Jan. 15, 1924. 1,480,980

L. P. BARLOW

DISK SOUND RECORD

Filed Aug. 19, 1918

Fig. 1.

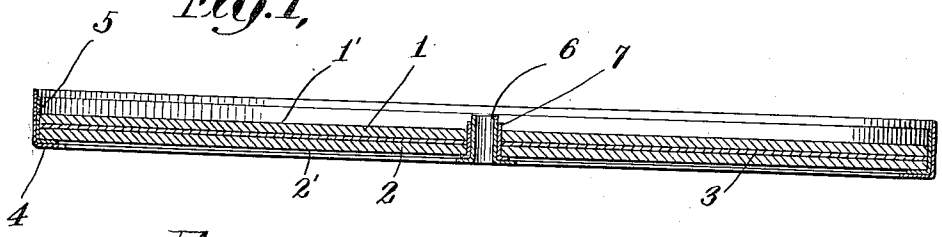


Fig. 2.

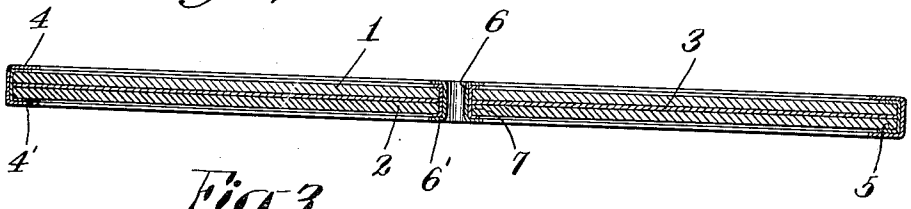


Fig. 3.

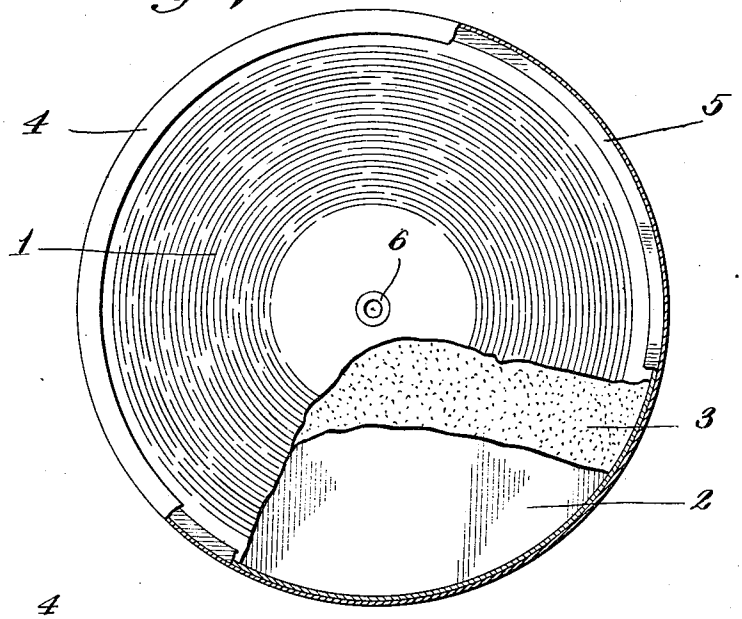
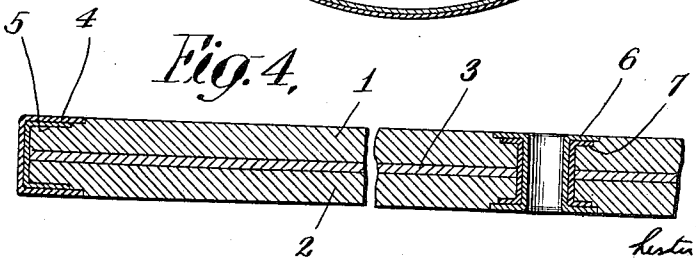


Fig. 4.



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Patented Jan. 15, 1924. 1,480,980

UNITED STATES PATENT OFFICE.

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DISK SOUND RECORD.

Application filed August 19, 1918. Serial No. 250,452.

To all whom it may concern:

Be it known that I, LESTER P. BARLOW, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Disk Sound Records, of which the following is a specification.

My invention relates to sound-records of the disk type, bearing record-grooves of any known character. At present it is common to manufacture and sell disk records bearing musical or other selections on the two faces thereof and it often happens that a purchaser of such records wishes to obtain a selection on one side of the disk and does not care for the selection on the other side. There are, however, various considerations which make double-disk records preferable from the manufacturing and selling standpoints over disks bearing records on one face only. The chief object of my present invention is to make is possible for sales-agents to keep in stock comparatively thin disk records bearing selections on one face of each of the same only, from which the customer may make his selections, after which pairs of such single records may very readily and simply be secured together to form double records, each of which carries sound-records which are entirely of the choice of the customer. Such double records may be of approximately the same thickness as the double records now sold, and may be used for reproducing the selections thereon as effectively as are the present double disk records.

I accomplish this object by securing the single record-bearing disks together preferably with a thin layer of filling material interposed between the non-record-bearing faces, the disks being readily secured in firm relation to each other by various means, such as metallic strips crimped about the peripheral edges, or sleevelike pieces extending through the central openings of the disks and crimped or riveted over the faces of the disks, or by adhesive material interposed between the disks, or by all of these means together, or by other similar means. Other objects will appear hereinafter.

In order that my invention may be more clearly understood, attention is hereby directed to the accompanying drawings, forming part of this application and illustrating certain embodiments of my invention.

In the drawings, Figure 1 represents a vertical cross-section through a pair of single disks during the process of securing the same together; Figure 2 is a similar section, showing the disks secured firmly together; Figure 3 is a top plan view, partly broken away, of the double disk shown in Figure 2; and Figure 4 is an enlarged partial section, similar to that shown in Figure 2 but illustrating a modification.

Referring to the drawings, a pair of disk records are shown at 1 and 2, each of which bears a suitable sound-record on its outer face 1′ or 2′. The inner or opposite faces of the disks may be plain or may be formed with etched or molded lines, or with depressions and projections of various kinds, in order to overcome shrinkage stresses in the record material. The disks may be formed of any suitable record-forming composition, and are preferably comparatively thin, so that preferably the completed double record will be of about the same thickness as the present double records.

When the disks 1 and 2, desired to form a single double-disk unit, have been selected, they are placed together by the salesman, with the record-bearing faces outermost and preferably with a thin layer of filling material, 3, which may be cut to disk form, interposed between the same. This filling material may be a sheet of paper or fiber or the like, coated with or impregnated with adhesive or cementitious material, which may be used for binding the two single records firmly together. Such cementitious or adhesive material will, of course, vary with the character of the material of which the records are formed, but is preferably of such a character that a simple moistening of the sheet 3 will be sufficient to cause the same to adhere firmly to the disks 1 and 2 when the latter are pressed together. If desired, the interposed disk 3 may be formed with projections or depressions adapted to coact with corresponding depressions or projections which may be formed in the inner faces of the two record-disks 1 and 2, in order to guard more surely against relative rotation between the disks when they have been assembled into a unit. In some cases, also, it may be found sufficient to

interpose a layer of material such as 3, which carries no adhesive material at all, this being merely for the sake of preventing vibration or rattling between the two disks of a unit, the binding together of the two disks being accomplished entirely by other means, such as the edge-clamping means. Also, in some cases, it may be found that an interposed disk of any character is unnecessary, the two single disks of a unit being provided with adhesive material upon their inner faces, such that the two disks may be secured together by this interposed adhesive to prevent rattling of the same during the reproduction of the record. In general, however, in view of the usual inequalities of the surfaces of the records, I consider it preferable to interpose a layer of yielding material between the two disks, as stated. It is, of course, unnecessary to give the faces of the single records any smooth or pleasing finish, since these surfaces will be covered up in the complete double records.

The records may be secured together by an edge-clip 4, which is preferably formed of thin sheet-metal and which may be kept in quantity in the sales-rooms in which the records are sold, properly formed to fit around the double records to be assembled. In order that such use of metal may not affect the reproduction of the record, a washer 5 of felt or other similar material may be interposed between the edges of the records and the metal strip 4. The single records are also preferably further held together by means of thin sleeve-pieces 6 formed of thin sheet-metal, which may be inserted in the central opening of the disks to surround the spindle on which the record is to be placed on the turntable of the reproducing machine. If sleeves 6 are used, the axial openings of the records must, of course, be made sufficiently large to accommodate the same. If desired, a washer 7 of felt or the like may be interposed between the metallic sleeve-piece 6 and the material of the two disk records.

Having mounted the parts in the position shown in Figure 1, it is merely necessary to press down or crimp over the edges of the peripheral binding-strip 4 and the central binding-sleeve 6, into the position shown in Figure 2, in order to clamp the single records firmly together. This may readily and quickly be accomplished by various means forming no part of the present invention.

When the double record is thus formed, the edge and central metallic flanges may extend slightly over the planes of the record-bearing surfaces, as is indicated in Figure 2. While this slightly increases the lateral space taken by the record in a filing cabinet or the like, an advantage is to be noted, namely, that composite records thus formed may be placed one upon the other with metal surfaces only in contact, so that the record surfaces are protected against being scratched, when piled one upon the other, or when slid over a table, or the like.

Such protection of the record surfaces constitutes one of the features of my invention, which is not limited to the type of record previously described. Disk records of various characters, such as are now made, having sound-records on one or both faces thereof, may have the record surfaces protected against marring or scratching by having the marginal surfaces and the surfaces immediately surrounding the central opening raised somewhat above the plane or planes in which the record grooves are formed. This may be accomplished by providing the disks with members of metal or other material such as are shown at 4 and 6 in Fig. 2, with slightly rounded edges, the washers 5 and 7 also preferably being used, if members 4 and 6 are of metal. Or it may be accomplished by so molding or forming the records as to accomplish the same result without the use of added members such as 4 or 6; that is to say, the record-bearing surfaces may be slightly countersunk, or circular flanges such as those shown at 4^1 and 6^1 in Fig. 2 otherwise provided of the same material as that of the body of the disk, in order to protect the record surfaces. The outer faces of the raised portions adjacent the periphery and adjacent the central opening should, of course, be in substantially the same plane, to form a base on which the disk rests.

As a modification, however, in case it is deemed desirable to keep the thickness of the double records to as small an amount as is possible, the construction illustrated in Figure 4 may be used, in which the edges of the peripheral binding-strips 4 and the washers 5 are pressed into recesses which may be formed on the outer faces of the records adjacent to the edges thereof, the central sleeve 6 and washer 7 being correspondingly pressed into similar recesses surrounding the central opening of the record.

Having now described my invention, what I claim as new therein and desire to secure by Letters Patent is:—

1. As a new article of manufacture, a sound record comprising two separate complete relatively thin disks connected back to back.

2. As a new article of manufacture, a sound record comprising two thin disks each of which alone would be too thin to stand ordinary practical handling, each disk having a sound reproduction upon one side of a predetermined selection, said disks being attached back to back so as to form a combination record.

3. As a new article of manufacture, a

double sound-record comprising a pair of disks each having a sound-record formed on one face thereof, arranged in parallel relation with the record-bearing faces outermost, a thin layer of filling material between said disks, adapted to prevent rattling of one disk against the other during reproduction, and means for securing said disks fixedly together, said disks being of usual sound-record material and considerably thinner than ordinary rigid commercial sound-record disks, so that they would not be adapted to render an effective reproduction with full volume, if used alone and unsecured to a base.

4. As a new article of manufacture, a double sound-record comprising a pair of thin disks each having a sound-record formed on one face thereof, arranged in parallel relation with the record-bearing faces outermost, and means for securing said disks fixedly together, said disks being of usual sound-record material and considerably thinner than ordinary rigid commercial sound-record disks, so that they would not be adapted to render an effective reproduction with full volume, if used alone and unsecured to a base.

This specification signed and witnessed this 7th day of August, 1918.

LESTER P. BARLOW.

Witnesses:
DYER SMITH,
I. MCINTOSH.