Feb. 21, 1961 W. L. RODGERS 2,972,483

TONE ARM LIFTER FOR PHONOGRAPHS

Filed June 16, 1958

FIG-1

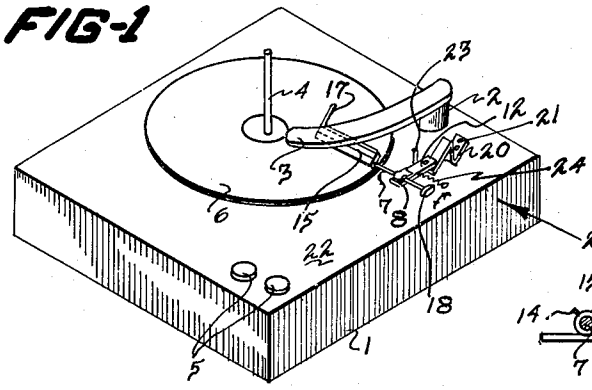


FIG-8

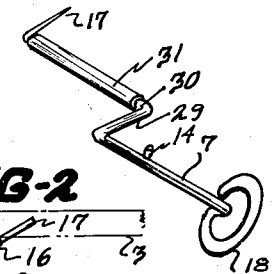


FIG-2

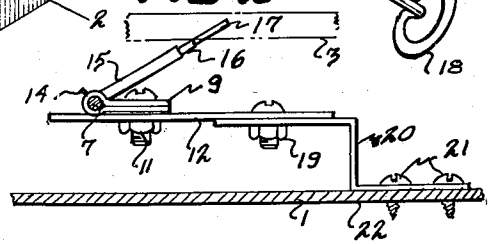


FIG-3

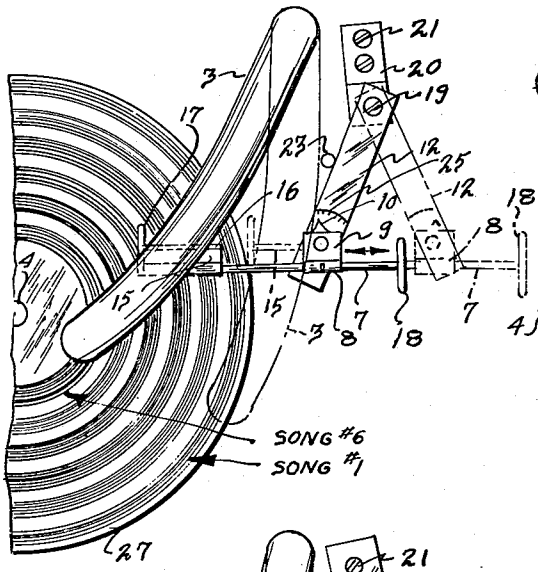
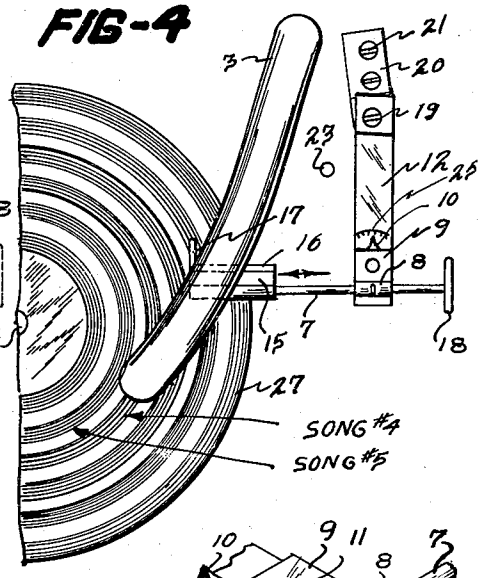


FIG-4



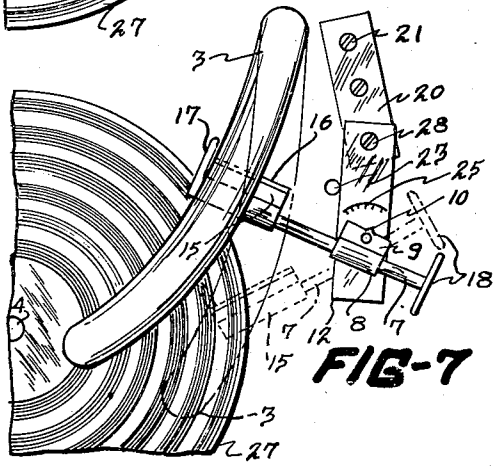
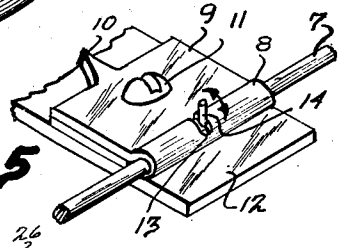


FIG-7

FIG-5



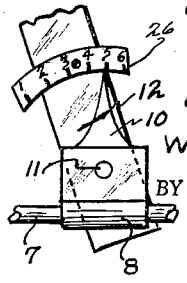


FIG-6

INVENTOR.
WILLIAM L. RODGERS
BY Toulmin & Toulmin
ATTORNEYS

United States Patent Office 2,972,483 Patented Feb. 21, 1961

2,972,483

TONE ARM LIFTER FOR PHONOGRAPHS

William L. Rodgers, 39 Houston Drive, Fairborn, Ohio

Filed June 16, 1958, Ser. No. 742,143

12 Claims. (Cl. 274—23)

The present invention relates to sound reproducing apparatus and more particularly to mechanism for reproducing selected parts of a multi-song record and for accurately indicating the position of the reproducing stylus on the same.

The modern type of long-playing record usually contains six to eight songs of approximately the same length and separated from one another by "run-out" and "run-in" grooves. The needle upon finishing one song will, after a short interval, run into the second song until the entire series is played.

However, it often happens that one or another of the series appeals to the particular audience more than the remaining songs so that it becomes necessary to start the needle at exactly the right place on the record to "catch" the selected song and to withdraw the needle at the instant that the song is finished.

It is practically impossible, using only visual aid, to hit the right spot when dropping or lifting the tone arm as there is always the danger of crossing one or more ridges of the grooves, which will wear the record out. Moreover, it is difficult to make the selection, even after the precise position of the desired song in the series is known, such as the second song or possibly the fourth song, because the separation of the songs on the record is hard to discern and the automatic arm lifting and dropping mechanism introduces further complications.

One of the principal objects of the invention is to provide a manually operated tone arm lifter and drop in which the precise position of the needle end of the arm with respect to the position of the various songs is indicated on a dial, which position can be accurately reproduced at will.

Still another object is to provide phonograph mechanism of the type described but in which the lifting and tone arm moving functions are controlled by the same actuating device so as to render the structure as simple as possible.

Again, great effort has been made at the recording studio to precisely time the length of each song and thereby provide annular bands of the same width per song on the record. Nevertheless, on occasion a given song may be somewhat longer or shorter than the average so that it is most impractical in such cases to provide any automatic means for raising or dropping the tone arm at predetermined intervals because the needle and the exact starting or terminating point of the song may not coincide.

Accordingly, another object of the present invention is to provide a tone arm lifter and dropping device in which the up and down movements are not confined to any strictly predetermined position or positions but a certain leeway is permitted in the upward or downward movement of the arm to accommodate the inevitable slight change in the length of any selected song of the series.

Still another object is to provide a tone arm lifting and dropping mechanism of improved and simple character that can be adapted to practically all standard makes of phonographs, either automatic or manual record changers, and can be furnished as an accessory to be applied by the owner of a phonograph with little or no technical skill.

Another object is to provide a manually operated tone arm lifting and dropping device which not only can be set to accurate positions indicated on a dial as to the number of the song on which the arm is being dropped, but also can take into account songs of different length or somewhat different positions on the record without destroying the accuracy of the position of the tone arm as indicated by the dial.

The final object is to provide an improved tone arm raising and dropping device which can be sold on a small package basis or, if desired, built into the machine by the manufacturer and which is versatile from the standpoint of being adapted to practically every make of phonograph on the market and yet offers the same accuracy by which the exact position of the needle with repect to each recorded song of a series can be readily ascertained and duplicated at will.

However, it will be understood that while my improved tone arm raiser and dropping device has its greatest use in connection with multi-song records and the selection of one song from another without any overlap of sound, it can also be used to advantage in the case of single song or instrumental records in setting the needle down at the exact beginning and raising the needle at the exact end of the single song or instrumental piece.

The above objects are attained in brief by providing a horizontal support rod rotatable in a bearing which is movable to duplicatable positions which are indicated by a pointer-dial arrangement, the rod having a cam at one end and being turned manually to contact the lower surface of the tone arm and being adapted to swing the tone arm to any desired position while resting upon the cammed end of the rod.

There are no rigid stops governing the movement of the rod or the pointer as it moves over the dial, this smooth movement allowing leeway in the position assumed by the tone arm but its exact position being known at all times by reference to the indications shown on the dial.

These and other objects and advantages of this invention will become more apparent upon reference to the following specification taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a typical record playing machine for accommodating multi-song or a single song record and provided with or without an amplifier system;

Figure 2 is an elevational view of the improved tone arm raising and lowering device with the tone arm shown in phantom and as shown looking in the direction of the arrow 2 in Figure 1;

Figure 3 shows in plan view the position of the swingable supports of the arm lifter in having moved the needle end of the tone arm from the position at rest (in dot-dash lines) to the innermost position to indicate the wide range of movement of the tone arm;

Figure 4 is a view similar to Figure 3 but showing the positions of the supports and the pointer-dial arrangement when selecting an intermediate song of the multi-song series;

Figure 5 is a perspective view of the bearing detail of the tone arm lifting rod and its support;

Fig. 6 is a fragmentary detailed view of a modified form of pointer-dial arrangement that may be used to advantage and particularly to provide an amplified movement effect so as to increase the accuracy of obtaining the proper position of the needle;

Figure 7 presents a plan view of a modified form of support for the various levers which on occasion may be more adaptable to certain types of phonographs than the lever structure shown in Figures 3 and 4; while

Figure 8 shows in perspective a modified form of the tone arm lifting rod.

Referring to Figure 1, reference character 1 designates the box of a typical phonograph containing the usual acoustical outlet coupled to the vertical tube 2 which carries a swingable hollow tone arm 3 of standard design. The box or casing 1 may, if desired, contain an amplifier of well known character and also a motor for driving an upright spindle 4, the necessary controls being indicated by the knobs 5.

The spindle 4 carries the usual metal plate 6 on which a multi-song large diameter size of record may either be manually placed in position on the spindle 4 or this may be performed automatically by a well known type of automatic record changing device (not shown).

Various ways have heretofore been proposed to drop the needle (not shown) provided at the inner end of the tone arm 3 onto the beginning of the song-playing groove and when this is done manually great care must be exercised to make certain that the needle is received squarely by the groove at a position just immediately before the song starts. Otherwise, the weight of the tone arm will cause the needle to migrate across the ridge between grooves and the record becomes full of scratchings upon repeated use and abuse, which will be most distasteful to the ear.

This problem of squarely hitting the right groove at the right place when lowering the tone arm manually and which is sometimes present in the case of an automatic record changing mechanism, is greatly enhanced when the number of songs on the record is multiplied. It is often difficult to discern with the naked eye the end of one song and the beginning of the next so that it often happens that a favorite song of a multi-song series is the one that has received the greatest abuse in this lack of proper coincidence between the position of the needle and the proper groove so that the record becomes practically useless to those interested solely in the one song.

In accordance with the principles of my invention to overcome these difficulties, I provide a rod 7 (Figures 3 and 5) contained snugly but still rotatable, in a sleeve bearing 8 formed by a bent-over strap structure 9. The latter is provided at the end farthest removed from the bearing 8 with a pointer 10 and is rotatably mounted by by a screw-headed bolt 11 on a bar or lever 12. The sleeve 8 is provided with a partial circumferential slot 13 for loosely receiving a pin 14 secured to the rod 7 in order to limit the rotational movements of the rod.

The rod 7 is provided at the left-hand end (seen in Figure 3) with the plate 15 of a length somewhat greater than the width of the tone arm, this plate extending radially outward from the rod and secured edgewise by means of an eyelet structure extending the length of the plate 15 and securely clamped to the rod so as to be movable with the latter. The free or outer edge of the plate 15 may be provided with a strip of rubber 16 in order not to mar the lower surface of the tone arm when lifting and carrying the same in the manner described hereinafter. A stop pin or guard 17 may be provided at the extreme end of the rod 7 and the attached plate 15.

The right-hand end (seen in Figure 3) of the rod 7 terminates in a small circular plate or wheel 18 to be gripped between the thumb and finger of the operator so as to rotate the rod 7, when desired. The bar 12 is pivotally mounted by means of a bolt 19 on a Z-shaped bar 20 (see Figure 2) which is secured as indicated at 21 to the top plate 22 of the phonograph.

There is a metal stop member 23 projecting upwardly from the top plate member 22 and the purpose of which will be apparent when a description of the functions of the various bar members and associated rod are explained. A spring may be attached to the edge of the bar member 12 in order to return the various parts to their inoperative or at rest position when not being actively used.

As shown more clearly in Figures 3 and 4, the bar member 12 has indications 25 printed or impressed thereon in an arcuate line and positioned opposite the pointer 10. These indications may be numbered 1 to 6 inclusive and, in general, correspond to the number of songs that are on the multi-song record, illustrated for example as six songs but which, of course, may be more or less than six.

If desired, and particularly if the width of the bar 12 is limited, a separate metal or cardboard piece 26 of arcuate configuration may be secured to the bar on which these song numbers are indicated and obviously, in order to obtain any desired degree of accuracy, the length of the pointer can be increased so as to magnify the various movements of the rod 7 about the axis 11.

In operation, assuming that the bars 12, 20 and the rod 7 are in the positions shown in Figure 3 so that the bar 12 abuts the stop pin 23 and it is desired to pick out song No. 4, for example, as indicated by the short grooves on the record 27 shown in this figure, the plate 15 is caused to move upwardly in a swinging direction by rotating the thumb knob 18. This serves to move the pin 14 against one edge of its slot and while grasping the knob 18 in this turned position the knob is pulled to the right until the pointer 10 shows No. 4 on the dial 25 at which time the knob 18 can then be turned in the opposite direction to cause the plate 15 to swing downwardly and thus to remove the support from under the tone arm and the needle will then be poised directly over the beginning groove of song No. 4 with no danger of having the needle strike the ridge on either side of the particular groove.

The condition of having moved the tone arm from this innermost position to song No. 4 is shown in Figure 4.

The dial is of course properly calibrated either by the manufacturer that supplies the tone arm lifting device or calibrations can be supplied by the user after a few determinations under playing conditions and these calibrations marked on an arcuate piece of cardboard or a metal strip secured to the bar 12 as shown in Figure 6.

It will be noted that when moving the plate upwardly to first support the tone arm and to swing the latter about the tube 2, the guard stop 17 will move up with the plate 15 and will pull against the inner surface of the tone arm to cause it to swing outwardly to the beginning of the No. 3 song position.

Now, assuming that the tone arm 3 is at its outward rest position (shown in dot-dash lines in Figure 3), having been brought into this position by the spring 24 or by an automatic record-changing mechanism, and further assuming that the turn table with the record thereon has been started and it is desired to play song No. 5, the knob 18 is rotated counter-clockwise as looking from the right (Figure 3) to swing the plate 15 having the rubber edge 16 upwardly and in doing so the weight of the tone arm is carried by the rubber edge. The knob 18 is then pushed to the left until the bar 12 strikes against the pin 23 and the tone arm is moved to its innermost position.

The rod 7 is then pulled to the right, causing the pin 17 to slide along the inner surface of the arm 3 and the arm is then brought to a position directly over the beginning groove of the No. 5 song as will be indicated by noting that the pointer 10 will be directly opposite the numeral 5 the arcuate strip 26 (Figure 6).

The tone arm is then allowed to drop slowly to bring the needle into the contact with the starting groove of song No. 5 by turning the knob 18 counter-clockwise which moves the rubber edged plate away from the underside of the arm. Other songs are selected in like manner but in the interests of accuracy of position of the arm, i.e. to assure that the needle will be poised directly over

the right groove of the selected song at the moment that it is lowered to playing position, it is desirable that the tone arm 3 be first moved to its innermost position, i.e. when the bar 12 strikes the pin 23, and then swung in the reverse direction to the proper song number as indicated by the reading on the dial 25, 26.

It will be noted by comparing Figures 3 and 4 that the strap 9 will always remain in its vertical position as the knob 18 is pulled to the right or pushed to the left. But the bar 12 assumes a different angle with respect to this strap member, depending upon the instantaneous position of the rod 7 and it is this difference in angle that is indicated at the dial 25 or 26 and this indication is an accurate measure of the angle through which the tone arm 3 has been swung from its innermost or starting position to the proper position directly over the selected song.

It will be further noted that the spring 24 serves to swing the arm 12 to its farthest right-hand position when no pressure is being exerted on the knob 18 so that the arm 3 will likewise be automatically returned to its "rest" position under these conditions, ready to be swung first to its innermost position and then part way back to such position as will bring the needle directly over the proper groove of the selected song as shown by the needle and the dial.

More experience on the part of the operator may eliminate the desirability of first moving the tone arm to its innermost position before being brought into coincidence with the selected song. But for most operators, and particularly when extreme accuracy is desired, it is better that the bar 12 be caused first to contact with the pin 23 and then move the rod to the right the proper distance to make the selection.

The structure described hereinbefore can normally be mounted on the top face of the casing and ordinarily at a position as will in no way interfere with any automatic changing device with which the phonograph might have been equipped. All the parts of the structure are obviously at a height over which the tone arm 3 can freely move except for the moment when the plate 15 is swung upwardly to carry the weight of the tone arm during the swinging movement.

When an automatic record changer is being additionally employed and the tone arm 3 is at its rest position, i.e. has been swung as far to the right as possible (Figure 3), the plate 15 and the guard pin 17 are in a depressed position so that the tone arm will have no contact with the song selecting structure and can then be under the full control of the automatic record changer.

It is apparent that the improved song selecting accessory described herein can be used even when the automatic record changer is in operation, since the angle through which the tone arm can be swung due to the rotary and sliding effects of the knob 18 can be controlled within the angular limits within which the automatic changing device is set to operate and when the tone arm is brought to its "rest" position by the knob 18 or spring 24, there is no interference offered to the automatic record changing device in removing one record and substituting another.

It will be further noted that since the angular movement between the strap 9 and the bar 12 is of a continuous character, i.e without abrupt stops as might be introduced by notches, a certain amount of leeway in this sliding action can be introduced by an experienced operator to take care of any known slightly less or slightly more width of a selected song and this leeway can be duplicated with accuracy by reference to the position of any one number on the dial.

For example, if the operator knows that the selected song No. 5 actually is running a few seconds longer than all of the other songs on the same record, or if it begins a little sooner than the other songs, the operator can make allowances by proper manipulation of the knob 18 when carefully observing the position of the pointer with respect to the No. 5 indication on the dial. This would not be possible if notches were provided anywhere in the structure by which to firmly locate the needle with respect to the beginning or end of a particular song.

Consequently, my invention, in providing a smooth sliding movement of the needle position from song 6 to song 1 and to make song selections anywhere between, provides not only extreme accuracy brought about by the proper calibration of the dial with respect to the position of the pointer, but also permits any deliberate and slight change of the position of the tone arm as determined by the operator to take care of known variations in the length or the position of the song on the record.

Figure 7 shows a modified structure which employs the same type of bars as were shown and described in connection with Figures 3 and 4. But in this case the pivot 28 which corresponds to pivot 19 in Figures 3 and 4 is now made frictionally tight so that under normal conditions the bar 12, after being forced against the pin 23 as described in connection with the earlier figures, remains in this position and all the movement of the tone arm in swinging from the innermost to the outermost position is accommodated by the movement of the strap 9 in space.

Whereas in Figures 3 and 4 this strap which carries the pointer remains in a vertical position (as seen when looking down on the strap) during the excursions of the tone arm, in Figure 7 the strap now moves away from the vertical and the bar 12 remains in a vertical position under these circumstances. However, in both forms of the invention, i.e. in Figures 3 and 7, the indications given by the pointer with respect to the dial, regardless of whether the dial moves in space or the pointer moves in space, will provide a correct indication of the position temporarily assumed by the tone arm with respect to the position of any one of the songs on the record.

It will be noted that the structure shown in Figure 3 may occupy a little more space in the right-hand direction and perhaps less space in the vertical direction than the structure shown in Figure 7 so that the choice of which structure should be used will depend to some extent upon the amount and shape of the space available for receiving the structure on the top of the phonograph.

It will be further noted that the modification of Figure 7 offers all the advantages that have been set forth in connection with Figures 3 and 4 and the main difference is that the pivot 28 is more or less rigid after the bar 12 has been brought in contact with the stop pin 23 so that all of the swinging movement must be accommodated by the strap.

Figure 8 shows a modified form of a single piece rod 7 which may be used to advantage. As will be noted, the pin 17 is formed integral with the rod and the latter is bent to form the leg 29, leaving a portion 30 that is positioned away from the main portion 7 and thus serving the function of the metal plate 15.

A rubber tube 31 surrounds the portion 30 to serve the function of the rubber edge 16 described hereinbefore and even the knob 18 can be formed as a ring integral with the rod, so that the only additional element that need be provided is the pin 14 which may be pressed into an opening in the rod to cooperate with the slot 13 of the bearing 8. Thus, the rod 7 shown in Figure 8 performs the same function as its counterpart in Figures 3 and 7 but can be made at somewhat less expense due to the integral rod-like structure.

It will be understood that various modifications and arrangements in structure could be made without departing from the spirit of my invention and, accordingly, I desire to comprehend such modifications and substitutions of equivalents as may be considered to come within the scope of the appended claims.

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

1. A device for reproducing a disc phonograph record having one or more songs thereon, a tone arm pivoted at one end to swing across the record, said arm carrying a stylus remote from the pivoted end, and hand-operated means for lifting said arm and stylus clear of the record and for swinging said arm to a predetermined and reproducible position with respect to the beginning of any song on the record, said means being adapted to drop the stylus precisely in the desired groove of the desired song and remove the same precisely upon the conclusion of the song, said means including a dial and pointer mechanism which moves with respect to one another only when the tone arm is lifted by said hand-operated means and is being swung by said means across the record to register the instantaneous positions of the tone arm during the song selecting operation, said tone arm resting on the hand-operated means but mechanically disconnected therefrom whereby said arm may be raised and swung into proper position by hand independently of any movement of the dial and pointer mechanism.

2. A device for reproducing a disc phonograph record having one or more songs thereon, a tone arm pivoted at one end to swing across the record, said arm carrying a stylus remote from the pivoted end, and means for lifting said arm and stylus clear of the record and for swinging said arm to a predetermined and reproducible position with respect to the beginning of any song on the record, said means being adapted to drop the stylus precisely in the desired groove of the desired song and remove the same precisely upon the conclusion of the song, said means including a pivoted bar, a bearing member swivelly mounted on the bar, a rod rotatably extending through said bearing member, a lifting plate secured to the rod, a pointer on said bearing member and a dial on said bar whereby as the rod is turned to bring the lifting plate under the tone arm and the bar and bearing member are caused to move about the pivot and swivel axis respectively, the pointer is caused to move relative to the dial to indicate the instantaneous position assumed by the tone arm in terms of a song position on the record.

3. A device for reproducing a multi-song disc phonograph record, a tone arm pivoted at one end to swing across the record and carrying a stylus, and means for lifting, swinging and then dropping the arm and stylus to a predetermined and reproducible position with respect to the beginning groove of any desired song on the record, said means offering a continuous sliding movement when being swung to said position, and means operable only when the tone arm is in a lifted state and is being carried across the record by said first mentioned means for visually indicating the exact position of the tone arm with respect to the beginning point of any one song on the record, said position-indicating means comprising a pointer and dial which move relative to one another and mounted on the tone arm carrying means.

4. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory being adapted to be packaged separately from the phonograph and serving to position the tone arm of the phonograph directly above the beginning groove of the song or any one song of a series, said accessory including a plurality of bars adapted to be detachably secured to the face plate of the phonograph, one of said bars being swivelly mounted on the other bar and carrying at one end a rotatable strap formed as a bearing to receive a rod rotatably and slidably carried in the bearing, a lifting plate at one end of the rod so positioned that as the rod is rotated in the bearing one edge of the plate will contact the underside of the tone arm and thereby remove the stylus from the record, the slidable movement of the rod within said bearing serving to swing the tone arm while in a lifted position across the record to a predetermined and duplicatable position, whereby as the rod is rotated in the opposite direction, the lifting plate is lowered from the tone arm to permit the stylus to be placed

in the predetermined and duplicatable groove of the desired song, and means for indicating the said predetermined and duplicatable position of the tone arm while in the lifted state, said means including a pointer and dial mechanism of which one portion constitutes a part of the rotatable strap and the other portion constitutes part of the swivable bar.

5. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory being adapted to be packaged separately from the phonograph and serving to position the tone arm of the phonograph directly above the beginning groove of the song or any one song of a series, said accessory including a plurality of bars adapted to be detachably secured to the face plate of the phonograph, one of said bars being swivelly mounted on the other bar and carrying at one end a rotatable strap formed as a bearing to receive a rod rotatably and slidably carried in the bearing, a lifting plate at one end of the rod so positioned that as the rod is rotated in the bearing one edge of the plate will contact the underside of the tone arm and thereby remove the stylus from the record, the slidable movement of the rod within said bearing serving to swing the tone arm while in a lifted position across the record to a predetermined and duplicatable position, whereby as the rod is rotated in the opposite direction the lifting plate is lowered from the tone arm to permit the stylus to be placed in the predetermined and duplicatable groove of the desired song, means for indicating the said predetermined and duplicatable position of the tone arm while in the lifted state, said means including a pointer and dial mechanism of which one portion constitutes a part of the rotatable strap and the other portion constitutes part of the swivable bar, and means forming part of said rotatable strap member for limiting the rotary movement of said rod within the bearing formed by said strap.

6. A device for reproducing a disc phonograph record having one or more songs thereon, a tone arm pivoted at one end to swing across the record, said arm carrying a stylus remote from the pivoted end and manually operable means for lifting said arm and stylus clear of the record and for swinging said arm to a predetermined and reproducible position with respect to the beginning of any song on the record, said means being adapted to drop the stylus precisely in the desired groove of the desired song and remove the same precisely upon the conclusion of the song, said means including a dial and pointer mechanism which moves with respect to one another when the tone arm is in its lifted position and being swung across the record, said means for lifting and swinging the arm being located at a level under the tone arm and out of contact with the tone arm except when operated to lift the arm, whereby the tone arm is entirely free to be manually lifted and swung across the record without any relative movement between the dial and the pointer, said tone arm resting on said lifting means and mechanically disconnected therefrom whereby said arm may be raised and swung into position independently of any movement of the pointer over the dial.

7. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory being adapted to be separately packaged from the phonograph and to be detachably secured thereto, said accessory comprising a hand-operated means for lifting, swinging and then dropping the tone arm to a predetermined and reproducible position with respect to the beginning of any song on the record and having a continuous sliding movement when being swung to said position, said last-mentioned means including a rod which is rotatable in a bearing, said rod having an offset portion which contacts the underside of the tone arm when the rod is turned in said bearing, said tone arm being adapted to swing freely over said lifting means except when said rod is turned, said swinging and dropping means including a pointer and dial mechanism formed as part of the accessory and oper-

able only when the tone arm is lifted, swung and dropped into position, said tone arm resting on said hand operated lifting means only when the last mentioned means is operated but mechanically disconnected therefrom whereby said tone arm may be lifted, swung and then dropped into proper position independently of any movement of the pointer and dial mechanism.

8. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory comprising means for lifting, swinging and then dropping the tone arm of the phonograph to a predetermined and reproducible position, said means including a Z-shaped bar adapted to be detachably secured to the top plate of the phonograph, a rectilinear bar member freely swivable on said Z-shaped member and positioned above the level of said top plate, a bearing member freely swivable on said rectilinear bar member and a rod rotatably mounted in the bearing member which carries a lifting plate at one end and a knob at the other end, said lifting plate serving when the rod is rotated by said knob to press upwardly against the underside of the tone arm, said rod being adapted to be manipulated to swing the bearing member about the bar member to carry the tone arm in a predetermined direction, and dial-pointer means mounted on said rectilinear bar member and bearing member for showing the angular distance travelled by the tone arm when in its lifted position in order to determine the poised position of the stylus on the tone arm with respect to the position of a song on the record beneath.

9. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory comprising means for lifting, swinging and then dropping the tone arm of the phonograph to a predetermined and reproducible position, said means including a Z-shaped bar adapted to be detachably secured to the top plate of the phonograph, a rectilinear bar member freely swivable on said Z-shaped member and positioned above the level of said top plate, a bearing member freely swivable on said rectilinear bar member and a rod rotatably mounted in the bearing member, said rod carrying a lifting plate at one end and a knob at the other end, said lifting plate serving when the rod is rotated by said knob to press upwardly against the underside of the tone arm, said rod being adapted to cause the bearing member to swivel about the bar member to carry the tone arm in a predetermined direction, and a dial means mounted on said rectilinear bar member and a pointer on said bearing member for showing the angular distance travelled by the tone arm when in its lifted position in order to determine the poised position of the stylus on the tone arm with respect to the position of a song on the record beneath, said lifting plate being provided with a stop pin at the extreme end thereof and projecting beyond the uppermost edge of the plate when in the lifted position, whereby said pin serves to urge the tone arm into a predetermined position by the manipulation of the rod and as shown on the indicating means.

10. An accessory for a phonograph which is adapted to play single or multi-song records, said accessory comprising means for lifting, swinging and then dropping the tone arm of the phonograph to a predetermined and reproducible position, said means including a Z-shaped bar adapted to be detachably secured to the top plate of the phonograph, a rectilinear bar swivable but frictionally held on the Z-shaped bar, a bearing member freely swivable on said rectilinear bar member, a rod rotatably mounted in the bearing member, said rod carrying a lifting plate at one end and a knob at the other end, said lifting plate serving when the rod is rotated by said knob to press upwardly against the underside of the tone arm, said rod being adapted to cause the bearing member to swivel about the bar member to carry the tone arm in a predetermined direction, and dial-pointer means mounted on said rectilinear bar member and the bearing member for showing the angular distance travelled by the tone arm when in its lifted position in order to determine the poised position of the stylus on the tone arm with respect to the position of a song on the record beneath.

11. A device for reproducing a disc phonograph record having one or more songs thereon, a tone arm pivoted at one end to swing across the record, said arm carrying a stylus remote from the pivoted end, and means for lifting said arm and stylus clear of the record and for swinging said arm to a predetermined and reproducible position with respect to the beginning of any song on the record, said means being adapted to drop the stylus precisely in the desired groove of the desired song and remove the same precisely upon the conclusion of the song, said means including a pivoted bar, a bearing member swivelly mounted on the bar, a rod rotatably extending through said bearing member, the end of the rod being bent to have an offset position with respect to the bearinged portion of the rod, the offset portion of the rod terminating in a stop pin portion which is adapted to contact the inner edge of the tone arm when the rod has been turned in its bearing to cause the offset portion to lift the stylus clear of the record, whereby the tone arm can be moved in its lifted position by manipulating the rod to cause the bar to turn about its pivot and a dial-pointer mechanism mounted on said bearing member and on said bar to indicate the instantaneous position of the tone arm and stylus with respect to the position of a song on the record.

12. A device for reproducing a disc phonograph record having a plurality of songs thereon, said device including a tone arm pivoted at one end to swing across the record, and hand-operated lever means for moving the arm from one position on the record to another position which is predetermined with respect to any one of said songs, said means comprising a rod terminating at one end in a hand knob and at the other end in a cam shaped element, a bearing for said rod and means for swingably supporting the bearing above the phonograph device at a height such that when said element is rotated in the bearing by turning said knob the tone arm is raised, and markings on said swingable support to indicate the swingable movements of said bearing on its support for determining the position of the tone arm with respect to any one of the songs on the record.

References Cited in the file of this patent

UNITED STATES PATENTS

2,141,804	Thompson et al.	Dec. 27, 1938
2,235,301	Robinson	Mar. 18, 1941
2,307,259	Fling	Jan. 5, 1943
2,494,063	Simon	Jan. 10, 1950

FOREIGN PATENTS

258,702	Great Britain	Sept. 30, 1926