June 6, 1939. W. H. HUTTER 2,161,168

PHONOGRAPH APPARATUS

Original Filed March 14, 1935

Fig. 1.

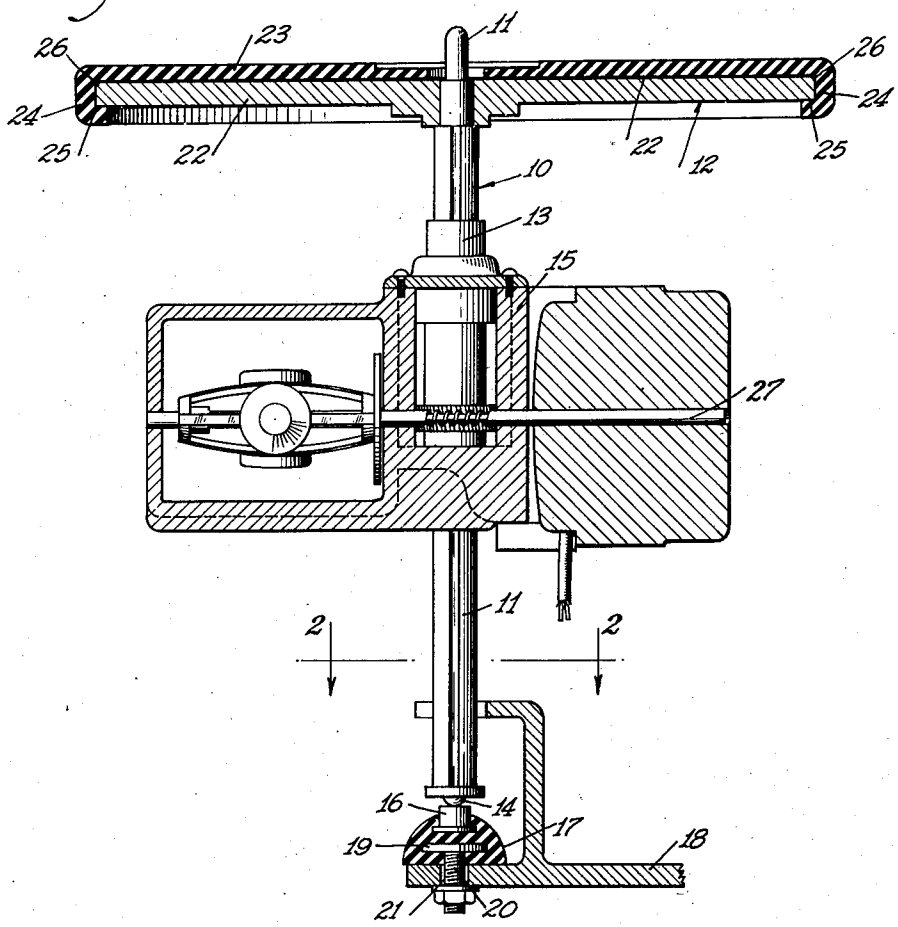
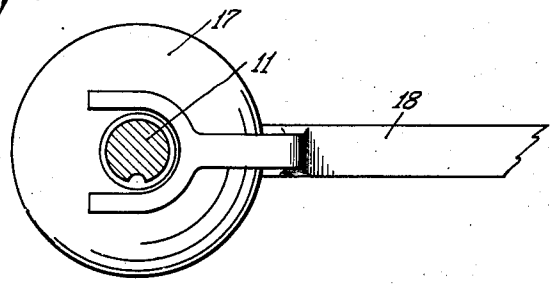


Fig. 2.



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Patented June 6, 1939 2,161,168

UNITED STATES PATENT OFFICE

2,161,168

PHONOGRAPH APPARATUS

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Original application March 14, 1935, Serial No. 11,094. Divided and this application March 6, 1936, Serial No. 67,472

1 Claim. (Cl. 308—26)

This application is a division of the applicant's copending application Serial No. 11,094, filed March 14, 1935, on a Phonograph apparatus.

This invention relates to a phonograph apparatus.

It is an object of this invention to provide an improved phonograph apparatus which is relatively simple and inexpensive in construction and efficient in use.

The present invention relates particularly to that type of phonographs in which the loud speaker or amplifier and pick up device are all arranged within the same cabinet. In that type of phonograph there is a decided tendency for the apparatus to develop what is known as an electro-acoustical "feed back", which has its inception, as mechanical vibration, at the point of contact between the needle and the record, where it is transmitted by way of the tone arm to the pick up device where mechanical vibrations of the tone arm are translated into electrical oscillations which are, in turn, transmitted to the amplifier or speaker, whence they travel back, as sound vibrations, through the apparatus, to the turntable, thereby setting up a cycle of feed backs which greatly interfere with the tone quality of the apparatus and its ability to reproduce low tones.

A further object of the present invention is, therefore, to prevent the transmission through a phonograph apparatus of the type referred to, with particular reference to the turntable supporting shaft therefor, of electro-acoustical feed backs and sound vibrations, as above referred to so as to improve the tone quality of the phonograph, to secure high fidelity tone, and so as to enable the apparatus better to reproduce low tones and resonances.

Another object of the invention is to provide for better occlusion or adherence of records to the record-supporting turn-table, especially if and when any warping or distortion occurs in the body of the records.

Another object of the invention is to provide a vibration insulator for the turntable of a phonograph apparatus by means of which the transmission of electro-acoustical feed backs from the tone arm and pick up, and through the turntable and operating parts of the phonograph therefor is minimized.

A further object of the invention is to provide a vibration absorbing device for the turntable of a phonograph.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed:

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction, and in which:

Fig. 1 is a fragmentary vertical sectional view of a phonograph apparatus embodying a preferred form of the present invention; and

Fig. 2 is a view on line 2—2 in Fig. 1, partly in section and partly in top plan.

A phonograph apparatus embodying a preferred form of the present invention is shown in the drawing, is therein generally indicated at 10, and comprises a vertical shaft 11 upon which is mounted a record-supporting disc or turntable, which is generally indicated at 12.

The supporting shaft 11 may be operated by any conventional means, generally indicated at 27, and is slidably mounted in a guide 13 which, in turn, is supported by a bracket 15. The particular construction of this shaft 11 and its guide form the subject matter of the pending application of Paul H. Smyth, Jr., Serial No. 3,202, filed January 24, 1935, now Letters Patent No. 2,072,924.

The shaft 11 has a rounded lower end portion 14 which is adapted to rest upon a seat 16 which in turn is mounted in a resilient base 17; this base 17 being preferably made of rubber or other vibration-absorbing material and being mounted upon a suitable support 18. Embedded in the resilient member 17 is a disc 19 which is mounted upon a nut-bearing bolt 20, the bolt 20 being slidably mounted in an opening 21 which is provided in the support 18. Thus the disc 19 and the nut bearing bolt cooperate to secure the resilient base 17 in the place on the support 18.

The record-supporting turntable 12 includes a base or disc 22 of relatively rigid material and a sheet of resilient material 23 which is mounted or arranged upon the disc 22; this sheet or disc 23 being preferably made of rubber or other vibration-absorbing material and having a skirt or flange 24 which is provided on its internal surface with an annular groove 25 for the reception of the peripheral or marginal edge portion 26 of the relatively rigid disc 22.

In the use of the present invention the resilient or sound-absorbing portion 23 of the turntable 12 prevents the transmission of electro-acoustical feed backs from the tone arm and pick up (not shown) through the turntable, acting as a sound absorber, to break up and tending to prevent vibrations through the turntable.

Moreover, the resilient or rubber portion 23

of the turntable 12 provides for better and closer occlusion or adherence between a record arranged upon the turntable than has been possible with turntable employing felt or the like in contact with the record carried by the turntable, and this is especially true in the case of a record which has become warped or otherwise distorted from its proper shape.

The resilient vibration-absorbing member 17 below the supporting shaft 11 likewise breaks up and absorbs sound vibrations at the point at which it is located in the apparatus and prevents electro-acoustical feed backs, though the shaft 11 is in lowered position, at which time the rounded end portion 14 thereof is disposed upon the seat 16.

When the shaft 11 is in lowered position, the rounded lower end portion 14 thereof engages or rests upon the seat 16, thereby compressing the resilient or rubber member 17, and the weight of the shaft 11 is transmitted to the flange 19 which acts to compress the rubber member 17 further.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise detail of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention what I claim as new, and desire to protect by Letters Patent is:

A bearing for the shaft of a reciprocable turntable of a phonograph, comprising a reciprocable bearing support, a hemispherical body of sound absorbing material, means embedded in said hemispherical body for attaching it to said bearing support, and a thrust bearing for the turntable shaft embedded in said hemispherical body in spaced relation with the last said means.

WILLIAM H. HUTTER.