

Sept. 27, 1927.

N. H. HOLLAND

1,643,770

PHONOGRAPH RECORD

Filed March 20, 1925

2 Sheets-Sheet 1

FIG. 1.

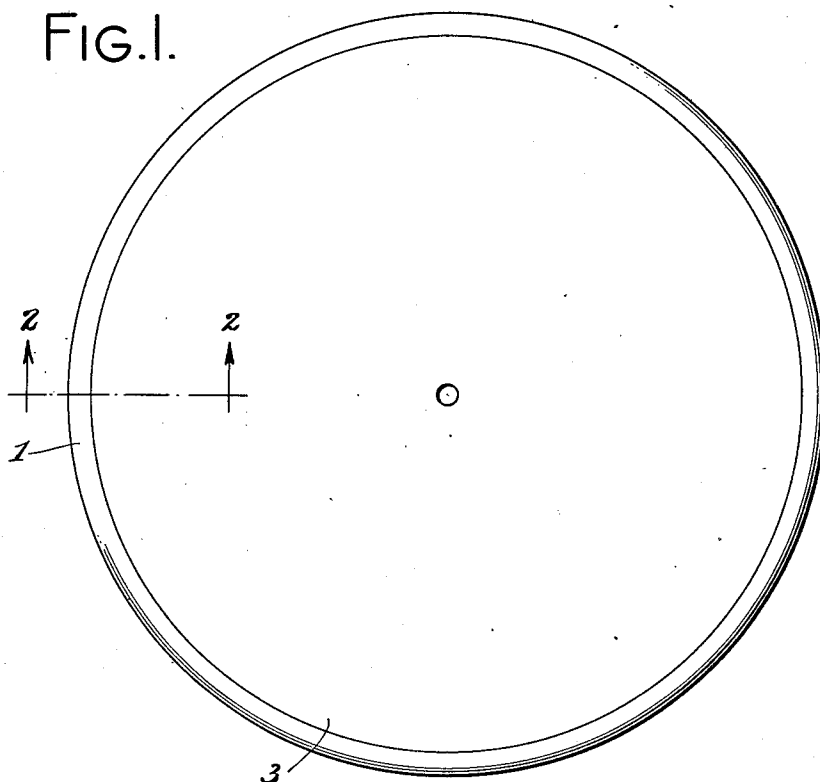


FIG. 2

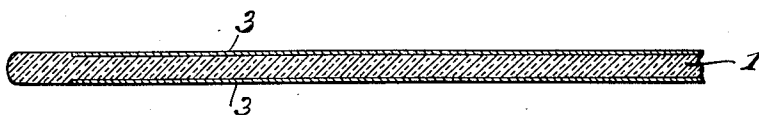
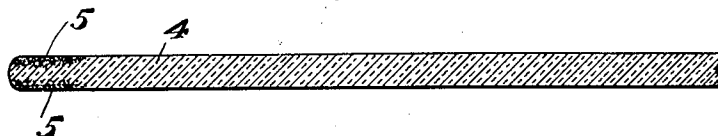


FIG. 3.



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2 Sheets-Sheet 2

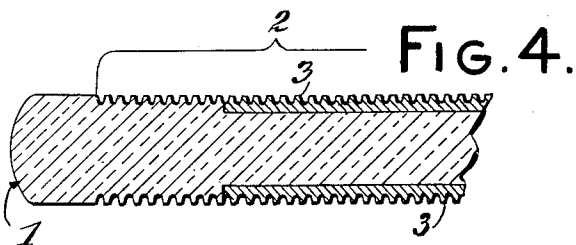
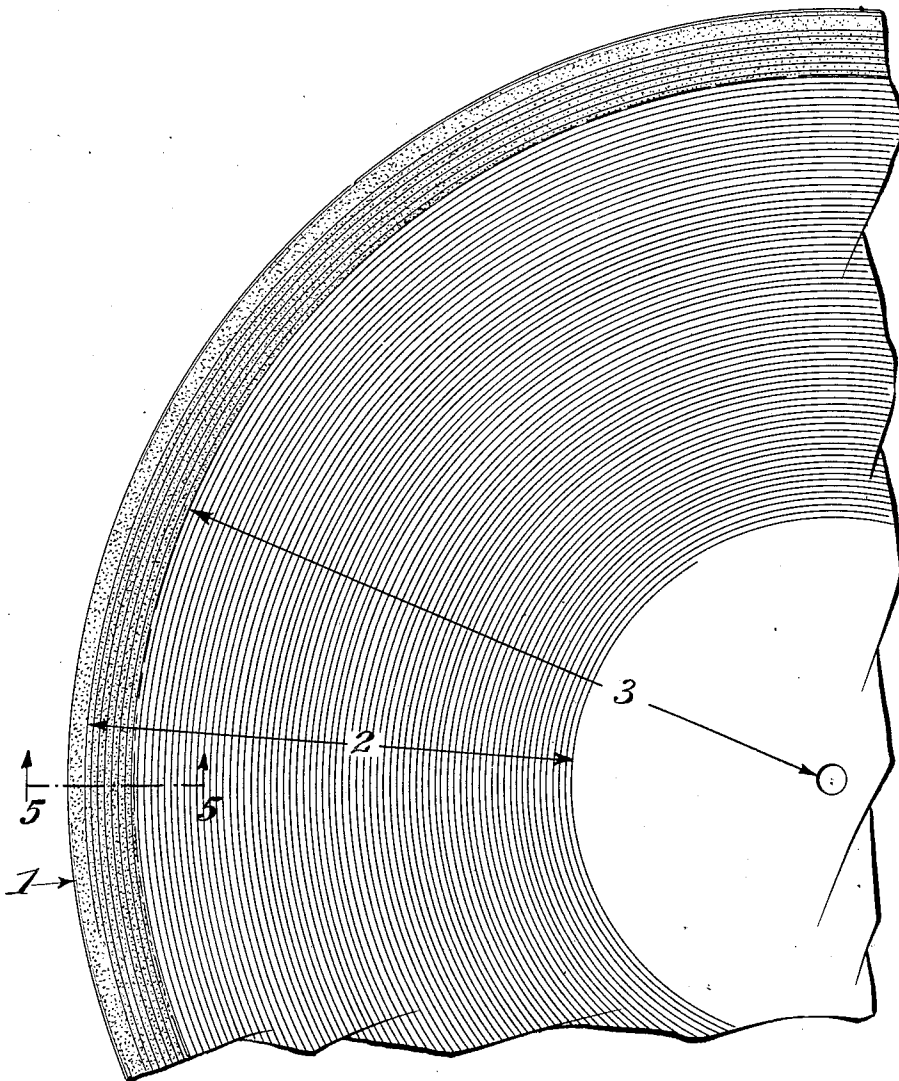


FIG. 5.

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UNITED STATES PATENT OFFICE.

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PHONOGRAPH RECORD.

Application filed March 20, 1925. Serial No. 16,916.

The object of my invention is to provide a phonograph record with a playing surface of maximum smoothness in order to eliminate as far as possible extraneous noise, and to prolong the life of the stylus, combined with means at the starting portion of the record groove whereby the reproducing stylus may be ground to fit said groove before the portion of the record groove in which the music or speech is recorded has been reached. While applicable to any form of record groove, the invention is particularly adapted to the so-called "lateral-cut" record, where the stylus has to exactly fit the groove and where the conventional manufacturing processes cause variations between the grooves of one master record and another. To compensate for this variation it has been necessary to use a stylus having a point slightly larger than the maximum width of the groove and to provide abrasive material in the record itself to grind the point of the stylus as it travels in the groove in order that it may exactly fit same.

Referring to the accompanying drawings: Fig. 1 is a plan view of a conventional "lateral cut" phonograph record, and Fig. 2 is a cross section of Fig. 1. Fig. 3 is a cross section of a modification. Figs. 4 and 5 are enlarged fragments of Figs. 1 and 2 respectively.

The numeral 1 indicates the body of the record which may be made of conventional record material containing abrasive particles such as silicate, rotten stone, etc., designed to grind the point of needle to fit the record groove. The member 1 may be formed at the same time that the record impression is taken, by being inserted in a conventional record press in a lump, but I prefer to first form the member into the general shape of a finished record.

The numerals 3—3 indicate two discs of smooth unabrasive material, which may be for instance celluloid, about 1/64 of an inch in thickness. One of the discs 3 may be inserted in a conventional record press and centered therein by means of a center pin of such press. After the insertion of the first disc 3, the material 1 is inserted in the record press on top thereof and the second disc 3 is placed upon the material 1.

The press is then closed in the conventional manner and the record grooves 2, shown diagrammatically in Figs. 4 and 5,

are pressed into the record and the discs 3—3 caused to unite with the record material 1 so as to form a practically integral structure.

The term celluloid as used herein is designed to embrace such analogous materials as sheets of cellulose nitrate, cellulose acetate or any other material capable of forming a smooth surface. It should be noted that only a few of the first spirals traversed by the needle are engraved in material 1 which contains the abrasive grit necessary to make the needle conform to the particular contour of the record groove, and after such few turns the needle continues its path in the ideally smooth surfaced veneer 3, without further grinding action and consequently without the development of surface noise or further wear of the needle during the reproduction from such a record.

Referring to Fig. 3 it will be noted that the abrasive material is imbedded in the surface of the record 4 only at the starting portion of the record groove thereof as indicated at 5—5.

This allows the needle to be ground at the starting grooves and travel thereafter upon the smooth interior portion of the record.

The construction of the modification shown in Fig. 3 permits the entire surface of the record to be made of homogeneous material except where abrasive is added for grinding the needle at the start of the record.

I claim:

1. A record provided with a groove of substantially uniform effective cross section throughout its length having a starting portion provided with means to grind a needle to fit the groove, the following portion of the groove being substantially free from grinding means.

2. A record provided with a groove of substantially uniform effective cross section throughout its length, having a starting portion provided with means to grind a needle to fit the groove and a playing portion free from such means.

3. A record including a body material containing an abrasive, a surface material substantially free from abrasive united to the body material and covering a portion thereof, a groove of substantially uniform effective cross section starting in the body

material whereby a needle may be shaped to fit the groove, continuing and being provided with sound writing in the surface material.

- 5 4. A phonograph record consisting of conventional record material containing abrasive designed to grind a needle, provided

with a celluloid veneer covering a part of the record material and united thereto to form the complete record, and a conventional groove of substantially uniform effective cross section starting in the record material and continuing in the veneer. 10

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