

J. HINES.
 AUTOMATIC STOPPING DEVICE FOR TALKING MACHINES.
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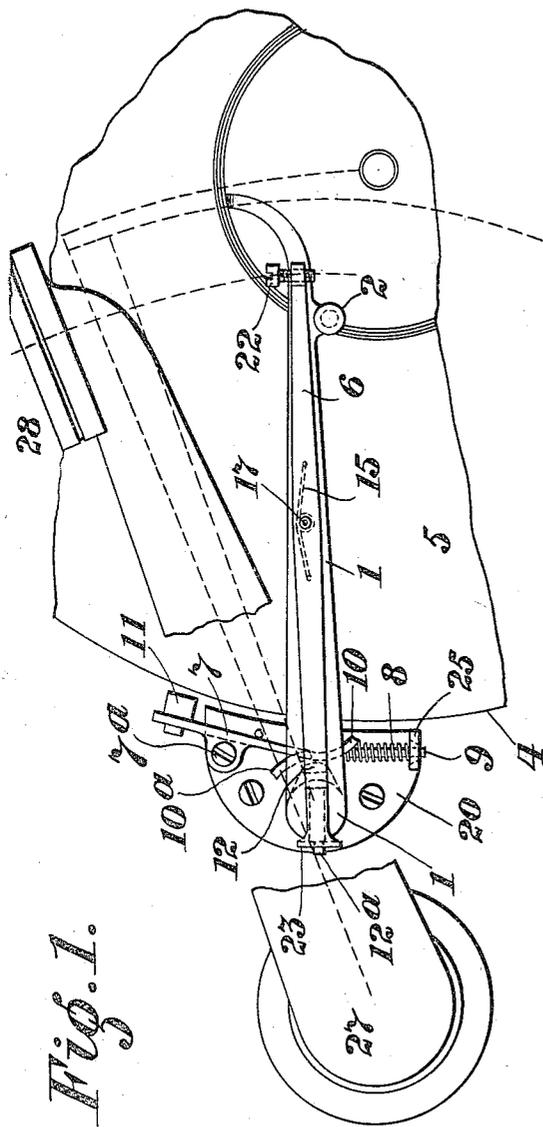


Fig. 1.

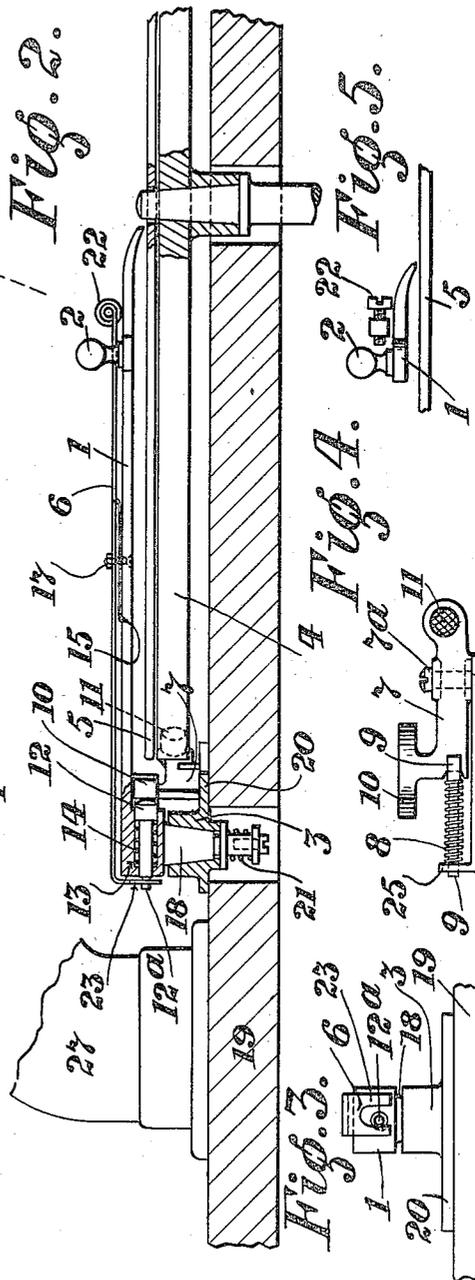


Fig. 2.

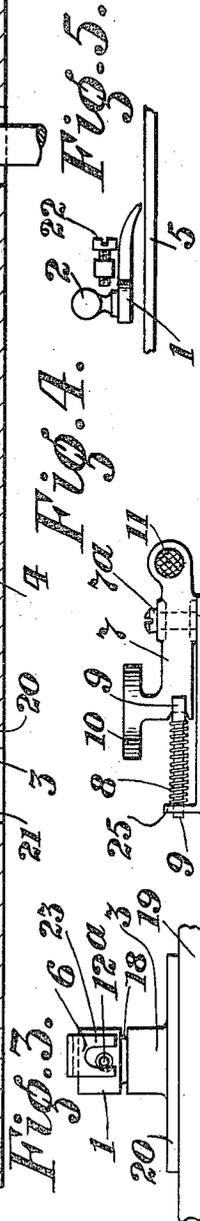


Fig. 3.

Fig. 4.

Fig. 5.

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AUTOMATIC STOPPING DEVICE FOR TALKING-MACHINES.

1,243,174.

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To all whom it may concern:

Be it known that I, JAMES HINES, a subject of the King of Great Britain, residing at Kelvinside, Glasgow, Scotland, have invented certain new and useful Improved Automatic Stopping Devices for Talking-Machines, of which the following is a specification.

The subject of this invention is an improved automatic stopping device for talking machines adapted to be set manually into position to permit rotation of the turntable when a record is to be reproduced and to be actuated automatically to arrest the rotation of the turntable when the reproduction is completed, say, when the stylus has entered the innermost convolution of the spiral groove in the record disk.

The improved device comprises a brake which normally tends to move to the applied position in contact with the turntable but, which, so long as the record is being played, is held out of action by a restraining device held by a latch member mounted on an arm which can be moved, by hand over the record from a non-active position tangential to the machine turntable into the active position which is substantially radial of the turntable. When the arm is in the active position it is adjusted so that its end will be over the last convolution of the record groove or such other part of the groove as it is desired the playing should stop. As the stylus moves along the record groove, the tone arm moves with it until the point is reached where it is desired the playing should cease when the sound box or other part on or connected with the tone arm contacts with the latch member and causes it to free the restraining device which thereupon moves out of action and allows the brake to immediately act and stop the turntable.

After the brake has acted, by again turning the arm toward the tangential position, the restraining device can be again put into action so as, on again turning the arm to the radial position, to overcome the brake and hold it out of action, thereby enabling the machine to re-start.

The brake has, preferably, a toggle joint with spring actuation and the latch member has, as well as the restraining device, a spring action.

The invention is illustrated by way of example in the accompanying drawings in which Figure 1 is a plan, Fig. 2 a part ele-

vation part vertical section showing the improved starting and stopping device in operative relation to the turntable; Figs. 3, 4 and 5 show details.

Referring to the drawings:—

The movable arm 1 has a tapered pivot pin 18 working, with friction tightness, in a socket 3 forming part of a plate 20 which is secured to the top of the box or case 19 of the machine at a place beyond but yet adjacent to the periphery of the turntable 4. The pivot pin is retained tightly in its socket by a spring 21. The arm, when inoperative, is disposed to one side of the turntable but when it is desired to bring it into the operative position it is turned, by hand, by means of the finger knob 2, to a position (see Fig. 1) which is approximately radial of the turntable and so that it overhangs the record disk 5, see Fig. 2. On the top of the arm is a latch member 6 which has an adjustable stop 22 at its one end and a jaw 23 at its other end and is pivoted on a pin 17 and is capable of being retracted, after movement, by a spring 15. 7 is one member of the brake and is pivoted at 7^a its one arm carrying a rubber or other suitable brake shoe 11 and its other arm, a cam piece 10 of undulatory form as shown at Figs. 1 and 4. The member 7 is engaged by a fork at the one end of a pin 9 whose other end passes freely through a hole in a bracket 25, this pin 9 being not only retained in engagement with the member 7 by a spring 8 but also acted on by the spring in such manner as to normally urge the brake shoe 11 into operative position. In the socket 13 of the arm 1 is a restraining pin 12 having a spring 14 weaker than spring 8 which normally tends to force it outward as at Fig. 2 in which position it is retained by the jaw 23 of the latch member 6 engaging its reduced outer end 12^a. The spring 8 is strong enough to overcome the spring 14 whenever the pin 12 is released from the jaw 23 but so long as the pin is retained by the jaw and the arm 1 is in the radial position the pin 12 acts on the toggle joint formed by member 7 and pin 9 and retains the brake out of action as at Fig. 1. When the arm 1 is in the inoperative position it is preferably arranged to lie substantially tangential to the periphery of the table 4 with the pin 12 forced outward and held by the jaw 23, and, when the arm is to be put into the operative position, it is turned through an arc of 90° or more, as de-

sired, and during this turning movement the pin 12 contacts with the cam piece 10 and forces it outward, against the action of spring 8, so as to move the brake out of the operative position. When the pointed end of the arm has been carefully adjusted so as to be over, say, the last convolution of the spiral groove of the record, the device is set. Immediately the record is finished the sound box 28 on the tone arm 27 strikes against the stop 22, moves the latch member 6 to disengage the pin 12 which is immediately retracted whereupon the spring 8 forces the brake shoe 11 into contact with the turntable 4 and stops the machine. The frictional grip of the pivot pin 18 is sufficiently great to retain the arm 1 in position while the latch 6 is being pushed aside (against the action of the spring 15) by the sound box.

The record having been played it can be removed and a new record inserted and, thereafter, the arm 1 be turned to or toward its tangential position to free the pin 12 from the cam 10 and allow it to again project under the action of spring 14 whereupon the arm is again returned to the radial position for adjustment to the new record, the action of the trigger during this return movement taking off the brake shoe and permitting the machine to re-start.

It will be seen that as the free end of the latch member occupies, at the moment the latch member is tripped, a position adjacent to the center of the turntable and is acted on by the sound box or a tripping member thereon at a point remote from the pivot of the tone arm, the latch member constitutes a very sensitive interponent of a stop motion mechanism.

While I have described a preferred construction capable of being conveniently fitted to existing talking machines, it will be evident that the invention is not limited to the particular form described and that the details of construction may be widely varied without departure from the scope of the invention as defined by the appended claims.

Having now fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. An automatic stopping device for talking machines comprising, in combination, an automatic spring actuated brake, means for restraining the action of the brake, a swinging arm pivotally and frictionally mounted by a pin and socket joint, means for retaining the pivot in the socket, a latch member on the arm adapted to remove the restraint from the brake on being struck by the sound box of the tone arm of the machine and a retracting spring for the latch member.

2. An automatic stopping device for talking machines comprising, in combination, an

automatic brake consisting of a pivoted member, a toggle pin embracing the end of said member and a spring tending to apply the brake, means for restraining the action of the brake, a movable arm, means on the arm adapted to remove the restraint from the brake and allow it to act, and means for actuating said last mentioned means.

3. An automatic stopping device for talking machines comprising, in combination, an automatic brake consisting of a pivoted member with cam piece, a toggle pin embracing the end of said member and a spring tending to apply the brake, means adapted to act on the cam piece for restraining the action of the brake, a movable arm, means on the arm adapted to remove the restraint from the brake and allow it to act, and means for actuating said last mentioned means.

4. An automatic stopping device for talking machines of the disk-record type comprising, in combination, an automatic brake, a pivotal arm capable of being moved over the record, by hand, to the stopping position, a spring pin therein capable of holding the brake out of action, retaining means on the arm for said pin and means for actuating said retaining means so as to free the pin and permit the brake to act.

5. An automatic stopping device for talking machines comprising, in combination, an automatic brake, a movable arm, which is adjustable by hand and has a frictional joint, a spring pin therein capable of holding the brake out of action, a latch member on the arm for retaining said spring pin, and means for actuating said retaining means so as to free the pin and permit the brake to act.

6. An automatic stopping device for talking machines comprising, in combination, an automatic brake, a hand operated arm pivoted on the machine case, and frictionally held in adjusted position, a spring pin in said arm and capable of holding the brake out of action, means on the arm for retaining said pin in position, said means being capable of movement by a part on the tone arm of the machine to free the said pin.

7. An automatic stopping device for talking machines comprising, in combination, an automatic brake, an arm pivoted on the machine case, a spring pin in said arm and capable of holding the brake out of action, means on the arm for retaining said pin in position, said means being capable of actuation by a part on the tone arm of the machine in one direction and by a spring in the other direction.

8. An automatic stopping device for talking machines comprising, in combination, an automatic brake consisting of a pivoted member, a toggle pin embracing the end of said member and a spring tending to apply the brake

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a movable arm, a spring pin therein capable of holding the brake out of action, retaining means on the arm for said pin and means for actuating said retaining means so as to free the pin and permit the brake to act.

9. An automatic stopping device for talking machines comprising, in combination, an automatic brake, a movable arm, a spring pin therein capable of holding the brake out of action, a pivoted and spring retracted latch member on the arm for retaining said spring pin and means for actuating said retaining means so as to free the pin and permit the brake to act.

10. An automatic stopping device for talking machines comprising, in combination, an automatic brake, a movable arm, a spring pin therein capable of holding the brake out of action, a pivoted and spring retracted latch member on the arm having a jaw at its end for engaging and retaining said spring pin and means for actuating said retaining means so as to free the pin and permit the brake to act.

11. An automatic stopping device for talking machines of the disk-record type, comprising, in combination, an automatic spring actuated brake, means for restraining the action of the brake, an arm which

can be moved by hand over the record to a stopping position, a socket on the machine case, a pivot on said arm which frictionally engages in said socket, means for retaining the pivot in the socket, means on the arm adapted to remove the restraint from the brake and allow it to act and means for actuating said last mentioned means.

12. An automatic stopping device for talking machines of the disk-record type, comprising, in combination, an automatic spring actuated brake, means for restraining the action of the brake, an arm which is movable by hand, over the record and has a pivot pin at its one end, a socket on the machine case in which said pivot pin works, a spring tending to hold the pivot pin in the socket, a latch member on the arm adapted to remove the restraint from the brake and allow it to act, a spring acting on said latch member to retract the same after movement and means for actuating the said latch member.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES HINES.

Witnesses:

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