

F. W. D'OLIER.
 AUTOMATIC STOP FOR PHONOGRAPHS.
 APPLICATION FILED JAN. 14, 1913.

1,135,166.

Patented Apr. 13, 1915.

FIG. 1.

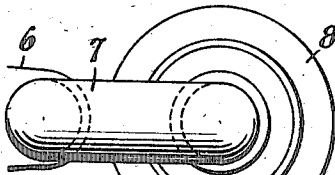
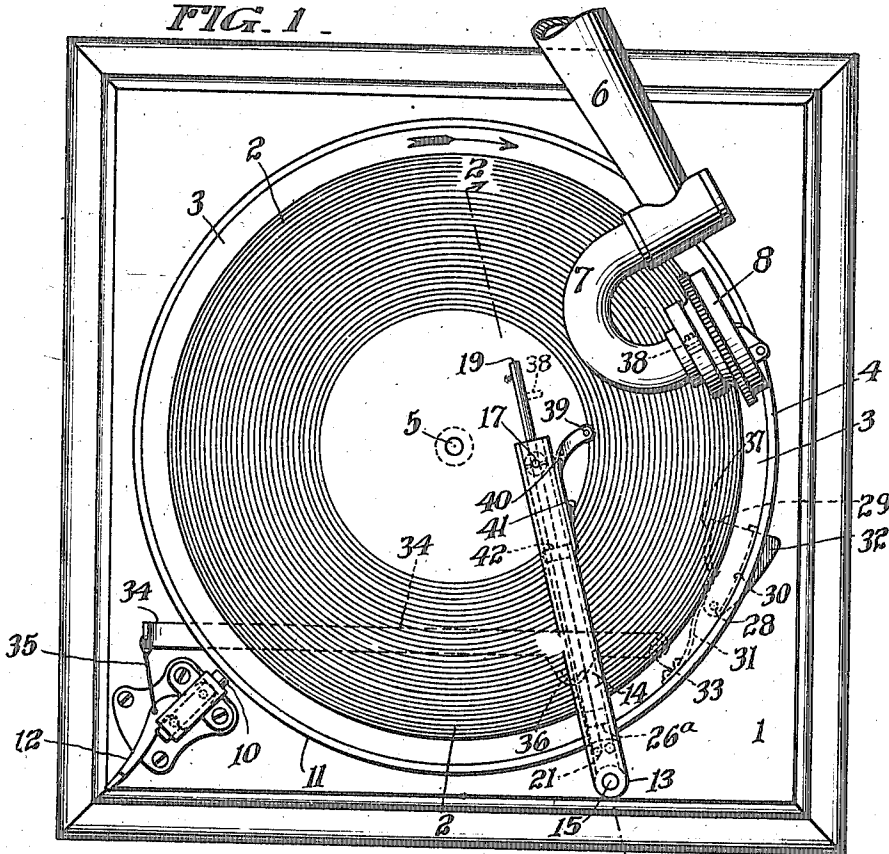
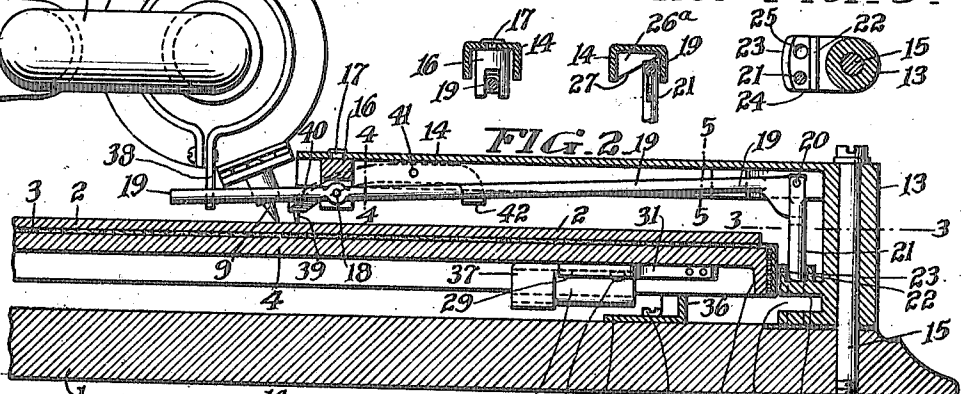


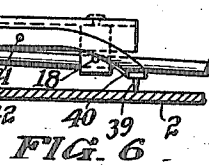
FIG. 4.

FIG. 5.

FIG. 3.



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AUTOMATIC STOP FOR PHONOGRAPHS.

1,135,166.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCIS W. D'OLIER, a citizen of the United States, residing in Moorestown, in the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in Automatic Stops for Phonographs, of which the following is a specification.

My invention relates to an automatic stop for a phonograph, graphophone, or other sound or voice reproducing apparatus.

It is the object of my invention to provide simple and effective mechanical means for automatically stopping the movement of a sound record after the record has been traversed, completely or otherwise, by the reproducing stylus or needle; and it is more particularly the object of my invention to provide apparatus for this purpose which dispenses altogether with any addition to or alteration of a sound record. To this end I have provided simple means for releasing or setting a brake which brings the record moving system to rest.

My invention resides in the features hereinafter described and pointed out in the claims.

For an illustration of one of the forms my invention may take reference is to be had to the accompanying drawing, in which:

Figure 1 is a top plan view of a sound reproducing machine having my invention applied thereto. Fig. 2 is a sectional view, some parts in elevation, taken on the line 2—2 of Fig. 1. Fig. 3 is a horizontal fragmentary sectional view, some parts in plan, taken on the line 3—3 of Fig. 2. Fig. 4 is a cross sectional view, some parts in elevation, taken on the line 4—4 of Fig. 2. Fig. 5 is a cross sectional view, parts in elevation, on the line 5—5 of Fig. 2. Fig. 6 is a fragmentary side elevational view of part of the setting or adjusting apparatus.

Referring to the drawing, 1 is a suitable base, such as the top of the usual box enclosing the motor for driving the sound record. The sound record 2, here shown by way of example, as being of the disk form, though it may be of any suitable form, rests upon the felt or other suitable material 3 which in turn is disposed upon the platen or turn table which is driven in the usual way by the shaft 5 of the driving motor.

The usual hollow sound transmitting arm 6, part of which has been omitted, is movable about a vertical axis on a bracket not

shown, secured to the motor box. Attached to the arm 6 is the hollow bend 7 communicating with the interior of the arm 6 and with the sound box 8 carried on the end of the member 7, the member 7 having pivotal movement about a horizontal axis upon the member 6, as is well understood in this art. The sound box 8 carries the usual reproducing needle or stylus 9 which engages the record 2 as the latter revolves. In moving from the circumference of the record 2 toward the center, in traversing the successive spirals in the record, the stylus 9 swings in an arc whose center is the pivotal axis of the arm 6.

On one corner of the base of top 1 is mounted the usual manual brake comprising the brake shoe 10 which is adapted to engage the peripheral or outer surface 11 of the platen 4 to bring the same to rest. The shoe 10 is released, as well understood in the art, by the clockwise movement of the hand lever 12, as viewed in Fig. 1 about its pivot, which movement releases the brake shoe to the control of a spring, which spring presses the shoe against the surface 11. And movement of the lever 12 in counter-clockwise direction withdraws the brake shoe and holds it withdrawn.

Secured to or integral with the post 13 is the arm 14 free of and across and above the sound record 2. The post 13 is secured to the base 1 by the bolt 15 which may be tightened to such degree as to produce sufficient friction between the post 13 and the base 1 to cause the arm 14, for the purpose of this invention, to remain in any position to which it may be shifted about the bolt 15 as a center. The arm 14 may be of any suitable shape, but it is here shown, by way of example, as of channel section. Near its outer end it carries a block 16 pivoted at 17 to the arm 14, so that the block 16 may move upon a vertical axis with respect to the arm 14. Within the block 16 there is pivoted at 18 the rod 19 movable about the horizontal axis formed by the pivot 18. At its inner end the rod 19 has a pivot 20 upon which is supported the pin 21. The lower end of the pin 21 is normally disposed between the ribs 22 and 23 carried by the lug 24 on the post 13, the lug 24 having a hole 25 through which the pin 21 is adapted to pass downwardly into the slot or space 26, such downward movement of the pin 21 accompanying a movement of the rod 19 upon its hori-

zontal pivot 18. As seen in Fig. 3, the pin 21 is normally out of alinement with the hole 25. The movement of the pin 21 into the hole 25 accompanies the pivotal movement of the block 16 about its vertical pivot 17.

At 26^a there is a web extending transversely to the channel 14, such web having an inclined edge 27, as indicated in Fig. 5.

Pivoted at 28 to the under side of the platen 4 is the member 29 having the downwardly extending cheek 30 adapted to engage the inner side of the flange 4^a of the platen 4, being held normally in such position by the spring 31 secured at its one end to the flange 4^a and engaging with its outer end the member 29. Extending under the lower edge of the flange 4^a is the lug 32 secured to or integral with the cheek 30, the lug 32 extending out beyond the periphery of the flange 4^a and as the platen 4 revolves passes through the space or slot 26.

Pivoted at 33 to the base 1 is the lever 34 whose outer end is connected by link or other connecting means 35 with the hand lever 12 of the brake releasing mechanism. At 36 the lever 34 has an upwardly extending flange which is adapted to be engaged, under circumstances hereinafter explained, by the flange 30 upon the member 29.

To the sound box 8 is secured a projection or lug 38 adapted to engage the outer end of the rod 19 as indicated by dotted lines in Fig. 1.

The operation is as follows: The sound record 2, which need be in no respect altered for service with this braking apparatus, is placed in position upon the platen 4 in the well known manner. When the motor has been started the stylus traverses the sound record causing the reproduction of sound in the well known way. When the selection has been completely reproduced, the lug 38 engages the rod 19 shifting it in counter-clockwise direction about its pivot 17, as viewed in Fig. 1, carrying the pin 21 from its normal position indicated in Figs. 1, 2, and 3 into alinement with the hole 25 whereupon the pin 21 drops into the space or slot 26, the rod 19 moving upon its horizontal pivot 18 during this dropping movement. The lug 32, which normally passed freely through the slot 26, now engages the pin 21 causing the flange 37 to move inwardly about its pivot 28 in opposition to spring 31, and while so held inwardly by the pin 21 the flange 37 engages the flange 36 upon the lever 34 causing a clockwise movement of the lever 34 about its pivot 33 as viewed in Fig. 1. This causes a pull to be transmitted to the lever 12 through the connection 35 with the result that the brake is tripped or released or set and the shoe 10 engages the platen 4 stopping the sound record moving system. When a new record has

been placed upon the platen the sound box may be moved manually over toward the center of the record until stylus 9 is in the last sound reproducing groove of the record. Then the arm 14 is swung upon its pivot 15 to bring the rod 19 near or against the lug 38. Then the stylus is returned to the start of the record. Then by pushing downwardly on the outer end of the rod 19 the pin 21 will be lifted out of the hole 25 and as the lower end of the pin 21 clears the upper surface of the lug 24 the rod 19 engages the inclined surface 27 of the web 26^a and the continued downward movement of the outer end of the rod 19 is accompanied by a lateral movement of the rod 19 about its pivot 17 carrying the pin 21 to one side of the hole 25 to its normal position as indicated in Figs. 1, 2, and 3. Then upon the traverse of the record by the stylus the brake is again applied as described.

If desired a pointer 39 may be provided upon the member 40 pivoted at 41 to the arm 14. Back of the pivot 41 the member 40 is provided with a lug 42 extending under the lower edge of the arm 14 and beneath the rod 19. The rear end of the member 40 back of the pivot 41 may be made heavier than the forward end carrying the needle 39 so that normally the needle or pointer 39 is raised from the record 2; of the arrangement may be such that the pointer 39 can in no case come into actual contact with the record 2.

This device may be used to position the arm 14 without manually moving the sound box 8 across the record for purposes of setting the arm 14. Thus, when a record has been put in position, the pointer 39 may be brought to the last sound record groove in the record and the forward end of member 40 depressed to bring the pointer 39 into such groove. This properly locates the arm 14. This depression of the member 40 will cause the lug 42 to lift the rod 19, which has dropped due to the braking of the previous record, lifting the pin 21 free of the hole 25 and causing the lateral shifting of the pin 21 to normal position by the action of the inclined edge 27 of web 26^a. Then releasing the member 40 pointer 39 will be raised free of the record, as above described. The pointer 39 is so positioned with respect to the arm 14 that the lug 38 will have sufficiently actuated the rod 19 to apply the brake when the stylus 9 has just finished traversing the sound record. In the arrangement illustrated this positioning of the arm 14 is accomplished with more or less accuracy. But the accuracy will be still greater if the pivot 15 of the arm 14 were on the other side of the sound record, that is, near the top of Fig. 1, for then the arm 14 and the arm 6 would be more nearly concentrically pivoted. In such case the mem-

ber 40 would be pivoted on the other edge, that is, the left hand edge, Fig. 1, of member 14.

What I claim is:

- 5 1. The combination with a rotating member, of an arm having an inclined surface, a rod having pivotal movement in different directions with respect to said arm, a member movable over said rotating member and adapted to actuate said rod, said rod when actuated being deflected by said surface, a brake for said rotating member, and brake controlling means carried by said rod.
- 10 2. The combination with a rotating member, of a brake therefor, a brake controlling member, means carried by said rotating member for actuating said brake controlling member, a member having a hole, a rod, a pin carried by said rod and adapted to enter said hole to come into the path of said means, and means movable over said rotating member for actuating said rod.
- 15 3. The combination with a rotating member, of a brake therefor, a brake controlling member, means carried by said rotating member for actuating said brake controlling member, a member having a hole, a rod, a pin carried by said rod and adapted to enter said hole to come into the path of said means, means movable over said rotating member for actuating said rod, and means to which said rod is pivoted adjustable with respect to said rotating member.
- 20 4. The combination with a rotating member, of a brake setting lever, of a second member movable with said rotating member and adapted to actuate said lever, an arm extending in proximity to said rotat-

ing member, a rod pivoted thereon, and a member controlled by said rod and brought into the path of travel of said second member.

- 5 5. The combination with a rotating member, of an arm adjustable with respect to and extending in proximity to said rotating member, a rod pivoted to said arm for movement parallel with the face of said rotating member and to and away from the face of said rotating member, and brake setting means actuated by said rod.

- 6 6. The combination with a rotating member, of a brake setting lever, of a second member movable with said rotating member and adapted to actuate said lever, an arm extending in proximity to said rotating member, a rod pivoted thereon, a member controlled by said rod and brought into the path of travel of said second member, and means movable across the face of said rotatable member adapted to actuate said rod.

- 7 7. The combination with a rotating member, a brake controlling member rotatable with said rotating member, a pivoted rod disposed in proximity to the face of said rotatable member, means adapted to move across the face of said rotating member and actuate said rod, and means carried by said rod and brought into the path of travel of said brake controlling member when said rod is actuated.

In testimony whereof I have hereunto affixed my signature in the presence of the two subscribing witnesses.

FRANCIS W. D'OLIER.

Witnesses:

NELLIE B. EVANS,
ELEANOR T. McCALL.