F. MYERS.

GRAMOPHONE DRIVE.

APPLICATION FILED JAN. 17, 1919.

1,343,640. **Patented June 15, 1920.**

Fig. 1.

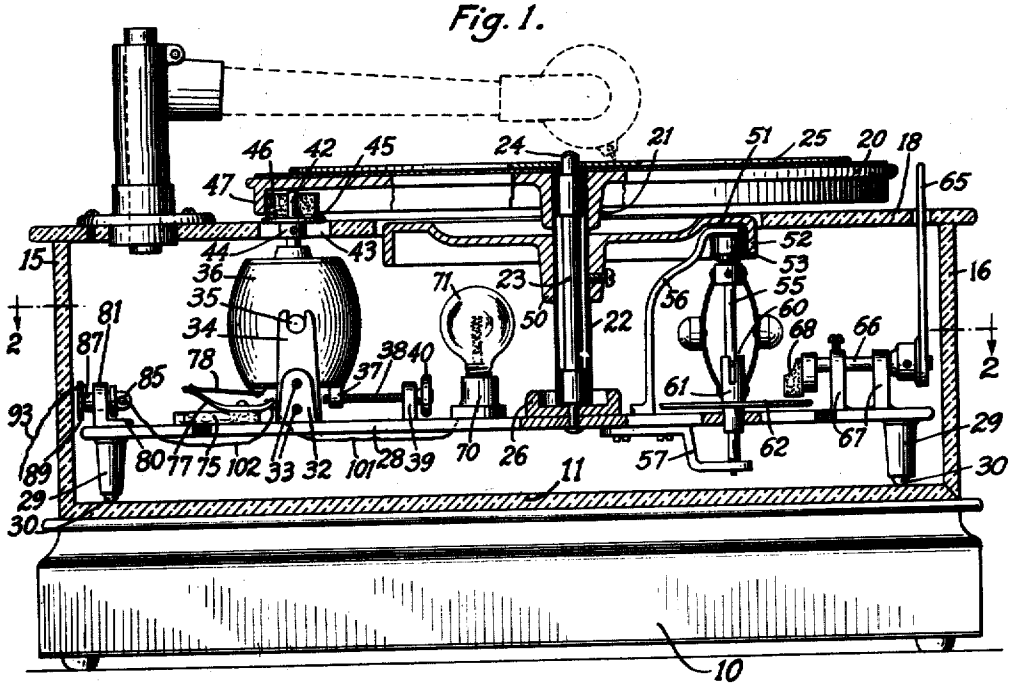
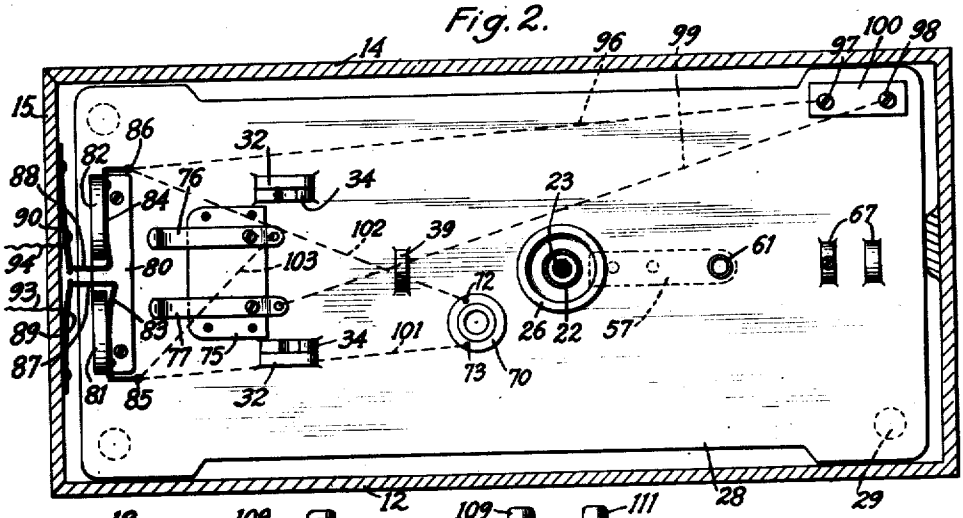


Fig. 2.



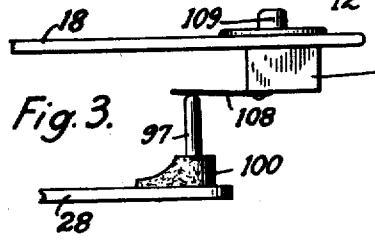


Fig. 3.

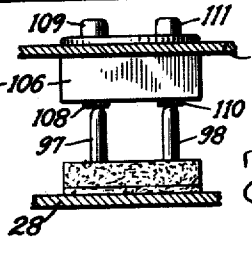


Fig. 4.

Inventor

Frederick Myers

UNITED STATES PATENT OFFICE.

FREDERICK MYERS, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MYERS PHONOGRAPH CORPORATION, A CORPORATION OF NEW YORK.

GRAMOPHONE-DRIVE.

1,343,640. Specification of Letters Patent. Patented June 15, 1920.

Application filed January 17, 1919. Serial No. 271,590.

To all whom it may concern:

Be it known that I, FREDERICK MYERS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gramophone-Drives, of which the following is a specification.

This invention relates to improvements in means for utilizing electric motive power for actuating and properly reproducing sounds from sound records and to means for controlling and regulating the speed of the same.

The principal object of the invention is to provide a simple, reliable electric drive, easily removed from its position for inspection or repairs, and as readily replaced.

A further object is to provide a starting device, operable automatically or manually.

A still further object is to provide a simple frictional drive mechanism, eliminating gearing, belts, and the like, thereby avoiding noise consequent to their use.

These and other similar objects are attained by the novel construction and combination of operative parts hereinafter described, and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a vertical sectional view, showing the motor and allied driving parts as attached within the cabinet.

Fig. 2 is a horizontal sectional view taken on line 2—2 of Fig. 1, the motor, governor, lamp and disk support being removed.

Fig. 3 is a partial side elevational view showing a fragment of the cover and electrical contacts, and

Fig. 4 is a front elevational view of the same.

The cabinet containing the driving mechanism is here shown to be substantially rectangular and is comprised of a base 10, over which is a flooring 11, and vertical side walls 12 and 14, joined at the front and rear by corresponding end walls 15 and 16, all of the vertical walls being desirably made of glass through which the interior mechanism can be seen.

A cover plate 18 is engaged with the upper edge of the structure, over which is the record carrying table 20, the same having an elongated hub 21 in which is affixed the upper end of a sleeve 22, extending through the plate 18, and inclosing a rigid central vertical spindle 23, having at the top a projection 24, on which is centered the record disk 25. The lower end of the sleeve is fitted to rotate on the spindle 23 and rests in a cup 26 formed on a removable plate 28 into which the spindle is riveted or otherwise secured.

This construction permits oil to partially fill the cup 26 and, by capillary action, lubricate the interior of the sleeve so as to cause the table to rotate freely.

The removable plate 28 rests within the casing upon legs or supports 29, having rubber feet 30 in contact with the flooring 11, these feet being slightly resilient so as to absorb any jar or vibration.

A pair of raised lugs 32 are formed on the upper side of the plate 28 near one end, and fixed to them by screws 33 are vertical insulating supports 34 having recesses in their tops in which are received the trunnions or pivotal supports 35 of an electric motor 36, arranged vertically and having a depending lug 37 drilled and threaded to receive an adjusting screw 38 mounted in another lug 39 on the upper surface of the plate 28 and provided with a knurled head 40 by which it can be turned in such manner as to pivot the motor upon its trunnions.

The motor shaft 42 extends upward through an opening 43 in the cover 18 carrying at its upper end a hub 44 held by a screw, and formed with the hub is a driving disk 45 on which is secured an elastic friction roll 46 adapted to make contact with the inner peripheral flange 47 of the record table 20 so that the same may be rotated by it when brought into frictional engagement by the screw 38.

On the sleeve 22 is a hub 50 formed with a disk 51 having a down-turned flanged peripheral rim 52, its inner surface being engaged by the elastic driving roll 53, fixed upon the upper extending end of the vertical shaft 55 which is held in position by end support brackets 56 and 57, secured respectively above and below the plate 28. By said roll rotary motion is transmitted to a conventional type of centrifugal governor 60, having at its lower end an elongated sleeve 61 carrying a disk 62.

This speed regulator or governor is provided with a control lever 65 fixed upon a short horizontal spindle 66, journaled in

bearings in a pair of raised lugs 67 formed on the upper surface of the plate 28 at the end opposite the motor, the spindle having a cam end adapted to raise or lower a friction contact block 68, so that as the governor arms are moved, due to the momentum of the weights, it may increase or decrease the speed of the sleeve 61.

The block 68 is pressed into engagement with the friction disk 62, when the latter rises, and acts as a brake, the upper end of the lever 65 extending above the cover 18 being convenient of access so as to control the speed of the table 20.

An incandescent lamp socket 70 is fixed at any convenient point on the plate 28 and engaged therewith is a light bulb 71 so that the interior of the casing is illuminated when the mechanism is in operation, the socket having terminals 72 and 73 in an electric circuit hereinafter described.

An insulating block 75 is secured upon the plate 28, contiguous to the motor 36, and fixed on the block are spring terminals 76 and 77 connected with the motor by contacts 78 affixed upon its lower end.

Fixed upon one end of the plate 28 is a bracket 80 having raised lugs 81 and 82 to which are secured spring strips 83 and 84 having terminals 85 and 86.

The other ends 87 and 88 of the strips extend in parallel relation outwardly beyond the edge of the plate, and are adapted to press against spring contacts 89 and 90, secured on the inner side of the casing element 15, when the plate 28 is in a normal position therein.

Connecting with the contacts 89 and 90, are insulated lead wires 93 and 94 from any convenient source of electrical energy, and from the terminal 86 leads a conductor 96 to one terminal 97 of an insulating block 100, the other terminal 98 being connected to the spring terminal 75 by the wire 99.

From the terminal 85 leads a wire 101 to the lamp socket terminal 73, the current passing through it to the terminal 72, and thence by wire 102 to the terminal 86.

Also connected with the terminal 85 is a wire 103 leading to the spring contact 76 and it will be understood that the spring contacts are in circuit when the motor is in position, owing to the contacts 78 at its bottom.

Secured to the cover 18 is a push button switch 106, having leaf spring contacts 108 and 110, respectively adapted to engage with the terminals 97 and 98, the buttons 109 and 111 extending upward through the plate 18 into position for convenient access.

In operation, the drive plate 28 having been positioned within the casing, the terminals 89 and 90 complete a direct circuit through the lamp socket so that the bulb is made to glow.

The motor 36 is then positioned in its trunnion bearings, the elements 78 completing the circuit to the motor from the spring contacts 76 and 77, the sleeve 22 and record table 20 are placed in position on the spindle 23, and the roll 46 brought to bear against the inner periphery of the flanged table 20, whereupon, if the proper switch button is depressed, current will flow through the motor, thereby rotating the record table and, obviously, its speed may be regulated by manipulating the lever 65.

From the foregoing it will be seen that a substantially noiseless friction drive has been provided, which is under ready control as to stopping, starting and speed, and that the plate carrying the mechanism is easily removed and replaced with all its attached parts as a unit.

The foregoing disclosure is to be regarded as descriptive only and not as restrictive or limitative of the invention, of which obviously embodiments may be constructed including many minor modifications without departing from the spirit thereof as herein indicated and hereafter claimed.

Having thus described my invention and set forth the manner of its construction and operation, what I claim as new and desire to secure by Letters Patent, is:—

1. In a gramophone, the combination with a casing and a record carrying table, of a plate removably supported in said casing, a motor pivotally mounted on said plate to swing on a horizontal axis, a spindle mounted on said plate and on which said table is rotatively mounted, a friction roll driven by said motor and engageable with the periphery of said record table, and means on said plate whereby said roll is adjustably held in contact with said record table.

2. In a gramophone, the combination with a casing and a record carrying table, of a plate removably supported in said casing, a vertical spindle fixed on said plate, an elongated sleeve carrying said table and rotatable on said spindle, a friction roller engaged with the periphery of said table, and a motor on said plate for rotating said roller.

3. In a gramophone, the combination with a casing and a record carrying table, of a motor in said casing, frictional driving means between said motor and said record table comprising a friction roll driven by said motor and engaged with said table, a governor controlling the speed of said table, and frictional driving means for driving said governor comprising a disk rotatable with said table and a friction roll engaging the same and connected with said governor.

4. In a gramophone, the combination with a casing, of a plate mounted therein, a stationary spindle extending upwardly from said plate, a record carrying table rotatively

mounted on said spindle, a motor pivotally mounted on said plate, a friction roll driven by said motor and engageable with the periphery of said table, means for holding said roll in engagement with said table, and means mounting said plate whereby said plate and the parts attached thereto may be freely withdrawn from said casing.

5. In an electric drive for gramophones, the combination with a casing and a source of electrical energy, of a removable plate in said casing, an electric motor pivotally mounted on said plate, a record table mounted on said plate, a friction roll driven by said motor and adapted to engage the periphery of said table, means for moving said motor to move said roll into and out of engagement with said table, spring contacts on said plate, means on said motor for electrically connecting said spring contacts, and other spring contacts on said plate adapted to engage with contacts connected with the source of electrical energy.

6. In an electric drive for gramophones, the combination with a casing and a source of electrical energy, of a removable plate in said casing, an electric motor on said plate, a record table driven by said motor and mounted on said plate, and spring contacts on said plate adapted to engage with contacts connected with the source of electrical energy when said plate is positioned in said casing.

7. In a gramophone, the combination with a casing and a record carrying table, a removable plate in said casing, a motor, supports on said plate pivotally mounting said motor to oscillate on a horizontal axis, a friction roll driven by said motor, a record table driven by said roll and mounted on said plate, and adjustable means for moving said roll into and out of engagement with the periphery of said table.

In testimony whereof I have signed my name to this specification.

FREDERICK MYERS.