

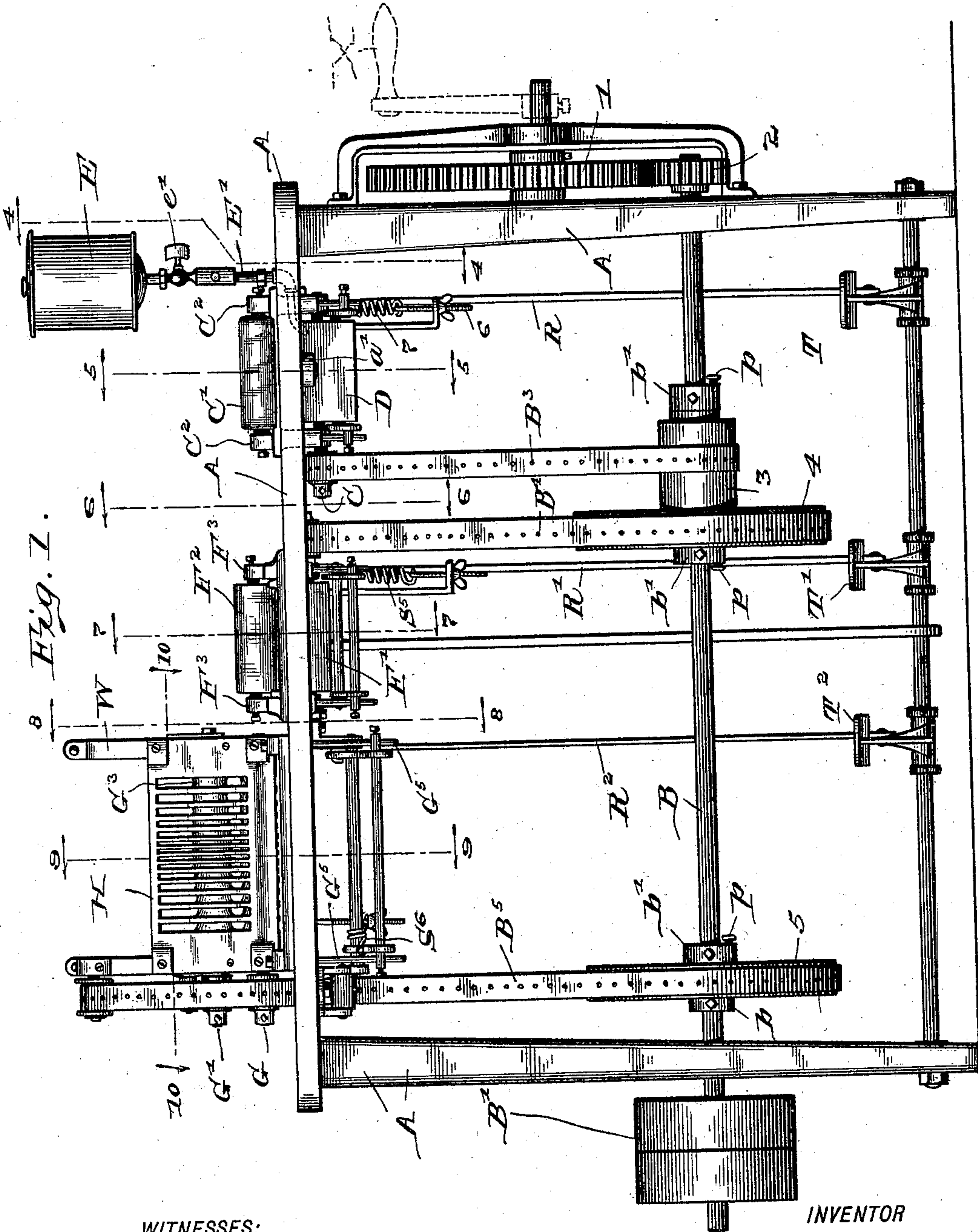
(No Model.)

5 Sheets—Sheet 1.

J. WORSDELL.
LEATHER FINISHING MACHINE.

No. 561,465.

Patented June 2, 1896.



WITNESSES:

H. S. Neal,
J. A. Walsh.

INVENTOR

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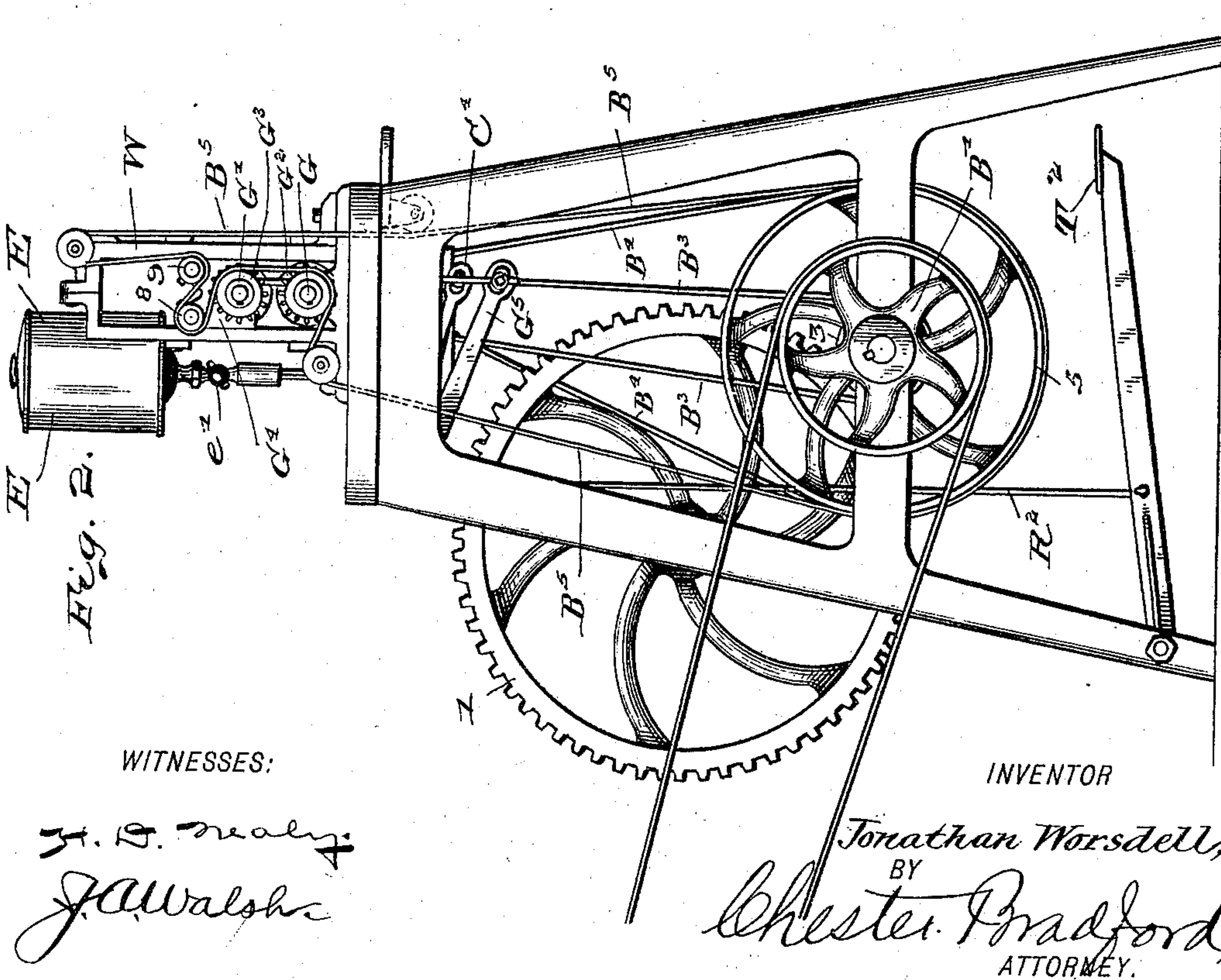
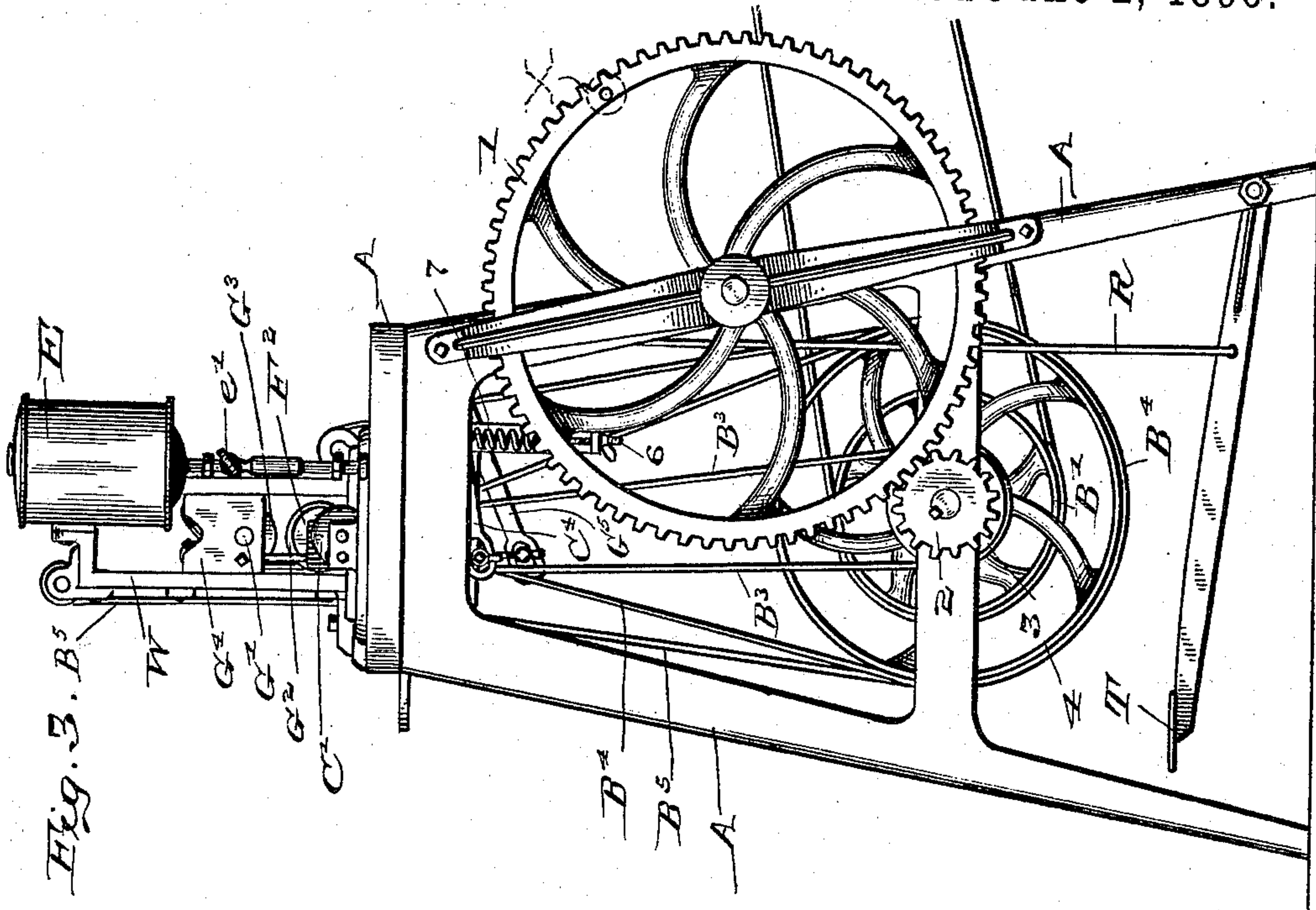
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WITNESSES:

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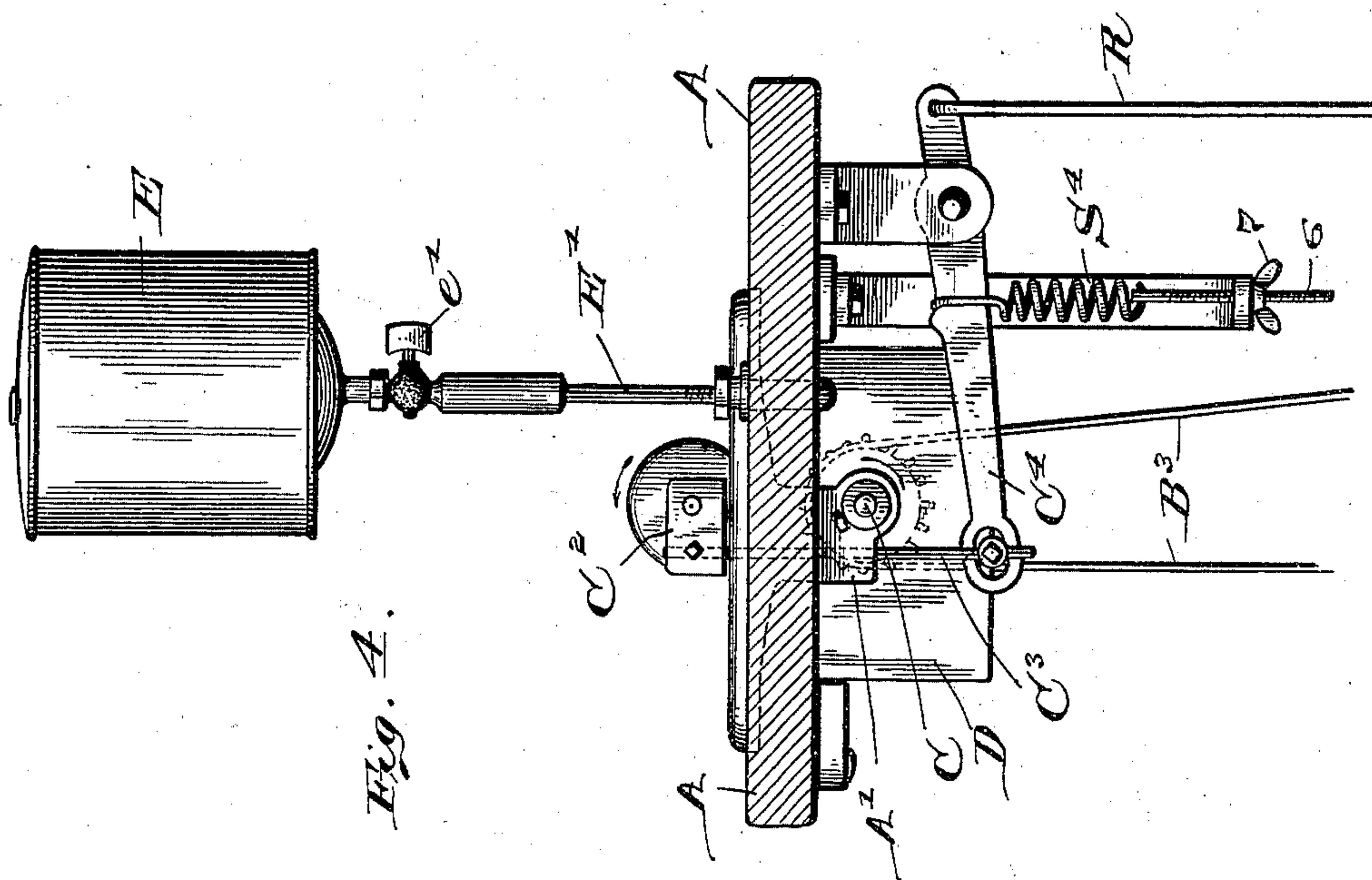
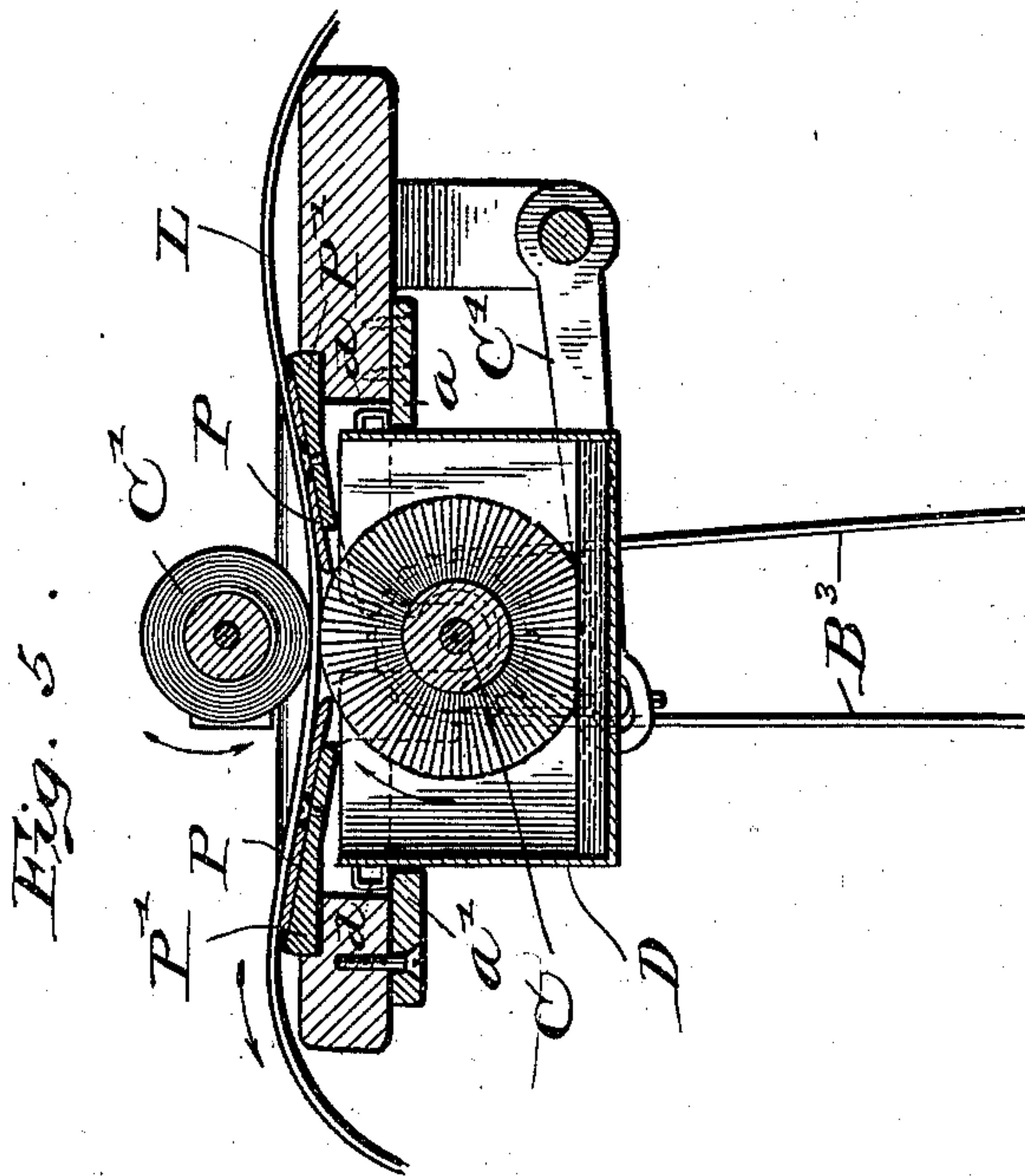
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WITNESSES:

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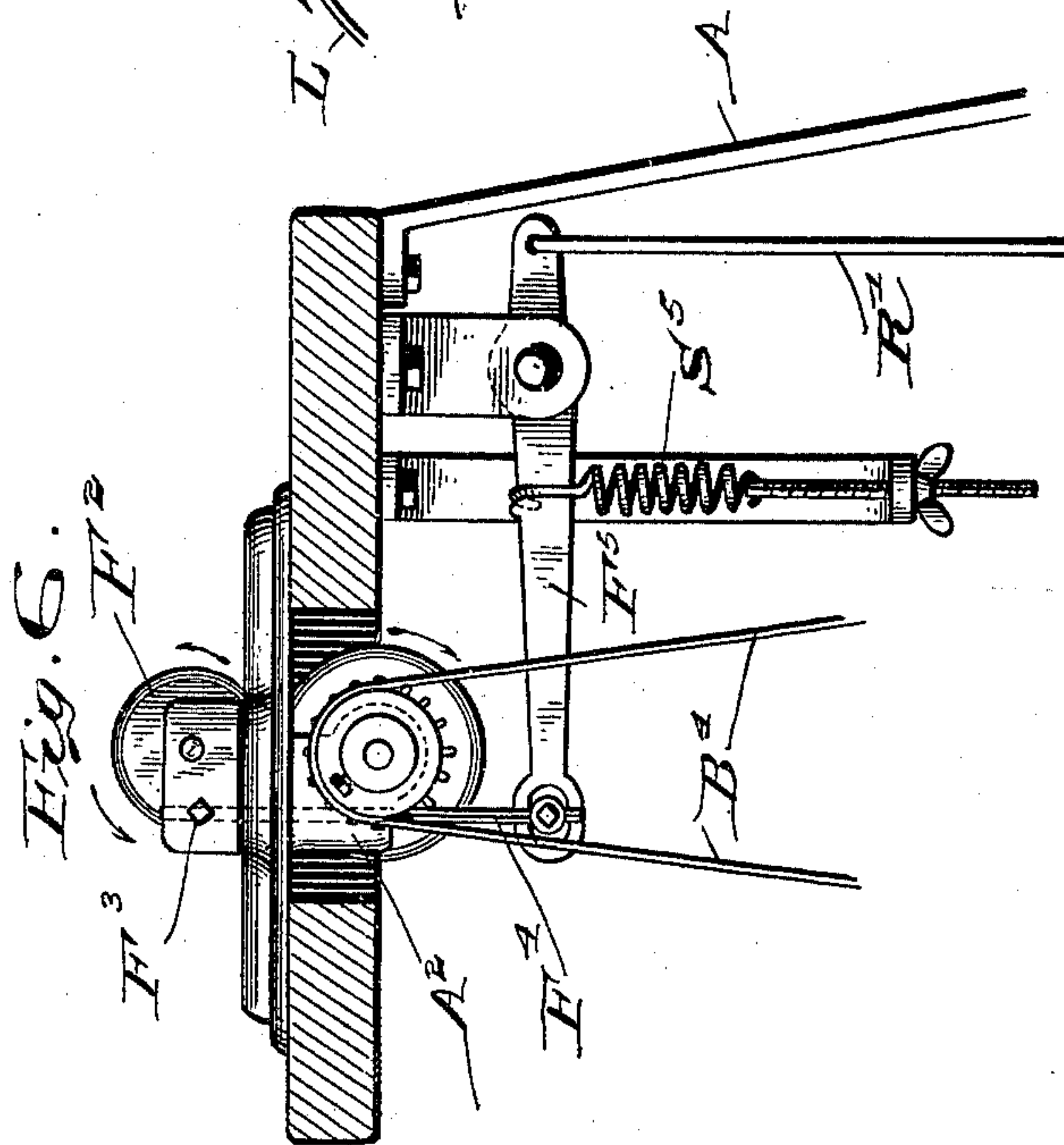
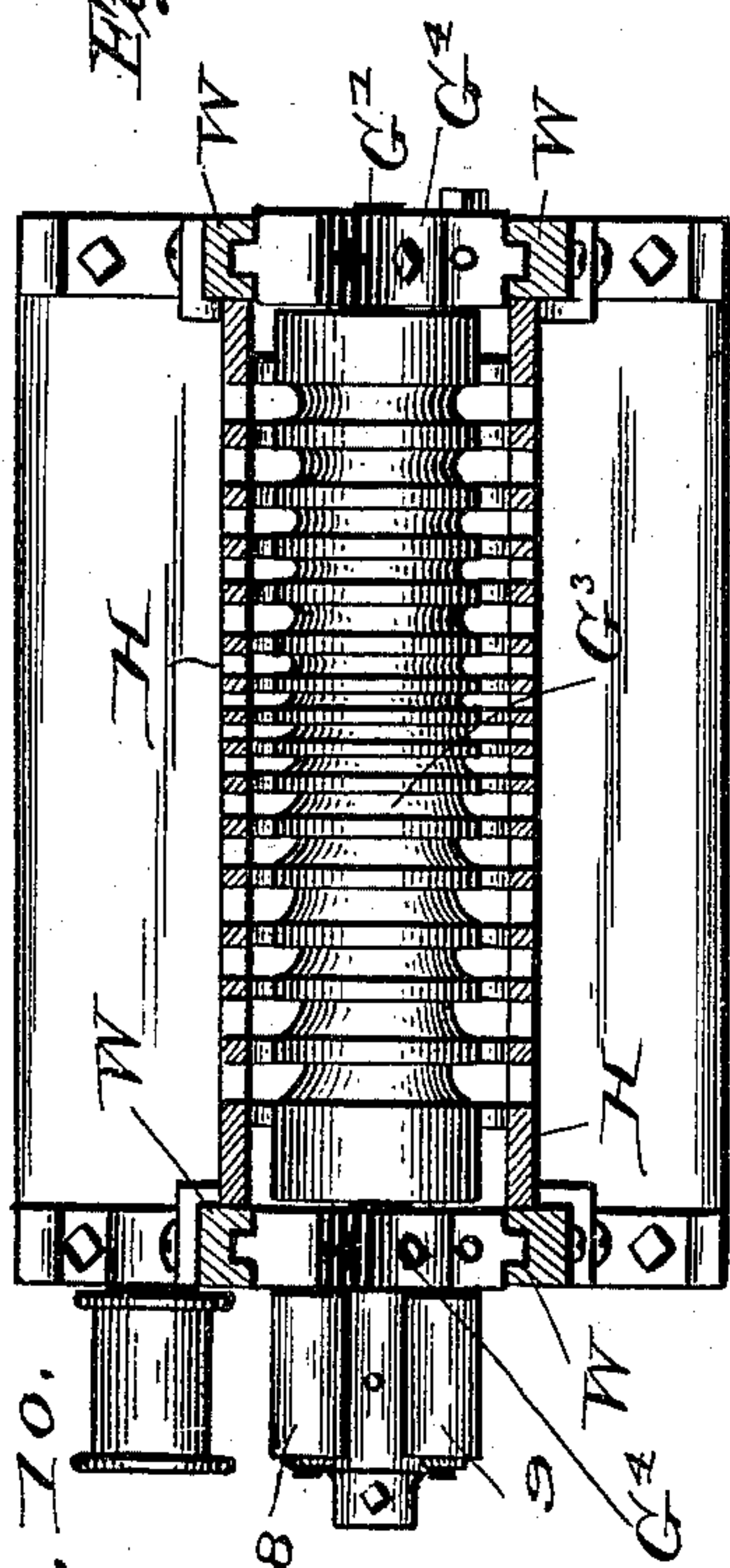
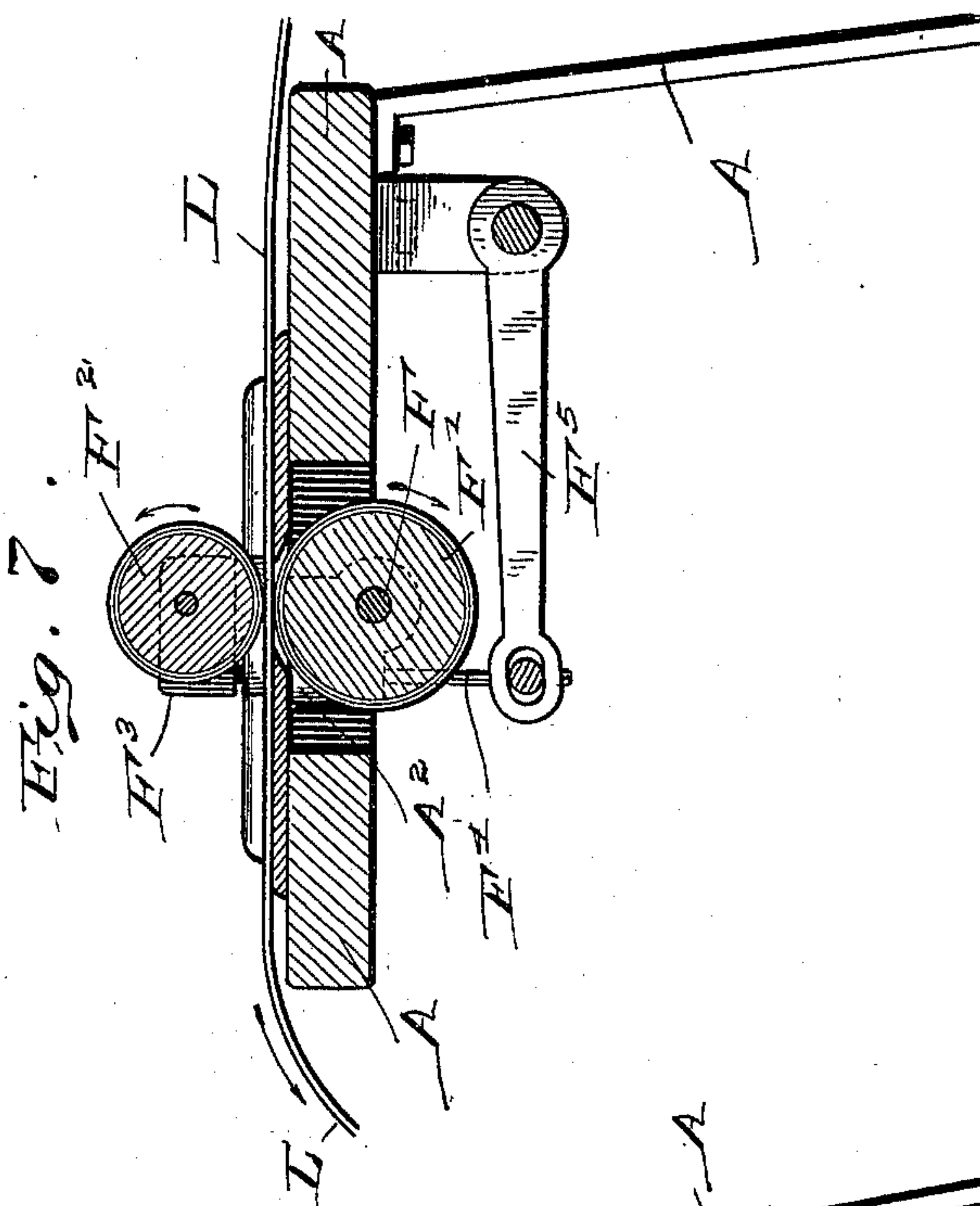
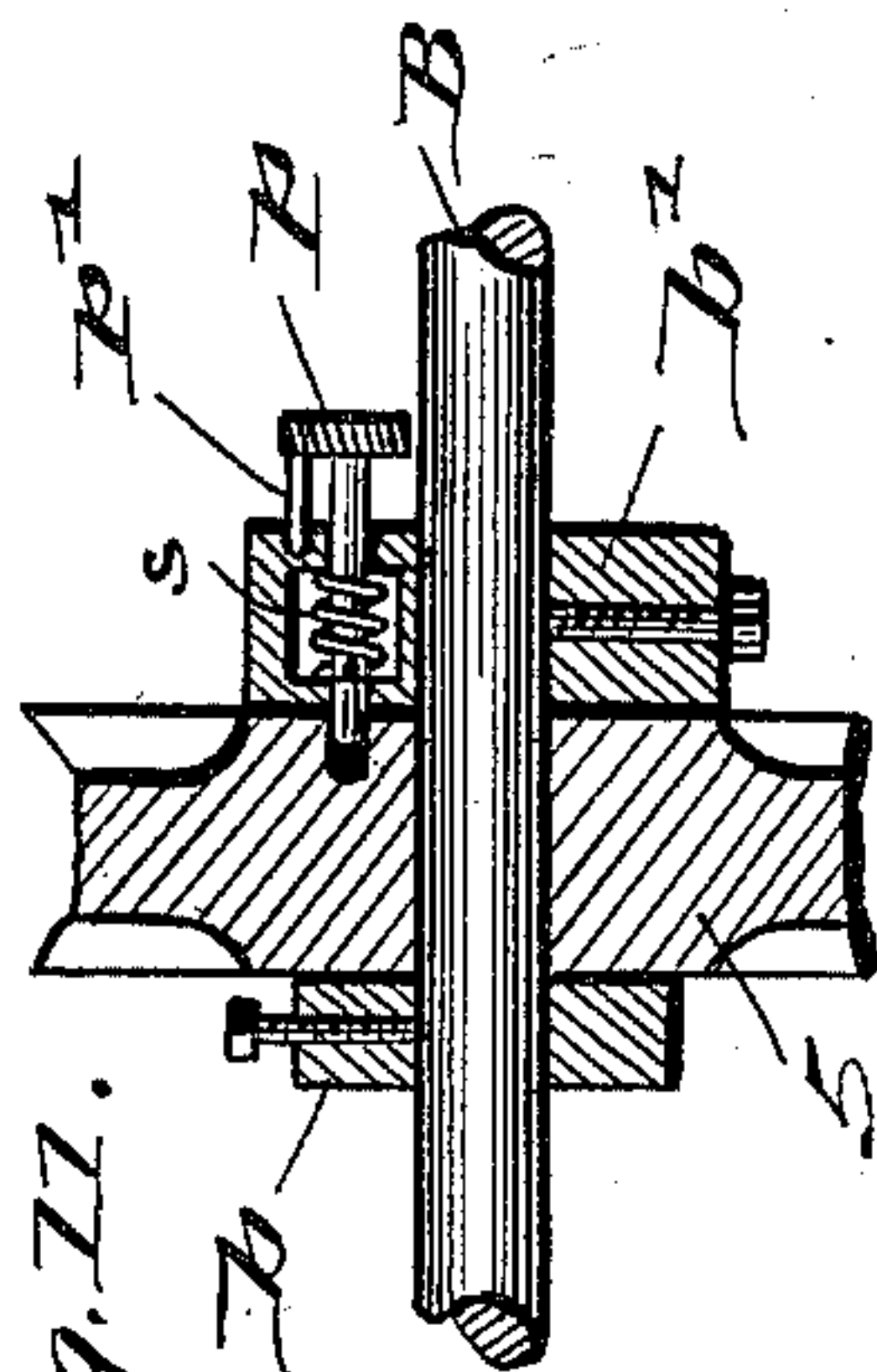
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No. 561,465.

Patented June 2, 1896.



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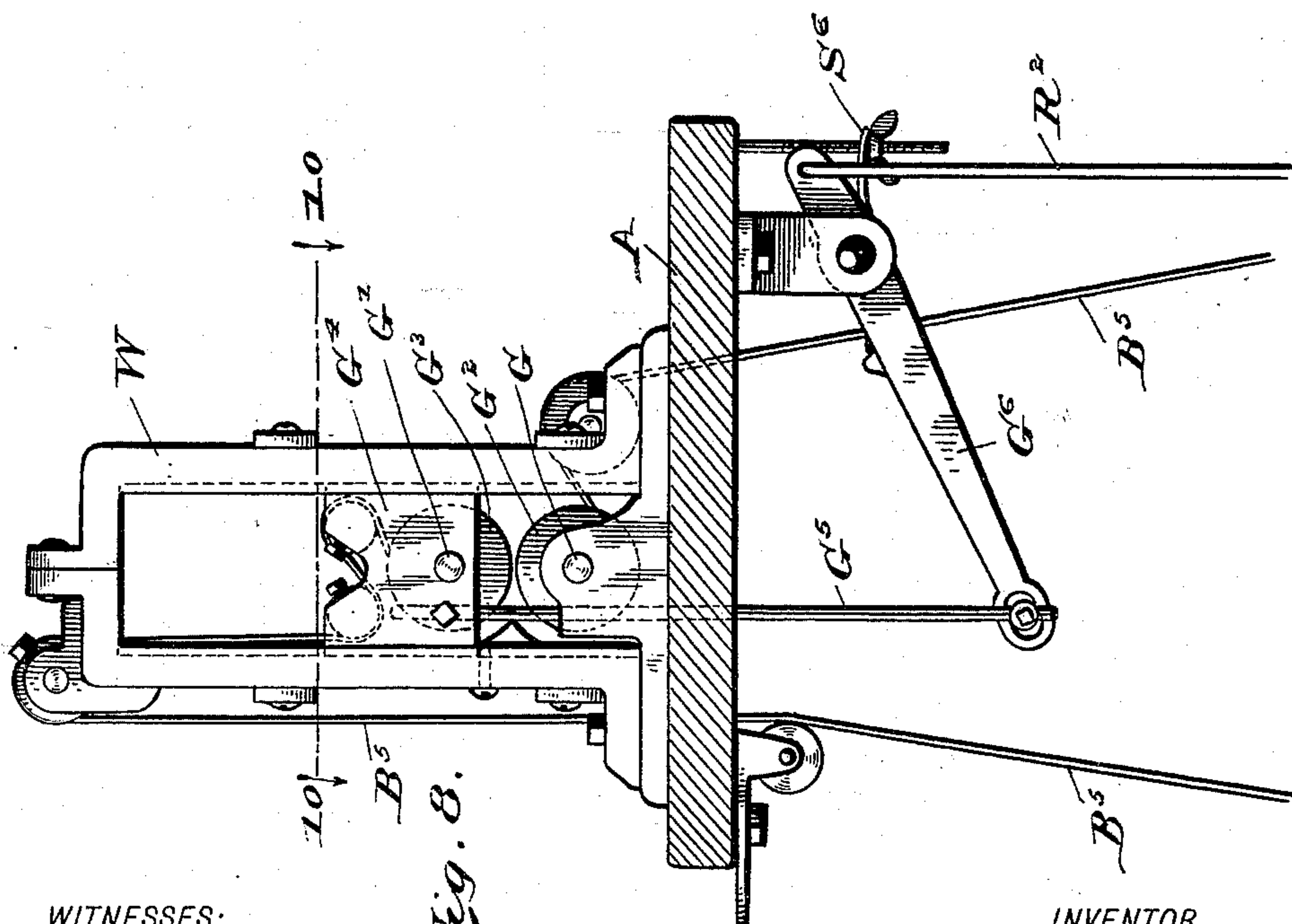
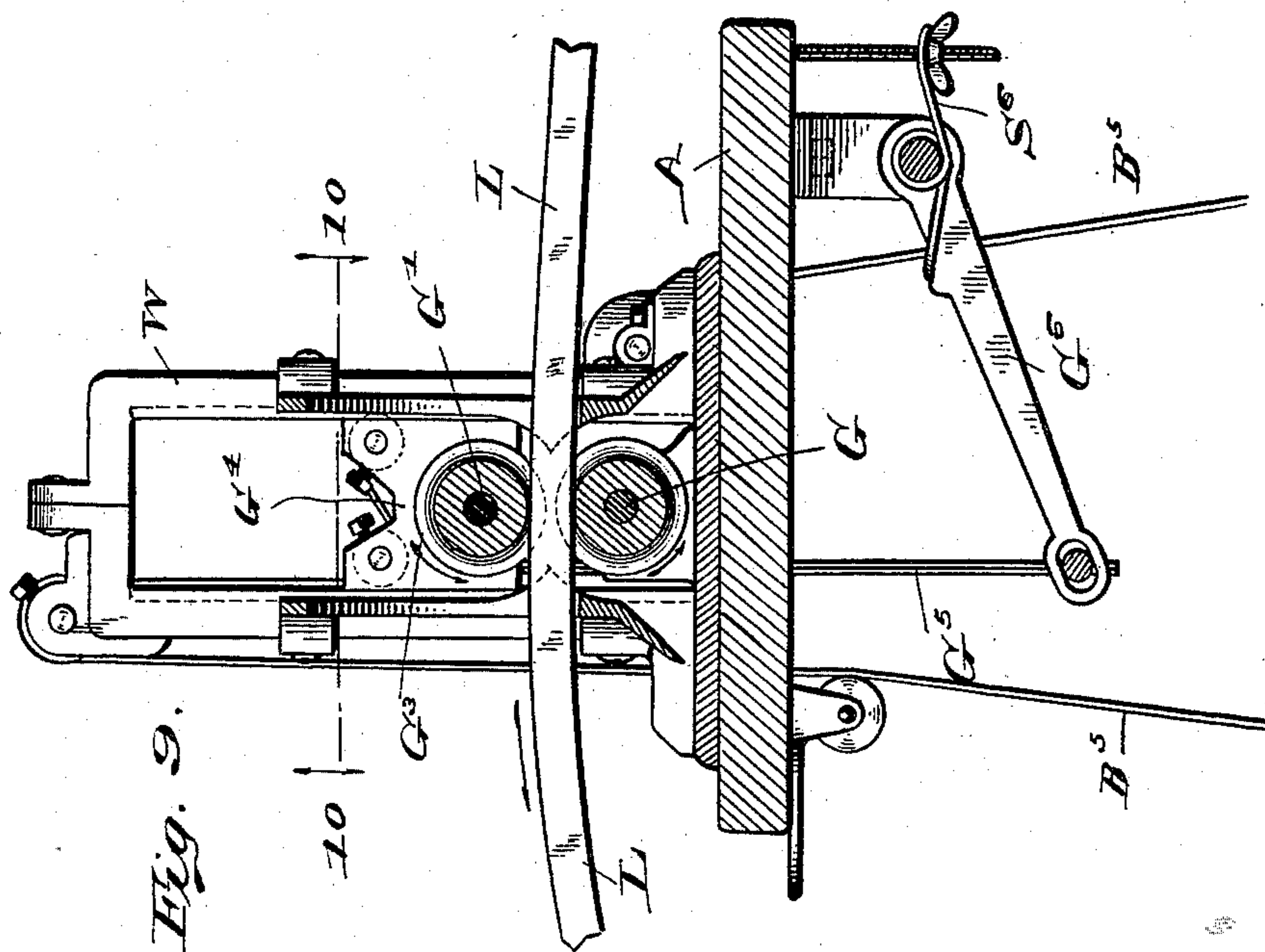
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Patented June 2, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JONATHAN WORSDELL, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO WILLIAM A. MOONEY, OF COLUMBUS, INDIANA.

LEATHER-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,465, dated June 2, 1896.

Application filed December 18, 1895. Serial No. 572,548. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN WORSDELL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Leather-Finishing Machines, of which the following is a specification.

The object of my said invention is to produce a machine whereby straps of leather—such, for instance, as are used in making harness—may be blacked and finished ready for use.

A machine embodying my said invention will be first fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters and figures of reference indicate similar parts, Figure 1 is a side elevation of a machine embodying my said invention; Fig. 2, an end elevation of one end thereof; Fig. 3, an elevation of the other end thereof; Figs. 4, 5, 6, 7, 8, and 9, transverse sectional views, on an enlarged scale, on the dotted lines 4 4, 5 5, 6 6, 7 7, 8 8, and 9 9, respectively, in Fig. 1 and illustrating the construction in detail at said various points; Fig. 10, a horizontal sectional view looking downwardly from the dotted line 10 10, and Fig. 11 a detail sectional view illustrating the method of securing the main-shaft pulleys to the main shaft of the machine.

In said drawings the portions marked A represent the framework of the machine; B, the main shaft thereof; C, the blacking-brush shaft; D, the blacking-receptacle; E, the blacking-tank; F, the side finishing or burnishing roll shaft; G and G', the edge finishing or burnishing roll shafts, and H guides to the edge finishing or burnishing rolls.

The frame A is of suitable construction for the purpose, consisting generally of legs and a top or table, and contains bearings for the mechanism and other parts of the machine. This frame and table is, generally speaking, of a simple construction and will not be further described herein, except as to special features, or incidentally in describing the other portions of the machine.

The shaft B is mounted in bearings in the frame A, preferably at the lower part, and may be driven either by a belt running to a pulley B' or by a hand-crank, as shown by dotted lines at X in Fig. 1, connected, either directly or through gears 1 2, to said main shaft. Said shaft bears the pulleys 3, 4, and 5, from which the blacking-roll and the various finishing or burnishing rolls are driven by means of belts B³, B⁴, and B⁵, as will be presently more fully described. As shown most plainly in Fig. 11, these pulleys are mounted loosely upon the shaft and run between collars b b' thereon, the latter of which collars are provided with pins p, which pass through them parallel with the shaft and are adapted to enter perforations in the hubs of the pulleys, as shown, whereby said pulleys and said collars are locked together, so that the pulleys may be revolved by the shaft through the medium thereof. This is so that the several rolls of the machine may be operated independently. Each pin p is normally held into engagement with the corresponding pulley by a spring s, inclosed within a suitable socket in its collar b', as shown in said Fig. 11. A smaller pin p' extends in from the head of the pin p and parallel therewith, and is adapted to register with and enter a perforation in the collar b' or to be turned so as not to enter said perforation. When it is desired that the pulley shall run loosely, the pin p is withdrawn from engagement with the hub and revolved somewhat in its bearing, so that the end of the pin p' will rest against the surface of the collar b', instead of entering the perforation therein, as will be readily understood.

The blacking-brush shaft C rests in bearings in hangers A', carried by the top or table of the frame A, and carries a rotary brush, as shown most plainly in Fig. 5, which is adapted to come in contact with one side of the piece of leather L being treated. The leather is held into forcible but yielding contact with said brush by an opposing roller C', mounted in bearings C², carried on rods C³, which rods pass down through perforations in the table-like top of the frame A, and are connected at their lower ends with a pivoted

lever-like frame C^4 , which is normally held down by a spring S^4 , but is adapted to be raised by a treadle T through a rod R . The tension of the spring S^4 is governed by a screw tension-rod 6, having a thumb-nut 7. The pressure of the roll C' on the piece of leather L may thus be regulated as desired, and the roll may be raised out of contact whenever desired by means of the treadle T .

As indicated most plainly in Fig. 5 by means of arrows, the leather is by preference drawn against the motion of the roll and brush, so that the blacking is thoroughly brushed into the fiber of the leather. One or both sides of the leather may be treated in this manner, as may be desired, said leather before treatment having preferably been cut into the sized strips in which it is to be used. The opening in the table through which the upper surface of the brush projects against the leather may be regulated, as desired, by means of the adjustable plates P , which form the surface with which the leather immediately comes in contact, and which themselves are secured, by means of the screws passing through slots therein, upon a trough-like plate P' , mounted on the top of the frame P .

The blacking-receptacle D containing the blacking is secured to the under side of the frame-top, and is rendered removable by means of detachable hangers. It is provided with projections d on its under sides near its upper edge, one of which rests on a ledge a and the other of which rests on a revoluble button or catch a' , as shown most plainly in Fig. 5. Turning said button or catch permits said blacking-receptacle to be withdrawn from place, as will be readily understood.

The tank E is adapted to contain a supply of blacking, and is mounted on a pipe E' , which leads to the receptacle D . This is provided with a valve e' , whereby the supply of blacking may be shut off or permitted to flow, as may be desired, it being desirable to have only a sufficient quantity of blacking in the receptacle, so that the lower edge of the rotary brush will just enter it.

After the blacking has been applied to the leather, it is first wiped and then greased, and afterward passed between the finishing or burnishing rolls F' F^2 , the former of which is carried by the shaft F , said shaft being mounted in stationary hangers A^2 , carried by the top of the frame A . The roll F^2 is carried in movable bearings F^3 , mounted on rods F^4 , the lower ends of which engage with a pivoted frame F^5 , and which is normally held down by a spring S^5 , but is adapted to be raised by a treadle T' , operating through a rod R' in a similar manner as in the case of the blacking-brush and its opposing roll. As shown most plainly in Fig. 7, these rolls F' and F^2 are preferably covered by canvas, which I have found to be the best material for thoroughly rubbing and burnishing the leather, and, as before, the leather is pulled

through them oppositely to the direction of motion of their surfaces where they come in contact therewith.

The shafts G and G' carry rolls adapted to finish or burnish the edges of the leather straps in the same way that the rolls F' and F^2 finish or burnish the sides thereof. As the straps are of various thicknesses, and as it is desired to give them different shapes, a machine, in order to be effective, must necessarily have a number of contact-surfaces; otherwise a great number of machines will be required to do the work. As shown in Figs. 1 and 10, these rolls G^2 and G^3 have a considerable number of grooves, varying in size and shape, the variations in size being to accommodate the different thicknesses in leather and the variations in shape for the purpose of producing the varied form of edge. The roll-shaft G is mounted in stationary bearings carried by the top of the frame A . The shaft G' is carried in movable bearings G^4 , mounted in slides or ways W , said slides or ways being mounted on said frame-top. This arrangement permits the treatment of straps of varying widths as well as of varying thicknesses. As shown most plainly in Fig. 2, and also by means of dotted lines in Fig. 8, the belt B^5 , by which these rolls are driven, run over two small pulleys 8 and 9, mounted on stud-shafts on the slidable bearing, which also carries the roll-shaft G' . As will be readily understood upon an inspection of said Fig. 2, the bearing structure G^4 can be moved vertically without varying the tension of the belt. Said bearing structure is connected to rods G^5 , which pass down through perforations in the frame-top and connect with a pivoted frame G^6 , which is normally held downwardly by a spring S^6 , but is adapted to be forced up by a treadle T^2 through a rod R^2 . This mechanism is similar to the other two corresponding treadle mechanisms of the machine, except that in this case I have used a different form of spring.

Each of the frames C^4 , F^5 , and G^6 consists, essentially, of a rod or shaft and two arms connected rigidly thereto, said rods or shafts being mounted in hangers depending from the under side of the table-like top of the frame of the machine. In each case the outer ends of the arms are slotted somewhat, and into these slots enter pins secured at the proper point on the rods C^3 , F^4 , and G^5 .

The guides H are secured to the sides of the slideways W , and the perforations therein correspond to the grooves in the face of the rolls. Said perforations are in the form of vertical slots of considerable length, so that the varying widths of the straps may be accommodated without shifting said guides.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a leather-finishing machine, the combination, of a frame supporting the table and operating mechanism, a blacking-receptacle

secured below said table under an aperture therein, adjustable plates by which the width of said aperture may be increased or diminished, a rotary blacking-brush mounted in
5 said receptacle with its top in said aperture, an opposing roll mounted in bearings carried by a swinging frame and arranged to hold the leather into contact with said brush, a spring arranged to normally hold said roll toward
10 said brush, and a treadle whereby it may be forced away therefrom, substantially as set forth.

2. In a leather-finishing machine, the combination, of the operating mechanism, and a
15 pair of edge-finishing rolls arranged opposite each other and mounted to be adjusted to greater or less distances from each other, each of said rolls being formed with a series of circumferential grooves of varying widths and
20 forms, those in one corresponding to those in the other with which they are designed to contact, and means for supporting the straps in edgewise position between said rolls, substantially as set forth.

25 3. The combination, in a leather-finishing machine, of a pair of edge finishing or burnishing rolls, one of said rolls being mounted

in stationary bearings, and the other in bearings in a sliding or movable bearing structure, stud-shafts also carried by said sliding or
30 movable bearing structure with pulleys thereon, whereby said movable bearing structure may be moved toward or from the stationary bearing structure without varying the tension of the belt, substantially as shown and de- 35 scribed.

4. The combination, in a leather-finishing machine, of a pair of edge-finishing rolls containing numerous grooves of varying sizes and forms, means whereby said rolls may be
40 adjusted toward or from each other, and guides secured in front of said rolls having vertical slots of widths corresponding to the grooves in the rolls, and of a length not less than the extreme adjustment of said rolls, 45 substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at New York city, New York, this 13th day of December, A. D. 1895.

JONATHAN WORSDELL, [L. S.]

Witnesses:

GEORGE BEARHOPE,
JNO. B. OFFUTT.