

J. ROBSON.
SOUND RECORD.
APPLICATION FILED-MAR. 7, 1918.

1,325,111.

Patented Dec. 16, 1919.

Fig. 1.

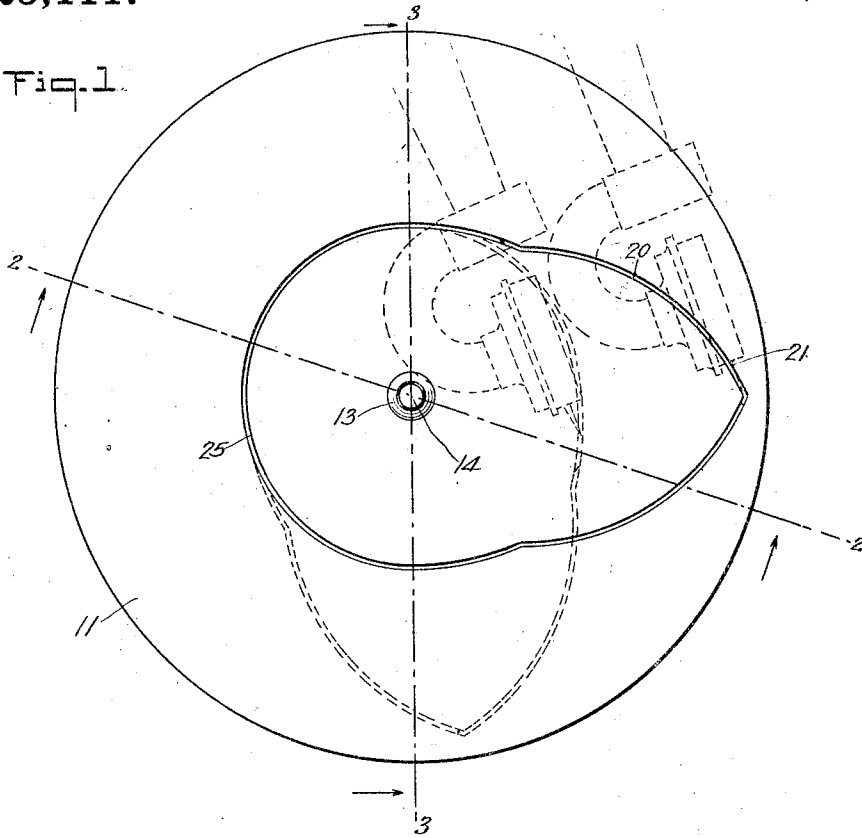


Fig. 2.

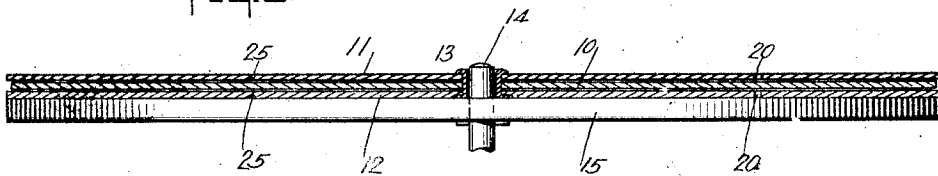


Fig. 3.

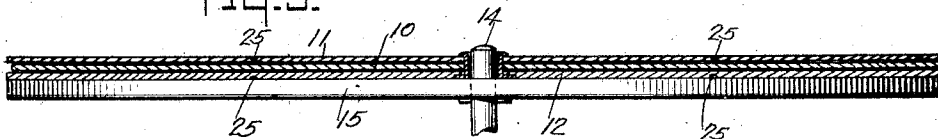
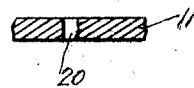


Fig. 4.



Fig. 5.



WITNESS

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SOUND-RECORD.

1,325,111.

Specification of Letters Patent.

Patented Dec. 16, 1919.

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To all whom it may concern:

Be it known that I, JOHN ROBSON, a citizen of the Dominion of Canada, and a resident of Moose Jaw, in the Province of Saskatchewan and Dominion of Canada, have invented a new and Improved Sound-Record, of which the following is a full, clear, and exact description.

The invention relates to phonographs and similar sound reproducing machines using records having sound grooves for engagement by the stylus of the sound box.

The object of the invention is to provide a new and improved covering for such records arranged to protect the record against dust, injurious deposits and other extraneous matter, and to permit using the record in the machine without requiring removal of the covering. Another object is to return the tone arm with the sound box and the stylus to starting position to automatically cause a repetition of the piece played without requiring stopping of the phonograph. Another object is to prevent abrasion of the groove face of a record by rubbing contact of one record against another or when placing such record on a table or other support or removing it therefrom.

In order to produce the desired result, use is preferably made of a protective covering which forms a permanent part of the record. Use is also made of a covering centrally pivoted on the record and covering and protecting the sound groove face thereof, the covering having a slot extending across the sound groove and through which extends the stylus to engage the sound groove and to hold the covering against turning with the revolving record. Use is also made of a return guideway formed on the covering and extending from the terminal of the aforesaid slot to the beginning end thereof to return the stylus to starting position.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the sound record provided with the protective covering;

Fig. 2 is an enlarged sectional side elevation of the same in position on the revolving platform of the phonograph and with the

covering arranged for a double-face record, the section being on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross section of the same on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged sectional side elevation of a portion of the covering and showing more particularly the return guideway for the stylus;

Fig. 5 is a similar view of the same and showing more particularly the slot for the passage of the stylus to engage the sound groove of the record.

Sound records have heretofore been marketed in a more or less unprotected state, and therefore in reproducing sounds from such records it has been necessary to expose the whole surface. There are many objections to this universal practice.

On removing the record from its usual paper covering the fingers are brought into immediate contact with the surface of the record. The finger tips exude a great deal of perspiration. This exudation is not simply moisture, but consists of grease, water, fatty matters, and various chemical salts in solution. Upon evaporation of the water, the salts crystallize while the greasy portions continue to be sticky. Under microscopical examination those crystals of salt are perfect in form, transparent and quite solid, being like table salt in hardness and grittiness. They stick very firmly onto the surface which bears them. When perspiration comes into contact with a record surface, some of the moisture flows into the grooves and after crystallizing in the minute indentations is bulky enough to alter the vibrations to some extent. One or two stains from the fingers might not be very important, but when repetitions to the extent of dozens of times are made, the subject is not a trivial one. The fingers come in contact with a record's surface when it is being removed from the envelop, laid on the instrument, turned over, removed therefrom, and replaced in the case—five times, at least. Both hands are generally used in manipulating a record, so that a dozen impressions may be made each time it is played. Except in very rare instances, the users of sound records discard the envelop altogether and allow the records to have immediate contact with one another. This leaves the sound

groove open to whatever dust may be floating around in the neighborhood and the frictional contact with one another has a deleterious effect on the surface of the record.

5 Another objection that may be cited to the unprotected state of records as hitherto made is that they are easily broken. A further difficulty met with where envelopes are used is that records very often are filed in
10 the wrong envelopes and considerable inconvenience caused thereby.

The record 10 illustrated is a double-face disk record, that is, each face is provided with the usual sound groove. The faces of
15 the record 10 are protected by a covering formed of two plates or sheets 11 and 12 of celluloid, stiff paper or other stiff sheet material, the plates or sheets being of circular or polygonal shape and projecting slightly
20 beyond the peripheral edge of the record 10 to protect such edge. The plates are mounted to turn centrally on an eyelet 13 held centrally on the record, the eyelet forming a passage for the upper end of the rotating
25 spindle 14 carrying the platform 15 adapted to support the record. It will be noticed that the two covering plates 11 and 12 protect the groove faces of the record 10 against dust, injurious deposits and other extrane-
30 ous matter.

Each of the covering plates 11 and 12 is provided with a slot or similar opening 20 extending across the corresponding sound groove of the record 10 to permit the stylus
35 21 to extend through the said slot 20 with a view to engage the corresponding sound groove without requiring removal of the covering from the record. The slot 20 is preferably curved as shown in Fig. 1, for
40 the particular purpose to be hereinafter described, and tends slightly outwardly beyond the beginning end of the corresponding sound groove and slightly inward beyond the inner end of the sound groove so that the
45 stylus can fully engage the sound groove throughout its length without the slightest hindrance by the covering. If a single-face record is used then the covering disk on the back does not require the slot and can be
50 permanently fastened to the back of the record, if desired, or such covering may be entirely omitted.

The inner end of the slot 20 leads to a
55 guideway 25 preferably formed in the outer face of the covering disk 11 or 12 and extending from the inner end of the slot 20 to the outer or beginning end thereof so that the stylus passes from the inner end of the slot 20 into the guideway 25 whereby the
60 stylus and with it the sound box and tone arm are gradually moved outward back to starting position with the stylus finally dropping off the outer end of the guideway 25 and back into the sound groove to auto-
65 matically cause a repetition of the piece

played at the time and without stopping the phonograph. It is understood that when a double-face record and its covering are placed in position on the phonograph then the covering disk at the under side of the
70 record rests on the platform 15 and is held against movement by the weight of the record so that both the record and the under side covering disk rotate with the platform. The upper covering disk has its slot 20 en-
75 gaged by the stylus so that this top covering disk is practically held against rotation by the stylus during the time the stylus travels in the sound groove. It is also under-
80 stood that when the slot 20 is curved, as shown in Fig. 1, then a slight turning movement is given to the uppermost covering disk by the stylus.

In explanation of the slot 20 in the particular disposition referred to, that is curved
85 and disposed in the angular inclination as a whole to a true radial line of the record disk and its covering, attention is called to the fact that by this means I am enabled to assist the feeding of the stylus across the
90 record disk within the sound groove, while, at the same time, I carry out the covering or protecting idea previously explained, as well as the utilization of a return groove in connection therewith, so that the invention
95 presents the combined advantages I have thus far specified in a small, simple, compact construction, as shown. I am aware that it has been before proposed to protect record
100 disks by coverings of a more or less permanent nature, and I am also aware that devices have been utilized in connection with and disposed upon record disks to return the stylus to its starting point for repetition
105 purposes. I am also aware that previous patents have proposed assistance to the stylus in its feeding movement across a record disk, as for instance in Patents Nos. 885,489; 915,022; and 919,856, although these latter
110 devices do not contemplate the use of means carried by the disk itself. As above stated, my invention combines these advantages in a single arrangement carried by and forming a permanent part of the record disk so as
115 to be ready for use at all times. For the purpose of the invention the slot 20, is, as stated, inclined as a whole, that is from end to end with respect to a true radial line of the record disk and the covering, and to facilitate the operation it is preferably
120 curved entirely therealong, as particularly seen in Fig. 1. Obviously the degree of inclination will control the force applied tending to affect the feeding of the stylus.

I do not limit myself to the precise con-
125 struction and arrangement of the covering as shown and described as the same may be varied without deviating from the spirit of my invention, it being however expressly understood that in each case the casing
130

forms a permanent part of the record and protects the sound groove thereof against dust, injurious deposits and other extraneous matter.

5 Titles for identification of the record and other legends may be printed on the outer faces of the covering.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A covering for phonograph records adapted to turn centrally on the face of the record and independently of the latter, the covering having an opening for the passage 15 of the stylus inclined with respect to a true radial line of the record disk, for the purpose set forth.

2. A covering for phonograph records adapted to turn centrally on the face of the record and independently of the record, the covering having a grooved slot-like opening extending across the sound groove of the record, and inclined as a whole with respect to a true radial line of the record, the said 25 opening being adapted to be engaged by the stylus of the phonograph to hold the covering practically against movement while the record rotates.

3. A covering for phonograph records 30 adapted to turn centrally on the face of the

record and independently of the record, the covering having a slot-like opening extending across the sound groove of the record at an angle as a whole inclined with respect to a true radial line of the record, the said 35 opening being adapted to be engaged by the stylus of the phonograph to hold the covering practically against movement while the record rotates, the said covering having a return guideway connecting with the terminal 40 of the slot-like opening to guide the stylus back to starting position.

4. A covering for phonograph records arranged to turn on the face of the record and independently of the latter, the said covering having a slot to receive a stylus, extending 45 at an angle inclined with respect to a true radial line of the record and curved for the purpose described.

5. A covering for phonograph records, 50 comprising a member carried by but rotatable independently of the record, said member having a combined needle slot and returning groove therein, the slot portion of which is so placed with respect to a true 55 radial line of said record, that it exerts a feeding force either toward or from the center of the record, dependent upon its position with respect to said radial line.

JOHN ROBSON.