

W. F. MOODY.
Dovetailing-Machines.

No. 151,710.

Patented June 9, 1874.

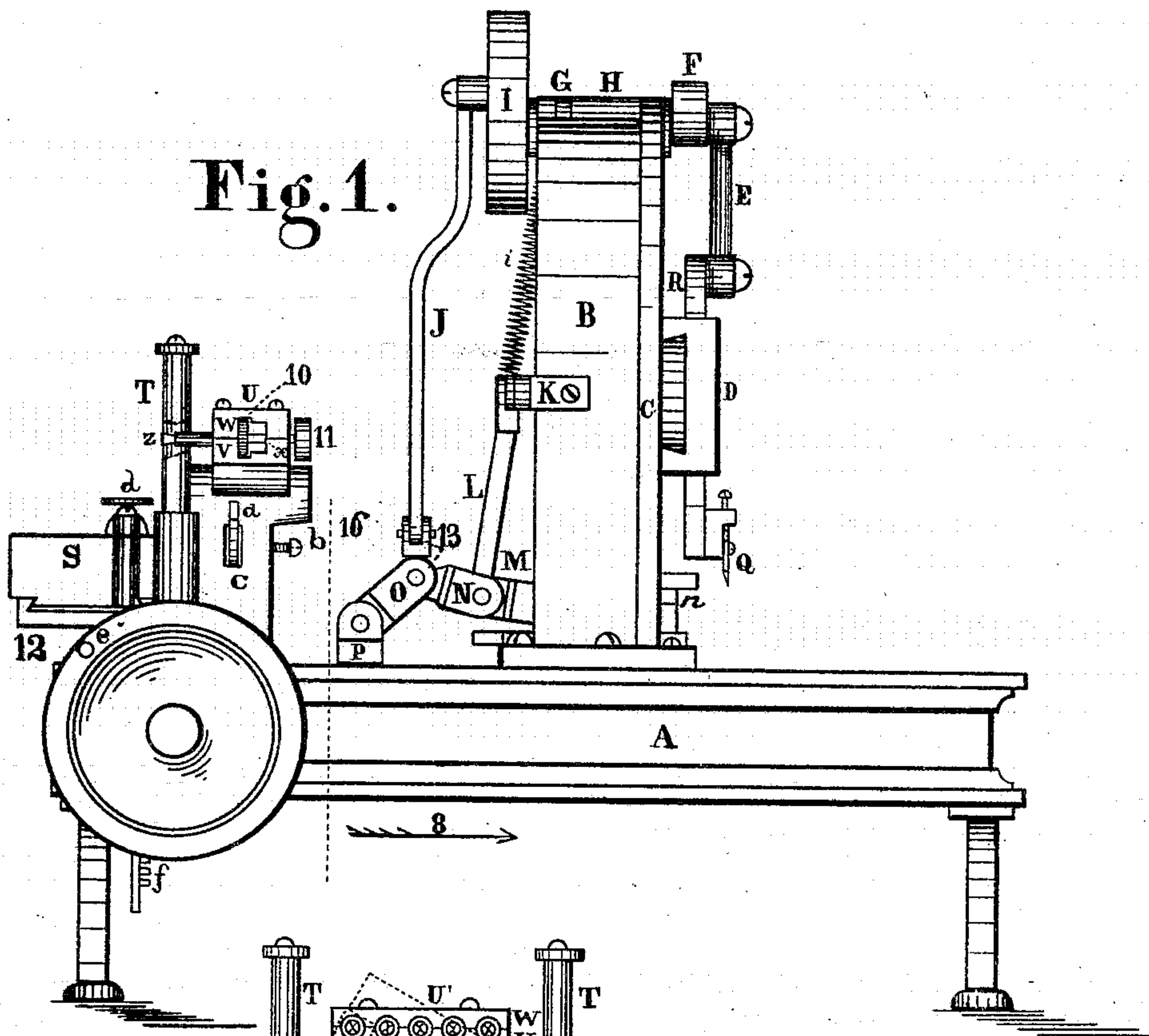
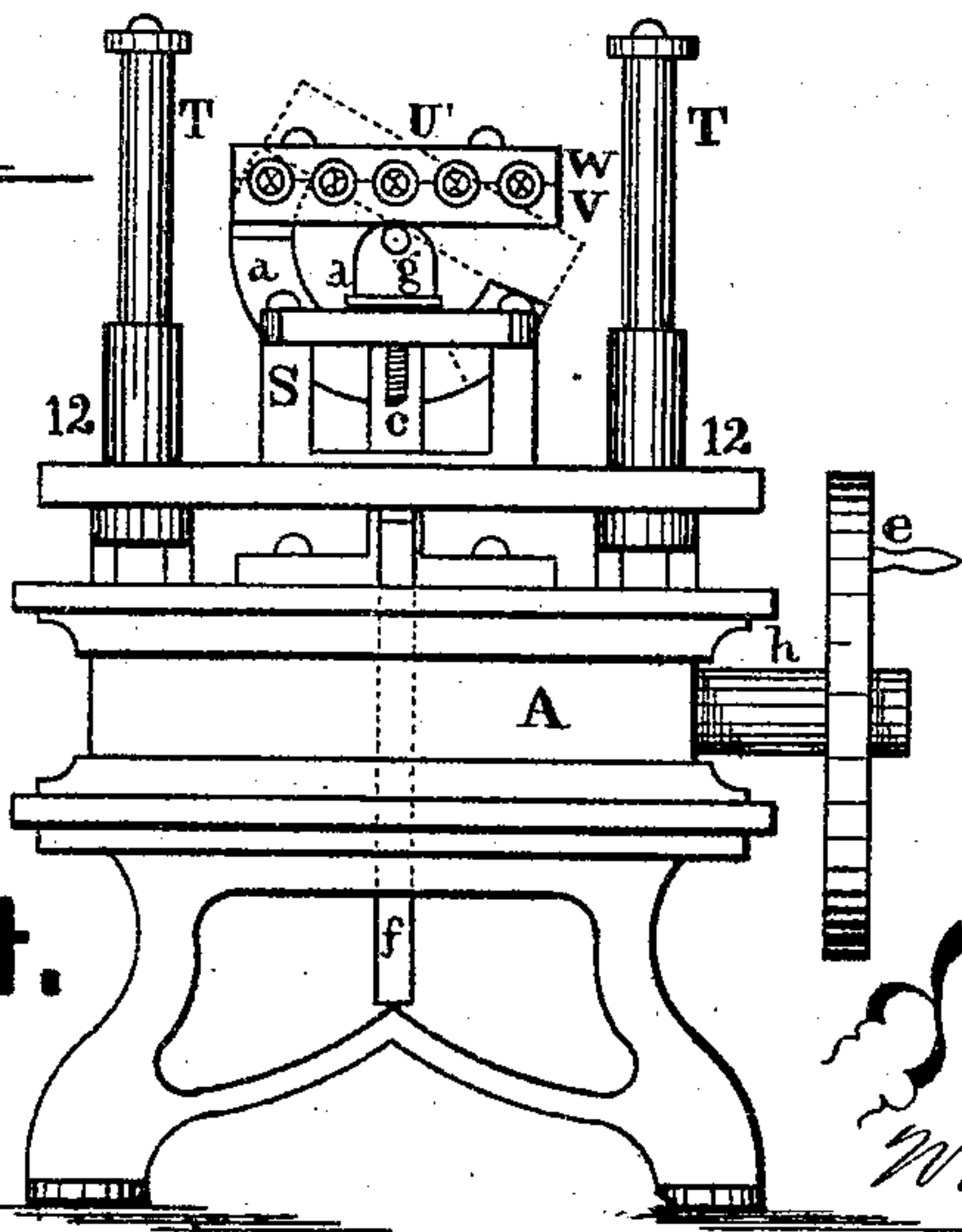


Fig. 2.



Attest.

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Fig. 4.

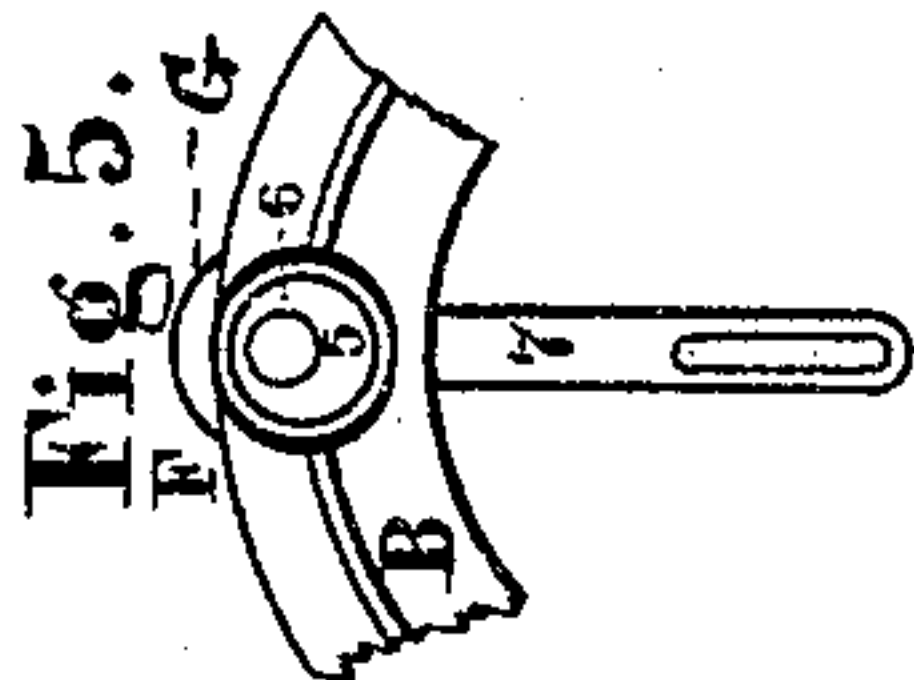
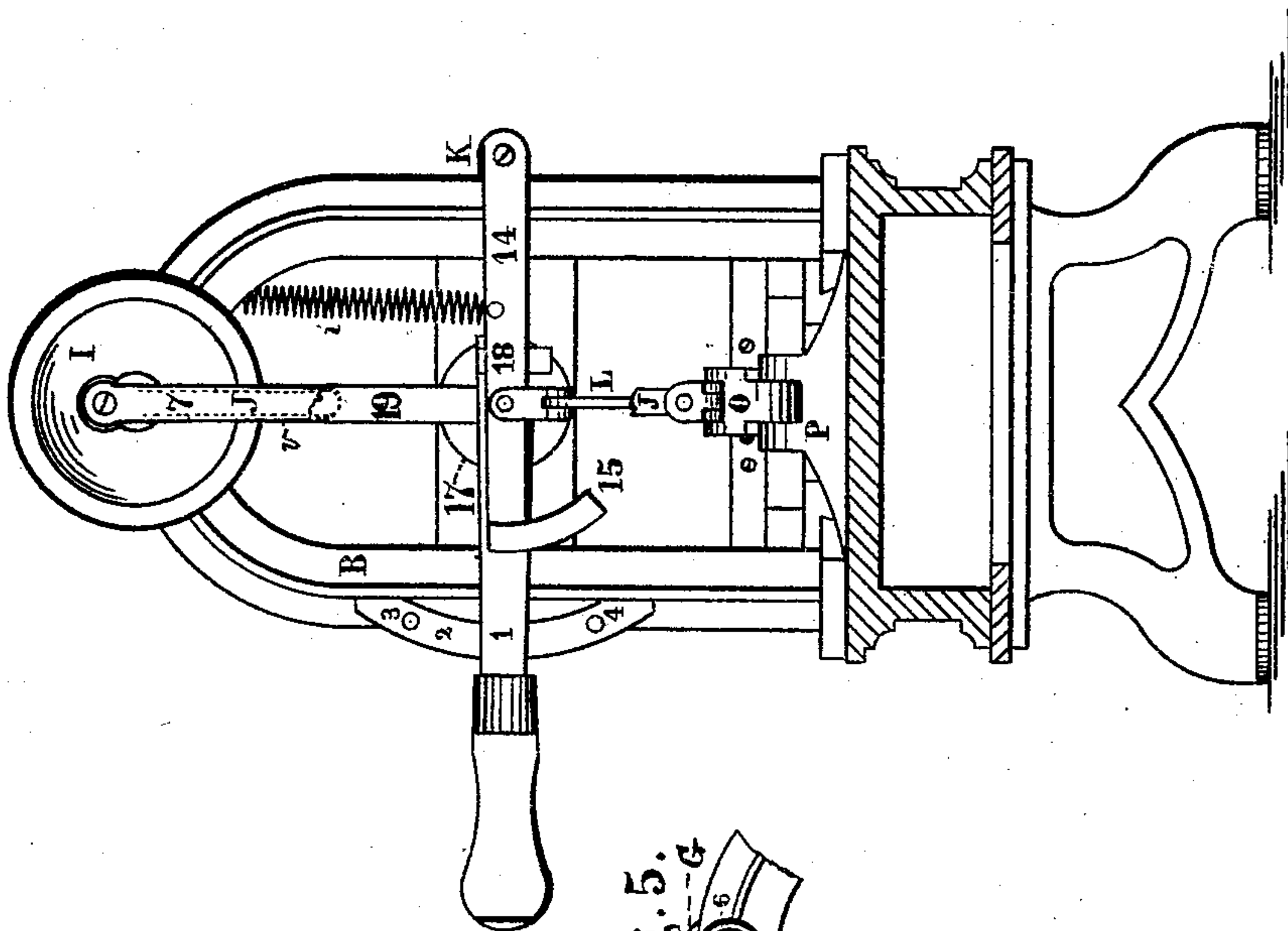
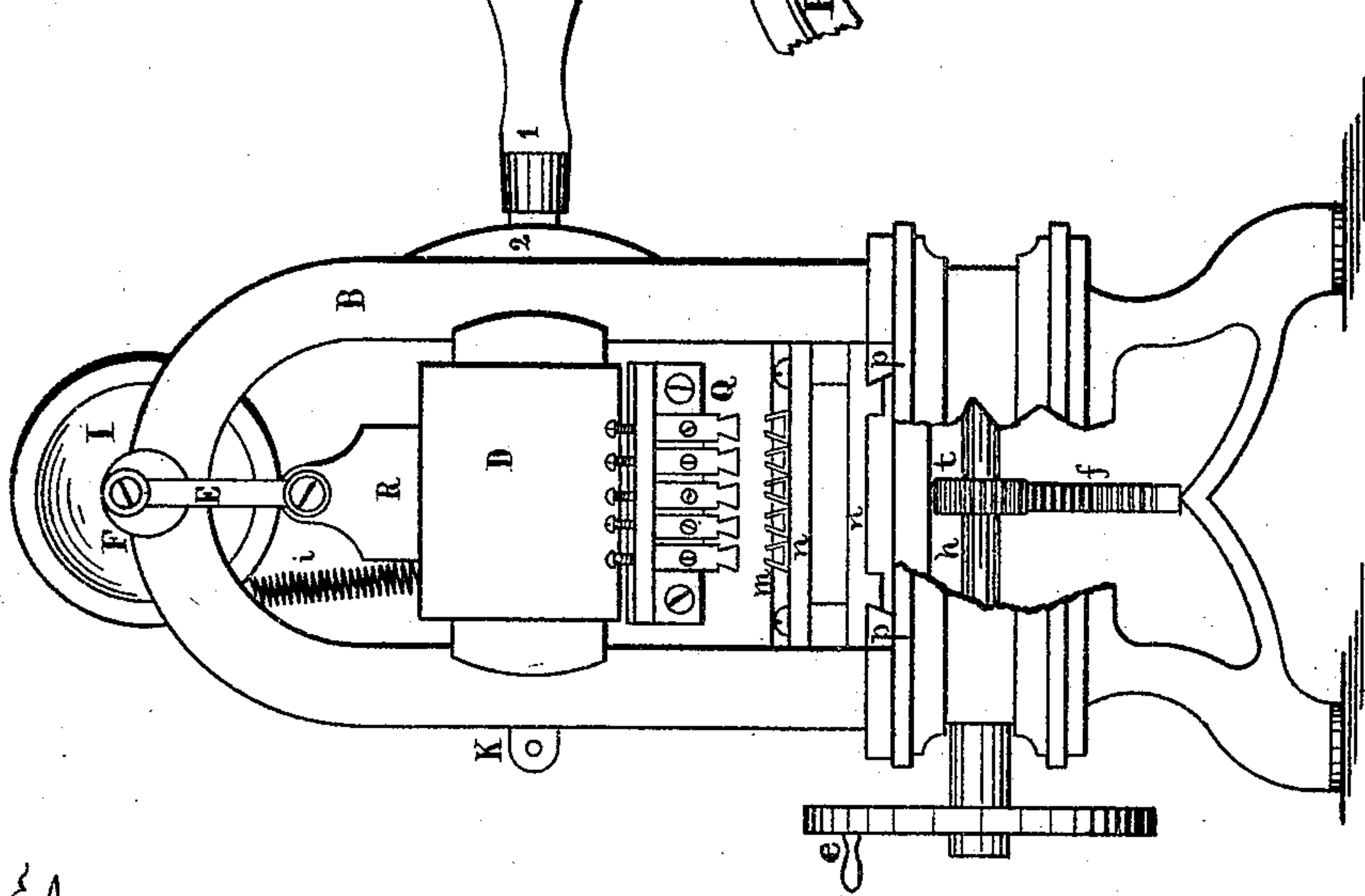


Fig. 3.



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WILLIAM F. MOODY, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN DOVETAILING-MACHINES.

Specification forming part of Letters Patent No. **151,710**, dated June 9, 1874; application filed April 30, 1874.

To all whom it may concern:

Be it known that I, WILLIAM F. MOODY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dovetailing-Machines, of which the following is a specification:

The present invention relates to an improvement in that class of machines which are to cut both blind and open dovetails, for fastening the angles of drawers, boxes, and other articles together. Its nature consists, first, in the novel construction of a tilting bit-head, which carries a series of bits for cutting the tenons to fit in the dovetails, the tilting of the head being such that tenons can be cut at any desired distance apart; second, with the tilting head, the use of an adjustable feed-box, by means of which the hand-stuff can be brought to the bits in a very convenient manner; third, in the use of knuckle-joints in combination with connecting-rods and drive-wheel, whereby the horizontal chisels have given to them the required reciprocating motion for cutting the first parts of the dovetails; fourth, the combination of the knuckle-joints with connecting-rods, compound levers of peculiar construction, and a spring, whereby an eccentric sheave on the main drive-shaft is turned to bring the horizontal chisels forward to cut the dovetail back to the shoulders formed by the vertical chisels, the spring raising the center knuckle up, while the operating-lever returns to a central position. The horizontal chisels are drawn back of the vertical chisels to give room for the latter to work.

In the drawings, Figure 1, Sheet 1, is a side elevation of my improvement in dovetailing-machines; Fig. 2, same sheet, a view of the rear end of the machine; Fig. 3, Sheet 2, a view of the front end of the machine; Fig. 4, a sectional elevation of the machine taken on line 16, Fig. 1, looking in the direction of dart 8; Fig. 5, a broken elevation of the eccentric sheave, which gives the vertical chisels a further downward movement to finish the cut.

A represents the frame which supports the mechanism hereinafter described. B is an upper frame, bolted fast to frame A, and which also, in part, supports the mechanism. I is the drive-pulley; F, the crank-wheel; E, the pitman; D C, the guide for the chisel-head R;

Q, the vertical chisel; and *m* are the dovetail-chisels, all of which are similar in construction to a dovetailing-machine patented to me April 1, 1873, No. 137,315. *c* represents a substantial bridge, which is bolted fast to the frame A, and has pivoted to it a tilting head, W V, Figs. 1 and 2, at *g*. This head is made in two parts, for the convenience of placing therein a series of bit-shanks, X, to the ends of which are fixed dovetailed or parallel bits, Z, as the case may require for cutting tenons. These shanks X are driven by toothed wheels 10, Fig. 1, and a similar toothed wheel on the shaft of a drive-pulley, 11, said pulley being in the center of the head W V. This arrangement is such that when the pulley 11 is driven by a belt to be put thereon, all of the bits Z will be rotated at the same speed. To one end of the head W V is affixed a quadrant, *a*, which extends through a slot in the bridge *c*, and is to be held in position by a set-screw, *b*, Fig. 1, so that the head may be held in a horizontal position, or inclined, as may be required to cut tenons a greater or less distance apart. Posts T are fastened to the frame A, and on them is made to slide vertically a table, 12, by means of crank-wheel *e*, pinion *t*, Fig. 3, and rack *f*, the shaft *h* of pinion *t* having bearings in the frame A. Longitudinally on this table is arranged to slide a feed-box, S, in which the stuff to be tenoned is put, and clamped therein by a screw, *d*. Knuckle-joints O M N are pivoted together to a chisel-carriage, *n n*, and to ears P, projecting up from the frame A, and to the rear joint M is pivoted, by a double joint, 13, a connecting-rod, J, the upper end of which is pivoted to the wrist of a drive-pulley, I, so that when the latter is rotated the joint M will be elevated and depressed, and consequently give to the carriage *n n* a reciprocating movement, and cause the chisels *m* to cut the first part of the dovetail as the stuff is moved forward. To the middle joint N is pivoted a connecting-rod, L, the upper end of which is pivoted to a lever, 14, at the center of the machine. This lever is pivoted to an arm fastened to the frame B, and its opposite end operates in a loop, 15, attached to a rectangular lever, 119, which is pivoted to a slotted head operating in a sleeve, 17, Fig. 4, to give a side movement to the chisels Q. This slot-

ted head and its operation on the guide D to give a side movement to the chisels Q for cutting out the corners of the dovetails are described in the said Patent No. 137,315, and made a part thereof. It therefore needs no description here. On the end of the lever 1 is a nib, 18, whose function is to depress the lever 14, and the function of the coil-spring *i* is to elevate said lever after depression. The vertical prong 19 of the lever 1 is provided with a pin on its upper end, which operates in the slot of a lever, 7, terminating in a head, G, Figs. 1, 5, which is attached to and forms a part of the eccentric 5, Fig. 5. When lever 7 is turned the shaft 6, Fig. 5, running through the eccentric, will be carried lower down, causing the chisels Q to make a deeper cut at the last stroke, to finish a dovetail. Eccentric 5 and shaft 6 are also shown in said patent, and therefore are not claimed in this specification.

To cut the tenons to fit in dovetails the tilting head W V is to be adjusted either level or inclined, according to how close the tenons are to be cut from each other, by means of the screw *b*. The stuff to be tenoned is to be put in the box S, clamped therein by screw *d*, and the wheel *e* turned to raise the box until the bits Z pass through the stuff. To cut dove-

tails, the stuff, one piece at a time, is to be presented endwise to the chisels Q *m* by means of any suitable table, the drive-pulley I running at the same time at about three hundred revolutions per minute. What I term the first cutting is done by simply feeding the stuff to the chisels Q *m*. The acute angles in the dovetails are cut by bringing the lever 1 against the pin 4, and then the pin 3, Fig. 4, at which time the last cut will finish the dovetail.

I claim—

1. The tilting bit-head W V, carrying bits Z, as set forth, in combination with the quadrant *a* and bridge *c*, as and for the purpose set forth.

2. The feed-box S, table 12, wheel *e*, rack *f*, and pinion I, in combination with the tilting head W V, as specified.

3. The combination of the knuckle-joints M N O, connecting-rod J, pulley-wheel I, and connecting-rod L, substantially as described.

4. The combination of the knuckle-joints M N O, bell-crank lever 1 19, levers 14 and 7, spring *i*, and loop 15 for operating the sliding head *d*, as and for the purpose set forth.

Witnesses: WILLIAM F. MOODY.

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