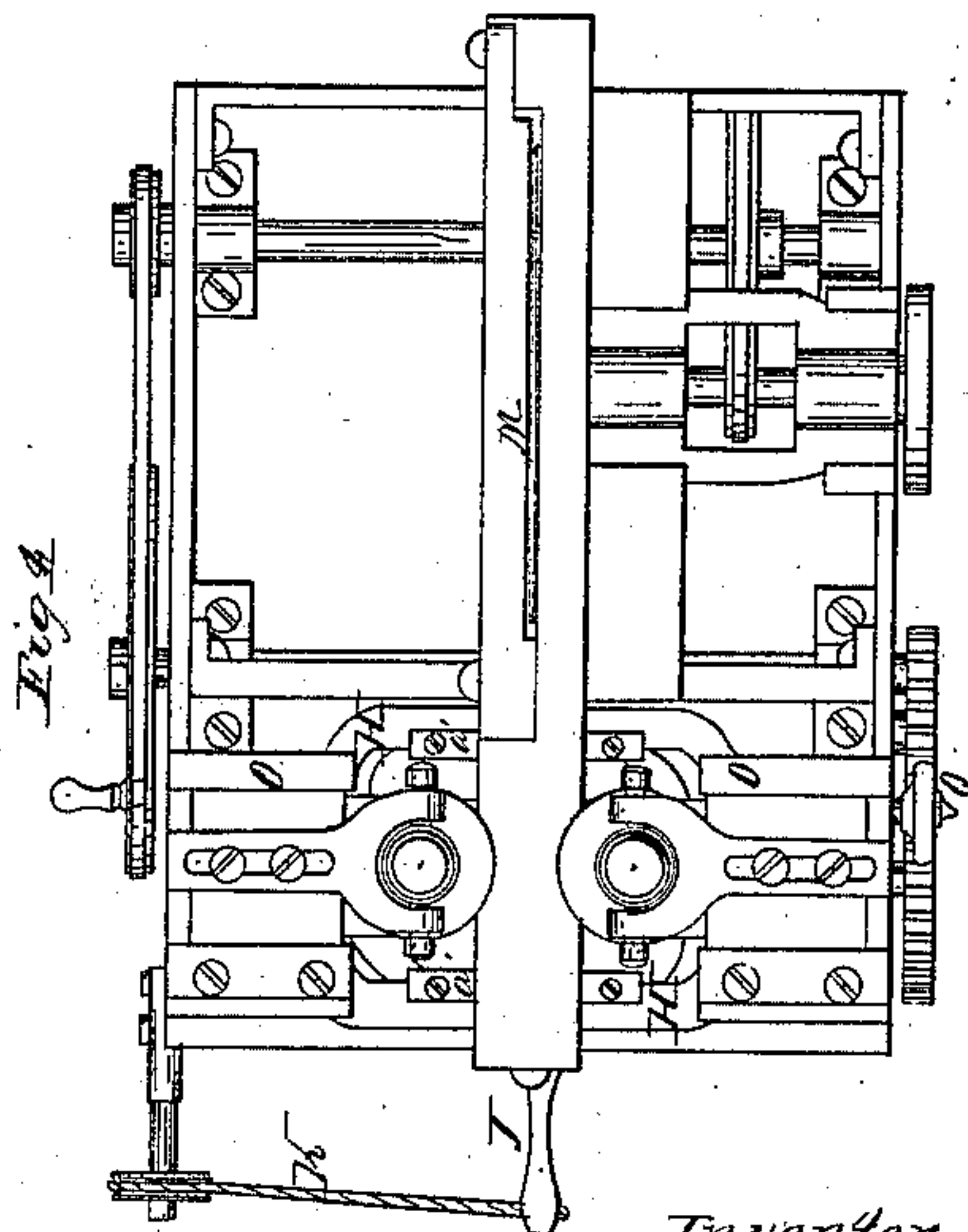
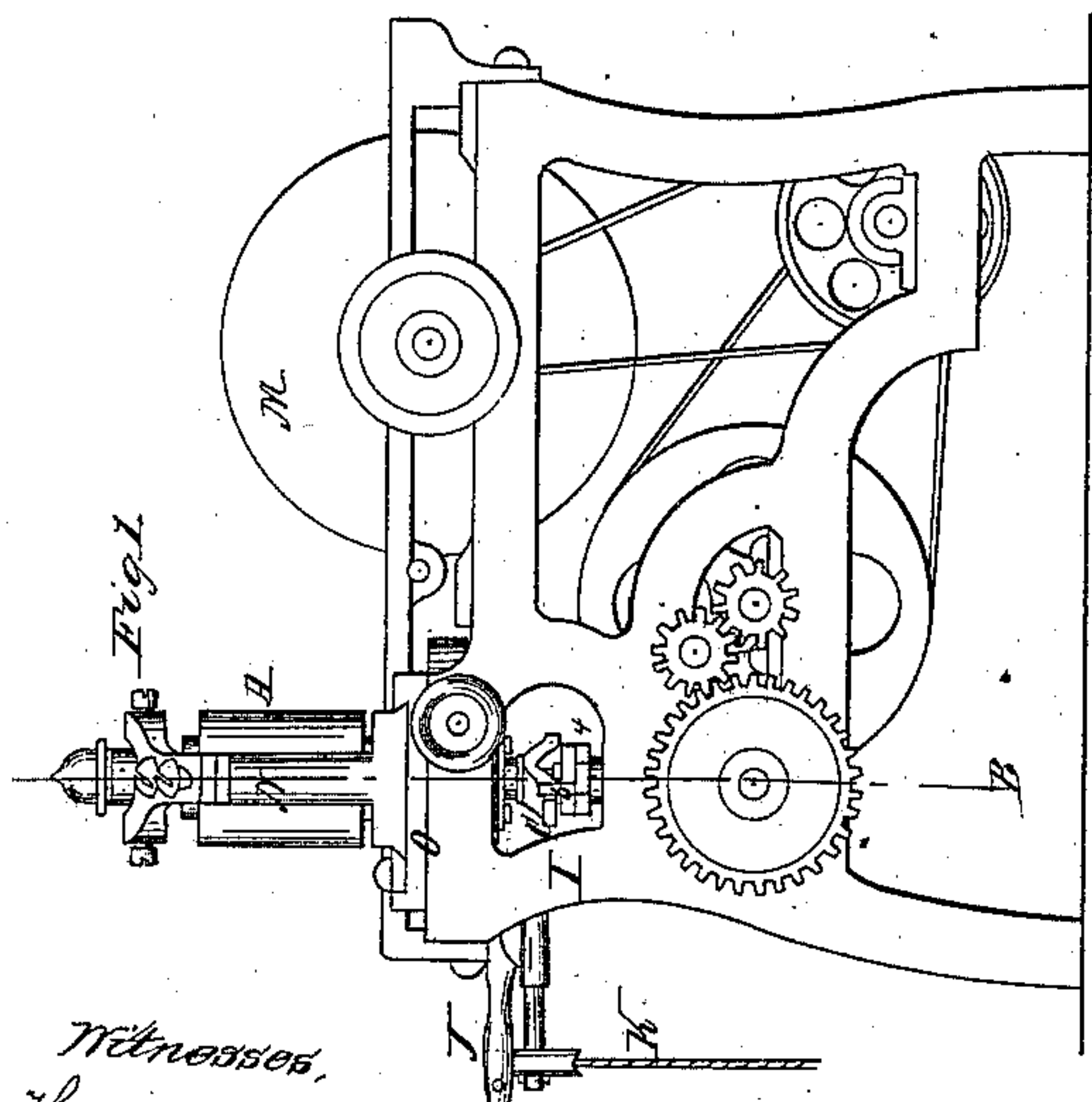
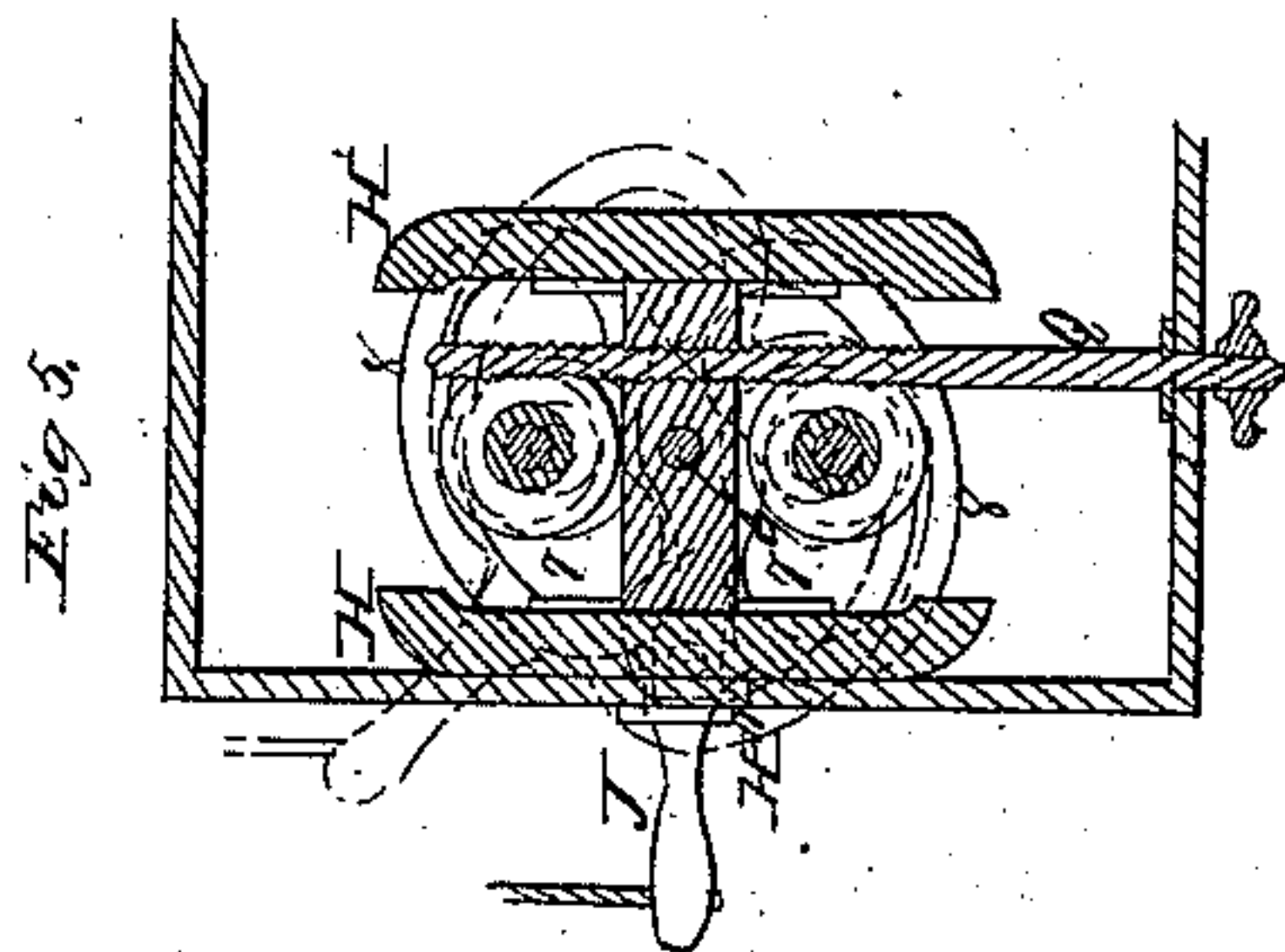
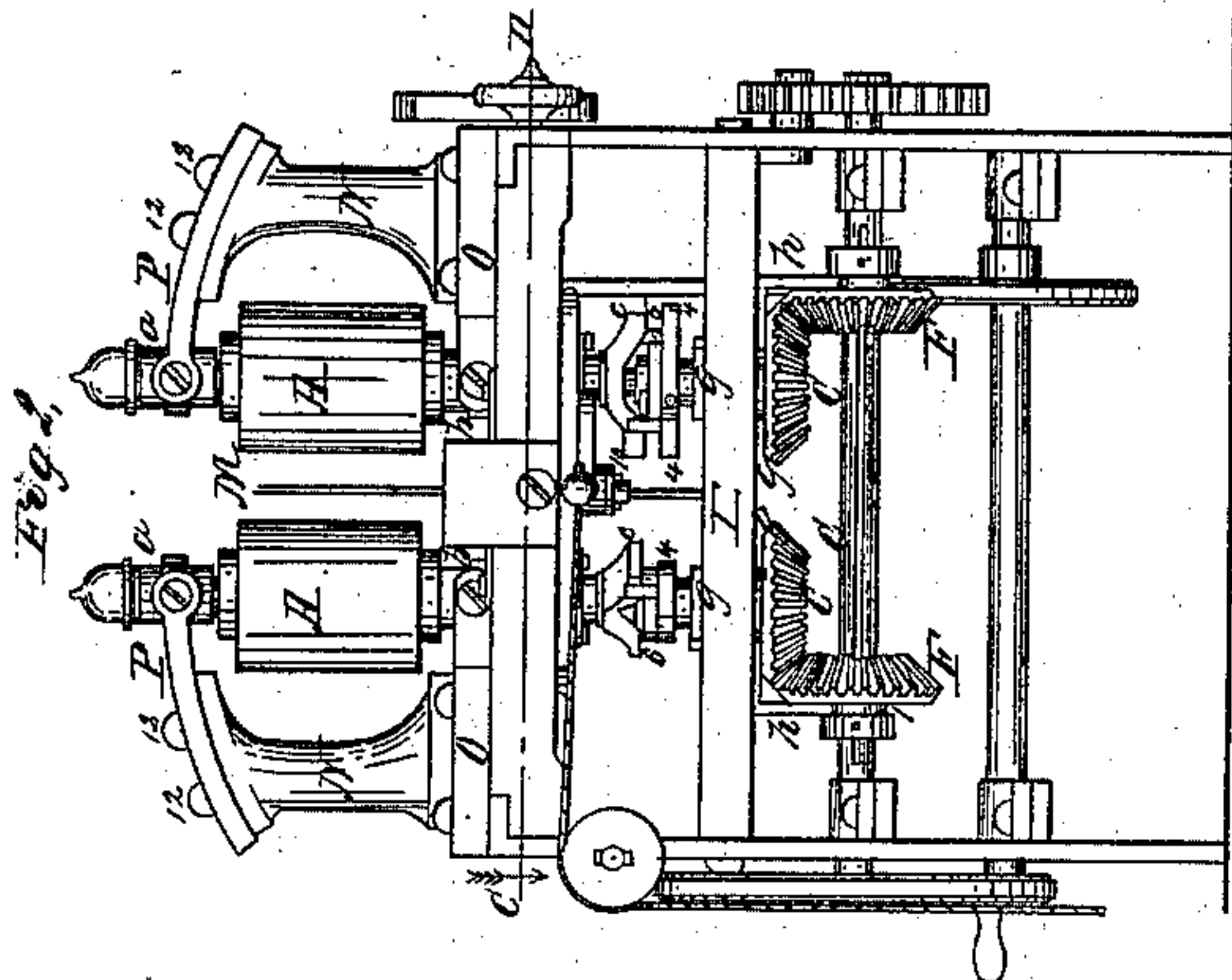
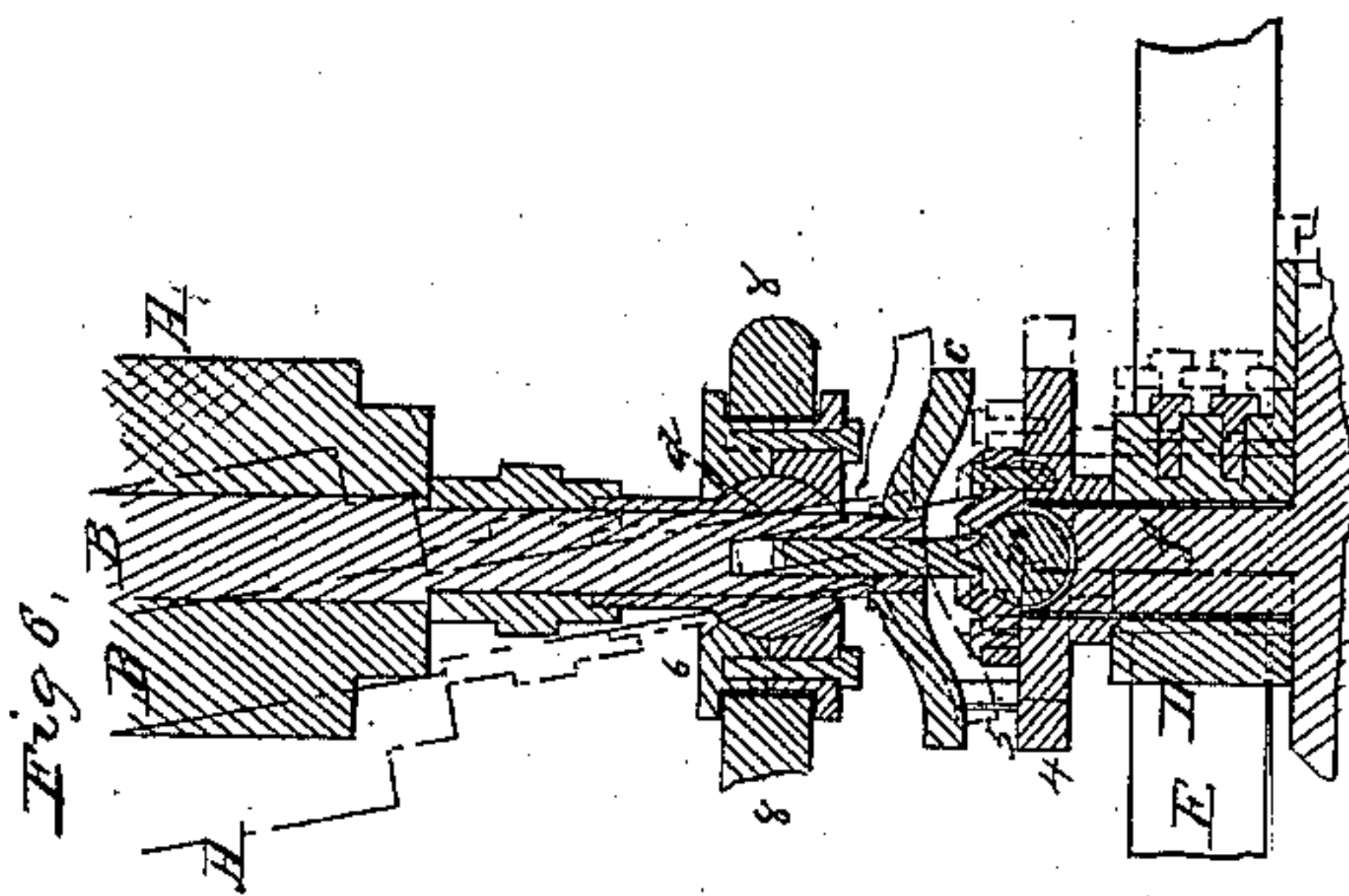
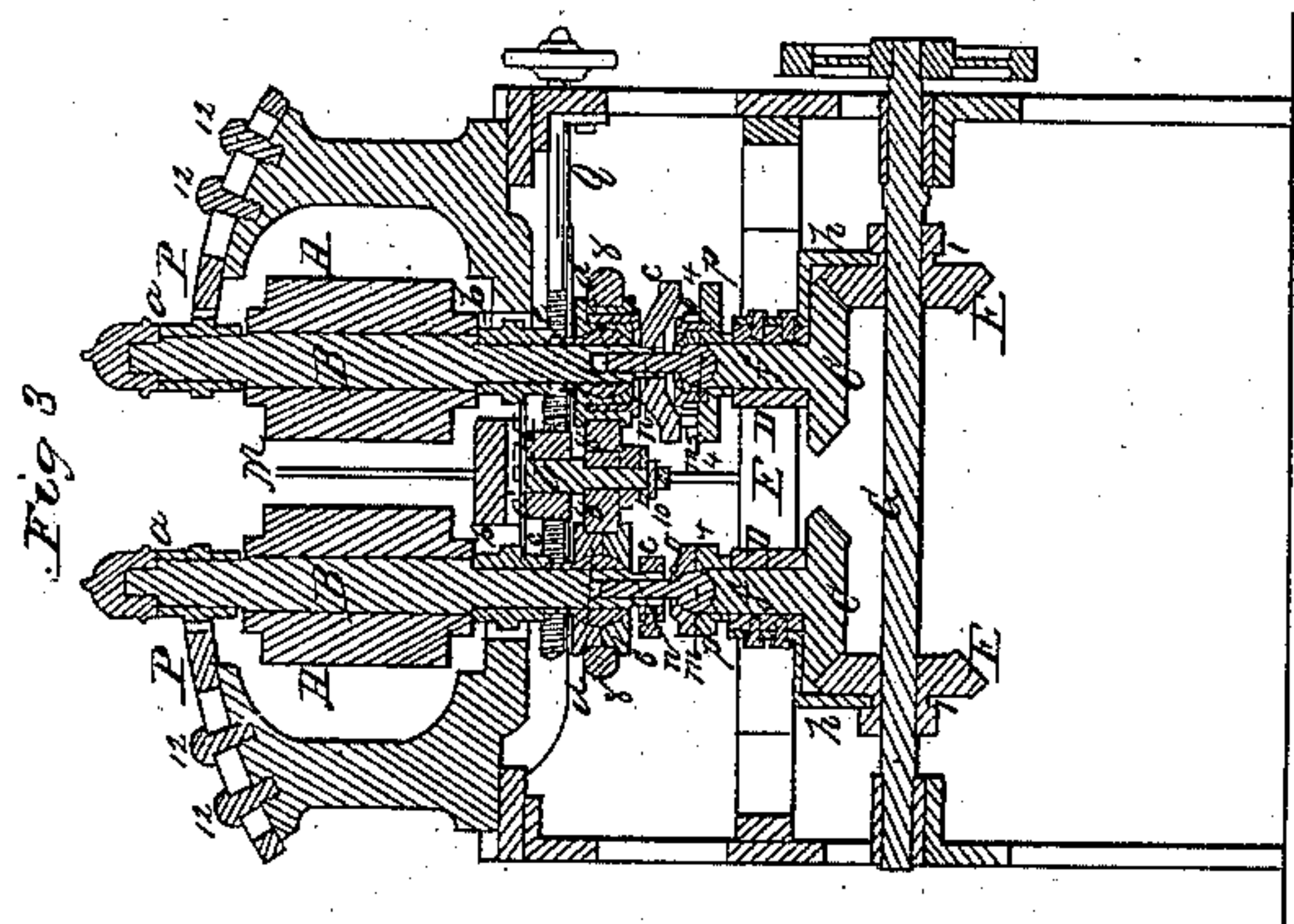


F. J. Plummer,
Resawing Machine,

No 79,682,

Patented July 7, 1868.



Witnesses,
Thos H Dodge
Geo H Miller

Inventor,
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United States Patent Office.

FRANK J. PLUMMER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO R. BALL AND COMPANY.

Letters Patent No. 79,682, dated July 7, 1868.

IMPROVEMENT IN CIRCULAR-SAW MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

KNOW ALL MEN BY THESE PRESENTS:

That I, FRANK J. PLUMMER, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Resawing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming a part of this specification, and in which—

Figure 1 represents a side view of my said improved machine.

Figure 2 represents a front view.

Figure 3 represents a vertical section on line A B, fig. 1.

Figure 4 represents a plan or top view.

Figure 5 represents a horizontal section of a part of the machine; and

Figure 6 represents, upon an enlarged scale, a part of the machine, as shown in section, fig. 3, the parts being shown in two different positions, one in dark lines, and the other in red lines.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

My present improvements relate to improved mechanism for operating and adjusting the feed-rolls A A, and, as the general construction and operation of the other parts of the machine are well known to those skilled in the construction and use of machinery for working wood, a detailed description of the machine will be unnecessary, and therefore my description of the machine represented in the drawings will be confined more particularly to my special improvements.

The shafts B B of the feed-rolls A A are supported in swivelled bearings *a a* and *b b*, as usual, but the lower ends of said shafts, instead of extending down to receive and have fastened rigidly thereto the driving-gears C C, as such machines have heretofore been constructed, only gear down far enough to have the dogs *c c* fastened to their lower ends.

Between the dogs *c c* and the swivelled bearings *b b* are placed, upon the shafts B B, balls *d d*, the necks *e e* of which have ears which project up into holes in the bearings *b b*, which prevent the balls *d d* from turning with the shafts.

The necks *f f* of the gears C C turn and are supported in bearings D D, which are fitted to slide freely back and forth between the bars E E, the lips or flanges *g g* of the boxes D D projecting past or by both the lower and upper edges of said bars, for the purpose of keeping said boxes from slipping up or down while the machine is in use, or while the boxes are being moved laterally, as will be hereafter explained.

To the sliding boxes D D are fastened the upper ends of guide-pieces *h h*, the lower ends of which are fitted to grooves 1 1 in the hubs of gears F F upon the driving-shaft G, and with which they turn, having splines to fit the slot or groove 2 in said shaft.

It will thus be seen that the gears C C, with their respective driving-gears F F, can be moved nearer to or farther from each other, without disturbing or changing the mesh of either set of gears.

The upper ends of the necks *f f* of the gears C C are concaved out, to receive the balls *m m*, as fully indicated in fig. 3 of the accompanying drawings.

The stems *n n* of balls *m m* extend up through the caps *o o*, and enter holes in the lower ends of shafts B B.

Upon the upper ends of the necks *f f* are fastened collar-pieces *p p*, the lower sides of which rest and turn upon the tops of the sliding boxes D D, while to their upper sides are fastened the cap-pieces *o o*, which retain the balls *m m* in place.

From the collar-pieces *p p* project wings 4 4, into which are inserted or fastened pins 5 5, which strike against the dogs *c c*, when gears C C are in motion, thereby giving the proper motion to shafts B B and feed-rolls A A.

The balls *d d* are enclosed by the friction-rings 6 6, each ring being made in two pieces, so that the rings

can be easily applied to the balls *d d*, and at the same time fitted into the cam-grooves 7 7 in the cams 8 8, after which the halves of each ring are fastened together by pins or screws, as indicated in the drawings, (see figs. 3, 5, and 6.)

The cams 8 8 are arranged loosely on the stud 9, which projects down from the cross-slide piece H, the ends of which are fitted to slide on flanges or ways of the central parts H' H' of frame *o o*, which is supported on the front of the main frame I of the machine, a pin, 10, being employed in this instance to support and keep the cams in place upon stud 9. Plates, *a' a'*, are fastened to the upper sides of the parts H' H', to keep the ends of slide-piece H in place.

Cams 8 8 may be made separately, or they may be made in one piece. I prefer to make them separately, but so arranged as to both turn upon the same stud or journal, and then fasten them together by a pin or screw, 11, shown in dotted lines, fig. 5, of the drawings.

J is a handle, fastened to one of the cams, and by which, when the cams are fastened together, the shafts B B and rolls A A can be quickly drawn or moved towards or from each other. When lever J is moved in one direction, they are drawn closer or nearer to each other, as shown in red lines, fig. 5, and a cord, chain, or rope, K, with a weight attached, may be fastened to handle J, to constantly draw the feed-rolls A A together, and thus give the necessary pressure upon the material being resawed, while, at the same time, the feed-rolls are left free to conform to the inequalities of the board or stick being fed through the rolls A A to the saw M.

It is well to have an adjustable or other stop to arrest lever J at a given point, and thus prevent the feed-rolls from being drawn too near together when the material being sawed has been fed quite through between the rolls.

The stands N N, which support the swivel-bearings *a a* and *b b*, are fitted, as usual, to slide back and forth in dove-tailed grooves in frame O O, fastened to the top of the main frame, whilst, in addition thereto, bearings *a a* are supported by the pieces P P, which can be adjusted on the tops of the stands N N, by means of screws 12 12, to give the feed-rolls any desired inclination.

A screw-shaft, Q, is fitted to the side of the main frame, with its screw part passing through the slide-piece H, whereby the latter, together with the feed-rolls and their operating-mechanism, can be moved in either direction, at the pleasure of the operator, and that, too, while all the parts so moved remain in their proper relative positions as respects each other.

By my improvements, it will be seen that the operator, after moving one roll to the desired position by shaft Q, can disconnect the cams 8 8, when one feed-roll will remain in a fixed position, while all the varying movements occasioned by the inequalities of the material being fed in will be indicated by the other roll. Again, when cams 8 8 are connected, the motion of the feed-rolls will be uniform in both directions, whereby the cut will be central throughout.

Again, it does not affect the mesh of gears C C with the gears F F, when the rolls A A are inclined in either direction, consequently the gearing always runs smooth and easy; nor is there any binding of the parts, owing to the peculiar construction and arrangement of the mechanism.

The cams 8 8 and gears C C always move in horizontal positions, the balls *d d* and *m m* turning freely in their sockets, to prevent all binding of the parts.

Having described my improvements in resawing-machines, what I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the shafts B B, or either, of the cams 8 8, or either, and friction-rings 6 6, constructed to operate substantially as and for the purposes set forth.
2. The combination, with the shafts B B, of the cams 8 8, friction-rings 6 6, and balls *d d*, substantially as and for the purposes set forth.
3. The combination, with the adjustable feed-rolls, the lower ends of whose shafts are received in balls *d d*, mounted in the machine as described, of the sliding gears for driving said rolls, and the balls *m* and stem *n*, for connecting the gears with the shafts of the rolls, under the arrangement and for operation as herein shown and set forth.
4. In combination with the parts claimed in the preceding clause, I claim the dogs *e*, collars *p*, wings 4, and pins 5, mounted upon the hubs of the gear-wheels and feed-roll shafts, in the manner and for the purposes shown and specified.
5. The combination, with the cams 8 8, of the handle or arm J and fastening-screw 11, for the purpose of allowing one to be operated independently of the other, substantially as and for the purposes set forth.

FRANK J. PLUMMER.

Witnesses:

THOS. H. DODGE,

GEO. H. MILLER.