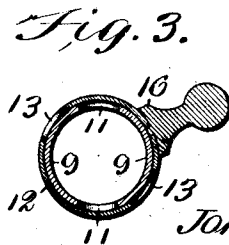
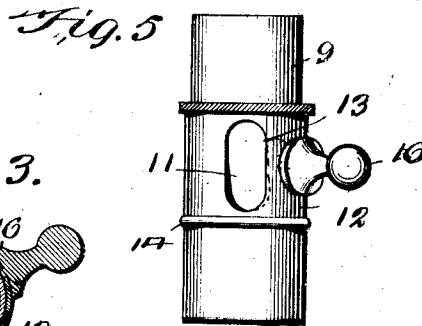
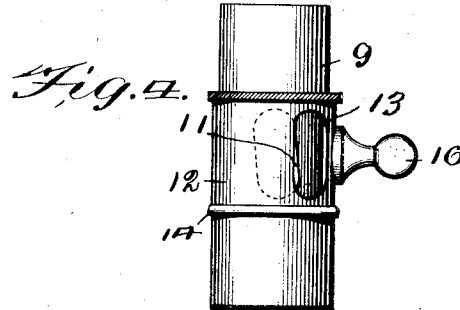
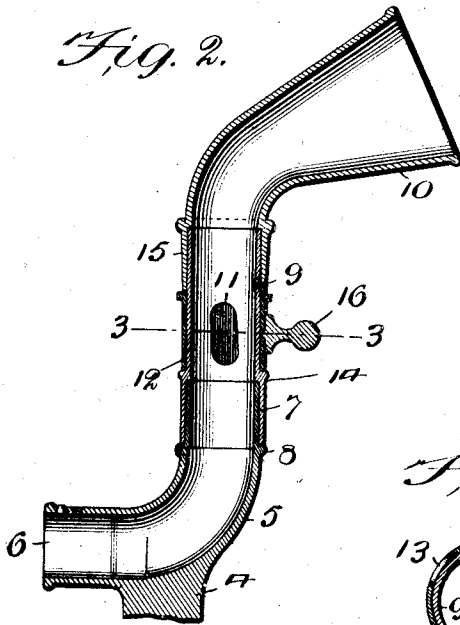
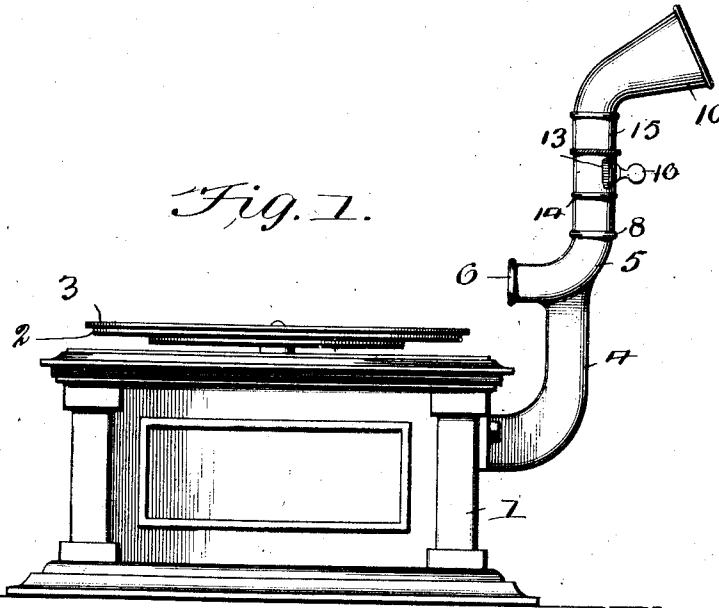


1,011,419.

Patented Dec. 12, 1911.



WITNESSES:
F. C. Barry
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BY
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UNITED STATES PATENT OFFICE

JOHN C. ENGLISH, OF CAMDEN, NEW JERSEY.

TALKING-MACHINE.

1,011,419.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed July 7, 1905. Serial No. 268,615.

To all whom it may concern:

Be it known that I, JOHN C. ENGLISH, a citizen of the United States, and a resident of the city of Camden, State of New Jersey, have invented certain new and useful Improvements in Talking-Machines, of which the following is a full, clear, and complete disclosure.

My invention relates to talking machines, and particularly to those parts of talking machines known as the sound reproducing and sound conveying apparatus, and has for its object to provide means for modifying the quantity of the sound reproduced by the talking machine.

In talking machines such as herein shown and described it is well known that the intensity of the vibration of the diaphragm of the reproducing apparatus is always substantially constant and variations thereof cannot be obtained by manipulation of the sound box, record, or record carrier.

My invention supplies means in connection with the sound conducting portions of the reproducing apparatus which will enable the quantity of the sound passing there-through to be varied at the will of the operator.

Briefly my invention comprises the combination with a sound conducting tube of a talking machine, of means for reducing the amplitude of the vibrations passing longitudinally therethrough, by allowing free lateral communication between the interior and the exterior of the tube, whereby a part of the energy of the vibrations within the tube will escape and be absorbed by air surrounding the tube, and consequently the amplitude of the vibrations within the tube will be diminished, resulting in a diminished intensity of the sound issuing longitudinally from the tube.

In the accompanying drawing illustrating one form of my invention: Figure 1 is a side elevation of the main parts of the usual parts of the usual talking machine showing my invention applied thereto. Fig. 2 is a longitudinal sectional view of the sound conducting mechanism employed in this form of my invention on a somewhat enlarged scale; Fig. 3 is a transverse sectional view taken substantially upon the line 3—3, of Fig. 2; and Figs. 4 and 5 are detail views of the parts of my invention detached from the other parts of the talking machine and

showing the parts in two different positions relatively.

Referring to the drawing, the numeral 1 indicates any suitable form of casing for the talking machine motor above which is rotatably mounted a turntable 2 carrying the record 3. Attached to one side of the casing 1 is an arm or bracket 4 which carries at its upper end a curved tube or elbow 5. This tube or elbow 5 is adapted to be connected at its lower end 6 with any well known or suitable form of sound conducting tube and reproducing mechanism. The upper end of the elbow 5 is slightly reduced in diameter as indicated at 7 and provided with a bead or shoulder 8. Upon the reduced portion 7 and telescoping therewith is mounted a short section of tubing 9, the upper end of which is adapted to telescope with the smaller end of the amplifying horn or support 10 therefor or other continuation of the sound conducting means. The wall of the tubular section 9 is provided with one or more openings as indicated at 11, which are preferably elongated and slightly inclined. The elongation of the holes 11 gives a large opening in the tubular section 9 without necessarily weakening the same and the incline of the same permits of great variations in the volume of sound transmitted longitudinally out through the amplifying horn 10. About the tubular section 9 is placed a sleeve or short section of tubing 12 which has an opening or openings 13 therein corresponding to the opening or openings 11 in the short section of tubing 9, but arranged longitudinally of the sleeve instead of in the inclined direction. The said sleeve 12 is preferably located upon the tubular section 9 by means of a shoulder or bead 14 and by the lower end of the telescoping portion of the support 10 for the amplifying horn as indicated at 15, and is provided with a projection 16 forming a handle for rotating the same about the tube 9.

In the operation of the talking machine, when it is desired to obtain the full value of the sound produced by the reproducing mechanism the sleeve 12 is placed in such a position about the tubular portion 9 that the openings 11 are closed by said sleeve, but when it is desired to reduce the sound, the sleeve is rotated so that the openings 13

register to a greater or less extent with the openings 11, thereby allowing the column of air within the sound conducting tube to vibrate freely transversely to a greater or less extent. This, of course, reduces the transmitted longitudinal vibration of the column of air within the tube and softens the sound emerging from the amplifying horn. This result is effected, as will be observed, without in any way muffling or rendering indistinct the tones and sounds given off by the reproducing mechanism, the modification thereof being simply one which reduces the volume of the sound without any detrimental effect.

I preferably employ two opposite openings in the sound conducting tube and its corresponding sleeve, but I do not wish to be limited to this precise arrangement for other arrangements may be adopted which will produce the same effect and allow a more or less free transverse vibration of the column of air without interfering with the progress of the waves longitudinally of said column.

It is obvious that my invention may be embodied in talking machines using either records having a vertically undulating groove or records having laterally undulating grooves of even depth.

What I claim is:—

1. In a talking machine, the combination with a sound conveying tube having a reduced end, of a sleeve rotatably mounted on said end, and means telescoping over the said end to hold said sleeve in position longitudinally, said tube and said sleeve being

perforated to permit a part of the sound carried by said tube to pass through said sleeve.

2. In a talking machine, the combination with a sound conveying tube having a reduced end forming an annular shoulder, of a second tube telescoping over said reduced end, and having a reduced outer end, a sleeve rotatably carried by the reduced end of said second tube, and means telescoping over the end of said second tube for holding said sleeve in place, said sleeve and said second tube being perforated to permit a part of the sound carried by said tube to pass through said sleeve.

3. In a talking machine, the combination with a sound conveying tube, having a reduced upper end forming an annular shoulder, of a second tube telescoping over said reduced end and resting upon said shoulder, and having an upper reduced end forming an annular shoulder, an amplifying horn telescoping over the upper end of said second tube and a sleeve rotatably carried by said second tube and confined between the shoulder and the lower end of said amplifying horn, said sleeve and said second tube being perforated to permit a part of the sound, carried by said tube, to pass through said sleeve to modify the intensity of sound issuing from said amplifying horn.

In witness whereof I have hereunto set my hand this sixth day of July, A. D., 1905.

JOHN C. ENGLISH.

Witnesses:

HENRY COBB KENNEDY,
ALEXANDER PARK.

Corrections in Letters Patent No. 1,011,419.

It is hereby certified that in Letters Patent No. 1,011,419, granted December 12, 1911, upon the application of John C. English, of Camden, New Jersey, for an improvement in "Talking-Machines," errors appear in the printed specification requiring correction as follows: Page 1, line 104, for the word "value" read *volume*, and page 2, name of the first-mentioned witness to the signature of the specification, for "Henry Cobb Kennedy" read *Harry Cobb Kennedy*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 30th day of January, A. D., 1912.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.