J. F. BLAND.

AUTOMATIC STOP FOR DISK RECORDS FOR TALKING MACHINES.

APPLICATION FILED MAY 17, 1921.

1,410,158.

Patented Mar. 21, 1922.

Fig. 1.

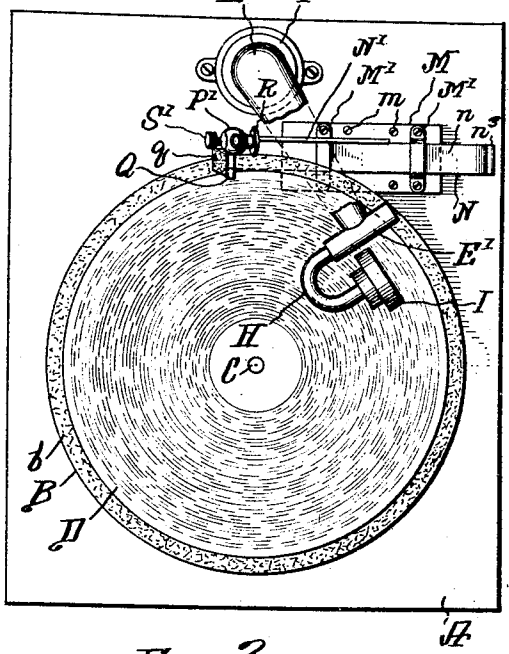


Fig. 2.

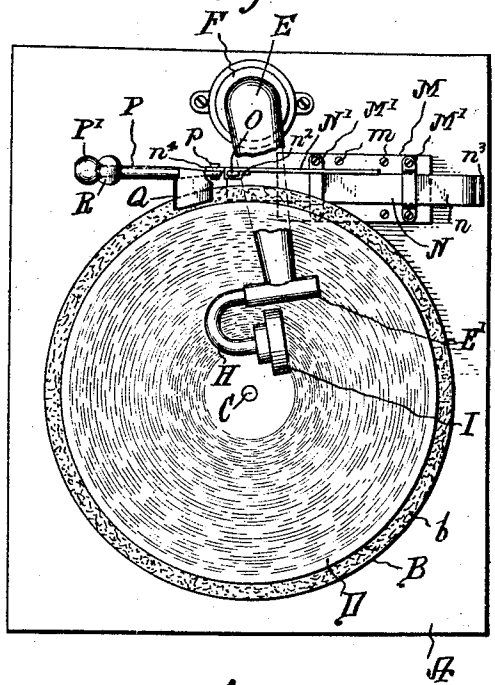


Fig. 3.

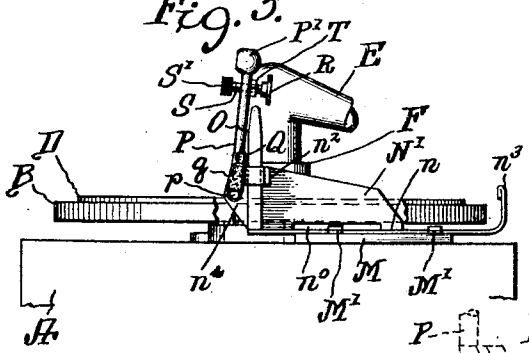


Fig. 4.

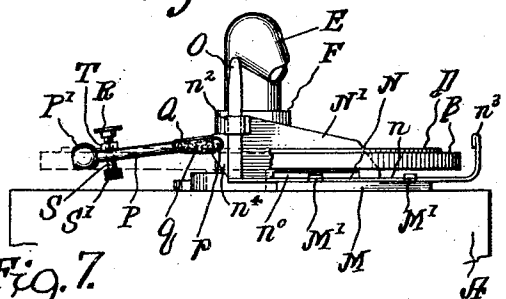


Fig. 5.

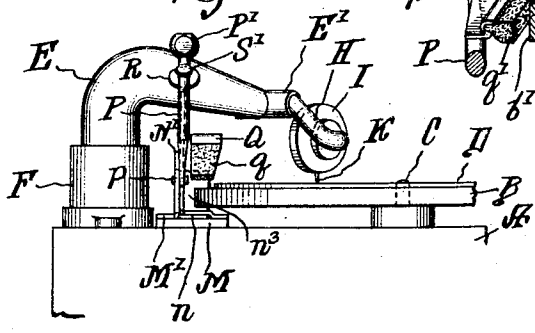


Fig. 7.

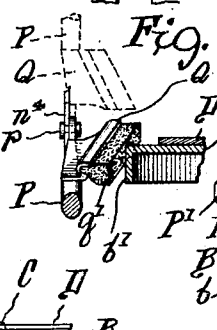
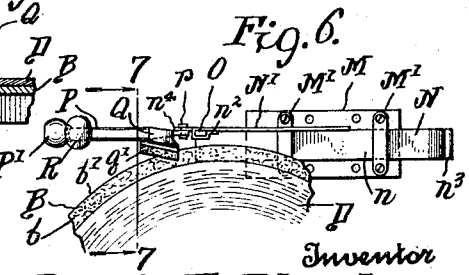


Fig. 6.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC STOP FOR DISK RECORDS FOR TALKING MACHINES.

1,410,158. Specification of Letters Patent. Patented Mar. 21, 1922.

Application filed May 17, 1921. Serial No. 470,322.

To all whom it may concern:

Be it known that I, JOSEPH FRANKLIN BLAND, a citizen of the United States, residing at Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Automatic Stops for Disk Records for Talking Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic stops for the turn-tables of disk record talking machines, such as Victrolas, or any other talking machine in which a rotating disk is used.

According to my invention I provide a base which is permanently attached to the top of the cabinet of the machine and on which a sliding bracket is mounted. This bracket is provided with a hinged weighted arm which carries a brake pad of felt or other similar material, adapted to engage the turn-table of the machine exterior to the periphery of the disk superposed thereon.

When not in actual engagement as a stop or brake, the weighted arm is normally supported against a stanchion carried by the inner end of the sliding bracket, and said weighted arm is held in the uplifted position by gravity, until the center of gravity of said arm and the parts carried thereby is displaced automatically by the movement of the tone arm. When the tone arm has almost reached the predetermined limit of its travel, the weighted arm is pushed outwards and falls by gravity, causing the felt pad to strike the turn-table carrying the disk, thus acting as a brake to stop same without undue shock.

The invention is intended to be applicable to any of the well known types of talking machines on which a disk record is used, and the parts are so arranged that they may be readily attached to or removed from the top of the box or cabinet of the machine.

The device is made adjustable so as to apply it to different makes of machine, in which the position of the tone arm varies within limits. When the device is once set for any particular machine it does not have to be altered with that machine.

The device is also intended to provide for stopping the turn-table by hand whenever desired at any time during the rotation of said turn-table, and this may be done by simply tilting the weighted arm by hand and allowing it to fall and to engage the turn-table irrespective of what may be the position of the tone arm with regard to the record. In other words when the device is properly set and the weighted arm is raised, it will operate automatically when the tone arm reaches the position at almost the predetermined end of its travel, and may be caused to operate by hand and not automatically at any time while the record is turning.

My invention will be more fully understood after reference to the accompanying drawings, in which like parts are indicated by similar reference symbols throughout the several views, and in which:—

Figure 1 is a plan view of a Victrola machine with the tone arm partly broken away, and with the said arm in the operative position for causing the needle to engage a disk.

Figure 2 is a similar view to Figure 1, but shows the tone arm in the position for actuating the automatic stop, and shows the automatic stop in the lowered and operating position.

Figure 3 is a side elevation of the apparatus shown in Figure 1, parts being broken away.

Figure 4 is a side elevation of the apparatus shown in Figure 2, parts being broken away.

Figure 5 is a view seen from the left of Fig. 1, with the parts in the position shown in that figure.

Figure 6 is a plan view similar to Figure 2, but shows a modified form of automatic stop; and

Figure 7 shows a section along the line 7—7 of Figure 6, but on a larger scale.

A represents the cabinet or sound box used with the machine, which may be of any desired shape or construction. This cabinet carries the turn-table B, journaled upon the pivot C and is rotated in the usual way. This turn-table is preferably provided on its upper face with a suitable facing *b* of felt or other suitable material, which is not apt to transmit vibrations, and is also not apt to injure the lower side of the disk, since disks with records on both faces are often used.

I make no claim to the construction and operation of the turn-table or the means for rotating the same.

D represents the disk which may be of any desired size, whether standard or otherwise.

E represents the tone arm which is pivoted in the usual way to the sleeve F. The tone arm is provided at its forward end with a T-head comprising the sleeve E′ in which the goose-neck H is pivoted, which carries the reproducer I to which is attached the needle K in the usual way.

All of the parts hitherto described are preferably of standard or preferred make and in no sense a part of my invention.

My invention relates particularly to the automatic stop or braking device which will now be described.

Referring first to the construction shown in Figures 1 to 5, in which the brake pad is applied horizontally, M represents a base plate which is connected to the top of the cabinet A in any convenient way, as by means of the screws *m*. This base plate is provided with suitable guides M′ to receive the horizontal portion *n* of the sliding bracket N.

This bracket, as shown, is provided with a vertical fin N′, provided with a clip n^2 to hold the stanchion O, which stanchion is carried by and moved with the bracket N. This bracket may be provided with a handle n^3 for convenience in manipulating the same. The bracket is mounted to slide without unnecessary friction in the guides M′.

The vertical fin N′ is slotted at its base, as at n^0, to permit the said fin to slide over the corresponding guide M′. The fin N′ is provided with a forwardly projecting ear n^4 to which the arm P is pivoted, as by the pin *p*. This arm is weighted at the free end as at P′ and is provided with a wing Q to which the brake pad *q*, of felt or similar material, is secured.

The adjusting of the device to any of the different types of machines now generally in use is effected by means of an adjustable button R, carried by the screw S which engages the screw threads in the arm P, and is turned by the knurled head S′. In order to set the device permanently for any given machine, a lock nut T is provided to prevent the button R from being turned backwards accidentally in any way.

The operation of the device is as follows:

Supposing the weighted arm P to be in the lowered position shown in Figs. 2 and 4, swing the tone arm to the left so that the needle will be in the position at which it is desired to stop the engagement of the same with the record. The position of the needle at which it may be desired to stop the disk may be in or out. Having determined the position at which the record is to stop relatively to the needle, hold the tone arm in this position, indicated for instance in Fig. 2, then pull the bracket N to the right until the standard O engages the adjacent face of the tone arm. Now swing the tone arm out of the way and raise the weighted arm P to the position shown in Figs. 1 and 3. When it is desired to start the music, the tone arm is moved to the proper position so that the needle will engage the record, and, the turn-table being rotated, the tone arm under the control of the needle will be gradually moved towards the button R.

As this button is reached there will be a gentle contact, first, with the tone arm and then a still further movement of the tone arm to the left will move the weighted arm P so that its center of gravity will fall to the left of its pivot, and the weighted arm will swing down under gravity from the position shown in Fig. 3 to the position shown in Figs. 2 and 4. This will cause the brake pad *q* to bear against the surface *b* of the turn-table B, and this pad being pressed on by the leverage of the weighted arm will exert sufficient braking effect to soon bring the turn-table to a stop.

It will be noted that the weight P′ acts at a long leverage relative to the stop, and, therefore, a comparatively small weight may be used. This is desirable so as not to transmit unnecessary shocks to the machine.

After the turn-table has been stopped a new record may be applied and the operation may be repeated indefinitely.

If it is desired to stop the turn-table at any time before the automatic action takes effect, it will be sufficient merely to swing the weighted arm to the left by a touch of the finger. It will then drop under the hand control and will apply the brake as before.

Thus it will be seen that the device may be used to automatically stop the turn-table at any predetermined position of the needle relatively to the record, and it may also be caused to stop the turn-table by hand control at any relative position of the needle to the record, or when the needle is not on the record at all.

In the modifications shown in Figs. 6 and 7, the parts are generally similar to those hitherto described, and the operation of the device is precisely the same except that instead of a braking effect by horizontal pressure of the brake pad on the top of the turn-table, a wedging effect of the brake pad on the edge of the turn-table is secured. This result is accomplished by setting the wing Q at an incline instead of at a right angle to the arm P′, so that a wedging effect of the pad *q* on the periphery *b′* of the turn-table B is secured. This is shown especially in Figure 7, in which the brake is shown in the engaging position in full

lines and in the lifted or un-engaged position in dotted lines.

It will be seen that with either form of device when the brake is applied, more or less lateral pressure is transmitted to the braket, causing it to bind in its guides, and thus preventing any appreciable slipping back of the bracket. This binding action is important as it permits the use of a bracket that will slide freely in its guides, and yet which will not slip backwards when the brake is applied.

It will be obvious that various other modifications might be made in the herein described apparatus, and in the construction, combination and arrangement of parts which could be used without departing from the spirit of my invention; and I do not mean to limit the invention to such details except as particularly pointed out in the claims.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. A stop arrangement for use with disk record talking machines provided with a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm, means carried by said sliding bracket for supporting said arm in the raised position, and a stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

2. A stop arrangement for use with disk record talking machines provided with a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm, means carried by said sliding bracket for supporting said arm in the raised position, and a laterally projecting adjustable stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

3. A stop arrangement for use with disk record talking machines provided with a turn-table and a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm provided with a padded brake shoe, adapted to engage said turn-table exterior to the disk, means carried by said sliding bracket for supporting said arm in the raised position, and a stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

4. A stop arrangement for use with disk record talking machines provided with a turn-table and a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm provided with a padded brake shoe, adapted to engage said turn-table exterior to the disk, means carried by said sliding bracket for supporting said arm in the raised position, and a laterally projecting adjustable stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

5. A stop arrangement for use with disk record talking machines provided with a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm, a vertically disposed standard carried by said sliding bracket for supporting said arm in the raised position, and a stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

6. A stop arrangement for use with disk record talking machines provided with a swinging tone arm comprising a sliding bracket, a weighted arm pivoted thereto, a brake wing carried by said arm, a vertically disposed standard carried by said sliding bracket for supporting said arm in the raised position, and a laterally projecting adjustable stop carried by said arm adapted to be engaged by the movement of said tone arm as the tone arm reaches a predetermined position in its angular movement, substantially as described.

JOSEPH FRANKLIN BLAND.