UNITED STATES PATENT OFFICE.

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STOP MECHANISM FOR TALKING-MACHINES.

1,211,110.


To all whom it may concern:

Be it known that I, RAYMOND DUNCAN, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Stop Mechanisms for Talking-Machines, of which the following is a full, clear, and exact specification.

10 My invention relates to improvements in means for controlling the operation of talking machines, and more particularly to means for governing the circuit of an electrically controlled mechanism for controlling the operation of the talking machine in any manner.

One of the objects of the invention is to provide circuit controlling means adapted to be actuated by a record when the same has been completely played whereby to govern the operation of the electrically controlled mechanism.

Another object is to provide a normally open circuit-closer adapted to be closed by a record when the same has been played whereby the electrically controlled mechanism will be operated.

Another object is to provide circuit controlling means comprising co-acting contact members one of which is adapted to be moved relatively to the other by the groove of a record when the same has been played.

Another object is to provide circuit controlling means comprising co-acting contact members and a member actuated by the record to move one of the contact members relatively to another thereof when a record has been played.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel details of construction, and in the combination, connection and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings showing an illustrative embodiment of the invention—Figure 1 is a plan view of a talking machine showing my improved controlling device attached thereto; Fig. 2 is a side elevation of a reproducer having the controlling means affixed thereto, and Fig. 3 is a front elevation of the same.

55 For purposes of illustration my said invention is shown as applied to a well-known type of talking machine but it is to be understood that it may be applied to other types of machines without departing from the spirit of the invention. It is also to be understood that while the invention is described in connection with an electrically controlled brake mechanism it is adapted to be used in connection with electrically controlled mechanism for controlling a mechanism for any desired purpose.

Referring to the drawings 10 represents a swinging tone arm carrying a reproducer 11 of any suitable construction and including a stylus 12 which engages the tone groove of a record 13 in the usual manner whereby, as the record is being played, the tone arm 10 will swing about its support to permit the stylus 12 to follow the convolutions of the groove.

A bracket 14 mounted upon an insulating block 15, preferably carried by the reproducer 11, is provided with a lug 16 having a contact member 17 secured thereto and electrically connected therewith. The lug 16 also supports a removable or resilient contact member 18 which is normally out of engagement with the contact member 17 and is insulated therefrom by a block 19 of suitable insulating material. Pivoted 85 mounted in lugs 20, 20, upon the reproducer 11, is an arm 21 having one of its ends extending through a guiding slot 22 in the bracket 15 and engaging the resilient contact member 18 whereby the arm 21 will normally be held in its inoperative position. At its other end the arm 21 is provided with a socket 23 to receive a groove engaging member 24 formed of resilient or yielding material such as wire or the like and preferably provided with a coiled portion 25 intermediate its ends to render it more resilient in order that it will not injure the record. The member 24 is removably held within the socket 23 by means of a set screw 26 so that it may be readily adjusted or removed when worn and replaced by a new member. When the arm 21 is in its normal position, in which it is held by means of the resilient contact member 18, the groove engaging member 24 will be spaced from the stylus 12 of the reproducer 11 so that when the reproducer is in its record playing position the member 24 will engage the groove in advance of the 110 stylus.

An electric circuit, including a source of
electrical energy and a suitable electro-magnetically operated brake (not shown) for controlling the rotation of the record support, has one of its ends connected to the bracket 14 and its other end electrically connected to the tone arm 10. Under normal conditions this circuit will be open by reason of the normally spaced contact members 17 and 18 of the circuit-closer which is constituted by these contact members. When, however, the arm 21 is moved to cause the contact member 18 to engage the contact member 17, as hereinafter described, the circuit will be closed and the brake will be operated to engage the record support and arrest the movement thereof in the well-known manner.

The operation is as follows:—When it is desired to play a record the brake is released, thereby permitting the record support to revolve, and the reproducer 11 is then positioned to cause the stylus 12 to engage the groove at the beginning of the record with the groove engaging member 24 engaging a groove in advance of the one engaged by the stylus 13. As the stylus and the groove engaging member follow the convolutions of the groove they will not move relatively to one another and the arm 21 will be maintained in its normally inoperative position, the electric circuit being broken by the normally spaced contact members 17 and 18. When, however, the groove engaging member arrives at the end of the groove further movement thereof relatively to the record is prevented, but as the stylus continues to follow the groove the reproducer will be caused to continue to move relatively to the record. As the groove engaging member 24, which is attached to one end of the arm 21, is held against movement, such continued movement of the reproducer will cause the arm 21 to rotate within the lugs 20, 29. As a result of this movement of the arm the other end thereof will be moved to cause the movable or resilient contact member 18 to approach and finally to engage the contact member 17 thereby closing the electric circuit and causing the brake to be operated to engage the record support and prevent its further rotation.

When the reproducer is raised from the record the movable or resilient contact member 18 will return to its normal position out of engagement with the contact member 17 and thus break the electric circuit and at the same time cause the arm 21 to return to its normal position.

Haven this described my said invention what I claim and desire to secure by Letters Patent is:—

1. In combination, a reproducer including a stylus, circuit controlling means carried by said reproducer and comprising co-acting contact members one of which is movable into and out of engagement with the other thereof, and means adapted to engage the tone groove of a record and to be actuated thereby to move said movable contact member relatively to said other contact member, substantially as specified.

2. In combination, a reproducer including a stylus, circuit controlling means carried by said reproducer comprising a fixed member and a member movable into and out of engagement therewith, and means adapted to engage the tone groove of a record and to be actuated thereby for moving said movable member relatively to said fixed member, substantially as specified.

3. In combination, a reproducer including a stylus, a normally open circuit closer carried by said reproducer, and means adapted to engage the tone groove of a record and to be actuated thereby for closing said normal open circuit closer, substantially as specified.

4. The combination of a tone arm carrying a reproducer including a stylus, with co-acting contact members, and means adapted to be controlled by the tone groove of a record for moving one of said contact members relatively to another thereof, substantially as specified.

5. The combination of a tone arm carrying a reproducer including a stylus, with normally spaced co-acting contact members, and means adapted to be controlled by the tone groove of a record for closing said normally spaced contact members, substantially as specified.

6. The combination of a tone arm carrying a reproducer including a stylus, with co-acting contact members, a movable arm operatively associated with one of said co-acting contact members, and means controlled by the tone groove of a record for actuating said arm to move said one of the co-acting contact members relatively to another thereof, substantially as specified.

7. The combination of a tone arm carrying a reproducer including a stylus, with co-acting contact members, a pivotally mounted arm operatively associated with one of said co-acting contact members, and means controlled by the tone groove of a record for actuating said arm to move said one of the co-acting contact members relatively to another thereof, substantially as specified.

8. The combination of a tone arm and a reproducer thereon, with a contact member, a resilient contact member co-acting with said first contact member and normally out of engagement therewith, and record controlled means for moving said resilient contact member into engagement with said first named contact member, substantially as specified.

9. The combination of a tone arm and a reproducer thereon, with a contact member, substantially as specified.
a resilient contact member co-acting with said first contact member and normally out of engagement therewith, a movable arm engaging said resilient contact member, and record controlled means carried by said arm to actuate the same to move said resilient contact member into engagement with said first-named contact member, substantially as specified.

10. The combination of a tone arm and a reproducer thereon, with a contact member, a resilient contact member co-acting with said first contact member and normally out of engagement therewith, an arm pivotally mounted upon the reproducer and engaging said resilient contact member, and record controlled means carried by said arm to actuate the same to move said resilient contact member into engagement with said first-named contact member, substantially as specified.

Signed at the city of New York, in the county and State of New York, this 29th day of December, one thousand nine hundred and fifteen.

RAYMOND DUNCAN.

Witnesses:

MARTIN CONROY,
JAMES B. LITTLE.