No. 865,088. PATENTED SEPT. 3, 1907.

L. F. DOUGLASS.

MOUNTING FOR THE STYLUS BAR OF TALKING MACHINES.

APPLICATION FILED MAR. 8, 1906.

Fig. 1.

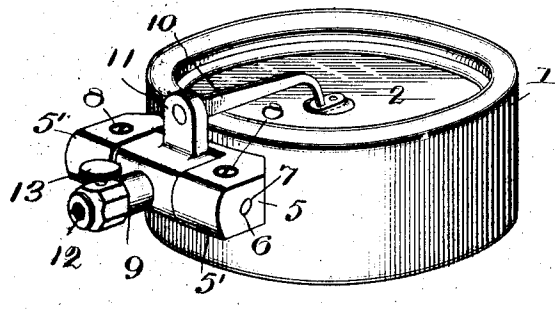


Fig. 2.

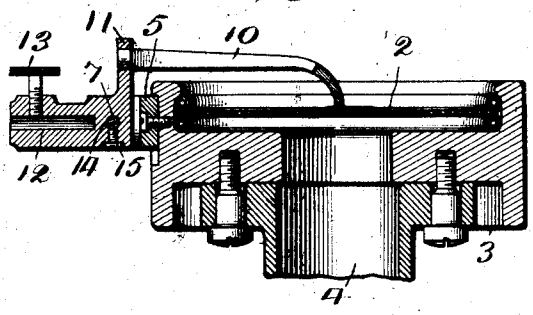


Fig. 3.

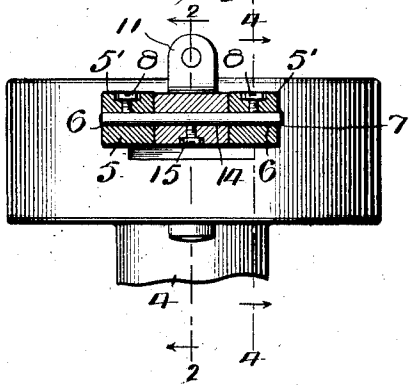
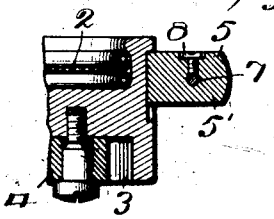


Fig. 4.



Witnesses

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MOUNTING FOR THE STYLUS-BAR OF TALKING-MACHINES.

No. 865,088. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed March 8, 1906. Serial No. 304,910.

To all whom it may concern:

Be it known that I, LEON F. DOUGLASS, a citizen of the United States, and a resident of the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Mountings for the Stylus-Bars of Talking-Machines, of which the following is a full, clear, and complete disclosure.

One object of my invention is to produce a mounting for the stylus bar of a sound box of a talking machine, in which the stylus bar may be more delicately, perfectly and efficiently mounted than heretofore, and the position and the tension of the stylus bar with respect to the diaphragm may be quickly and easily adjusted.

Other objects of my invention will appear below in the specification and claims forming a part of this application.

Heretofore the sound boxes in which the stylus bar has been mounted upon a torsional device for giving a tension thereto, or for holding said stylus bar in position, the torsional device or spring has been attached rigidly to the casing of the sound box and to the stylus bar, and no means have been provided for the axial adjustment of the stylus bar so that its pressure or tension in relation to the diaphragm may be varied, and this lack of adjustability of the torsional mounting for the stylus bar is a disadvantage which reduces the efficiency and quality of the reproductions by the sound box.

Briefly, my invention comprises an improved torsional mounting for a stylus bar which may be easily adjusted by means of suitable holding or clamping devices located in both the stylus bar and the bearings for the torsional device.

For a full, clear and exact description of my invention reference may be had to the following specification and the accompanying drawings forming a part thereof, in which

Figure 1 is a perspective view of a sound box having my improved stylus mounting secured thereto; Fig. 2 is a transverse sectional view thereof taken on the line 2—2, Fig. 3; Fig. 3 is a sectional view of the mounting taken on the plane passing through the torsional spring or wire perpendicular to the plane of the diaphragm; Fig. 4 is a sectional view through one of the arms of my improved mounting taken on the line 4—4 Fig. 3.

Referring to the drawings, 1 indicates the usual cylindrical casing or ring in which the diaphragm 2 is mounted, said ring being provided with a transverse partition or back 3, to which is attached the sound conducting tube 4, in any suitable or well known manner. Attached to one portion of the periphery of the ring 1 is a U-shaped block 5, the arms 5′ of which are provided with apertures 6 in alinement, through which passes the torsional pin, wire or spring 7, upon which the stylus bar is carried. Said pin, wire or spring smoothly fits within said apertures 6 in said U-shaped block, and is secured within the same by set screws 8—8, the inner end of which jam or press against said torsional spring.

The stylus bar consists of two main parts, a portion 9 of which is adapted to receive the stylus needle, and the portion 10 of which is connected with the first main portion and also with the diaphragm 2. The portion 9 is preferably made in the form of an L-shaped block, the one arm 11 of which is attached to the portion 10 which connects with the diaphragm, and the other arm of which is provided with a socket 12 and set screw 13, by which the stylus is secured thereto. Passing through the said block is a transverse hole 14, within which the torsional spring or wire 7 smoothly fits, and a set screw 15 carried by said block is adapted to engage said torsional wire or spring 7 and clamp the stylus bar firmly to said spring. The inner faces of the arms 5′ of the U-shaped block are accurately squared with respect to the apertures 6 therein, and the L-shaped block has its ends also squared to fit smoothly between the arms of said block.

A stylus bar mounted in the manner above described is very rigidly or firmly held between the arms of the supporting block, and the torsional spring or wire being at all times in contact with the holes in the block and stylus bar is so confined that it can move only torsionally, and any buckling or bending of the torsion spring is absolutely prevented. Moreover, the tension or pressure between the stylus bar and the diaphragm can be accurately adjusted since it is merely necessary to press the inner end of the stylus bar against the diaphragm with the required pressure, while either the set screw 15 or the set screws 8 are loose, and then hold or secure the stylus bar in such adjusted position by screwing the set screws down against the torsional spring.

While I have described one embodiment of my invention I do not desire to be limited to the particular construction of sound box or of stylus bar above shown and described, since my invention contemplates the mounting of any stylus bar upon a torsional spring between shoulders which closely fit against the said stylus bar, whereby the stylus bar is prevented from moving in any direction except around said spring as an axis, the spring being so confined that it can only be flexed torsionally.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States, is:—

1. In a sound box for talking machines, a stylus bar, a support having arms fitting against opposite sides of said stylus bar and a torsional spring passing through said stylus bar and said arms.

2. In a sound box for talking machines a stylus bar, a support therefor, a torsional spring passing through said stylus bar and said support and means to prevent the stylus bar from moving in any direction except about the torsional spring as an axis.

3. In a sound box for talking machines the combination with a stylus bar of a support therefor, a torsional spring passing through said support and stylus bar, said support preventing said stylus bar from moving in any direction except about said spring as an axis.

4. In a sound box for talking machines the combination with a stylus bar, a support having arms fitting against opposite sides of said stylus bar, a torsional spring passing through said stylus bar and said arms and means to adjustably hold said spring in said arms and said stylus bar to said spring.

5. In a sound box a torsional spring, a stylus bar and a support engaging opposite sides of said stylus bar, said torsional spring being incased throughout its entire length by said stylus bar and said support.

6. In a sound box the combination with a stylus bar of a torsional spring passing through said stylus bar, and a fixed support for said spring, said support being provided with faces which snugly fit against the opposite sides of said stylus bar.

7. In a sound box a stylus bar, a mounting for said stylus bar comprising a U-shaped block having its extremities engaging opposite sides of said stylus bar, and a torsional spring passing through said block and through said stylus bar and rigidly confined within each of said parts.

8. In a sound box a stylus bar, a support, a torsional spring comprising a pin rigidly connected to said stylus bar at its central portion and having its outer ends rigidly mounted in said support, the torsional portion of said spring being in contact for its entire length with said stylus bar and support.

9. In a sound box the combination with a stylus bar of bearings therefor; a spring passing through said stylus bar and said bearings, means to secure said spring to said stylus bar and to said bearings, said stylus bar fitting snugly between said bearings.

10. In a sound box for talking machines the combination with a stylus bar of a support having arms engaging opposite sides of said stylus bar, a torsional spring comprising a wire passing through said arms and said stylus bar, means for holding said wire rigidly within said bearings and means for rigidly holding said stylus bar on said spring.

11. In a sound box for talking machines a stylus bar and a support therefor, said stylus bar and support being provided with alined openings and a torsional spring snugly fitting within said openings and means to secure said spring to said support and to said stylus bar.

12. In a sound box for talking machines a stylus bar, a support engaging opposite sides of said stylus bar, said stylus bar and support being provided with alined circular openings, a round torsional spring inserted within said openings and snugly fitting the same, means to rigidly secure the ends of said spring within said support and means to secure said stylus bar to said spring midway between the ends thereof.

13. In a sound box for talking machines, the combination of a stylus bar with a recessed stylus bar support, the said recess and said stylus bar having flat sides engaging each other, each of said sides being disposed in a plane parallel to the plane of oscillation of the stylus bar and a torsional spring passing transversely through said sides, the said spring being in rigid engagement with said bar and support.

14. In a sound box for talking machines, the combination of a stylus bar with a recessed stylus bar support, the said recess and said stylus bar having flat sides engaging each other and disposed in a plane parallel to the plane of oscillation of the stylus bar, a torsional spring passing transversely through said sides and means for adjustably engaging said spring with said stylus bar and with said support.

In witness whereof, I have hereunto set my hand this seventh day of March, A. D. 1906.

LEON F. DOUGLASS.

Witnesses:
ALSTON B. MOELTON,
ALEXANDER PARK.