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J. L. D. MORRISON
PHONOGRAPH RECORD ADAPTOR

2,712,943

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Fig. 1

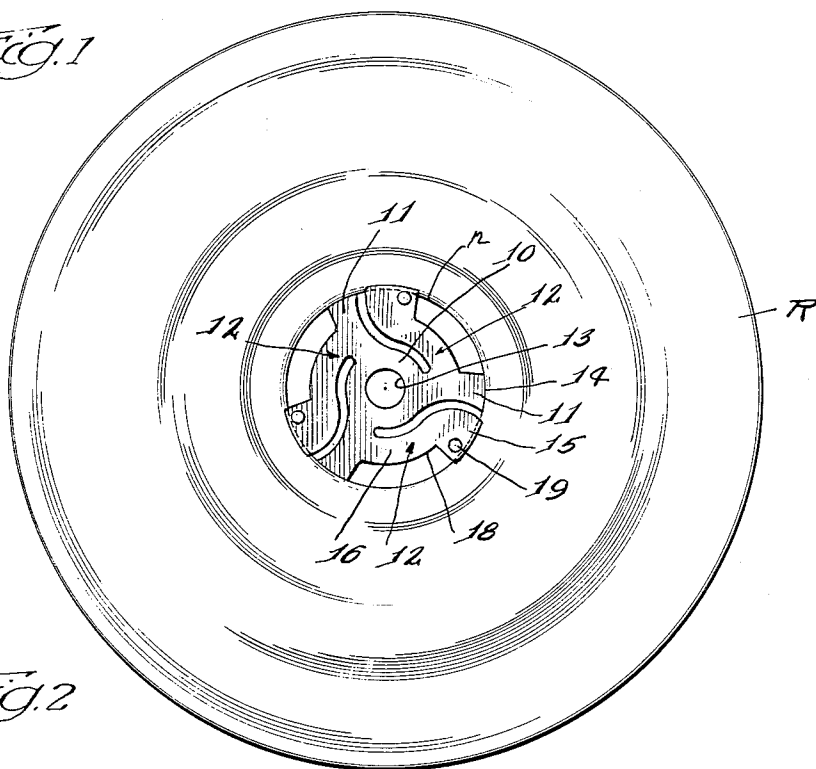


Fig. 2

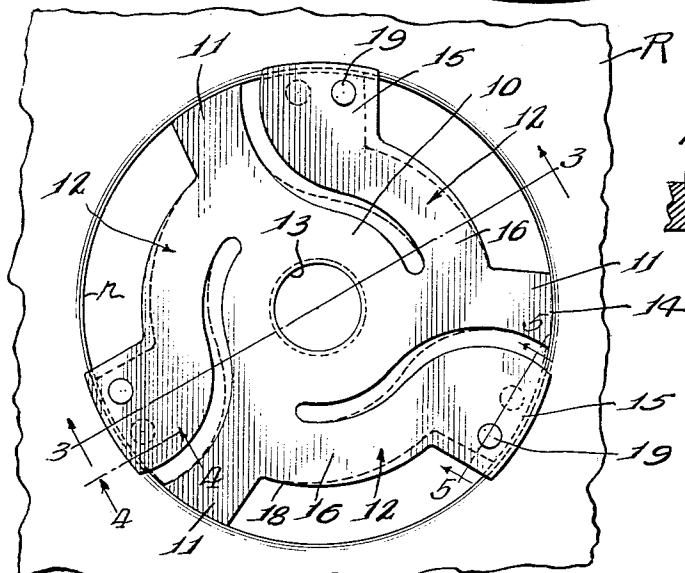


Fig. 4

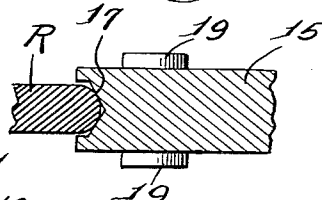


Fig. 5

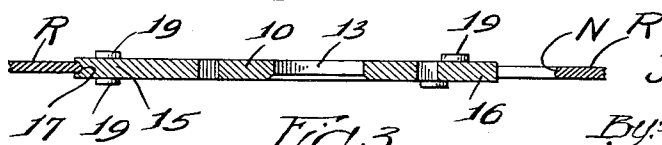
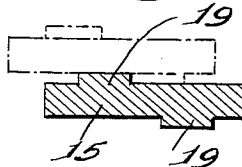


Fig. 3

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PHONOGRAPH RECORD ADAPTOR

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3 Claims. (Cl. 274—42)

The present invention relates generally to phonograph record adaptors. More particularly the invention relates to that type of adaptor which is designed for use with a phonograph record having a large sized spindle-receiving center hole therein, serves when in place to permit the record to be mounted on a standard small sized spindle in centered relation with a motor driven turntable, and consists of a substantially flat body which is shaped and adapted to fit in the large sized hole in the record and has in its central portion a hole for receiving the standard small-sized spindle.

One object of the invention is to provide an adaptor of this type which is an improvement upon and has certain inherent advantages over previously designed adaptors and is characterized by high efficiency, cheapness of construction and facility of mounting.

Another object of the invention is to provide a phonograph record adaptor of the type under consideration in which the body is of one-piece character and embodies (1) a plurality of rigid outwardly extending equidistantly spaced centering arms which have curved or arcuate outer end surfaces for engaging the different portions of the hole defining edge of the record, and (2) a plurality of spring variety arms which correspond in number to the rigid centering arms, consist of comparatively wide outer parts and comparatively narrow inner parts, have in the outer ends of the outer parts thereof longitudinally extending grooves for receiving and interlocking with the hole defining edge of the record, and are adapted in connection with mounting of the adaptor to be flexed inwards a sufficient distance so that the outer ends of the outer parts clear the hole defining edge of the record and then to be released so that they spring or flex outwards into an operative position wherein the grooves in the outer ends of the outer parts are in such interlocked relation with the hole defining edge of the record that the spring variety arms hold the adaptor as a whole against axial displacement with respect to the record.

Another object of the invention is to provide a phonograph record adaptor of the last mentioned character in which the comparatively narrow inner parts of the spring variety arms are arcuate in contour or configuration and extend circumferentially with respect to the body and each spring variety arm has the inner end of its inner part connected to the inner end of one of the rigid centering arms and has the comparatively wide outer part disposed adjacent, but spaced a small distance from, the next adjoining rigid centering arm.

Another object of the invention is to provide a phonograph record adaptor of the type and character under consideration in which the comparatively wide outer parts of the spring variety arms are provided on opposite sides thereof with laterally extending integral lugs which have a twofold purpose in that they serve as handles whereby the spring variety arms may be flexed inwards in connection with mounting of the adaptor in

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place and also serve when the adaptor is disposed between similar adaptors in connection with a stack of records on a phonograph turntable to form with the other adaptors interlocking driving connections whereby the records to which the adaptors are applied are caused conjointly to rotate with the turntable.

A further object of the invention is to provide a phonograph record adaptor of the type and character under consideration in which the outer side edges of the comparatively narrow inner parts of the spring variety arms are spaced inwards an appreciable distance from the outer ends of the comparatively wide outer parts and also the outer ends of the rigid centering arms and define outwards thereof comparatively long arcuate notches which, when the adaptor is on the supporting ledge of a record changer variety spindle, are adapted to receive and accommodate depending lugs on a similar superjacent adaptor so that the adaptor together with the record to which it is applied is free to be shifted laterally from the ledge without interference from the superjacent adaptor.

A still further object of the invention is to provide a phonograph record adaptor which is generally of new and improved construction, effectively and efficiently fulfills its intended purpose and is essentially simple in design and construction.

Other objects of the invention and the various advantages and characteristics of the present phonograph record adaptor will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by claims at the conclusion hereof.

In the drawing which accompanies and forms a part of this specification or disclosure and in which like numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a plan view showing an adaptor embodying the invention applied to a phonograph record with a large sized spindle-receiving center hole;

Figure 2 is an enlarged plan view of the adaptor illustrating by dotted lines the manner in which the spring variety arms are adapted to be flexed inwards in connection with application or mounting of the adaptor;

Figure 3 is a transverse section on the line 3—3 of Figure 2;

Figure 4 is an enlarged transverse section taken on the line 4—4 of Figure 2 and showing in detail the manner in which the grooves in the outer ends of the comparatively large outer parts of the spring variety arms are adapted to interlock with the hole defining edge of the record when such arms are in their normal or operative position; and

Figure 5 is an enlarged transverse section taken on the line 5—5 of Figure 2 and illustrating the manner in which the upstanding lugs on the outer parts of the spring variety arm coact with the depending lugs on a similar superjacent adaptor to form driving connections between the two adaptors.

The adaptor which is illustrated in the drawing constitutes the preferred form or embodiment of the invention. It is illustrated in connection with a phonograph record R with a large sized spindle-receiving center hole *r* and serves, when in place as hereinafter described in detail, to permit the record to be mounted on a standard small sized spindle (not shown). The record R is of the type that is currently known as a 45 R. P. M. R. C. A. record. Such a record is designed to be played on a phonograph, the turntable of which is driven at 45 revolutions per minute by way of a single speed electric motor. It is also adapted, when equipped with the adaptor, to be

mounted on a standard small sized spindle on a phonograph, the turntable of which is driven by a multi-speed electric motor at speeds including 45 revolutions per minute. It is contemplated that the spindle heretofore described will be in centered relation with the turntable and may be of the ledge automatic record changer variety.

The adaptor is of one-piece character and may be formed of molded "plastic" material or made of stamped fiber material. It is adapted to fit within, and become interlocked with, the hole defining edge of the record R and comprises a small sized substantially circular body 10, a plurality of rigid outwardly extending equidistantly spaced centering arms 11 and a plurality of spring variety arms 12.

The body 10 is of materially less diameter than the center hole *r* in the record R and has in its central portion a concentric small sized circular hole 13 for the aforementioned standard small sized spindle. It is slightly thicker than the record R and, as hereinafter described, is maintained in centered relation with the hole *r* by the arms 11 and 12 when the adaptor is in its operative position within the hole *r*.

The centering arms 11 are preferably 3 in number and are connected to, and project radially from, the outer periphery of the body 10. They have curved or arcuate outer end surfaces 14 and these are so shaped and curved that when the adaptor is in its operative position within the hole *r* they fit flatly against the adjacent portions of the hole defining edge of the record R. The length of the arms 11 is such that when the adaptor is in place they hold the body 10 in truly centered relation with the hole *r*.

The spring variety arms 12 correspond in number to, and are associated with, the rigid centering arms 11 and consist of comparatively wide outwardly and radially extending outer parts 15 and comparatively narrow inner parts 16. The inner parts of the spring variety arms are arcuate in contour or configuration and extend circumferentially with respect to the body 10. Each of the spring variety arms has what may be considered the inner end of its inner part connected to the inner end of one of the rigid centering arms 11 and is so arranged and designed that the outer part 15 thereof is disposed adjacent but spaced a small distance from the next adjoining rigid centering arm. The spring variety arms as well as the centering arms are the same in thickness as the substantially circular body 10. The comparatively wide outer parts 15 of the spring variety arms are connected to the outer ends of the inner parts 16 and project radially outwards therefrom. They have convexly curved outer ends in which are formed longitudinally extending grooves 17 for receiving and interlocking with the adjacent portions of the hole defining edge of the record R. The inner side edges of the inner parts 16 of the spring variety arms are spaced from the adjacent portions of the outer periphery of the substantially circular body 10. The spring variety arms 12 are adapted in connection with mounting of the adaptor to be placed inwards a sufficient distance so that the outer longitudinally curved ends of the outer parts 15 clear the hole defining edge of the record (see dotted lines in Figure 2). They are further adapted, after insertion of the adaptor into the center hole *r* in the record, to be released so that they spring or flex outwards into an operative position wherein the grooves 17 in the outer ends of the outer parts are in such interlocked relation with the adjacent portions of the hole defining edge of the record that the spring variety arms hold the adaptor as a whole in connected relation with the record and against axial displacement relatively thereto. The outer side edges of the comparatively narrow inner parts 16 of the spring variety arms are spaced inwards an appreciable distance from the outer ends of the outer parts 15 and the centering arms 11 and define outwards thereof three comparatively long arcuate notches 18, the purpose of which will be defined in detail here-

after. In applying the adaptor to the record R the adaptor is placed over and in centered relation with the hole *r*. Thereafter the spring variety arms 12 are flexed inwards. After inward flexing of the spring variety arms the adaptor is shifted axially into the center hole of the record and then the spring variety arms are released so that they flex outwards into their operative position wherein the longitudinally extending grooves 17 in the outer ends of the outer parts 15 are in interlocked relation with the adjacent portions of the hole defining edge of the record. When the adaptor is in place the spring variety arms lock the adaptor firmly to the hole defining edge of the record and also maintain the substantially circular body 10 in truly centered relation with the center hole.

The comparatively wide outer parts 15 of the spring variety arms 12 are provided on opposite sides thereof with laterally extending integral cylindrical lugs 19. There are preferably two lugs on each outer part 15 and these are arranged so that one projects upwards and the other projects downwards and is in circumferential offset relation with respect to the one lug. The lugs 19 have a twofold purpose in that they serve as handles whereby the spring variety arms 12 may be flexed inwards in connection with mounting of the adaptor in place and also serve when the adaptor is disposed between similar adaptors in connection with a stack of records on a phonograph turntable to form with the other adaptors interlocking driving connections whereby the records to which the adaptors are applied are caused conjointly to rotate with the turntable. If the adaptor is so positioned with respect to a similar superjacent adaptor that its upwardly extending lugs engage the outer parts of the spring variety arms of the superjacent adaptor and are in abutment with the depending or downwardly extending lugs on the superjacent adaptor (see Figure 5) the upwardly extending lugs coact with the depending lugs to form driving connections between the two adaptors. On the other hand, if the adaptor is so positioned with respect to a similar superjacent adaptor that its upwardly extending lugs are disposed in the arcuate notches in the superjacent adaptor then such upwardly extending lugs will, in connection with rotation of the phonograph turntable, engage either the outer parts of the spring variety arms of the superjacent adaptor or the rigid centering arms of said superjacent adaptor and form drive connections whereby said superjacent adaptor is caused to rotate conjointly with it. The arcuate notches 16 of the adaptor have a twofold purpose. In the first place they are adapted in connection with certain positioning of a similar superjacent adaptor to receive the depending or downwardly extending lugs on the superjacent adaptor. Secondly, if the adaptor is on the supporting ledge of a record changer variety spindle the arcuate notches 18, in the event that the depending lugs of a similar superjacent adaptor are disposed therein, permit the adaptor together with the record to which it is applied to be shifted laterally from the ledge without any interference from the depending lugs of the similar superjacent adaptor.

The herein described adaptor is highly efficient and effectively serves its intended purpose. It may be applied with facility and is characterized by the fact that its simplicity of design or construction permit it to be manufactured at an extremely low cost.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

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

1. As a new article of manufacture, a one-piece adaptor designed for use with a phonograph record having a large sized center hole therein, adapted to fit within the hole and when in place to permit the record to be mounted on a small sized phonograph spindle, and com-

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prising a substantially circular body of materially less size than the center hole in the record and having in its central portion a hole for receiving the spindle, a plurality of rigid equidistantly spaced centering arms connected to, and extending outwards from, the body and having curved outer end surfaces for engaging different portions of the hole defining edge of the record, and a plurality of spring variety arms disposed between the centering arms and consisting of comparatively wide rigid outer parts and elongated comparatively narrow laterally flexible curved inner parts extending substantially circumferentially around, but spaced a small distance outwards from, portions of the body, said spring variety arms having in the outer ends of their outer parts longitudinally extending grooves for receiving and interlocking with the hole defining edge of the record and being adapted in connection with mounting of the adaptor with respect to the record to be flexed inwards a sufficient distance so that the outer ends of the outer parts clear said hole defining edge and then to be released so they spring or flex outwards into an operative position wherein said grooves are in gripping and interlocked relation with said hole defining edge of the record, the outer parts of the spring variety arms being provided on opposite sides thereof with outwardly extending lugs arranged and adapted to form handles for use in flexing the spring variety arms inwards and also to form when the adaptor is positioned between similar adaptors interlocking driving connections whereby the adaptors are connected together for conjoint rotation.

2. As a new article of manufacture, a flat one-piece adaptor designed for use with a phonograph record having a large sized center hole therein, adapted to fit within the hole and when in place to permit the record to be mounted on a small sized phonograph spindle, and comprising a substantially circular body of materially less size than the central hole in the record and having in its central portion a hole for receiving the spindle, a plurality of rigid equidistantly spaced centering arms connected to, and extending outwards from, the body and having curved or arcuate outer end surfaces for engaging different portions of the hole defining edge of the record, and a plurality of spring variety arms corresponding in number to and disposed between, the centering arms and consisting of comparatively wide rigid outer parts and elongated comparatively narrow laterally flexible curved inner parts extending substantially circumferentially around, but spaced a small distance outwards from, portions of the body, each of the spring variety arms having one end of its inner part connected to the inner end of one of the centering arms and having its outer parts positioned adjacent, but spaced from, the next adjoining centering arm, said spring variety arms having in the outer ends of their outer parts longitudinally extending grooves for receiving and interlocking with the hole defining edge of the record and being

adapted in connection with mounting of the adaptor with respect to the record to be flexed inwards a sufficient distance so that the outer ends of the outer parts clear said holes defining edge and then to be released so they spring or flex outwards into an operative position wherein the grooves in the outer ends of said outer parts are in gripping and interlocked relation with said hole defining edge of the record, the outer parts of the spring variety arms being provided on opposite sides thereof with outwardly extending lugs arranged and adapted to form handles for use in flexing the spring variety arms inwards and also to form when the adaptor is positioned between similar adaptors interlocking driving connections whereby the adaptors are connected together for conjoint rotation, the outer side edges of the inner parts of said spring variety arms being spaced inwards of the outer ends of the outer parts of the centering arms in order to form arcuate notches for loosely receiving the lugs on adjacent similar adaptors.

3. As a new article of manufacture, an adaptor designed for use with a phonograph record having a large center hole therein, adapted to fit within the hole and when in place to permit the record to be mounted on a small sized phonograph spindle of the off-set record changer type, and comprising a body of less size than the center hole in the record and having in the central portion a hole for receiving the spindle, and a plurality of arms connected to, and extending outwards from, the body and designed and adapted to grip the hole defining edge of the record when the adaptor is mounted in place, the outer parts of the arms being provided on opposite sides thereof with upwardly and downwardly extending lugs adapted when the adaptor is positioned between similar adaptors to form interlocking driving connections whereby the adaptors are connected together for conjoint rotation, said adaptor being provided between said outer parts of the arms with comparatively long arcuate notches which are circumferentially aligned with the lugs, are of greater radial width than the width of the lugs, and are adapted when the adaptor is mounted on the offset of the spindle and a superjacent similar adaptor is positioned so that its downwardly extending lugs are in the notches to permit the adaptor to be shifted laterally off the offset without interference on the part of the downwardly extending lugs of said superjacent similar adaptor.

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