W. H. MILLER.

PHONOGRAPH.

APPLICATION FILED JAN. 18, 1909.

1,002,074. Patented Aug. 29, 1911.

Fig. 2

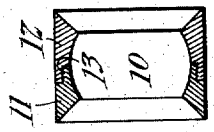
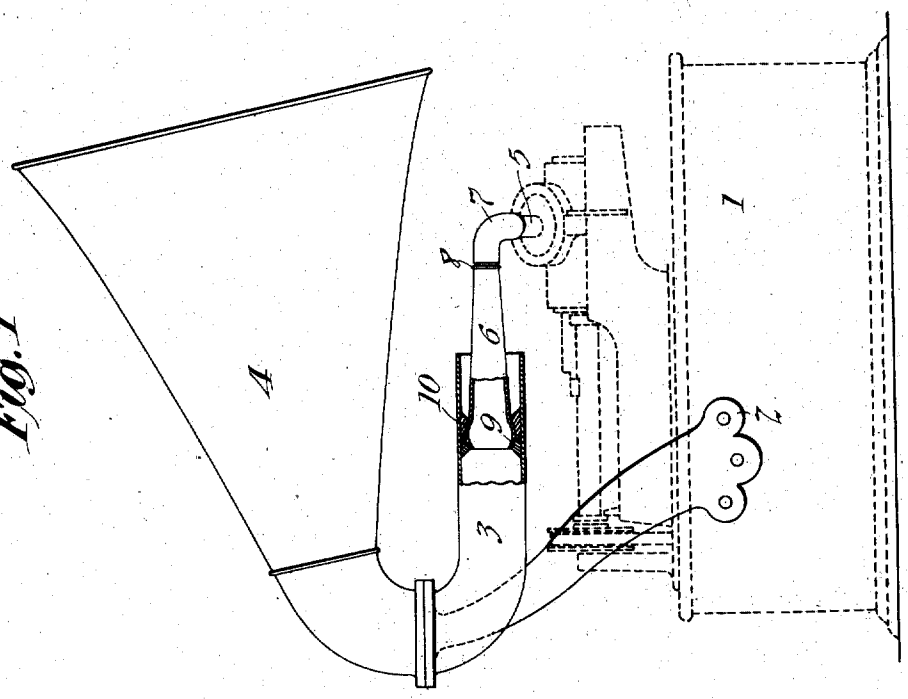


Fig. 1



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UNITED STATES PATENT OFFICE

WALTER H. MILLER, OF ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOMAS A. EDISON, INCORPORATED, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PHONOGRAPH.

1,002,074. Specification of Letters Patent. **Patented Aug. 29, 1911.**

Application filed January 18, 1909. Serial No. 473,001.

To all whom it may concern:

Be it known that I, WALTER H. MILLER, a citizen of the United States, and a resident of Orange, county of Essex, and State of New Jersey, have invented a certain new and useful Improvement in Phonographs, of which the following is a description.

My invention relates to phonographs, and particularly to phonograph horns and means for supporting the same.

In my application Serial No. 430,259, filed May 1, 1908, I disclose a structure in which the horn is provided with a straight section arranged parallel to the path of the traveling carriage of the phonograph as the latter traverses the record in reproducing the same. A tapered tube member connected to the reproducer neck is arranged, in the above described application, to slide back and forth in the fixed tube above referred to with the movement of the traveling carriage, whereby bending and twisting stresses upon the telescoping parts are avoided.

This application is an improvement on the above construction, which consists chiefly in the provision of a member slidably engaged within the rigid tube member, and fitting snugly therein, in which member the end of the tube section, which is attached to the reproducer neck, has a universal joint. By this means an improved joint is provided between the telescoping parts whereby loss of air is prevented, while at the same time, the advantages accruing from the elimination of stresses are retained.

In order that the invention may be fully understood, reference is hereby made to the accompanying drawings, which form a part of this specification, wherein—

Figure 1 represents my improved horn and connections applied to a phonograph, which latter is shown in dotted lines, and Fig. 2 is a detail sectional view of the bearing member in the rigid tube enlarged to show the method of connecting together the parts of the same.

In the drawings, the numeral 1 indicates the phonograph to which my improvement is applied. I have found it convenient to connect my rigid tube, which is arranged parallel to the path traversed by the phonograph reproducer to the phonograph by means of a bracket secured to the rear of the phonograph and extending upwardly and forwardly, and toward the end of the instrument in such a manner that the rigid tube may be connected by an upward bend to the lower face of the said bracket substantially on the central longitudinal line of the instrument and at the end thereof opposite the end gate or the end of the phonograph mandrel upon which the record is inserted. The bell-shaped mouth piece of the horn is connected to the upper face of the bracket and is preferably so mounted that it may be made to rotate in a horizontal plane as is common.

The bracket above described is represented by the reference numeral 2. The rigid tube, which is parallel to the path of the reproducer is indicated by the numeral 3, and the bell shaped portion of the horn, which is connected to the upper side of the bracket as above described, is represented by the reference numeral 4. It is to be understood that while I prefer to provide the common supporting means for the mouth piece 4 and the rigid tube 3 in the neighborhood of one end of the instrument and at a short distance thereabove, this device may be supported from the phonograph cabinet by any convenient form of support as well as that which I have described and shown. The member for connecting the neck of the reproducer 5 to the cylindrical tube 3 is designated by the reference numeral 6. This hollow member is preferably tapering in form and its smaller end is preferably removably connected to the reproducer neck 5 by means of the elbow 7. An outwardly projecting bead 8 is preferably formed upon the member 6 and serves to determine the position of the elbow 7 thereon. The larger end of the member 6 is flared outwardly as indicated at 9 into a partial spherical shape. This fits snugly within the shoe or sliding member 10 which slidingly engages within the rigid tube 3, a ball and socket or universal joint being thereby provided between the member 6 and the shoe 10, allowing the easy removal of the elbow 7 from the reproducer neck 5.

In the construction indicated, the shoe 10 is formed of two members 11 and 12 in order that the same may be easily fitted to the spherical end 9 of the tube 6, although any other convenient method of forming this joint may be used. As indicated, the mem-

bers 11 and 12 may be placed on the outside of the spherical end 9 of the tube 6 and may conveniently be secured together as by screw thread engagement of a flange on the sections 11 and 12, as indicated at 13 in Fig. 2. The end 9 of the tube 6 with the shoe 10 carried thereby may then be inserted within the end of the rigid tube 3 in which it is then adapted to slide in the course of the forward and backward travel of the phonograph carriage.

In operation, the slidable member 6 is carried with the reproducer and telescopes within the tube 3 with entire absence of the stress or strain which has always been found so objectionable in all cases where a joint has been inserted between a movable member such as the traveling carriage of the phonograph, and a stationary member, such as the horn. When a record has been played and it is desired to move the reproducer back to its original position, the reproducer is raised in the usual fashion so as to disengage the feed nut from the screw and is pushed back to its original position.

It will be noted that with the device shown, a horn of any convenient size may be used, since, when the horn is turned so as to be directed endwise of the phonograph, as shown, the entire length of the phonograph cabinet serves as a supporting piece for the horn, rendering it practically impossible to overturn the cabinet by the use of a horn of any reasonable size. The horn, however, may be turned in any desired direction as is evident.

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

1. In a phonograph, the combination with a horn section and means for supporting the same, of a movable reproducer, and telescoping connections between the horn section and the reproducer, comprising a tube fixed with its longitudinal axis parallel to the path traversed by the reproducer in its movement, an annular shoe slidably mounted in said tube, and a hollow tapering member pivotally connected with said shoe and communicating with the reproducer, substantially as described.

2. In a phonograph, the combination with a horn section and means for supporting the same, of a movable reproducer, and telescoping connections between the horn section and the reproducer, comprising a tube fixed with its longitudinal axis parallel to the path traversed by the reproducer in its movement, a shoe slidably mounted in said tube, and a tube communicating with the reproducer and having a ball and socket connection with said shoe, substantially as described.

3. In a phonograph, the combination with a horn section and means for supporting the same, of a movable reproducer, and telescoping connections between the horn section and the reproducer, comprising a tube fixed with its longitudinal axis parallel to the path traversed by the reproducer in its movement, annular members slidably mounted in said tube, and a tube communicating with the reproducer and having an enlarged rounded end embraced by said annular members to constitute a ball and socket joint, substantially as described.

4. In a phonograph, the combination with a horn section and means for supporting the same, of a movable reproducer, and telescoping connections between the horn section and the reproducer, comprising a fixed tube, a member slidably mounted in said tube, and a tube communicating with the reproducer and having a ball and socket connection with said member, substantially as described.

This specification signed and witnessed this 16 day of January 1909.

WALTER H. MILLER.

Witnesses:
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ANNA R. KLEHM.