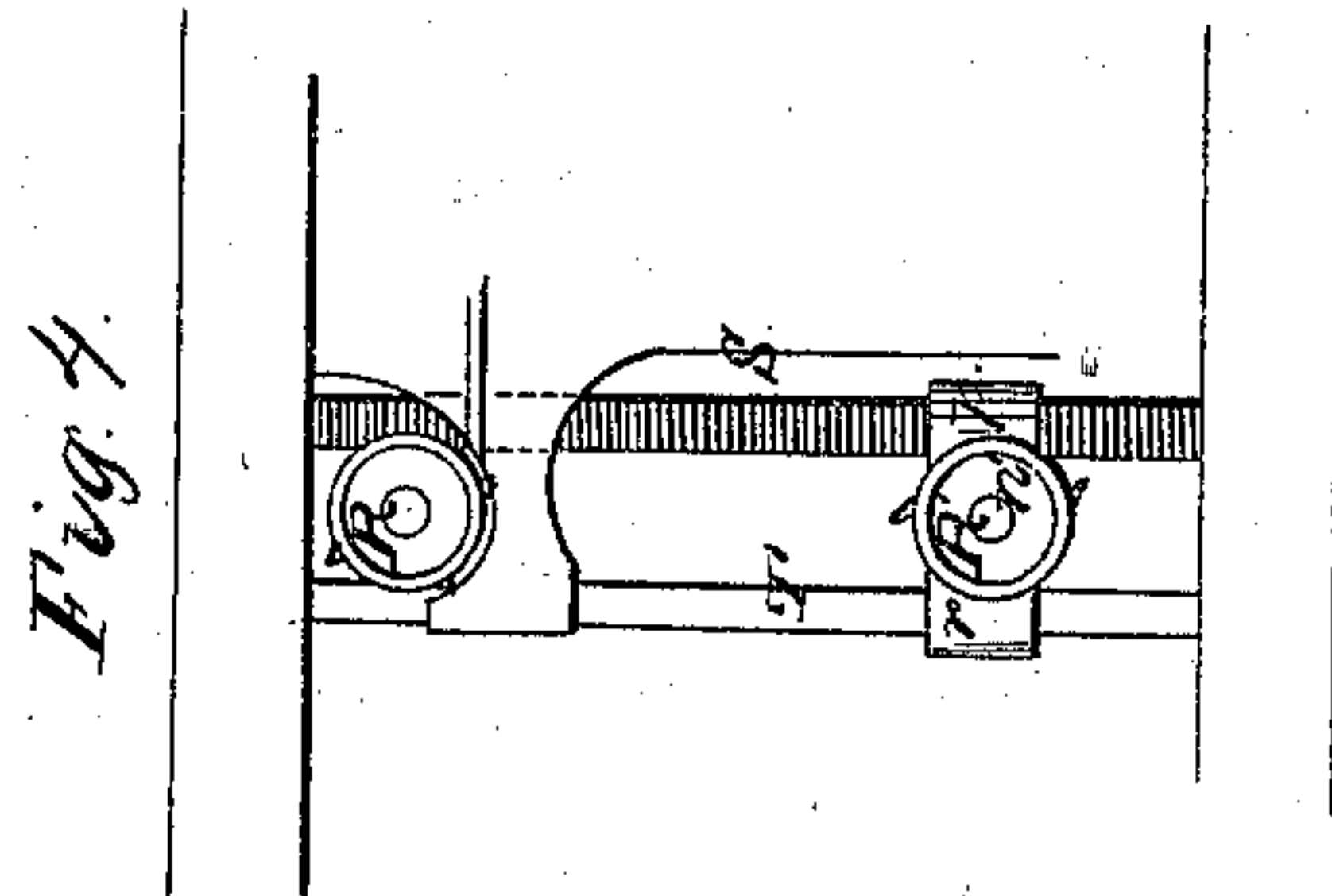
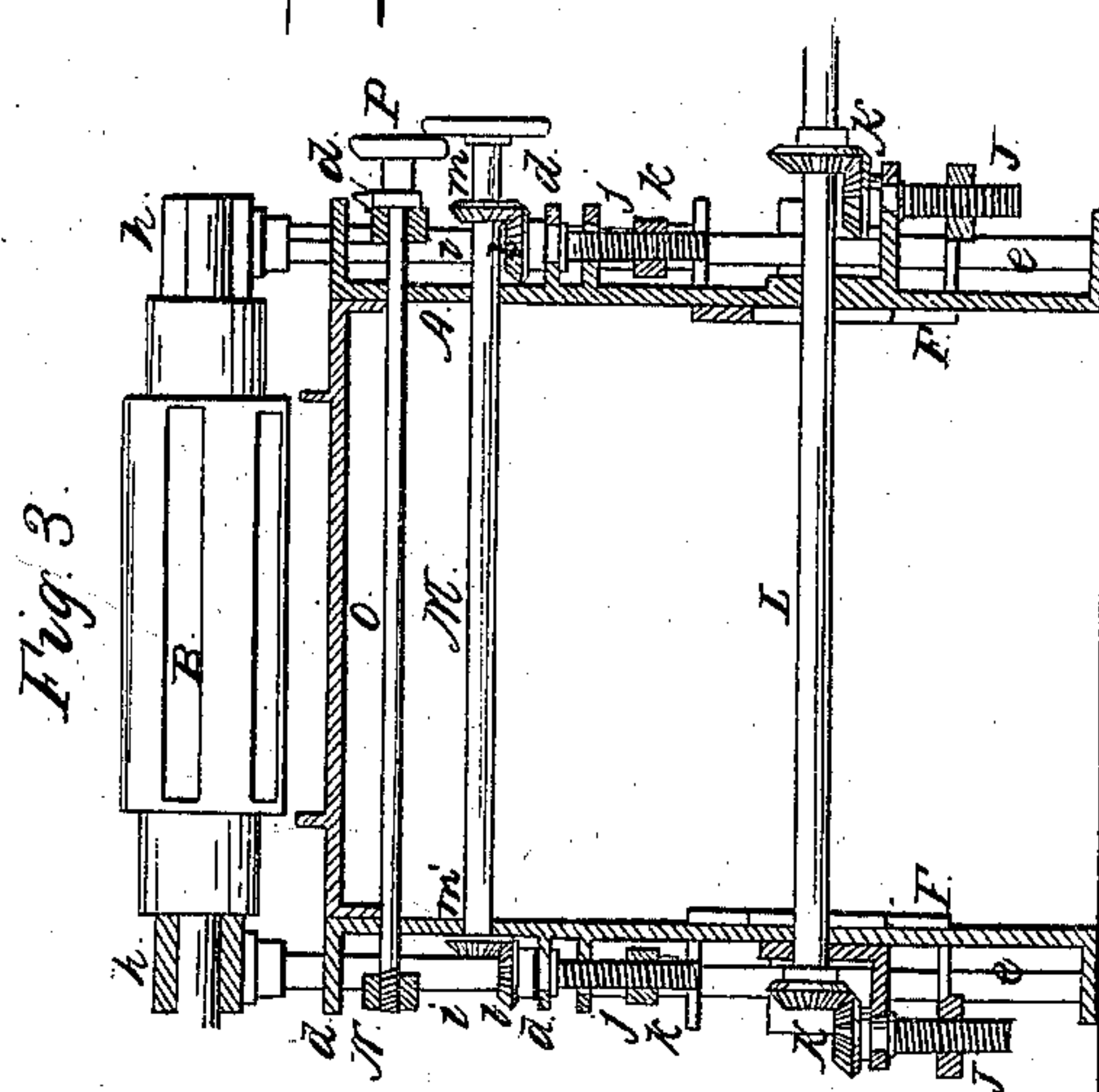
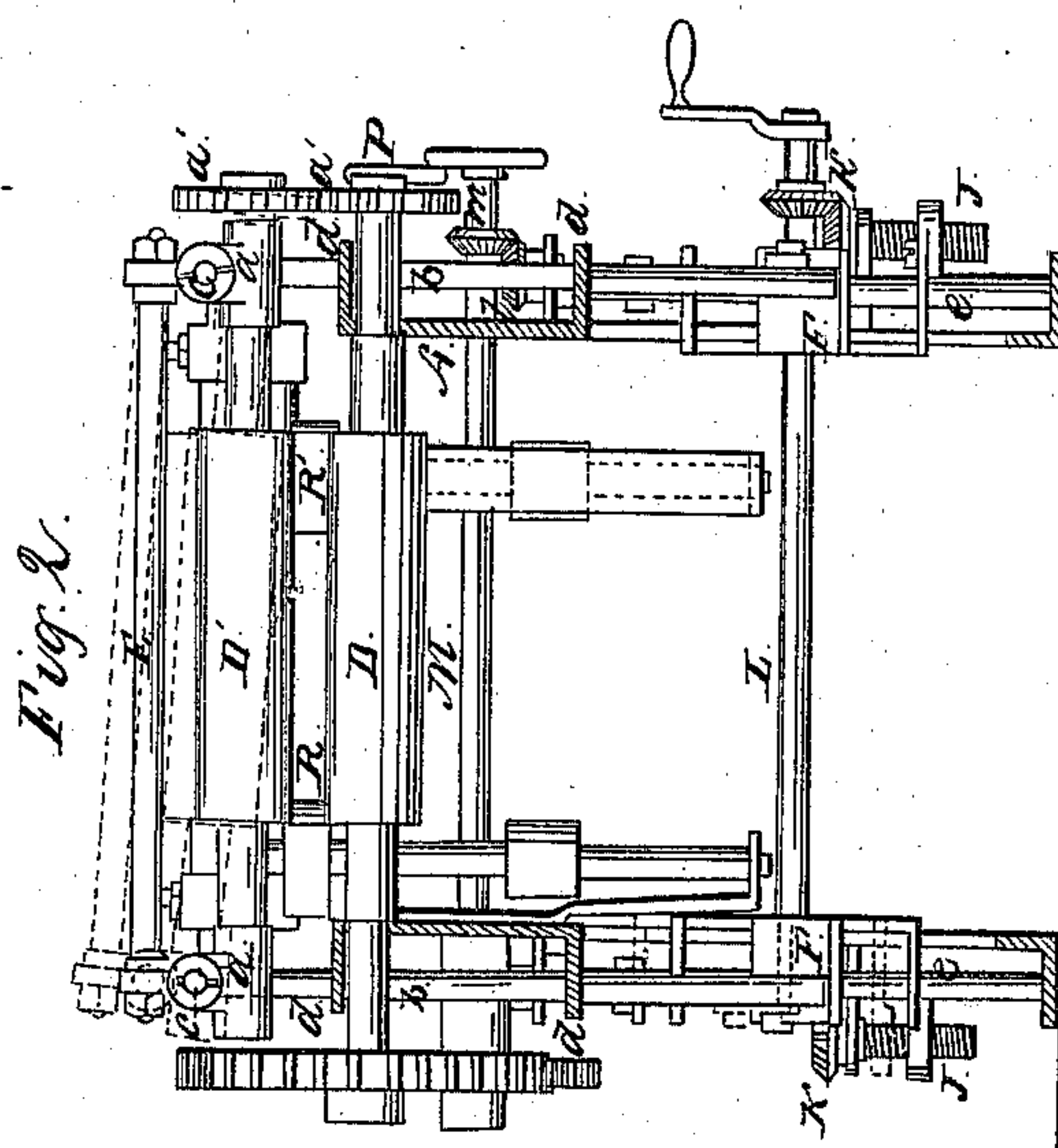
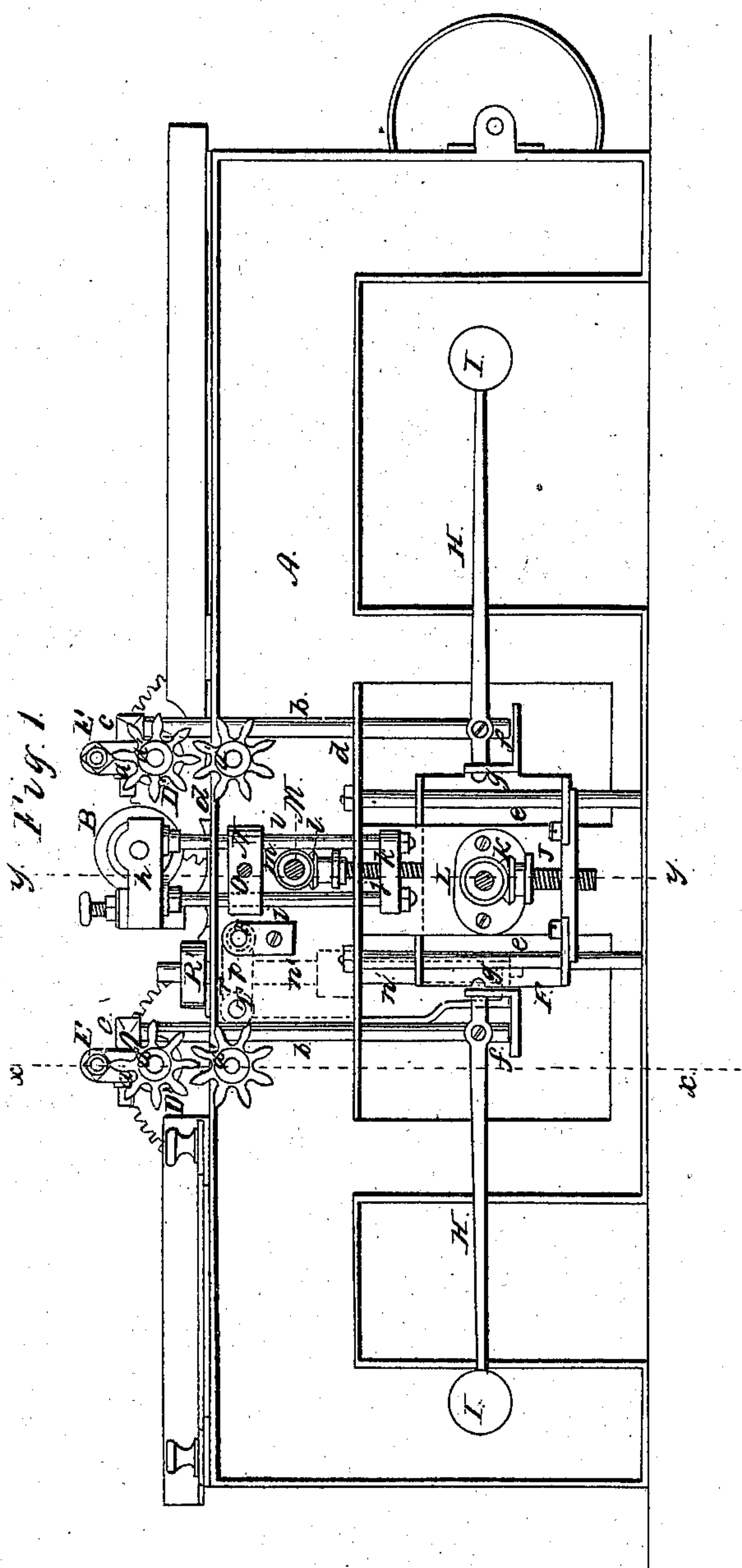


L. Tilton,
Planing Machine,
No 12,880, Patented May 15, 1855.



UNITED STATES PATENT OFFICE.

LEONARD TILTON, OF NEW YORK, N. Y.

DEVICE FOR ADJUSTING PLANING MACHINERY.

Specification of Letters Patent No. 12,880, dated May 15, 1855.

To all whom it may concern:

Be it known that I, LEONARD TILTON, of the city, county, and State of New York, have invented certain new and useful Improvements in Wood-Planing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side view of my improved planing machine. Fig. 2, is a transverse vertical section of ditto, (*x*) (*x*) Fig. 1, being the line of section. Fig. 3, is also a transverse vertical section of ditto (*y*) (*y*) Fig. 1, being the plane of section. Fig. 4, is a detached plan of the tongue and groove cutters.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists in the peculiar means employed for adjusting the feed rollers, cutter cylinder, and tongue and groove cutters as will be presently shown and described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, represents the frame of the machine of the usual form.

B, is the cutting cylinder, and D, D', are the feed rollers, one pair being placed at each side of the cutting cylinders. The feed rollers are placed one over the other, as usual, and they and also the cutting cylinder, occupy the same position on the frame A, as in other planing machines. The lower feed rollers D, have their axes running in fixed or permanent bearings in the frame A, as usual but the axes of the upper rollers D', work in bearings (*a*) (*a*) which are suspended on the upper ends of vertical rods (*b*), see Figs. 1 and 2. The upper ends of the rods (*b*) having short horizontal arms (*c*) attached to them, which arms pass through the bearings above the journals or axes of the rollers D', the bearings (*a*) being allowed to turn on the arms (*c*). The two bearings of each roller D' are connected by a rod E, as clearly shown in Fig. 2. The rods (*b*) pass through projections or guides (*d*) on the frame A, and the lower ends of the rods (*b*) at each side of the frame A rest upon a slide F which works on vertical guide rods (*e*) (*e*) secured to the

frame A, see Figs. 1, 2 and 3. To the lower end of each rod (*b*) there is attached by a pivot (*f*) a lever H having a weight I at one end, fitting in a recess (*g*) in the slide, see Fig. 1.

J is a screw connected with small bevel gear wheels K, by which the slide F is moved up and down upon the guide rods (*e*). Both slides F are operated at once, or at the same time, in consequence of a shaft L by which the gear wheels K at each side of the frame A are connected and made to move simultaneously with each other, see Figs. 2 and 3.

The axis or journals of the cutting cylinder B, work in bearings (*h*) (*h*) which are secured to the upper ends of vertical rods (*i*) (*i*), two rods to each bearing as shown in Fig. 1. These rods (*i*) work through the projections or guides (*d*) on the frame, and a screw (*j*) passes through the lower projection or guide (*d*) and through a bar (*k*) which is connected to the lower ends of the rods (*i*) (*i*). On the upper end of the screw (*j*) there is a bevel wheel (*l*) which gears into a bevel wheel (*m*) on a shaft M, said shaft passing transversely through the frame A and having a bevel wheel (*m'*) on its opposite end which gears into the wheel of the screw at the opposite side of the frame, see Figs. 2 and 3.

N is a clamp at each side of the frame A and bearing against the rods (*i*) (*i*). A rod O, passes through both clamps, said rod O having a screw thread cut on one end which works in one of the clamps and a knob or thumb wheel P at the opposite end.

R, R', Figs. 1, 2 and 4, are the cutters which cut the tongue and groove of the plank or board. The cutter R is permanent its shaft (*n*) working in stationary bearings, but the cutter R' is made adjustable the bearing (*p*) of its shaft (*n'*) having a screw rod S passing through it as clearly shown in Fig. 4, and by turning which the cutter R' is brought nearer to or farther from the cutter R. The bearing (*p*) has a guide (*r*) to its bearing formed by elongating the bearing sufficiently to allow a guide rod T to pass through it, the guide rod being parallel with the screw rod S as shown in Fig. 4.

Each pair of feed rollers D, D' are connected at one end by pinions (*a'*) which gear into each other, see Figs. 1 and 2.

The operation of the machine so far as the planing of boards is concerned is precisely similar to other machines in use, the feed rollers forcing the board along underneath the cutting cylinder B, but the manner of adjusting the feed rollers D D' is entirely different. By merely turning the shaft L, both slides F F may be raised or lowered and with them both of the upper feed rollers D', because the rods (b) rest or bear upon the slides F and rise and fall with it. The levers H give the requisite pressure to the rollers D' and by this simple operation, the turning of the shaft L, both of the rollers D' may, at the same time, be raised or lowered to suit planks or boards of varying thicknesses, and by means of the suspended bearings (a) the rollers D' may be inclined to conform to the boards unevenly sawed or which are thicker at one side than at the other, see red lines Fig. 2, thus preventing any strain or undue pressure upon the bearings, a difficulty attending the planing machines in use.

The cutting cylinder B is raised or lowered by turning the shaft M, both ends of the cylinder being operated upon at the same time and by turning the rod O, the clamps N are made to bind against the rods (i) (i) and secure the cylinder B at the desired height.

The arrangement of the guide (r) and guide rod T keeps the adjustable cutter R' firm and steady and allows it to be moved or adjusted with facility.

I do not claim any of the parts of the within described machine irrespective of the devices herein shown for admitting of the adjustment of the feed roller and cutters, with the exception of these devices the parts described are substantially the same as the Woodworth and other planing machines. I do not claim the feed rollers and cutting cylinder for planing planks or boards for they have been previously used, but

What I do claim as new and desire to secure by Letters Patent, is—

1. I claim hanging the axes or journals of the upper feed rollers D' in suspended bearings (a) attached to the rods (b) in the manner and for the purpose as herein shown.

2. I claim adjusting the cutting cylinder B, by having its bearings (h) (h) attached to vertical slide rods (i) operated by the bevel wheels (m) (l) and screws (j) and securing the cylinder at the desired height by means of the clamps N, N, and rod O, as herein shown and described.

3. I claim the employment or use of the guide rod T and guide (r) arranged as shown for the purpose of keeping the adjustable cutter R' firm and steady while operating and causing it to be adjusted with facility.

LEONARD TILTON.

Witnesses:

S. H. WALES,
I. G. MASON.