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H. E. MORGAN.

ARM FOR TALKING MACHINES.

APPLICATION FILED FEB. 17, 1904.

NO MODEL.

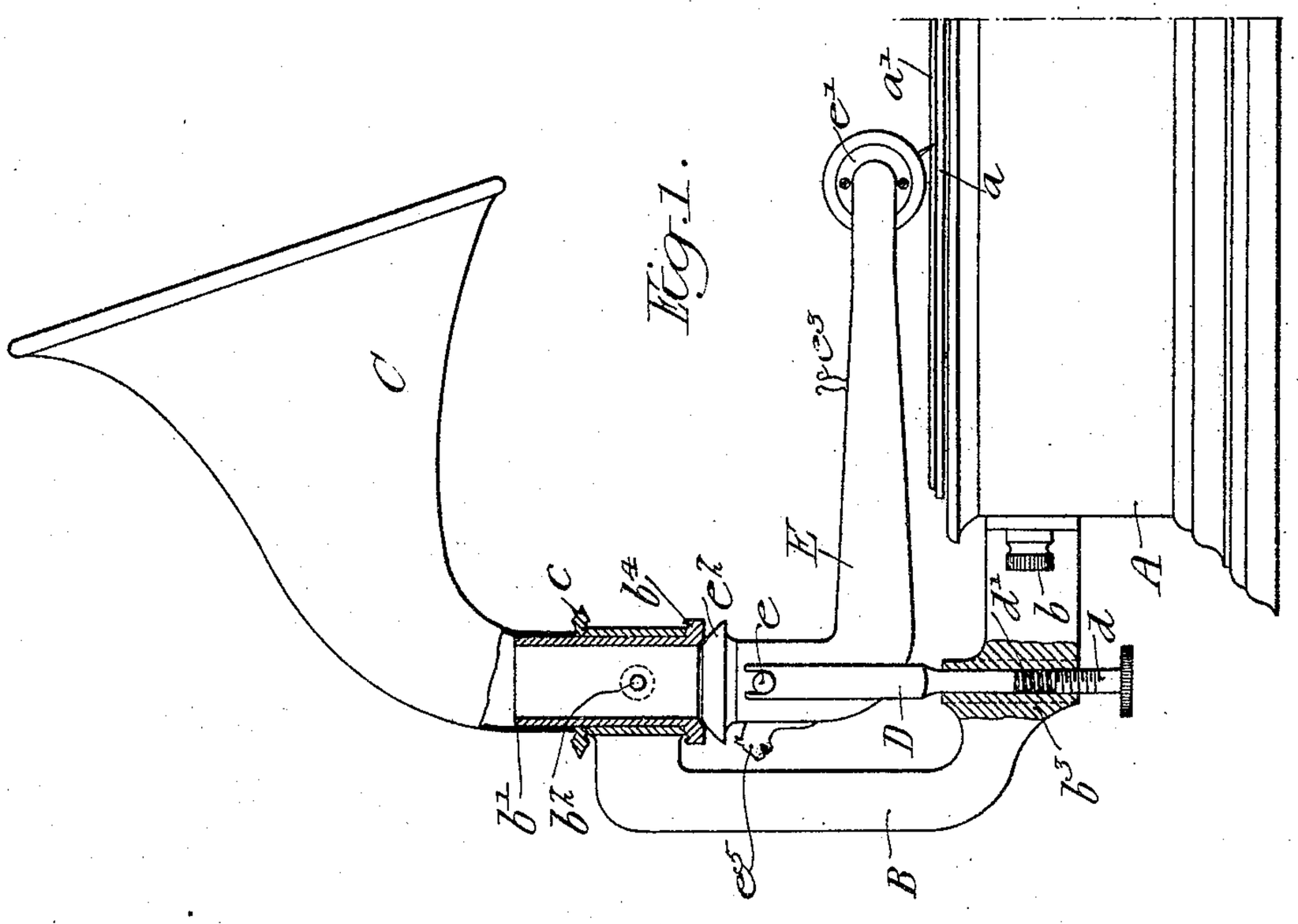

Fig. 1.

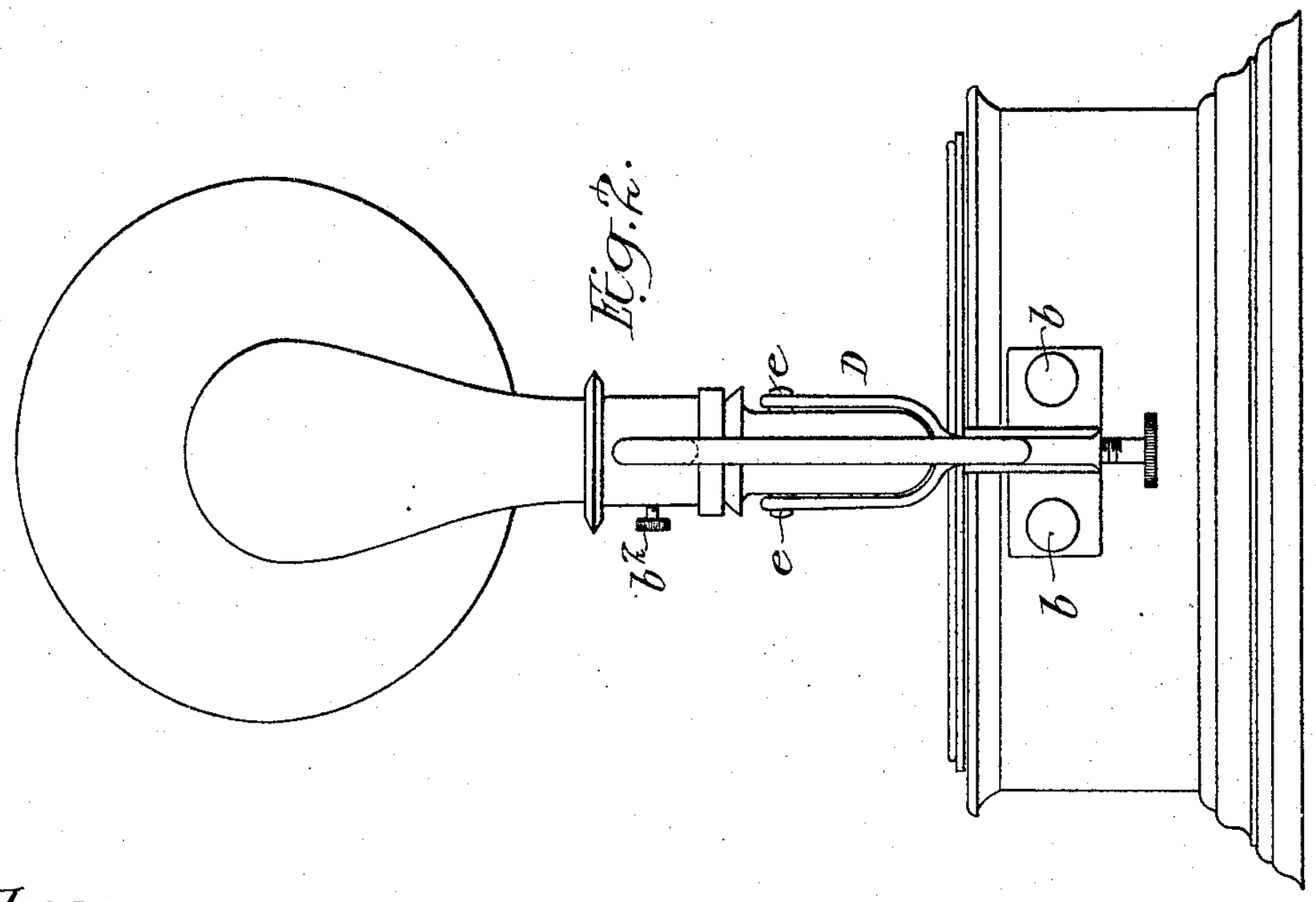

Fig. 2.

Witnesses:-
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Inventor:
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by his Attorneys,
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No. 776,194. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

HARRY E. MORGAN, OF CAMDEN, NEW JERSEY, ASSIGNOR TO VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

ARM FOR TALKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 776,194, dated November 29, 1904.

Application filed February 17, 1904. Serial No. 193,978. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. MORGAN, a citizen of the United States, and a resident of Camden, New Jersey, have invented certain Improvements in Arms for Talking-Machines, of which the following is a specification.

My invention consists of a connecting and supporting arm for the sound-box of a sound recording and reproducing machine, commonly known as a "talking-machine," as hereinafter claimed.

These objects I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, showing my improved device as applied to a talking-machine; and Fig. 2 is an end elevation of the apparatus shown in Fig. 1.

In the above drawings, A represents the box containing the mechanism for rotating a plate *a*, to which is removably fixed in any desired manner a disk *a'*, commonly known as a "record."

To one side of the box A is attached a bracket or standard B, removably held in position by means of screws *b* and having its top portion overhung or bent toward the box and formed for the reception of a flanged sleeve *b'*, held in position by a set-screw b^2. The upper end of this sleeve projects beyond the top of the standard for the reception of the horn C, and there is also on said projecting portion a collar *c* for a purpose hereinafter noted. In the line of the axis of the sleeve *b'* the standard B has an enlarged portion b^3, formed tubular for the reception of the lower end of a forked piece D, and into the lower end of the tubular opening is threaded an adjustable screw *d*, having a spring *d'* confined between its upper end and the lower end of the piece D. The ends of the branches of said piece D are recessed for the reception of the trunnions *e* of the tube E, on the end of which is fixed the sound-box *e'*, it being noted that said tube gradually increases in area of cross-section from the sound-box toward its other end and is bent, so that its two parts are substantially at right angles to each other at a point a short distance below its trunnions. The upper end e^2 of the tube E is flanged and preferably curved to form a portion of a spherical surface, being supported by the forked piece D and held against the lower flanged end b^4 of the sleeve *b'* by means of the spring *d'*, said end having, preferably, a portion formed as a spherical surface for the reception of the end of said tube. Upon the body of the tube E is fixed a clip e^3, which when said tube is turned on its trunnions to a substantially vertical position engages the collar *c*, so as to retain the tube in such elevated position.

In operation it will be seen that the tube E is free to turn, so that the sound-box can move in a substantially horizontal plane, while the fork D moves on its vertical axis, and in addition said box is also free to move in a vertical plane, turning on the trunnions *e*.

By the use of the spring *d'* it will be seen that the fork D and the tube E carried thereby are yieldingly supported, while the screw *d* makes it possible to vertically adjust the position of the tube so as to force its upper end toward the flanged portion b^4 of the sleeve *b'* with any desired force. This upper end may, if desired, be out of mechanical engagement with the said portion b^4 of the sleeve connected to the horn, in which case it would prevent the vibrations of the material of the tube from being transmitted to the body of the horn itself, while in no way interfering with the free and uninterrupted vibration of the column of air within the tube and the horn. The position of the tube, however, is a matter depending upon the adjustment of the screw *d*.

As shown at e^5, I may provide a counterweight of any required magnitude to balance the extended end of the tube E and the sound-box thereon, said weight being in the form of an ornamental projection attached to the vertical portion of said tube. It will be understood that said weight is carried on the

portion of the tube farthest from the sound-box, so that the trunnions are between the two centers of gravity of these respective parts.

I claim as my invention—

1. The combination in a talking-machine of a standard, a horn supported thereby, a forked piece yieldingly carried by the standard and having its lower portion only in engagement with the same, a tube carried by said piece and communicating with the horn, and a sound-box on said tube, substantially as described.

2. The combination in a talking-machine of a standard having an overhanging portion, a horn supported thereby, a tube supported by the lower portion of the standard so as to be maintained upright independently of other supports and out of engagement with the upper portion thereof, and a sound-box carried by the tube so as to be normally in communication with the end of the horn, substantially as described.

3. The combination in a talking-machine of a standard, a horn supported thereby, a tube, a sound-box therefor and a supporting structure for the tube in addition to a record, said structure being mounted at its lower end upon a portion of said standard so as to be maintained in its normally upright position independently of other supports, substantially as described.

4. The combination in a talking-machine of a standard carrying at its upper part a horn, a tube having a sound-box normally in communication with the horn and a supporting structure for said tube mounted at its lower end in the standard so as to be maintained in a substantially vertical position independently of other supports, with mechanism constructed to positively move said supporting structure, substantially as described.

5. The combination in a talking-machine of a standard, a horn, means for supporting said horn, a screw adjustable in the standard, a spring supported thereby, a tube having a sound-box, and a piece removably carried by the spring for supporting said tube in a position so that it communicates with the horn, substantially as described.

6. The combination in a talking-machine of a standard having an overhanging portion provided with a flanged sleeve for the reception of a horn, a forked piece carried by the standard and out of engagement with the overhung portion, a tube having trunnions engaging the branches of said fork, one end of said tube being adjacent to the flanged portion of the sleeve, substantially as described.

7. The combination in a talking-machine of a standard, a horn, means for supporting said horn, a collar, a forked piece carried by the standard independently of the part for supporting the horn, a tube carrying a sound-box and a spring-clip on said tube constructed to engage said collar, substantially as described.

8. The combination in a talking-machine of a standard having a portion whose lower end is flanged, an arm adjustably carried by the standard and engaged by the lower portion only thereof, a tube carried by said arm in such manner as to be movable in a vertical plane, said tube having a sound-box and being flanged at that portion where it is adjacent to the flanged portion of the standard, substantially as described.

9. The combination in a talking-machine of a standard having in its lower portion a substantially vertical tubular opening, a forked piece carried in said opening so as to be movable on a vertical axis, screw in the opening and a spring interposed between said screw and the forked piece, a tube having trunnions engaging the branches of the forked piece, and a sound-box carried by the tube, substantially as described.

10. The combination of a standard having a tubular portion for the attachment of a horn and a tube carrying a sound-box and supported by the lower portion of the standard, said tube being free to turn in vertical and horizontal planes and having a flanged portion formed as a spherical surface, with a concave piece rigidly fixed to the tubular portion of the standard and shaped to receive the spherical end of the tube, substantially as described.

11. The combination of a standard having a horn, with a tube having a sound-box, means for supporting said tube, a screw for carrying said means and a spring interposed between said screw and the tube-supporting means, substantially as described.

12. The combination of a standard having means for the attachment of a sound-transmitting device, a forked piece, a supporting-spring interposed between said piece and the standard, with a tube and a sound-box carried by said forked piece, substantially as described.

13. The combination of a tubular arm having two portions bent at an angle to each other, one portion extending in a substantially vertical line, a counterweight carried by said vertically-extending portion and a sound-box carried by the other portion, with means for supporting the whole of said tubular arm so that it is free to move in vertical and horizontal planes, and a structure engaging the lower portion of said means so as to maintain it in an upright position independently of other supports, substantially as described.

14. In a talking-machine, a bracket, a horn supported by said bracket, a sound-conveying tube communicating with said horn, a supporting structure for said tube movably carried by said bracket at its lower end so as to be maintained upright independently of other

supports, said structure pivotally supporting said sound-conveying tube, substantially as described.

15. In a talking-machine, a bracket, a horn supported by said bracket, a sound-conveying tube communicating with said horn, a supporting structure for said tube having a forked upper end and movably supported at its lower end by said bracket so as to be maintained upright independently of other supports, said structure pivotally supporting said sound-conveying tube between the forks of its upper end, substantially as described.

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

HARRY E. MORGAN.

Witnesses:

ELIAS H. WHITE,

WILLIAM E. BRADLEY.