Sept. 8, 1931. A. M. ACHESON ET AL 1,821,916

PIN HOLDER FOR PHONOGRAPH RECORDS

Filed July 24, 1930 3 Sheets-Sheet 1

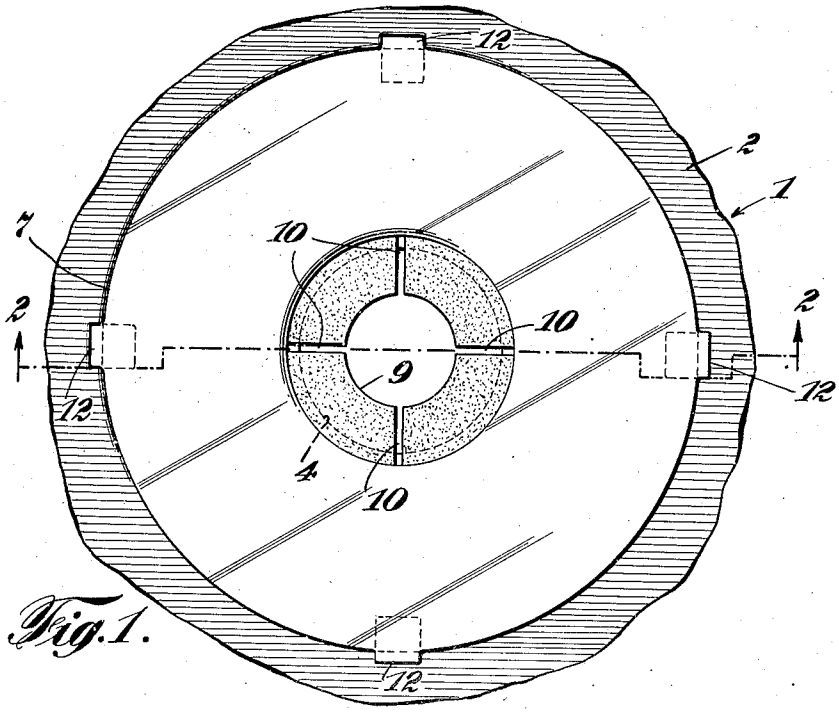


Fig. 1.

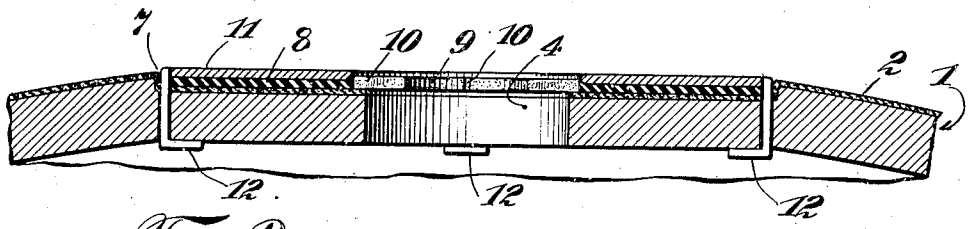


Fig. 2.

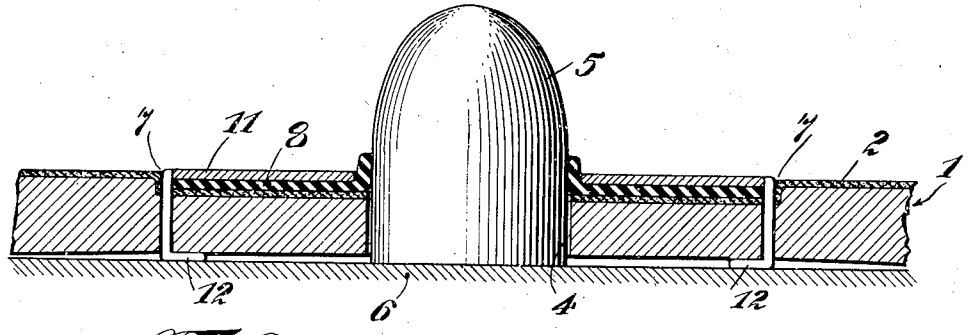


Fig. 3.

INVENTORS
Arthur M. Acheson
and George Ramsey

By Ramsey & Kent
their ATTORNEYS

Sept. 8, 1931. A. M. ACHESON ET AL 1,821,916

PIN HOLDER FOR PHONOGRAPH RECORDS

Filed July 24, 1930 3 Sheets-Sheet 2

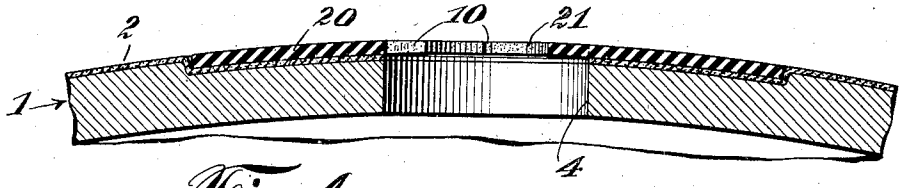


Fig. 4.

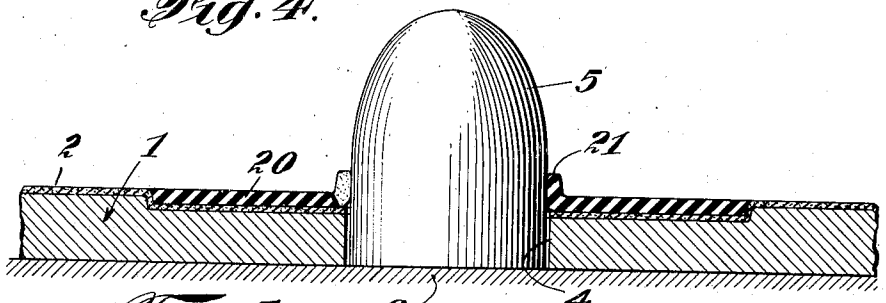


Fig. 5.

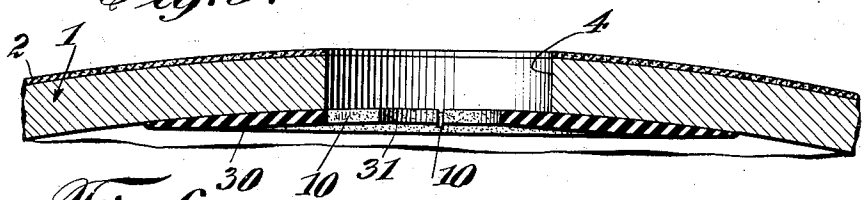


Fig. 6.

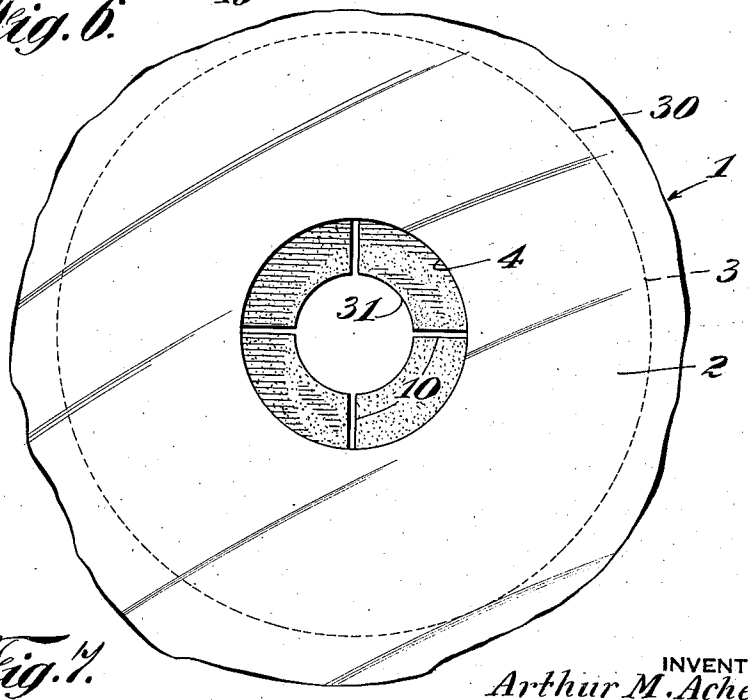


Fig. 7.

INVENTORS
Arthur M. Acheson
and George Ramsey
By Ramsey & Kent
their ATTORNEYS

Sept. 8, 1931. A. M. ACHESON ET AL 1,821,916

PIN HOLDER FOR PHONOGRAPH RECORDS

Filed July 24, 1930 3 Sheets-Sheet 3

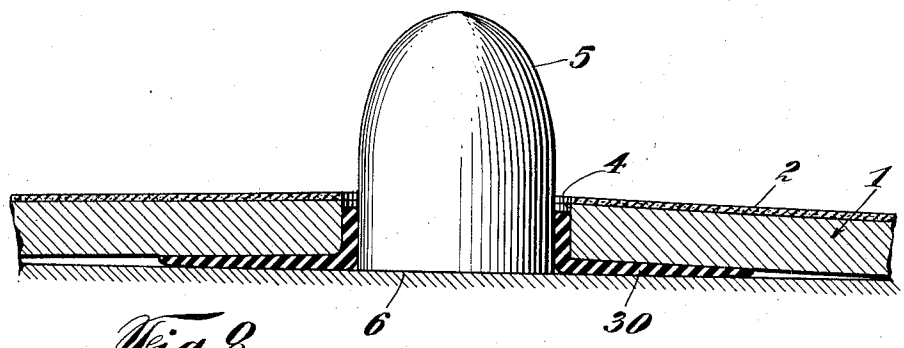


Fig. 8.

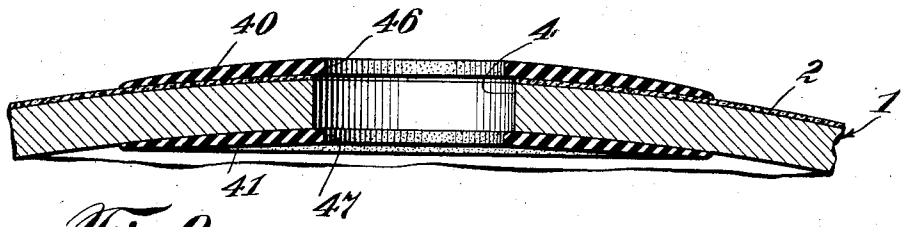


Fig. 9.

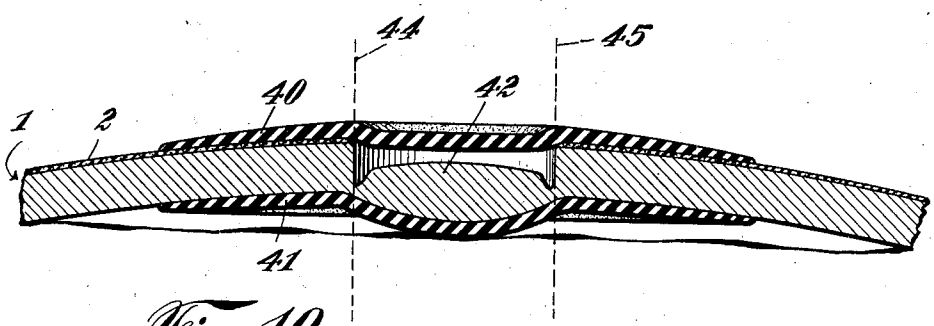


Fig. 10.

INVENTORS
Arthur M. Acheson
and George Ramsey
By Ramsey & Kent
their ATTORNEYS

Patented Sept. 8, 1931

1,821,916

UNITED STATES PATENT OFFICE

ARTHUR M. ACHESON, OF DOBBS FERRY, AND GEORGE RAMSEY, OF BROOKLYN, NEW YORK, ASSIGNORS TO DURIUM PRODUCTS CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

PIN HOLDER FOR PHONOGRAPH RECORDS

Application filed July 24, 1930. Serial No. 470,386.

The present invention relates broadly to phonograph records and more especially to a construction comprising a pin holder for a phonograph record.

The present invention relates primarily to flexible phonograph records and more especially to a flexible phonograph record formed with a paper body of cardboard thickness coated with a flexible tough material on the record face thereof. Phonograph records of this thin flexible type may tend to warp and may not lie flat on a record table. This warping may be of such character as to tend to interfere slightly with the proper playing of the record and such records are usually formed with a slight bow or convexity relative to the record groove face in order that the record will lie flat on the table when pushed down over the record table pin. Where the opening in the center of the record is made directly in the paper body, this opening tends to wear by repeated use of the record and may enlarge to such an extent that friction between the side walls of the opening and the pin cannot be relied upon to maintain the record on the table, especially in view of the tendency of the bow in the record, which lifts the center of the record.

The present invention overcomes the difficulties above specified by providing a flexible engagement between the record and the record table pin. In the preferred form the flexible engaging member comprises a relatively thin resilient rubber member having an opening therein with the axis coincident with the pin opening in the body of the record and through which the record pin may be forced in such manner as to cause the rubber to be compressed against the sides of the pin and thereby provide an engaging member carried by the record which may be repeatedly placed upon and taken from the pin without substantial wear. In phonograph records of the type specified it is particularly desirable that the thickness of the record shall not be substantially increased over any portion and therefore the present invention is preferably carried out by providing that the rubber member shall comprise a thin flexible portion attached to the record adjacent the pin opening in the center thereof, in such manner that the center of the completed record is a laminated structure. In order to facilitate centering of the record on the table pin, the opening through the record preferably forms a loose fit with the pin; and since the friction of holding the record in place on the table is accomplished largely by the rubber center, the opening through the record does not tend to appreciably enlarge during the use thereof.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter in the specification following by reference to the accompanying drawings forming a part thereof. The disclosure herewith is that of the preferred forms of the invention and is not to be understood in the limiting sense.

Fig. 1 is a plan view of the center of a record made in accordance with the present invention.

Fig. 2 is a sectional view on line 2—2 of Fig. 1.

Fig. 3 illustrates a sectional view through the record when in place over the record pin of a record table of a phonograph.

Fig. 4 is a sectional view through a construction slightly modified relative to Fig. 1 and wherein the rubber center is cemented or anchored directly on the record.

Fig. 5 illustrates the operation of the construction shown in Fig. 4 when in place over a record table and with the center pin of a record table extending through the record.

Fig. 6 is a sectional view through a further modification of the present invention and wherein the rubber centering member is secured to the back of the record.

Fig. 7 is a detail plan view of the center of a record with the attaching member in accordance with the construction illustrated in Fig. 6.

Fig. 8 illustrates the construction shown in Figs. 6 and 7 when in place upon a record table with the centering pin extending through the opening in the record.

Fig. 9 illustrates a further modification of the present invention in which rubber centers are provided on both the front and back of the record.

Fig. 10 illustrates a step in the manufacture of the form shown in Fig. 9.

Referring more especially to the construction illustrated in Figs. 1, 2, and 3, a phonograph record comprising a flexible body 1, having a paper backing or support carrying a coated surface 2 adapted to contain the tone grooves, is provided with an opening 4 which preferably is slightly larger than the standard size center pin 5 of a record table 6. When the tone grooves are pressed into the coated surface a circular recess 7 may be impressed around the opening 4. A sheet of resilient rubber, preferably circular in form, comprising a center member 8 is provided with a central opening 9 of smaller diameter than the diameter of the center pin 5, and preferably is set in the circular recess 7. Preferably slots 10 are provided in the center member to increase the flexibility around the center opening 9. An anchoring member 11, which may comprise an annular piece of brass or other supporting material, is adapted to be anchored over the center member 8 by means of lugs 12 which pass through the phonograph record body 1 and are clinched on the back thereof. As will be observed from Fig. 3, when the completed phonograph record is in place over the center pin 5, the inner portion of the center member 8 engages with the sides of the pin 5 and forms a substantial frictional contact therewith so that the engagement between the record and the center pin is not dependent upon the engagement of the sides of the center opening 4 in the record body 1.

In the construction illustrated in Figs. 4 and 5, the rubber center 20 is substantially similar to the center member 8 illustrated in Figs. 1, 2, and 3, with the exception that preferably it is secured directly to the face of the record body 1 by cement or other cohesive attaching means, thereby dispensing with the anchoring member shown in Figs. 1, 2, and 3. The action, as shown in Fig. 5 of the central opening 21 in this member 20 with reference to the center pin 5 is similar to that illustrated in Fig. 3.

The construction shown in Figs. 6, 7, and 8 is similar to that shown in Figs. 4 and 5, except that rubber center member 30 is attached to the back of the record body 1 so that the inner edges 31 of this rubber center 30 tend to bend upwardly between the side walls of the opening 4 in the record body 1 and the sides of the centering pin 5.

Figs. 9 and 10 illustrate a further modification of the present invention in that rubber centers 40 and 41 are secured to both the front and back of the record body 1 at the center thereof before the central opening is made, as is illustrated in Fig. 10. In the manufacture of paper records the operation which impresses the tone grooves into the coated surface 2 may simultaneously emboss the center, as shown at 42 in Fig. 10. The location of this embossed center 42 is discernible through the rubber centers 40 and 41, thereby forming an indication of the true center of the record. The embossed center 42 is punched or cut out on lines 44 and 45 around the true center, as indicated in Fig. 10, after the centers 40 and 41 are in place. The finished result is shown in Fig. 9 in that since the rubber is very resilient, while the record body is more rigid, the cutting operation results in a slightly larger opening in the record body 1 than in the rubber centers 40 and 41. The openings 46 and 47 in the rubber pads, therefore, engage the sides of the center pin of the record table with the opening 4 in the center of the record slightly out of contact with the sides of the pin. However, where desired, the opening 4 may be substantially the size of the pin with the openings 46 and 47 slightly smaller so that the frictional engagement with the pin occurs primarily between the rubber centers and the side walls of the pin. In the use of a record of this type the center opening 4 may tend to slightly become larger due to wear while the openings 46 and 47, because of the resiliency of the rubber, maintain substantially the same size during a large period of use.

The term "body" as used in the claims may comprise both the paper supporting portion and the coating which carries the tone grooves.

The present invention provides a resilient center for a phonograph record which center is a laminated structure comprising the record body and the layer of rubber; or where desired there may be a layer of resilient rubber on each side of the body of the record, thus forming a triple laminated structure at the center of the record. Since the rubber member is relatively thin, the thickness of the record at this central point is not increased to an undesirable extent, and the body may be recessed to receive the rubber member, thus further reducing the total thickness of the center. Since the rubber is both resilient and flexible, the use of the record does not impose substantial wear on the center member and therefore the record is properly centered on a phonograph record table, even after it had been used extensively.

Having described our invention, we claim:

1. A phonograph record comprising a body portion provided with a center opening; and a resilient sheet member secured to said body portion to comprise a laminated structure, with a pin opening in said member having an axis substantially coincident with the axis of the center opening in the body of the record, the opening in said resilient member being slightly smaller than the opening in the body of said record.

2. In a flexible phonograph record, a flex-

ible body portion being provided with a center opening located in the center of the record; and a resilient rubber disc secured in laminated relation to said body portion and having an opening with the axis thereof coincident with the center opening in the body of the record, said resilient rubber member being adapted to frictionally engage a record table pin to hold the record in place thereon during use.

3. In a flexible phonograph record, a flexible body portion being convex on the face and provided with a center opening located at the center of the record, the face of said record being provided with a circular recess concentric with said center opening, and a resilient member secured in said recess and being provided with a pin opening having an axis coincident with the axis of the center opening and being adapted to frictionally engage the sides of a record table pin when the record is in position on the record table.

4. A flexible phonograph record comprising a body portion of thin flexible material having a center opening in the center thereof; a pad of resilient rubber secured to said body portion and surrounding said center opening, said pad being provided with a pin opening having an axis coincident with said center opening; a retaining member over a portion of said pad; and means passing through said body portion to anchor said retaining member securely in place to lock said pad against said body portion.

5. In a flexible phonograph record, a flexible body portion provided with a centrally located opening, said body portion having a circular recess in the face thereof around said opening, a circular pad of resilient rubber mounted in said recess, a clamping ring over said pad, said clamping ring being provided with lugs passing through said body portion and clinched on the back thereof to securely hold said pad in place and to lock said pad to said body portion.

6. A flexible phonograph record comprising a flexible body having an opening in the center thereof, resilient sheet rubber center members secured to said body and centrally located on said body to comprise a laminated center for said record, pin openings in said rubber members with the axis thereof coincident with the axis of the opening in the body of the record whereby said rubber members comprise frictionally engaging means adapted to contact with the sides of a record table pin to hold said record in place when in use.

7. A flexible phonograph record comprising a flexible body portion bowed toward the face thereof in such manner that the face of the record is convex; said body being provided with a center opening, and a resilient rubber center member secured to said body portion at the center thereof, said rubber center member having an opening of smaller size than said opening in the body and with the axis of both openings being substantially coincident.

ARTHUR M. ACHESON.
GEORGE RAMSEY.