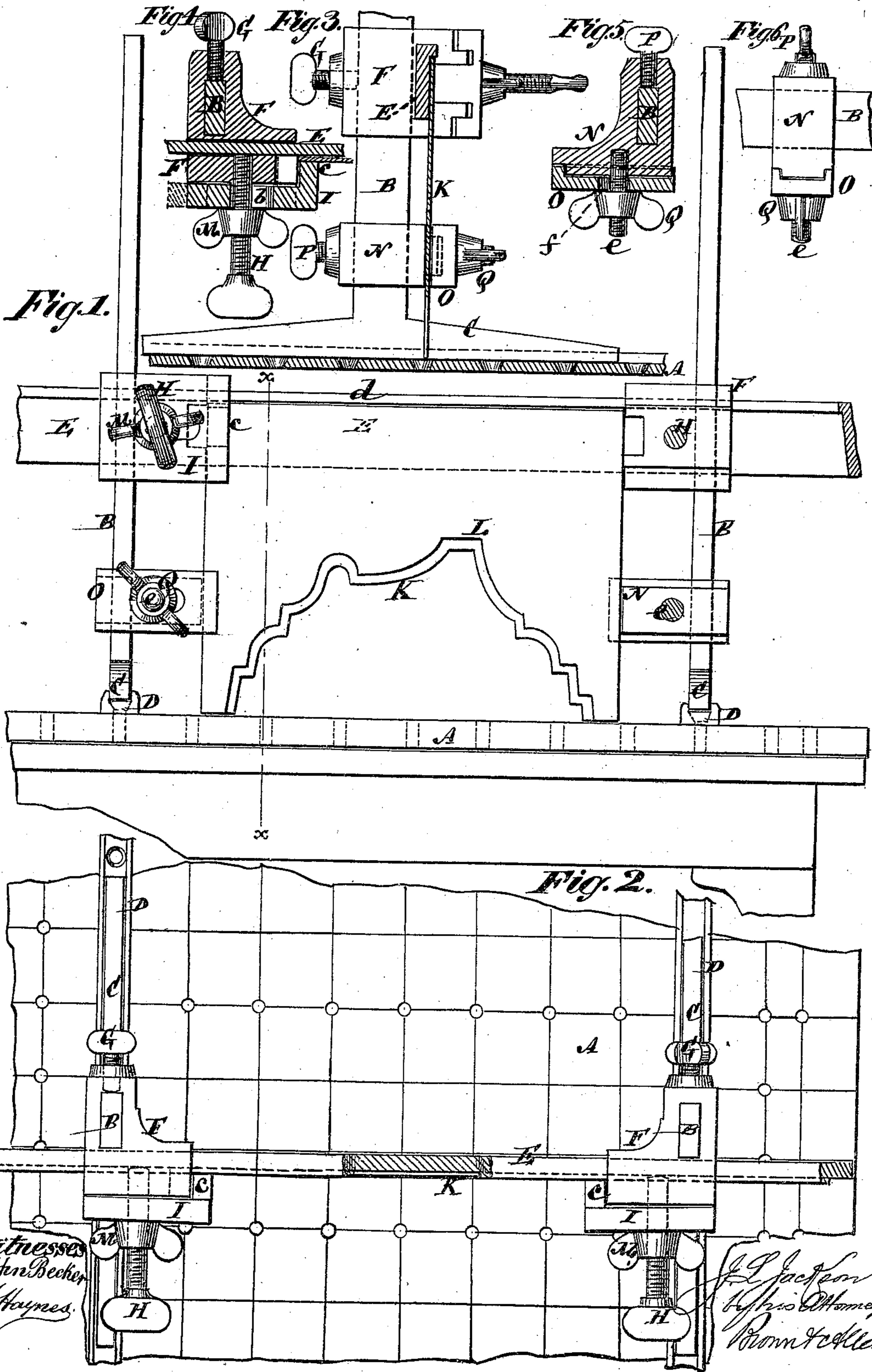


J. L. JACKSON.

Apparatus for Making Patterns.

No. 148,461.

Patented March 10, 1874.



Witnesses  
John Becker  
Haynes.

J. L. Jackson  
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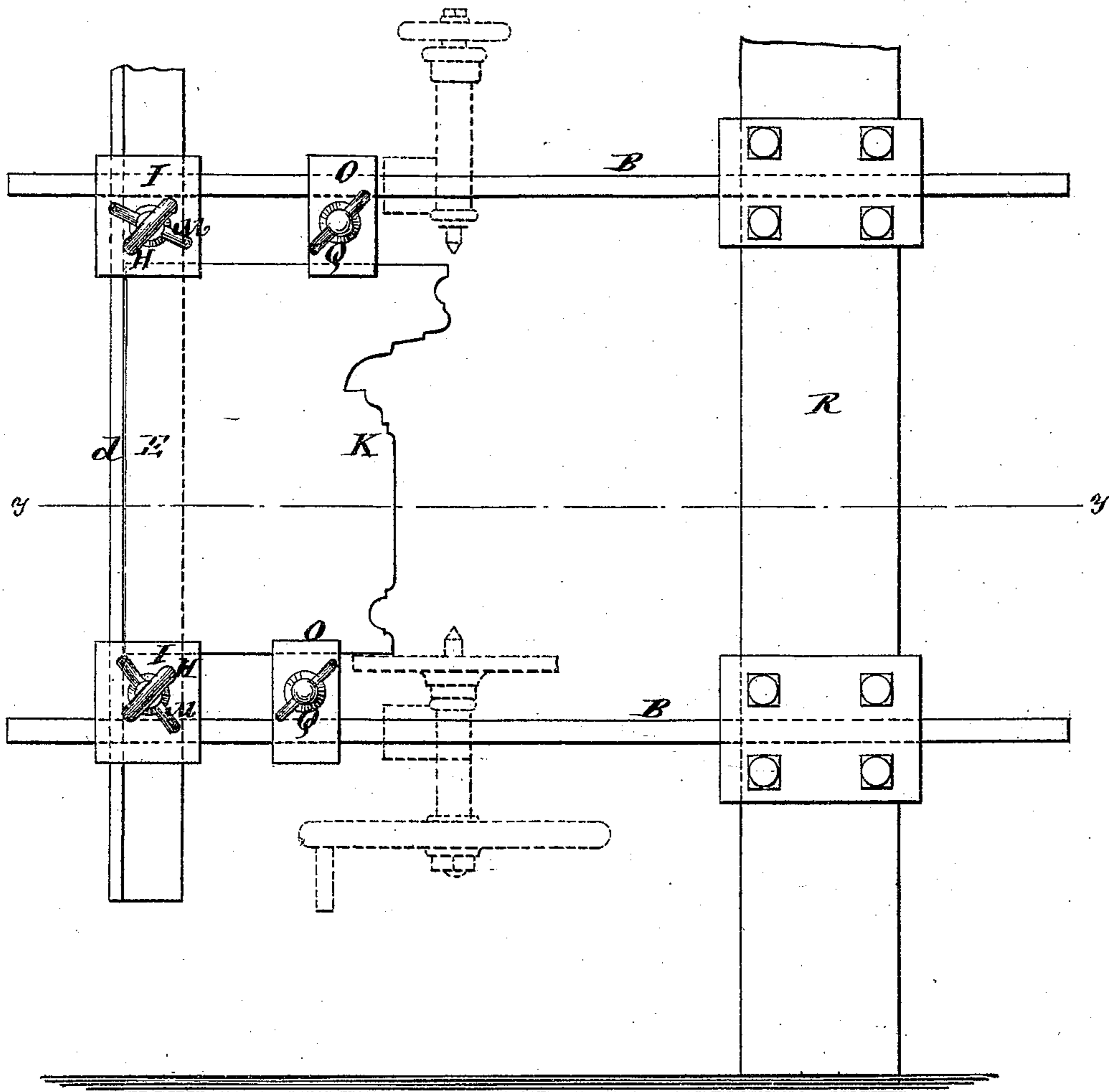
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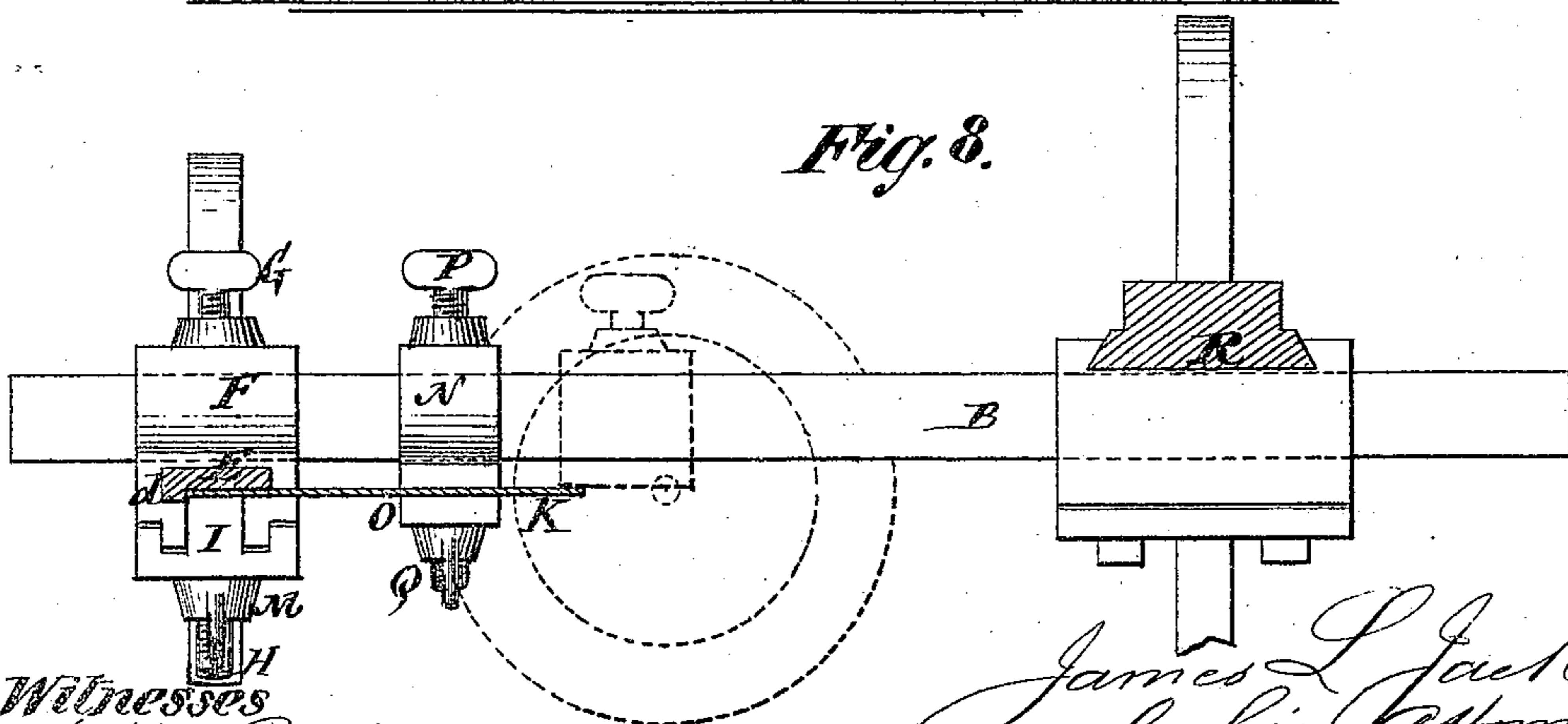
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*Fig. 7.*



*Fig. 8.*



Witnesses  
John Becker  
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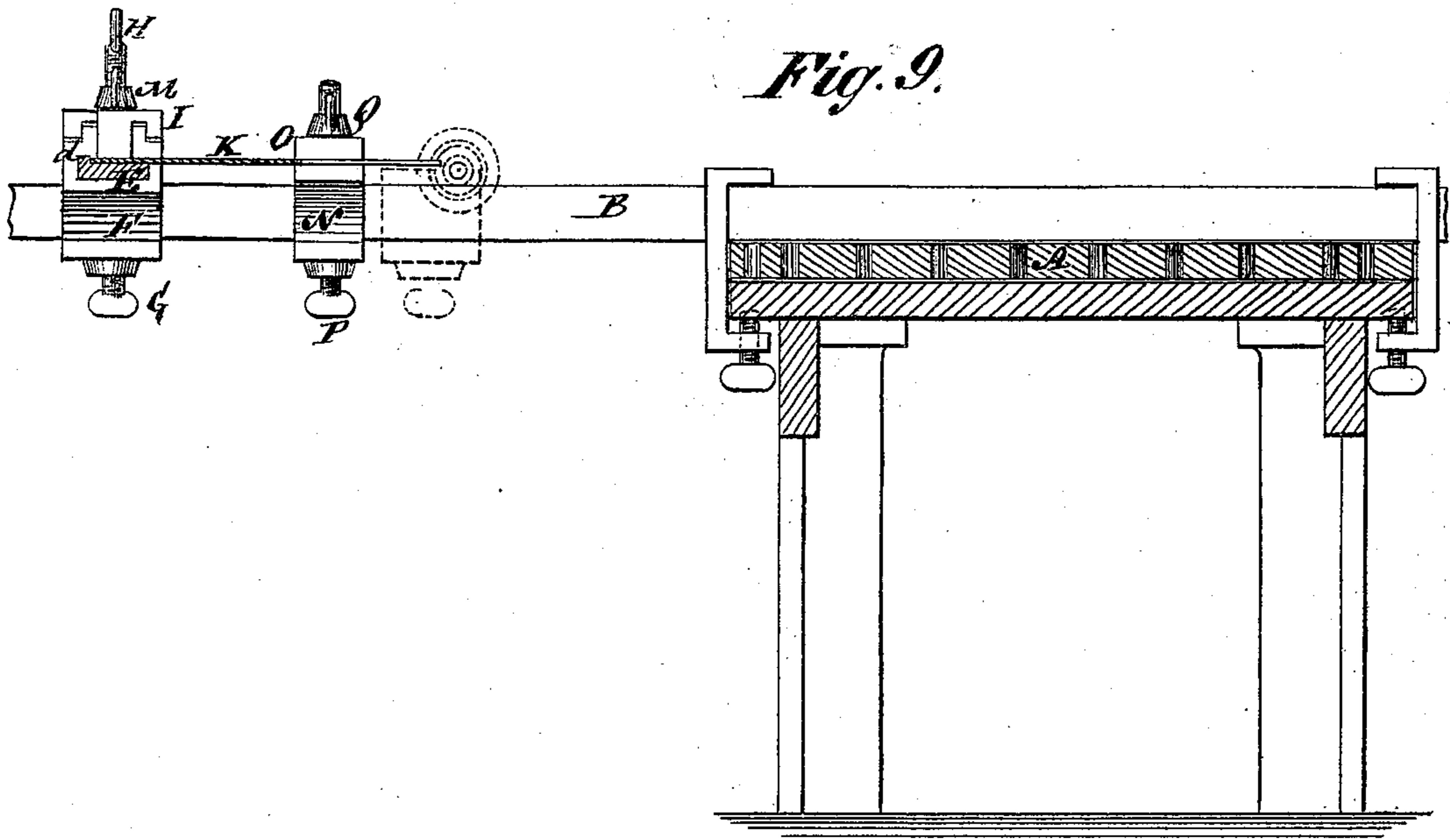
James L. Jackson  
by his Attorneys  
Brown & Allen

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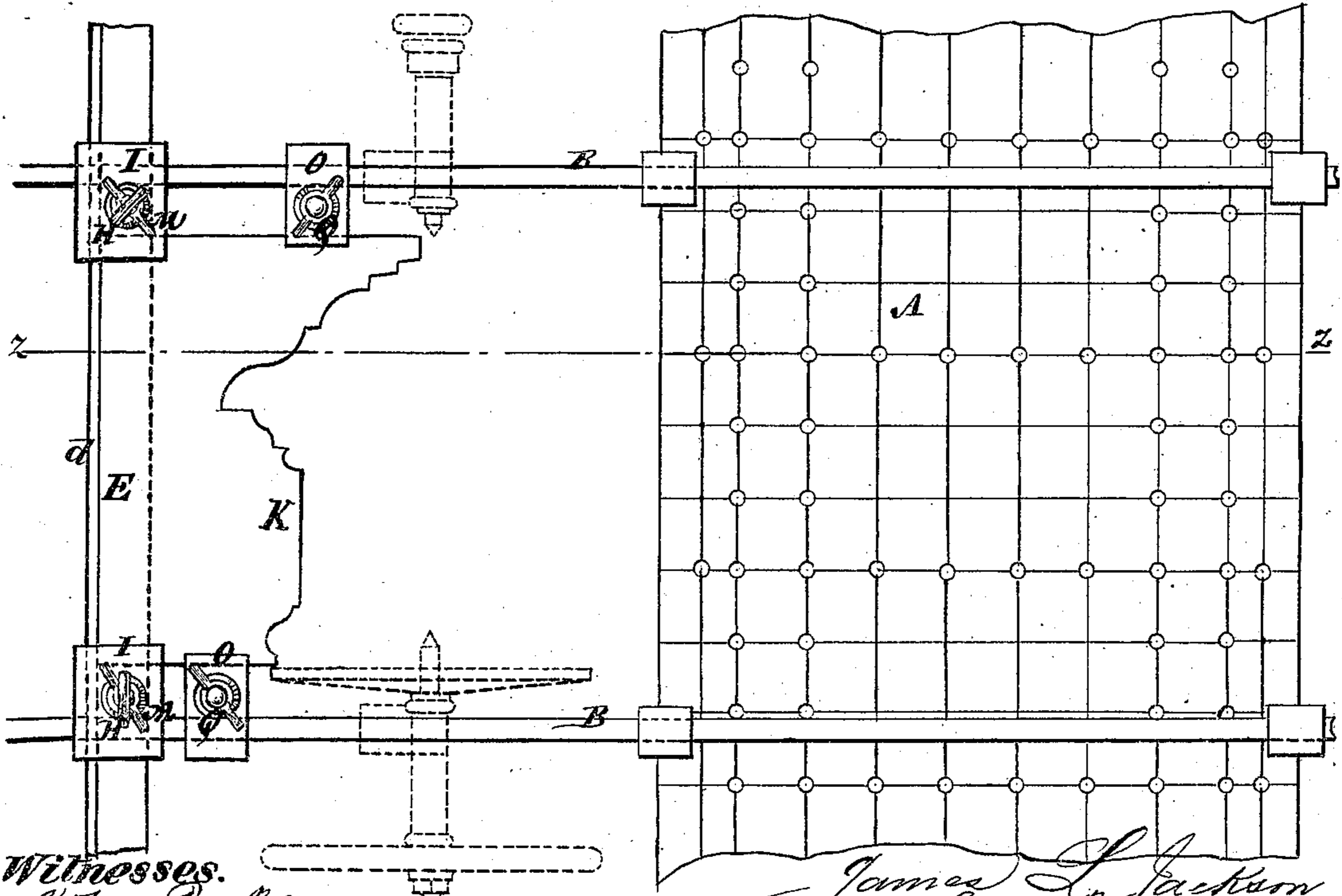
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*Fig. 9.*

*Fig. 10.*



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# UNITED STATES PATENT OFFICE.

JAMES L. JACKSON, OF NEW YORK, N. Y.

## IMPROVEMENT IN APPARATUS FOR MAKING PATTERNS.

Specification forming part of Letters Patent No. **148,461**, dated March 10, 1874; application filed January 23, 1874.

*To all whom it may concern:*

Be it known that I, JAMES L. JACKSON, of the city, county, and State of New York, have invented an Improvement in Apparatus for Making Patterns for Castings, of which the following is a specification:

This invention relates to the manufacture of patterns of plastic material by means of duplicate plates or their equivalents, of similar profile on their molding or shaping edges, corresponding to the sectional shape of the pattern to be produced, but the profile of the one plate made larger than that of the other, leaving a space between them conforming to the thickness of the pattern required, said plates or shapes, which may be attached to a common carrier, being used, respectively, to produce a base or form of plastic material, and upon such to make the plastic pattern, substantially as described in Letters Patent No. 103,888, issued to me June 7, 1870. The object of this invention is to provide for carrying out said process with rapidity and precision, to form plaster patterns for the castings of various metallic articles; and consists in a holder or holders of novel construction, and having gages and clamps to receive and carry successively, without varying the general set of the gages or mechanism of the apparatus, the duplicate profile plates or shapers for any given pattern, said plates being of like dimensions on their exterior edges for such purpose. The holders may be made to swing, slide, revolve, or be otherwise moved, according to the pattern to be produced; or they may be stationary, and the plastic substance be moved instead.

The invention is applicable not only to the production of patterns for architectural work, including lintels, columns, door and window casings, sills, &c., but to foundry work of different kinds and of various shapes, as, for instance, round, elliptic, polygonal, having equal or unequal sides, or all combined, a dividing-plate being used with the apparatus, when required.

The accompanying drawing represents a few of the modifications of which the invention is capable to produce certain kinds of work, or for doing similar work with the apparatus in different positions.

Figure 1 represents a front or end elevation

of an apparatus constructed in accordance with my invention, suitable for making cornice or other patterns by a sliding movement of the holder of the profile plates or shapers along or across a horizontal table, and with said plates in a vertical position. Fig. 2 is a plan of the same; Fig. 3, a transverse vertical section on the line *x x*; Fig. 4, a horizontal section of one of the upper combined clamps and gages in the arrangement or modification of part shown in Figs. 1 and 2; Fig. 5, a horizontal section of one of the lower combined clamps and gages in the same arrangement; and Fig. 6, a side view of such lower combined clamp and gage. Fig. 7 is a side view of another modification of the apparatus as carried by a fixed upright or post, and with the clamps, gages, and accompanying devices as arranged to hold and work the shaping-plates, with their profiles or shaping-edges in an upright position, suitable for making cylindrical and other turned work by revolving the plastic mass. Fig. 8 is a horizontal section of the same on the line *y y*. Fig. 9 is a vertical section on the line *z z* of an apparatus for doing similar work, but with the profile plate or shaper in a horizontal position; and Fig. 10 is a plan of the same.

Similar letters of reference indicate corresponding parts.

Referring, in the first instance, to Figs. 1, 2, 3, 4, 5, and 6 of the drawings, A is a table or bed, on which the holder of the profile plates or shapers is arranged to slide to produce plastic patterns for cornices or other like molding, said holder consisting, in part, of uprights or bars B B, provided with feet or shoes C C, arranged to slide on rails or within grooved strips D D, which are suitably secured to the table, that may be divided to suit various lengths of pattern. In connection with these bars B B is a rail, E, arranged to extend horizontally or at right angles to the bars B B, and secured to the latter, with provision for both horizontal and vertical adjustment, to spread the bars B B more or less apart, or to adjust the rail E to a greater or less distance from the table A by means of gages F F, having holding-screws G H, the one set, G, of which retain the gages F at any desired point on the bars B B, while the other set, H, hold said gages at their required position on the rail E.

These last-mentioned screws H also pass freely through slots *b* of adjustable clamps I, which may be fitted to slide in, on, or along the gages F relatively to the rail E, and so that the same form lips, *c c*, which hold either profile-plate K or L up against the one face of the rail E, the end edges of said plate resting against the inside ends of the gages F, and their upper or opposite edges to the profile lying under or against a rib, *d*, on the rail E. A thumb-nut, M, on the screw H serves to fasten the clamps I to their places, and, by means of the gages F, clamps I, and rib or one or more equivalent projections, *d*, either profile-plate K or L is adjusted and firmly held to its place. Additional gages and clamps N O are arranged below or at suitable distances on the bars B B from the gages and clamps F I, and secured—that is, the gages N—by set-screws P, to the bars B, and the clamps O by thumb-nuts Q on screws *e* projecting through slots *f* in the clamps O. These gages and clamps serve to steady or give additional hold to the profile-plates K L at or near their acting edges.

The general principle of action is the same as that described in my Letters Patent of June 7, 1870, hereinbefore referred to. Thus, to make a cornice or other straight pattern, the profile-plate K having the smallest profile is first run over the plastic body to form a plaster shape or foundation, which, when dry, may be coated over with shellac-varnish or other material, and then, after a suitable layer of plastic substance has been laid on the same, the larger profile-plate L is run by the holder over the mass, producing a plastic pattern of a thickness corresponding to the differences in the profiles or outlines of the operative edges of the plates K L. The outer edges of these plates K L are of the same dimensions, so that after the apparatus, including the bars B, rail E, and gages F N, have once been adjusted and arranged to receive and work the primary plate K, it is only necessary, without further disturbing the arrangement, to slacken the thumb-nuts M Q, and introduce and tighten up by said nuts the second profile-plate L, to produce the pattern, as hereinbefore referred to. A pivoted or swinging sweep may be substituted for the sliding profile-plate holder when corner patterns are required to be produced, or the profile-plate holder may be stationary when in operation and the plastic substance be moved or revolved, as represented,

for instance, in Figs. 7 and 8, in which the bars B B are arranged horizontally, and secured by clamps at a suitable distance apart to a fixed upright or post, R, and the rail E occupies a vertical position, the gages and clamps F N I O, for holding either profile-plate K or L, being of the same construction as hereinbefore described. The plastic substance to be worked may either be slid transversely across the lower bars B, or be rotated as between centers shown by dotted lines, such centers being adjustable along the bars B relatively to the profile edges of either plate K or L; or these two modifications may be combined, and by a suitable arrangement of the gages and clamps and the use of a division-plate and stop, connected, say, with the bottom center, partly curved and partly polygonal-shaped patterns may be produced. Again, a substantially similar arrangement to that shown in Figs. 8 and 9, but substituting a divided table, A, for the post R, and with the bars B, rail E, and the centers carrying the plastic substance in a horizontal position, the clamps and gages which hold either profile-plate in succession being the same, is represented in Figs. 9 and 10 of the drawing. Furthermore, a like system of clamps and gages for working the two profile-plates of the same outside dimensions, but of different-sized profiles on their operative edges, may be used in connection with a revolving spindle or mandrel carrying the plastic substance, a division-plate thereon to make polygonal work, and oval or other shaped formers, against which the holder having the profile-plate is pressed up to produce an oval configuration of the pattern or of a portion of it. Thus figures of any particular kind or of a mixed variety may be produced.

I claim—

The combination, with the bars B B and rail E, of the gages and clamps F N I O, constructed substantially as described, whereby the duplicate profile-plates K L, of the same exterior dimensions, but of different-sized profiles on their operating edges, may be substituted without disturbing the set of the gages, essentially as and for the purposes herein set forth.

JAMES L. JACKSON.

Witnesses:

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