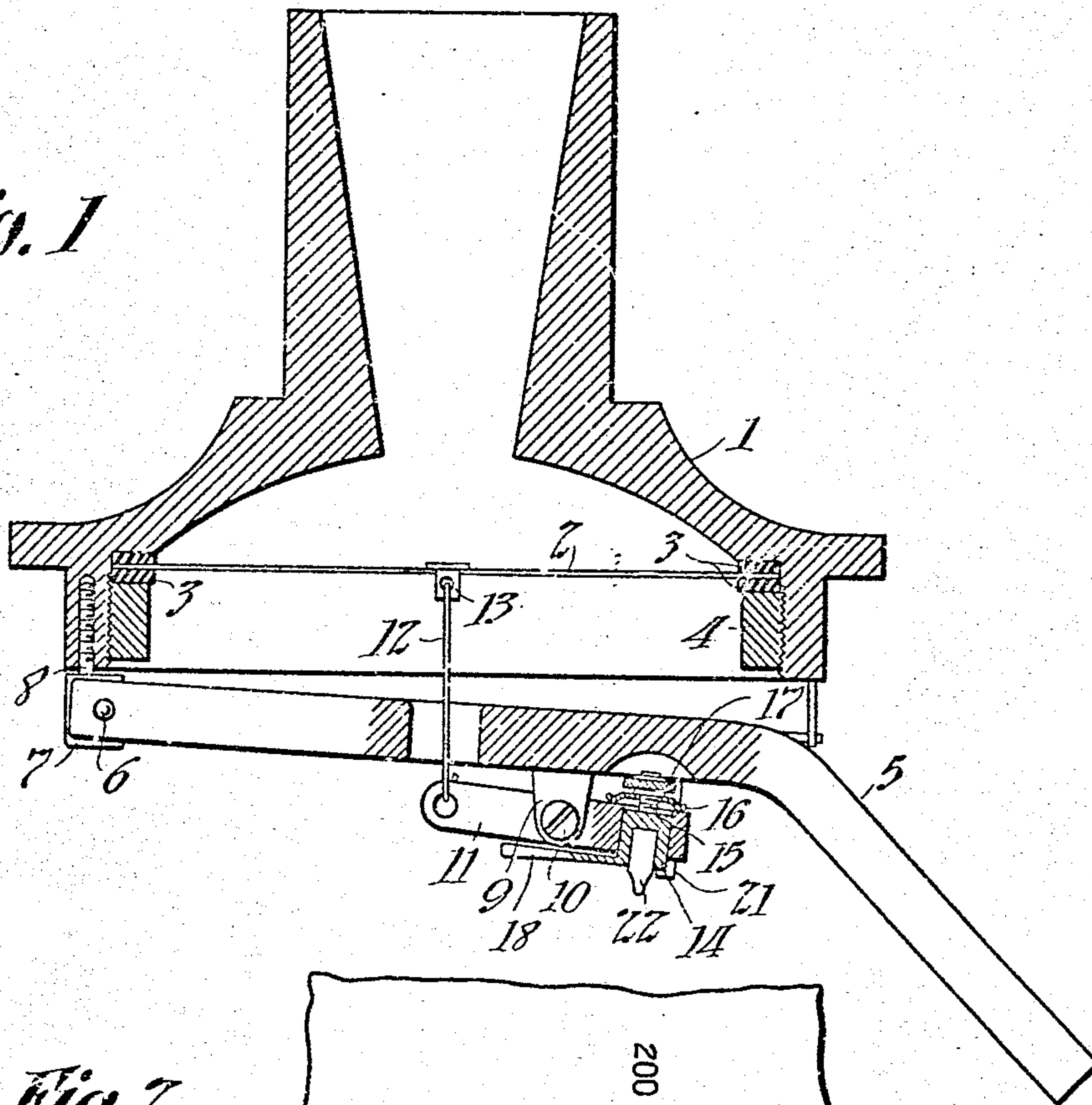


F. L. DYER.  
 PHONOGRAPH REPRODUCER.  
 APPLICATION FILED MAR. 18, 1909.

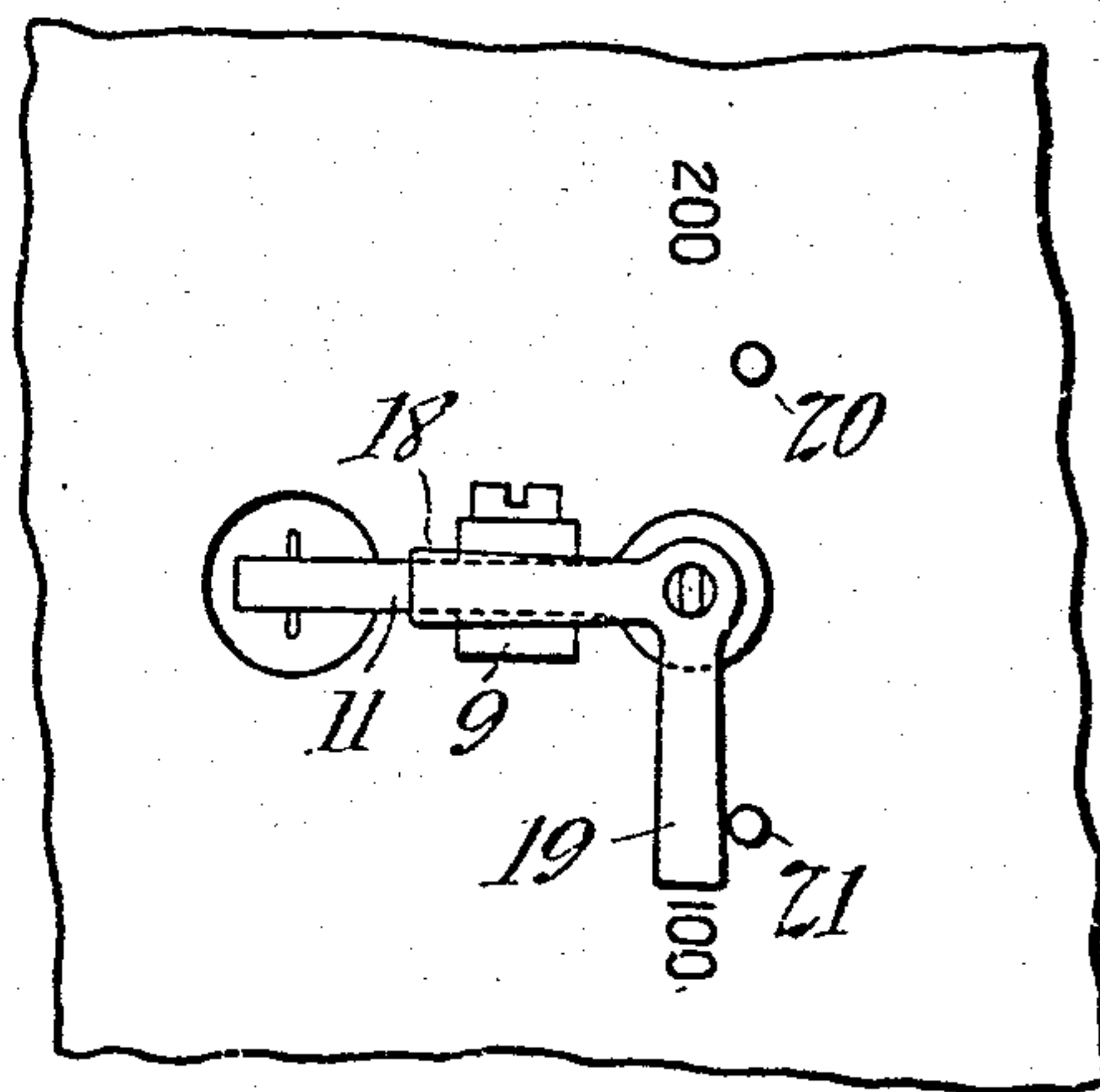
985,736.

Patented Feb. 28, 1911.

*Fig. 1*



*Fig. 2*



*Witnesses:*  
 Frank D. Lewis  
 Dyer Smith

*Inventor:*  
 Frank L. Dyer



# UNITED STATES PATENT OFFICE.

FRANK L. DYER, OF UPPER MONTCLAIR, NEW JERSEY, ASSIGNOR TO NEW JERSEY PATENT COMPANY, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PHONOGRAPH-REPRODUCER.

985,736.

Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed March 18, 1909. Serial No. 484,298.

*To all whom it may concern:*

Be it known that I, FRANK L. DYER, a citizen of the United States, and a resident of Upper Montclair, county of Essex, and State of New Jersey, have made a certain new and useful Invention in Phonograph-Reproducers, of which the following is a specification.

My invention relates to phonograph reproducers and the object thereof is particularly to improve the construction described and claimed in the application of Louis A. Chipot, Serial No. 474,843, for phonograph reproducer styluses, filed January 28, 1909. In the application of said Chipot, a phonograph stylus is provided, which is formed with different contours in planes at right angles to each other, or at some different angle to each other, so that the stylus as viewed in one direction is narrower than when viewed in the other direction. The cross section of the stylus in one direction is of suitable size and form for tracking a record groove having certain characteristics, and its cross section in the other direction is of suitable size and form for tracking a record groove having different characteristics. The stylus was designed particularly for use in tracking record grooves having respectively 200 threads to the inch and 100 threads to the inch, although, of course, it is obvious that it might be used in connection with record grooves having different pitches or different characteristics by modifying the contours of the stylus above referred to. This stylus was mounted by the said Chipot in any suitable manner so that it could be shifted readily through an angle of 90 degrees, or through whatever angle was requisite to permit the stylus to be used for tracking the two records of different characteristics above referred to. The stylus was thus adapted to be used in a single reproducer comprising a diaphragm, sound box, floating weight, and a single stylus lever, upon one end of which is preferably mounted a holder for the stylus. In this preferred form, the holder is rotatably mounted upon the lever, so that by rotation of the holder, either contour may be presented in position for tracking the desired record. In my improvement upon this construction, I provide arms or projections upon the said holder, which can be easily manipulated to rotate the holder, and stops or projections upon a relatively

fixed member, as the floating weight, adapted to co-act with the arms upon the stylus holder in order to limit the movements of the holder and properly position the stylus for tracking the different records. I also preferably provide indicating means to designate the particular record with which the stylus is in position to co-act when one of the arms above described is in contact with its appropriate stop.

In order that the invention may be more fully understood, reference is made to the accompanying drawing in which—

Figure 1 is a side elevation, partly in section, of a phonograph reproducer constructed in accordance with my invention, and Fig. 2 is a bottom plan view showing the stylus lever, stylus holder and stylus, together with the arms upon or integral with the stylus holder, the stops upon the floating weight co-acting therewith, and the indicating means.

The reproducer shown in Fig. 1 comprises a sound box body 1 of the usual form, and the diaphragm 2 secured between gaskets 3 by a clamping ring 4 threaded in said body. The floating weight 5 is pivoted at 6 to the pivot block 7, which is pivoted to the body 1 by the usual screw 8, and the floating weight carries the depending lugs 9, in which is mounted the horizontal screw or stud 10 on which the stylus lever 11 is pivoted. One end of said lever is connected to the center of the diaphragm 2 by the usual link 12 and head 13. The stylus holder 14 is pivotally connected to the end of the stylus lever distant from the link 12 in any suitable manner. In the construction shown, the stylus holder is rotatably mounted within a recess or passageway in the stylus lever 11 in which it closely fits, the stylus holder 14 having integrally formed therewith as an extension thereof the screw 15. The spring member or resilient washer 16 is slipped over this threaded stud 15 when the stylus holder is in position in its recess in the stylus lever, when the nut 17 is screwed down on the screw 15, pressing upon the spring member 16, the holder 14 thus being securely held in position. It is, of course, obvious that the holder 14 might be mounted in the lever 11 in any other suitable manner, as by forming the holder 14 with a peripheral thread which is adapted to engage a screw thread on the bore of the opening.



Preferably, the holder has formed integrally therewith two arms 18 and 19, which, in the case of a stylus having its two distinctive contours in planes at 90 degrees apart from each other, would preferably be mounted at an angle of 90 degrees apart. These two arms are adapted to co-act with the stops or lugs 20 and 21, which project from the lower surface of the floating weight. Adjacent to the stops 20 and 21, suitable indicia may be marked, as the figures 200 and 100 shown in Fig. 2 of the drawings, which indicate that when the arm 19 is in contact with the stop 21, the stylus is positioned to track a record having 100 threads to the inch, and when the arm 18 is in contact with the stop 20 that the stylus has been turned so that it is in position to track a record having 200 threads to the inch. It is, of course, obvious that the arms 18 and 19 might be located at different angles, and that the stops 20 and 21 might be differently situated, if the relation between the two contours of the stylus and the position thereof when the arms are in contact with their stops, is observed. It is, of course, also obvious that but a single arm might be used if the two stops were so positioned as to co-act therewith to properly position the stylus for tracking the two types of records. With the construction shown, the arms 18 and 19

form convenient means for easy manipulation by the operator. The stylus 22 may be of any suitable material such as sapphire, and is cemented or otherwise secured in a socket formed in the holder 14.

Having now described my invention, what I claim and desire to secure by Letters Patent is as follows:

In a phonograph reproducer, in combination, a stylus lever, a stylus holder carried by said lever, a floating weight on which the stylus lever is mounted, said holder having a pair of arms mounted ninety degrees apart movable therewith, and stops on said floating weight one hundred and eighty degrees apart adapted to co-act with said arms to limit the movement of the holder in either direction, and a stylus carried by said holder and having different contours in planes at an angle of ninety degrees from each other, either contour being in position to track a certain type of record groove when the appropriate arm is in contact with its co-acting stop, substantially as described.

This specification signed and witnessed this 16th day of March, 1909.

FRANK L. DYER.

Witnesses.

DYER SMITH,  
JOHN M. CANFIELD.