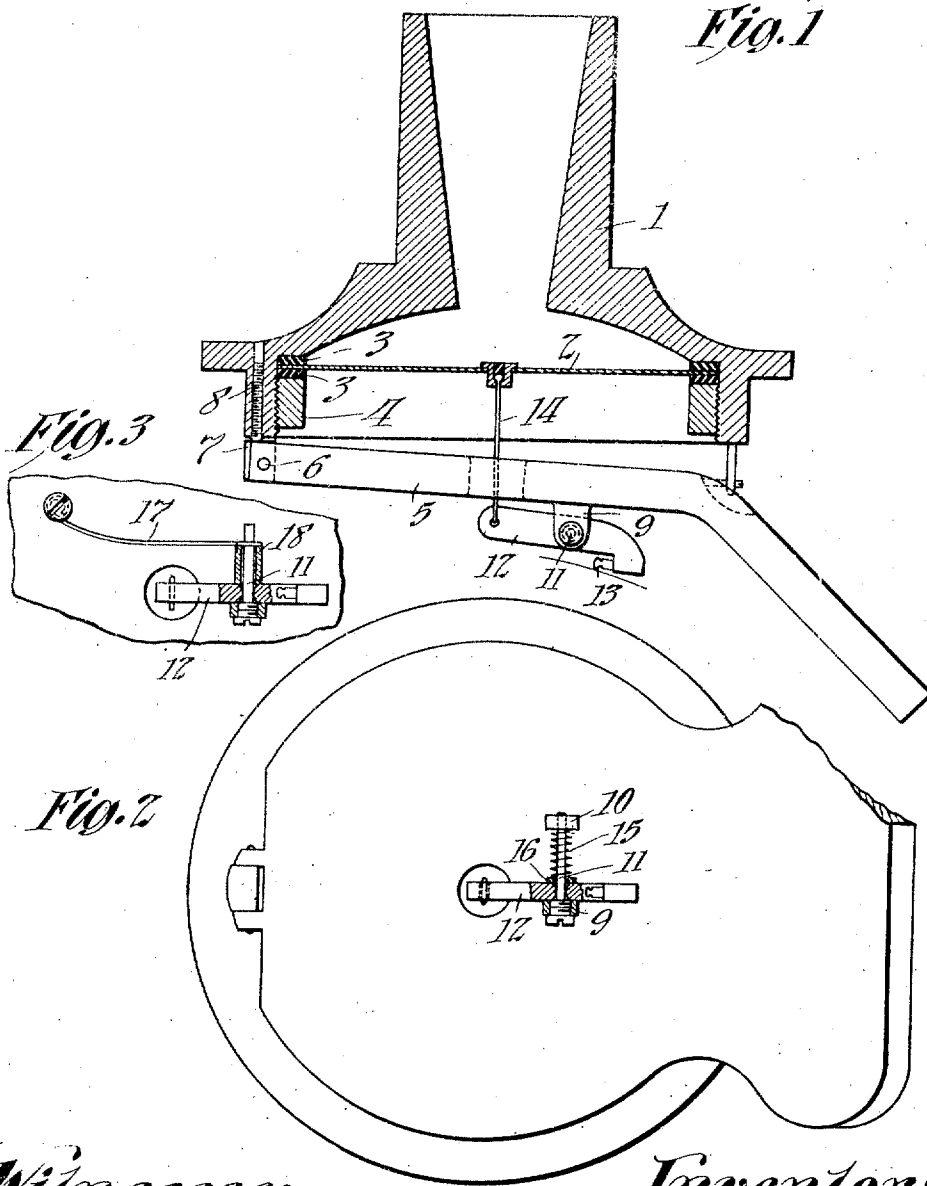


991,424.

Patented May 2, 1911.



Witnesses:
 Frank D. Lewis
 Dyer Smith

Inventor:
 Charles P. Carter
 by Frank L. Avery
 His Atty.

UNITED STATES PATENT OFFICE.

CHARLES P. CARTER, OF KINGSTON, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS TO THOMAS A. EDISON, INCORPORATED, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PHONOGRAPH-REPRODUCER.

991,424.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed September 20, 1909. Serial No. 518,575.

To all whom it may concern:

Be it known that I, CHARLES P. CARTER, a citizen of the United States, and a resident of Kingston, in the county of Ulster and State of New York, have invented certain new and useful Improvements in Phonograph-Reproducers, of which the following is a description.

My invention relates to phonograph reproducers of the Edison type in which a floating weight is pivoted to the body of the reproducer and the stylus is carried by a lever pivoted to the floating weight and connected to a reproducer diaphragm or other means for producing sound vibrations.

My invention has for its object the mounting of the said lever in such a way that the stylus shall be free to move up and down and also horizontally or laterally in order to follow the sound record groove faithfully. I mount the lever upon a horizontal pivot pin in such a manner that the stylus lever is free not only to rock about the said pin in a vertical plane in tracking the sound record groove, but also to rock about the said pin in a horizontal plane and also to move bodily laterally upon the said pin in following the irregularities of the record groove. My construction also employs an elastic or spring means for maintaining the stylus lever centrally in alinement with the record groove and for returning the lever to said position after deviation therefrom and for restraining its lateral movement upon the pivot pin.

Reference is hereby made to the accompanying drawings of which—

Figure 1 is a central vertical section of a phonograph reproducer constructed in accordance with my invention, certain parts being shown in elevation. Fig. 2 is a bottom plan view of the same, certain parts being shown in section; and Fig. 3 is a detail view similar to Fig. 2 of a modified form of my device.

The reproducer shown comprises the usual body 1 within which the diaphragm 2 is clamped between gaskets 3 by means of the usual clamping nut 4. The floating weight 5 is pivoted at 6 to a block 7 having a shank 8 threaded within the body 1. The floating weight in the form of my invention shown in Figs. 1 and 2 is provided with a pair of depending lugs 9 and 10 within which is se-

cured the horizontal pivot pin 11 upon which stylus lever 12 is mounted. Lever 12 carries stylus 13 and is connected to diaphragm 2 by means of link 14. Lever 12 is mounted upon pin 11 in such a way as to be free to pivot upon the same in a horizontal plane. I accomplish this by providing lever 12 with a bearing surface for pin 11 which closely fits the same only at a central longitudinal section of the lever 12. That is, the lever 12 is given as nearly as possible merely a point contact upon pin 11 so that the lever is free to rock in a horizontal direction. This is accomplished by enlarging the hole in lever 12 through which pin 11 passes from the central section of the lever toward the two sides of the lever, as is shown in Figs. 2 and 3 of the drawings. This enlargement of the hole results in giving the latter an elliptical or circular shape at the two openings of the orifice upon the sides of the lever, these openings being, of course, greater in diameter than the pin 11, the diameter of the hole midway between the two sides of the lever, however, fitting the pin 11 closely so that lengthwise movement of lever 12 is prevented.

In the form of my invention shown in Fig. 2 the lug 10 is some distance to one side of lever 12, spiral spring 15 being coiled around pin 11 between lug 10 and the adjacent side of lever 12. A washer 16 may be interposed between spring 15 and lever 12. As shown, lever 12 normally rests against lug 9, but may move from such position against the pressure of spring 15. If desired, it is of course obvious that a spring similar to 15 might be interposed on both sides of lever 12, but I do not consider this construction desirable or necessary.

In the modification shown in Fig. 3, a leaf spring 17 is used in place of the spiral spring. In this case lever 12 is mounted as before upon pin 11, an elongated washer or sleeve 18 preferably being mounted upon the extension of pin 11 to one side of lever 12, the end of leaf spring 17 being provided with an opening through which the end of pin 11 is passed, spring 17 thus bearing directly upon the end of sleeve 18. If desired, it is, of course, obvious that spring 17 might bear directly against the side of lever 12.

Having now described my invention, what

I claim and desire to protect by Letters Patent is as follows:

1. In a sound reproducer, the combination of a body, a floating weight carried thereby, a horizontal pin carried by the floating weight, a stylus lever pivoted upon said pin and free to move bodily thereon axially of the same, a stylus carried by said lever, said pin projecting to one side of said lever and yielding means arranged to press against the side of said lever and resiliently resist lateral movement thereof upon said pin, substantially as described.

2. In a sound reproducer, the combination of a body, a floating weight carried thereby, a horizontal pin carried by the floating weight, a stylus lever pivoted upon said pin, a stylus carried by said lever, said lever being provided with an opening from side to side through which said pin passes provided with a close fitting bearing surface for said pin at the section of said lever midway between the two side surfaces thereof only, and yielding means tending to maintain said lever in a central position, substantially as described.

3. In a sound reproducer, the combination of a stylus lever, a horizontally disposed pin upon which said lever is pivoted said pin extending through said lever from side to side and being longer than the width of said lever and said lever being free to move laterally upon said pin, fixed means upon one side of said lever, and yielding means upon the other side of said lever, arranged to restrain lateral movement of said lever upon said pin, substantially as described.

4. In a sound reproducer, the combination of a stylus lever, a horizontally disposed pin

upon which said lever is pivoted said pin extending through said lever from side to side and being longer than the width of said lever, and said lever being free to move laterally upon said pin, and yielding means laterally disposed to said lever arranged to restrain lateral movement of said lever upon said pin, substantially as described.

5. In a sound reproducer, the combination of a stylus lever, a horizontally disposed pin upon which said lever is pivoted longer than the width of said lever, said lever being provided with an opening from side to side through which said pin passes having a close fitting bearing surface for said pin at the section of said lever midway between the two side surfaces thereof only, and said lever being free to move bodily laterally upon said pin, substantially as described.

6. In a sound reproducer, the combination of a stylus lever, a horizontally disposed pin upon which said lever is pivoted longer than the width of said lever, said lever being provided with an opening from side to side through which said pin passes having a close fitting bearing surface for said pin at the section of said lever midway between the two side surfaces thereof only, said lever being free to move laterally upon said pin, and yielding means arranged to press laterally upon said lever to restrain such movement, substantially as described.

This specification signed and witnessed this 17th day of Sept. 1909.

CHARLES P. CARTER.

Witnesses:

JNO. B. ALLIGER,
JAMES J. O'CONNOR.