

No. 762,661.

PATENTED JUNE 14, 1904.

B. C. SCHUTTE.

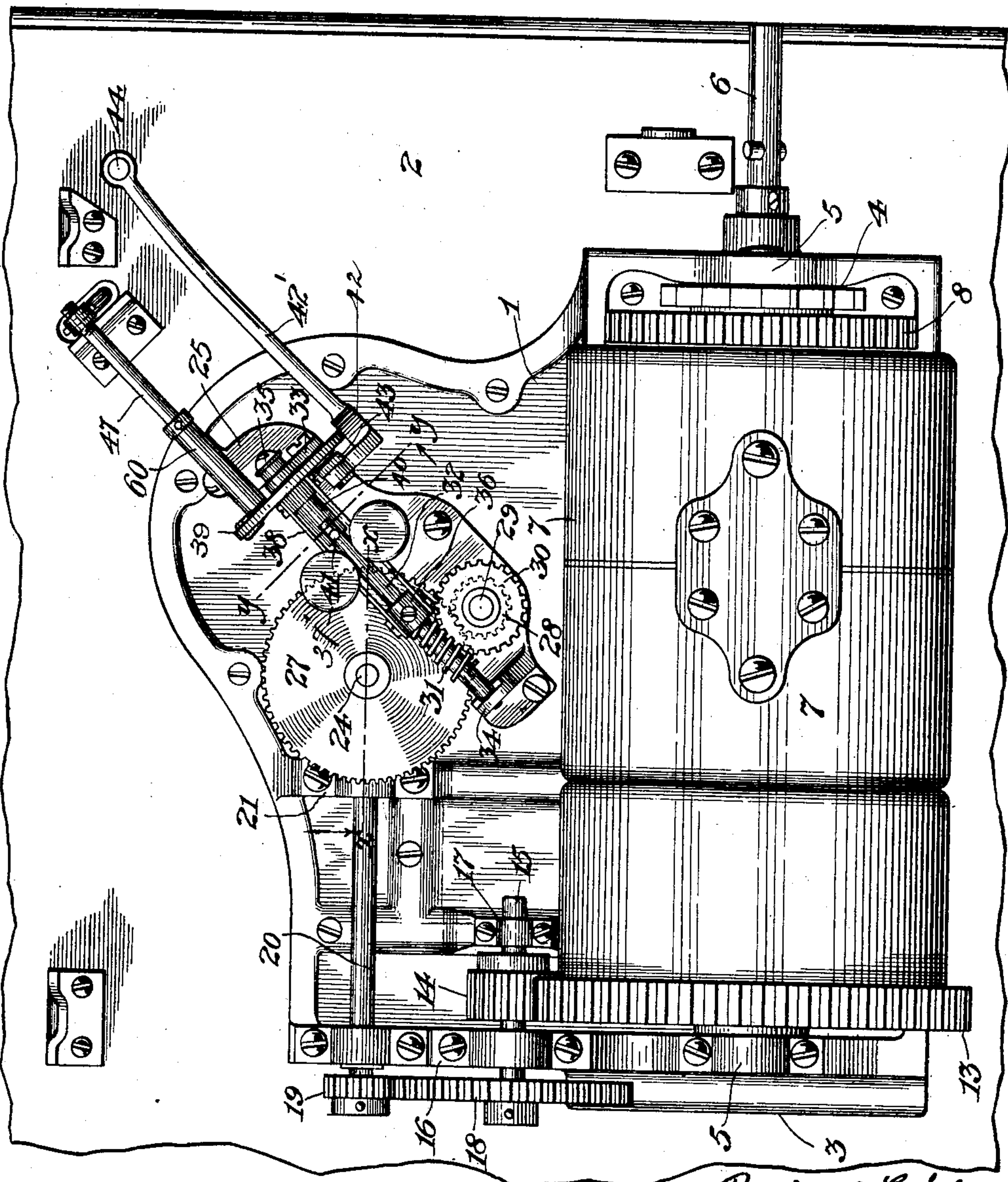
REGULATING MECHANISM FOR SOUND REPRODUCING MACHINES.

APPLICATION FILED OCT. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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J. Clark Pybas

Benjamin C. Schutte,
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By his Attorney, *J. R. Littell,*

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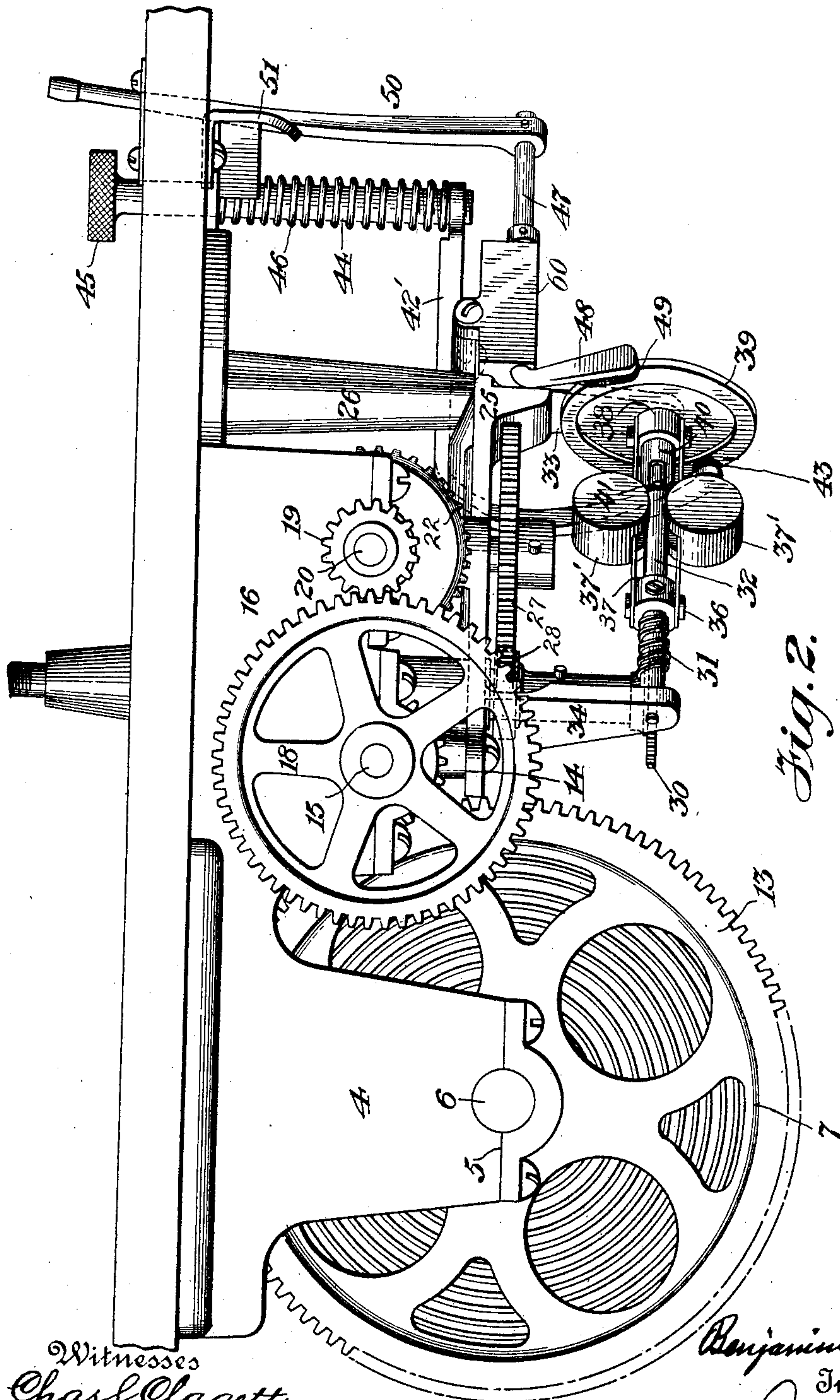


Fig. 2.

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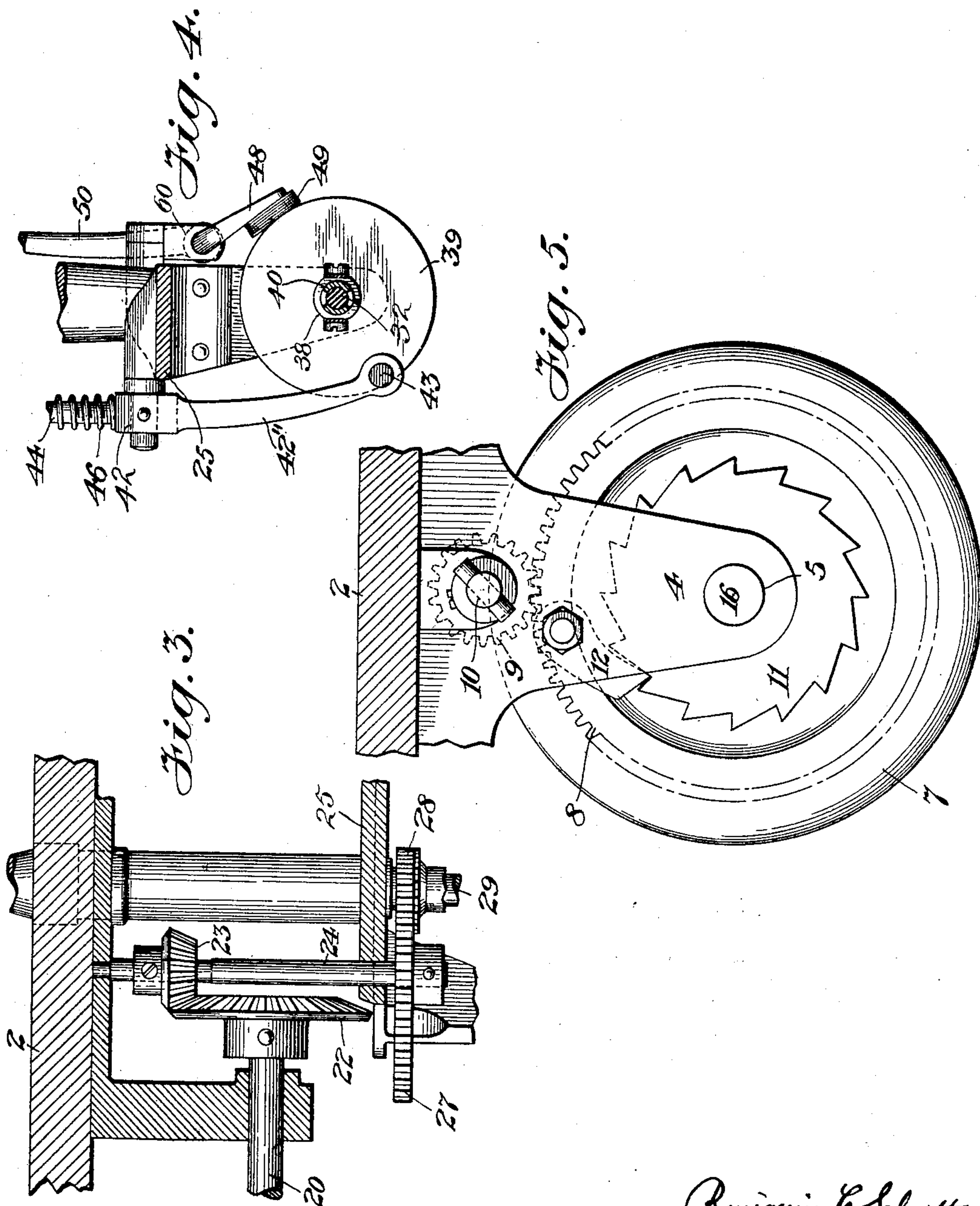
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APPLICATION FILED OCT. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 3



Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN C. SCHUTTE, OF RED HOOK, NEW YORK.

REGULATING MECHANISM FOR SOUND-REPRODUCING MACHINES.

SPECIFICATION forming part of Letters Patent No. 762,661, dated June 14, 1904.

Application filed October 18, 1902. Serial No. 127,766. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN C. SCHUTTE, a citizen of the United States, and a resident of Red Hook, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Regulating Mechanism for Sound-Reproducing Machines, of which the following is a specification.

My invention relates to mechanism operated by spring-motors, and more especially pertains to said mechanism when adapted to the requirements of sound-reproducing machines of the class represented in a general way by phonographs and graphophones; and the principal object of my invention is to provide an improved form of duplicate brake mechanism to regulate the operative speed of the spring-operated gearing. By my invention I also provide an improved driving-gear and in a general way an improved construction of mechanism for devices of the class named.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which form part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a reverse or bottom plan view of a machine embodying the invention. Fig. 2 is an end elevation of the same. Fig. 3 is a detail sectional view on the line *x x* shown in Fig. 1. Fig. 4 is a detail sectional view on the line *y y* shown in Fig. 1. Fig. 5 is a fragmentary view showing winding mechanism.

Corresponding parts in all the figures are denoted by the same reference characters.

The reference-numeral 1 designates the bed-plate of the machine, secured to the under side of the lid 2 of the cabinet, within which the mechanism is incased.

3 and 4 designate parallel brackets depending from the bed-plate and provided at their ends with bearings 5 for the motor-shaft 6. Upon this shaft 6 is mounted a cylinder 7, containing the springs for driving the motor. I preferably employ what is known as a "triple-spring" motor, containing three springs; but as the motor proper, embodying the cylinder and springs, forms no part of the

present invention a more detailed description thereof is not deemed necessary.

A winding gear-wheel 8 is mounted upon the shaft 6 at one end of the cylinder to mesh with a pinion 9, mounted upon a winding-shaft 10, and concentric with said wheel 8 is a ratchet-wheel 11, coacting with a pawl 12 to prevent backward movement of the motor-shaft. At the opposite end of the cylinder a driving gear-wheel 13 is mounted upon the cylinder or casing 7, said gear-wheel meshing with a pinion 14, fixed upon a shaft 15, supported in bracket-bearings 16 and 17, depending from the bed-plate.

Upon the outer end of the shaft 15, on the outer side of the bracket 16, is a gear-wheel 18, adapted to mesh with a pinion 19, fixed upon the outer end of a shaft 20, supported in bearings in the brackets 16 and 21, depending from the bed-plate. A bevel-gear 22 on the inner end of the shaft 20 meshes with a bevel gear-pinion 23, mounted on a depending shaft 24, the latter being revolubly supported at its upper end in a bearing formed in the bed-plate and adjacent to its lower end in a bearing formed in a plate 25, secured to the bed-plate by a plurality of parallel vertical arms 26.

Fixed to the lower end of the shaft 24 is a gear-wheel 27, meshing with a pinion 28 on a vertical power-shaft 29, said shaft 29 carrying at its lower end a gear-wheel 30, meshing with a worm 31 on the governor-shaft 32. The governor-shaft 32 is supported in bearings formed in parallel bracket-arms 33 and 34, depending from the plate 25. A button or keeper 35 is pivoted to the bracket-arm 33 and adapted to bear against the adjacent end of the governor-shaft to prevent longitudinal play thereof.

Upon the governor-shaft 32 is a fixed collar 36, connected on opposite sides by means of expanding springs 37 to the hub 38 of a disk 39, fixed upon the end of the governor-shaft and having a sleeve extension 40, formed with diametrically opposite slots into which extend pins 41, projecting from the shaft. On each spring 37 is secured a weight 37'.

Fulcrumed to one side of the plate 25 ad-

5 jacent to the disk 39 is a bell-crank lever 42, provided at the end of its depending arm with a pad or shoe 43, of rubber or equivalent material, which is adapted to bear against the inner face of the disk.

The forward end of one arm 42' of the bell-crank lever 42 is connected to a screw 44, extending through an opening in the cover of the cabinet and is provided with a knurled knob 45. A spiral spring 46 surrounds the pin 44 below the cover.

Projecting from the plate 25 is a sleeve or housing 60, within which is mounted a brake-shaft 47, provided at one end with an arm 48, to which is secured a brake-shoe 49, of leather or like yielding material. The opposite end of the brake-shaft 47 is connected to a lever 50, which extends through an opening in the cover and frictionally contacts a flat spring 51, arranged on the under side of said cover.

The brake-shoe 49 is adapted to engage the rim of the disk 39, while the spring 51 is arranged to frictionally contact the brake-lever and hold it in the desired position either in or out of contact with the rim of the disk 39, according to whether it be desired to stop or to start the mechanism. It will be readily seen that the parts which control the operation of the mechanism of the instrument may be operated by means of the members 45 and 50, which are readily accessible to the operator, and that said parts are void of complication and certain of operation.

Power applied by the spring-operated cylinder 7 will be so communicated by means of the gear-wheel 13, pinion 14, gear-wheel 18, pinion 19, shaft 20, bevel gear-wheel 22, bevel-pinion 23, shaft 24, gear-wheel 27, pinion 28, shaft 29, and worm-wheel 30 to the worm 31, thus rotating the latter, and with it the shaft 32, carrying the pins 41, (one only being shown). By means of the collar 36 the governor, comprising the springs 37 and weights 37', is rotated with the shaft 32, and torsion of the springs 37 is prevented by means of the pins 41, which engage in the slots which are formed in the sleeve extension 40 of the hub 38, to which one end of each spring 37 is attached. The speed of rotation is regulated by means of the brake-shoe 43, which may be adjusted to various positions axially of the governor-shaft, said adjustments being effected by rotating the screw 44 by means of the knob 45, the screw 44 either raising or permitting the spring 46 to urge downwardly, as the case may be, the arm 42' of the bell-crank lever 42, thus moving the arm 42'', and with it the brake-shoe 43, toward or from the disk 39. When the governor is rotated, the weights 37' are centrifugally thrown outwardly from each other, thus flexing the springs 37 and moving the disk 39 axially of the shaft 32 and toward the brake-shoe 43, which being adjusted in a re-

quired position frictionally contacts the disk 39 when the desired speed of rotation of the governor has been attained, thus preventing the mechanism from attaining a greater rate of speed than the one desired.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A mechanism of the class described, comprising a spring-operated motor, a governor arranged to be operated by said motor and having a rotary shaft, a friction-disk movable axially on said shaft by the governor, means for preventing rotary movement of said disk on said shaft, a bell-crank lever carrying a friction-brake adapted to be engaged with one face of said disk and adjustable at various angles whereby to hold said brake at various points in the path of axial movement of said disk, and a second brake suspended from the bed-plate and adapted to be engaged with or disengaged from the rim of said disk and means for operating it, as and for the purpose set forth.

2. A mechanism of the class described, comprising a bed-plate, a motor, a governor arranged to be operated by said motor and having a rotatable friction-disk movable axially by said governor, a bell-crank lever carrying a friction-brake adjacent one face of said disk, means for adjusting said lever to various angles whereby to hold said brake at various points in the path of axial movement of the disk, said means including a screw, manually operable and working through the bed-plate of the machine, a brake-shaft 47 provided with an operating-handle and also provided with a brake arranged to contact with the rim of said disk when the handle is moved, as set forth.

3. A mechanism of the class described, comprising a motor, a governor arranged to be operated by said motor and having a rotatory disk movable axially by the governor, a friction-brake adapted to be engaged with a face of said disk, means for holding said brake at various points in the path of axial movement of said disk, a sleeve 60 suspended from the bed-plate at one side of said disk, a brake-shaft mounted in said sleeve, an operating-handle secured to one end of said shaft, and a brake secured to the other end of said shaft

and adapted to be engaged with the rim of said disk, as and for the purpose set forth.

4. A mechanism of the class described, comprising a spring - operated motor, a rotary shaft, a governor arranged to be operated by said motor and having a disk variably movable axially on said shaft by said governor, means for preventing rotary movement of said disk on said shaft, a friction-brake adapted to be engaged with a face of said disk at a variable point in the axial movement of the latter, means for adjustably fixing said axial contacting point, a second friction-brake suspended from the bed-plate and adapted to be contacted at will with the rim of the disk to stop the motor and manually-operative means to operate said disk-rim-contacting friction-brake.

5. A mechanism of the class described, comprising a motor, a governor arranged to be op-

erated by said motor and having a rotary shaft 20 provided with pins, a friction-disk movable axially on said shaft by the governor and provided with a hub having a slotted sleeve extension, the slots engaged by the lugs on the rotary shaft, a collar fixed on said shaft, springs 25 each connected at one end to said sleeve and at the other end to said hub, a crank-lever carrying a friction-brake adapted to be engaged with one face of said disk and a second brake suspended from the bed-plate and adapted to 30 be engaged with or disengaged from the rim of said disk, and means for operating it.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

BENJAMIN C. SCHUTTE.

Witnesses:

WILLIAM E. TRAVER,
ROBERT T. MARSHALL.