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AUTOMATIC DISPLAY DEVICE.
APPLICATION FILED AUG. 2, 1912.

1,090,552. Patented Mar. 17, 1914.

Fig. 1

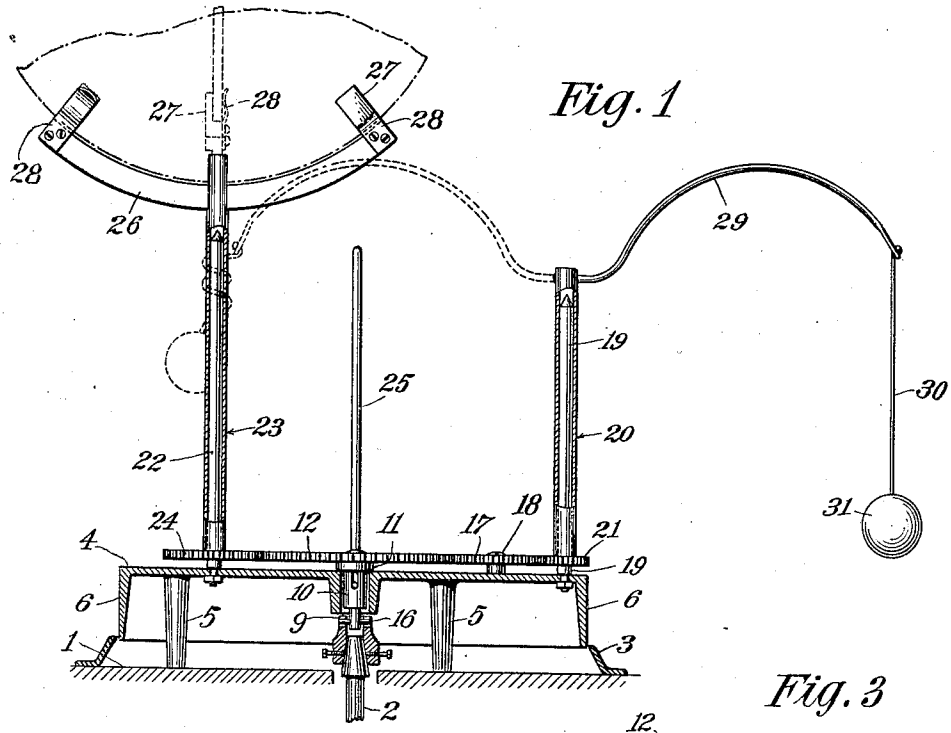


Fig. 3

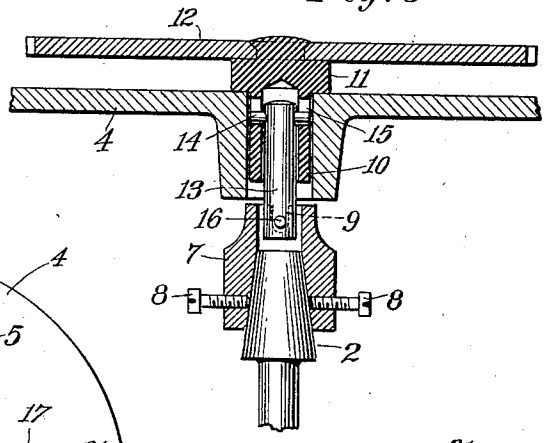
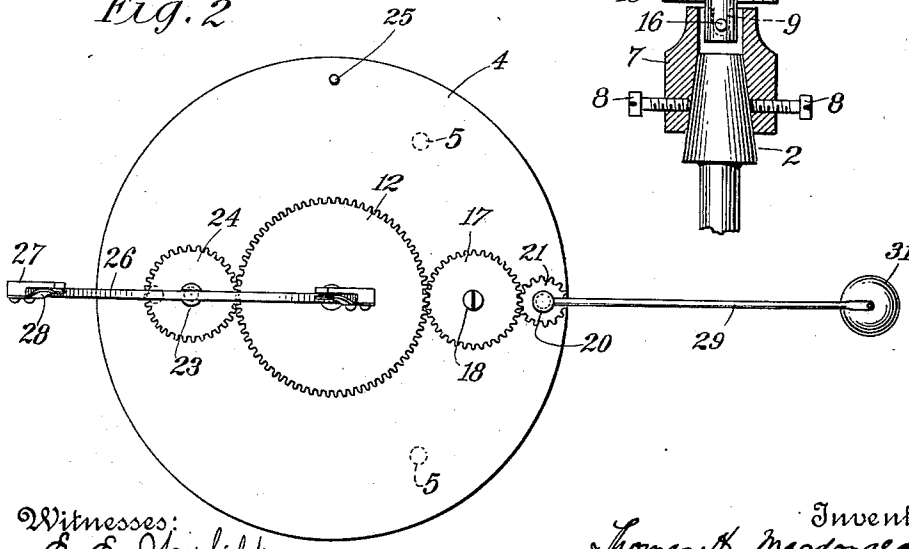


Fig. 2



Witnesses:
E. E. Warfield
Jas. H. Anderson.

Inventor
Thomas K. Macdonald, deceased,
by Sophie B. Macdonald
By his Attorneys
Mauro, Cameron, Lewis & Massie

UNITED STATES PATENT OFFICE.

THOMAS H. MACDONALD, DECEASED, LATE OF BRIDGEPORT, CONNECTICUT, BY SOPHIE B. MACDONALD, EXECUTRIX, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO AMERICAN GRAPHOPHONE COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF WEST VIRGINIA.

AUTOMATIC DISPLAY DEVICE.

1,090,552. Specification of Letters Patent. **Patented Mar. 17, 1914.**

Application filed August 2, 1912. Serial No. 712,962.

To all whom it may concern:

Be it known that THOMAS H. MACDONALD, deceased, late of Bridgeport, Connecticut, did invent an Automatic Display Device, which is fully set forth in the following specification.

This invention is intended primarily as an attachment for talking-machines, the object being to display a disk sound-record, preferably a "double-faced" record, so-called.

The invention comprises means for intermittently rotating the disk sound-record (or any other disk or placard), preferably in such manner as to expose first one face and then the other, and preferably with a moment's delay in the exposures to give the spectator opportunity to see what is on the disk or placard.

The invention comprises, as a means for doing this, a rotating shaft carrying the disk record in vertical position, and another shaft carrying a flexible cord with a ball or weight that is caused to wrap itself around the first-named shaft,—the whole constituting a sort of escapement.

The invention further comprises means for properly relating or adjusting the various parts and various other features of construction and arrangement that will be hereinafter set forth and claimed.

The invention will be best understood by reference to the annexed drawings, in which—

Figure 1 is a vertical section through one embodiment of the invention, shown as mounted upon an ordinary disk graphophone; Fig. 2 is a plan view thereof; and Fig. 3 is a vertical section of a detail on an enlarged scale.

1 represents the top of the boxing or cabinet containing the motor of an ordinary disk-graphophone or other talking-machine; and 2 is the main shaft thereof adapted to carry the usual turn-table (which in the present instance has been removed).

3 is a guard-ring secured to the top 1, and adapted to lie substantially flush with the top of the turn-table (when the latter is employed).

4 is the base-plate of the new attachment, shown as provided with a plurality of depending legs 5 adapted to rest upon top 1, and having the depending peripheral flange or apron 6 extending adjacent the rim of ring 3.

In place of a talking-machine, any suitable motor can be utilized to drive the shaft 2.

7 is a detachable bushing, secured on main shaft 2, as by set-screws 8, and having the open transverse slot 9 in its upper face. In the center of the plate 4 is journaled the hollow arbor 10, having the spacing-head 11 which carries the toothed-wheel 12 and rests upon top of plate 4. The link 13 is secured to arbor 10, by means of transverse pin 14 engaged in the closed vertical guide-slot 15 in the arbor; and at the lower end of this link is the transverse pin 16, adapted to be seated in the slot 9 of the bushing 7. It is obvious that the motor will rotate shaft 2 and the bushing; and that the latter, by means of the pins 16 and 14, will rotate the wheel 12. Further, on account of the slotted connection 14—15, this wheel 12 can be vertically lifted a short distance without disengagement from the shaft 2.

A gear 17, journaled upon a stud 18 (secured on plate 4), is in mesh with wheel 12. A cone-pointed rod 19 rises from plate 4, adjacent gear 17; and a sleeve 20 is journaled thereon, carrying at its lower end a gear 21 in mesh with gear 17. Another cone-pointed rod 22 rises from the main plate; and upon this rod is journaled another sleeve 23, carrying a gear 24 in mesh with gear wheel 12. Preferably the rod 19, the stud 18, the hub 11, and the rod 22, are all located in the same diametrical line; and preferably the two gears 17 and 24 have the same number of teeth, twice as many as gear 21 (and half as many as wheel 12). Preferably, there will be a stop-rod 25 rising from the margin of plate 4, ninety degrees distant from rods 19 and 22 respectively. The top of sleeve 23 is slotted and in this slot is secured the curved bar 26, having offset projections 27 at each end, and opposite to each projection is secured a spring-clamp 28, one of which is broken away from Fig. 1. The curvature of bar 26 and the space between each projection 27 and its spring-clamp 28, are adapted to receive and hold an ordinary disk sound-record. From the upper end of sleeve 20 extends an arched arm 29, reaching not quite to sleeve 23, but clearing this sleeve and the rod 25; and at

the outer end of this arm is secured a flexible cord 30 that carries a ball or weight 31. The rotation of main wheel 12 (from the motor) rotates the record-carrier 26 in one direction while rotating the ball-carrier 29 in the opposite direction, whereupon centrifugal force causes the ball with its flexible cord to swing outwardly; and when the latter encounters the sleeve 23, it wraps itself around the sleeve, checking the rotation momentarily and until the cord unwinds itself (further travel of the ball-carrier 29 causing the cord to wrap itself around the stop-rod 25 also, when that rod is employed, again checking rotation momentarily),—and so on continuously. Preferably, the parts are so adjusted that the wrapping of the cord around the sleeve and the stop-rod respectively will present first with a slight pause one face of a double-faced record in the carrier 26 and then with two successive pauses the other face thereof; so that the spectator has opportunity to observe each face of the record. The effect of the stop-rod 25 is to produce a sort of irregular succession of pauses, the very irregularity of which—being a departure from a uniform and monotonous rotation—serves to attract additional attention. In short, the mechanism automatically presents first one face of the record to the observer, and then, after a moment's delay, the record is turned around and the other face presented. The relative adjustment of the face of the record and of the ball-carrier is obtained by lifting one or more of the gears 12, 21, and 24, out of engagement with each other and rotating them the desired amount.

If desired, the rod 25 may be omitted, the relative arrangement of the gears and their relative proportion may be varied within wide range, as may the manner of slidably mounting the wheel 12 and the outer gears 19 and 24, and other details of construction and arrangement; but prefer the constructions, proportions and arrangements above indicated.

Having thus described the invention, it is claimed:

1. A display-device, comprising a base-plate adapted to be located on a talking-machine, a slotted tubular arbor journaled upon said plate and carrying a toothed-wheel located above the same, a link located within said arbor and carrying at each end a transverse pin one of which is seated in said slot, a slotted bushing detachably secured to the main shaft of said talking-machine and having its slot detachably engaged by the other transverse pin of said link, a rotatable device journaled upon said plate and driven from said toothed-wheel, means carried by said device for displaying a disk sound-record in vertical position, a second rotatable device journaled on said plate and driven from said toothed-wheel and having a transverse arm supporting from its end a flexible weighted cord to act as an escapement for the first-named rotatable device.

2. A display-device, comprising a base-plate adapted to be located on a talking-machine, an arbor journaled upon said plate and carrying a toothed-wheel located above said plate, a vertically-slidable link keyed to said arbor, means for detachably connecting said link to the main shaft of the talking-machine, a rotatable device journaled upon said plate and driven from said toothed-wheel, means carried by said device for displaying a disk sound-record in vertical position, a second rotatable device journaled upon said plate and driven from said toothed-wheel and having a transverse arm supporting from its end a flexible weighted cord to act as an escapement for the first-named rotatable device.

3. A display-device, comprising a base-plate adapted to be located on a talking-machine, an arbor journaled upon said shaft and carrying a toothed-wheel located above said plate, detachable means for rotating said arbor from the main shaft of said talking-machine and for permitting vertical movement of said arbor without disengagement from said shaft, a rotatable device journaled upon said plate and driven from said toothed-wheel, means carried by said device for displaying a disk sound-record in vertical position, and a second rotatable device journaled upon said plate and driven from said toothed-wheel and having a transverse arm supporting from its end a flexible weighted cord to act as an escapement for the first-named rotatable device.

4. A display-device, comprising a base-plate adapted to be located upon a talking machine, an arbor journaled thereon and detachably engageable with the motor of said machine, a toothed-wheel fast on said arbor, axially-adjustable means rotated from said toothed-wheel for displaying a disk sound-record in vertical position, and separate axially-adjustable means also rotated from said wheel to act as an escapement for interrupting the continuous rotation thereof.

5. A display-device, comprising a base-plate, a toothed-wheel journaled thereon and adapted to be rotated from a suitable motor, an axially-adjustable placard-holding device rotated from said toothed-wheel, and a separate axially-adjustable rotatable device driven from said wheel and sustaining a flexibly-supported weight for intermittently engaging said placard-carrying device as an escapement therefor.

6. A display-device, comprising a base carrying a gear-wheel revoluble in a horizontal plane, two vertical shafts journaled diametrically opposite each other, a gear on

one shaft in mesh with the first-named gear, a gear on the other shaft driven from the first-named gear, a vertical rod located ninety degrees from each of said shafts, means carried by one of said shafts for supporting a vertically-disposed disk, and a weight supported from the other shaft by a flexible cord, said cord adapted to wind itself alternately around the opposite shaft and around the rod.

In testimony whereof I, as said executrix, have signed this specification in the presence of two subscribing witnesses.

SOPHIE B. MACDONALD,
Executrix of the estate of Thomas H. Macdonald, deceased.

Witnesses:
W. E. LYLE,
J. S. GRIFFITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."