

UNITED STATES PATENT OFFICE.

FRIEND H. GREGORY, OF PHILADELPHIA, PENNSYLVANIA.

PHONOGRAPH-RECORD.

1,089,835.

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To all whom it may concern:

Be it known that I, FRIEND H. GREGORY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Phonograph-Records, of which the following is a specification.

One object of my invention is to provide a novel form of record and supporting structure therefor whereby in conjunction with suitable mechanism it shall be possible to obtain and reproduce a sound record of practically any length; it being further desired that the "record" made according to my invention shall have its parts so disposed as to occupy but relatively little space, even though it be of comparatively great length.

Another object of the invention is to provide a record for a talking machine of such a nature that notes indicating its subject matter may be conveniently applied to it without material loss of space and at any desired portion of its length; it being thus possible to provide a musical record with any desired directions for its rendition.

Another object of my invention is to provide a record supporting structure in the form of a ribbon or strip of any desired length, having a sound record in the form of a line of varying depth or of an undulatory nature, arranged or placed upon it in such manner as shall utilize to the best advantage the record receiving surface.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a plan of a portion of a phonograph record constructed according to my invention; Fig. 2, is a diagrammatic view illustrating one method of using the record; Fig. 3, is a fragmentary section on a greatly enlarged scale, showing one of the features of the invention; Fig. 4, is an enlarged side elevation showing the disposal of the ends of successive sections when my record strip is folded; Fig. 5, is a plan of the strip shown in Fig. 4; Fig. 6, is an enlarged plan showing another of the features of the invention, and Fig. 7, is a fragmentary plan of a modified form of sound record.

In the above drawings, 1 represents a strip of any desired length and of suitable width, made of some material capable of efficient use for the reception of phonograph records, such, for example, as some

gum-containing or shellac-like body which may be made in the desired form and possess sufficient flexibility to permit of its passage through a sound recording or reproducing machine, and of its being folded for storage, or wound on a reel. It is understood, however, that I do not limit myself to any particular material for my record, as a number of substances may be employed so that they satisfactorily perform the functions. Upon this ribbon or strip of material and by means of any suitable record-making machine operating in the well known manner, I form the sound record; this being preferably disposed on the strip in the form of a continuous line extending back and forth transversely thereof, as indicated at 2. It is understood that for the purpose of making this record the machine will necessarily have to include some device for periodically oscillating the arm carrying the record making needle point or other member, and it is obvious that at the same time it will be necessary to intermittently or continuously move the record receiving strip relatively to said needle. The movement of these two parts may be so proportioned that the record is formed in a series of substantially parallel lines whose extremities are joined to form an endless line, either by V or U-shaped portions or by such curved parts as may be found necessary. For satisfactorily moving the strip through the record-making or reproducing machine, I provide its edges with two series of perforations 3 and 4 in the manner common to films for moving picture machines.

In order that records made according to my invention may occupy a minimum of space and may be folded so as to fit in a container without injury to themselves, I cut a series of transverse notches in the strip so as to divide it into a number of sections joined to each other by tabs or bridges of greater or less length. These section-uniting portions are indicated at 6 and it is to be noted that the slots 5 are cut in the strip in sets so that the bridge pieces 6 of three successive sets, for example, are at different distances from the edges of the strip. As a result, when said strip is folded back and forth upon itself, as indicated in Figs. 2 and 4, the bends in said strip occur at the bridge pieces joining one section to the next. In forming a record upon the strip, the path of the record-making needle is made to pass

from one section of the strip to the next across one of the bridges 6 so that there is no interruption in the record made.

When the sections of the record strip are laid or folded parallel with each other, the bridges 6 are necessarily sharply bent and if such sections were tightly pressed together, said bridges 6 would either break in time or injure the record line crossing them. By, however, cutting the slots out of the record in the manner illustrated and above described, the bridges uniting two adjacent sections will enter or fit within a part of the slot formed between two other sections, with the result that they are not sharply curved or bent when the strips are piled together.

In order to assist in guiding the record-making or reproducing needle to where it reverses its direction of movement in forming the record adjacent the edges of the strip, I may, in some instances, confine it to a definite path, stamping or otherwise forming in the strip a channel or groove, as indicated at 7 in Fig. 3. This, however, is not necessary in every case, since I usually depend upon the mechanism of the record-making or reproducing machine to properly direct its needle.

Under conditions of use the continuous record strip may be drawn from any suitable container, in which it is folded in a series of parallel sections, as illustrated at 8, Fig. 2, and, by means of a machine including a pair of toothed wheels 10 and 11, driven from any suitable source of power, it may be passed over a guide piece 12, during which time its sound record line is engaged by a needle 13, carried by a lever or other suitable form of arm 14, belonging to a record-making or reproducing device. After so passing the machine, the record strip may be again folded, preferably automatically, and depos-

ited in a receptacle. It is, of course, understood that the arm 14 is driven synchronously with the wheels 10 and 11 by means of properly designed mechanism, which, however, forms no part of the present invention.

If desired, the sound record line of the record may be interlined for purposes of reference, and various notes may be made on the margin of the record strip, as, for example, each line may be numbered, as shown, and the sections may be independently numbered.

It is to be understood that in some cases I may make the record strip without the transverse slots or notches, and wind it on reels for storage or transportation, although I preferably employ said slots for the reasons noted.

As shown in Fig. 6, I may dispose the sound record line upon the record strip in the form of a continuous scroll 16, instead of as shown in the other figures, and it is to be understood that such a form of record is contemplated and included as part of my invention.

I claim:—

A record strip for a talking machine, consisting of a continuous length of flexible material provided with a number of series of transverse slots dividing it into sections, the slots between the adjacent sections being varied as to their positions to provide openings for the reception of the bridge pieces formed by the slots between other sections.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRIEND H. GREGORY.

Witnesses:

WM. BROWN, Jr.,
WILLIAM E. BRADLEY.