July 8, 1924.

1,500,539

P. F. ADAMS

RECORD HOLDER AND EJECTOR

Filed June 7, 1923

2 Sheets-Sheet 1

Fig. 1.

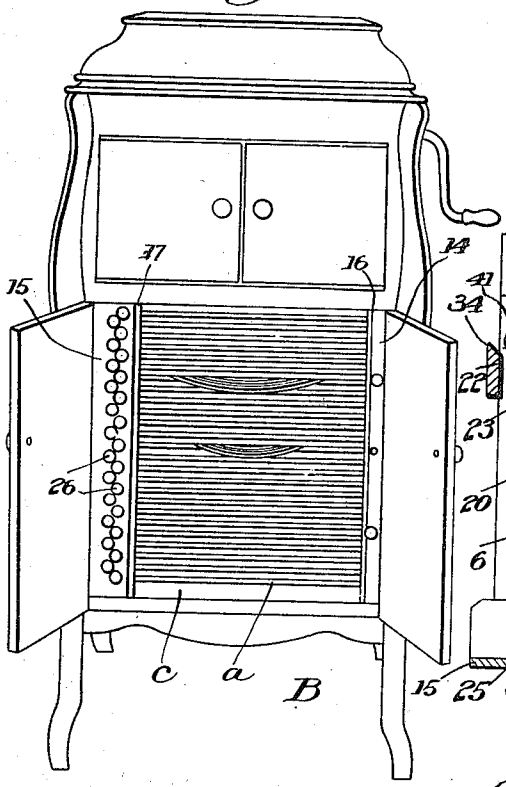
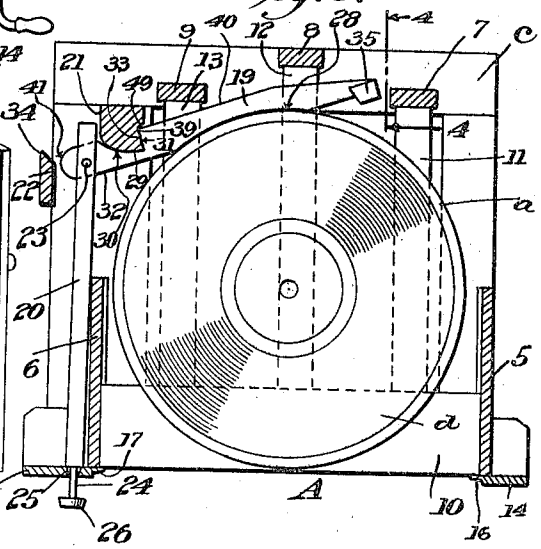


Fig. 3.



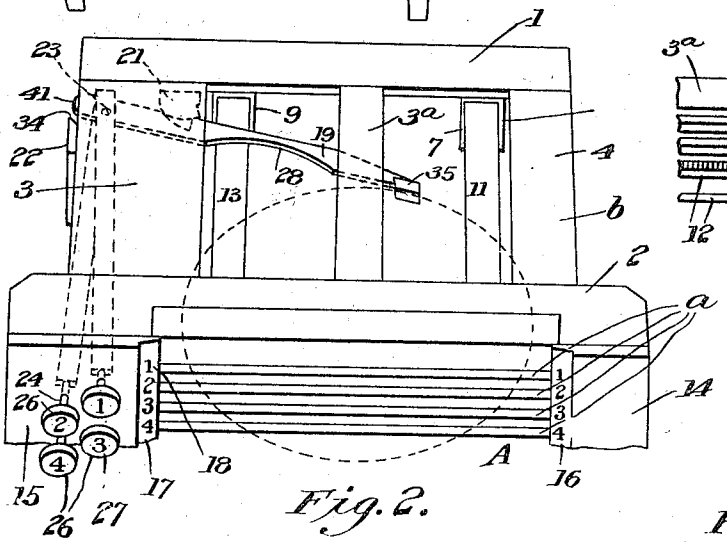
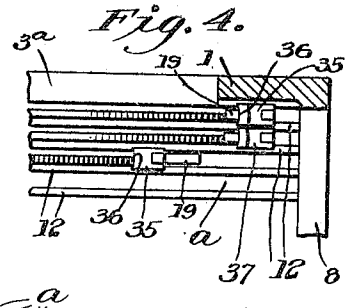


Fig. 2.

Fig. 4.



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Fig. 5

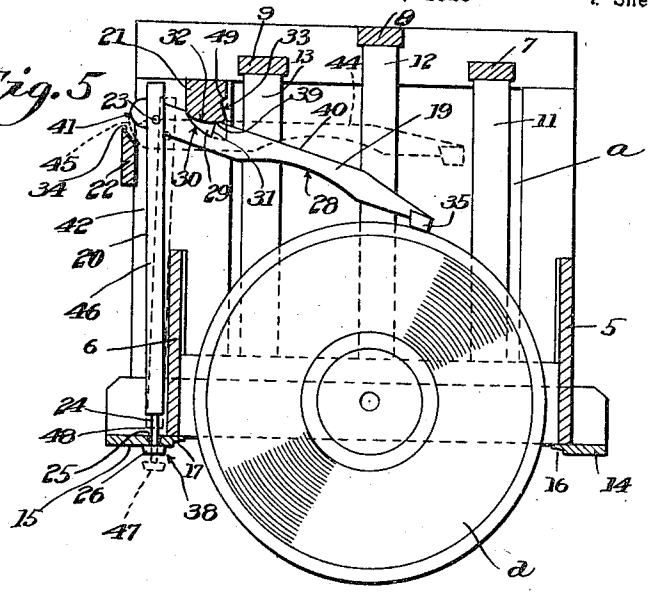
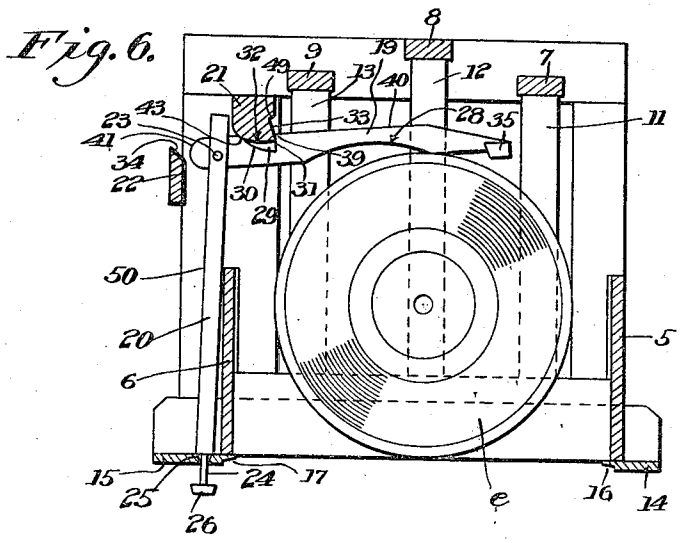


Fig. 6.



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Patented July 8, 1924. 1,500,539

UNITED STATES PATENT OFFICE.

PHILIP F. ADAMS, OF LOS ANGELES, CALIFORNIA.

RECORD HOLDER AND EJECTOR.

Application filed June 7, 1923. Serial No. 643,721.

To all whom it may concern:

Be it known that I, PHILIP F. ADAMS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Record Holders and Ejectors, of which the following is a specification.

This invention is a continuation of my application for record holders and ejectors, filed November 14, 1923, Serial No. 515,058, and the same relates to a record holder and ejector adapted to be associated with a phonograph cabinet or the like.

This invention contemplates that form of record holder and ejector which is suitable for disc records, although by minor changes it may be utilized for other forms of records, such as cylinders.

An object of the invention is the utilization of all available space within the phonograph cabinet for holding records. To accomplish this object it is deemed expedient to place the records horizontally within the phonograph cabinet, although a vertical arrangement could be readily resorted to.

Another object of this invention is to provide a record holder and ejector which will receive all thicknesses and diameters of records without the necessity of segregating the records and placing them in selected compartments according to variation in record diameter. It is well known that the ordinary horizontal record-holder and ejector or the vertical record holder and ejector has certain compartments for twelve inch records and other compartments for the ten-inch records, the same compartments not being adaptable for varying diameters.

Another object is to provide a disc record holder and ejector having the usual push button members for ejecting records from the compartments and which push buttons will at all times be in alignment when records are within the compartments regardless of the diameter of the records received within the compartments.

With the above and other objects in view, the invention consists in the novel and useful provision, formation, construction, interrelation of parts, members and features, as illustrated in some of its embodiments in the accompanying drawings, described in the following detailed statement, and finally pointed out in claims.

In the drawings:

Figure 1 is a perspective view of phonograph cabinet with the improved record holder and ejector installed therein;

Figure 2 is a fragmentary perspective view of the improved record holder and ejector, and showing the mechanical construction of same;

Figure 3 is a plan view, certain parts being in section, of the record holder and ejector, there being a record within the compartment and showing the relation of the various parts of the ejector mechanism when the record is in such compartment;

Figure 4 is a fragmentary view, parts being in section and taken on the line 4—4 of Figure 3, and looking in the direction of the appended arrows and showing means for positively engaging the periphery of the record to eject the same when the mechanism is operated;

Figure 5 is a plan view, certain parts being in section and is a view similar to Figure 3 and showing the position of the ejector mechanism when the record is partially ejected from a record holding cabinet; and,

Figure 6 is a plan view, certain parts being in section and showing the position of the ejector mechanism when a record of smaller diameter than that shown in Figures 3 and 5 is engaged by such mechanism.

Corresponding parts in all the figures are designated by the same reference characters.

Referring with particularity to the drawings, the improved record holder and ejector is designated as an entirety by A, and the same is installed in the embodiment shown in Figure 1 in the record compartment of a phonograph cabinet, B. In the showing of Figure 1 a series of compartments *a* are provided and a complete record holder and ejector A is included for each compartment *a*. In Figure 2, which shows a series of such compartments *a*, numbered 1 to 4 inclusive, I have provided a suitable framework con-

sisting of a top member *b* and a bottom or base member *c*, (see Fig. 3) each of which members includes lateral members 1 and 2 and transverse members 3, 3ª and 4, and which top and base members of the frame are held in spaced relation by side members 5 and 6, and members 7, 8 and 9. This forms a framework for holding the various compartment members *a*, and each compartment *a* has a front member 10 extending between the members 5 and 6 and joined thereto, with members 11, 12 and 13 joined with the member 10 and associated with the members 7, 8 and 9 respectively, as shown in the figures. The three members 11, 12 and 13 may be arranged in spaced parallelism and the records are adapted to rest thereon. The members 2, both top and bottom, have their ends extended beyond the members 5 and 6, and joined to such members are vertically disposed members 14 and 15. Said members 14 and 15 are beveled at 16 and 17 and on the beveled portion are suitable indicia such as 18 adapted to number the respective compartments *a*. There is a complete ejector mechanism for each compartment *a*, but only one compartment with its mechanism will be described, the mechanism in the other compartments being identical, and like reference characters will be applied to such remaining compartments. Said ejector mechanism includes an ejector lever 19, a push rod 20, and compensating means or fulcrum members 21 and 22. The ejector lever 19 is pivotally associated with the push rod 20 by furcating or forking the end of such push rod and passing an end portion of said ejector lever between such forks or furcations and then passing a pin 23 through said members. The push rod 20 is further provided with a pin 24 extending through a conical bore 25 in the member 15, and joined to such pin is a button 26, upon which button appears indicia 27 corresponding to the indicia 18 for the selected compartment *a*. The ejector lever 19 is provided with a concavity along its record-receiving edge, as shown at 28, and said lever is likewise formed with a cam-shaped notch 29, said cam shaped notch including a curved wall portion 30 joined by a wall portion 31. The means 21 in the showing is a member extending between the top and base members *b* and *c* respectively, and has its working face 32 curved to correspond to the curve 30 of the cam notch 29, and likewise has one of its sides notched as shown at 33; the second part of the compensating means, namely, the member 22 extends between the top and base members *b* and *c* and has one edge of the same beveled or inclined, as shown at 34. In practice, the various compartments are arranged in spaced relation as shown in the figures and each ejector lever is provided with an ejector head 35 best illustrated in Figure 4, wherein it will be seen that the ejector head has a curved record-engaging portion 36. Taking the head 35 shown at 37, it will be seen that said head is of a thickness sufficient to span the gap between two of the members 12 and would partially overlap such members 12 if the head 35 were in engagement with such members. The purpose of so forming the head 35 will appear in the statement of the operation. While I have shown the compartments as arranged in horizontal ascending relation in the phonograph cabinet B, still the said compartments might be arranged vertically, if desired. As stated in the preamble, one of the objects of this invention is to provide a record holder and ejector adapted to accommodate records of various diameters and thicknesses, and in such a manner as to approximately maintain the buttons 26 in substantial alignment when records of various diameters and thicknesses are carried within the compartments *a*, and the mechanism just described is so formed as to automatically maintain the buttons 26 in approximate alignment when records are within the compartments, without the necesssity of providing complicated apparatus having springs and like members for returning such buttons to a predetermined position.

The operation is as follows:

Assume that a record has been ejected from a compartment as shown in Figure 5, the record being designated by *d*. The ejector lever will have its head 35 in engagement with a portion of the periphery of such record and will be in what is termed a forward position with the push button 26 stopped in its movement inwardly by engaging the member 15, as shown at 38. In this position the portion 39, being the jointure portion between the edge 40 and the wall 31, rides upon the curved surface 32 of the member 21, and the curved end 41 of the ejector lever 19 is above the member 22 and likewise the push rod 20 is positioned slightly to the left, this position being designated by 42. It is likewise to be observed that the member 21 engages a portion of the curved wall 30 of the cam notch 29, as shown at 43. We thus have two points of engagement of the member 21 with the ejector lever 19. Assume now that it is desired to return the record *d* within a compartment *a* shown in Figure 5; upon pushing said record inwardly the portion 39 as well as the portion 43 of the lever 19 will slide along the curved surface 32 of the member 21 until the said ejector lever 19 reaches the position shown by the dotted lines in Figure 5 at 44. At this position it will be noted that the portion 39 has reached the limit of the curved portion 32. Attention is directed to the dotted line 45, which dotted line traces the path of travel of the curved end 41 when a

record, as *d*, is inserted within a compartment *a* and swings the ejector lever 19 inwardly to the dotted position shown at 44, and it will be seen that the path shown by the dotted line 45 causes the curved end 41 to engage the beveled or cam edge 34 of the member 22, and movement of the ejector lever 19 causes said end to travel on the surface of said cam edge 34 and push said lever 19 inwardly to the position as illustrated by the dotted lines of Figure 5. It is to be further noted that the push rod 20 has moved from the position shown at 42 to the dotted position shown at 46, and further, that this rocking or sideward movement of such push rod is readily accommodated by the conical bores 25. During this movement of the record inwardly to where the ejector lever reaches the position known as 44 the push rod 20 has moved outwardly, the button 26 now assuming the position shown at 47. Further movement of the record *d* inwardly of the compartment produces but slight outward movement of the push button 26. In Figure 5 it will be seen that the end 48 which normally receives the pin 24 to which the push button 26 is attached, is but a slight distance from the inner surface of the member 15 and that when said end 48 contacts with such inner surface the said push rod of course can not move any further. Upon further movement of the record *d* inwardly the portion 39 will engage a surface of the notch 33. This surface is designated as 49, and said portion 49 of the notch 33 inclines inwardly in the member 21. Further movement of the record will cause the curved end 41 of the lever 19 to leave the cam edge 34 of the member 22, as the wall 31 now engages the surface 49 of the notch 33. While Figure 6 shows a record *e* of smaller diameter than the record *d*, still the movement of the ejector mechanism would be the same, and it will be seen in Figure 6 that the push rod 20 has moved further to the right, as shown at 50, with the end as 41 now engaging the inner surface of the member 15. If the record were *d* further movement of the record *d* inwardly of the compartment *a* would move the ejector lever into the position shown in Fig. 3, and in which the portion 31 is totally received upon the surface 49 of the notch 33 and with the curved edge 32 engaging the curved edge 30 of the cam notch 29. It is by selecting a given point in the movement of the ejector lever, beyond which point no further movement is produced in an outward direction of the push rod 20, that the said mechanism will accommodate within a compartment records of different diameters and still keep its push button in approximate alignment with other push buttons of other compartments similarly constructed.

The head 35 ensures that the record will at all times be engaged when the ejector lever 19 is moved, and regardless of the thinness of the record. It is believed that further detailed explanation of the operation of the device is unnecessary, as it is obvious from the description just given and from the drawings.

It is obvious that various changes and modifications may be made in practicing the invention, in departure from the particular showing of the drawings, and that said modifications and changes may be made within a fair interpretation of the invention as disclosed and set forth in the appended claims.

Having thus disclosed my invention, I claim and desire to secure by Letters Patent.

1. A record ejecting cabinet construction including a record compartment, a record ejector lever, a push rod pivotally connected to the record ejector lever, and compensating means for permitting a definite sliding movement of the push rod and a variable arcuate movement of the ejector lever, said compensating means comprising the pivot for connecting the push rod and ejector lever which may move in the direction of push rod thrust and also laterally, and a fixed abutment cooperating with a notch in the ejector lever.

2. A record ejecting cabinet construction including a record compartment, a push rod slidable at one side of the record compartment whereby its inner end may also move laterally, a record ejector lever pivotally connected to the end of the push rod which is capable of slidable and lateral movement, said lever having a notch and a fixed abutment cooperating with said notch to produce a variable arcuate movement of the ejector lever when the push rod is moved longitudinally and laterally.

3. A record ejecting cabinet construction including a record compartment, and record ejecting means comprising a fulcrum member, a push rod and an ejector lever pivotally connected together, said ejector lever being provided with a notch adapted to adjustably engage said fulcrum member.

4. A record ejecting cabinet construction including a record compartment, and record ejecting means comprising a fulcrum member, a push rod and ejector lever pivotally connected together, said fulcrum member and ejector lever having cooperating elements for causing the ejector lever to adjustably engage the fulcrum member.

5. A record ejecting cabinet construction including a record holding compartment, a fulcrum therein, and record ejecting means comprising a slidable push rod, and an ejector lever adapted to operate within the compartment and pivotally connected at one end with said push rod and the other end of said lever being adapted for record en-

gagement, and a portion of said ejector lever being notched at the zone of engagement of the ejector lever with the fulcrum thereby to provide adjustment for receiving records of different diameter in the compartments.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

PHILIP F. ADAMS.

Witnesses:
J. SHUTT,
EDNA TURNER.