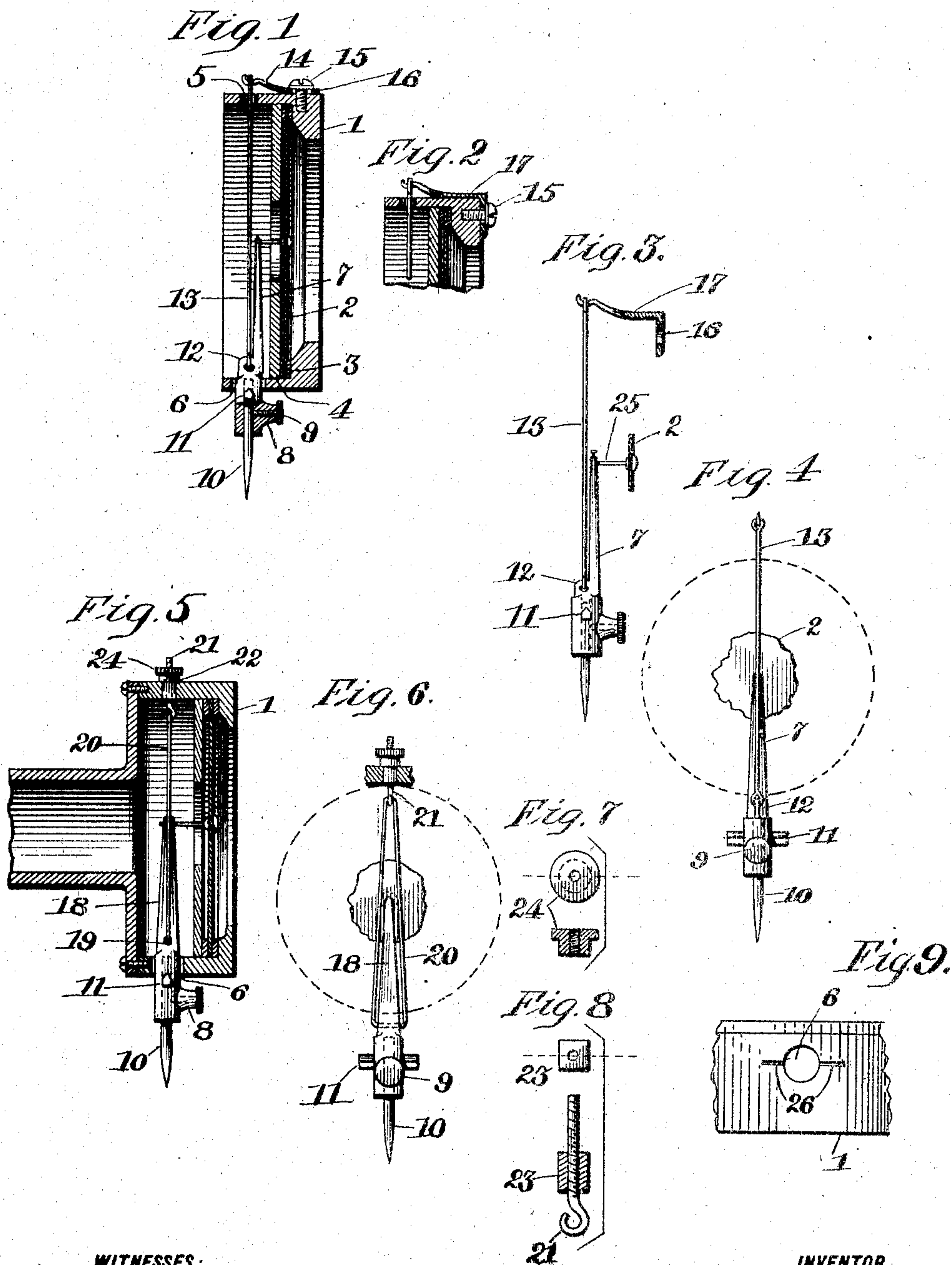


No. 865,105.

PATENTED SEPT. 3, 1907.

E. R. JOHNSON.  
SOUND BOX FOR TALKING MACHINES.  
APPLICATION FILED APR. 7, 1903.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ELDRIDGE R. JOHNSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

## SOUND-BOX FOR TALKING-MACHINES.

No. 865,105.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed April 7, 1903. Serial No. 151,453.

*To all whom it may concern:*

Be it known that I, ELDRIDGE R. JOHNSON, 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 Sound-Boxes for Talking-Machines, of which the following is a full, clear, and complete disclosure.

My invention relates to sound boxes for talking machines, and more particularly to novel means for mounting the stylus bar of such a sound bar, having for its object to provide a mounting that will make the box extremely sensitive to accurately reproduce the recorded vibrations, as will be hereinafter fully described and claimed.

For a full, clear and exact description of the particular construction I have selected to illustrate my invention reference may be had to the following specification and to the accompanying drawing forming a part thereof in which

Figure 1, is a sectional elevation of a portion of my improved sound box showing the stylus bar and its connection in position therein; Fig. 2 a sectional view of a slight modification of the means for producing an elastic tension; Fig. 3, a detail view of the stylus bar and its suspension detached from the sound box; Fig. 4 a front elevation of Fig. 3; Fig. 5 a sectional elevation of a modified form of the means for producing a tension upon the stylus bar; Fig. 6 a front elevation of the stylus bar and its connecting parts, shown in Fig. 5, detached; Figs. 7, and 8, show means for varying the tension upon the suspension shown in Figs. 5 and 6 and Fig. 9, a view showing a portion of the edge of the sound box.

The numeral 1 indicates the sound box casing which has the usual diaphragm 2 yieldingly mounted therein and retained in position in any suitable manner such as by the flange 3 and the perforated disk 4.

The sound box casing 1 is provided at substantially diametrically opposite points with holes or openings 5 and 6. The lower opening 6 is somewhat larger than the opening 5 and is adapted to receive the stylus bar 7 so that the latter may have a slight lateral play therein.

The stylus bar 7 is provided with the usual boss 8 which is adapted to receive the set screw 9 for retaining the needle or stylus in position. The stylus bar 7 is also provided with a knife edge or pivot 11 which is adapted to engage the outer surface of the sound box and have a bearing thereon. Small cuts or recesses 26 are provided to receive the knife edge on the surface of the sound box adjacent the opening 6. The stylus bar 7 is also provided with an eye or socket 12 which is adapted to receive one end of the wire or elastic suspension 13. The other end of wire or suspension 13 passes through the opening 5 in the sound box casing and engages a spring hook 14 which is re-

tained in position upon the outside of the sound box casing by means of a screw or similar device 15, the engagement between said wire or suspension 13 and hook 14 being to one and the same side of the bearing of the bar 7, as the engagement between said suspension 13 and the said bar. The plate or material of which said hook is formed is provided with an elongated slot 16 for allowing of an adjustment of the hook in relation to the screw 15. The hook 14 may be substantially straight as shown in Fig. 1 or may be bent at an angle and attached to the front of the sound box as illustrated in Figs. 2 and 3.

It will now be seen that the knife edge 11 is forced into contact with the surface of the sound box by means of the suspension 13 and the tension placed upon the latter may be varied according to the elasticity and position of the hook 14 or of the hook 17. The latter is so designed that the said tension will be such as to produce the best results in relation to the character of the sound record and after the parts are placed in position the hook 14 or 17 may be adjusted within certain limits.

In Figs. 5 to 8 inclusive I have illustrated another form of my improved means for retaining the stylus bar in position. The stylus bar 18 is provided with knife edges 11 similar to those above described but instead of having an eye or socket 12 a hole 19 is placed in the stylus bar 18 substantially in line with the knife edge 11 through which the suspension 20 is adapted to pass. This suspension 20 consists of a continuous loop of wire or other strong material which passes through the hole 19 and is adapted to engage the hook 21 which passes through an opening 22 diametrically opposite the opening 6 through which the stylus bar passes, the engagement between said suspension 20 and hook 21 being also located to one and the same side of the bearing of the bar 18, as the engagement between said suspension and bar. The opening 22 is preferably square in cross section and is adapted to carry a square plug 23 which is attached to the hook 21. A thumb nut 24 permits a longitudinal adjustment of the hook 21 so that the tension upon the suspension 20 may be varied after the parts are in position in a manner similar to that above described in connection with the first form.

The upper end of the stylus bar is, of course, in each case connected to the diaphragm 2 by means of the wire or similar device 25. In either form the suspensions 13 or 20 are slightly elastic under tension, or in other words, act as springs and allow of a lateral vibration of the stylus bars.

It will be seen that by the constructions set forth in the forms above described that the movable parts of the sound box are very easily assembled efficiently retained in position and may be very accurately adjusted to give the best results in the production or reception of sound waves.



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

1. In a sound recording and reproducing machine, the combination with a sound box casing of a diaphragm, a stylus bar, a transverse bearing located on the exterior of the sound box casing, said bearing holding said stylus bar against longitudinal movement in one direction, the said stylus bar having an opening adjacent said bearing, an elastic suspension loop passing through said opening, and means at the opposite side of the casing for adjustably supporting said loop.

2. In a sound recording and reproducing machine, the combination with a sound box casing of a diaphragm, a stylus bar having a transverse bearing journaled on the exterior of the sound box casing, an elastic suspension loop passing through an opening in said stylus, and a screw threaded hook at the opposite side of said casing for adjustably supporting said loop.

3. In a sound box for talking machines, a casing having a diaphragm, a stylus bar projecting through an opening in said casing and having a transverse bearing journaled on the exterior of said casing, an elastic suspension loop

passing through an opening in said stylus bar within the sound box casing, and between the limbs of which said stylus bar is situated, a screw threaded hook at the other end of said loop, the screw threaded portion of said hook passing through an opening on outside of the sound box casing opposite that through which the stylus bar projects, and an adjusting nut situated on the outside of the casing and engaging said screw threaded portion of the hook.

4. In a sound box recording and reproducing machine, the combination with a sound box casing of a diaphragm, a stylus bar, an axial bearing located on the exterior of the sound box casing, the said bearing holding said stylus bar against longitudinal movement in one direction, a suspension wire passing through an opening in said stylus bar adjacent said bearing, said wire tensioning said bearing against said casing, and means at the opposite side of the casing for adjustably supporting said wire.

In witness whereof, I have hereunto set my hand this 30th day of March, A. D. 1903.

ELDRIDGE R. JOHNSON.

Witnesses:

LESTER L. BRISTOL,  
ROSE CHEVALIER.