

Sept. 23, 1941.

C. A. BRINKERT

2,257,019

SELECTOR KEY MECHANISM FOR AUTOMATIC PHONOGRAPHS

Filed Jan. 16, 1940

3 Sheets-Sheet 1

Fig. 1.

Fig. 6.

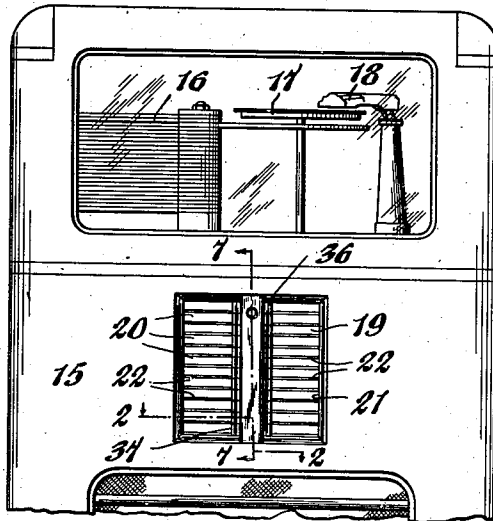
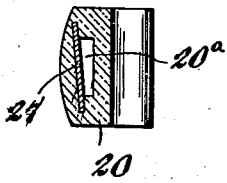


Fig. 7.

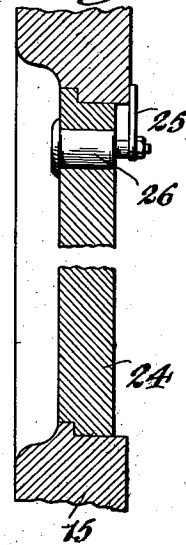


Fig. 2.

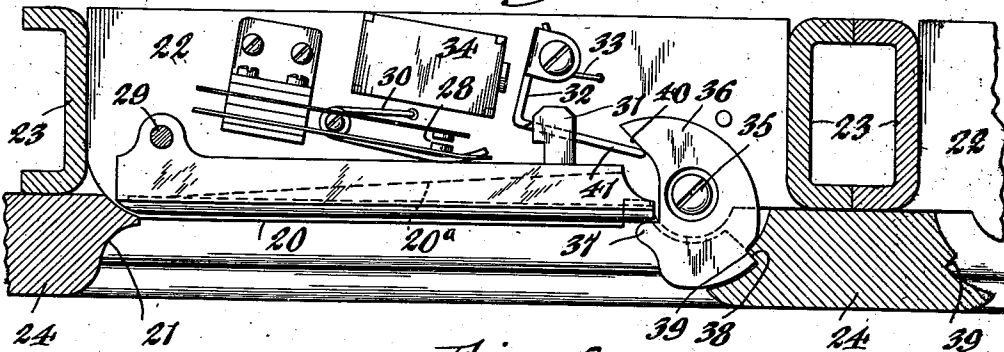
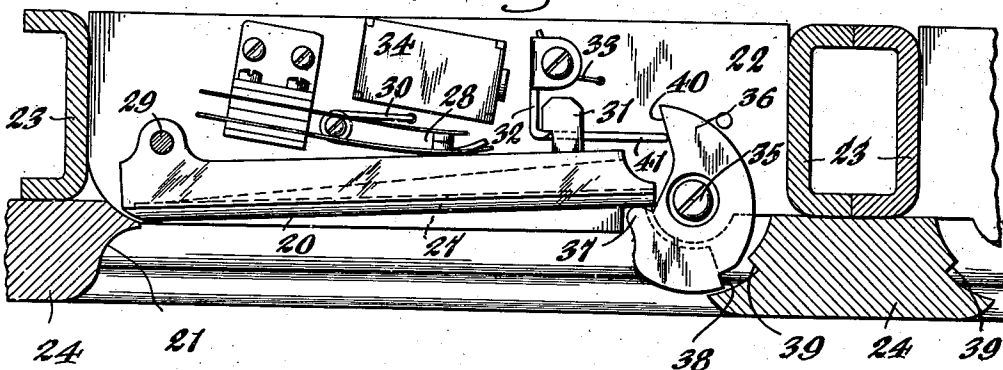


Fig. 3.



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Fig. 4.

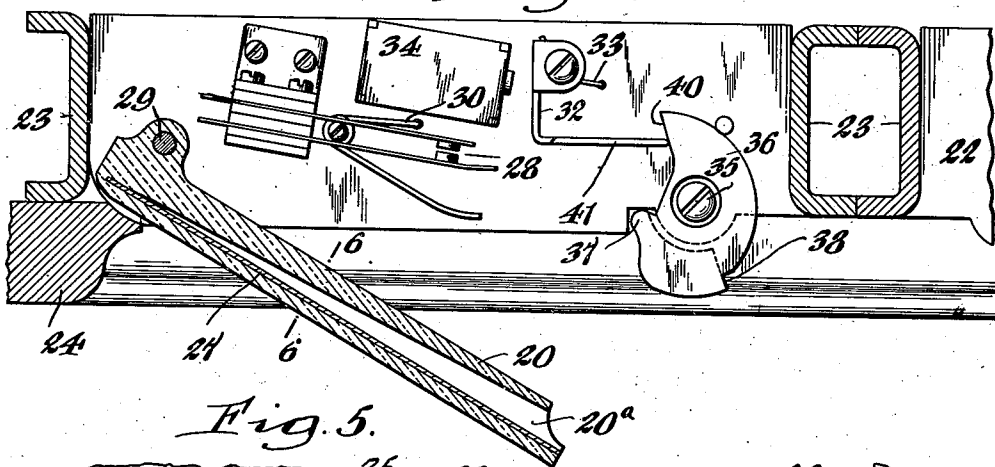


Fig. 5.

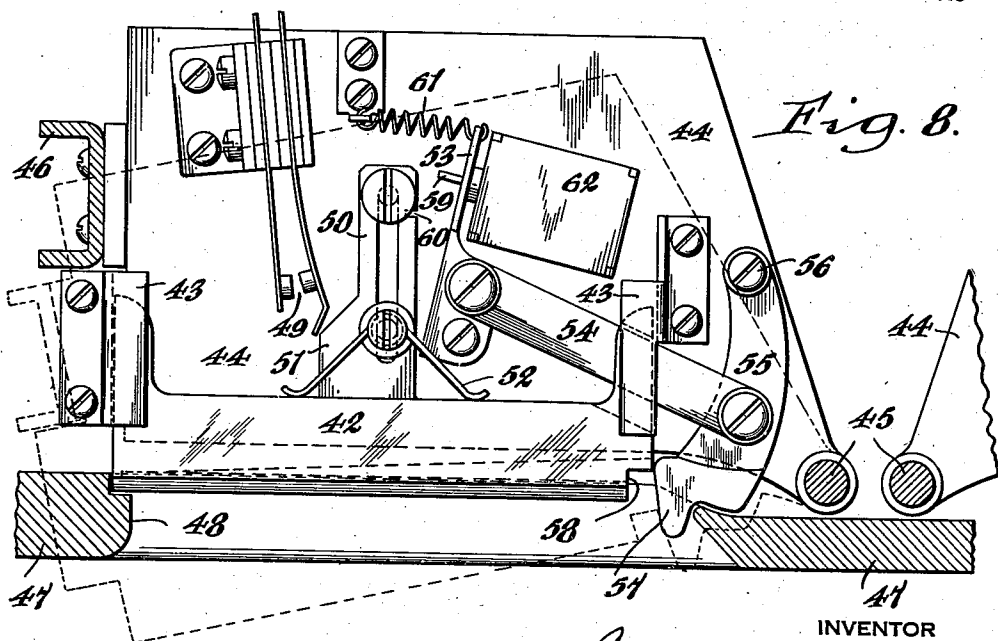
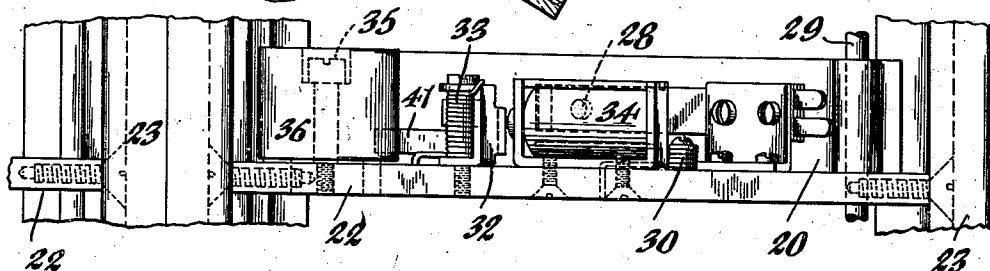


Fig. 8.

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Fig. 9.

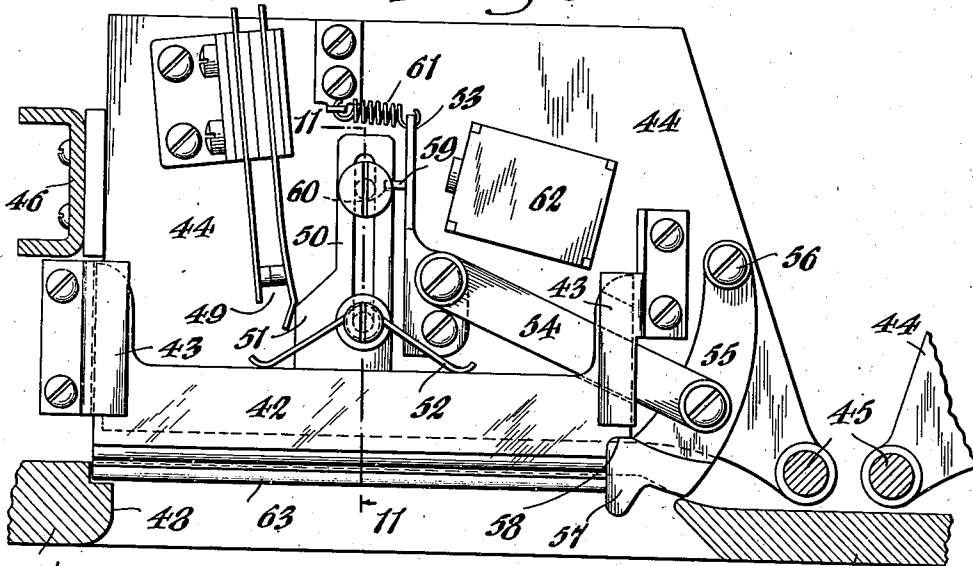


Fig. 10.

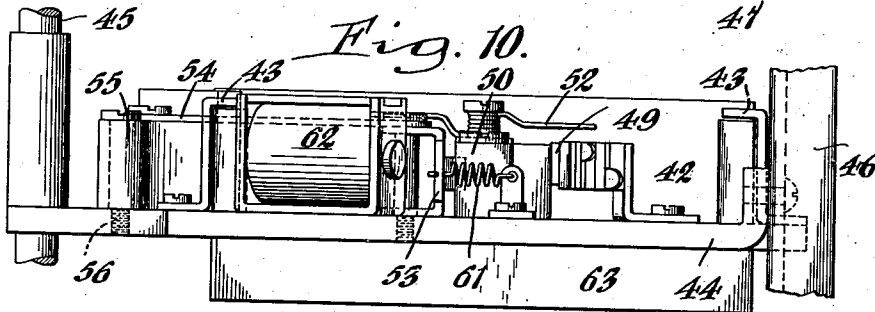
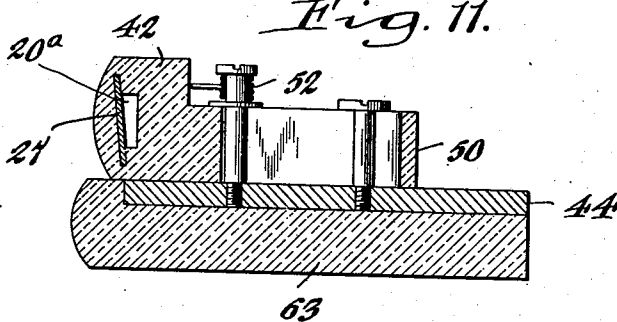


Fig. 11.



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SELECTOR KEY MECHANISM FOR AUTOMATIC PHONOGRAPHS

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Application January 16, 1940, Serial No. 314,126

12 Claims. (Cl. 74-479)

This invention relates generally to automatic phonographs but more particularly to a combination program holder and selector key mechanism therefor.

It has for one of its objects to provide a combination mechanism of this character which is designed to facilitate the patron's selection of a given program of records in a simple, direct and accurate manner.

Another object of the invention is to provide a combination program holder and selector key assembly which is simple, compact and inexpensive in construction, and wherein each selector key embodies therein a given record title, thereby enabling the operator at a glance to choose the record desired from such assembly and to at the same time actuate such key directly to its selective position.

A further object is the provision of a combination selector mechanism of this character which is so designed as to magnify the program titles to render them clearly visible and so constructed as to permit the ready cancellation of a selection once made without disturbing any other selections constituted in a given program selected.

Other features of the invention reside in the construction and arrangement of parts herein-after described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a fragmentary front elevation of an automatic phonograph showing my combination program holder and selector key mechanism associated therewith. Figures 2 and 3 are enlarged horizontal sections taken substantially in the plane of line 2-2, Figure 1, and showing one of the combined program holders and selector keys in its non-selective and selectively-set positions, respectively. Figure 4 is a like section showing one of the unit holders and keys swung outwardly to a position for replacing the program title card or element. Figure 5 is a rear view of one of the combination program holders and selector key units and their associated parts. Figure 6 is a cross section of one of such units taken on line 6-6, Figure 4. Figure 7 is an enlarged, fragmentary vertical section taken on line 7-7, Figure 1. Figure 8 is a horizontal section, similar to Figure 2, showing a modification of one of the combination program-selector key units in its non-selective position. Figure 9 is a like view of the same in a selective position. Figure 10 is a rear view of such modification. Figure 11 is a cross section taken on line 11-11, Figure 9.

Similar characters of reference indicate corresponding parts throughout the several views.

While my improved selector key mechanism is applicable to any type of a selectively-controlled instrument, it has been shown, by way of example, in connection with an automatic selective phonograph of a well known type, that shown in the drawings (Figure 1) consisting of a cabinet 15 in the upper portion of which is housed a vertical stack of record carriers 16 adapted to be selectively swung horizontally to a position in the axial plane of a vertically adjustable turntable 17, to the end that after a carrier is selectively swung from the stack to a position over the turntable, the latter is elevated to the position shown in Figure 1 to bring the selected record from its carrier into playing engagement with the tone arm 18. The present invention has to do with the patron-actuated means for pre-selecting those records borne by the phonograph which the patron desires to be played, and in this connection these means consist of a combined program holder and selector key unit, one for each record, the keys being depressible to a selective position and directly bearing the title of the respective records borne by the phonograph.

As shown in Figure 1, this combined program holder and selector key assembly is indicated generally by the numeral 19 and may be disposed at the front side of the cabinet for convenient manipulation by the patrons. The combined program holder and key units preferably consist of horizontally-disposed, depressible bars or members 20 arranged in one or more vertical rows, depending upon the number of records borne by the phonograph, these bars having their front faces exposed through an opening 21 formed in the front wall of the cabinet 15 and each being supported for displacement to and from a selective position on a companion horizontal shelf or platform 22 supported on upright rails 23 disposed within the cabinet. In the example shown in Figures 1 to 7 of the drawings, the bars 20 and intervening shelves 22 are disposed in two adjoining vertical rows with a removable upright partition 24 being disposed between the opposing inner ends of the bars, and being removably held in position by a releasable keeper 25, as shown in Figure 7. This keeper may be operatively associated with a key-operated lock assembly 26, so that only authorized persons have access thereto for removing the partition 24 for a purpose which will hereinafter appear. These bars are of such dimensions as to appropriately

constitute holders for receiving removable cards 27 on which are inscribed the titles of the phonograph records borne by the instrument. When depressed from the position shown in Figure 2, which is the normal, non-selective position of a selector bar, to the depressed selective position shown in Figure 3, such bar acts to close a switch 28 included in a suitable circuit for selectively governing the projection of the companion record carrier 16 from the record stack to a position over the turntable 17, whereby to effect the automatic selection and playing of that record whose title is borne by the card 27 contained in the depressed or selected holder key 20. Inasmuch as this selective control circuit constitutes no part of the present invention, it has not been deemed necessary to show or describe it.

In the embodiment of the invention shown in Figures 1-7, inclusive, the combined selector key and program-holder bars are pivoted to swing horizontally to and from a selective position and for this purpose are connected at one end to a common upright pintle 29 which intersects the respective shelves 22. A spring 30 is associated with each bar 20 to normally urge and maintain it in the non-selective position, shown in Figure 2, and projecting inwardly from adjacent the free end of each bar is a shouldered lug 31 with which a horizontally swinging latch 32 is adapted to engage for releasably holding the bar in its depressed or selective position shown in Figure 3. A spring 33 associated with this latch normally urges it to swing into latching engagement with the shouldered lug 31. An electromagnet 34 may be included in the selective-governing circuit so that at a predetermined time after the selected record has been brought out for play, this magnet will be energized and the latch 32, which also constitutes an armature, will be attracted to the magnet and be released from latching engagement with the lug 31, whereupon that selector bar will be automatically projected or restored to its non-selective position by the spring 30.

Pivotaly mounted on each shelf 22 adjacent the free end of its companion selector bar 20 on a pivot screw 35, is a rotatable cancelling element 36 having a nose portion 37 against which the free end of such bar abuts in both the selective and non-selective positions of the bar, as shown in Figures 2 and 3, a radially-disposed shoulder 38 adapted to abut against a corresponding shoulder 39 on the adjoining wall of the partition 24 in the non-selective position of the selector bar and cancelling element, as shown in Figure 2, and a cam face 40 against which an extension 41 of the latch 32 is adapted to abut at all times, so that when the latch is shifted to its latching position motion is imparted to the cancelling element in a direction to keep its nose 37 in contact with the selector bar, and when the latter is released to its non-selective position, such bar turns the cancelling element to its initial position abutting the shoulder 38. The nose portion 37 of the cancelling element also serves as a stop for limiting the return of the selector key to its normal, non-selective position. As shown in Figures 1, 4 and 5, that portion of the cancelling element between the nose 37 and the shoulder 38 preferably depends downwardly from the remaining portion of the element and overhangs the adjoining front edge of the corresponding partition 22 to provide a convenient finger-grip for actuating such element to a cancelling position. Should the patron desire to

cancel a given selector bar 20 after he has depressed it to a selective position, he merely grasps the exposed front face of the cancelling element 36 with the thumb or finger and rotates it in a counterclockwise direction to bring the nose 37 forwardly and to project the catch 32 to released position due to the cam 40 deflecting the catch-arm 41 in a direction to unlatch it from the key lug 31, whereupon the spring 30 will cause the key-bar to be automatically swung outwardly to the non-selective position shown in Figure 3.

The combined selector key and program holder bars 20 are preferably made of a light-transmitting material, such as "Lucite," and the forward face of each bar is convexly curved in the manner shown in Figure 6 for the purpose of magnifying the title appearing on the inscription cards 27, the latter being removably supported in a pocket 28^a formed in each bar. These bar-pockets are open at the free ends of the bars, so that when the latter are swung outwardly to the position shown in Figure 4, after removal of the frame-partition 24, the title-cards 27 may be readily inserted or removed. The shelves 22 are likewise made of a light-transmitting material, so that in use these parts, namely, the bars 20 and the front edges of the shelves 22 are effectually and colorfully illuminated from a light source suitably disposed within that part of the cabinet 15 containing these elements. Furthermore, the cancelling elements 36 are made of a similar material to blend with and in effect form continuations of the selector bars.

In the modified form of the invention shown in Figures 8-11, inclusive, the combination program holder and selector key units are in the form of depressible slide bars 42 guided in suitable ways 43 applied to vertically-spaced supporting shelves 44, the latter being hinged at one end as a unit assembly to a common upright hinge post 45 suitably supported in the cabinet, and the opposite ends of the shelves being suitably fixed to an upright standard 46. In this form of the invention, a rectangular frame piece 47 is detachably applied to the front side of the cabinet about the vertical row of selector keys and the latter are exposed through the opening 48 of such frame. This frame may be detachably secured in the same manner that the frame-piece 24 is secured. As in the previously-described construction, when the selector bars are depressed from the position shown in Figure 8 to the position shown in Figure 9, each bar acts to close a companion selector-governing switch 49 and is provided with a rearward slotted extension 50 having a lateral projection 51 thereon for governing the displacement of the movable element of the switch to and from a switch-closing position in response to the inward and outward movement of the selector bar. A spring 52 bearing against the inner face of each bar 42 normally urges it to the non-selective position shown in Figure 8. The numeral 53 indicates a horizontally-swinging latch which is connected by a link 54 with a companion horizontally-swinging cancelling element 55 pivoted at 56 to the corresponding shelf 44 and terminating at its outer or front end in a nose or finger-gripping portion 57 which is adapted to engage a shoulder 58 formed in the adjoining end of the selector bar 42 in the depressed or selective position of such parts, as shown in Figure 9. The latch 53 has a projection 59 thereon which is adapted to engage a locking notch 60 in the opposing face of the bar ex-

tension 50 in the selective position of the selector bar. A spring 61 connected to the latch 53 normally urges the same into latching engagement with the bar extension 50. In the non-selective position of the selector bar 42 the nose portion 57 of the cancelling element 55 assumes a position displaced from the bar-shoulder 58 and bears against the adjoining side edge of the selector bar 42, as shown in Figure 8. When the patron depresses the selector bar to a selective position, the spring 61 urges the latch 53 and cancelling element 55 to the latched positions shown in Figure 9. An electromagnet 62 may be included in the selecting circuit so that at a predetermined time in the selective playing cycle this magnet will be energized and the latch 53, which also constitutes an armature, will be attracted to the magnet and be released from latching engagement with the bar extension 50, whereupon the companion element 55 will be simultaneously projected or released from engagement with the shoulder 58 of the selector bar 42 and the latter will be automatically projected by the spring 52 to its normal non-selective position.

The selector bars 42, which also constitute holders for the selection title-cards, are similar in construction to those previously described, and when it is desired to replace such cards in accordance with record-changes in the phonograph, the frame 47 is removed from the cabinet and the several shelves 44 together with the selector bars and associated parts are swung outwardly as a unit from the cabinet, to thereby expose the ends of the bars to conveniently effect the removal of the title cards and the replacement thereof with new ones, after which this unit structure is swung back into the cabinet and the frame piece 47 replaced in position on the cabinet.

The selector-bar-supporting shelves 44 which are suitably supported in proper spaced relation on the hinge-post 45 and standard 46 may be made of metal and faced on their under sides and front edges with facings 63 of light-transmitting material to match with the appearance of the selector bars 42.

I claim as my invention:

1. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective position, means for normally urging said selector elements to a non-selective position, means releasably engageable with said elements for latching them in a selective position, and relatively-movable cancelling means disposed in cooperative adjoining relation with the companion selector elements and latching means and movable therewith to a selective position when the companion selector element is moved to such position, each of said cancelling means being manually movable to a cancelling position and having a portion operatively engageable with the latching means to release the same from engagement with the companion selector element.

2. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective position, means for normally urging said selective elements to a non-selective position, means releasably engageable with said elements for latching them in a selective position, and manually-actuated cancelling members individually associated in correlation with said selec-

tor elements for movement relative thereto and each having a portion operatively connected to the companion latching means for effecting the release of the latter from engagement with the companion selector element.

3. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective governing position, means for normally urging said selector elements to a non-selective position, means releasably engageable with said elements for latching them in a selective position, and pivoted cancelling members individually associated with said selector elements in adjoining coextensive relation therewith and having a portion operatively connected to the companion latching means for effecting the release of the latter from engagement with the companion selector element and a manually-engageable portion adjoining the face of the latter.

4. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective position, means for normally urging said selector elements to a non-selective position, means operatively associated with each of said selector elements for latching them in a depressed selective position, and a manually-actuated cancelling element disposed in correlation with each of said selector elements and each having a facial portion in coextensive relation with the operating face of its companion selector element and having a second portion operatively connected with its companion latching means for releasing it at the will of the operator from such selector element.

5. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective governing position, means for normally urging said selector elements to a non-selective position, means operatively associated with each of said selector elements for latching them in a depressed selective position, and a manually-actuated cancelling element disposed in correlation with each of said selector elements and operatively connected with its companion latching means for releasing it at the will of the operator from such selector element, the operative connection between the cancelling element and its companion latch means including a part for compelling the restoration of the cancelling element to its normal position simultaneously with the movement of the selector element to its non-selective position.

6. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective governing position, means for normally urging said selector elements to a non-selective position, means operatively associated with each of said selector elements for latching them in a depressed selective position, means operatively connected with each of said latching means for automatically releasing it at a predetermined time in the record-changing operation to cause the restoration of the companion selector element to its non-selective position, and a manually-actuated cancelling element operatively connected with each of said latching means for releasing it at the will of the operator from its companion selec-

tor element to cause the restoration of the latter to its non-selective position.

7. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective governing position, means for normally urging said selector elements to a non-selective position, means operatively associated with each of said selector elements for latching them in a depressed selective position, and a manually-actuated cancelling element disposed in correlation with each of said selector elements and operatively connected with its companion latching means for releasing it at the will of the operator from such selector element, said cancelling element having a stop thereon for limiting its movement in one direction and an exposed finger-engaging portion for effecting its movement in the opposite direction to its selector-cancelling position.

8. In a phonograph for playing a plurality of records selectively, a plurality of selector elements corresponding in number to the records and mounted for movement to and from a selective governing position, said selector elements being made of a translucent material and each having a recess therein for removably receiving a program-card bearing a given record title, means operatively connected to each of the selector elements for urging them to a non-selective position, means engageable with said selector elements for latching them in a selective position, means operatively connected with each of said latching means for automatically releasing it at a predetermined time in the record-changing operation, and a manually-actuated cancelling element of translucent material in adjoining co-extensive relation to each selector element and operatively connected to the corresponding latching means for releasing it at the will of the operator from its companion selector element to cause the restoration of the latter to its non-selective position.

9. In a selector mechanism of the character described, a support, a selector key mounted on said support for movement to and from a selective-governing position, means acting on said key for constantly urging it to a non-selective position, means engageable with said key for latching

it in a selective position, and reversibly movable means having a portion operatively connected to said latching means for releasing it from said key when said movable means is actuated in one direction, said last-named means being disposed in operative relation to the key and having a portion in engagement therewith in all positions thereof and a stop for limiting the movement of said movable means in the opposite directions when the key is moved to its non-selective position.

10. In a selector mechanism of the character described, a support, a combined selector key and title-bearing bar mounted on said support for movement to and from a selective-governing position, said bar being light-transmitting and having a recess therein for removably receiving a title-bearing element, and means engageable with said key for releasably latching it in its selective position.

11. In a selector mechanism of the character described, a support, a combined selector key and title-bearing bar mounted on said support for movement to and from a selective-governing position, means engageable with said key for releasably latching it in its selective position, and a cancelling member pivotally disposed adjacent one end of said key and having a finger-engaging portion in coextensive relation to the face of the key and having a part in operative engagement with said latching means, said finger-engaging portion having a nose in bearing engagement with the adjoining end of said key.

12. In a selector mechanism of the character described, a support, a combined selector key and title-bearing bar mounted on said support for movement to and from a selective-governing position, means engageable with said key for releasably latching it in its selective position, a cancelling member pivotally disposed adjacent one end of said key and having a part in operative engagement with said latching means and a finger-engaging portion in coextensive relation to the key, a detachable frame-piece extending in part over the finger-engaging portion of said cancelling member, and companion stop elements applied to the latter and said frame-piece for limiting the movement of said cancelling member in one direction.

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