON, WISCONSIN, ASSIGNOR OF ONE-HALF
TO PAUL M. GREEN, OF SAME PLACE.

COMPOUND METAL-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 377,976, dated February 14, 1888.

Application filed July 21, 1887. Serial No. 244,866. (No model.)

To all whom it may concern:

Be it known that I, E. STILLMAN BABCOCK, of Milton, in the county of Rock, and in the State of Wisconsin, have invented certain new and useful Improvements in a Combined Vise and Punching and Shearing Machine; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to metal-working machines; and it consists in a combined vise and punching and shearing machine, all as will be fully set forth hereinafter, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my device, partly broken away to better illustrate the construction. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1, looking down. Fig. 3 is a like view on the line 3 3 of Fig. 1. Fig. 4 is a like view on the line 4 4 of Fig. 1. Fig. 5 is a like view on the line 5 5 of Fig. 1. Fig. 6 is a plan view, and Fig. 7 a side elevation, of the upper part or vise portion.

A is the stationary standard of my machine, having flange *a*, whereby it may be suspended from a bench, (when used in a vertical position,) and above this is the head B, containing one jaw of the vise.

C is the swinging standard, having a head, D, containing the other jaw of the vise and pivoted at *b* between a pair of bearing strips, E E, which are themselves secured to the stationary standard A, between the lugs *d d*, by bolts *c*. The heads B D of the vise portion meet at the top on the vertical line *e*, and below the same each has a V-shaped concave face, *f f*, making a pipe vise or jaws for round objects, and in order that objects as small as wires may be grasped and held by said vise each of these heads B and D is centrally cut away, the former to form a V-shaped convex surface, *g*, (exactly the opposite of its face *f*,) while the head D is provided with a central groove, *h*, to receive a sliding head, F, which has a V-shaped concave serrated face, *i*, the said head F being moved forward or back in its groove by the screw G, whose head is secured to the rear end of the head F, and whose shank projects through a screw-threaded opening in the head D and may be provided with a bar, *j*, or other device for readily turning it.

The base of my machine is formed with two parallel horizontal arms, I and J, the former extending from the standard A and rigidly united at that end by a piece, H, having projecting ears *k k*, said pieces and ears being flush with the outer edge of the standard A, so that the device may be placed horizontally of its greatest length on a bench when more convenient to operate it in this position than in the vertical position shown in Fig. 1.

The swinging standard C projects below the bottom line of the arms I and J, and is bifurcated to receive one end of a link, K, pivoted at *l* to said standard, the other end of said link being pivoted at *m* to the eccentric head *n* of the lever L, said head *n* being similarly bifurcated to receive this end of the link K, and having a cam-surface, *o*, above the link K, adapted to bear thereon, the head being itself pivoted at *p* between the arms I and J. The standard C is provided with a pin or stop, *q*, and the standard A with a detent, M, pivoted thereto at *r* and having a notched face, *s*, and when the jaws of the vise have been adjusted the desired distance apart, in order to more firmly hold any object between them, the detent M is brought up so that one of the notches in its face *s* shall engage with the pin *q*, and thereby insure steadiness and security in the relative positions of the standards A and C and the jaws of the vise formed thereon.

I will next describe the punching device.

The upper part of the standard A, just beneath the head B, is provided with a transverse dovetail groove for the reception of a similarly-shaped block, N, provided with a series of holes, *t t t*, of different diameters, and below this groove there is secured by screw-bolt *u* a supporting-block, O, whose upper portion is offset, so as to furnish space between its inner surface and that of the standard A for the metal to be punched, said upper portion having a hole, *v*, therethrough in line with one of the holes *t*, just described, for the admission of the punch P, which latter is secured by set-screw *w* in the stock Q, which in turn is pivoted by bolt *x* to the standard C, the rounded ends of said stock fitting within a suitable recess formed therein. It is designed to use a series of these punches P corresponding to the diameters of the holes *t t t* in the

block N, which block is moved within its groove so as to bring the corresponding hole *t* opposite the hole *v* in the supporting-block O for use in connection with the particular punch to be used at any time. Below the line of the bearing-strips E E are located the shearing devices, consisting of the blades R R, secured within suitable recesses, *z z*, in the standards A C by bolts *y y*.

10 The operation of my machine will be readily understood by the foregoing description of its construction.

All of the parts are operated by the lever L, which brings the swinging standard C and its attachments against the stationary standard A, so that the metal being worked can be held between the jaws of the vise or punched or sheared at will by a single movement of the lever L.

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

1. The combination of a stationary standard and a swinging standard pivoted thereto, the said standards being provided at their upper ends with vise-jaws, with an operating-lever having a cam-head pivoted to the base-frame of the machine and united by a link to the lower end of the said swinging lever, substantially as and for the purpose set forth.

2. The combination of a stationary standard, a swinging standard pivoted thereto, an operating-lever having a cam-head pivoted to the base-frame of the machine and linked to the lower part of the swinging standard, and vise-jaws and punching and shearing devices carried by the said standards and adapted to be operated by a movement of the said lever, substantially as and for the purpose set forth.

40 3. The combination of a stationary standard and a swinging standard pivoted thereto, each standard having a head with straight and V-

shaped concave-faced vise-jaws formed on their opposing inner surfaces, and an operating-lever pivoted to the base-frame of the machine and linked to the swinging standard, a pin or stop projecting from one of the standards, and a detent with notched face for engagement with said pin or stop, pivoted to the other standard, substantially as set forth. 45

4. The combination of stationary standard A, having head B, provided with V-shaped concave-faced vise-jaw *f*, centrally cut away, so as to leave an interior convex-faced V-shaped surface, *g*, with swinging standard C, having head D, provided with V-shaped concave-faced vise-jaw *f*, having central groove, *h*, sliding block F, and adjusting-screw G, and operating-lever L, substantially as set forth. 50

5. The combination of stationary standard A, provided with a transverse groove and perforated block N, adjustable therein, and supporting-block O, bolted to said standard below said groove and having an opening through its upper offset portion, with the swinging standard C, pivoted to standard A and bearing stock Q and punch P, and the operating-lever L, substantially as set forth. 55

6. The combination of stationary standard A and swinging standard C, pivoted thereto, with the shearing-blades R R, secured by bolts *y y* within recesses *z z* in said standards opposite each other, and the operating-lever L, having a cam-head pivoted to the base-frame of the machine and linked to the swinging standard C, substantially as set forth. 60

In testimony that I claim the foregoing I have hereunto set my hand, at Milton, in the county of Rock and State of Wisconsin, in the presence of two witnesses.

E. STILLMAN BABCOCK.

Witnesses:

E. B. SAUNDERS,

E. A. STEER.