

No. 814,047.

PATENTED MAR. 6, 1906.

E. R. JOHNSON.  
MOTOR FOR TALKING MACHINES.  
APPLICATION FILED SEPT. 14, 1903.

Fig 1.

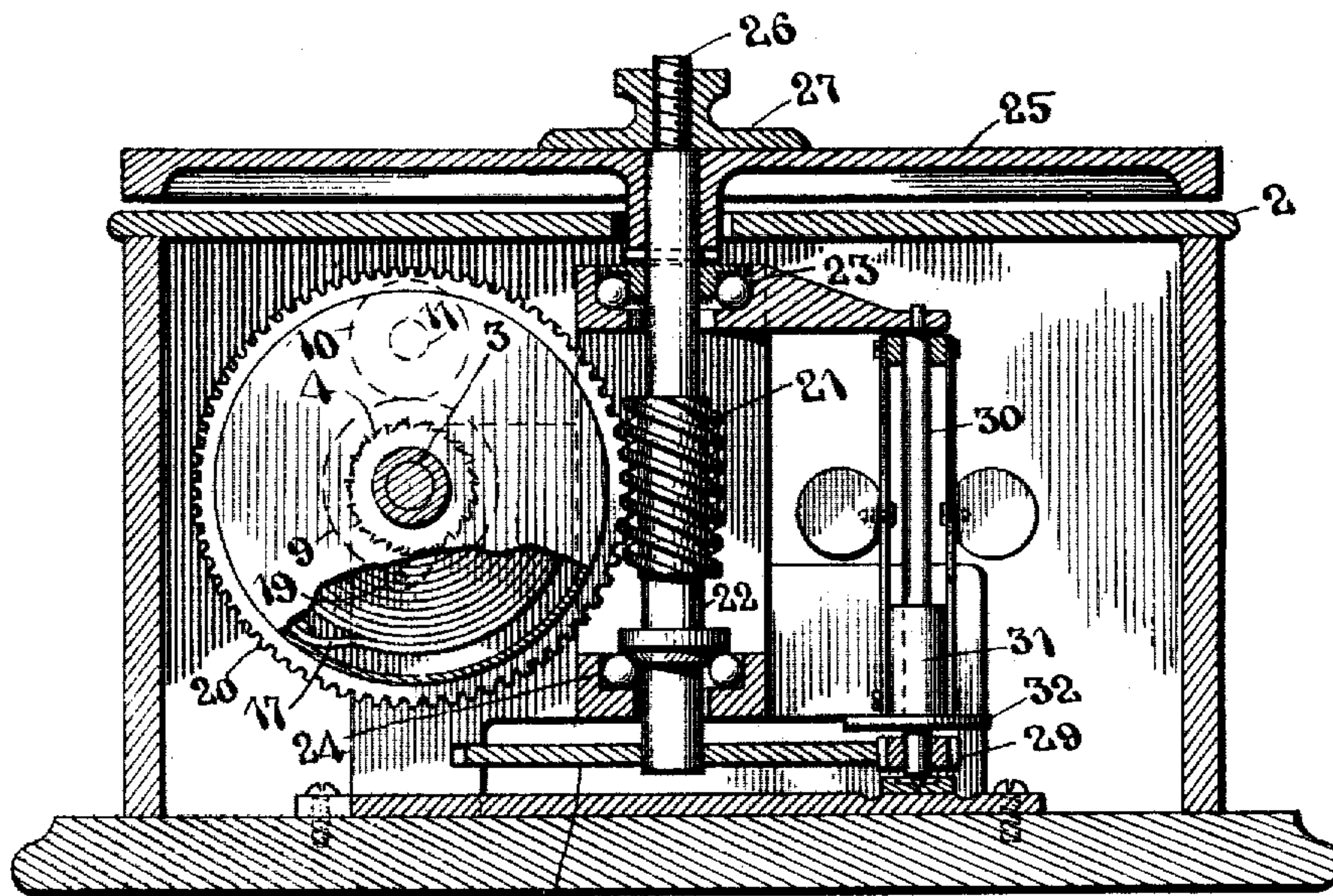
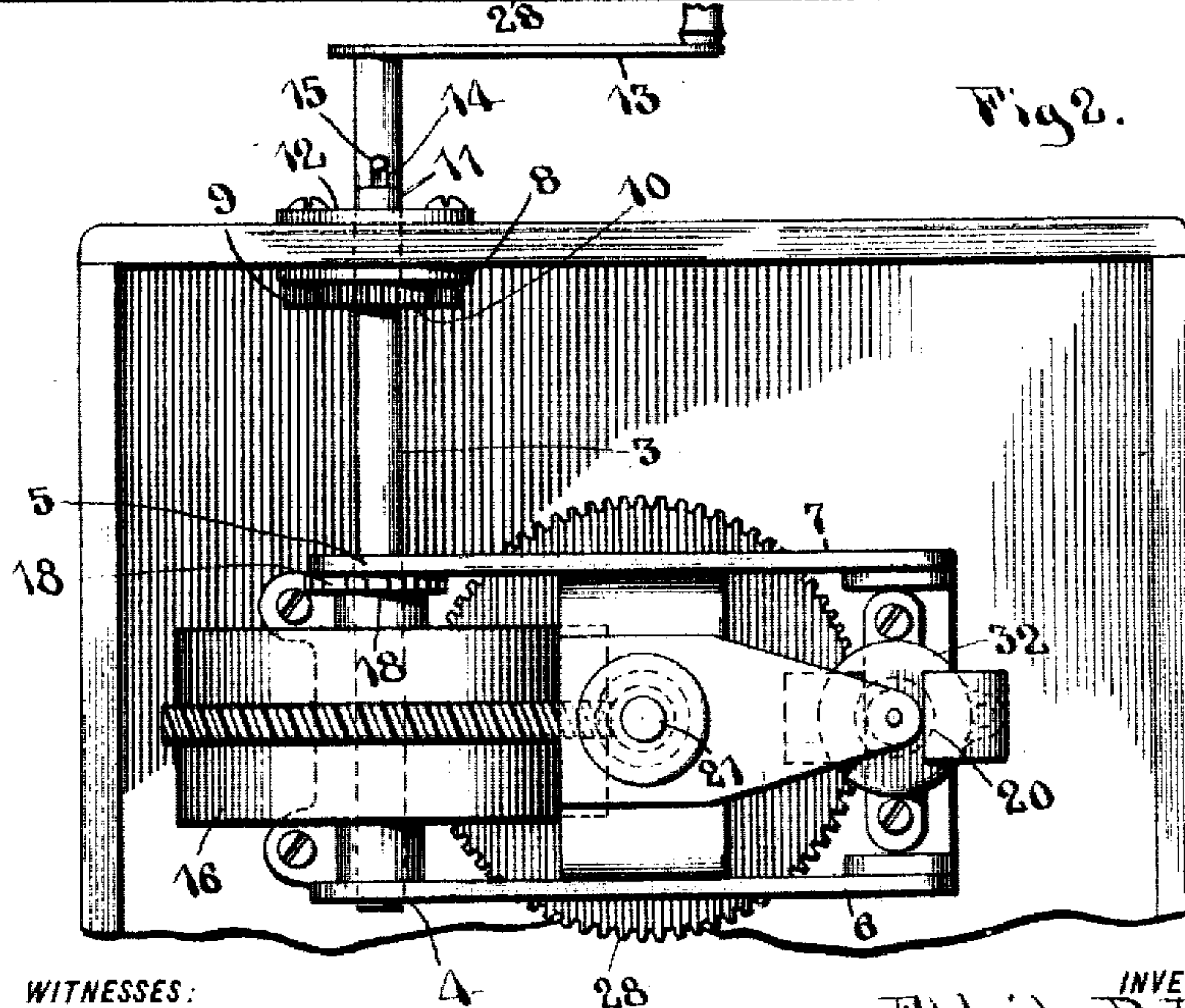


Fig 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## MOTOR FOR TALKING-MACHINES.

No. 814,047.

Specification of Letters Patent.

Patented March 6, 1906.

Original application filed June 21, 1898, Serial No. 684,052. Divided and this application filed September 14, 1903. Serial  
No. 173,060.

*To all whom it may concern:*

Be it known that I, ELDRIDGE R. JOHNSON, a citizen of the United States, and a resident of the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Motors for Talking-Machines, of which the following is a full, clear, and complete disclosure.

My invention relates to certain improvements in spring-motors for talking-machines and in the gearing used in connection therewith.

The object of my invention is to provide an improved arrangement of the parts of the motor and its connection with the driving-spindle of the talking-machine such that the action of the motor will be uniform and constant and such that the driving-spindle will be driven noiselessly without undue friction, while at the same time the use of a large number of delicate and complicated parts is avoided.

With these and other objects in view my invention consists in the construction, arrangement, and combination of parts hereafter fully described in the following specification, and particularly pointed out in the claims annexed thereto, this application being a division of my prior application, filed June 21, 1898, Serial No. 684,052.

For a full, clear, and exact description of my invention reference may be had to this specification and to the accompanying drawings, forming a part thereof, in which—

Figure 1 is a view showing the main parts of my improved motor in elevation, certain portions being shown in section and broken away; and Fig. 2, a plan view of the same, the top of the casing and the turn-table being removed.

In the drawings the numeral 1 indicates an outside box or casing on the top of which is a cover 2, which is attached to the side of the casing in any suitable way, but is preferably hinged thereto. A horizontal shaft 3 is provided at one side of the motor having bearings 4 and 5 in the side walls 6 and 7 of a suitable supporting-frame, the extending end of said shaft 3 also having a bearing in a plate 8, attached to the inside of the side wall of the casing 1. A gear-wheel 9 is rigidly mounted on the shaft 3 and meshes with a smaller gear-wheel 10, rigidly mounted on a stub-shaft 11, journaled in the side of the casing 1 by means

of the plate 12. The outer projecting end of the stub-shaft 11 is reduced for the reception of a crank-handle 13, which is provided with a slot 14, adapted to engage a pin 15 on the stub-shaft 11. By means of this crank power is transmitted to the shaft 3 for winding up the spring or springs which propel the motor in a manner hereinafter to be described.

Loosely mounted on the shaft 3 between the two side walls 6 and 7 of the supporting-frame is a drum 16, having attached to the interior thereof a spiral or coiled spring 17, the other end of which is secured to the winding-shaft 3. Rigidly attached to the winding-shaft 3 is a ratchet-wheel 18, which is adapted to be engaged by a pawl 19, fixed to the side plate 7 of the motor-frame. This pawl 19 is pivotally fixed to said plate and may be operated by gravity or by a spring, as may be desired. This ratchet and pawl may also be located in any other convenient position—such, for instance, in connection with the stub-shaft 11.

Upon the cylindrical surface of the drum 16 is provided gear-teeth forming a worm-wheel 20, which is adapted to mesh with a worm or screw 21, carried by the turn-table spindle 22. The turn-table spindle 22 is in the form of a vertical shaft having bearings 23 and 24, which are preferably antifriction or ball bearings which not only guide but support the weight of the shaft 22 and the turn-table 25, carried thereon. I have shown the upper end of the spindle 21 as being reduced in diameter and screw-threaded to receive a thumb-nut 27, which may be screwed downward onto the record, thereby clamping the latter securely in position. For simplicity the turn-table is shown without the record being mounted thereon. On the lower end of the spindle 22 is rigidly secured a large gear 28, which is adapted to mesh with a pinion 29, rigidly secured on the lower end of the governor-spindle 30. This governor-spindle 30 has bearings in the motor-frame at its upper and lower ends and carries on its lower portion a sleeve 31, slidably mounted thereon and having at its lower end a disk 32, which forms one element of the governor-brake. The usual adjustable brake-shoes are designed to cooperate with this disk, but are here omitted for the purpose of clear-

ness. While I have shown and illustrated one



spring on the shaft 3 for driving the drum 16, it will of course be understood that two or more springs may be used, the only necessary changes in that case being to provide a shaft  
 5 similar to 3, having sections therein to correspond with the different springs, as is the practice in the art relating to spring-motors. The addition of extra springs do not of course increase the power of the motor, but simply  
 10 prolong its time of operation, so that a record of greater diameter and having a longer record-groove may be used.

Having thus described my invention, what I claim, and desire to protect by Letters Patent of the United States, is—

1. In a motor for talking-machines, the combination of a vertical driving-spindle, a worm carried by said spindle, a driven member mounted on said spindle, a drum having  
 20 a worm-gear on its outer surface and meshing with said worm, a horizontal winding-shaft upon which said drum is mounted, a spring connecting said shaft and drum and a centrifugal governor for controlling the speed  
 25 of said spindle.

2. In a motor for talking-machines, a horizontal winding-shaft, a drum revolubly mounted thereon, a coiled spring connecting said drum and shaft, said drum having gear-  
 30 teeth located upon its cylindrical surface and forming a screw-gear, a vertical turn-table spindle, and a screw-gear mounted on said spindle and adapted to mesh with the teeth upon said drum.

35 3. In a motor for talking-machines, a hori-

zontal winding-shaft, a drum revolubly mounted thereon, a coiled spring connected with said drum and shaft, said drum having gear-teeth located centrally upon its cylindrical surface and forming a screw-gear, a  
 40 vertical turn-table spindle and a screw-gear upon said spindle adapted to mesh with the teeth upon said drum.

4. In a motor for talking-machines, a horizontal winding-shaft, a drum revolubly  
 45 mounted thereon, a coiled spring connecting said drum and shaft, said drum having gear-teeth located upon its cylindrical surface and forming a screw-gear, a vertical turn-table spindle, a screw-gear mounted on said  
 50 spindle and adapted to mesh with the teeth upon the drum, and a centrifugal governor driven directly from said vertical spindle.

5. In a motor for talking-machines, a horizontal winding-shaft, a drum mounted there-  
 55 on, a coiled spring connected with said drum and shaft, said drum having gear-teeth located centrally upon its surface and forming a screw-gear, a vertical turn-table spindle, antifriction-bearings for said spindle, a screw-  
 60 gear upon said spindle adapted to mesh with the teeth upon said drum, a gear also carried by said spindle and a centrifugal governor operated by the last-named gear.

In witness whereof I have hereunto set my  
 hand this 11th day of September, A. D. 1903.

ELDRIDGE R. JOHNSON.

Witnesses:

CHAS. K. BENNETT,

LEWIS H. VAN DUSEN.