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REPEATING DEVICE FOR SOUND REPRODUCING MACHINES.

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Fig. 1.

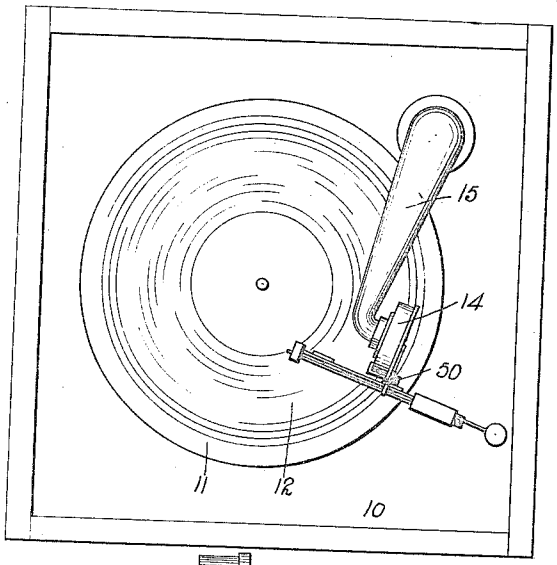


Fig. 2.

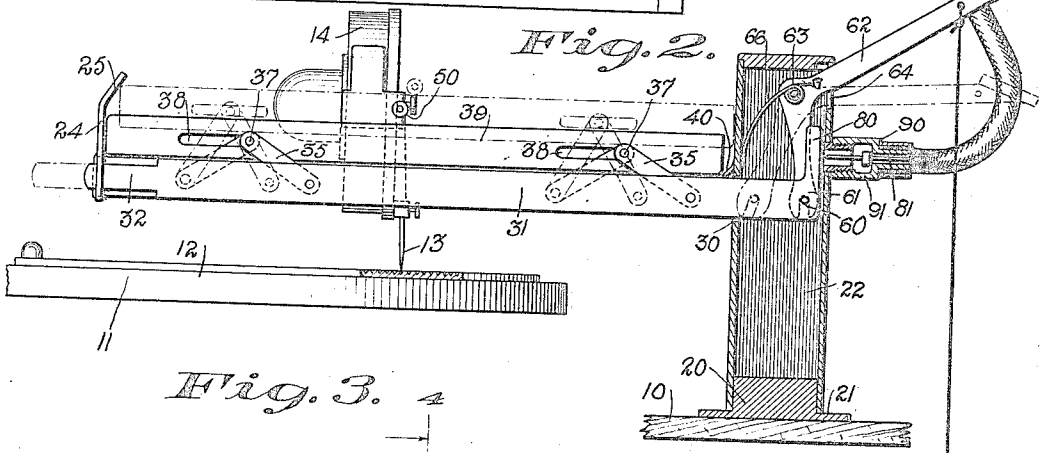


Fig. 3.

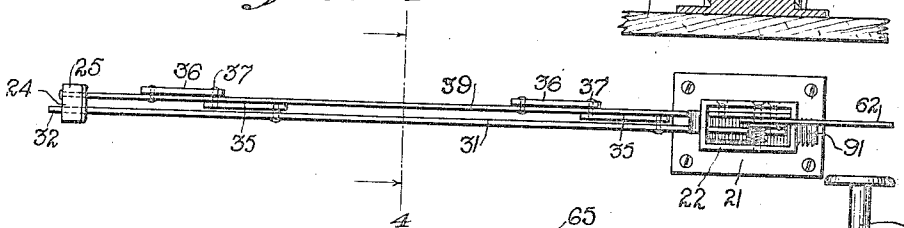
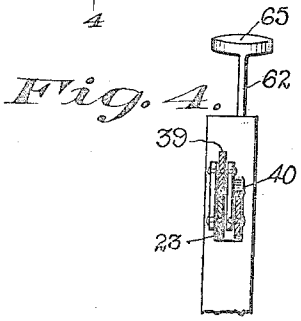
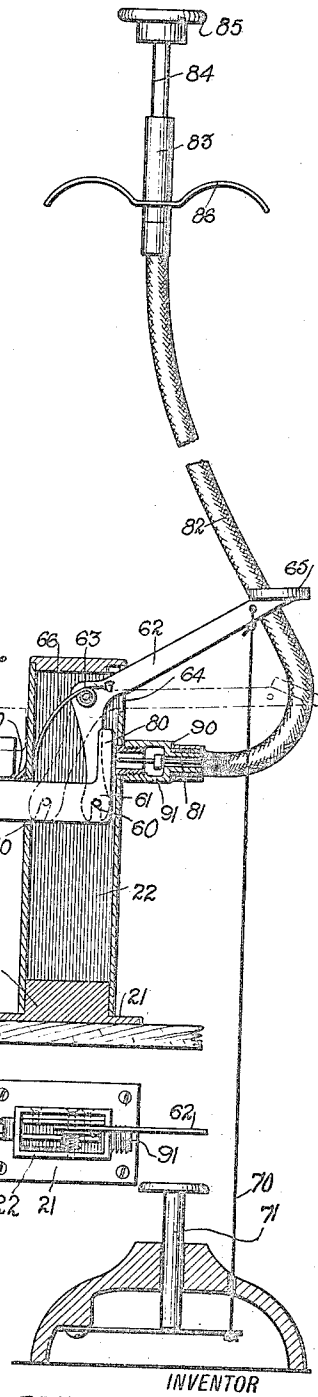


Fig. 4.





WITNESSES

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REPEATING DEVICE FOR SOUND-REPRODUCING MACHINES.

1,343,087. Specification of Letters Patent. Patented June 8, 1920.

Application filed June 5, 1919. Serial No. 301,873.

To all whom it may concern:

Be it known that I, EDWARD PEREMI, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Repeating Device for Sound-Reproducing Machines, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved repeating device for phonographs and other sound reproducing machines and more especially designed for use in connection with disk or cylinder records containing foreign language matter to be reproduced with a view to enable a listener to acquire the language. Another object is to permit the user to cause the machine to repeat any particular word or words or a sentence or any small portion of the record whenever it is desired to do so, thereby enabling a person to quickly and accurately gain the desired knowledge. Another object is to permit the user to readily actuate the repeating device either by hand or by foot. Another object is to allow of conveniently attaching the repeating device to a phonograph or other reproducing machine without requiring any alteration in the construction of the machine.

With these and other objects in view, the invention consists of certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a reduced plan view of the repeating device as applied to a phonograph using disk records;

Fig. 2 is a side elevation of the same with parts shown in section;

Fig. 3 is a plan view of the repeating device with the cover of the hollow post removed; and

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

The phonograph or other sound reproducing machine on which the repeating device is used is mounted on a suitably constructed frame or casing 10, and the machine is provided with the usual revolving platform 11 adapted to support a disk record 12, the sound grooves of which are adapted to be engaged by a stylus 13 attached to or forming part of a sound box 14 mounted to turn on the usual tone arm 15. On the top of the casing 10 adjacent one side of the support 11 is secured a block or pin 20 having a flange 21 attached to the frame by screws or other fastening means. On the block 20 fits the lower end of a hollow post 22 provided on one side with an arm 23 extending across the sound grooves of the record 12, and the outer end of this arm 23 is provided with an upwardly extending bracket 24 terminating in a cam 25. In the side of the post 22 adjacent the arm 23 is formed a bearing 30 in which is mounted to slide an arm 31 extending parallel to the arm 23 and having its outer end 32 somewhat reduced and slidingly engaging the bracket 24. The arms 23 and 31 are pivotally connected by pairs of links 35, 36 with pivots 37 extending through slots 38 formed lengthwise in a lifting bar 39 disposed above the fixed arm 23. The outer end of the lifting bar 39 is adapted to engage the cam 25 to move the lifting bar from the left to the right after encircling the same, and the inner end of the lifting bar 39 is adapted to engage a cam 40 formed on the post 22 directly above the arm 23 to cause the lifting bar 39 to move from the right to the left on lowering the lifting bar.

On the upper edge of the lifting bar 39 is adapted to rest a lifting member 50, preferably in the form of a pin detachably secured to the peripheral face of the sound box 14, it being understood that when the stylus 13 is in engagement with a sound groove then the lifting member 50 is slightly above the upper edge of the lifting bar 39. By the arrangement described, the stylus 13 is free to engage the sound groove to reproduce the sounds in the usual manner, but when at any time during the reproducing of the sounds it is desired to repeat a word or a number of words or a sentence then it is only necessary for the operator to move the arm 31 from the right to the left thus causing the lifting bar 39 to rise owing to the connection of the links 35 with the pivots 37. During the rising of the lifting bar 39 the lifting member 50 is carried along whereby the sound box 14 is bodily lifted and the stylus 13 moved out of engagement with the sound groove. During this upward movement of the lifting bar 39, its

left hand end comes in contact with the cam 25 whereby the lifting bar 39 is shifted to the right thus carrying the lifting member 50 and the sound box 14 along, and when the operator releases the arm 31 the lifting bar 39 moves straight downward thus re-engaging the stylus 13 with the sound groove, and when the lifting bar 39 nears its lowermost position, its right hand end moves in contact with the cam 40 whereby the bar 39 is shifted from the right to the left to normal position, as shown in Fig. 2. It is understood that the links 36 cause the pivots 37 to rise on moving the arm 31 from the right to the left at the time the left hand end of the lifting bar 39 is in engagement with the bracket 24, but the pivots 37 allow the lifting bar 39 to slide from the left to the right on the lifting bar engaging the cam 25. During the rising movement of the lifting bar 39 the pivots 37 move from the right to the left in the slots 38, and during the lowering of the lifting bar 39 the pivots 37 travel in the slots 38 from the left to the right and consequently the right-hand end of the lifting bar 39 remains in contact with the side of the post 22 until it moves downward on the cam 40, which latter shifts the lifting bar 39 to the normal position shown in Fig. 2.

The slidable arm 31 may be shifted sidewise by any suitable means under the control of the operator. As shown in the drawing, the right-hand end of the arm 31 extends into the post 22 and this end is provided with a pin 60 engaged by a fork 61 on one end of a bell crank lever 62 fulcrumed at 63 in the upper end of the post 22. The lever 62 extends through a slot 64 formed in the outer side of the post 22, and the outer end of the lever 62 is provided with a finger-piece 65 adapted to be alternately pressed and released by the operator for actuating the arm 31. A spring 66 is attached to the lever 62 and bears against the post 22 to normally hold the slidable arm 31 in its normal position to the right and to hold the lever 62 in the position shown in Fig. 2 with the fingerpiece 65 uppermost. On pressing the fingerpiece 65 the lever 62 imparts a sliding movement to the arm 31 from the right to the left for raising the lifting bar 39, and when the fingerpiece 65 is released the spring 66 returns the lever 62 and the slidable arm 31 to normal position. The outer end of the lever 62 is connected by a wire or other connection 70 with a pedal 71, under the control of the operator's foot, for actuating the lever 62, the same as above described relative to the fingerpiece 65.

If desired, the slidable arm 31 can be actuated from a distance, and for this purpose the following arrangement is made: The right-hand end of the slidable arm 31 is provided with an angular lug 80 adapted to be engaged by one end of a flexible shaft 81 extending through a sheathing 82 provided on its outer end with a bearing 83 in which is mounted to slide a plunger 84 attached to the end of the flexible shaft 81. The plunger 84 is provided with a thumbpiece 85, and a fingerpiece 86 is attached to the bearing 83 to permit of readily actuating the plunger 84, which latter is pressed on by a spring (not shown) mounted in the bearing 83 to normally hold the plunger 84 in outermost position. The sheathing 82 is provided with a coupling 90 screwing onto a nipple 91 held on the outer side of the post 22, and through this nipple projects the inner end of the flexible shaft 81 to engage the lug 80 to actuate the sliding arm 31 whenever the fingerpiece 85 is alternately pressed and released.

From the foregoing it will be seen that the repeating device can be readily applied to sound reproducing machines as now generally constructed and without requiring any alteration in the machine. It will also be noticed that on actuating the arm 31, the stylus 13 is lifted out of the sound groove of the disk record 12 and moved outward and reëngaged with the sound groove at a point nearer the beginning, thus repeating a word or a number of words or a sentence.

By causing the lifting bar 39 to move upward, outward, downward and inward as described, the stylus is gently lifted out of the sound groove and reëngaged with the same without danger of injuring the sound groove or the point of the stylus.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A repeating device for sound reproducing machines having a sound box provided with a stylus adapted to engage a sound groove in a record, comprising a lifting means attached to the said sound box, a movable lifting bar engaged by the said lifting means and extending across the sound grooves of a record in position on the sound reproducing machine, and means imparting successively upward, outward, downward and inward movements to the said lifting bar to raise the sound box and thereby lifting the stylus out of engagement with the record grooves, then carrying the sound box bodily outward and then lowering it to reëngage the stylus of the sound box with the sound groove in the record.

2. A repeating device for sound reproducing machines having a swinging sound box provided with a stylus adapted to engage the sound groove in a record in playing position at the time, comprising a post attached to the casing of the machine and provided with a cam and with an arm attached to the post and extending across the sound

groove of the record, a cam on the outer end of the said fixed arm, a lifting bar adapted to engage the said cams and adapted to engage the sound box, a slidable arm mounted to slide on the post and the said fixed arm, links connecting the said lifting bar with the said fixed arm and the said slidable arm, and means controlled by an operator and connected with the said slidable arm to actuate the latter.

3. In a sound reproducing machine, a sound box having a stylus and a lifting member, a revoluble record support adapted to support a record, a lifting bar extending across the sound groove of the record and adapted to engage the said lifting member, and means under the control of an operator and connected with the said lifting bar to raise the latter and to move it outward, and then lower the lifting bar and move it inward, the said means maintaining the said lifting bar in parallelism during the said movements.

4. In a sound reproducing machine, a sound box having a stylus and a lifting member, a revoluble record support adapted to support a record, a lifting bar extending across the sound groove of the record and adapted to engage the said lifting member, a post having a fixed arm and a slidable arm, links connecting the said arms with the said lifting bar, means under the control of an operator for imparting sliding movement to the said slidable arm, and fixed cams adapted to be engaged by the ends of the said lifting bar.

5. In a sound reproducing machine, a sound box having a stylus and a lifting member, a revoluble record support adapted to support a record, a lifting bar extending across the sound groove of the record and adapted to engage the said lifting member, a post having a fixed arm and a slidable arm, links connecting the said arms with the said lifting bar, a spring-pressed lever mounted on the said post and pivotally connected with the said slidable arm, and fixed cams on the post and the fixed arm and adapted to be engaged by the ends of the said lifting bar.

6. In a sound reproducing machine, a sound box having a stylus and a lifting member, a revoluble record support adapted to support a record, a lifting bar extending across the sound groove of the record and adapted to engage the said lifting member, the said lifting bar having slots, a post having a fixed arm and a slidable arm, pivots engaging the said slots, links connecting the said pivots with the said arms, means under the control of an operator and connected with the said slidable arm to actuate the latter, and fixed cams adapted to be engaged by the ends of the said lifting bar.

EDWARD PEREMI.