

No. 728,704.

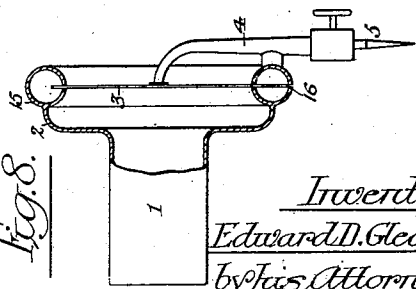
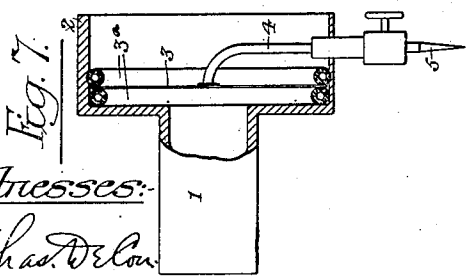
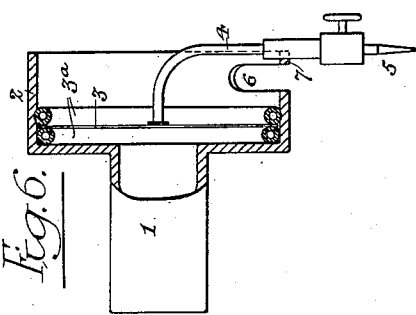
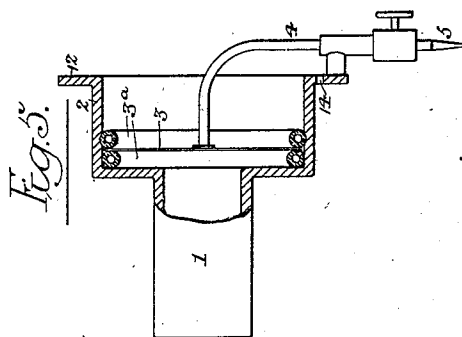
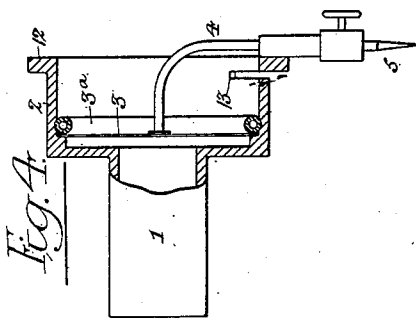
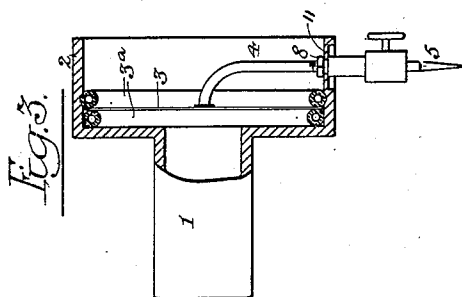
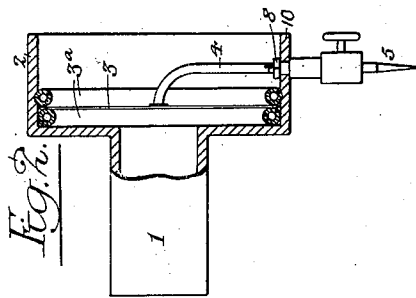
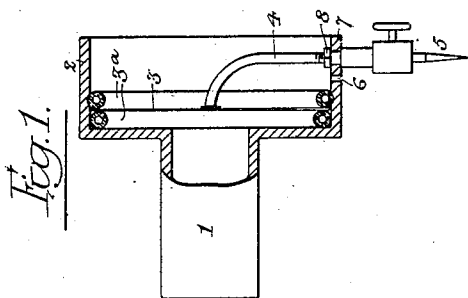
PATENTED MAY 19, 1903.

E. D. GLEASON.
SOUND BOX FOR TALKING MACHINES.

APPLICATION FILED JULY 28, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Chas. DeLoe
Frank L. A. Graham.

Inventor:

Edward D. Gleason

by his Attorneys

Howson & Hooper

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2 SHEETS—SHEET 2.

Fig. 9.

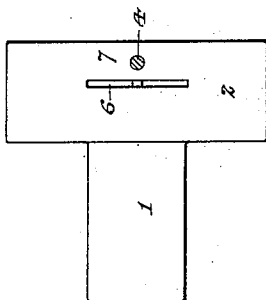


Fig. 10.

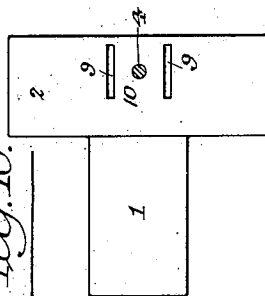


Fig. 11.

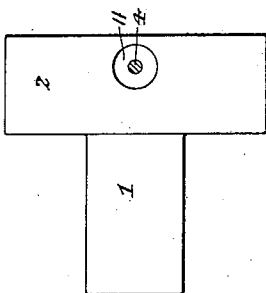


Fig. 12.

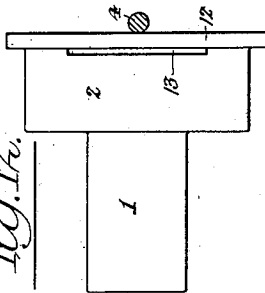


Fig. 13.

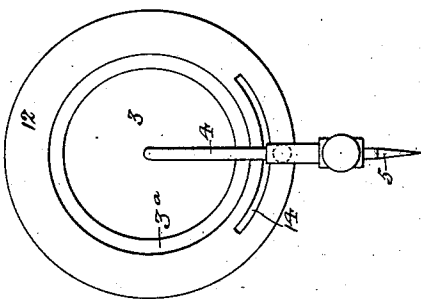


Fig. 14.

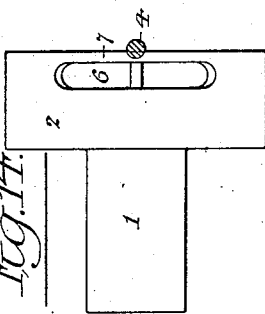


Fig. 15.

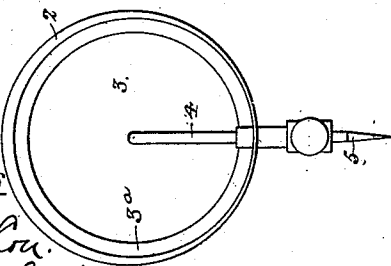
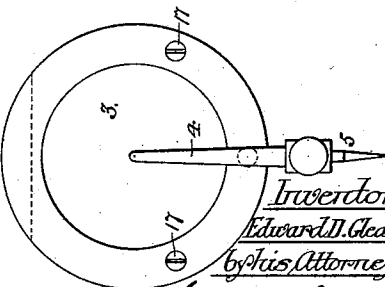


Fig. 16.



Witnesses

Chas. DeCru.
Frank L. A. Graham

Inventor:
Edward D. Gleason
by his Attorneys:

Howell & Howson

UNITED STATES PATENT OFFICE.

EDWARD D. GLEASON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
ELLSWORTH A. HAWTHORNE AND HORACE SHEBLE, OF PHILADELPHIA,
PENNSYLVANIA.

SOUND-BOX FOR TALKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 728,704, dated May 19, 1903.

Application filed July 28, 1902. Serial No. 117,387. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. GLEASON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Sound-Boxes for Talking-Machines, of which the following is a specification.

The object of my invention is to provide a cheap and simple construction of sound-box for talking-machines, whereby the stylus-arm will be provided with an elastic mounting of such character that the vibrations imparted to the stylus by the record will be faithfully transmitted to and reproduced by the diaphragm of the sound-box. This object I attain by rendering elastic or resilient a portion of the diaphragm-casing and mounting the stylus-arm upon this elastic or resilient portion of the casing.

In the accompanying drawings, Figures 1 to 8, inclusive, are sectional views of sound-boxes, illustrating different constructions of the same in accordance with my invention; Figs. 9 to 12, inclusive, are side elevations of the sound-boxes shown in Figs. 1, 2, 3, and 4, respectively. Fig. 13 is a face view of the sound-box shown in Fig. 5. Fig. 14 is a bottom view of the sound-box shown in Fig. 6. Fig. 15 is a face view of the sound-box shown in Fig. 7, and Fig. 16 is a face view of the sound-box shown in Fig. 8.

The sound-box in each case consists of a tubular stem 1 with enlarged or cup-shaped end 2, and in the latter portion of the sound-box the diaphragm 3 is mounted in any ordinary or appropriate manner.

In the structures shown in Figs. 1, 2, 3, 5, 6, and 7 the diaphragm is mounted between inner and outer elastic rings or washers 3^a, the outer ring being fitted to an internal annular recess in the casing 2, and in the structure shown in Fig. 4 the diaphragm rests on an internal annular shoulder and is retained thereon by an outer ring 3^a, while in the sound-box shown in Fig. 8 a special form of mounting for the diaphragm is adopted, which will be hereinafter described.

The stylus arm or lever 4 of the sound-box bears upon or is connected to the central portion of the diaphragm 3, and the outwardly-

projecting portion of said stylus arm or lever carries the detachable stylus 5.

The stylus-arm is mounted upon a portion of the diaphragm-casing which is rendered elastic by reason of a special construction of this portion of the casing, so that while the stylus-arm is normally held in a neutral position it can vibrate with the desired amount of freedom when the stylus 5 is acted upon by the walls of the undulating or wave-like groove of the record, these vibrations being transmitted to the diaphragm 3, so as to cause reproduction of the sounds whereby the record was made.

As shown in Figs. 1 and 9, that portion of the cup-shaped end of the sound-box casing which carries the stylus-arm is rendered elastic by forming therein a segmental slot 6, between which and the outer edge of the casing intervenes a band 7 to which the stylus-arm is secured, the latter result being attained in this structure by reducing the diameter of the stylus-arm, so as to form a shoulder for bearing upon the outer face of the band 7, and threading the reduced portion of the arm for the reception of a nut 8, which bears upon the inner face of the band, and thereby serves to properly secure the stylus-arm thereto.

In that form of sound-box shown in Figs. 2 and 10 slots 9 are formed in the casing 2 on each side of a central band 10, which carries the stylus-lever, and in the construction shown in Figs. 3 and 11 a recess is formed in one side of the casing 2, so as to reduce this portion of the casing to the condition of a diaphragm 11, to which the stylus-arm is secured, this diaphragm being so thin as to provide the desired elastic mounting for the stylus-arm.

The casing 2 of the sound-box shown in Figs. 4 and 12 has a projecting top flange 12, upon which the stylus-arm 4 is directly mounted by soldering or brazing it thereto; but that portion of the flange which carries the stylus-arm is rendered properly elastic or resilient by forming in the casing 2, immediately under the flange, a segmental slot 13.

The structure shown in Figs. 5 and 13 also has a projecting top flange on the casing 2 of the sound-box and a stylus-arm 4 mounted

upon said flange, that portion of the flange which carries the stylus-arm being in this case separated from the casing 2 by means of a segmental slot 14, formed in the flange instead of in the casing.

The sound-box shown in Figs. 6 and 14 is substantially similar to that shown in Figs. 1 and 9, with the exception that the stylus-arm 4 is directly secured to the upper edge of the elastic band 7 of the casing by soldering or brazing instead of passing through said elastic band.

In the structure shown in Figs. 7 and 15 the desired elasticity is imparted to that portion of the casing 2 which carries the stylus-arm by reducing the thickness of the entire casing on that side upon which the stylus-arm is mounted instead of providing a local reduction in the thickness, as in the sound-box shown in Figs. 3 and 11.

In the structure shown in Figs. 8 and 16 the casing 2 of the sound-box has formed upon it a hollow annular rim 15, the upper and lower portions of which are separated from each other throughout the greater portion of the extent of the rim by means of a horizontal slot or saw-kerf 16, which serves not only to render elastic or resilient that portion upon which the stylus-arm is mounted, but also serves to retain in position the diaphragm 3, the latter being inserted in the slot or kerf formed in the hollow rib 15 and being, if desired, securely clamped in position by means of screws 17, which are located so far apart as not to detract from the desired elasticity of that portion of the rim which carries the stylus-arm.

It will be noted that in all of the constructions shown the annular flange of the sound-box casing projects outwardly beyond the diaphragm, and the stylus-lever is mounted upon this outwardly-projecting flange, so that the stylus occupies a plane considerably beyond the plane of the diaphragm, whereby there is a sufficient body of metal in the flange between the stylus-lever and the diaphragm to permit of the recessing or slotting of the flange in order to provide an elastic support for the stylus-lever, thus rendering unnecessary the employment of a special and independent piece as a mounting for said lever and to that extent simplifying and cheapening the construction of the sound-box.

This projecting flange of the sound-box is, moreover, without any joint. Hence the operation of the sound-box is improved, as such joints are apt to become loose, and thereby permit vibrations of the stylus-lever other than those derived from the undulations of the record.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A sound-box for talking-machines having a diaphragm and a casing therefor with projecting side walls which constitute an integral ring, a part of the wall being rendered yielding, and a stylus-lever rigidly connected with said yielding portion of the sound-box walls, substantially as specified.

2. A sound-box for talking-machines having a diaphragm and a cup-like casing therefor having sides projecting beyond said diaphragm, said projecting sides of the casing being without joint therein, and a stylus-lever rigidly mounted upon said jointless projecting side of the casing, which is slotted or recessed to render it elastic, substantially as specified.

3. A sound-box for talking-machines having a cup-like casing made in one piece, a diaphragm mounted in said cup, and a stylus-lever rigidly mounted directly upon a side of the cup which projects beyond the diaphragm, substantially as specified.

4. A sound-box for talking-machines having a cup-like casing made in one piece, a diaphragm mounted in said cup, and a stylus-lever mounted upon a side of the cup which projects beyond the diaphragm, said side of the cup being slotted or recessed to render elastic that portion of it which carries the stylus-lever, substantially as specified.

5. A sound-box for talking-machines having a casing with hollow rib slotted for the reception of the diaphragm, and a stylus-lever mounted upon said slotted rib, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD D. GLEASON.

Witnesses:

F. E. BECHTOLD,
JOS. H. KLEIN.