

EDWARD MYERS & SAMUEL R. SMITH.

Improvement in Mortising Machines.

No. 120,993.

Patented Nov. 14, 1871.

Fig. 1.

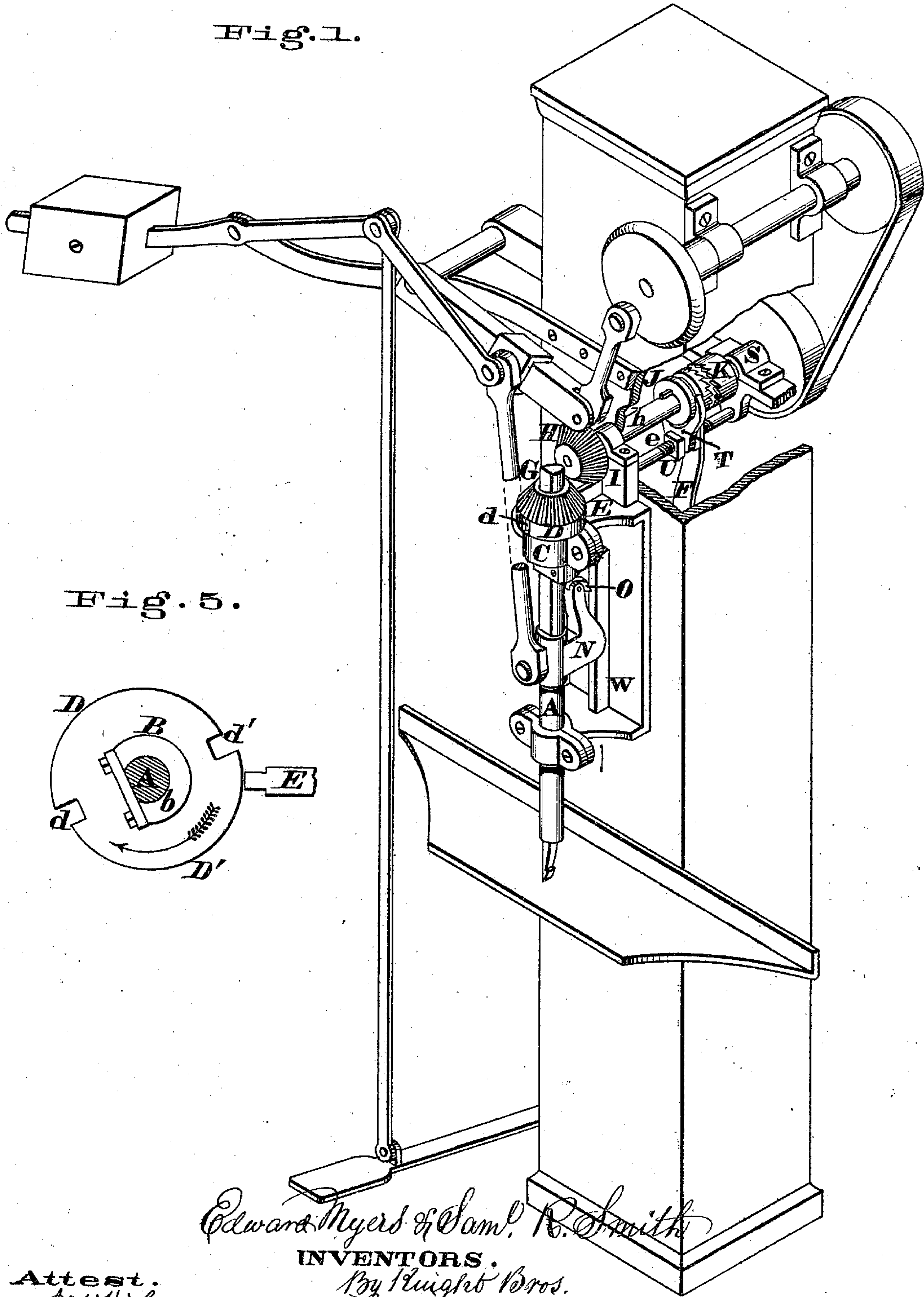
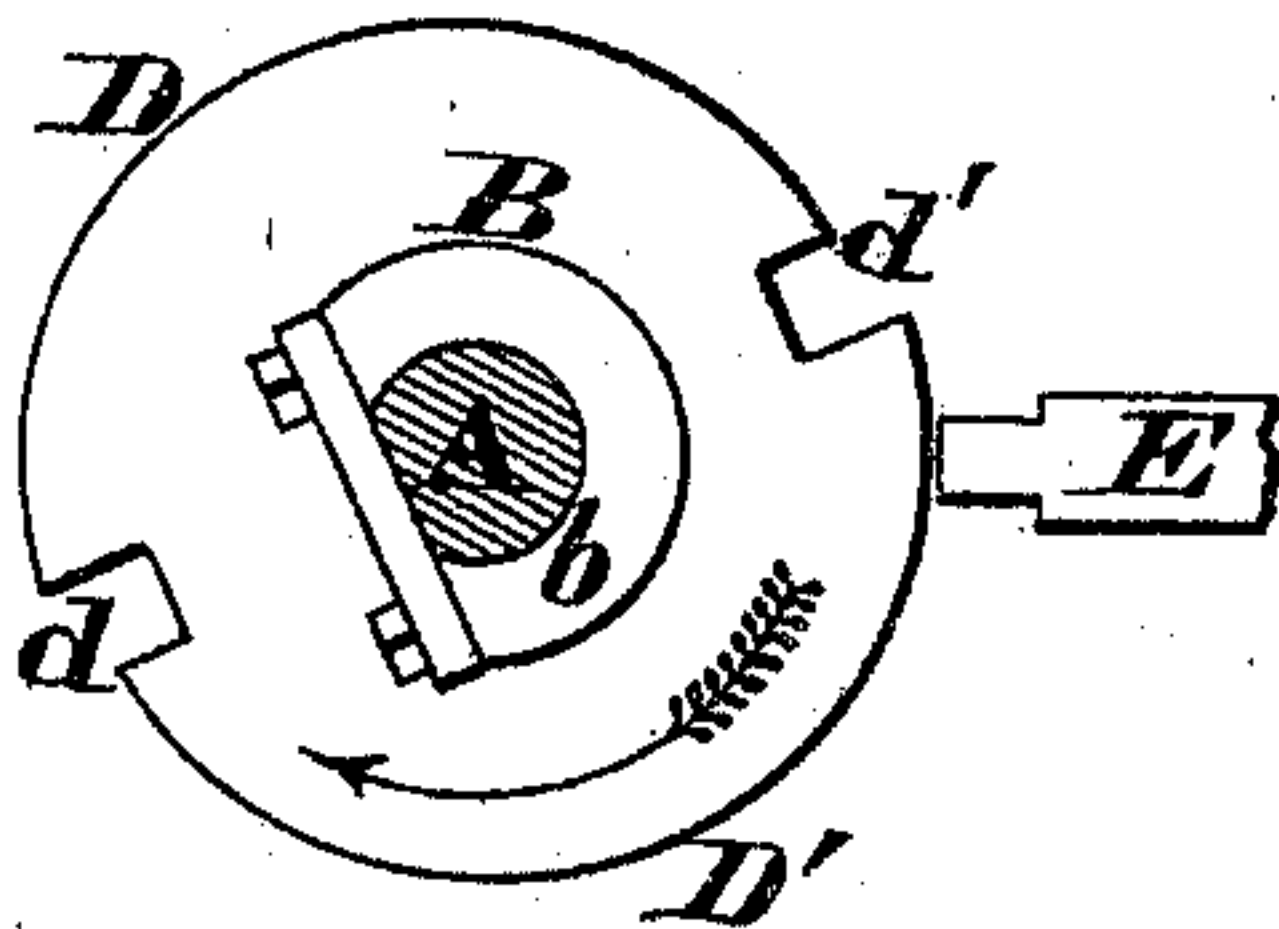


Fig. 5.



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By Knight Bros.

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Fig. 2.

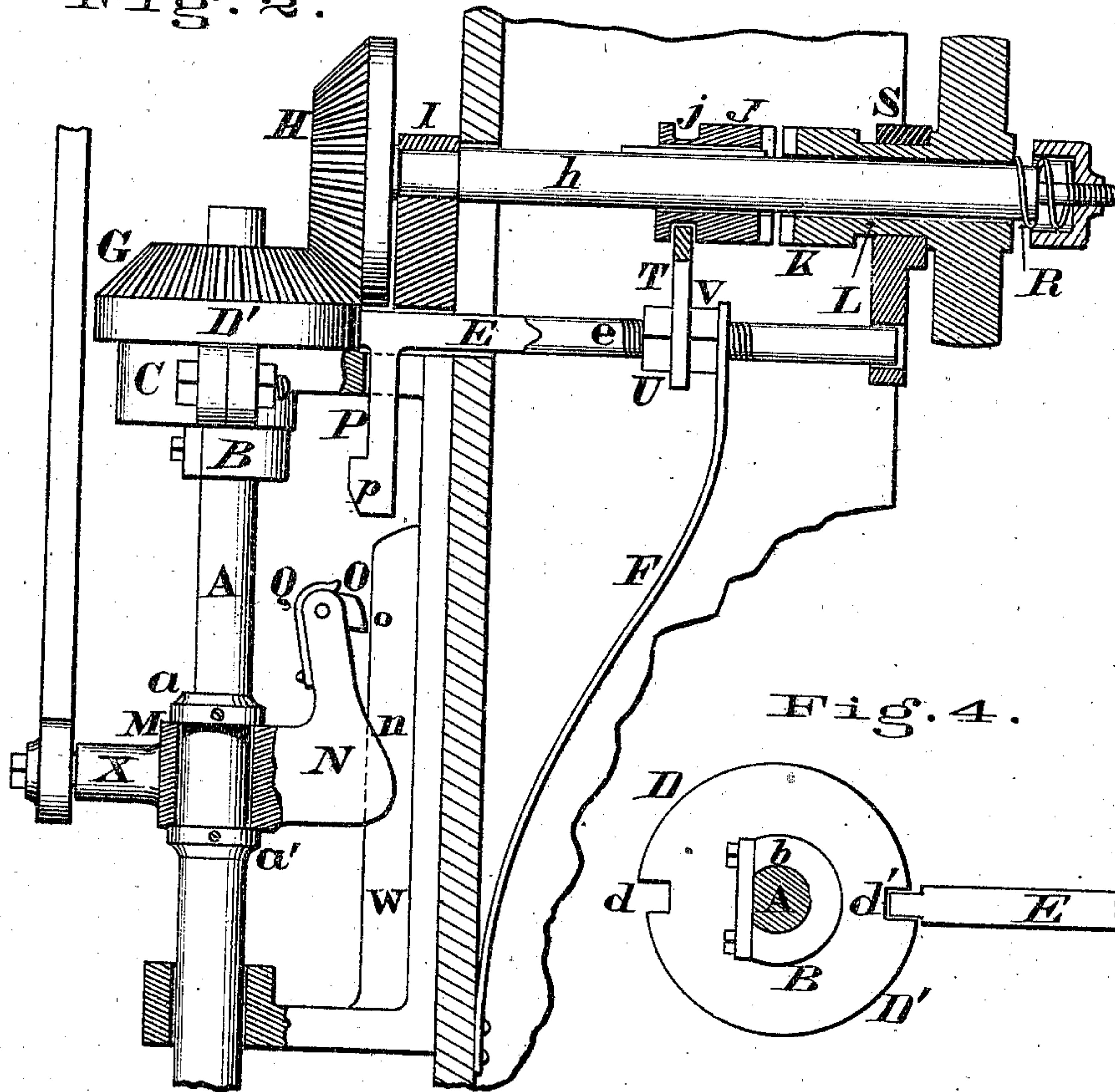


Fig. 4.

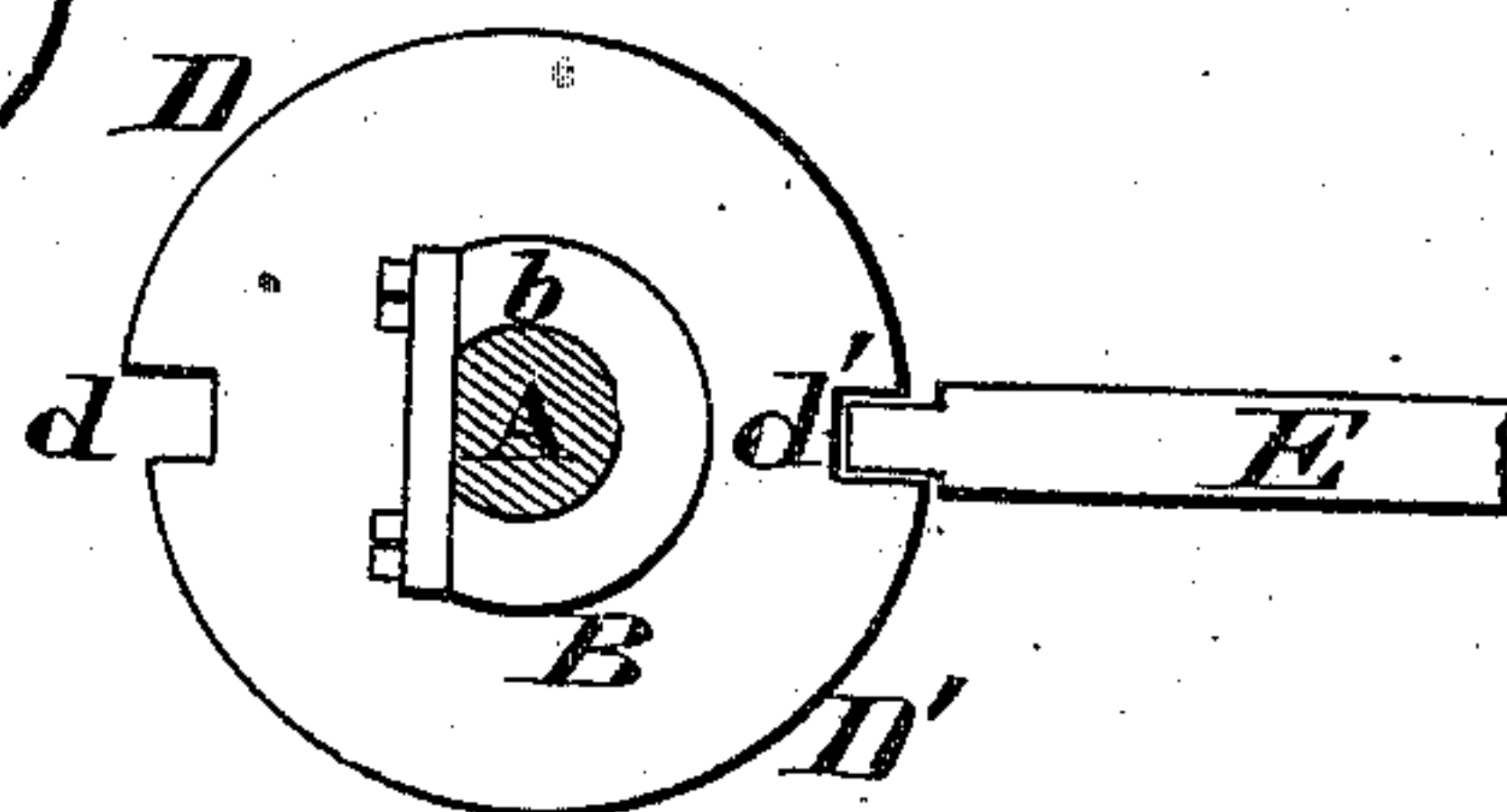
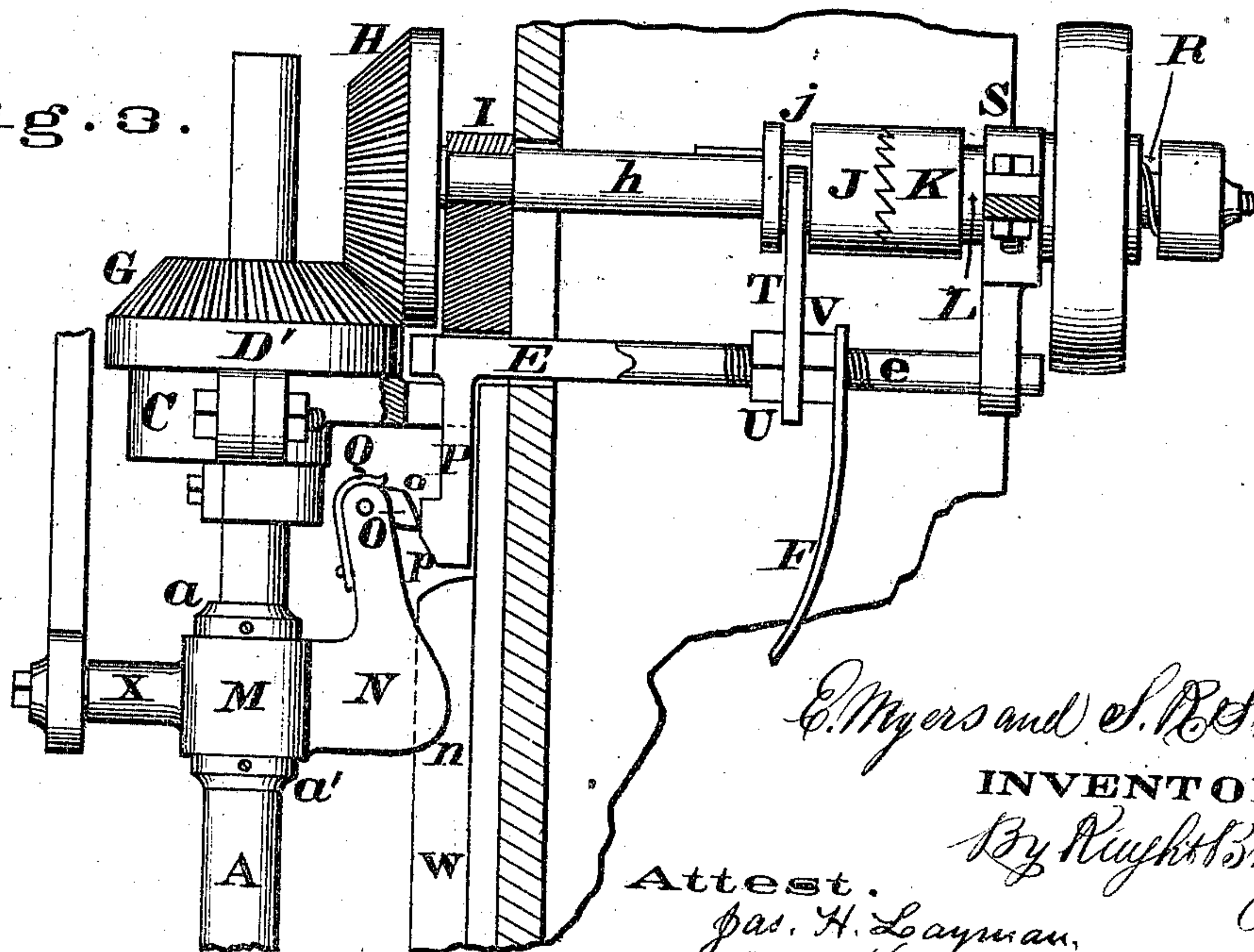


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD MYERS AND SAMUEL R. SMITH, OF CINCINNATI, OHIO, ASSIGNORS
TO LANE & BODLEY, OF SAME PLACE.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. 120,993, dated November 14, 1871.

To all whom it may concern:

Be it known that we, EDWARD MYERS and SAMUEL R. SMITH, both of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Power Mortising-Machines, of which the following is a specification:

Our invention relates to an improved device for automatic reversal of the tool or chisel in power mortising-machines.

Figure 1 is a perspective view of a mortising-machine embodying our invention, a portion of the metallic post or standard being broken away. Fig. 2 is a partially-sectionized elevation of the reversing mechanism in its inactive condition. Fig. 3 shows the same parts in their active condition. Fig. 4 is a plan of the notched eccentric collar with a portion of the sliding bolt engaged. Fig. 5 shows the same parts disengaged.

Our improvement, although applicable to various forms of power mortising-machines, is especially applicable to those whose mandrel is driven by power under the control of the operator's foot through the medium of a treadle and sliding wrist.

The upper part of the chisel-mandrel A is not circular, and is capable of axial reciprocation in a sleeve or thimble, B, having a corresponding non-circular aperture, *b*, and a circular periphery or barrel to fit and revolve within a guide-box or bearing, C, attached to the post. The sleeve B above said bearing takes the form of a double-eccentric collar, whose eccentric portions D D' are separated by two notches, *d d'*. In its normal or inactive condition rotation of the said sleeve is prevented by a sliding bolt, E, that engages in one or other of said notches, by the action of a spring, F. The sleeve B is surmounted by a bevel-wheel, G, which gears with a similar wheel, H, whose shaft *h* is journaled horizontally in bearing I upon the post, and has a clutch, J, slidable upon it, so as to engage with a corresponding clutch, K, upon a constantly-rotating shaft, L, so that whenever the clutches J and K are engaged the rotary movement of the shaft L is communicated, through the bevel-gearing G H, to the mandrel A. This engagement is effected automatically by the following means: The sleeve M, by means of which the mandrel is elevated and depressed, (and which embraces a circular portion of the mandrel between collars *a a'* thereon,) has projecting from its rear side a lug, N,

that, being extended upward in the manner shown, terminates in a latch, O, whose sloping or beveled surface *o*, when the mandrel is entirely elevated, impinges against a similar surface, *p*, on the arm P that projects rigidly from the sliding bolt E, thereby pressing back said bolt so as to release the same from its notch *d* or *d'* and, at the same time, to engage the clutches J and K, thus initiating a rotary movement in the mandrel. The latch O passing above the beveled surface of the arm P their engagement is only momentary, and, consequently, the end of the sliding bolt E is retracted by the spring F so as to rest against the now-revolving eccentric D D', which, in turn, operates to maintain the clutches in gear until, the sleeve having gone through a half rotation, the bolt E snaps into the other notch, thus simultaneously holding the sleeve with its contained mandrel against further rotation and liberating the clutches. On the descent of the mandrel for active service there is no disturbance of the clutch or bolt, because the latch O is so hinged to the lug as to yield readily upward. A spring, Q, restores the latch to its represented normal position. A spring, R, being provided at the rear end of the shaft L, pressing the latter firmly against its box S, holds said shaft to its represented normal position, but so as to yield slightly should the points of the two clutches come in conflict, thus enabling them to mesh together. The connection between the sliding clutch J and the sliding bolt E is by a yoke, T, whose upper portion is gripped by two nuts, U V, that occupy the screw-threaded portion *e* of the sliding bolt so as to be adjustable thereon. The lug N may be furnished with lips *n*, which, embracing a vertical guide, W, on the front of the post, serve to hold the wrist X, by which the mandrel is operated, in proper position.

It will be seen that in our device the reversal of the chisel is effected without reversing the mandrel.

While describing the preferred form of our improvement we reserve the right to vary the same so long as the essential characteristics of the invention are retained. For example, a weighted bell-crank may be used instead of the spring F. Friction-clutches may be employed in place of the ratchet-clutches J and K.

We are aware that an automatic reversal of the chisel-mandrel of mortising-machines has been ef-

fect by an eccentric yoke, cam, and pawl; we therefore disclaim any exclusive control of such cam, except for an interrupted but always onward rotation of the mandrel in conjunction with the devices hereinafter specifically recited.

We claim as our invention—

1. The reversing mechanism of a mortising-machine having the following elements, to wit: The mandrel A, latch O, shafts L and *p*, clutches K and J, sleeve B, double eccentric *D d D' d'*, wheels G and H, bolt E, arm P, and spring F, the whole being combined and operating to produce an interrupted rotation of the mandrel in one direction, as and for the purpose designated.

2. In connection with the elements of the preceding claim, the nuts U V upon the screw-threaded part *e* of the sliding bolt E.

3. In connection with the elements of the first claim, the spring R, for the purpose explained.

In testimony of which invention we hereunto set our hands.

EDWARD MYERS.
SAM. R. SMITH.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.

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