

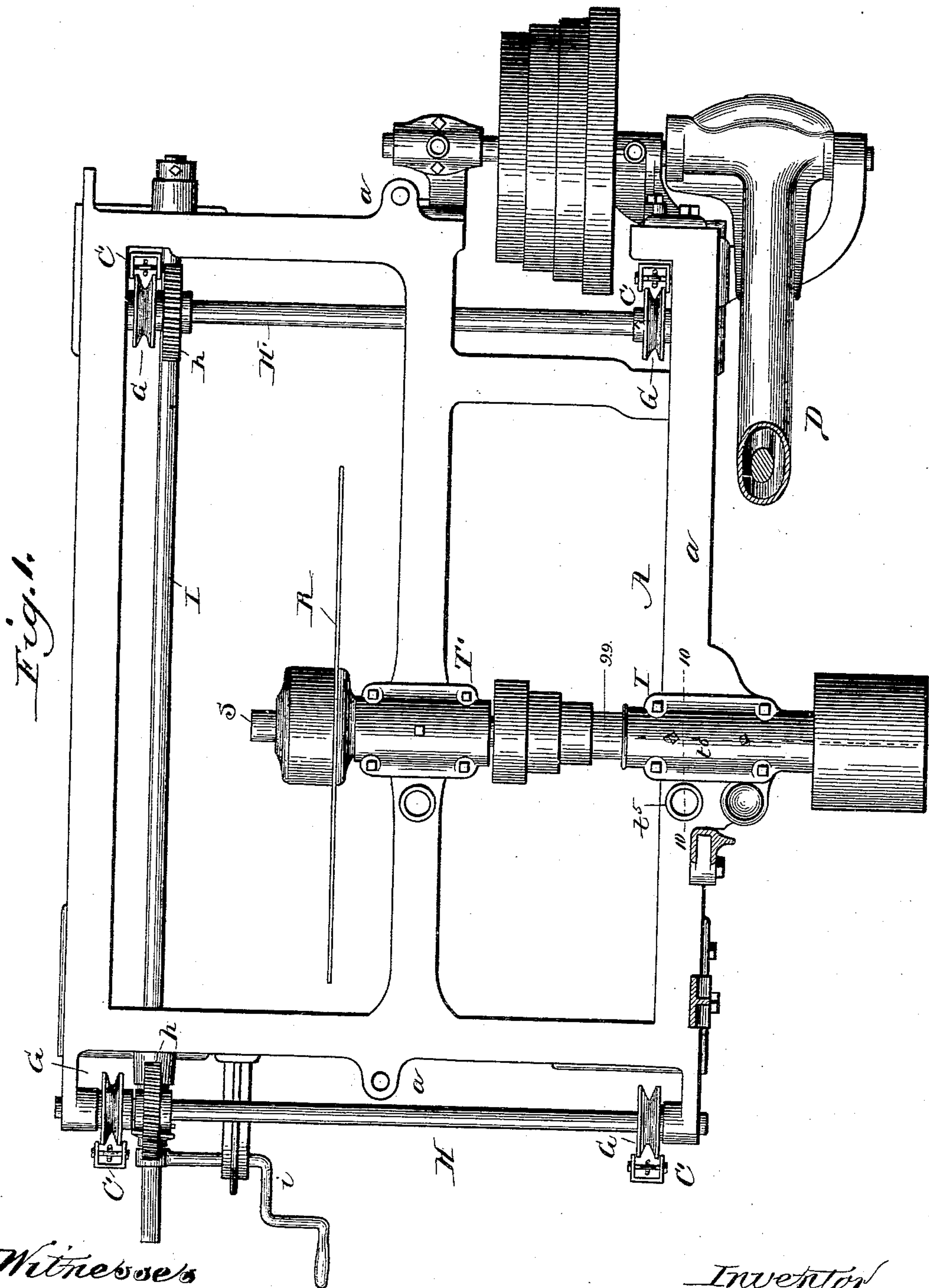
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5 Sheets—Sheet 1.

W. J. EDWARDS.
POWER FEED SAWING MACHINE.

No. 447,812.

Patented Mar. 10, 1891.



Witnesses
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J. Kennedy.

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Atty

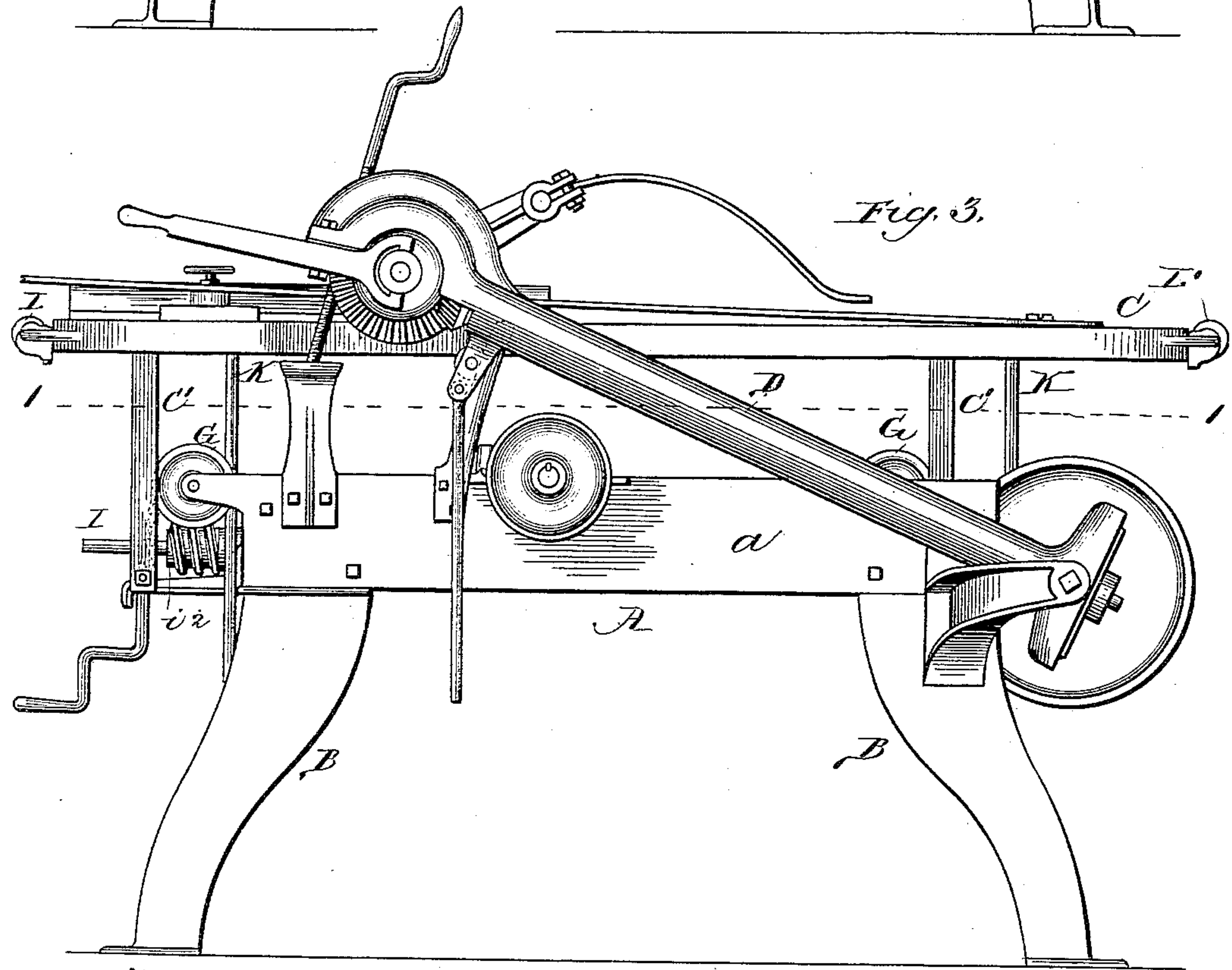
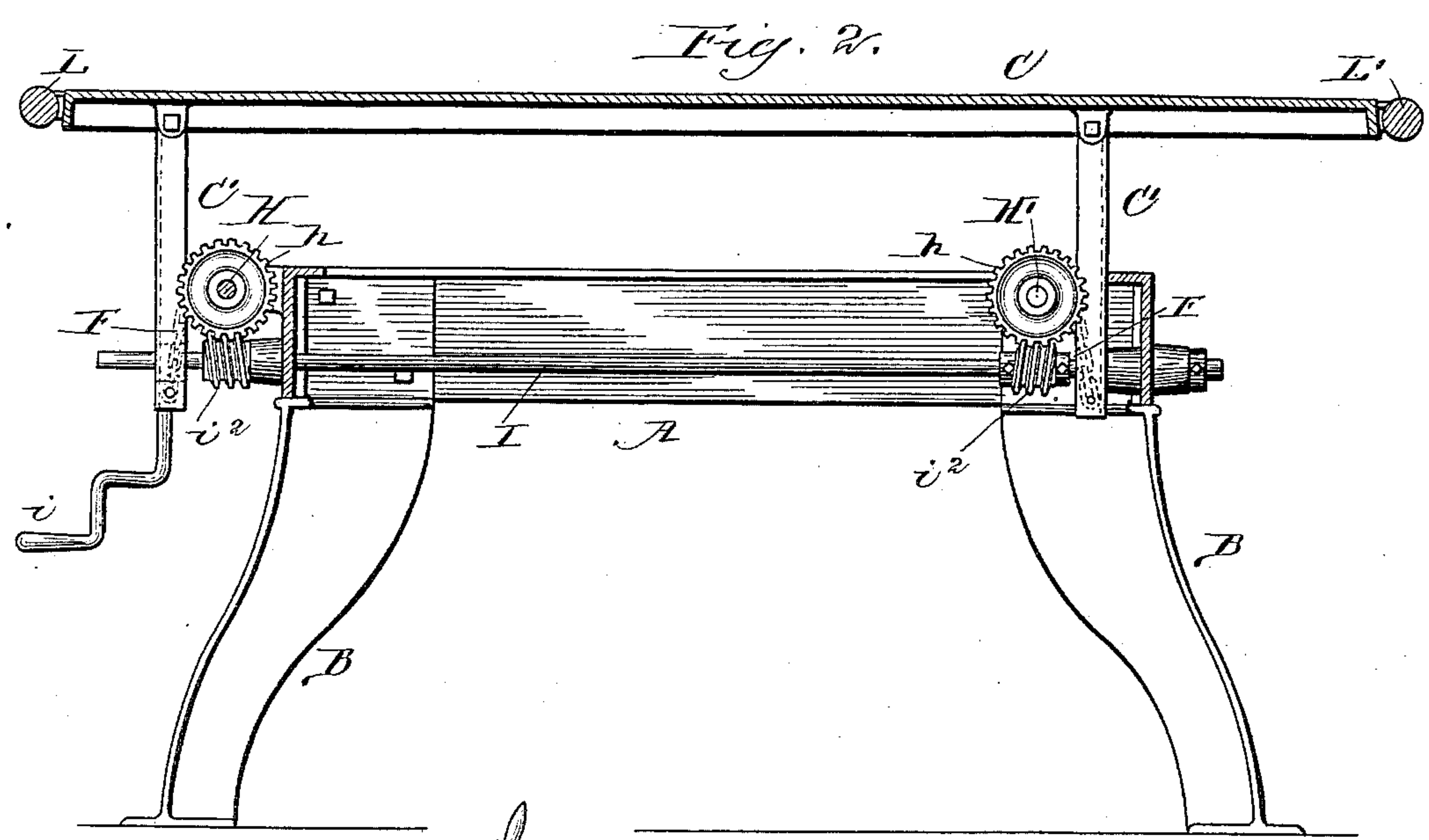
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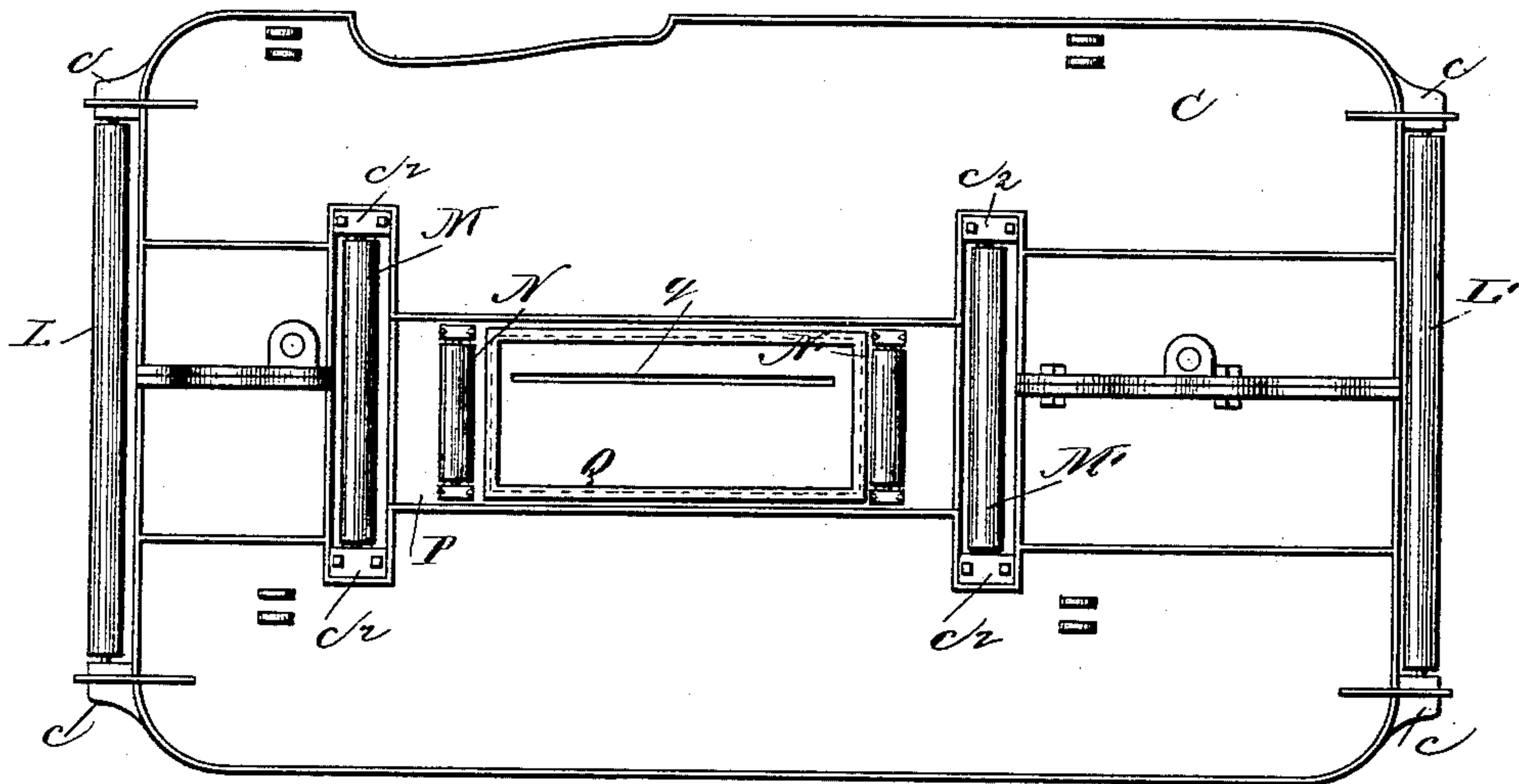
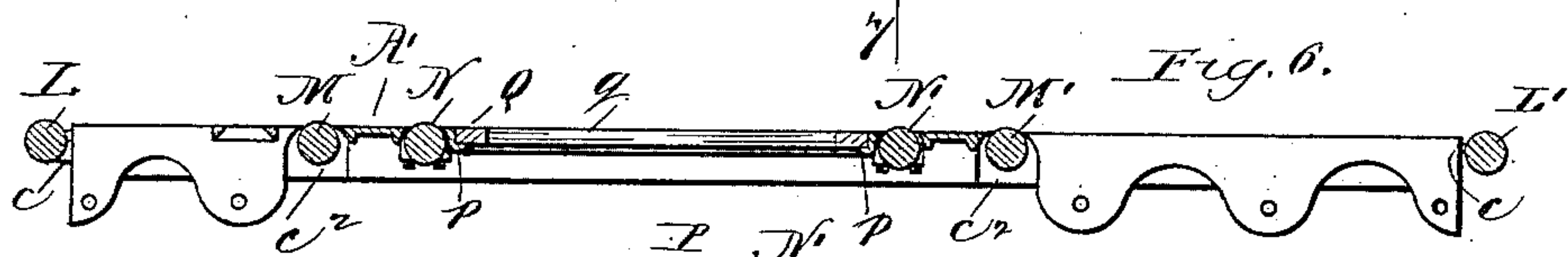
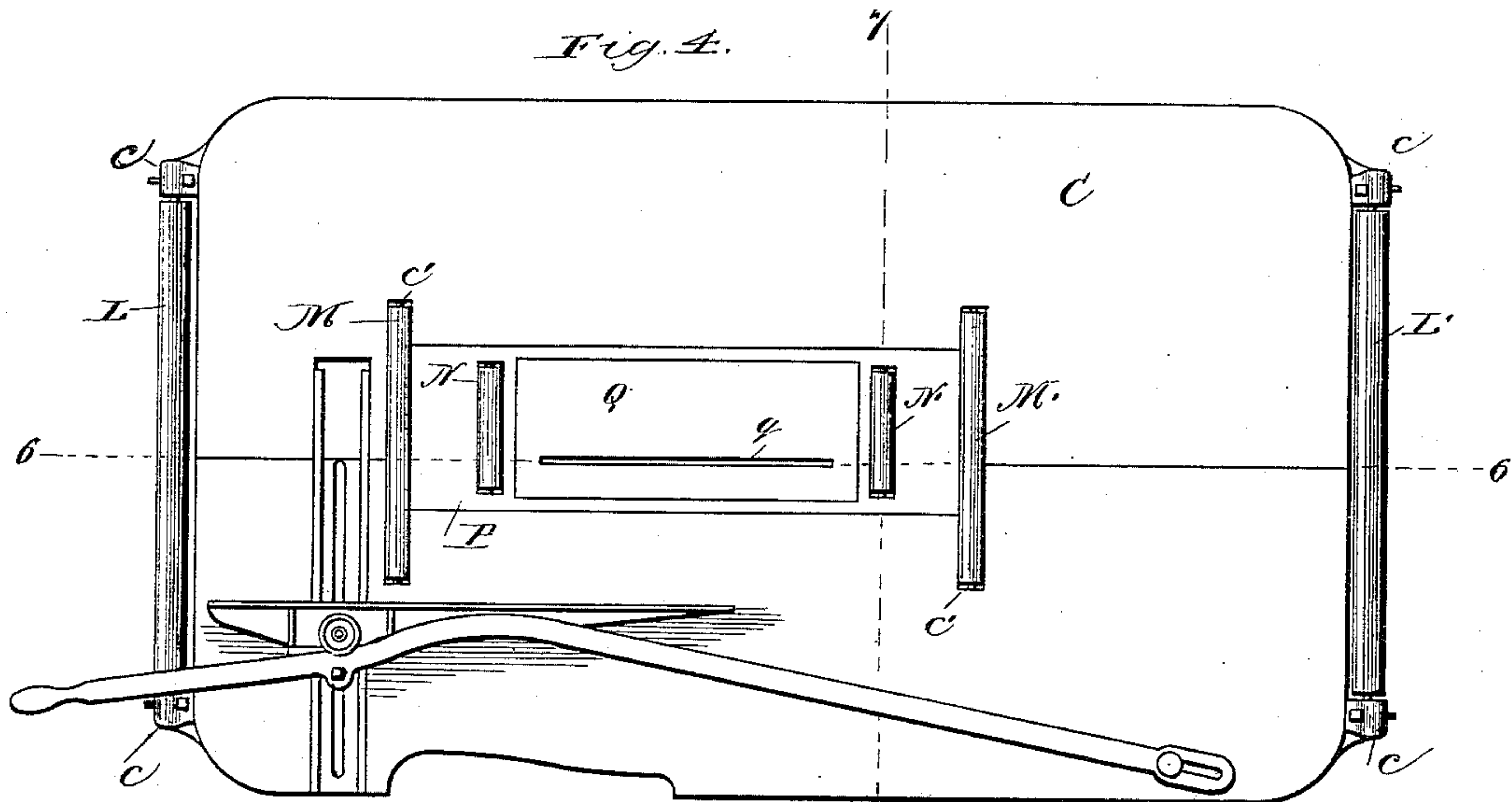
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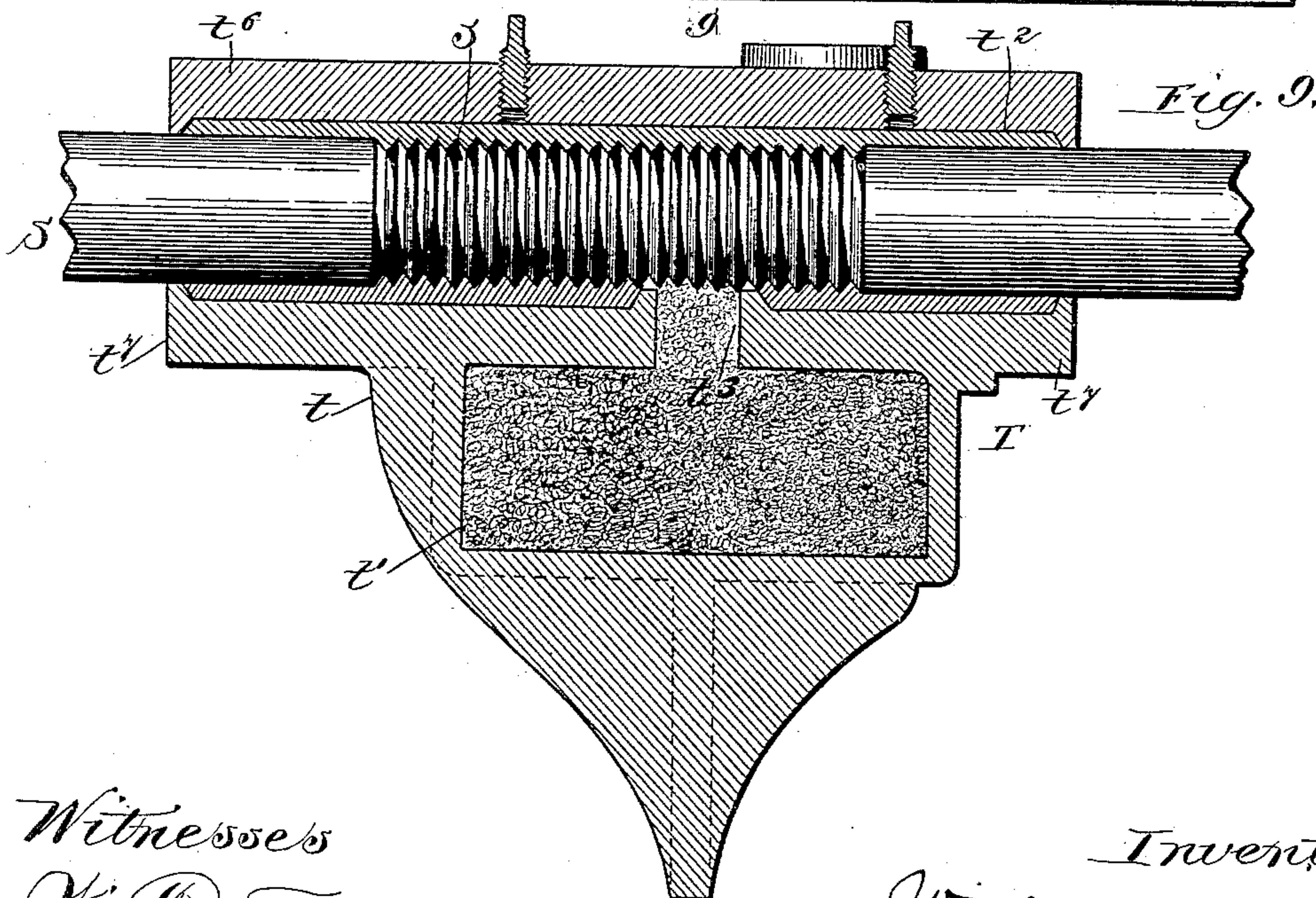
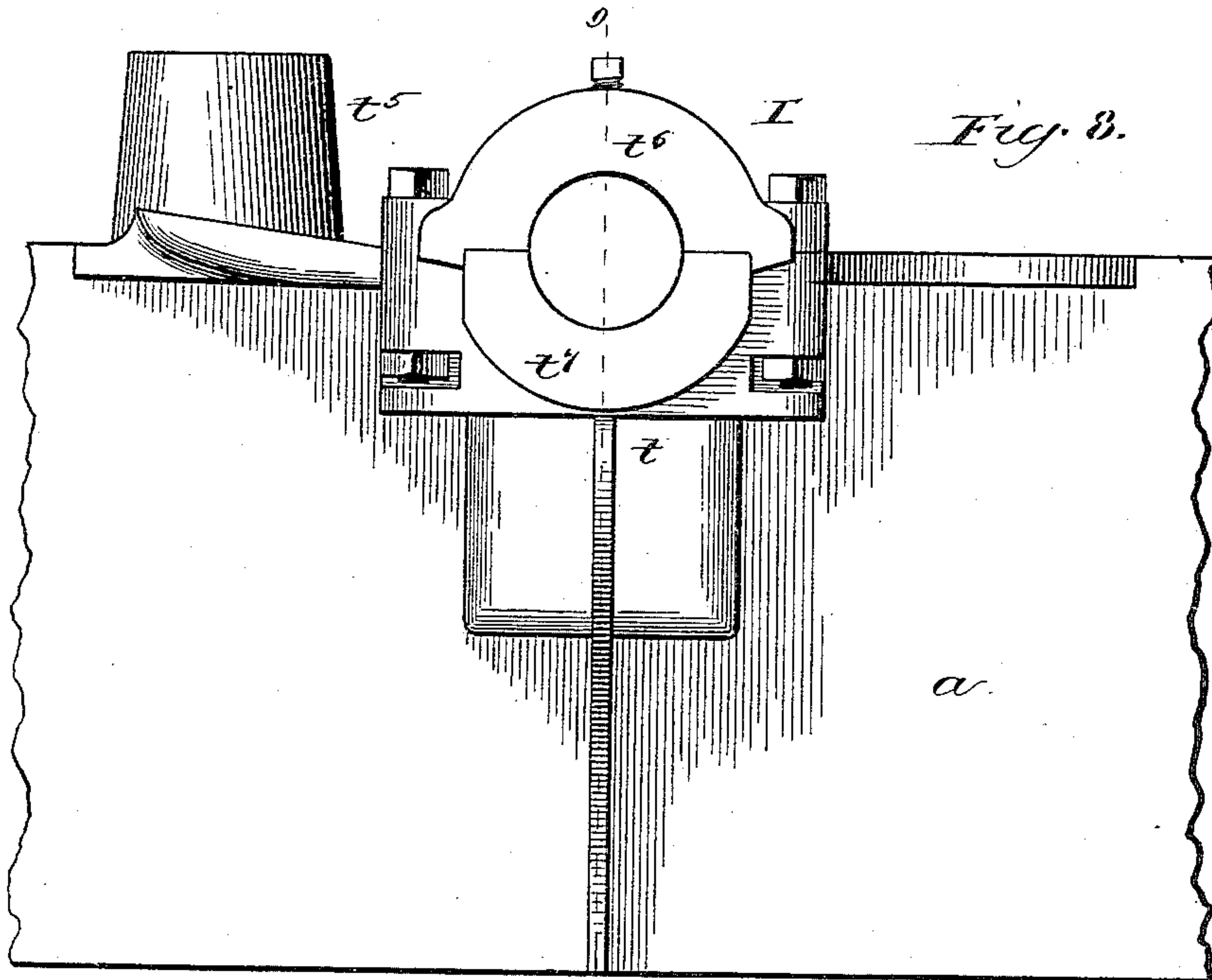
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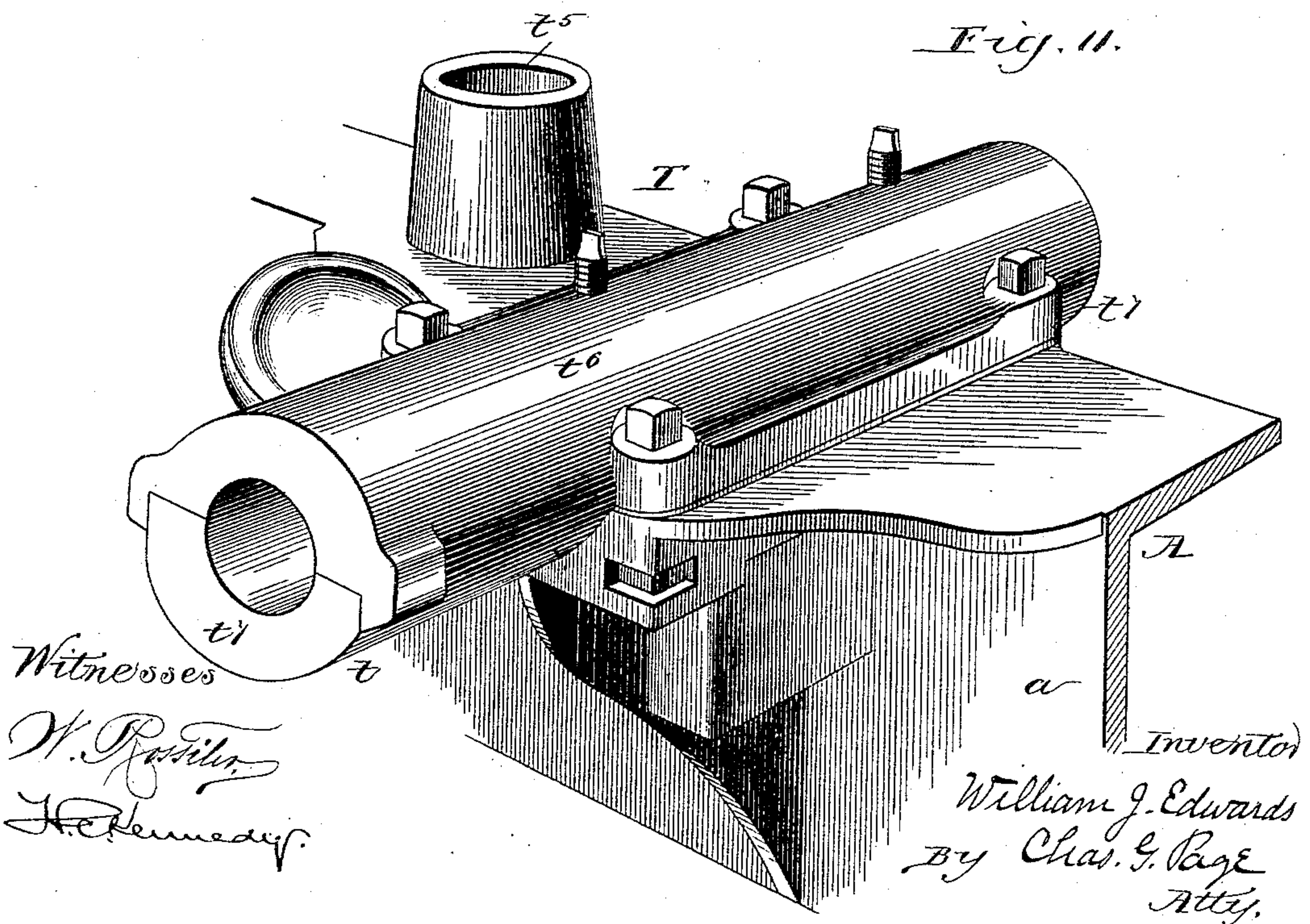
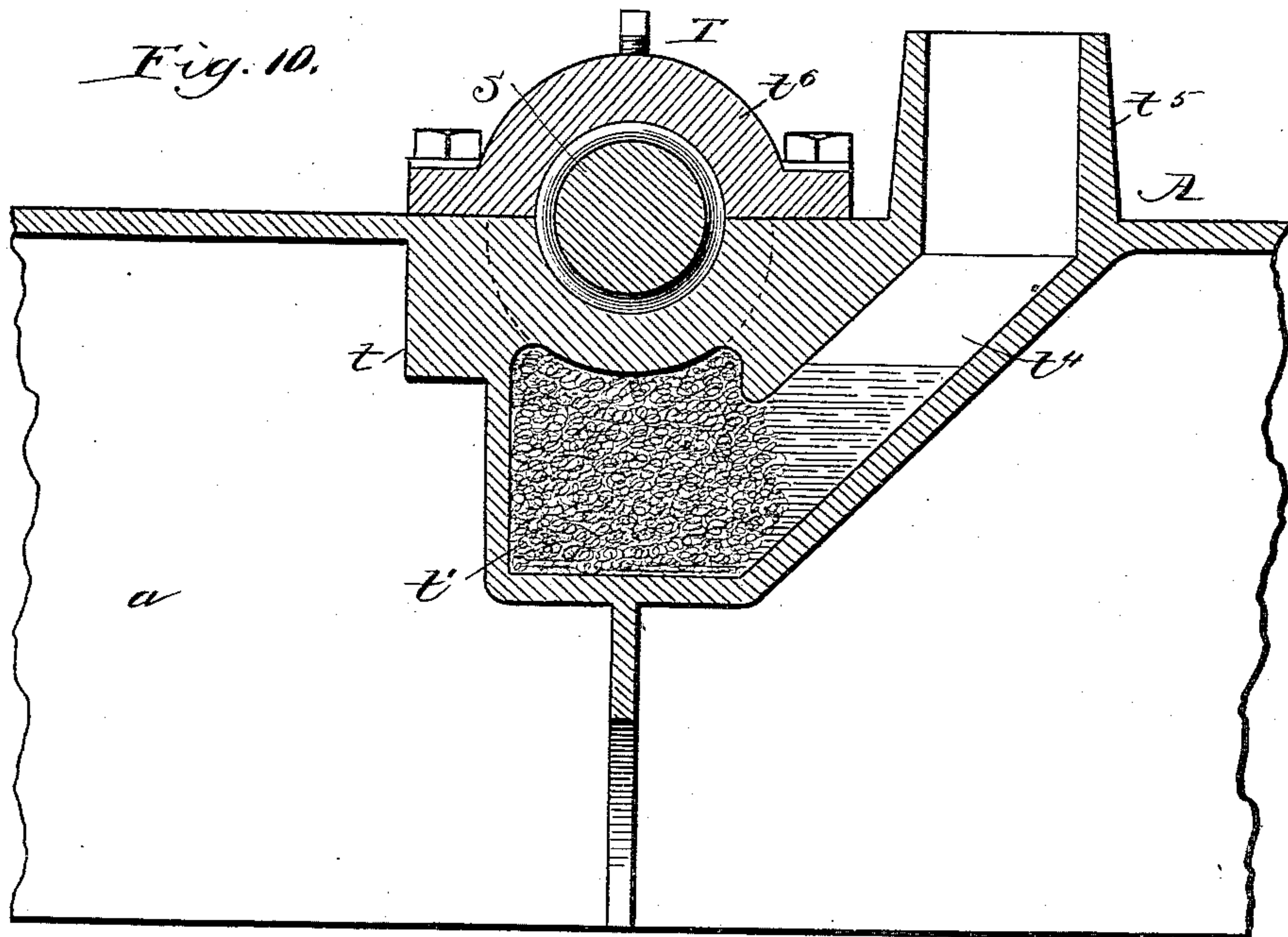
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UNITED STATES PATENT OFFICE.

WILLIAM J. EDWARDS, OF CHICAGO, ILLINOIS.

POWER-FEED SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 447,812, dated March 10, 1891.

Application filed April 14, 1890. Serial No. 347,892. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. EDWARDS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Power-Feed Sawing-Machines, of which the following is a specification.

My invention relates to power-feed sawing-machines wherein a system of connected raising and lowering devices is employed for raising and lowering the saw-table, and has for its more prominent objects to provide exceedingly simple and reliable means for raising and lowering the saw-table without rocking or tending to rock the same, and, further, to adapt the saw-table for saws of different sizes and pieces of material of various lengths.

To the attainment of the foregoing and other useful ends, my invention consists in matters hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional plan of my improved sawing-machine, the section being taken below the saw-table on line 1 1 in Fig. 3, the scale on which Fig. 1 is made being, however, somewhat larger than that of Fig. 3. Fig. 2 represents a section taken longitudinally through the saw-table and bed-frame on a vertical plane, the legs or depending standards of the saw-table and the greater portion of the table raising and lowering mechanism being shown in elevation. Fig. 3 represents the machine in side elevation. Fig. 4 is a top plan of the saw-table, and Fig. 5 is a bottom plan of the same. Fig. 6 is a section on line 6 6 in Fig. 4. Fig. 7 is a section on line 7 7 in Fig. 4. Fig. 8 represents, on a larger scale, one of the saw-shaft boxes in end elevation, and includes a portion of one of the sides of the bed or body frame of the machine. Fig. 9 is a section through the box of Fig. 8 on line 9 9, and shows a portion of the saw-shaft in elevation. Fig. 10 is a transverse section through said box on a vertical plane indicated by line 10 10 in Fig. 1. Fig. 11 represents said box in perspective.

In said drawings, A indicates the bed-frame, which is supported upon legs B and provided with bearings for the principal operative parts of the machine. The saw-table C is sup-

ported over and from the bed-frame, and is provided with a suitable opening for the saw, which is mounted below the saw-table and arranged to extend up through the opening in the same. The rotary feed-wheel (not herein shown) is understood to be arranged over the saw-table and supported by a swinging arm or support D, which is hung at its lower end below the level of the saw-table and made hollow, so as to contain shafting for driving the feed-wheel, substantially as in United States Letters Patent No. 383,112.

The saw-table is provided with a set of legs or pendent standards C', and is supported by cables or chains F, (shown in dotted lines in Fig. 2,) which are attached both to the lower portions of the legs and to winding drums or pulleys G, whereon they can be wound, in which way by operating said pulleys the table can be raised and lowered by the winding and unwinding of the chains or cables upon and from the pulleys. The pulleys G are fixed upon the horizontally-arranged rotary shafts H and H', two of said pulleys being placed upon each shaft. These rotary shafts H and H' are arranged, respectively, at the front and rear ends of the machine, and can be operated synchronously, so that in raising and lowering the table it will be kept in a horizontal condition. As a means for operating the raising and lowering mechanism comprising the pulleys and chains, I provide a horizontally-arranged rotary shaft I, which is supported by the bed-frame and gear connected with the rotary shafts H and H'. Said shaft is also provided at one end with a crank i, by which it can be readily operated by an operator standing in front of the machine. The said crank i is movable lengthwise upon the shaft I, and when it is desired to turn said shaft it is moved outwardly near the outer end thereof, so that the other parts of the machine will not interfere with it. When not in use it is moved inwardly upon the shaft, and is illustrated in this latter position. As a suitable gear-connection between the operating-shaft I and the pulley-shafts H and H', the shaft I may, as herein shown, be connected with the pulley-shafts by worm-gearing consisting, for example, of worms i' on the shaft I, arranged to engage worm-wheels h on the pulley-shafts, although, as a matter of course,

other forms of gearing can be employed. The legs or standards C' of the saw-table are recessed longitudinally, so as to receive to some extent the pulleys G , in which way the pulleys and longitudinally-recessed standards also serve as guides, which steady the saw-table during its vertical adjustment and hold it true after it has been adjusted. By means of the foregoing devices the table can be readily raised and lowered independently of the bed-frame whereon the saw-shaft is mounted, and hence the extent to which it is desired the saw shall project above the table can be determined. It will also be observed that in the power-feed sawing-machine of Patent No. 383,112 the swing of the feed-wheel support will cause the feed-wheel to be moved bodily in the arc of a circle proximately concentric with the axis about which the saw revolves. This adjustment of the feed-wheel may be desirable, and at the same it may be desirable to raise or lower the table with particular reference to the position of the feed-wheel, and this can obviously be attained by vertically adjusting the saw-table, as hereinbefore set forth. While the legs or standards of the saw-table are guided by the pulleys, I also provide, as a means for positively holding the saw-table steady and preventing any tilt thereof, a couple of guide or steady rods K , Fig. 3, which are arranged, respectively, at opposite ends of the machine. These rods are secured to the saw-table and extend downwardly through eyes a , Fig. 1, on the bed-frame, by which arrangement the rods can slide in the eyes when the saw-table is raised and lowered.

The saw-table is provided with a couple of rollers L and L' , which are mounted, respectively, at its front and rear ends and arranged so that the work which is being fed to and delivered from the saw may run upon them. I also provide the saw-table with a pair of rollers M and M' , which are arranged between the two end rollers L and L' and placed, respectively, in front and in rear of the point where the saw operates. While the end rollers L and L' are of particular service in feeding the work onto the table at the received end thereof and carrying off the work from the delivery end of the same, the intermediate rollers M and M' serve to support and permit the free travel of the work near the saw.

The rollers L and L' are conveniently journaled in bearings c on the ends of the saw-table. The rollers M and M' are arranged within slots c' , which are formed through a portion of the width of the table and arranged transversely to the length thereof, the bearings c^2 for said rollers being upon the under side of the table. The table is also provided with a removable center piece P , which supports a couple of short rollers N and N' .

The saw is understood to extend up through and above the removable center piece P at a point between the two rollers N and N' , which

said rollers lie comparatively near the saw and serve to support the work at points both in front of the saw and in rear of the same. Should it be desired to employ an unusually large saw, the center piece P , with its rollers N and N' , can be removed from the saw-table, and in such case the rollers L and L' will support the work at points adjacent to the saw.

The center piece P can be fitted within a suitable opening in the saw-table and held therein in any convenient way, and as a matter of further improvement I provide said center piece with a removable wooden slab or block Q . This wooden block is provided with a slot q , through which the saw is understood to extend upwardly. By employing material such as wood for the piece or block Q all danger of injury to the saw-teeth is avoided. By removably holding the block at the center of the saw-table, or at the point where the sawing is to be effected, it can, when so desired, be removed, so that a larger saw can be used. The wooden block can be applied to the center piece in any suitable way—as, for example, the center-piece can be provided with an opening corresponding in size with the wooden block and surrounded by a ledge or seat p , whereon the wooden block can be seated.

The circular saw R , Fig. 1, is held upon a rotary shaft S , which is mounted in boxes T and T' on the bed-frame. The lower portion t of the box T is cast integral with one of the sides a of the bed-frame, and is provided with a chamber t' , adapted to contain a suitable quantity of cotton waste and lubricant. This chamber is arranged below the shaft S , which extends through a soft-metal bearing t^2 , such as a Babbitt metal bearing, which is arranged within the box. The chamber t' communicates by a short passage t^3 , Fig. 9, with the bore through which the saw-shaft extends, and the saw-shaft is for a portion of its length formed with annular grooves, as at s . It is found that by forming the annular grooves s in said shaft the lubricant seems to more readily distribute itself along the bearing than if said shaft was not provided with such grooves. The lower half of the box, which is in effect an enlarged portion of one of the side bars of the bed-frame, is also provided with an upwardly-extending supply-passage t^4 , which terminates at its upper end in a nipple t^5 , wherein the lubricating matters can be introduced. The upper portion of the box consists of a cap t^6 , which is bolted on the side bar of the bed-frame and extended in correspondence with the extended ends t^7 of the lower portion of the box. The box T' is understood to be constructed like the box T , and hence need not be shown in detail.

What I claim as my invention is—

1. The combination, substantially as hereinbefore set forth, of a bed-frame whereon the saw is mounted, the elevated saw-table pro-

vided with legs or pendent standards, gear-connected shafting supported upon the bed-frame and provided with winding-pulleys arranged at the corners of the machine, and chains or cables attached to said legs or standards of the saw-table and connected with the pulleys, so that they can be wound upon and unwound from the pulleys for the purpose of varying the height of the saw-table.

2. The combination, substantially as hereinbefore set forth, of the saw-table provided with legs or pendent standards, and a raising and lowering mechanism therefor, comprising the transversely-arranged rotary shafts H, carrying winding-pulleys, the longitudinally-arranged rotary shaft I, geared to said transversely-arranged shafts, and chains or cables attached to the legs or pendent standards of the saw-table and connected with the pulleys on the transversely-arranged shafts, for the purpose described.

3. The combination, substantially as hereinbefore set forth, of the vertically-movable saw-table provided with grooved legs or pendent standards C', gear-connected shafting provided with winding-pulleys G, which are partially received within the grooves of the legs

or pendent standards, and chains or cables attached to the legs or pendent standards within the grooves thereof and connected with the winding-pulleys, for the purpose described.

4. The combination, with the saw-table provided with a centrally-arranged opening, of the removable center piece P, provided with rolls N N' and removably fitted in said opening and arranged to lie in the plane of the table, said rolls being respectively at the front and rear of the saw, which projects up through said center piece, substantially as and for the purpose described.

5. The center piece P, removably applied to the saw-table and provided with a removable slotted block Q, substantially as and for the purpose set forth.

6. The saw-table provided with end rollers L and L' and intermediate rollers M and M' and having a removable center piece P, provided with rollers N and N', substantially as and for the purpose described.

WILLIAM J. EDWARDS.

Witnesses:

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