

Halliwell & Osborn, File-Cutting Machine.

N^o 17,928.

Patented Aug. 4, 1857.

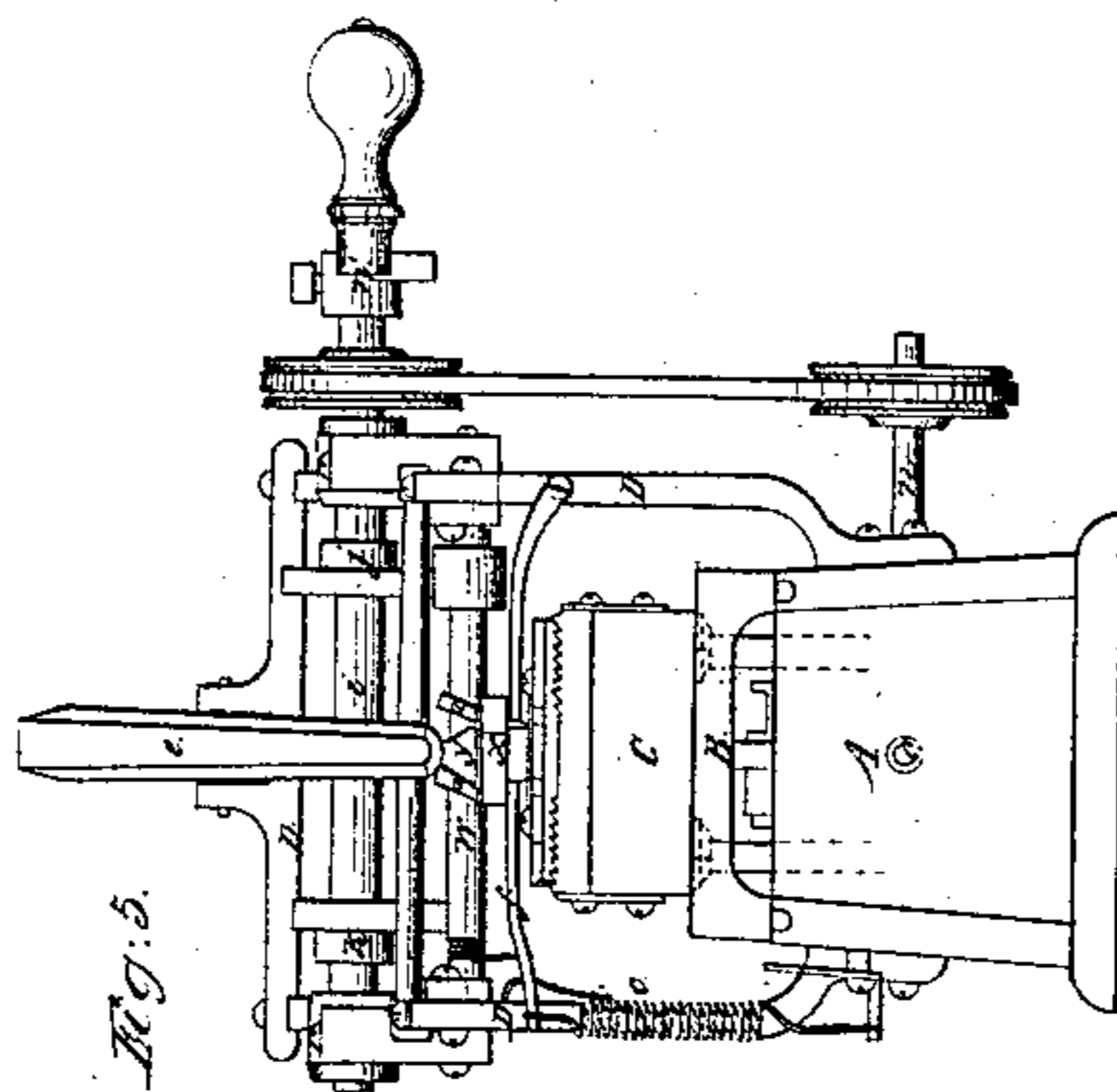
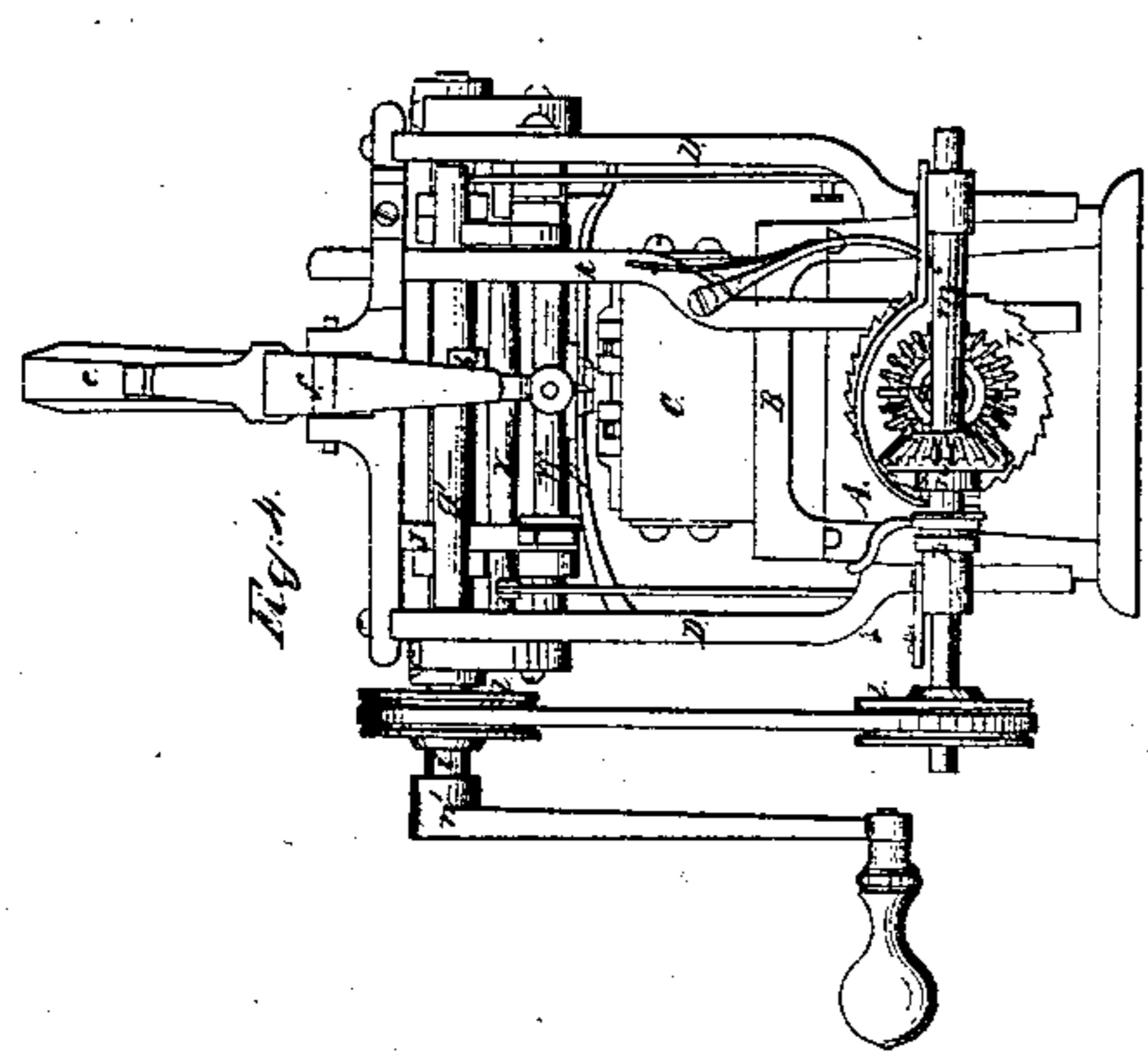


Fig. 6.

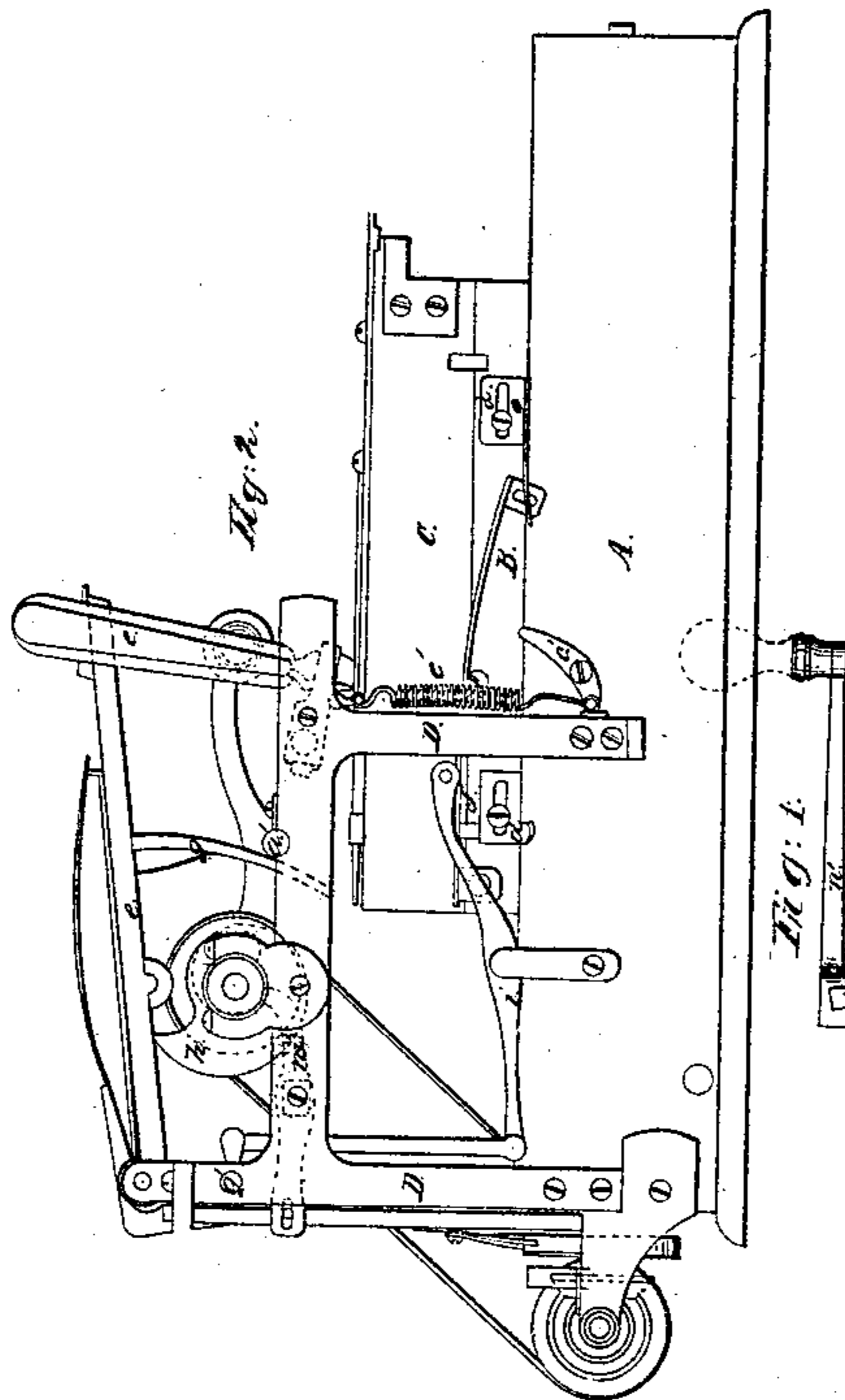
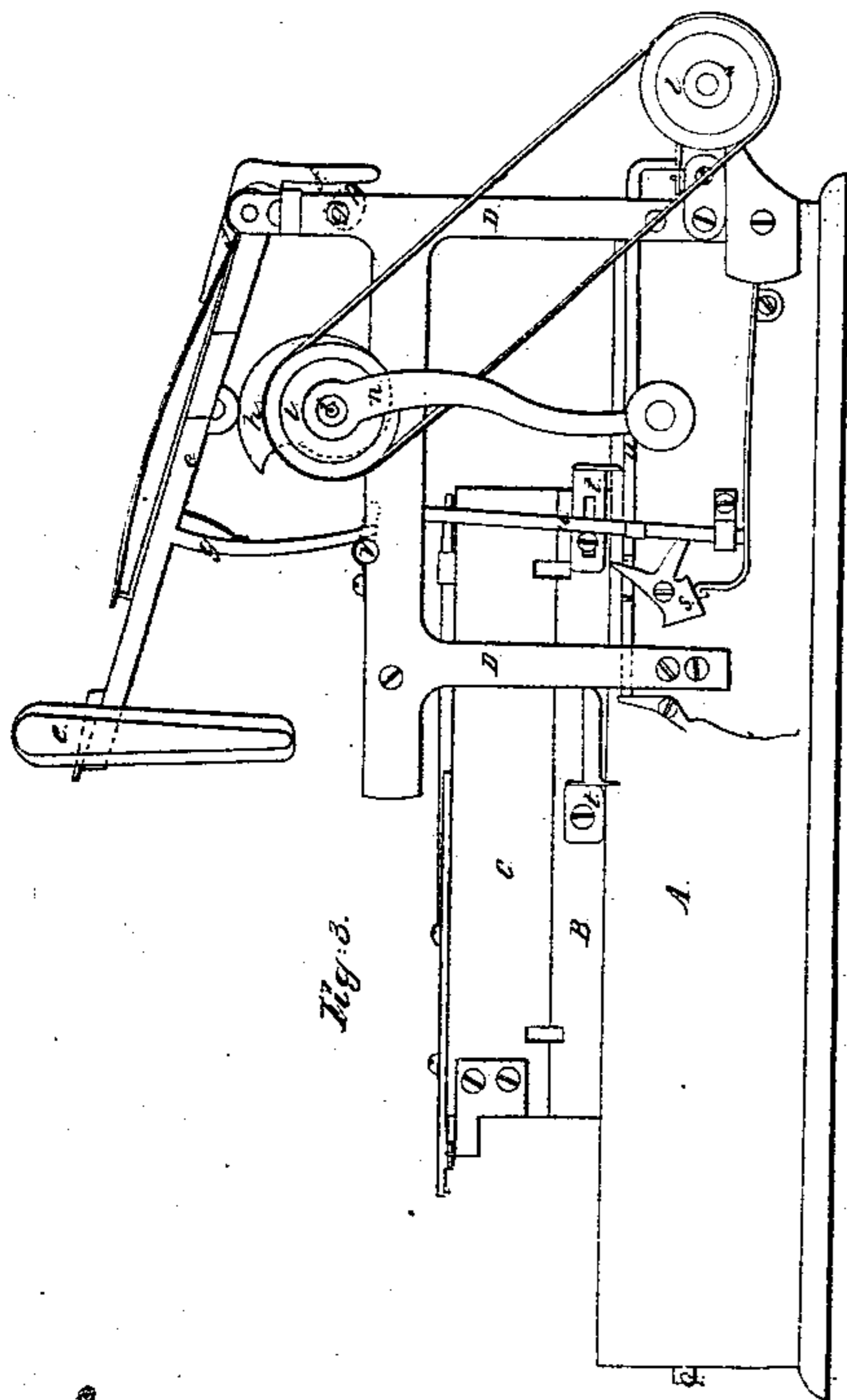
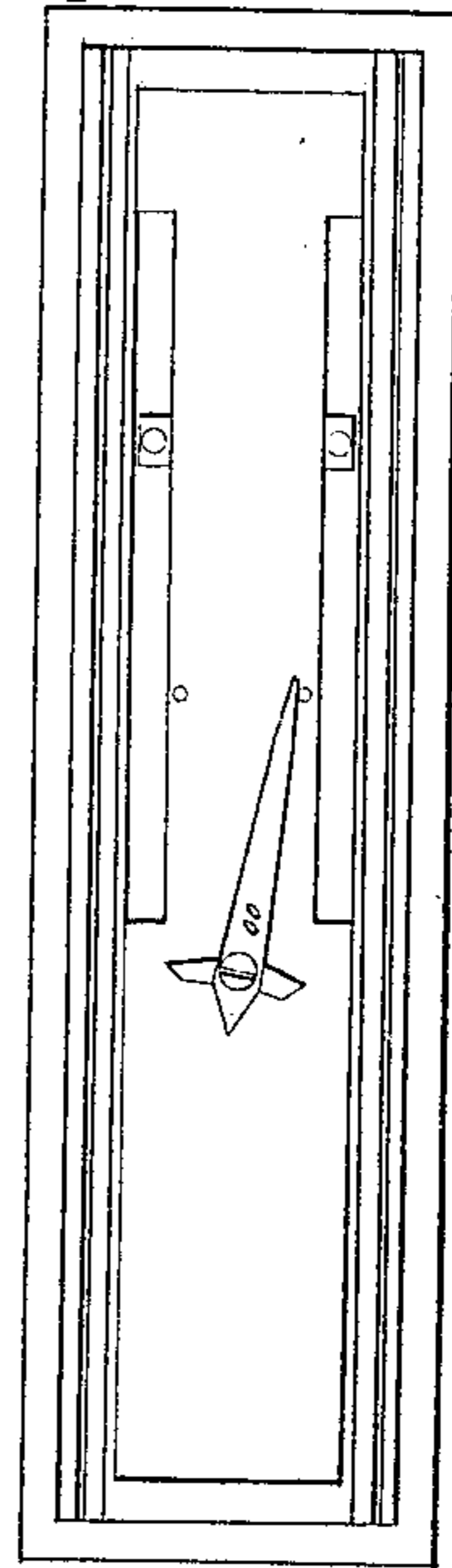
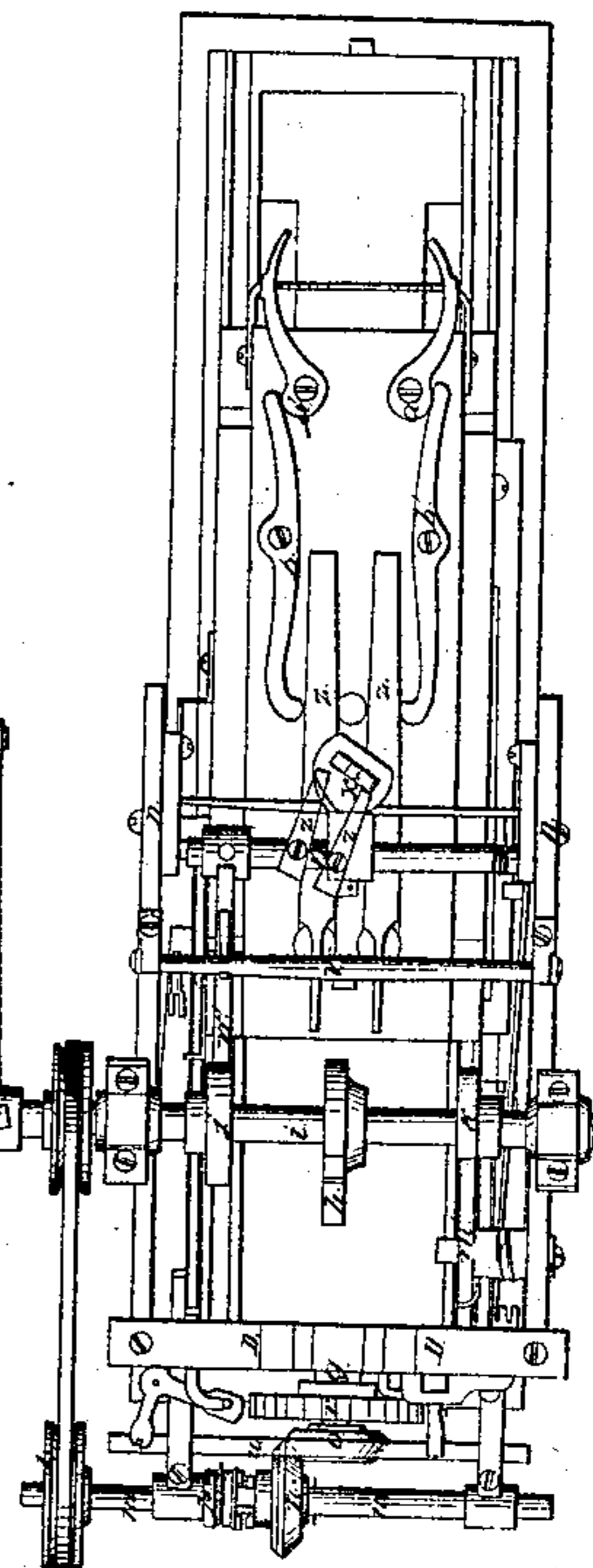


Fig. 1.



UNITED STATES PATENT OFFICE.

WILLIAM HALLIWELL AND LEVI OSBORN, OF POUGHKEEPSIE, NEW YORK.

FILE-CUTTING MACHINE.

Specification of Letters Patent No. 17,928, dated August 4, 1857.

To all whom it may concern:

Be it known that we, WILLIAM HALLIWELL and LEVI OSBORN, of the city of Poughkeepsie, county of Dutchess, and State of New York, have invented a new and useful Self-Adjusting Machine for Cutting Files; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a horizontal view. Figs. 2 and 3 longitudinal elevations. Figs. 4 and 5 transverse elevations.

A is the bed of the machine; B a moving carriage sliding on A by means of a screw therein as hereinafter described; C a lateral sliding carriage regulated by the self-acting switch *o o* (Fig. 6) also hereafter described upon which are placed the files (*z z*) required to be cut, these files being secured by means of the levers *b' b'* acting upon the cams *a' a'* and rack.

D is the frame of the machine—*e* the hammer the point inclining to the fulcrum of the hammer shaft—*f*, a spring attached to the hammer to strengthen the blow.

X is the chisel fixed in a moving socket on the rock shaft W which rock shaft is acted upon by the lever W' and eccentric lever *j* fixed on the shaft *i* to which is applied the motive power;—*h*, an eccentric lever regulating the stroke of the hammer. Upon the shaft *i* is also placed another eccentric lever *k* which in connection with the lever *m'* and spiral spring attached act upon the ratchet *k—e* and the wheel *r* (Fig. 4) which is fixed on the end of the screw—for the purpose of moving forward the carriages B and C. The bar *f'* is furnished with a roller immediately under the chisel socket which by means of the spiral springs attached to the bar is kept firmly on the files and holds them firmly on the carriage except during the change motion of the carriages.

As files are much broader toward the middle than at the point the chisel will necessarily require a heavier blow to make a uniform cut throughout. To accomplish this object, we attach to the carriage B an incline plane J' which acting on the lever *i'* (Fig. 2) causes the spur *h* on the shaft *g'* to press against the base of the hammer

spring *f* (Fig. 4) and consequently produces a heavier stroke of the hammer.

The carriage B moving forward carries with it the stops *t* (Fig. 3) and *d'* (Fig. 2) until *t* coming in contact with one of the arms of the tumbler *s* (Fig. 3) causes the opposite point to press on and move over the spring and draws with it the horizontal bar *u* raises the other arm of the tumbler which raises the perpendicular bar *u* which acting upon the rock shaft V brings the gag *a'* (Fig. 2) under the spur *g* of the hammer and prevents the hammer striking during the change motion of the carriages—the horizontal bar *u* (Fig. 3) acting upon the crank and bar *u* Fig. 1, which is connected with the sliding clutch *p* on the shaft *m* moves the clutch *p* into gear with the cog wheel *n*—and holds back the ratchet *e'* (Fig. 4) while (the wheel *n* acting upon *o* motion having been communicated by means of the belt and pulleys) the carriages are being brought back—then the other stop *t* (Fig. 3) again coming in contact with the tumbler draws back the horizontal bar *u*, ungears the wheel *n*—and leaves the ratchet *e'* at liberty to perform its function. The hammer however yet remains tripped by reason of the long arm of the front stop *t* coming under a pin in the perpendicular bar *u* and thus the chisel does not commence cutting till the carriage has advanced far enough to draw the arm of the stop from under the pin and permits the gag to drop and the hammer to commence striking—the stops *d'* (Fig. 2) act upon the lever C' which acts upon the spring *e'* and regulates the action of the bar and roller under the chisel socket—as when the back stop comes in contact with C' and moves it over the center the effect of the long spring is removed the bar being raised by the spring on the rock shaft of the chisel (Fig. 1) prevents the roller from falling down between the files during the backward motion of the carriage B and the sliding motion of C the backward motion of the carriage B causes the front stop *d'* to adjust the spring and brings the roller again to bear on the files.

Fig. 6, *o o* represents the self acting switch which is placed on the surface of the bed A. The object of the switch is to slide the carriage C to either side of B and thus bring a fresh pile under the chisel.

The operation is as follows: When the

carriages advance either wing of the switch is acted upon by one of two pins which are fixed in the carriage C and project through a small slide in B and move the point of the
5 switch to the opposite side. This motion is accomplished before the change motion is communicated to the carriages. In the center of the sliding carriage C there is a pin which also projects through B by means
10 of another small slide and comes in contact with the side of the switch during the change motion of the carriages, and advancing toward the broad part of the switch

necessarily changes the position of the carriage C to which it is attached and causes it 15 to slide to the opposite side from that which it before occupied.

We claim—

The levers, cams, and ratchet bar as described for holding the file in place.

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Witnesses:

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C. A. McCORD.