Oct. 26, 1937. A. HILL 2,097,323

RECORD RECEIVING AND REVERSING TRAY FOR AUTOMATIC PHONOGRAPHS

Filed May 7, 1936

Fig. 1.

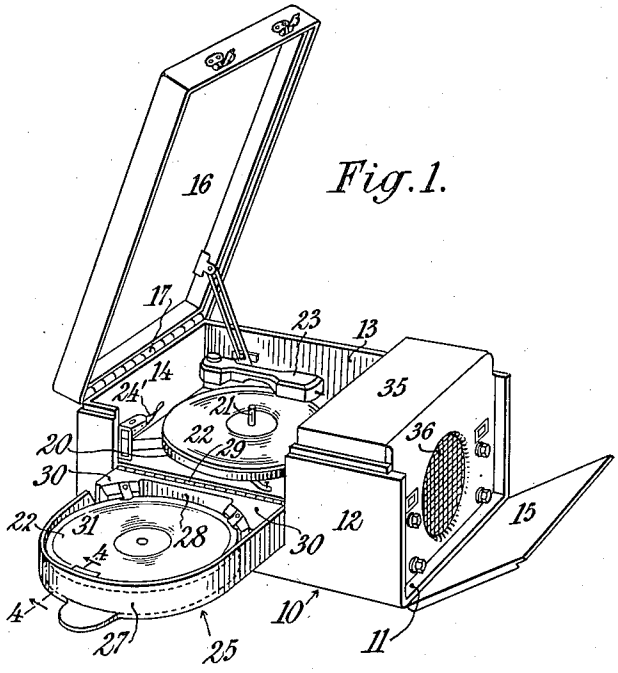


Fig. 4.

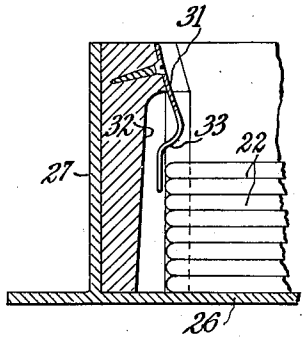


Fig. 5.

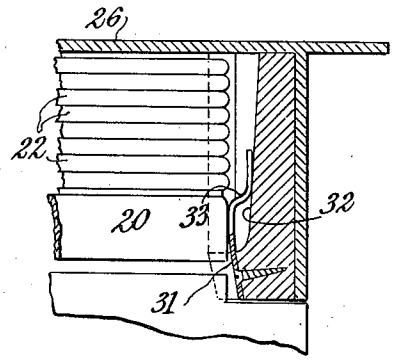


Fig. 2.

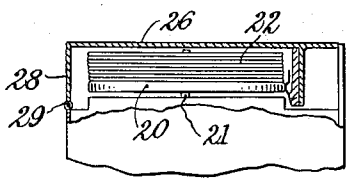
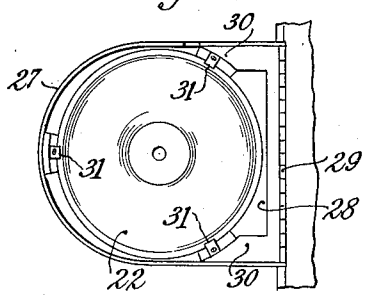


Fig. 3.



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RECORD RECEIVING AND REVERSING TRAY FOR AUTOMATIC PHONOGRAPHS

Arthur Hill, New York, N. Y.

Application May 7, 1936, Serial No. 78,380

8 Claims. (Cl. 274—10)

My present invention relates to automatic phonographs, e. g. those capable of playing a plurality of records in succession. More particularly it constitutes an improvement over the record receiving tray and guard disclosed in my prior Patent No. 2,022,543, dated November 26, 1935.

In my above designated patent I have shown and described a record receiving tray forming part of a cabinet of a portable automatic phonograph, said tray in one position being adapted to extend laterally of the cabinet and receive the records from the turntable as they are discharged by the automatic mechanism, and in another position being adapted to extend over the turntable and act as a guard for the records on the turntable when the instrument is carried about.

According to the present invention, the record receiving tray is made to serve additional and novel functions, namely, that of facilitating the replacing onto the turntable of a group of records which had just been played, in the course of which replacing operation the group of records is automatically turned so as to present the opposite faces of the records in position to be played. I accomplish these novel results by fitting within the record receiving tray, which is preferably hingedly connected to the cabinet housing the turntable, means for holding the records in the tray against accidental dropping out therefrom as the tray is turned bottom-side up, said record holding means being adapted to be released to deposit the records on the turntable when said records have been brought into superposed engaging relation with the turntable or to a previously deposited record on the turntable. Preferably the means which I propose to use to accomplish the desired objects of my invention are a plurality of spring clips so disposed in the tray and of such form as to act as latches to hold the records in the tray when said tray is turned bottom-side up, which latches will be disengaged upon being brought into contact with the turntable as the records from the tray are deposited on said turntable. The invention will be more fully understood by reference to the detailed description which follows when considered in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a portable automatic phonograph embodying my invention, the parts thereof being shown in operative relation.

Fig. 2 is a sectional view through the turntable and the record receiving tray when in position over the turntable.

Fig. 3 is a top plan view of the record receiving tray shown in Fig. 1.

Fig. 4 is an enlarged fractional sectional view taken substantially along the plane of the line 4—4 of Fig. 1.

Fig. 5 is an enlarged fractional sectional view of the right hand portion of Fig. 2.

Referring to the several figures of the drawing wherein the same reference characters are employed to designate the corresponding parts, the numeral 10 designates a portable substantially rectangular cabinet comprising a body portion consisting of a bottom 11, side walls 12 and 13, end walls 14 and 15 and a lid 16 hingedly connected to the end wall 14 by a piano hinge or the like 17. The side walls 12 and 13 and the end wall 15 have their top edges rabbeted to form upstanding ribs or flanges which are adapted to seat within the rabbeted free edges of the depending walls of the lid 16.

Within the body of the cabinet there is mounted an automatic phonograph of any approved design comprising a turntable 20 disposed below the top edges of the body portion of the cabinet having a central pin 21 adapted to accommodate a plurality of disc sound records 22 in superposed relation, a tone arm 23 and automatic mechanism comprising a pivoted arm 24 adapted to successively remove each record from the turntable after it has been played. The specific construction of the automatic phonograph does not constitute a part of the present invention, but is of the type that comprises an electric motor and operative record discharge mechanism (not shown) which will remove each record in succession after being played by raising the record to clear the top of the pin 21 and giving to it a motion of translation which will discharge it laterally from the turntable. Such automatic phonograph mechanism is shown and described in the patent to Mitchell, et al., No. 1,936,335, November 21, 1933.

To receive the records 22 when discharged by the automatic mechanism, I provide a record receiving tray 25 which has a flat bottom 26 herein shown of somewhat greater than semi-circular form and an upstanding surrounding wall consisting of a substantially semi-circular portion 27 and a flat portion 28. The flat portion 28 of the wall preferably constitutes a part or a section of the side wall 12 and is hinged to the main section of said side wall by a piano hinge or the like 29 along a line which is parallel to and preferably below the plane of the turntable 20. The record receiving tray 25 may have its up-

standing wall portions at their juncture reinforced by triangular reinforcing pieces 30. The tray 25 when in record receiving position e. g. in the position shown in Fig. 1 with the tray extending laterally from the side wall 12 is braced in its horizontal laterally extending relation to the cabinet by engagement of the wall 28 with the outer face of the side wall 12. The tray 25 is of such dimensions with respect to both area and depth as will adapt it to extend over the group of records 22 on the turntable and extend down into encircling relation to the turntable, when the hingedly connected side wall section by which said tray is carried is in its normal side wall relation as best shown in Fig. 2.

The tray 25 as herein shown is also provided with means for confining a group of records therein in superposed relation and for normally retaining said records in such relation as the tray is being brought into its bottom-side up relation or in a position to extend over the turntable. To accomplish this I mount within the tray a plurality of spring clips 31 herein shown as disposed about a circle of approximately the diameter of the records to be held by the tray, which in practice will be approximately the diameter of the turntable. As herein shown three such clips 31 are disposed at points approximately 120° apart, two of said clips being mounted on the triangular reinforcing blocks 30 and the third upon the inner face of the circular wall 27 at a point about midway between the blocks 30. The clips 31 normally extend downwardly and inwardly of said circle about which they are disposed and are adapted to be pressed radially outwardly by the weight of the records as they are received upon said clips in the tray upon their discharge from the turntable. The spring clips 31 are best illustrated in Figs. 4 and 5 and to permit of their free flexing the supports to the rear of said springs are longitudinally recessed as indicated at 32. Preferably the spring clips intermediate their ends are formed with a shoulder 33 which serves as a stop to prevent the records from falling out of the tray when said tray is turned bottom-side up. The point in the springs at which the shoulders 33 are located are spaced from the bottom of the tray 26, a distance equal to the thickness of the maximum number of records which the tray or the turntable are adapted to support in superposed relation. The center of the circle about which the spring clips 31 are disposed is adapted to coincide with the center of the pin 21 on the turntable when the tray is turned on its hinge 29 to bring the tray into overlying relation to the turntable so that the records from the tray may engage over said pin.

In view of the shoulders 33 on the spring clips 31 it will be apparent that as the tray 25 with a plurality of records therein is turned on its hinge, the records will be restrained from dropping out and the central openings in the records will be brought into coincidence with the pin 21 and engage thereover as the tray is brought into its position overlying the turntable. As the tray approaches its final position the spring clips 31 will engage the edge of the turntable 20 and will be pressed radially outwardly into the recesses 32 in the spring supports to move the shoulders 33 out of record confining position, thereby releasing the records onto the turntable.

It will thus be seen that a group of records within the tray are movable as a unit to bodily transfer them onto the turntable by merely moving the tray about its hinge from its record receiving position into its turntable overlying position. In the course of this transfer it will also be obvious that the records are reversed or turned so that the sides of the records which had been last played are now mounted on the turntable facing downwardly thereby presenting the opposite sides of the records for successive playing operation.

In the accompanying drawing I have shown the portable cabinet 10 as housing in addition to the automatic phonograph mechanism a radio receiving set 35 having a loud speaker opening 36. Where such radio set is coupled with the phonograph it is desirable that the electro-magnetic unit of the radio receiving set and the electronic means thereof (both not shown) be utilized in the reproduction of sounds from the phonograph records, hence the tone arm of the phonograph may be connected up with the aforementioned means in any well known manner.

When the lid 16 is closed down over the top edges of the wall 15 and the side walls 12 and 13 it serves to hold the end wall in closed relation to the cabinet and to hold the record receiving tray 25 in its record confining relation over the turntable. The cabinet may take on the appearance of a travelling case by providing it with a handle (not shown) which preferably will be mounted on the outside of the side wall 13.

In the operation of the automatic phonograph the lid 16 is first raised and a connecting cord (not shown) for supplying electric current for the phonograph motor is plugged into an electric socket or outlet. The receiving tray 25 is brought into record receiving position by being turned outwardly on its hinge 29, a plurality of records mounted on the turntable 20 and the phonograph operated in the usual manner. As the records are discharged from the turntable they will pass down over the spring clips 31 into the tray 25, and will be held therein in superposed relation. After all the records have been played and it is desired either to replace the records onto the turntable or to play the opposite sides of the records, it is merely necessary to turn the tray 25 on its hinge into turntable overlying relation, whereupon as the spring clips 31 which will restrain the records from falling out of the tray engage the turntable, the records from the tray will be released and deposited onto the turntable with the sides of the records opposite to those which had last been played facing upwardly in position to be played.

It will thus be apparent that I have provided an exceedingly simple and practicable record transfer and reversing means and although I have shown and described a preferred embodiment of my invention, I do not wish to be limited to the precise details of construction disclosed since changes may be made therein within the realm of mechanical skill without departing from the spirit of the invention as claimed.

What I claim is:

1. An automatic phonograph comprising a cabinet having therein a turntable adapted to support a plurality of records in superposed relation, mechanism for playing a plurality of records in succession when mounted on the turntable and for discharging each record from playing position after it has been played by giving to the record being discharged a motion of translation, a record receiving tray movably mounted on the cabinet and adapted in one position to extend laterally outwardly below the turntable to receive the

records upon their discharge from the turntable by the mechanism, and in another position being adapted to extend in bottom-side up relation down over a group of records on the turntable, movable means on said tray for releasably confining a group of records therein in superposed relation and for normally retaining said records in said relation when the tray is brought into bottom-side up relation, in which position the group of records in the tray can be brought down to engage over the central pin of the turntable and means for moving the record retaining means when the tray is brought into position overlying the turntable to release the records from the tray so that they will seat upon the turntable.

2. An automatic phonograph according to claim 1 wherein the record retaining and confining means are resilient clips, and the means for moving the clips is an element within the cabinet.

3. An automatic phonograph according to claim 1 wherein the record retaining and confining means are resilient clips, and the means for moving the clips is the edge of the turntable.

4. An automatic phonograph according to claim 1 wherein the record retaining and confining means are resilient clips circumferentially disposed on the tray in a circle of approximately the diameter of the turntable.

5. An automatic phonograph according to claim 1 wherein the record retaining and confining means are spring clips mounted on the tray at circumferentially spaced points about a circle of approximately the diameter of the records to be held by the tray, said clips having parts thereof normally extending inwardly of said circle and being movable radially outwardly by the records as they are received in said tray upon their discharge from the turntable and permit said records to pass down thereover.

6. An automatic phonograph according to claim 1 wherein the record retaining and confining means are spring clips mounted for radial movement on the tray at circumferentially spaced points about a circle of approximately the diameter of a turntable, said clips having parts thereof normally extending inwardly of said circle and being movable radially outwardly by the records as they are received in said tray upon their discharge from the turntable and permit said records to pass down thereover, and wherein the means for moving the spring clips for releasing the records from the tray is the edge of the turntable.

7. An automatic phonograph according to claim 1 wherein the record receiving tray is hingedly connected to the cabinet and the record retaining and confining means within the tray are circumferentially spaced about a circle, the center of which substantially coincides with the center of the turntable when the tray is turned on its hinge to extend over the turntable.

8. An automatic phonograph of the type wherein a plurality of records mounted on a turntable are successively laterally dischargeable therefrom after being played, comprising a tray for receiving the records upon their discharge, resilient means mounted on the tray and movable radially outwardly by the records as they are received by the tray upon their discharge from the turntable and for supporting and confining the discharged records in superposed relation with the side of the records which had been last played facing upwardly in the tray, said resilient means being capable of normally confining said records in the tray when the latter is turned into bottom-side up relation, said tray with a group of records therein being movable bodily into bottom-side up relation to present the records therein onto the turntable and means for engaging said resilient means on the tray to move them radially outwardly when the tray is brought into its last mentioned position to release the records from the tray and transfer them onto the turntable with the face of the records which had been last played facing downwardly.

ARTHUR HILL.