

D. C. & J. W. NELSON.
 AUTOMATIC STOP FOR TALKING MACHINES.
 APPLICATION FILED APR. 23, 1908.

982,293.

Patented Jan. 24, 1911.

Fig. 1.

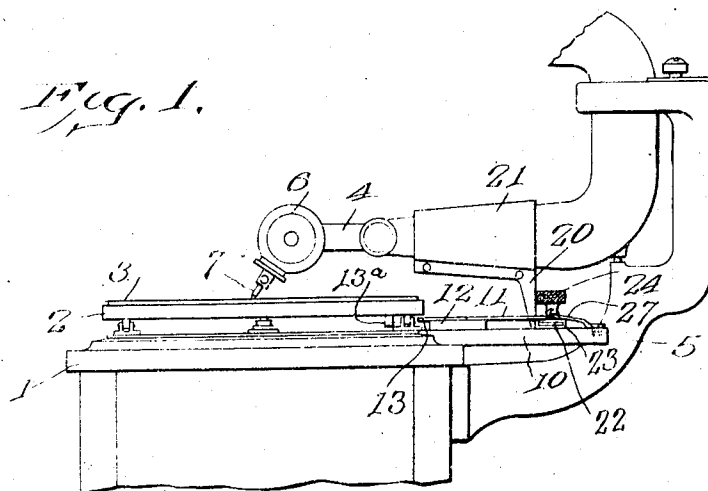
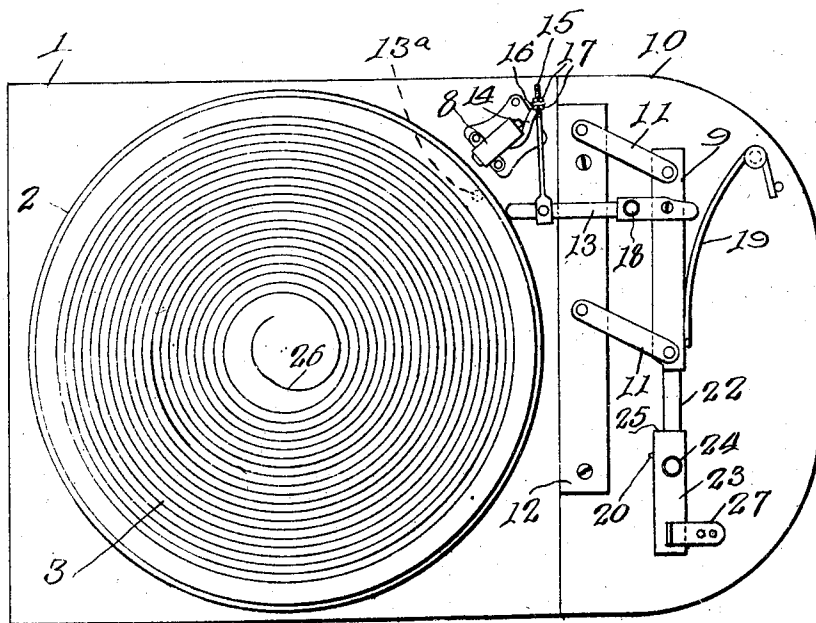


Fig. 2.



Inventors
 Delphos C. Nelson,
 James W. Nelson,

Witnesses

G. Howard Walmsley,
 Edward Reed.

By *H. A. Taubert*
 Attorney

UNITED STATES PATENT OFFICE.

DELPHOS C. NELSON AND JAMES W. NELSON, OF MARION, OHIO.

AUTOMATIC STOP FOR TALKING-MACHINES.

982,293.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed April 23, 1908. Serial No. 428,723.

To all whom it may concern:

Be it known that we, DELPHOS C. NELSON and JAMES W. NELSON, citizens of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Automatic Stops for Talking-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to automatic stops for talking machines, and the object of the invention is to provide means for automatically stopping the movement of a record support when the sound-reproducing device has reached the end of the record: and to provide adjustable means for controlling the actuating mechanism for the stop.

With these objects in view our invention consists in certain novel features of construction and in certain parts and combinations hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a talking machine equipped with our invention; and Fig. 2 is a top plan view of the same, with the sound-reproducing device and its support removed.

In these drawings we have illustrated the preferred form of our invention and have shown the same as applied to a well known form of machine embodying a disk record, but obviously, the device is capable of wide variations from the particular construction herein shown and can be adapted to different types of machines. We have here shown the talking machine as comprising a motor casing 1 having mounted thereon the usual turn-table 2 which supports the disk record 3. An arm 4 is pivotally supported at its outer end on a bracket 5 carried by the motor casing 1 and extends inwardly over the record 3 and carries at the inner end thereof a suitable sound-reproducing device 6 provided with the usual needle 7. A suitable stop, such as a brake 8, which is here shown as of ordinary construction, is provided for controlling the movement of the turn-table and the record disk, which is supported thereon.

As is well known in talking machines of this type, the needle 7 of the sound-reproducing device travels over the record from a point near the periphery thereof to the end of the record which lies near the center of the disk. When the disk continues to rotate after the pin has reached the end of the record groove, it defaces and damages the record, as well as causes an unpleasant sound. In order to overcome these objections, we have devised means for automatically actuating the stop or brake 8 to check the movement of the turn-table and the record carried thereby as soon as the sound-reproducing device reaches the end of the record and have provided means controlled by the movement of this sound-reproducing device over the record for controlling the automatic stop-actuating mechanism. In the present instance, we have shown the stop-actuating mechanism as comprising a movable member, such as a bar 9, which is preferably mounted upon a base 10 secured to and extending rearwardly from the edge of the motor casing 1. This bar 9 is operatively connected to the brake 8 and is adapted to be moved in such a direction as to operate that brake. In the preferred construction, the bar 9 is connected to the base 10 by means of suitable links 11 which are pivotally connected at one end to the bar 9 and at the other end to a plate 12, which is rigidly secured to the base 10 near the inner edge thereof. An arm 13 is pivotally connected at one end to the bar 9 and is connected near its other end to a stop controlling member or actuating lever 14, which is operatively connected to the stop or brake 8. The stop-controlling member may be of any suitable character and may be operatively connected to the stop either for the purpose of actuating the same or for controlling a spring-actuated stop. The controlling member or lever is preferably connected to the arm 13, by means of a connecting rod 15 pivotally secured at one end to the arm 13 and having its other end screw-threaded and extending through an apertured lug 16 on the stop-controlling lever 14, which is adjustably secured thereto by means of jam-nuts 17 mounted on the

screw-threaded end of the rod 15 on opposite sides of the apertured lug 16. The arm 13 is preferably made adjustable by forming the same in two parts and slidably connecting said parts one to the other, the relative movement of the two parts being controlled by the thumb-nut 18.

The present form of connection between the bar 9 and the base causes said bar to move diagonally of the base 10 and in a direction away from the brake and toward the end of the record, which, in the present instance, is the center of the record disk, the bar being actuated by a spring 19 which is mounted upon the base 10 and engages the rear side of the bar 9, thus tending to force the same inwardly toward the record. When the bar 9 reaches a certain point in its diagonal movement, the inner end of the arm 13 is moved beneath the edge of the turntable and into the path of a projection, such as a pin 13^a, depending from the under side of the turn-table. The pin 13^a coming in contact with the arm 13 moves the same about its pivotal center and causes the connecting rod 15 to actuate the lever 14 of the brake 8 to check the movement of the turntable. The inward movement of the bar 9 is controlled by suitable means connected with the sound-reproducing device 6, and, in the present instance, this means comprises a finger 20 supported from the arm 4 which carries the sound-reproducing device and is mounted thereon by means of a sleeve 21. The lower end of the finger 20 extends in the path of the bar 9 and serves to control the inward movement thereof. As the sound-reproducing device 6 moves over the record, the arm 4 moves about its pivotal center and the finger 20 is carried with the same and is moved diagonally of the base 10 along a line which intersects the line of movement of the bar 9. Consequently, as the sound-reproducing device approaches the end of the record, the finger 20 will have been moved inwardly a distance such as to cause the further movement of the bar 9 to move the arm 13 into the path of the stop 13^a. Thus the arm 13^a will be positively moved about its pivotal center and will actuate the stop-controlling member 14 and the stop 8 will be caused to engage the edge of the turn-table. In order to instantly actuate this brake we prefer to provide the bar 9 with an offset which is so located on the bar that the finger 20 will reach the same and pass off the shoulder formed thereby immediately after the sound-reproducing device reaches the end of the record. This offset is preferably formed in the bar 9 by forming the same in two parts, the main portion of the bar being provided with a reduced extension 22 upon which is mounted the outer end 23 of the bar which is pro-

vided with a thumb-nut 24 for holding the same in its adjusted position thereon. The width of the portion 23 of the bar 9, which portion is that engaged by the finger 20, is greater than the width of the extension 22 to the bar 9. Consequently, a shoulder 25 is formed, this shoulder being of a depth such that when the finger 20 passes beyond the same, the bar 9 will be moved quickly forward and the arm 13 brought into the path of the pin on the turn-table, and the engagement of the pin with the arm will actuate the brake and instantly stop the movement of the record. By making the outer portion 23 of the bar 9 adjustable, the location of the shoulder 25 can be adjusted to accommodate the same to records of different size, thus enabling the machine to be stopped at the end of the record, regardless of the size of that record. However, in order to insure that the finger 20 will pass beyond the shoulder 25 immediately upon the sound-reproducing device reaching the end of the record, we prefer to form in the record a groove 26 which forms an extension of the record groove and turns sharply toward the center of the disk, as shown, thus carrying the needle inwardly, and, consequently, moving the finger 20 quickly through a considerable distance, which distance is sufficient to insure that said finger will pass beyond the shoulder 25 and thus permit the bar 9 to move inwardly a distance sufficient to actuate the brake 8. Means are also provided for retaining the bar 9 in its open position against the tension of the spring 19 when it is so desired, and this means preferably consists of a spring-clip 27 secured to the base 10 and adapted to engage the bar 9 and hold the same against movement when it is desired to render the device inoperative. When it is desired to place the device in operation the bar 9 is moved forward until the forward edge thereof extends beyond the clip 27 and the bar 9 is again under the control of the spring 19 and the finger 20.

The operation of the device will be obvious from the foregoing description and it will be apparent that we have provided automatic means for controlling the brake or stop mechanism which controls the movement of the record-supporting means; that this means is controlled by a part connected with the sound-reproducing device and is so adjustable that the movement of the record will be stopped immediately after the sound-reproducing device has reached the end thereof, thus avoiding the defacing of the record and also doing away with the unpleasant sounds caused thereby. It will also be apparent that the stop-controlling member is positively actuated by the pin on the turntable coming into contact with the arm

which is connected with said stop-controlling member, thereby rendering the operation of the device certain.

We wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a talking machine, the combination, with a movable record, a sound-reproducing device adapted to move over said record, a stop for controlling the movement of said record, and a stop-controlling member, of a spring-pressed member for actuating said stop-controlling member, and a part connected to and adapted to move with said sound-reproducing device and lying normally in the path of said spring-pressed member for controlling the movement thereof.

2. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, a stop for controlling the movement of said record, and a stop-controlling member, of a movable bar operatively connected to said stop-controlling member, a spring tending to move said bar in one direction, and a finger carried by said arm and normally extending into the path of said bar to control its movement.

3. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, a stop for controlling the movement of said record and a stop-controlling member, of a base, a bar, links for connecting said bar to said base, a spring for actuating said bar, means for operatively connecting said bar to said stop-controlling member, and a part connected with said arm for controlling the movement of said bar.

4. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, a stop for controlling the movement of said record and a stop-controlling member, of a base, a bar, links connecting said base to said bar, a spring for actuating said bar, an arm pivotally connected at one end to said bar, a rod connecting said arm to said stop-controlling member, and a part connected with the first-mentioned arm for controlling the movement of said bar.

5. In a talking machine, the combination, with a movable record, an arm movably

supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, a stop for controlling the movement of said record, and a stop-controlling member of a movable bar having a shoulder, means for actuating said bar, means for actuating said stop-controlling member from said bar, and a finger carried by said arm and adapted to engage said bar near said shoulder.

6. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, a stop for controlling the movement of said record and a stop-controlling member, of a two part bar having one part movably connected to the other and forming a shoulder thereon, means for actuating said bar, means for operatively connecting said bar to said stop-controlling member, and a finger carried by said arm and adapted to engage said bar near said shoulder.

7. In a talking machine, the combination, with a record, a movable support therefor having a projection, a stop for controlling the movement of said support, and a sound-reproducing device adapted to move over said record, of a base, a bar movably mounted on said base, an arm carried by said bar and operatively connected at a point removed from the end thereof with said stop, means for actuating said bar to move the end of said arm into the path of said projection, and means connected with said sound-reproducing device for controlling the movement of said bar and said arm.

8. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to be moved over said record, and a stop for controlling the movement of said record, of a base, a bar movably connected to said base, a spring for actuating said bar, means for operatively connecting said bar to said stop, and a part connected with said arm and controlling the movement of said bar.

9. In a talking machine, the combination, with a movable record, an arm movably supported above said record, a sound-reproducing device carried by said arm and adapted to move over said record, and a stop for controlling the movement of said record, of a movable bar having a shoulder, a spring for actuating said bar, a finger carried by said arm, extending in front of said bar and adapted to engage the same near said shoulder, and a connection between said bar and said stop, whereby, said stop will be actuated when said finger passes said shoulder.

4
10. In a talking machine, the combination, with a movable record, a sound-reproducing device carried by said arm and adapted to move over said record, and a
5 stop for controlling the movement of said record, of a two part bar having one part movably connected to the other and forming a shoulder thereon, means for actuating said bar, means for operatively connecting
10 said bar to said stop, and a finger carried

by said arm adapted to engage said bar near said shoulder.

In testimony whereof, we affix our signatures in presence of two witnesses.

DELPHOS C. NELSON.
JAMES W. NELSON.

Witnesses:

W. E. CHRISTMAN,
L. B. McNEAL.