Feb. 12, 1924. 1,483,647

A. VASSELLI

SPEED REGULATOR FOR TALKING MACHINE MOTORS

Filed Aug. 23, 1920

Fig. 1

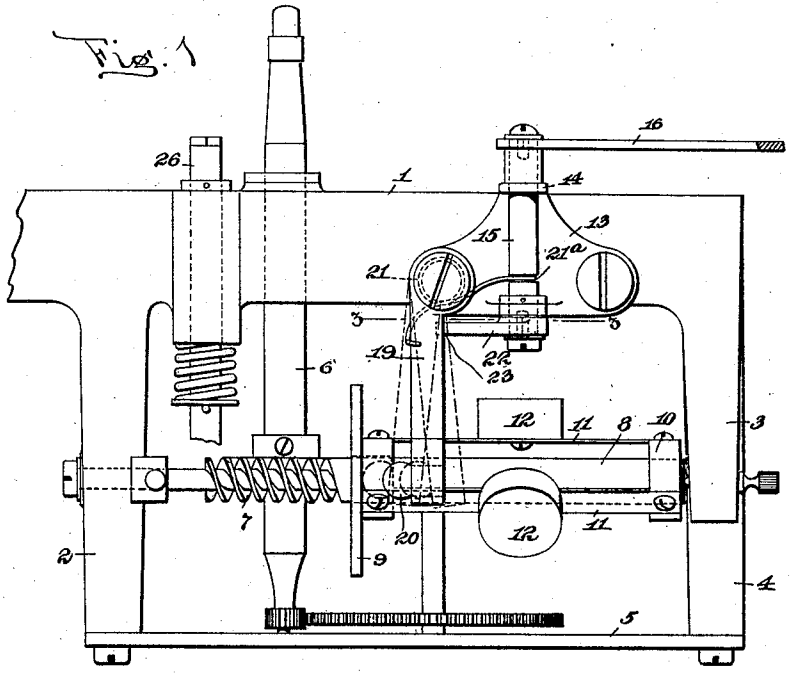


Fig 2

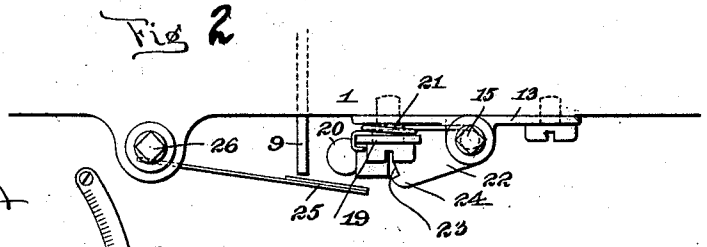


Fig. 4

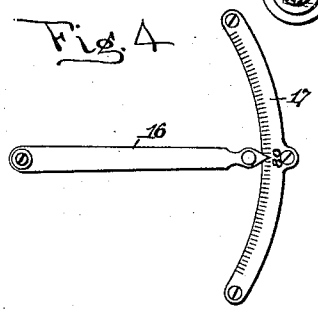
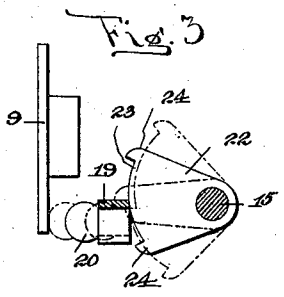


Fig. 3



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UNITED STATES PATENT OFFICE.

ANTHONY VASSELLI, OF NEWARK, NEW JERSEY, ASSIGNOR TO GENERAL PHONOGRAPH CORPORATION, A CORPORATION OF NEW YORK.

SPEED REGULATOR FOR TALKING-MACHINE MOTORS.

Application filed August 23, 1920. Serial No. 405,227.

To all whom it may concern:

Be it known that I, ANTHONY VASSELLI, a citizen of the United States, and a resident of the city of Newark, county of Essex, and State of New Jersey, have invented a certain new and useful Improvement in Speed Regulators for Talking-Machine Motors, of which the following is a specification.

My invention relates to apparatus for governing the speed of talking machine motors, and has for its objects the production of a device which will be positively and accurately operative in its action.

A further object of the invention is the production of a device, of the character herein described, which is extremely simple in construction, neat and attractive in appearance, thoroughly reliable and efficient in its purpose, and economical to manufacture, and easily installed and which will not get out of order.

With these and other objects in view to be more fully set forth hereinafter, the invention consists in the novel construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter described in the specification and illustrated in the accompanying drawings considered together or separately.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which for the purpose of illustrating the invention, is shown in the accompanying drawings.

The invention will be first described in connection with the accompanying drawings, wherein similar reference characters are used to designate corresponding parts throughout the several views, and then more specifically defined and indicated in the appended claims.

In the drawings,—

Fig. 1 is a side elevation of a portion of a talking machine motor provided with my invention;

Fig. 2 is a plan view of a portion of the same;

Fig. 3 is a detail sectional view taken on the line indicated by 3—3 in Fig. 1; and

Fig. 4 is a detail plan view of a portion of the device.

In carrying out my invention, I provide a motor comprising a bed plate 1 provided with the usual depending members 2, 3 and 4, certain of which carry a plate 5. Carried in the base plate 1 is the usual turn-table mandrel 6 driven through gearing from a spring (not shown). The turn-table mandrel carries the usual worm wheel which meshes with a worm 7 preferably cut on a shaft 8. The shaft 8 is rotatably carried by the members 2 and 3 and carries a governor device comprising a disc 9 free to move longitudinally of the shaft, a collar 10 fast to the shaft and spring elements 11 connecting the collar and disc. Each spring element carries a weight 12 whereby when the shaft is rotated the weights will be thrown outward and the disc will be moved longitudinally of the shaft.

A plate 13 is secured to the side of the base plate 1 and is provided with ears 14 in which a short shaft 15 is rotatably mounted. The shaft 15 extends above the bed plate and its upper end is preferably squared and has secured thereto an indicator arm or pointer 16. The pointer cooperates with a graduated scale 17 carried on the top of the board (not shown) to which the motor is secured. The scale 17 is so situated relatively to the turn-table mandrel that it will be outside of the periphery of the turn-table, and the scale and the extremity of the pointer 16 carrying the operating handle or knob will always be visible.

Pivoted to the plate 13, and preferably on one of the devices by means of which the latter is secured to the bed plate, is an arm 19, the free end of which carries a brake shoe 20 of any suitable character. That end of the arm 19 carrying the shoe 20 is arranged in the path traveled by the disc 9 due to movements of the latter longitudinally of the shaft 8 due to centrifugal movement of the weights 12 caused by the rotation of the shaft 8.

A spring 21 is wound about the pivot of the arm 19. One end of the spring engages the arm and tends to move the same away from the disc 9. The opposite extremity of the spring is engaged in a peripheral groove 21ª in the short shaft 15. The attachment of the spring 21 to the shaft 15 not only forms an anchor for the spring but the tendency of the spring to expand will tend to resist rotary movement of the shaft 15 and pointer 16.

Rigidly secured to the lower extremity of

the shaft 15 is a member 22 having a curved face 23 adapted to engage the arm 19 and resist movement of said arm due to the spring 21. The face 23 is eccentric to the axial line of the shaft 15 whereby as the latter is oscillated by means of the pointer 16 the brake shoe will be moved toward or away from the disc 9 whereby the latter will be permitted to move a greater or less distance before it will engage the shoe as depends upon the position of the pointer 16, and the position of the pointer relatively to the scale 17 will indicate on the scale the speed at which the turn-table may rotate when the disc engages the brake shoe 20. The member 22 is provided with stops 24 to limit the movement of the pointer but it is obvious that such stops may be attached to the shaft 15, scale 17, or to any other suitable part of the apparatus.

An auxiliary brake shoe 25 carried on a shaft 26 is employed to stop the motor at any time. The shaft 26 extends above the base plate and its upper end is adapted to receive a lever by means of which the shoe 25 may be caused to engage the periphery of the disc 9 by a manual operation.

The operation is as follows:—

When a record is being made it, the record, is rotated at a speed which will give the best results. This speed has been found by most manufacturers to be 80 revolutions to the minute for the general run of musical selections, and to get a perfect reproduction the record must be run at the same speed. As, however, it is sometimes desirable to change the tempo, as for dancing, it is not desirable to manufacture motors capable of one speed only, but a certain amount of speed adjustment is necessary.

When a machine is sold the pointer 16 is set at the point on the scale indicating 80 and the member 22 is in its central position whereby the spring 21 will hold the arm 19 against the face 23 to position the shoe 20 to arrest the movement of the disc 9 longitudinally of the shaft 8 when the turn-table attains a speed of 80 revolutions per minute.

When a record is to be played the brake shoe 25 is released from the periphery of the governor disc and the spring will rotate the mechanism until such a time as the speed reaches 80 revolutions per minute and the side face of the disc will engage the shoe 20. This will prevent the turn-table from attaining a higher speed.

If it is desired to play the record at a different speed the finger 16 is moved downward in Fig. 4. Such movement will rotate the member 22 in the clockwise direction and bring that portion of the face 23 which is nearest the axis of the shaft 15, into alignment with the arm 19 and the spring 21 will move the arm and the shoe toward the shaft 15 and the shaft 8 will attain a different speed before the disc 9 is moved to engage the shoe.

When the finger 16 is moved in the opposite direction the shoe 20 will be moved toward the disc and a shorter distance will be traveled by the latter before it coacts with the shoe to change the speed.

The tendency of the spring 21 is to move the shaft 15 downward and this will generate enough friction to retain the shaft and pointer in the desired position. If desired, however, means may be employed for positively locking the pointer in position.

I find that by the employment of a speed regulator with a cam actuating member as hereinbefore described, that I have a motor which is positive and accurate in operation, and at all times registers the correct rotation of the turn-table. This is impossible with devices heretofore on the market, owing to the fact that such devices relied either on a spring arrangement or the springing tendency or elasticity of the metal to hold the lever or beam in contact with the speed regulating device.

In accordance with the provisions of the patent statute, I have described the principle of my invention together with the apparatus which I now consider to represent the best embodiment thereof, but I desire it understood that my invention is not confined to the particular form of apparatus herein shown and described, the same being merely illustrative, and that the invention can be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which objects of my invention are attained, and the new results accomplished, as herein set forth, as it is obvious that the particular embodiment herein shown and described is only one of many that can be employed to attain these objects and accomplish these results.

Having now described my invention what I claim and desire to secure by Letters Patent is:

1. In a phonograph, a frame, a rotating shaft carried by the frame, a braking disk mounted on the shaft, means for operating said disk along said shaft in response to speed changes of the shaft, a bed plate carried by the frame, an arm pivoted to the plate, a braking shoe carried by the arm, a cam journaled in the plate, said cam adapted to rotate said arm upon its pivot, and a spring attached to the plate and holding said arm in contact with the face of the cam.

2. In a device of the character described, a pivoted arm, a brake shoe carried by the arm and adapted to be swung forwardly and backwardly in the path of a braking disk, whereby said brake shoe may engage said

braking disk at any predetermined point in the path of said disk, and a cam engaging said arm between its pivot and the brake shoe.

3. A device of the character described, comprising a shaft, means for rotating the shaft, a disc loosely mounted on the shaft, a collar secured to the shaft, elastic elements connecting the disc and collar, weights carried by the elements whereby the centrifugal action of the weights will move the disc longitudinally of the shaft, a pivoted arm, a brake shoe carried by the arm, said shoe lying in the path of the disc, a cam shaft and means for rotating the same, a cam carried by the cam shaft, and a spring wound around the pivot of the arm, one end of the spring bearing against the arm and holding the latter in engagement with the cam, the other end of said spring engaging a peripheral groove in said cam shaft.

4. In a phonograph, a frame, a rotating shaft carried by the frame, a braking disk mounted on the shaft, means for operating said disk along said shaft in responce to speed changes of the shaft, an arm pivotally mounted on said frame, a braking shoe carried by the arm, a cam journaled in said frame, an index, means connecting said index to said cam whereby said cam is rotated when said index is operated, and a spring connected at one end to said arm for holding said arm in contact with said cam and connected at its other end to said last-named means for holding said cam and index in set position.

This specification signed this 26 day of July, 1920.

ANTHONY VASSELLI.