T. A. EDISON.

PHONOGRAPH REPRODUCER.

APPLICATION FILED MAR. 23, 1908.

975,340. Patented Nov. 8, 1910.

Fig. 2.

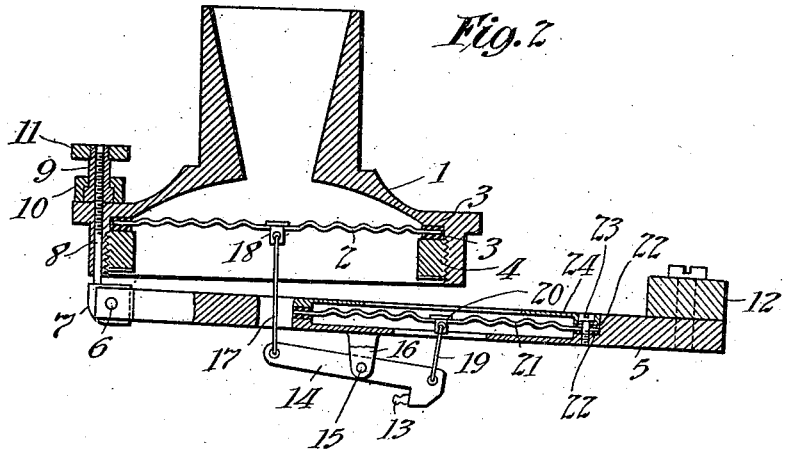
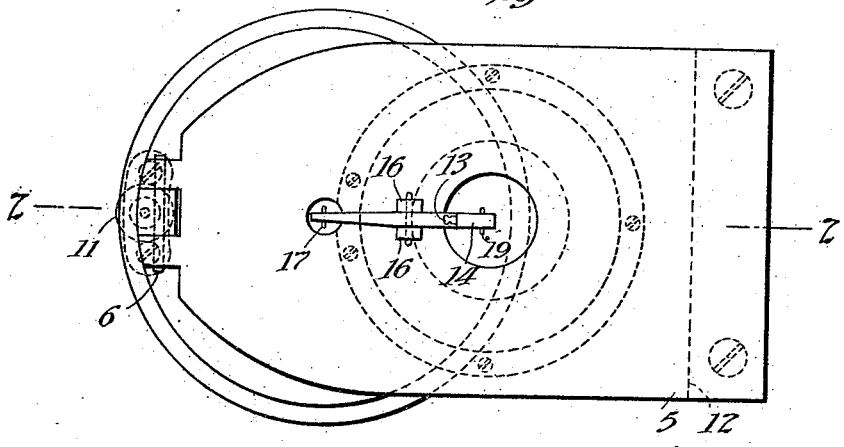


Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, ORANGE, NEW JERSEY.

PHONOGRAPH-REPRODUCER.

975,340. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed March 23, 1908. Serial No. 422,651.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, and a resident of Llewellyn Park, Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Phonograph-Reproducers, of which the following is a description.

My invention relates to phonograph reproducers, more particularly of the type in which the stylus is carried by a lever pivotally secured to a floating weight, said lever being connected to a diaphragm carried by the sound box, and my invention has for its object the application of resilient means to said lever for the purpose of counterbalancing or opposing the vibrations of the said diaphragm, so as to eliminate false vibrations or overtones which pervert the quality of the reproduction, causing a harsh or metallic sound. Said resilient means is preferably in the form of a diaphragm similar to the sound box diaphragm, so as to be capable of vibrating in the same manner, that is, of responding in the same way to all of the waves constituting the sound record surface, and such diaphragm is preferably applied to and carried by the floating weight.

In order that my invention may be more fully understood, reference is hereby made to the accompanying drawings, of which—

Figure 1 is a bottom plan view of a phonograph reproducer constructed in accordance with my invention, and Fig. 2 is a section on line 2—2 of Fig. 1.

In the structure shown, 1 is the sound box body of the usual form, within which the diaphragm 2 which may be of hard copper is clamped between gaskets 3, by the clamping ring 4, all of these parts being of well-known construction. A floating weight 5 is pivoted at 6 to a block 7, carried on the lower end of a vertical pin 8 which passes through the body 1. The upper end of said pin is threaded, and an elongated nut 9 engages the same, said nut being held in position by an inverted cup 10 secured to the body 1, in any suitable manner. The nut 9 is provided with a head 11 for convenience in turning and the pin 8 may be adjusted up and down to any desired extent by rotation of the nut 9. The floating weight 5 is preferably of metal and along its free edge is secured a strip 12 for increasing the pressure of the stylus 13 on the record surface. The said stylus is held in a socket formed in the lever 14, and the latter is pivoted at 15 to a pair of lugs 16 depending from the floating weight 5.

One end of the lever 14 is connected by the link 17, which passes through an opening in the floating weight, to a head 18 which is secured to the center of the diaphragm 2, and the other end of said lever is connected by a link 19 to a head 20, which is secured to the center of the diaphragm 21. By connecting opposite ends of the lever to the two diaphragms, they are caused to move simultaneously in opposite directions, whereby the pressure of the stylus upon the record is equalized and the vibrations of the diaphragm 2 are more perfectly counterbalanced.

The diaphragm 21 may be a corrugated plate of hard copper, such as the diaphragm 2, although my invention is not limited to the particular form of diaphragm 21. The diaphragm 21 is situated within a recess formed in the floating weight 5, and is clamped between gaskets 22 of rubber, paper or other suitable material, by means of screws 23, threaded in the weight 5, and countersunk within the cover plate 24, the said screws securing said cover plate, gaskets and diaphragm firmly to the floating weight 5. My experiments with a reproducer constructed in accordance with the drawing have shown me that the same will give an excellent reproduction of sounds from a phonograph record, but I do not limit myself to the exact structure shown, and include all such modifications and rearrangements of the parts thereof as will be obvious to one skilled in the art and as covered by the appended claims.

Having now described my invention, what I claim is:—

1. In a phonograph reproducer, the combination with the sound box, diaphragm, floating weight, stylus lever pivoted thereto, and stylus, of a diaphragm carried by said floating weight and connected to said stylus lever, substantially as set forth.

2. In a phonograph reproducer, the combination with the sound box, diaphragm, floating weight, stylus lever pivoted thereto and stylus, of a diaphragm carried by said floating weight and connected to said stylus lever on the opposite side of its fulcrum from the point at which the first diaphragm is connected, substantially as set forth.

3. In a phonograph reproducer, the com-

bination with the sound box and diaphragm, of a floating weight provided with a recess, a diaphragm within said recess, a stylus lever pivotally secured to said weight, a stylus carried thereby, and connections from one end of the said lever to one diaphragm, and from the other end of the lever to the other diaphragm, substantially as set forth.

4. In a phonograph reproducer, the combination with the sound box and diaphragm, of a floating weight, a block to which said weight is pivoted, and means for adjusting the vertical position of said block comprising a threaded pin secured to said block and engaging within a recess in the sound box body, a nut mounted on said sound box and engaging said threaded pin, and means for preventing axial movement of said nut, substantially as set forth.

This specification signed and witnessed this 13th day of March 1908.

THOS. A. EDISON.

Witnesses:
FRANK L. DYER,
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