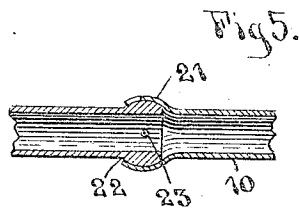
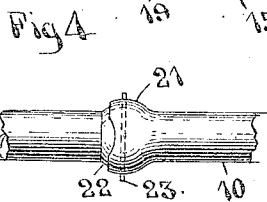
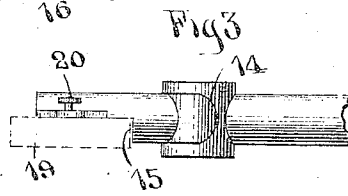
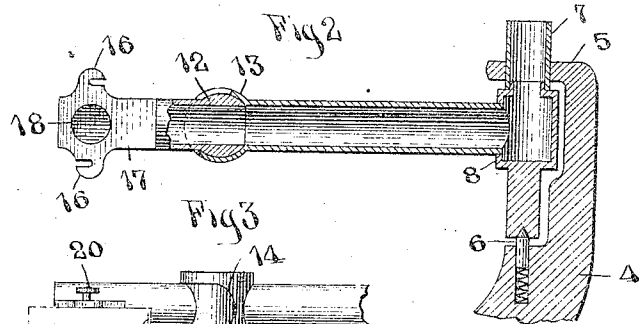
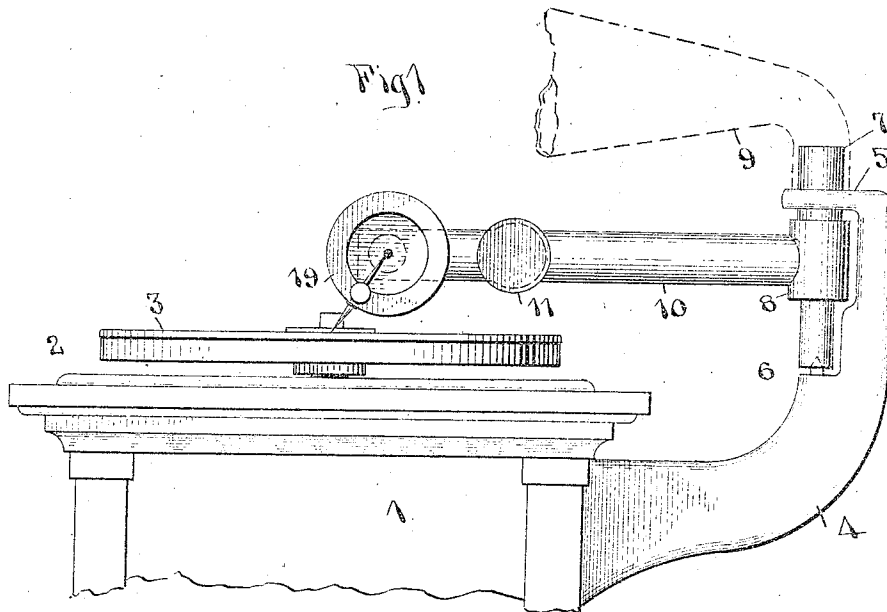


J. H. ELFERING.
TALKING MACHINE.
APPLICATION FILED SEPT. 6, 1902.

1,060,541

Patented Apr. 29, 1913



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN H. ELFERING, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

TALKING-MACHINE.

1,060,541.

Specification of Letters Patent.

Patented Apr. 29, 1913.

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To all whom it may concern:

Be it known that I, JOHN H. ELFERING, a citizen of the United States, and a resident of Camden, State of New Jersey, have invented certain new and useful Improvements in Talking-Machines, of which the following is a specification.

The main objects of this invention are, to provide, in a talking machine, an improved support for a sound box; to provide improved means for connecting a sound box to its support; to provide an improved joint in a sound conveyer; and to provide other improvements as will appear hereinafter.

In the accompanying drawings: Figure 1 is a side elevation of a talking machine constructed in accordance with this invention; Fig. 2 a side elevation, partly in central vertical section, of a portion of the same; Fig. 3 a plan view of a portion of the same; and Figs. 4 and 5 are, a plan view, and a longitudinal central vertical section, of a modified form of a portion of the same.

Referring to the drawings, one embodiment of this invention comprises the usual casing 1 containing a motor, and supporting thereon the usual flat horizontal circular turntable 2, which is mounted on a vertical axis to be rotated by the motor to carry a sound record 3.

A rigid vertical curved supporting bracket 4 is rigidly attached at its lower end to one side of the casing 1, and is provided at its upper end with an inwardly extending horizontal portion having an axially vertical cylindrical opening therein, forming a collar 5. Beneath the collar 5, and axially in vertical alinement with the axis of the opening in the collar, is a spring pressed yielding pivot or end bearing 6, which fits slidably in an axially vertical cylindrical recess provided therefor in the bracket 4. A short section of cylindrical tubing fits tightly in the opening in the collar 5, being held in fixed position therein, and projects slightly above and below the collar.

An amplifying horn 9 is carried by the bracket 4, the inner end of the horn telescoping loosely over the upwardly projecting end of the fixed tube 7, and engaging against the upper surface of the collar 5 of the bracket. The horn is thus rotatably

mounted upon a vertical axis and is in communication with the interior of the tube 7.

A hollow cylindrical vertical hub 8 is rotatably retained in position between the tube 7 and the yielding spring pressed pivot 6. The lower end of the hub is closed and rests against the upper end of the pivot which is preferably conical in shape and which engages in a conical recess provided therefor centrally in the end of the hub. The upper end of the hub 8 is reduced in diameter and fits or telescopes loosely within the lower end of the tube 7, the shoulder of the hub being held in engagement against the lower end of the tube by the pressure of the pivot 6. The upper end of the hub is open to permit communication between the interior of the hub and the interior of the horn through the tube 7.

Extending outwardly from the hub 8, and communicating therewith, is a cylindrical tubular arm 10 for supporting a sound box. This arm is divided into two communicating sections by a flexible practically sound tight joint 11 adjacent the outer end of the arm. The inner section of the arm is rigid with the hub 8 and extends radially and horizontally therefrom, and the outer section of the arm is shorter than the inner section and has attached to its free end the sound box 19.

One form of the joint between the two sections of the sound box arm, comprises a hollow cylindrical sleeve or portion 13, the longitudinal axis of which is horizontal and perpendicular to the longitudinal axis of the arm 10, forming the outer end of the inner section of the arm and an externally cylindrical hub or portion 12 forming the adjacent end of the outer portion of the arm and fitting rotatably within the cylindrical end 13 of the inner portion of the arm 10. The cylindrical end 13 of the inner portion of the arm is provided on its upper front side with a longitudinal recess 14 having a curved inner edge to permit of the upward movement of the outer section of the hollow arm.

It is evident that, by this construction, the inner section of the hollow sound box arm 10 is restrained to oscillate in a fixed horizontal plane, carrying the outer section of the arm therewith and that the outer section of the arm 10 is free to swing in a vertical direction about the horizontal axis of the joint 11. The outer section of the arm

being shorter than the inner section, the greater part of the weight of the arm is supported by the mounting on the bracket 4 when the sound box is in operative position resting on the record, thus relieving the stylus of all of the weight of its supporting arm 10 except about half of the weight of the short outer section of the arm which is but a small fraction of the total weight of the arm.

The outer end of the outer section of the hollow sound box arm 10 is cut away longitudinally, and is substantially semicircular in transverse section to provide a recess, as shown at 15, for the reception of a sound box. For attaching the sound box, oppositely recessed ears 16 are provided upon the upper and lower sides respectively, and integral with the flat vertical plate 17, which forms the inner flat side of the recessed portion of the arm. The plate 17 has a circular opening 18 to allow communication between the sound box and the interior of the hollow arm.

The sound box 19 is mainly of the usual construction, having the usual diaphragm actuated by a stylus bar, carrying a stylus for engagement with the record. The sound box has a flat back, which is rigidly secured against the flat side 17 of the outer end of the hollow arm by means of thumb screws 20, which extend through the recesses of the ears 16 and are threaded into the sound box casing. The sound box is thus held in axial alinement with the aperture 18 in the flat plate 17 of the sound box arm, the interior of the sound box being in communication with the interior of the arm through the opening 18. The sound box may be detached from the plate by loosening the screws and giving the sound box a partial rotation clockwise until the screws are released from engagement with the recesses of the ears 16.

A modified form of joint, shown in Figs. 4 and 5, for the hollow sound box arm comprises a hollow spherical portion 21, forming the outer end of the inner section of the arm, and, fitting within this spherical portion, an externally spherical portion 22 forming the adjacent end of the outer section of the arm. These two cylindrical portions are pivoted together by means of a horizontal pivot 23, whereby the movement of the outer section of the arm is limited to a vertical plane. The outer spherical portion of the joint is recessed on its front upper edge to permit of the necessary amount of vertical movement of the outer section of the arm.

In the operation of this machine, when it is desired to place a record upon the turntable, or remove a record therefrom, it is necessary only to raise the box 19 vertically, and swing it horizontally with its supporting arm 10 to one side of the turn-table.

During this movement of the sound box, the horn 9 remains stationary, as the movement of the sound box does not affect the movement of the horn, but the horn is rotatable about its vertical axis into any position desired, independent of the sound box. When the sound box is in operative position on the record, the two sections of the tubular sound box supporting arm are substantially in the same straight line which gives a pleasing appearance, and an effective straight channel of communication between the sound box and the amplifying horn.

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

1. In a talking machine, the combination with a hollow swinging sound conducting arm having a straight portion, and a joint in said portion, dividing said arm into an inner section and a relatively movable outer section shorter than said inner section, of a sound box secured to said outer section, and communicating therewith, said joint consisting of a hollow hub rigidly attached to one of said sections, and a sleeve inclosing said hub and rigidly attached to the other of said sections, and the said hub having lateral communication with both of said sections.

2. In a talking machine, the combination with a hollow swinging sound conducting arm having a joint dividing said arm into an inner section and a relatively movable outer section shorter than said inner section, of a sound box secured to said outer section and communicating therewith, said joint consisting of a hollow hub rigidly attached to one of said sections, and a sleeve inclosing said hub and rigidly attached to the other of said sections, and the said hub having lateral communication with both of said sections.

3. In a talking machine, the combination with a hollow swinging sound conducting arm having a joint dividing said arm into an inner section and a relatively movable outer section shorter than said inner section, of a sound box secured to said outer section and communicating therewith, said joint consisting of a hollow hub rigidly attached to one of said sections, and a sleeve inclosing said hub and rigidly attached to the other of said sections, and the said hub having lateral communication with both of said sections, said sections being substantially in longitudinal alinement when said sound box is in operative position.

4. In a talking machine the combination with a hollow tone arm provided with a plate having a flat surface, said plate being provided with an aperture surrounded by said surface, and with a plurality of marginal ears each provided with a recess, of a sound box engaging against said flat sur-

face, and means carried by said sound box and engaging in said recesses and clamping said box to said plate, said box communicating through said aperture with said tone
5 arm.

5. In a talking machine the combination with a hollow tone arm provided with a plate rigid therewith and having a flat surface, said plate being provided with an aperture surrounded by said surface, and with
10 a plurality of marginal ears each provided with a recess, of a sound box engaging against said flat surface, and means carried by said sound box and engaging in said recesses and clamping said box fixedly to said
15 plate, said box communicating through said aperture with said tone arm.

6. In a talking machine, the combination with a hollow tone arm provided with a plate rigid therewith and having a flat surface, and with an aperture surrounded by
20 said surface, and a pair of ears oppositely disposed with respect to said aperture and each provided with a recess, and means carried by said sound box and extending
25 through said recesses clamping said box fixedly to said plate.

In witness whereof I have hereunto set my hand this twentieth day of August, A. D. 1902.

JOHN H. ELFERING.

Witnesses:

JNO. T. CROSS,

LEWIS H. VAN DUSEN.