

July 14, 1925.

L. DUBÉ ET AL

1,545,641

TIMING CLOCK FOR TALKING MACHINES

Filed Nov. 28, 1921

3 Sheets-Sheet 1

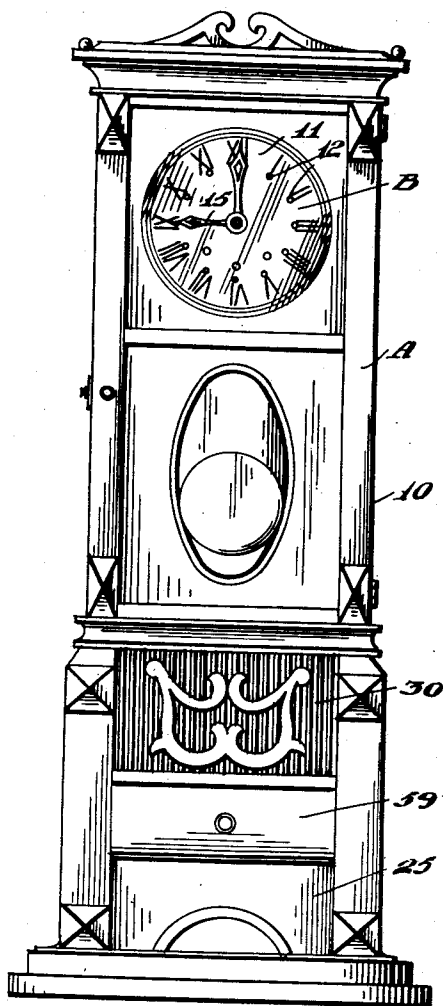


Fig. 1.

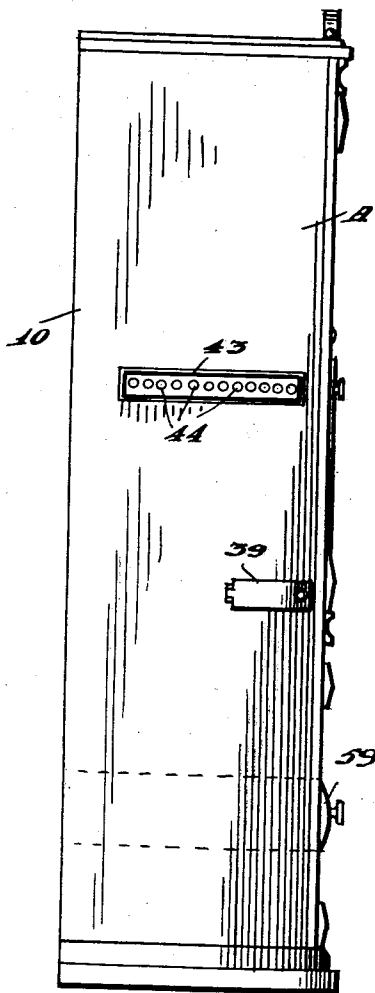


Fig. 2.

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3 Sheets-Sheet 2

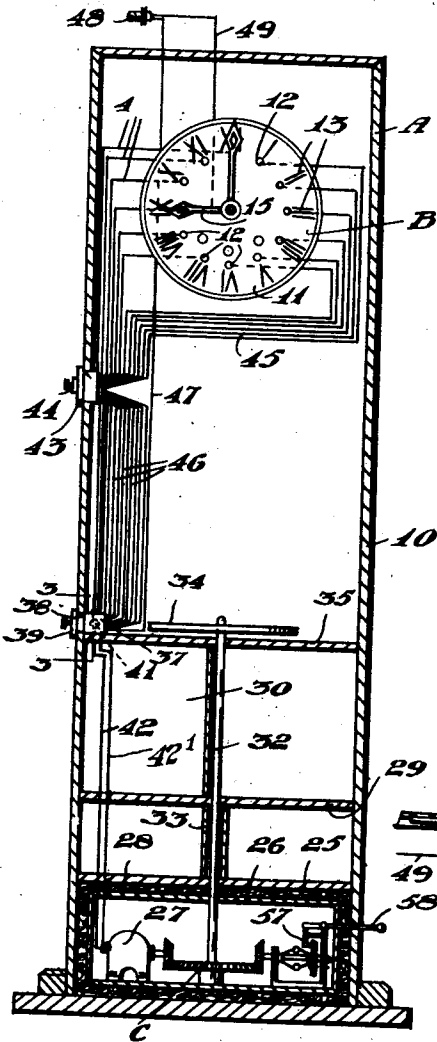


Fig. 3.

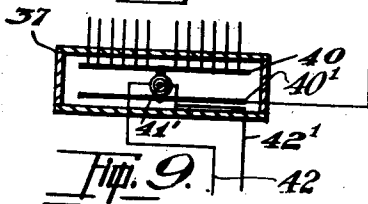


Fig. 9.

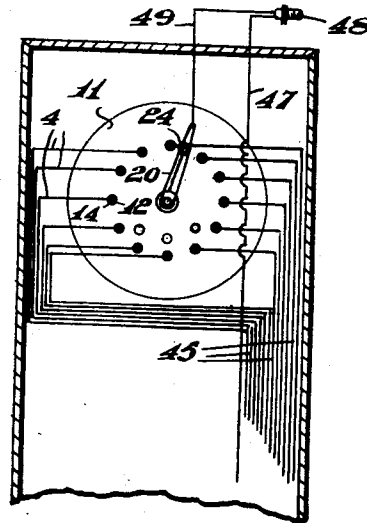


Fig. 4.

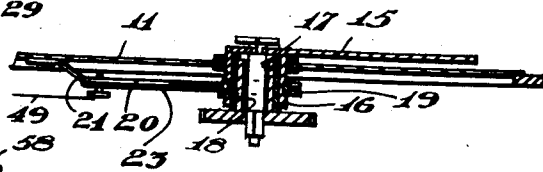


Fig. 7.

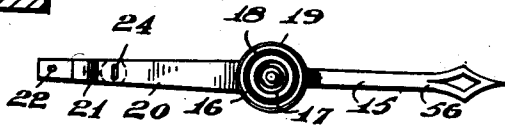


Fig. 8.

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TIMING CLOCK FOR TALKING MACHINES

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3 Sheets-Sheet 3

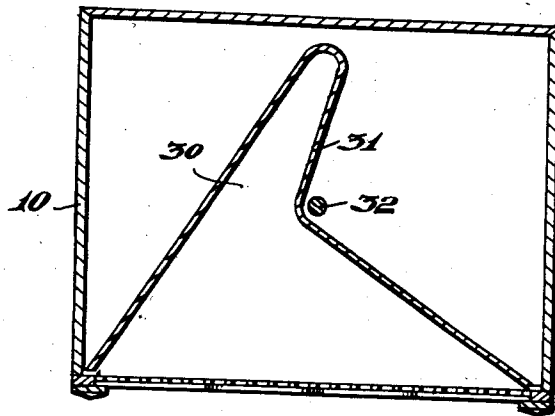


Fig. 6.

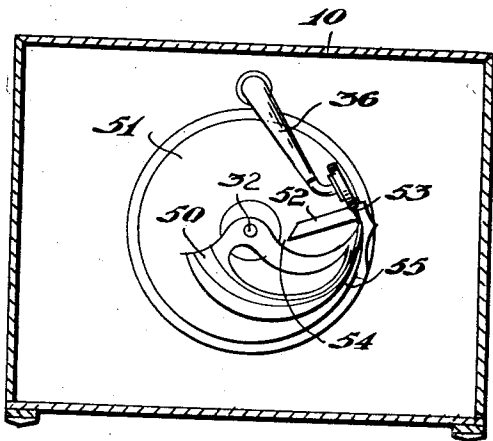


Fig. 5.

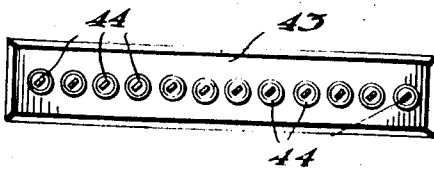


Fig. 10.

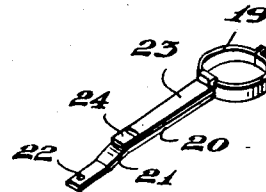


Fig. 11.

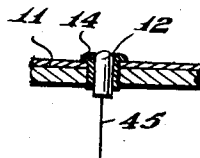


Fig. 12.

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UNITED STATES PATENT OFFICE.

LAWRENCE DUBÉ AND JOSEPH PALMA GRATTON, OF OTTAWA, ONTARIO, CANADA.

TIMING CLOCK FOR TALKING MACHINES.

Application filed November 28, 1921. Serial No. 518,385.

To all whom it may concern:

Be it known that we, LAWRENCE DUBÉ and JOSEPH PALMA GRATTON, both subjects of the King of Great Britain, and residents of the city of Ottawa, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Timing Clocks for Talking Machines, of which the following is a specification.

This invention relates to timing clocks for talking machines, and has for its objects to provide a combination of a clock and a phonograph, to provide a means of replacing the usual chimes of a clock by a phonograph designed to play any suitable record.

Further objects are to provide a clock more especially a grandfather's clock comprising a casing in the top part of which a clock dial is provided, and in the lower part of which a box is formed in the casing spaced therefrom and lined outwardly with felt.

The box is designed to carry a phonograph which is to be electrically connected to a clock dial so that when the hour hand strikes a predetermined character appearing on the clock dial, a motor propelling the phonograph mechanism will be started, and the record placed on the turn table of the phonograph to be played.

Further objects are to provide a number of switches corresponding to the twelve hours appearing on the clock dial so as to provide a means of playing a record at every hour or only at predetermined hours.

Further objects are to provide a combination clock and phonograph, which is simple in construction, not liable to get out of repair, and generally to adapt the several parts to better perform the functions required of it.

With the above and other objects in view, the invention consists essentially of the improved construction, hereinafter described in detail in the accompanying specification and drawings.

In the drawings;

Figure 1 is a front elevation of the improved grandfather's clock provided with a phonograph.

Figure 2 is a side elevation of the same.

Figure 3 is a longitudinal section.

Figure 4 is a fractional longitudinal section of the top of the casing showing the back of the dial and a diagram of the electrical connections.

Figure 5 is a cross section of the clock casing taken above the phonograph turn table.

Figure 6 is a cross section taken through the sound box.

Figure 7 is a cross sectional detail taken through the clock dial and the hour hand.

Figure 8 is a plan view of the hour hand.

Figure 9 is a sectional detail taken on the line 3—3 of Figure 3.

Figure 10 is a side elevation of the switch board provided on the side of the clock casing.

Figure 11 is a perspective view showing the contact collar designed to engage the hour hand.

Figure 12 is a sectional detail taken through the part of the clock dial and showing one of the contact pins.

Like characters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents a grandfather's clock of usual construction comprising a longitudinal casing 10, provided in its top part with a clock B, comprising a dial 11 provided with a plurality of contact pins 12 placed in circular arrangement and corresponding to each of the characters 13 shown on the dial.

The contact pins 12 may be made of suitable conducting material and are surrounded by a collar 14 of insulating material extending between the pin 12 proper and the material of the dial 11.

The hour hand 15 provided on the clock dial 11 is formed with a sleeve 16 as usual, and the sleeve 16 as well as the hour hand 15 are designed to be made of electrical conductive material. The sleeve 16 is insulated from the spindle 17 carrying the same by means of a small sleeve or packing 18 made of insulating material, and the sleeve 16 is designed to be engaged by a collar 19 made of metal, and formed integral or otherwise provided with an arm 20 offset as at 21 and pivotally mounted as at 22 to the clock dial 11.

If desired the offset portion 21 may be

made of insulating material, while the arm itself is made of metal, but it is preferred to make the arm 20 together with the offset portion 21 of insulating material and providing the top face of the arm 20 with a metallic rod 23 connected at one end to the metallic collar 19 and formed at the other end with a terminal 24, the purpose of which is hereinafter made clear.

The lower end of the casing 10 is formed with a compartment 25, in which is located and suitably spaced therefrom a box 26 in which is mounted a phonograph mechanism C together with a motor 27 designed to propel the phonograph mechanism C. The space 28 is provided around the box 26 between the walls thereof, and the inner walls of the compartment 25 may be packed with felt or other packing material in order to reduce or completely hush the sound of the phonograph mechanism provided inside the box 26.

Formed above the compartment 25 is a second compartment 29 designed to receive the suitable quantity of records, and above this compartment 29 an amplifier 30 is formed, which is offset as shown at 31 so as to allow the upright shaft 32 to clearly extend upwardly.

The upright shaft 32 is carried by the phonograph mechanism and extends through a tube or sleeve 33 in the record compartment 29 and through the compartment holding amplifier 30 as shown in Figure 3 of the drawings.

The shaft 32 at its upper end immediately above the amplifier 30 carries a turn table 34 on which the records to be played are placed. Above the amplifier 30 underneath the turn table 34 is located a board or shelf 35 on which is mounted the tone arm 36, which is of usual construction and need not be further described.

On the board or shelf 35, a box or small casing 37 is provided, which registers with an elongated opening 38 formed in the side wall of the casing 10 and designed to be normally closed by a door 39. Inside the casing or box 37 is a contact plate 40 on which is formed a socket 41, which is the positive contact. At the base of the socket 41 is connected plate 40' which is the negative contact. This socket 41 is designed to engage a plug 41' carried by leading wires 42 and 42' from the motor 27 located within the box 26 and designed to propel the phonograph mechanism C.

The casing 10 is provided on one side thereof with a switch board 43 carrying twelve switches 44 which are each connected by means of a wire 45 to one of the contact pins 12 provided on the dial 11 and suitably insulated therefrom by means of the collar 14.

The twelve switches 44 are then connected

by twelve wires 46 to the contact plate 40 located within the casing or box 37 previously described and shown in Figure 9 of the drawings.

A wire 47 connected to the contact plate 40' extends upwardly and leads to a plug 48, while a second wire 49 also connected to the plug 48 leads the positive current to the terminal 24 carried by the arm 20 connected to the collar 19 mounted on the sleeve 16 formed integral with the hour hand 15.

It is obvious that when the plug 48 is connected to a suitable source of electrical supply, and the switches 44 are turned on in order to complete the circuit, a positive current will be led to the hour hands 15, while negative current will be led through the wire 47 to the contact plate 40' thence to the plug 41' and from there to the motor 27 through the wire 42 to the plug 41' and the contact plate 40, the hour hand 15 being of conductive material will complete the circuit on touching one of the contact pins 12, and this will start the motor 27, which will propel the phonograph mechanism C and thus turn the turn table 34 on which a suitable record will already have been placed.

When a clock is equipped with this electrically propelled talking machine or phonograph, it is obvious that every switch 44 corresponds to one of the hours marked on the dial 11, and if for instance the first switch member 44 is turned on, the hand 15 when it passes over the contact pin 12 corresponding to the character representing one o'clock on the dial 11, the circuit will be completed as the wires 45 and 46 are already connected by means of the switch 44, and the motor 27 will be started, thus playing the record placed on the turn table 34.

The turn table 34 may be provided with a repeater 50 which consists of a piece of flat material formed as a semi-circle and eccentrically mounted on the upper end of the upright shaft 32.

The repeater 50 is obviously designed to be mounted above the record 51 shown in Figure 5 of the drawings, and the plate of the repeater is formed integral with an arm 52 extending radially towards the centre 32.

The needle 53 carried by the tone arm 36 will be engaged by the arm 52 and will prevent the repeating member 50 from being rotated with the record 51. When the record is over, the needle 53 will be disengaged from the arm 52 and pass in the open space 54 thus allowing the plate or repeater 50 to rotate with the record 51 and the curved outer end of the plate 50 will engage the needle and forcing it into the groove 55 will bring it into engagement again with the arm 52 at the outer end of the turn table ready to start to play the record once more, whenever the motor 27 is actuated through

the completion of the circuit by means of the contact of the hand 15 with one of the pins 12.

As no claim is made on this repeater mechanism, since it has already been invented, the same will not be further described, and it is thought that the operation of the same will be obvious from the foregoing description.

If it is desired to have a record played every hour, the twelve switches 44 are turned on in order to open all circuits corresponding to the twelve hours, but if the record is desired to be played at only predetermined hours, the switches 44 corresponding to these hours will be turned on, while the remaining switches will be turned off. As the charged hand 15 passes over the contact pins 12, it will complete the circuit for the switch corresponding to the contact pin over which the hand passes, and this will start the motor 27, but it is of course obvious that the motor will not be started by the contact of the hand 15 and the contact pin 12, if the corresponding switch is turned off.

If desired the top face of the hour hand 15 may be covered or protected by a sheet of insulating material 56. A control for the phonograph mechanism C may also be provided as shown at 57 having an operating arm 58 extending through the casing 10 of the clock as shown in Figure 3 of the drawings.

A suitable means of using the phonograph C independently of the clock B is provided by making the wires 42 42' leading from the motor 27 of suitable length, and the additional length of the wires 42 and 42' may be suitably housed within the box or casing 37. When it is desired to play the phonograph C independently of the clock B, the door 39 is opened, and the plug 41' being disengaged from the socket 41, the wires 42 and 42' are extended to a suitable light socket with which plug 41' is engaged. This connection will start the motor 27, thus propelling the turn table 34 of the phonograph mechanism C without the current being completed through the clock.

A variety of records may be kept within the record compartment 29 and a new record may be placed when desired on the turn table 34 to replace the one previously played.

If desired the compartment 29 may be provided with a suitable drawer 59 which would be formed intermediate of its width with a slot designed to engage the tube or sleeve 33 provided within the compartment 29 and through which the upright shaft 32 extends. In this case the records are placed

within the drawer 59 instead of within the compartment 29, as has been previously described.

As many changes could be made in the above construction, and many apparently widely different embodiments of our invention, within the scope of the claims, constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings, shall be interpreted as illustrative and not in a limiting sense.

What we claim as our invention is:

1. A timing clock for talking machines comprising in combination a casing, a clock at the top thereof, a phonograph in the bottom of the casing, a motor actuating the phonograph, means electrically connecting the clock to the motor, comprising a switch board, a contact plate, and a separate connection with each hour position, to the switch board and to the contact plate, wires leading current from a source of electrical energy to the clock and motor, and means on the contact plate whereby the motor and the phonograph may be operated independently of the clock.

2. A timing clock for talking machines comprising in combination, a casing, a clock at the top thereof, a phonograph in the bottom of the casing, a motor actuating the phonograph, means electrically connecting the clock to the motor including means whereby the phonograph can be played for hours without setting a switch after each play, and means whereby the motor and the phonograph may be operated independently of the clock.

3. A timing clock for talking machines comprising in combination a casing, a clock at the top thereof, a phonograph in the bottom of the casing, a motor actuating the phonograph, means electrically connecting the clock to the motor, comprising a contact plate, and a separate connection with each hour position, wires leading current from a source of electrical energy to the clock and motor, controlling means whereby the phonograph may be played at every hour successively or at predetermined hours only, and means on the contact plate whereby the motor and the phonograph may be operated independently of the clock.

In witness whereof we have hereunto set our hands.

LAWRENCE DUBÉ.
JOSEPH PALMA GRATTON.

Witness:
LEO MARION.