

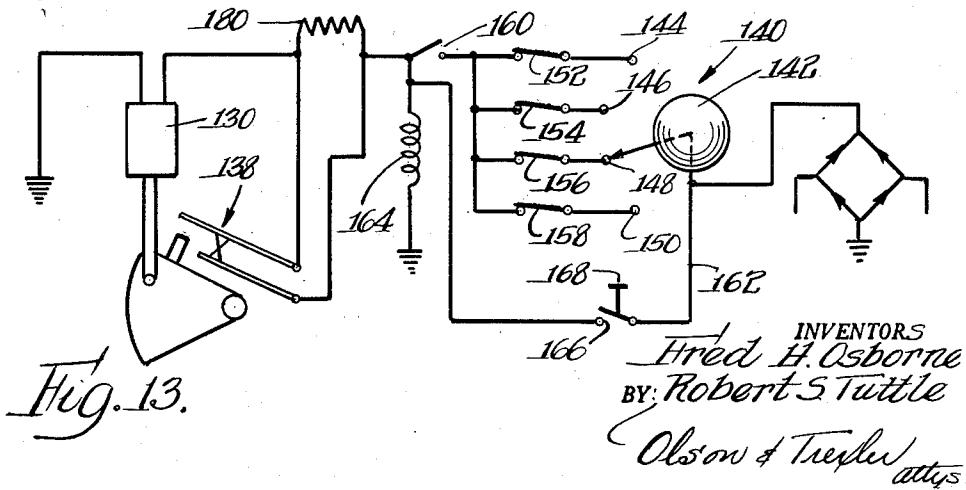
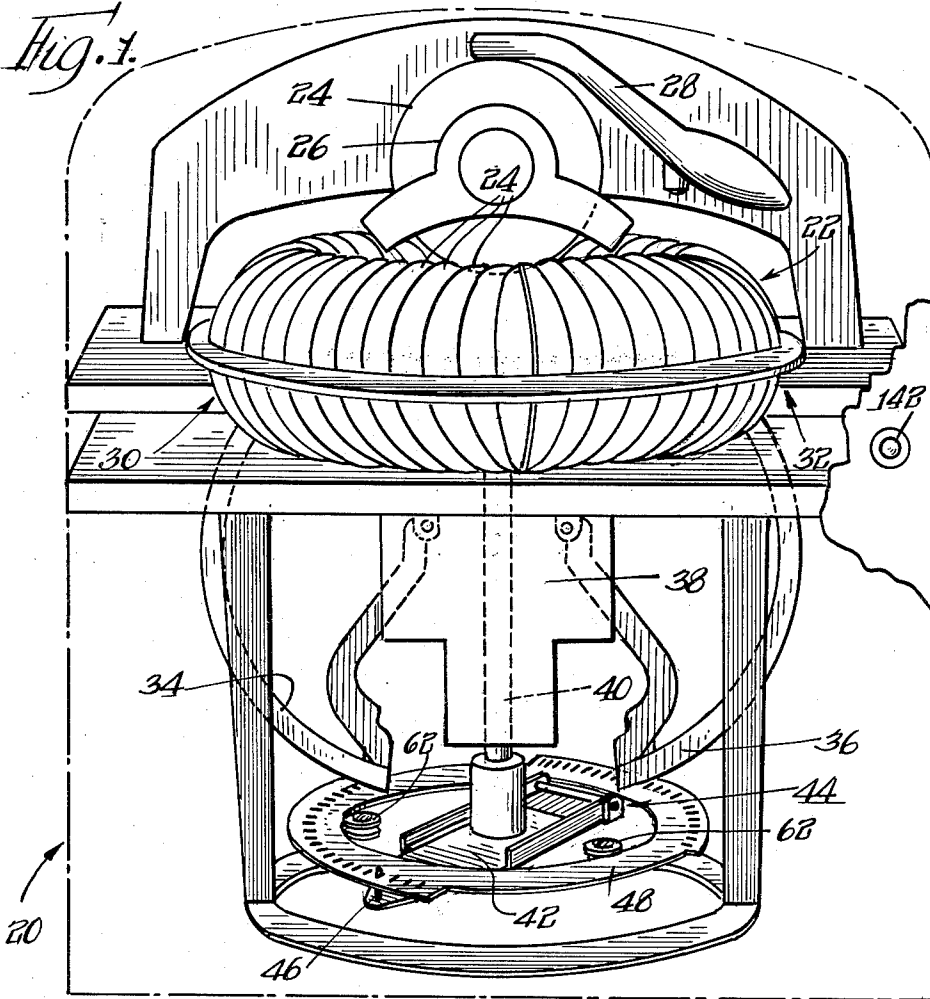
Aug. 13, 1963

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BACKGROUND MUSIC PHONOGRAPH

3,100,644

Filed June 29, 1960

6 Sheets-Sheet 1



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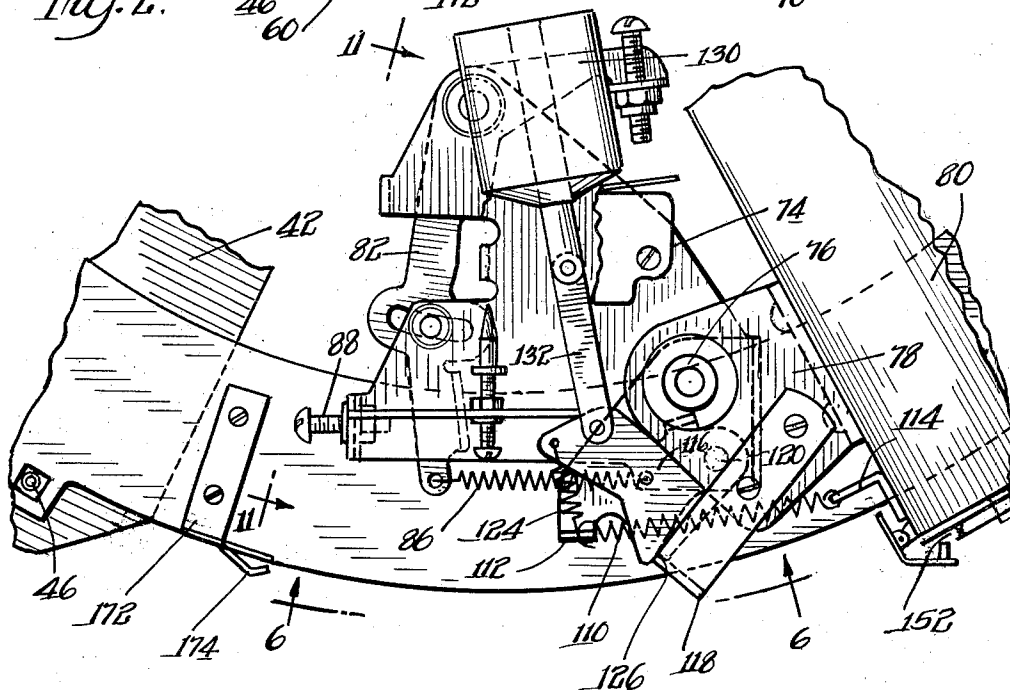
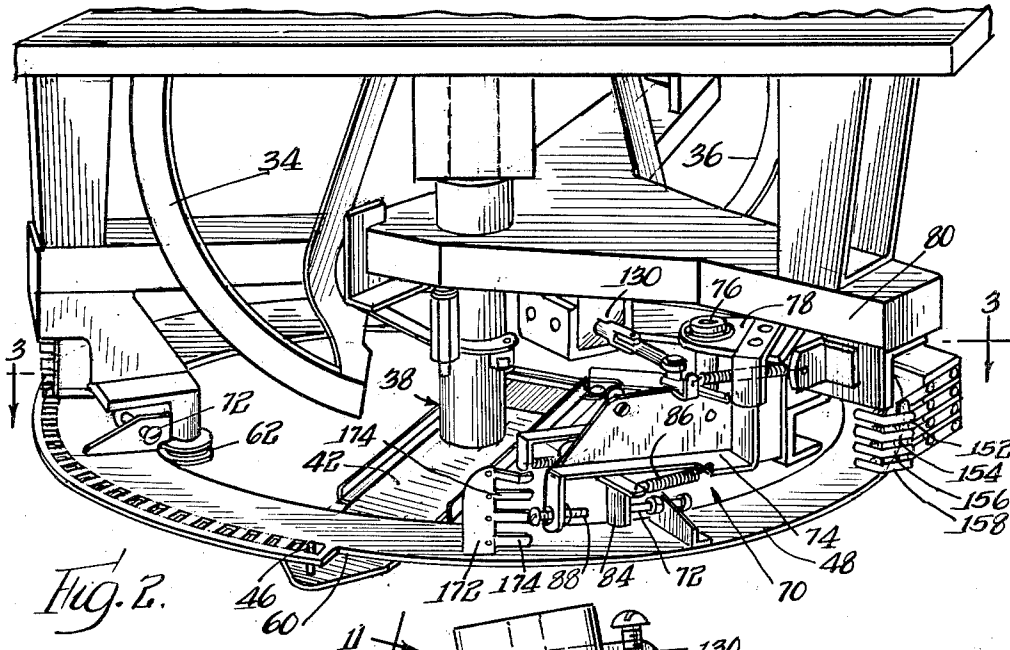
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BACKGROUND MUSIC PHONOGRAPH

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6 Sheets-Sheet 2



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BACKGROUND MUSIC PHONOGRAPH

3,100,644

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Fig. 4.

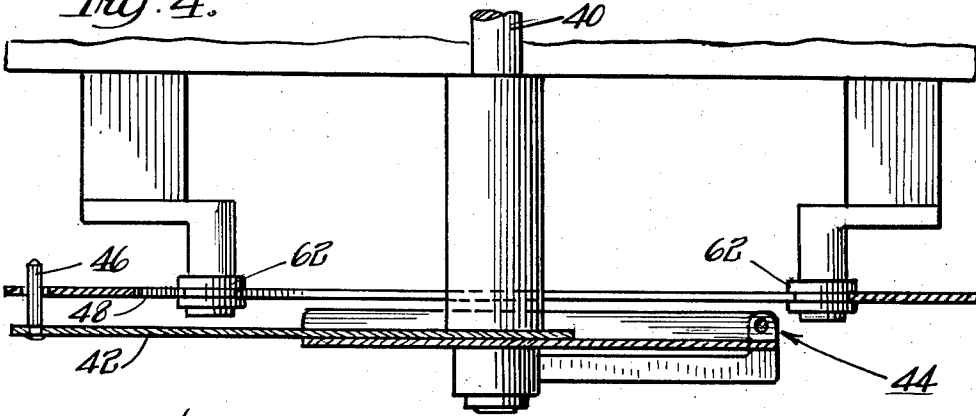
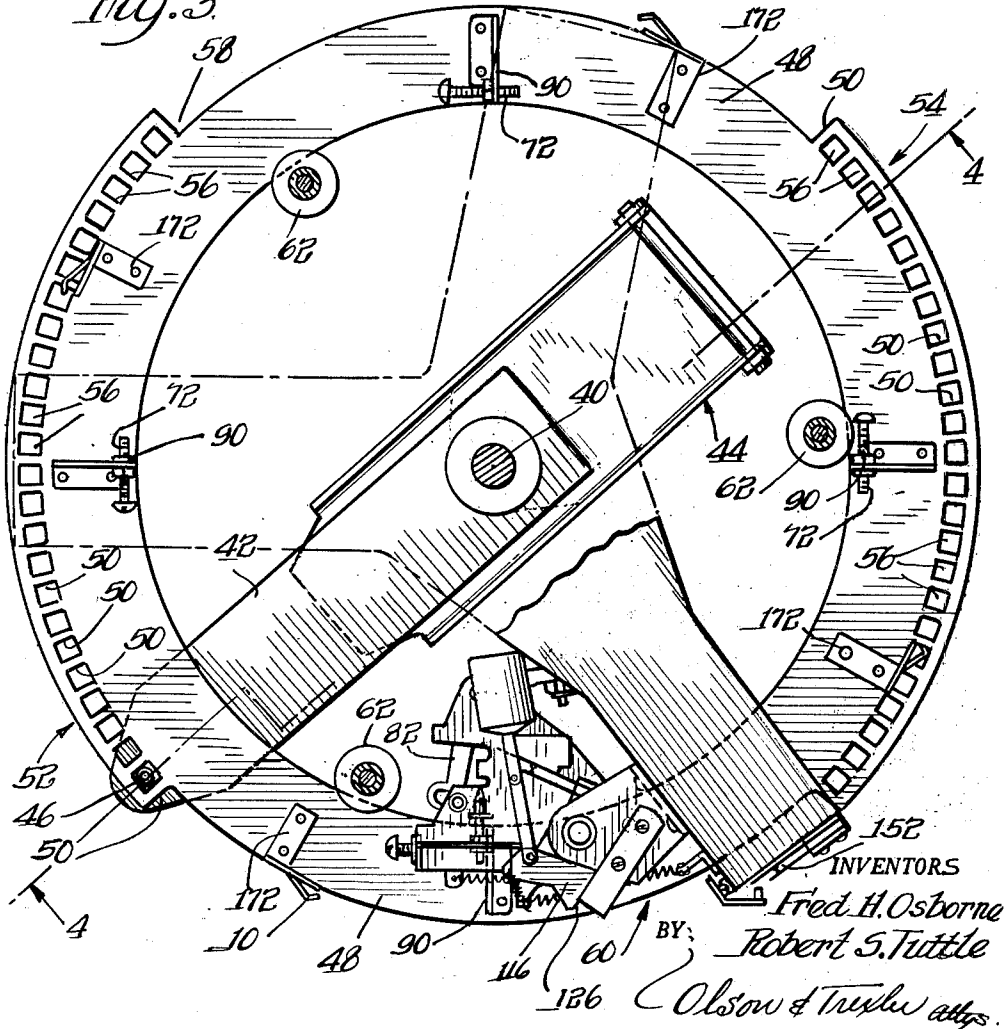


Fig. 3.



Aug. 13, 1963

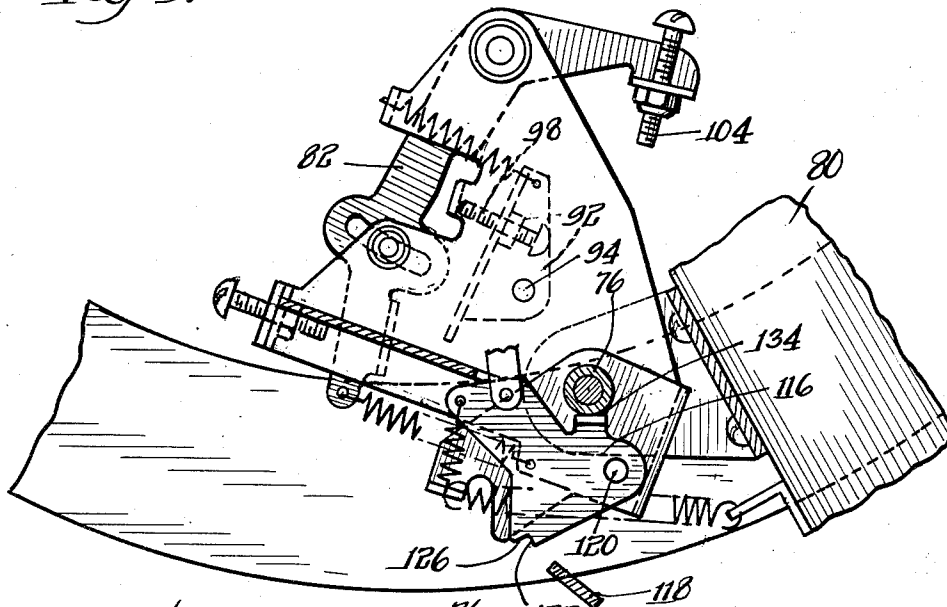
F. H. OSBORNE ETAL  
BACKGROUND MUSIC PHONOGRAPH

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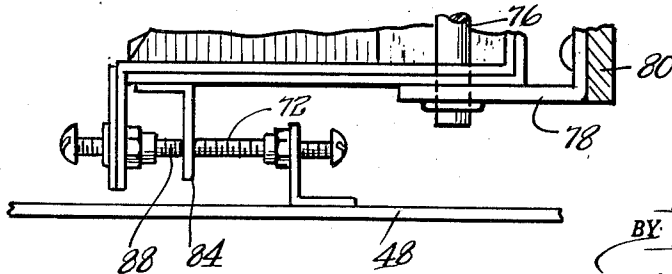
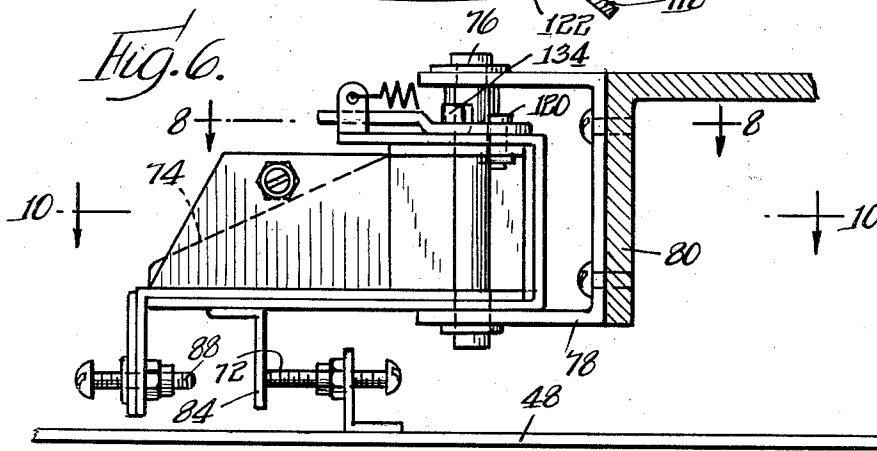
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*Fig. 9.*



*Fig. 6.*



*Fig. 7.*

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**Aug. 13, 1963**

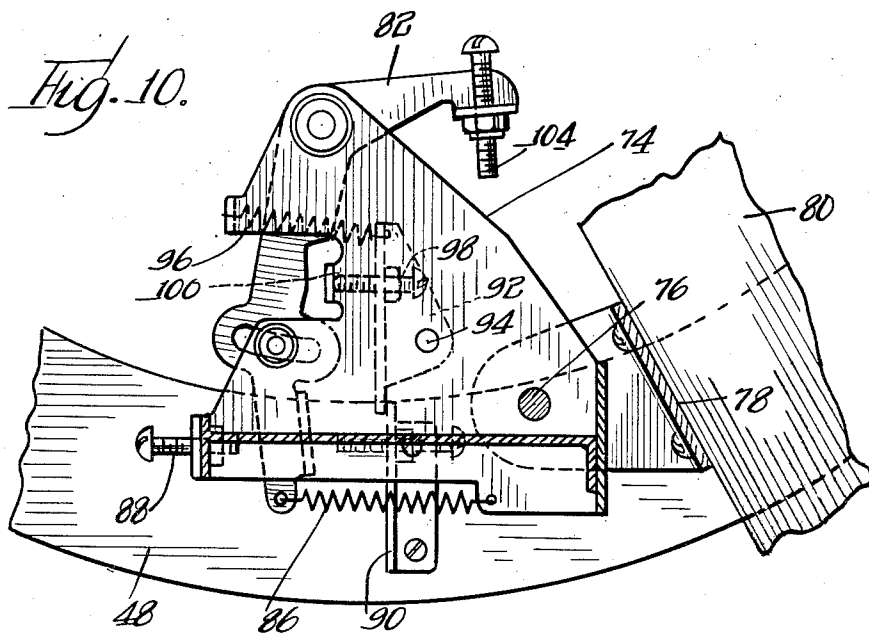
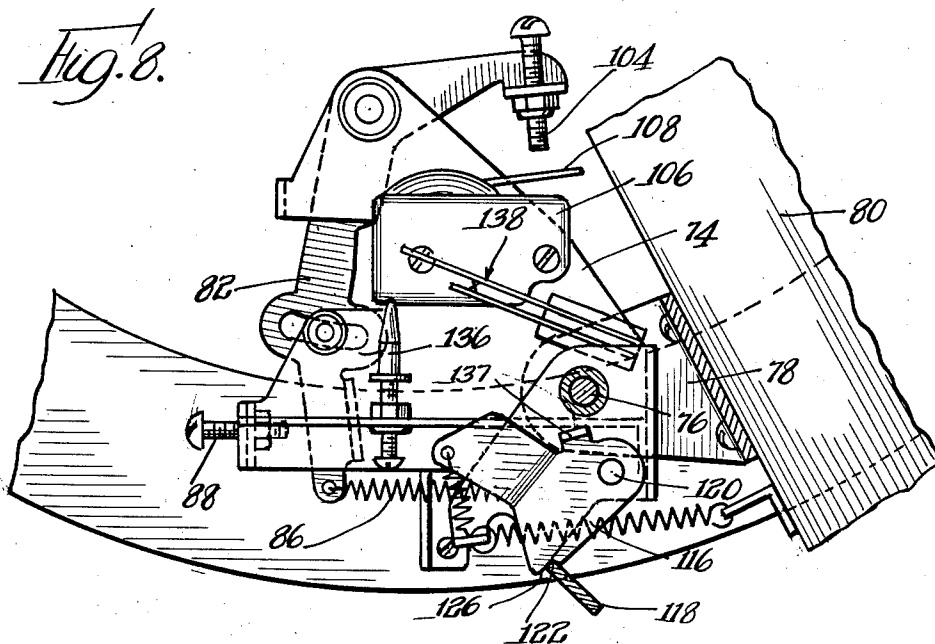
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**3,100,644**

## BACKGROUND MUSIC PHONOGRAPH

Filed June 29, 1960

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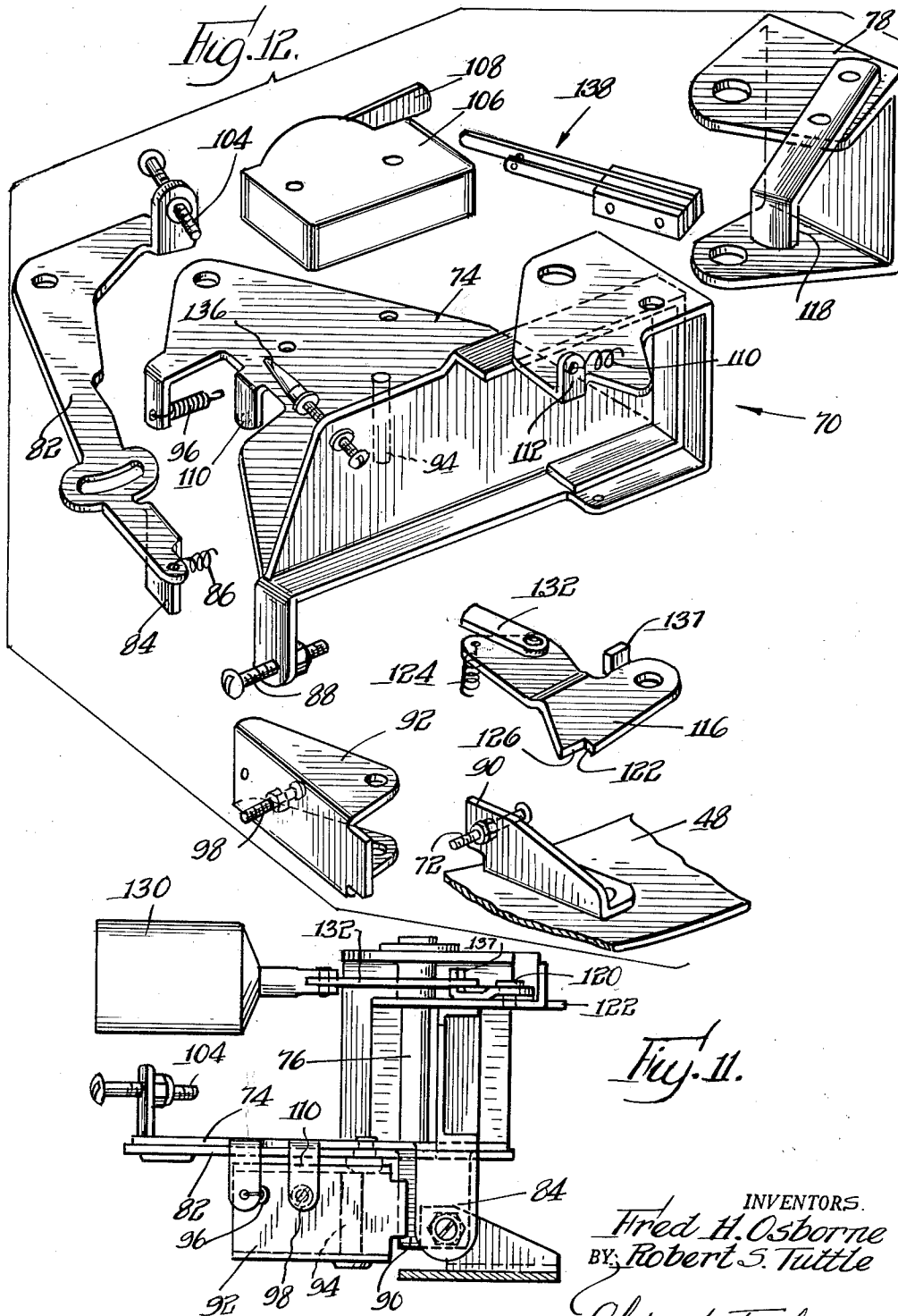
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BACKGROUND MUSIC PHONOGRAPH

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6 Sheets-Sheet 6



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3,100,644

## BACKGROUND MUSIC PHONOGRAPH

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Filed June 29, 1960, Ser. No. 39,649

10 Claims. (Cl. 274-10)

The present invention relates to automatic phonographs of the type in which a large number of records are supported in a holder or magazine and played by fully automatic means which operates to transfer individual records temporarily from the magazine to a turntable, to play the record on the turntable and to return the record to the magazine.

One object of the invention is to provide a new and improved phonograph of the above character which is particularly well suited to supply automatically for an indefinite period of time a substantially continuous program of background music.

Another object is to provide an automatic phonograph of the character recited which will supply different programs of background music selectively in a manner which provides for automatic continuation of any selected program for an indefinite period of time.

Another object is to provide a new and improved automatic phonograph capable of receiving at once a large number of records in different categories, and operating to play the categories of records selectively in a manner whereby the records in a selected category are automatically played in an unending succession for an indefinite period of time.

Another object is to provide a new and improved phonograph, as recited in the preceding objects, which will respond to operation of a simple program selector control to discontinue playing records in any previously selected category and proceed immediately to play and continue playing automatically records in any other selected category of records.

A further object is to provide a new and improved automatic phonograph, as recited in the preceding objects, which can be constructed in large measure from standard components of conventional phonographs, to the end that the new and improved phonograph is economical to manufacture on a mass production basis.

Another object is to provide a new and improved phonograph of the character recited in the foregoing objects which will operate with great efficiency and dependability over a long service life.

Other objects and advantages will become apparent from the following description of the exemplary embodiment of the invention illustrated in the drawings, in which:

FIGURE 1 is a simplified and somewhat schematic illustration of the phonograph forming the exemplary embodiment of the invention, certain external parts being illustrated in phantom to more clearly reveal the internal structure.

FIG. 2 is a fragmentary perspective view showing internal program determining and magazine indexing structure of the phonograph;

FIG. 3 is a simplified, transverse sectional view taken generally along the line 3-3 of FIG. 2;

FIG. 4 is a vertical sectional view, taken generally along the line 4-4 of FIG. 3;

FIG. 5 is an enlarged fragmentary, horizontal sectional view of program selector structure appearing in the lower central portion of FIG. 2;

FIG. 6 is a fragmentary elevational view taken along the line 6-6 of FIG. 5 and illustrating initial engagement of a program stop with an intermediate abutment;

FIG. 7 is a view similar to the lower portion of FIG. 6 and illustrating limit positions of the selector elements;

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FIG. 8 is a fragmentary sectional view, taken along the line 8-8 of FIG. 6;

FIG. 9 is a view generally similar to FIG. 8, but showing the locking element for the program selector arm in unlocked position;

FIG. 10 is a fragmentary sectional view, taken along the line 10-10 of FIG. 6;

FIG. 11 is a fragmentary, vertical sectional view, taken along the line 11-11 of FIG. 5;

FIG. 12 is an exploded view of the program selector assembly; and

FIG. 13 is a simplified, diagrammatic illustration of electrical program selector circuits used in the machine.

As illustrated in the drawings, FIGURE 1, the phonograph 20 forming the exemplary embodiment of the invention illustrated comprises a toroidal magazine 22 adapted to receive and support one hundred records 24 which provide two hundred playing sides. The records 24 are supported on edge in the magazine 22 in circumferentially spaced relation to each other.

Individual records to be played are temporarily transferred from the magazine 22 to a turntable 26 centrally located in overlying relation to the magazine 22. A record mounted on the turntable 26 is rotated about a horizontal axis and played by a tone arm 28.

Records to be played are transferred to the turntable 26 from either of two transfer stations 30, 32 located on opposite sides of the magazine in general alignment with the record plane of the turntable. A record to be played is moved by rotation of the magazine 22 into alignment with one or the other of the transfer stations 30, 32, depending upon the side of the record to be played. The tone arm 28 always plays the adjacent side of the record on the turntable. Transfer of a record from the station 30 to the turntable 26 brings one side of the record into playing relation to the tone arm 28, while movement of the record from the station 32 into assembled relation with the turntable brings the opposite side of the record into playing relation to the tone arm.

Records are moved upwardly and laterally from the respective transfer stations 30, 32 to the turntable 26 by two scythe shaped transfer arms 34, 36 pivotally mounted in underlying relation to the magazine 22. The respective arms have upwardly projecting free ends which are swung upwardly through the respective transfer stations to carry records into alignment with the turntable.

The construction of the magazine 22 in relation to the transfer stations 30, 32 is such that the magazine moves records into alignment with only one of the two stations at a time. The record in alignment with one of the two transfer stations is shifted to the turntable by the corresponding one of the arms 34, 36, while the other arm remains in its normal position. After the record is played, it is lowered back into the magazine by the arm which initially shifted it into playing position.

Rotation of the magazine 22, operation of the arms 34, 36 to transfer records to and from the turntable 26, and operation of the turntable 26 and tone arm 28 to play the individual record is effected by conventional operating mechanisms in the phonograph 20 which are substantially identical to mechanisms provided and used for the same purposes in certain well known commercial phonographs which are usually coin controlled.

For a description of magazine operating and record playing mechanisms similar to those used in the phonograph 20, reference may be made to United States Patent 2,796,263. In view of the well known character of these mechanisms in the commercial field, further description here is unnecessary in order to convey an understanding of the invention. The lower portion of the mechanism used to rotate the magazine 22 and effect playing of the

records is illustrated schematically in FIG. 1 and identified by the reference number 38.

The phonograph 20 forming the exemplary embodiment of the invention serves to supply selectively a plurality of continuous programs of background music from corresponding categories of records in the magazine 22. Thus, the one hundred records in the magazine 22 are arranged in different categories or groups, each of which is designed to provide a continuous program of background music. Moreover, as will presently appear, the records in the category corresponding to the program music to be played are successively played in endless succession for an unlimited period of time. The operation of the phonograph will become more apparent from the ensuing description of the structure involved.

Thus, a shaft 40 extending vertically downward from the center of the magazine 22 is connected for rotation with the magazine and used to position the magazine rotatably in various indexed positions or rotary stations in relation to the record transfer stations 30, 32. The lower end of the shaft 40 carries a selector stop arm 42, FIGS. 1, 2 and 3, which has a free end projecting radially to one side of the shaft. This arm is mounted on the shaft 40 by means of an aligned support 44 which provides for limited downward swinging movement of the arm from its normal, generally horizontal position. Conventional components of the record playing mechanism 38 are connected with the arm 42 to swing the arm downwardly momentarily as an incident to the playing of each individual record. The manner in which this arm is actuated to move downwardly in timed relation to the completion of the playing of each successive record conforms to the conventional mode of operation of the mechanism 38, and will be well understood by those skilled in the art without further explanation.

The free end of the arm 42 carries an upwardly projecting stop pin 46 which coacts with a generally flat, annular selector ring 48 to effect stepping of the magazine rotatably to successive indexed positions, as will be described.

It is fitting to mention here that the hundred records in the magazine 22 of the instant magazine are divided into four categories of twenty-five records. The selector ring 48 is designed to coact with the stop 46 to effect playing an endless succession of one side of a category of twenty-five records followed by playing of the other side of the same twenty-five records.

Thus, the ring 48 is shaped to define two series of selector abutment stops 50 located generally on diametrically opposite sides of the ring, as shown in FIG. 3. Each of the two series 52, 54 of abutments extends circumferentially through an arc of approximately 90 degrees and comprises twenty-five circumferentially spaced abutments corresponding to the twenty-five records in one category. Except for the first abutment in each series, the abutments 50 are defined by the sides of circumferentially spaced apertures 56 formed in the peripheral edge of the selector ring 48.

The selector abutments 50 thus formed on the ring 48 are disposed in interfering relation to the rotary path of the selector stop 46 on the arm 42. Two diametrically opposed arcuate recesses 58, 60 formed in the periphery of the ring 48 between the two series 52, 54 of abutments provided for unobstructed rotary movement of the stop 46 between the two series of abutments.

The selector ring 48 is supported by three guide rollers 62. The axes of the three guide rollers 62 lie on a circle concentric with the shaft 40, whereby the selector ring 48 is mounted concentrically about the shaft 40 for concentric rotation relative thereto. Thus supported, the selector element 48 is positioned rotatably in any one of four equally spaced program determining positions corresponding to the four categories of records in the magazine 22. This positioning of the selector element 48 is effected by program selecting structures to be described.

The program determining means to be described locates the selector means 48 in a program determining position in a manner which provides for limited free rotation of the ring through an angle equal to the angular spacing between the records 24 in the magazine 22. Moreover, the ring 48 is biased rotatably in a direction opposite to the direction of indexing movement of the magazine 22, so that it tends to seek a rotatably retracted position.

The conventional record playing mechanism 38 operates to turn the magazine 22 and the selector stop arm 42 in a clockwise indexing direction, as viewed from above. This rotary indexing movement of the magazine is repeatedly effected at the completion of the playing of each successive record. It causes the selector stop 46 to engage a coacting one of the selector abutments 50 to rotate the selector ring 48 with the magazine until the selector ring is stopped by coacting program structure to be described. This termination of rotary movement of the magazine locates a record 24 in alignment with one of the transfer stations 30, 32 and triggers operation of the record playing mechanism, as will be described, to effect playing of the record.

As the mechanism 38 cycles to return the record to the magazine 22 at the completion of a record playing operation, the stop arm 42 is momentarily swung downwardly by automatic operation of the mechanism 38. The structure and mode of operation of the mechanism 38 which effects this automatic downward swinging of the stop arm 42 are conventional in the commercial art and need not be described here. It is sufficient to note that the mechanism 38 coacts with the arm 42 to effect this function and that the arm is pivotally mounted on the support 44 to provide for this movement.

The downward movement of the arm 42 disengages the stop 46 from the coacting abutment 50, allowing the selector ring 48 to be retracted rotatably through an angle approximately equal to the angular spacing between adjacent records 24 in the magazine 22. The arm 42 immediately returns to its normal upper position, causing the stop 46 to move up into interfering relation to the next adjacent abutment 50. Thus, the stop moves up through one of the apertures 56 or one of the arcuate recesses 58, 60 in the selector ring. Hence, when the magazine 22 is rotated in an indexing direction, the coacting relation of the stop 46 with the succeeding abutment 50 locates the magazine 22 in the next station for playing the next record of the category of records to be played.

In this manner the magazine 22 is successively indexed or stepped to twenty-five record playing positions corresponding to the twenty-five abutments in the series 52, for example. This brings the twenty-five records of the corresponding category of records into successive alignment with one of the transfer stations 30, 32 to effect an automatic playing of one side of the records in succession.

After the stop 46 has cleared the last abutment 50 of the series 52, the rotary indexing movement of the magazine 22 carries it through the arcuate recess 58 to engage the first abutment 50 of the series 54. The indexing or stepping action previously described is repeated to move the magazine into twenty-five positions corresponding to the abutments in the series 54. This brings the same twenty-five records of the category being played into alignment with the other one of the record transfer stations 30, 32 to effect an automatic playing of the other side of the respective records. In this connection, it will be noted that the stop 46, in moving from the first abutment of the series 52 into coacting relation with the first abutment of the series 54, is carried through an angle of approximately 180° which is equal to the angular spacing of the two transfer stations 30, 32 about the axis of the magazine.

The automatic cycling of the magazine continues to effect playing of the successive records in endless suc-



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cession, the stop 46 continuing from one of the series of abutments 52, 54 to the other successively to effect playing of the respective sides of the records.

In this manner an endless program of background music can be supplied over an indefinite period of time from a single category of the records in the magazine 22.

The selector ring 48 is positioned rotatably in any one of four equally spaced program positions selectively by means of a program selecting assembly 70. This assembly 70 is movable between a retracted program selecting position, which leaves the selector ring 48 free to rotate with the stop 46, and an extended program determining position which coacts with one of a series of four program stops 72, FIGS. 2, 3, 6 and 7, on the selector ring 48 to locate the ring in a selected program determining position.

Preferably the program determining assembly 70 comprises a generally horizontal arm 74 supported for swinging movement about a vertical pivot 76, FIGS. 2 and 5 to 8. The pivot 76 is mounted in a bracket 78 secured to the frame structure 80 of the machine.

The underside of the arm 74 carries a pivotal selector ring locating and retracting lever 82 which has a radially outer end defining a depending ear 84 which forms an intermediate abutment that is engaged by a coacting one of the program stops 72, as shown in FIGS. 6 and 7. A spring 86 connected between the radially outer end of the lever 82 and the arm 74, as shown in FIGS. 2, 5, 8 and 10, urges the lever in a counterclockwise direction as viewed from above to effect an intermittent rotary retraction of the selector ring 48, as will presently appear.

When the program selecting assembly 70 is in its program determining position, the intermediate abutment 84 is disposed in interfering relation to the path of a coacting program stop 72 which engages the abutment 84 and swings the lever 82 against the spring 86 until the abutment 84 engages an adjustable limit stop 88 on the arm 74, FIGS. 2, 6 and 7. This terminates rotary advancement of the selector ring 48 and acts through the selector stop 46 and the coacting selector abutment 50 to locate a record in a transfer position, as described.

Upon downward movement of the arm 42 to disengage the abutment stop 46 from the coacting abutment 50, as described, the spring 86 acts through the intermediate abutment 84 to retract the selector ring 48 rotatably through a limited angle approximately equal to the angular spacing between the adjacent records in the magazine 22. The rotary movement of the selector ring 48 in the reverse direction by the spring 86 is limited by engagement of the support bracket 90 for the coacting program stop 72 with a one-way stop dog 92 pivotally mounted on the underside of the swingable arm 74. The dog 92 is supported on a pivot 94 and biased by a spring 96, FIG. 10, in a manner such that the coacting program stop bracket 90, in moving in a magazine indexing direction, engages the dog which pivots to let the bracket pass. However, as the bracket 90 is moved in a reverse direction by the spring 86 an adjustable abutment 98 on the dog 92 engages a coacting abutment 100 to hold the dog against reverse pivotal movement and thereby limit reverse movement of the selector ring 48.

It is noteworthy at this point that the limit stop 88 is formed by an adjustable screw and that each program stop 72 is formed by an adjustable screw. These adjustable stops provide for a rotary adjustment of the rotary position in which forward rotation of the ring 48 is terminated. The adjustable stop 98 on the dog 92 provides for adjustment of the rotary position in which retraction of the ring 48 is terminated.

As the intermediate abutment 84 is moved into engagement with the limit stop 88 by the coacting program stop 72, an adjustable switch actuator 104 carried by the inner end of the lever 82 operates a reversing switch 106 which controls the mechanism 38 to effect the playing of the

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record brought into alinement with one of the playing stations 30, 32. The reversing switch 106 is mounted on top of the swingable arm 74 and includes an operating blade 108 which is engaged by the actuator 104 as the lever 82 is swung by the abutment 84. The structural relationship of the switch 106 to the record playing mechanism 38 and its mode of operation in controlling the mechanism to effect automatic playing of a record are substantially identical to the relationship of the record playing mechanism to similar reversing control switches in automatic phonographs in commercial usage.

The swingable arm 74 which carries the program selecting assembly 70 is urged to swing outwardly to its program determining position by a spring 110 connected between an ear 112 on the arm 74, FIG. 5, and a bracket 114 on the frame 80. The arm is firmly locked in its extended position by a latch 116 swingably mounted on the arm 74 for engagement with a locking bracket or ear 118 on the bracket 78, FIGS. 5, 8, 9 and 12. Thus, as shown in FIG. 8, the latch 116 is swingably mounted about a pivot 120 carried by the arm 74 in spaced relation to the pivot 76, and in a position on the arm such that the swinging movement of the arm from its extended position toward its retracted position causes the pivot 120 to move toward the locking ear 118. A ledge 122 on the latch 116 normally engages the locking ear 118, as shown in FIG. 8, to hold the arm in its extended position. A spring 124 connected to the latch 116, as shown in FIG. 5, urges the latch in a counterclockwise direction to engage a shoulder 126 on the latch with the ear 118 to hold the ledge 122 in coacting relation with the ear 118.

The arm 74 is swung inwardly to its program selecting position by a solenoid 130, FIG. 5, connected through a link 132 with the latch 116. Energization of the solenoid 130 swings the latch 116 about the pivot 120, to disengage the latch from the locking ear 118 and bring an abutment 134 on the latch 116 into engagement with the main pivot pin 76, as shown in FIG. 9. After releasing the arm 74 in this manner, the solenoid acts through the latch 116 to swing the arm 74 radially inward about the pivot 76 to move the intermediate abutment 84 and stop 88 out of the path of the program stop 72. As the arm 74 reaches its innermost position a switch actuator 136, FIG. 8, on the arm engages a stationary switch 138 to reduce the current flow through the solenoid 130 to prevent overheating of the solenoid while the arm is held in its innermost position.

When the program selecting assembly 70 is swung inwardly in this manner, the selector ring 48 is free to rotate to an unlimited degree. Thus, upon forward rotation of the magazine 22 after completion of playing of a record, the stop 46 operates through a coacting abutment 50 to rotate the selector ring 48 until rotation of the ring 48 is terminated by deenergization of the solenoid 130 to allow the spring 110 to swing the program selecting assembly back into its program determining position.

Thus, in order to discontinue playing of any program and select any other category of records for playing, it is necessary only to energize the solenoid 130 and continue energization of the solenoid until the selector ring 48 is rotated to bring the program stop 72 corresponding to the new record category into approaching relation to the normal position of the program selector assembly. Then, the solenoid 130 is deenergized, allowing the program selector assembly to return to program determining position in which it coacts with the new program stop to effect playing of records from the newly selected category.

Control of the phonograph to select any desired category of records for playing automatically in this manner is effected by an extremely simple control circuit which is illustrated diagrammatically in FIG. 13. Thus, as shown, a program selector switch 140 operated by a control knob 142 has four output terminals 144, 146, 148, 150, corresponding to the four categories of records in the magazine 22 and connected respectively to four selec-

tor ring position sensing switches 152, 154, 156, 158. The sides of the switches 152 to 158 opposite from the switch 140 are connected through a normally open relay switch 160 to the program selecting solenoid 130. The other side of the solenoid 130 is grounded and the program selecting switch 140 is supplied with power through a line 162. The operating solenoid 164 for the switch 160 is energized from the line 162 through a normally open program selector energizing switch 166 which is controlled by a button 168.

The four position sensing switches 152, 154, 156 and 158 are normally closed. As shown in FIGS. 2 and 5, these switches are mounted in a vertical tier on the frame 80 in vertically spaced relation to the periphery of the selector ring 48. These switches are operated selectively by four upstanding switch actuators 172 mounted on the selector ring 48 in equally spaced relation to each other around the circumference of the ring, as shown in FIGS. 2 and 3. Each actuator 172 carries four trailing tines 174 which are positioned in vertical alinement with the respective switches 152, 154, 156 and 158. One of the tines 174 of each of the actuators 172 is bowed radially outward, as shown in FIGS. 2 and 3, to effect operation of a corresponding one of the switches 152 to 158 as the actuator 172 is moved past the position sensing switches. A different tine 174 is bowed outwardly on each of the actuators 172 so that the actuators 172 serve to open the respective position sensing switches as the actuators move past the switches.

To select a desired musical program, the operator turns the knob 142 to connect the power line 162 to one of the terminals 144, 146, 148 and 150 corresponding to the category of records to be played. He then pushes the button 168 to energize the solenoid 164 and close the switch 160 to energize the solenoid 130 to move the program selecting assembly 70 to its selecting position.

This is subsequently followed by rotation of the selector ring 48 in the manner described. It will be appreciated that the solenoid 130 is energized through one of the position sensing switches 152, 154, 156 and 158 corresponding to the desired program. When the selector ring 48 approaches the correct position for playing the selected program, the position sensing switch through which the solenoid 130 is energized is opened by a corresponding one of the switch actuators 172. This immediately deenergizes the solenoid 130 allowing the program selector assembly 70 to return to its program determining position to effect automatic playing of the selected category of records in the manner described.

It will be observed, with reference to FIG. 13 that the solenoid switch 160 serves as a holding switch for continuing energization of the switch solenoid 164 after the start switch 166 has opened and until the position sensing switch corresponding to the desired program has opened.

It is also noteworthy, with reference to FIG. 13, that the switch 160 is connected to the retracting solenoid 130 through any resistor 180 and the previously mentioned normally closed switch 138, which are connected in parallel with each other. It will be recalled that the switch 138 is opened upon swinging of the program selector assembly 70 to its retracted position. This opening of the switch 138 puts the resistor 180 in series with the retracting solenoid 130 to reduce the current flow through the solenoid, as described.

It will be appreciated that the invention is not necessarily limited to use of the particular construction illustrated, but includes variants and alternatives within the spirit and scope of the invention as defined by the appended claims.

The invention is claimed as follows:

1. For supplying different programs of background music selectively from records, an automatic phonograph comprising, in combination, means for holding a plurality of records in different program categories, rotary record selecting means for selecting records for playing from

said record holding means in accordance with the rotary position of the record selecting means, rotatable stepping means coacting with said record selecting means to determine a continuous series of record selecting positions of said record selecting means corresponding to a category of records in said record holding means, program selecting means for locating said stepping means selectively in any one of a plurality of programming positions rotatably spaced from each other and corresponding respectively to different categories of records in said holding means, said program selecting means including an arm assembly swingable between a retracted program selecting position in which said stepping means is free to rotate between different program positions and an extended program determining position in which the arm assembly coacts with said stepping means to hold the latter in a selected program position, means for locking said arm assembly automatically in the extended program determining position thereof, a program selecting solenoid connected with said locking means and said arm to unlock said arm and swing the latter to the retracted position thereof, and means for moving said arm to the extended locked position thereof.

2. For supplying different programs of background music selectively from records, an automatic phonograph comprising, in combination, means for holding a plurality of records in different program categories, rotary record selecting means for selecting records for playing from said record holding means in accordance with the rotary position of the selecting means, rotatable stepping means coacting with said record selecting means to determine a continuous series of record selecting positions of said record selecting means corresponding to a category of records in said holding means, program selecting means for locating said stepping means selectively in any one of a plurality of program positions rotatably spaced from each other and corresponding respectively to different categories of records in said holding means, said program selecting means being movable between a retracted program selecting position in which said stepping means is free to rotate between different program positions and an extended program determining position in which said program selecting means coacts with said stepping means to hold the latter in a selected program position and means for moving said program selecting means between said retracted position and said extended position thereof.

3. For supplying a substantially continuous program of background music, an automatic phonograph comprising, in combination, a record magazine, a movable record selector stop, means for automatically playing individual records from said magazine selectively in accordance with the position of said stop, means for locating said stop in a plurality of record selecting positions spaced from each other, said stop locating means including a selector element defining a plurality of spaced selector abutments disposed in interfering relation to said stop, stop advancing means for repeatedly moving said stop against a coacting one of said abutments in a stop indexing direction, means for limiting movement of said selector element in said indexing direction by said selector stop to locate the selector stop in an indexed position, biasing means for urging said selector element to move a limited distance in a retracting direction opposite from said indexing direction, and means for momentarily shifting said selector stop out of interfering relation with said abutments as an incident to the playing of a selected record from said magazine to allow limited retraction of said selector element and to establish an interfering relation of said stop with the next successive abutment for locating the stop in the next indexed position.

4. For supplying different programs of background music selectively, an automatic phonograph comprising, in combination, a turntable, a rotary record magazine, means for transferring individual records from said magazine to

said turntable for playing in accordance with the rotary position of said magazine, a radial arm rotatable with said magazine, a magazine selector stop on said arm, a circular selector element defining a series of circumferentially spaced abutments located in angularly spaced relation to each other and in interfering relation to said magazine stop, means for advancing said magazine rotatably in an indexing direction as an incident to playing of each successive record, a plurality of circumferentially spaced program stops on said selector element; program determining means movable from a retracted position, which provides for free rotation of said selector element by said magazine stop, to a program determining position which coacts with a selected one of said program stops to locate said selector element in a position corresponding to a category of records to be played; said program determining means including means for limiting rotary movement of said selector element by said magazine stop to determine indexed positions of the magazine, means for urging said selector element rotatably through a small angle in a retracting direction opposite from said indexing direction, means for momentarily disengaging said magazine stop from coacting one of said record selector element abutments as an incident to playing of each record to effect limited rotary retraction of said selector element and positioning of said magazine stop in coacting relation with the next adjacent record selector abutment, and program selecting means coacting with said program determining means and with said program selector element to move said program selector means between said positions thereof to locate said selector element rotatably in accordance with the desired category of records to be played.

5. For supplying different programs of background music selectively, an automatic phonograph comprising, in combination, a turntable, a rotary record magazine, means for transferring individual records from said magazine to said turntable for playing in accordance with the rotary position of said magazine, a magazine selector stop rotatable with said magazine, a rotatable selector element defining an arcuate series of selector abutments located in interfering relation to said magazine stop, means for advancing said magazine rotatably in an indexing direction as an incident to playing of each successive record, a plurality of angularly spaced program stops on said selector element; program determining means movable between a retracted position, which provides for free rotation of said selector element by said magazine stop, and an extended program determining position which coacts with a selected one of said program stops to locate said selector element in a position corresponding to a category of records to be played, said program determining means including means for limiting rotary movement of said selector element by said magazine stop to determine indexed position of the magazine, means for urging said selector element rotatably through a small angle in a retracting direction opposite from said indexing direction, means for momentarily disengaging said magazine stop from a coacting one of said record selector abutments as an incident to playing of each record to effect positioning of said magazine stop in coacting relation with the next adjacent record selector abutment, program selecting means for selecting a desired category of records to be played, and selector element position sensing means coacting with said program sensing means and said program determining means to effect movement of the latter to said extended position thereof to locate said selector element in the rotary position corresponding to the desired category of records.

6. For supplying continuously different programs of background music selectively, an automatic phonograph

comprising, in combination, a turntable, a rotary record magazine, means for transferring individual records from said magazine to said turntable for playing in accordance with the rotary position of said magazine, a movable selector element, means for indexing said magazine to a plurality of record playing positions relative to said selector element, means for moving said selector element to different program positions corresponding to different categories of records to be played, a plurality of spaced program selector stops on said selector element; program determining means movable between a retracted position, which provides for free movement of said selector element, and an extended program determining position which coacts with a selected one of said program stops to locate said selector element in a position corresponding to a category of records to be played, program selecting means for selecting a desired category of records, and selector element position sensing coacting with said selecting means and said position determining means to effect movement of the latter to said extended position thereof upon movement of the selector element to a position corresponding to the category of records to be played.

7. The combination for playing background music comprising fixed frame means, a rotary record magazine rotatably supported from said fixed frame means, a turntable rotatably supported from said fixed frame means, record transfer means supported from said fixed frame means and movable between said magazine and said turntable for transferring records between said magazine and said turntable for successive playing of said records as said records are successively brought into alignment with said transfer means by said magazine, a magazine stop arm having a stop element thereon interconnected with said magazine and rotatable therewith, rotatable programming means, means mounting said programming means adjacent said stop arm for rotation about the axis of said stop arm, said programming means being capable of continuous rotation, means coacting between said frame means and said programming means to arrest said programming means in any of a plurality of rotatably spaced predetermined program determining positions, means providing an arcuate series of spaced indexing abutments on said programming means in interfering relation to said magazine stop element, and means for repeatedly indexing said magazine rotatably into a plurality of record playing positions determined by engagement of said magazine stop with successive ones of said indexing abutments.

8. The combination as set forth in claim 7 wherein the rotatable programming means comprises a ring concentric with the axis of said stop arm and having a plurality of circumferentially spaced apertures therein, a corresponding arcuate limit of all of said apertures comprising the spaced indexing abutments.

9. The combination as set forth in claim 7 wherein the spaced indexing abutments are arranged in arcuately spaced groups, the abutments in each group being uniformly arcuately spaced.

10. The combination as set forth in claim 9 wherein each group of abutments has an arcuate extent of substantially 90 degrees, there being substantially 90 degrees between each group.

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