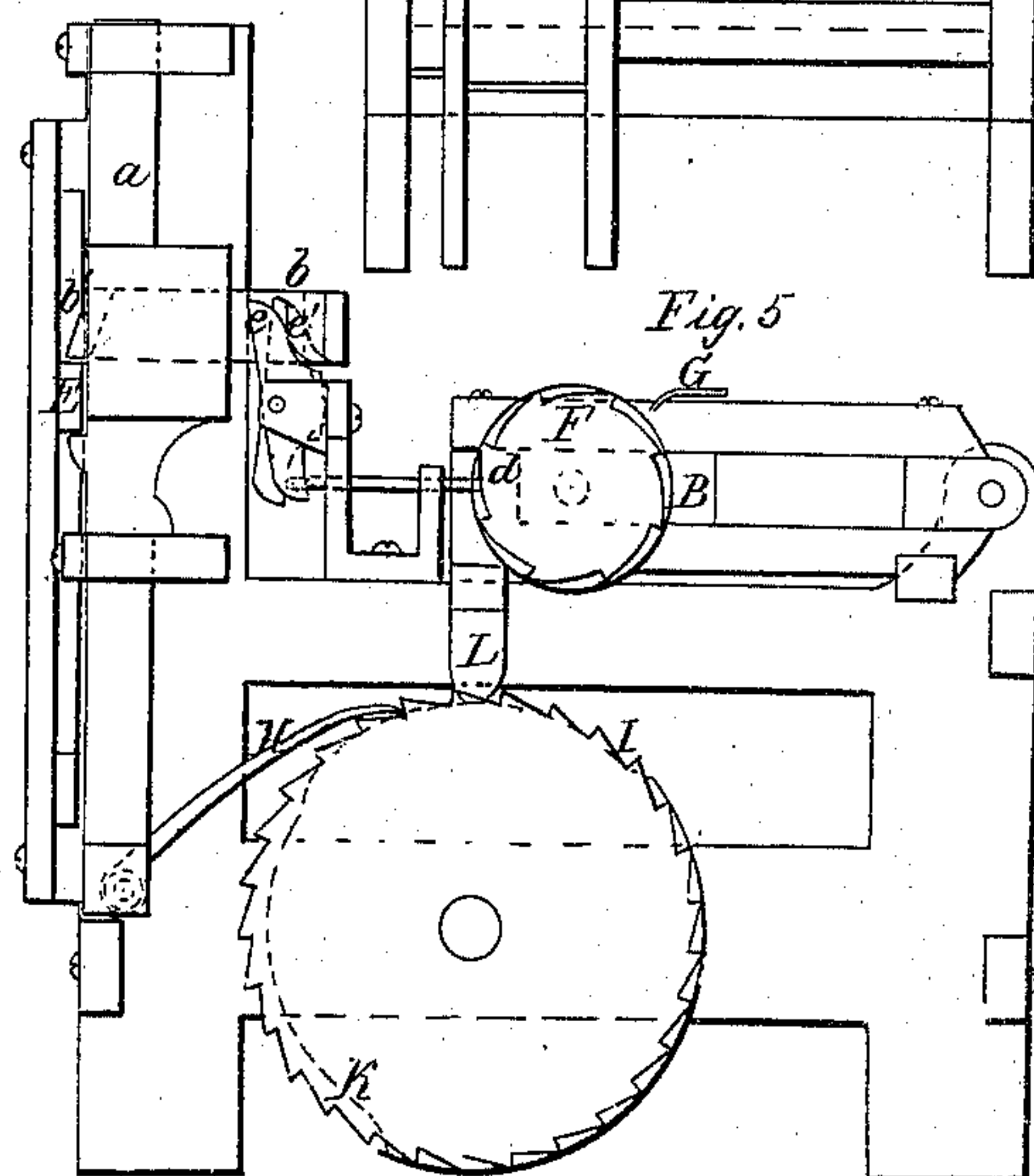
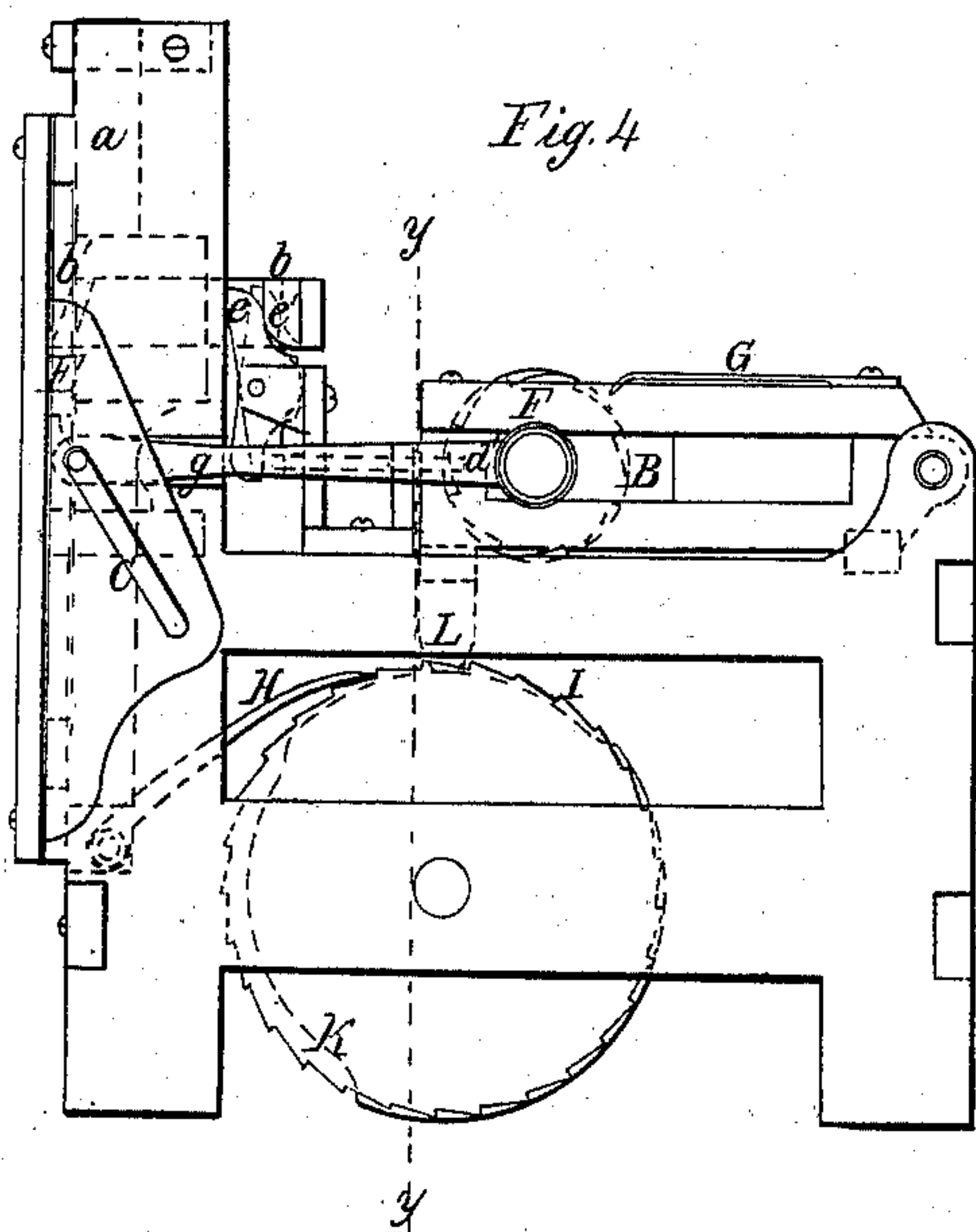
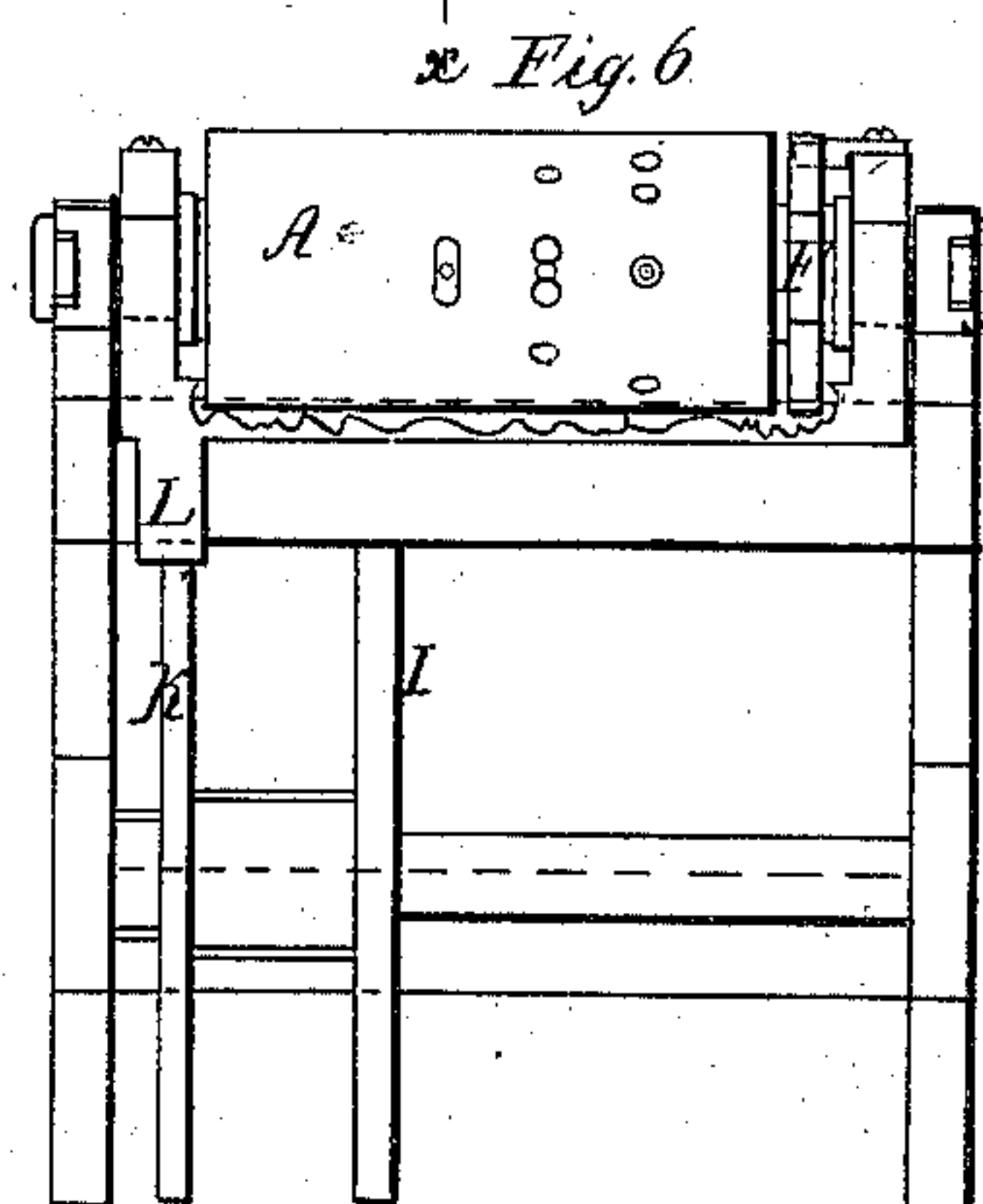
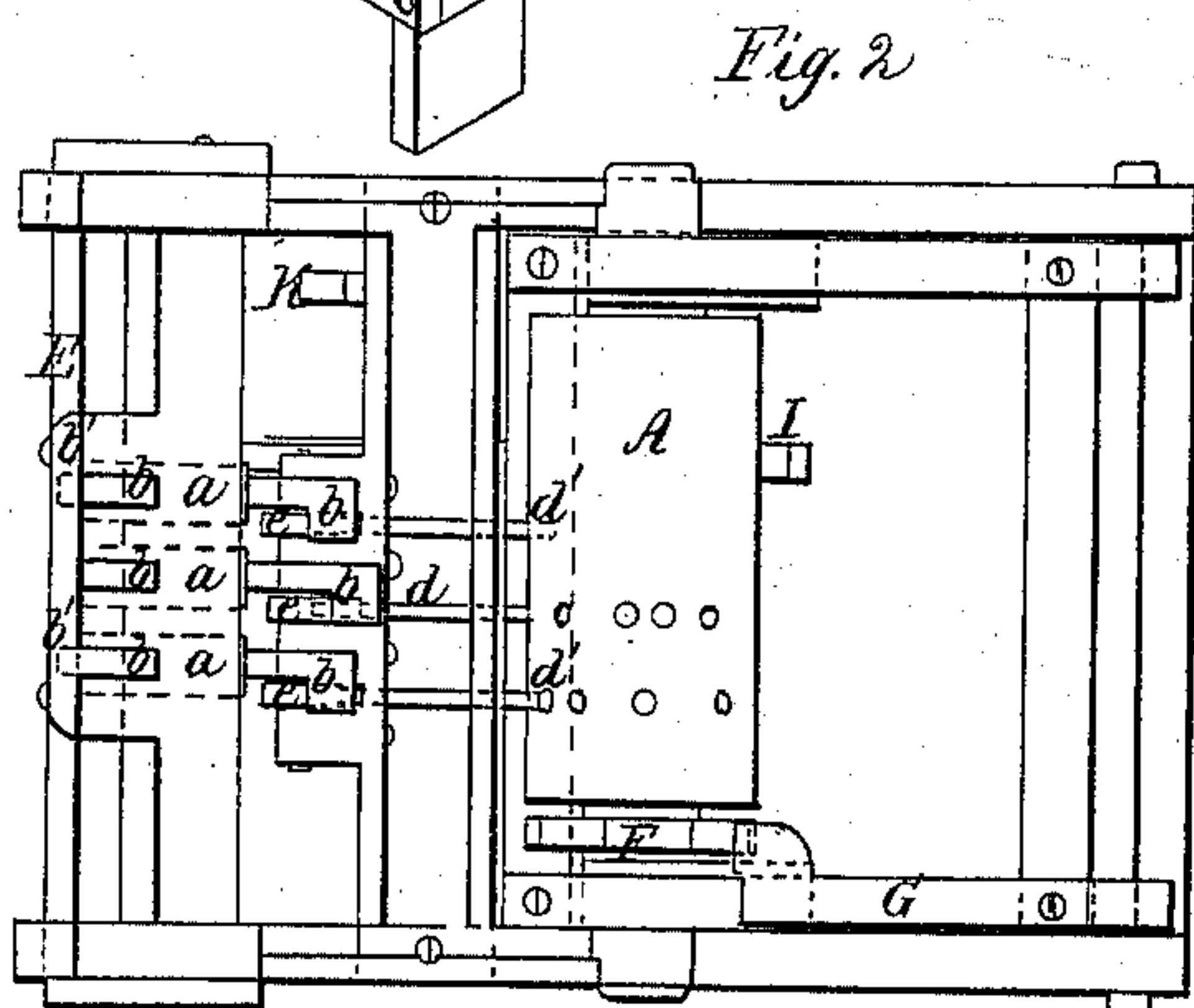
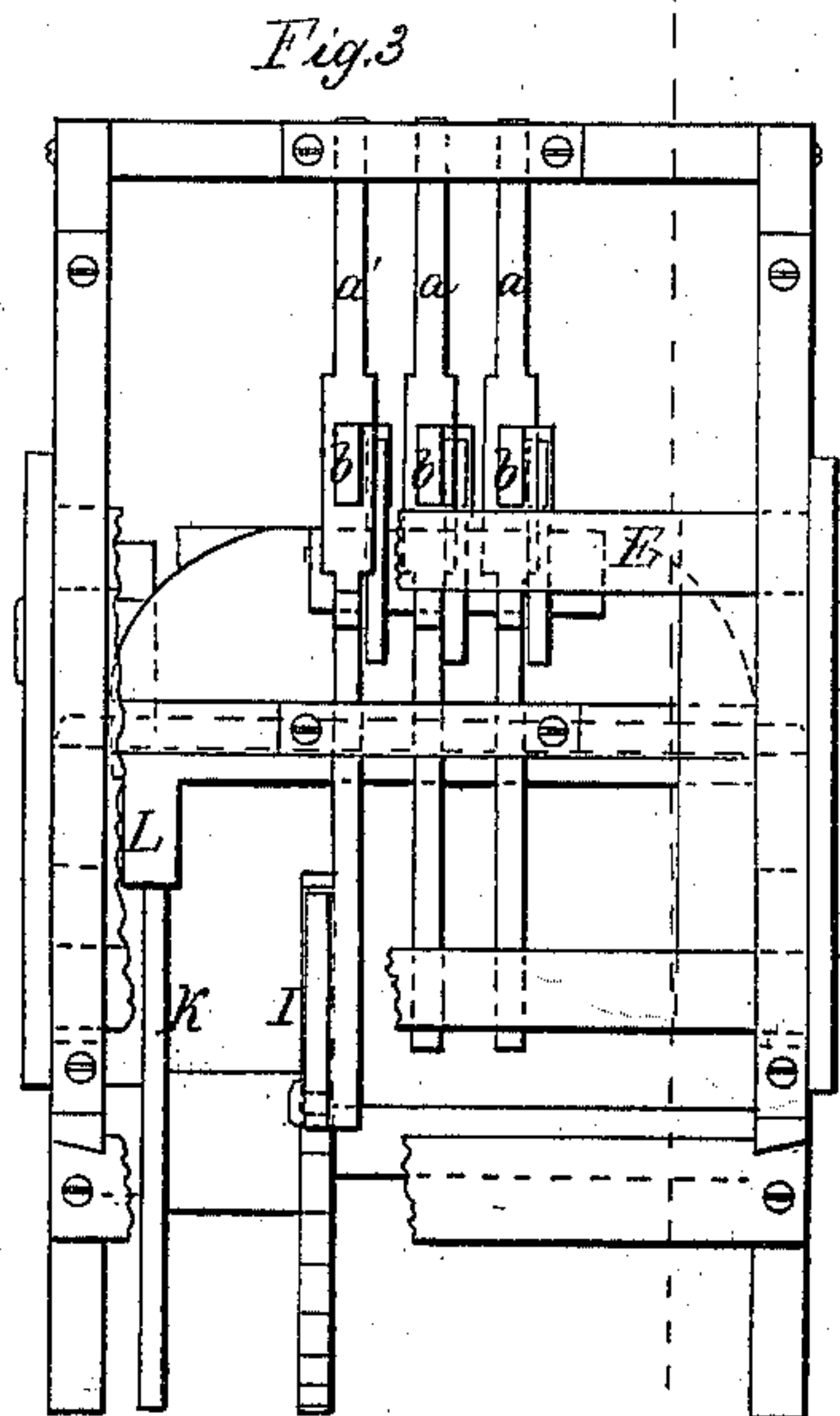
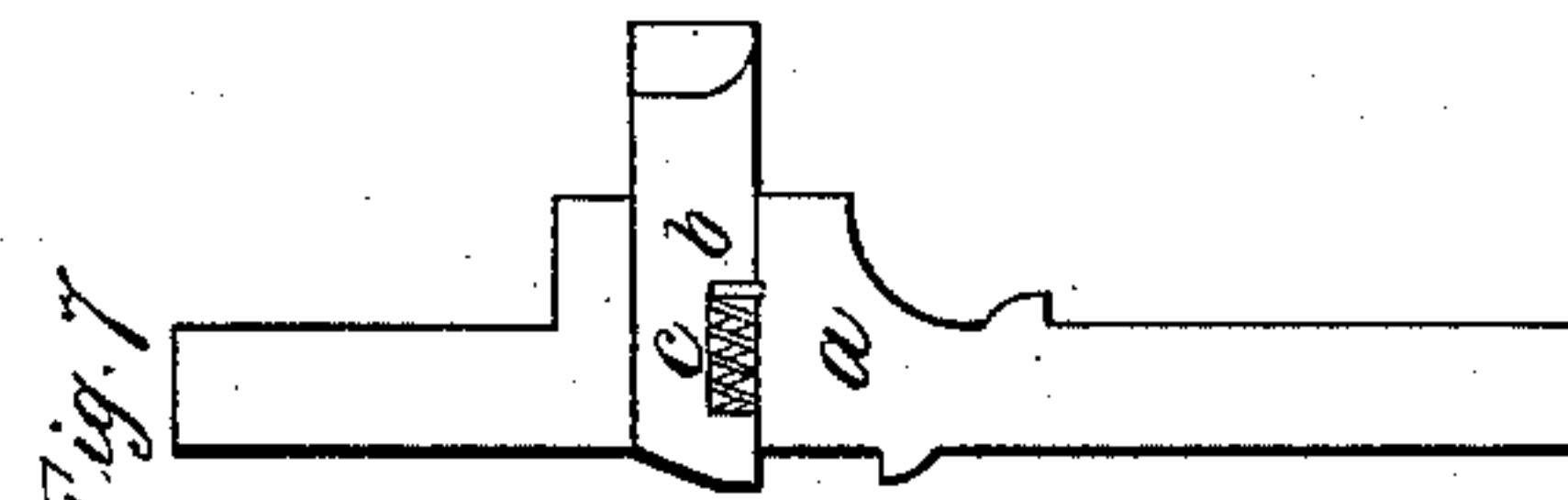
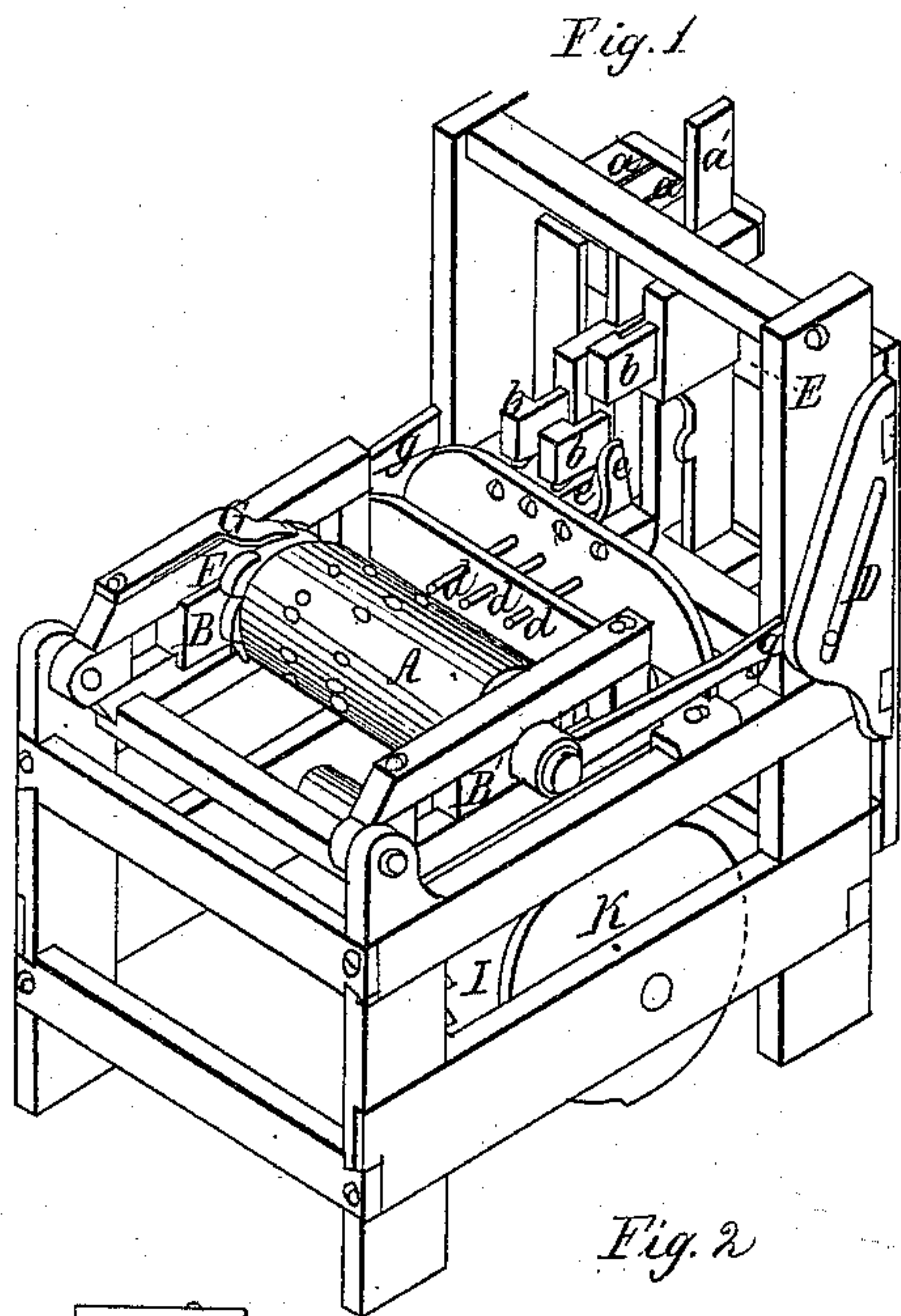


J. C. Cooke.
Jacquard Motion for Loom.

N^o 15,717.

Patented Sep. 9, 1856.



UNITED STATES PATENT OFFICE.

JAMES C. COOK, OF WATERBURY, CONNECTICUT, ASSIGNOR TO HOTCHKISS & MERRIMAN
MANFG. CO., OF WATERBURY, CONNECTICUT.

JACQUARD LOOM.

Specification of Letters Patent No. 15,717, dated September 9, 1856.

To all whom it may concern:

Be it known that I, JAMES C. COOKE, of the city of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Method of Working Jacquard Looms for Weaving Figured Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the construction, character, and operation of the same, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1, is a perspective view of the attachment, taken from the rear end and left hand side. Fig. 2 is a birdseye view of the same. Fig. 3 is a part elevation of the same. Fig. 4 is a side elevation, of the right hand side. Fig. 5, is a longitudinal section cut vertically through the line, X, X, Fig. 3. Fig. 6, is a cross section, cut vertically through the line Y, Y, Fig. 4. Fig. 7, is a plan of one of the lifting bars, with the hook, and spring, attachment.

My improvement consists in so constructing the lifting bars, with a cross bar, or hook, attached, that when the needles pass into the holes in the cylinder, so as to relieve the hooks, a spring will throw the hooks formed to such a position that a bar, (extending across the front end of the apparatus,) will take hold of the front end of the hooks and raise the lifting bars to work the heddles, or harness; but when the needles do not enter the holes in the cylinder the hooks will be held back so that the front ends will be within the lifting bars, and, therefore, will not be acted upon. And, in so connecting a ratchet wheel with a cam, and diagonal slots, and a stationary click, that the cylinder will have an intermittent rotary, and vertical, motion as well as a reciprocating, horizontal, motion, to vary the pattern, and will be susceptible of being changed at pleasure.

I make the cylinder, A, Figs. 1, 2, and 6, of wood, or any other suitable material, with any desired pattern displayed on its convex surface, (and more than one pattern may be displayed on the same cylinder, when thought best; and any number of cylinders may be used at pleasure). The journals of this cylinder, A, rest in bearings which slide in grooves, or slots, as shown at B, and B, Fig. 1, and B, Figs. 4, and 5. And it re-

ceives a reciprocating horizontal motion by means of the diagonal slots, shown at C, Fig. 4, and D, Fig. 1, by the rising and falling of the front bar, C, which works the lifting bars, *a, a, a*. Or, the horizontal motion may be given by any other suitable means, as cranks, cams, or otherwise.

By the horizontal motion of the cylinder, as before described, the teeth of the ratchet wheel, F, Figs. 1, 2, 4, 5, and 6, come in contact with the stationary dog, or click, G, Figs. 1, 2, 4, and 5, and revolve the cylinder, A, one notch, so as to bring another set of holes on the side next the needles to change the pattern. And by the operation of the lifting bars, a dog, or pawl, H, works in the large ratchet wheel, I, and revolves the cam, K, which by means of the hand, or tracer, L, gives a vertical motion to the cylinder, which also varies, or changes, the pattern, when necessary.

To work the heddles, or harness, I insert the requisite number of lifting bars, or jacks, made substantially in the shape shown at *a*, Fig. 7, and their places shown at *a*, &c., Figs. 1, 2, 3, 4, and 5. In each of these lifting bars I fit a movable cross bar, or hook, *b*, in which I fit a spiral spring, *c*, Fig. 7, to throw the hook, *b*, forward to the position shown in Fig. 7, and at *b'*, Figs. 2, 4, and 5, when the needle connected with it enters the hole in the cylinder, as seen at *d'*, Figs. 2, 4, and 5, by which means the cross bar, C, will carry the lifting bar, *a*, up to the position shown at *a'*, Fig. 1, and thereby work the heddles, or harness, in accordance with the pattern on the cylinder. These needles, *d*, *d*, *d*, press against a rocking piece, shown at *e*, and *e'*, Figs. 4 and 5, and at *e*, &c., Figs. 1, and 2, so that when the needle, *d*, does not pass into the hole in the cylinder it will hold the rocking piece in the position shown at *e'*, Figs. 4, and 5, and thereby hold back the hook, *b*, so that the bar, E, will not touch it. But when the needle enters the hole in the cylinder, as at *d'*, the spring, *c*, will throw the hook to the position shown at *b'*, so that the raising of the bar, C, will carry up the lifting bar to the position shown at *a'*, Fig. 1, and so work the harness.

Having constructed the attachment, as described, and connected it, in any proper way, with the harness of the loom, I apply the power to the front cross bar, E. When this bar, E, is elevated it will carry up such of

the lifting bars as have the hooks, *b*, in the position shown in Fig. 7, (and at *b'*, Figs. 4, and 5,) and will also carry up the side pieces which contain the diagonal slots, C, and D, Figs. 4, and 1, (to the position seen in Fig. 1,) which, by means of the connecting rods, *g*, Figs. 1, and 4, will give a horizontal motion to the cylinder, A, and, by means of the stationary click, or dog, G, will give the cylinder an intermittent rotary motion, and, by the operation of the dog, or hand, H, the cam K, and rod, or tracer, L, will, at suitable times, give it a vertical motion; all of which motions vary, or change, the pattern, as desired, by bringing different portions of the cylinder, A, to the needles, *d, d, d*.

The cylinder, ratchet-wheels, and cam, may be varied, or replaced, at pleasure, when a change of pattern requires it; and

any required number of lifting bars and their appendages may be used to work the harness, to suit the desired patterns.

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

1. The combination of the lifting bar with the sliding hook and rocking piece for operating the needle, when constructed, and made to operate, substantially, as herein described.

2. I also claim the use of a pattern cylinder having a reciprocating horizontal and vertical movement combined with the movement of rotation on its axis in the manner and for the purpose set forth.

JAS. C. COOKE.

Witnesses:

R. FITZGERALD,
A. SMITH.