

960,645.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

WITNESSES:
J. Hartman.
W. W. Vaill Jr.

INVENTOR
Julius Jetter
 BY
Wm. Jetter
 ATTORNEY.

UNITED STATES PATENT OFFICE.

JULIUS JETTER, OF CAMDEN, NEW JERSEY, ASSIGNOR TO VICTOR TALKING MACHINE COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TALKING-MACHINE.

960,645.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed April 23, 1904. Serial No. 205,278.

To all whom it may concern:

Be it known that I, JULIUS JETTER, 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.

The main objects of this invention are to provide, in a talking machine, an improved support for a tubular sound box arm, of simple and durable construction, which will be effective in action, and in which the interior of the arm is unobstructed by any projections, while at the same time the arm is supported so that it may be easily moved in the different directions required in the use of the machine; to provide improved means for retaining a sound box arm in its raised or inoperative position to permit of the insertion of a new needle or the removal of a record; to provide improved means for connecting a sound box to a sound conveying tube or other support; 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; and Figs. 2, 3, 4, 5 and 6 are fragmentary sectional views of details of the same.

Referring to the drawings, one embodiment of this invention comprises the usual motor casing 1 which carries suitable driving mechanism for actuating a vertical spindle carrying the usual turntable 2. Attached to the casing is an outwardly and upwardly extending bracket 3 provided adjacent its outer end with a vertical opening in which is mounted a vertical rod or support 4, which is adjustably retained in position within the opening by a thumb screw 4'. The upper end of this rod 4 carries fixed thereon a horizontal supporting ring 5 in the upper end of which telescopes the smaller end of an amplifying horn 6, and which has an enlarged opening in its lower portion adapted to receive the end of a tapering sound conveying tube or sound box arm 7, or an extension thereof.

The sound box arm 7 preferably terminates at its large end in an upwardly curved upwardly flaring elbow 8, attached thereto or integral therewith. This elbow of the sound box is provided at its upper end, with an outwardly projecting annular flange 9,

provided externally with an annular peripheral groove 10 which preferably has inclined sides approaching each other at an angle of about 6°. The outer surface of the flange 9 is preferably spherical, and the flange fits loosely within the enlarged opening in the lower portion of the ring 5.

Within the annular groove 10 of the flange 9 of the sound box arm, slidably engage two segmental shoes 11 which conform in shape to the outer surface of the flange, and also to the tapering sides of the groove. These shoes 11 are provided externally midway of their ends with suitable sockets in which engage the inner ends of screw threaded pivots 12, which are threaded through the ring 5 at diametrically opposite points in a horizontal plane, the pivots being provided adjacent their outer ends and outside of the ring 5, with set nuts 13, which engage against the ring 5 and lock the pivots adjustably in position.

For holding the sound box arm 7 in an inoperative position, the ring 5 has an opening in the front side thereof which is substantially in the same horizontal plane with the pivot screws 12, and through which slidably passes a pin 14 engaged at its outer end by a leaf spring 15, attached to the ring 5 and adapted to force the pin inwardly toward the flange 9 of the sound box arm. At the lower side of the flange 9, on the elbow 8, a recess 16 is formed which extends for a considerable portion of the circumference of the elbow and parallel to the annular groove 10 thereof. The pin 14 is provided with a rounded or conical inner end, and when the sound box arm is in its operative position for reproducing sound, the pin engages loosely in the annular groove 10, but when the sound box arm is raised from the record and in its inoperative position, the pin 14 will be forced out of the groove 10 and will engage in the recess 16 below the groove, thereby retaining the sound box arm in its raised position.

For attaching a sound box 17 to the outer or free end of the sound box arm 7, an elbow 18 is provided, one end of which is split along one side by a kerf 19, and telescopes over the outer end of the arm, the elbow being provided with laterally extending ears 20 located upon opposite sides respectively of the kerf and engaged by a thumb screw or similar device, 22 whereby

the elbow is clamped in position on the arm. The opposite end of this elbow 18 carries a vertical plate 23, upon one end of which is secured a piece of felt or similar elastic material 24, the sound box being placed over this piece of elastic material and connected with the plate 23. The sound box 17 may be of any well known or suitable construction.

It is evident from the above description, that in this construction, the sound box and its supporting arm are movable freely about a fixed horizontal axis, the arm being carried by the fixed pivots 12, and at the same time, the sound box and its arm are freely movable horizontally about the fixed vertical axis of the supporting ring, the elbow 8 of the arm being slidably rotated upon the shoes 11, the sound box and arm thus having a universal movement. When the sound box and its arm are moved either vertically or horizontally, the spherical flange 9 of the sound box arm will move easily within its supporting ring 5 and without binding therein. It is also evident that in this construction a continuous unobstructed passage is provided from the sound box to the amplifying horn so that the sound waves in passing therethrough, will not be deviated, modified or changed in any manner by pins, cross bars, or other parts, which, in some instances, have been used. The sound waves are, therefore, allowed to proceed from the sound box through the passage to the horn with a regular and uniform increase in wave front, all changes in the shape of the passage being gradual and the passage having no sharp corners or recesses. The connections forming the joint between the sound box arm and its support are, in this construction, made practically sound tight without causing any friction which would retard the free movement of these parts. The yielding resilient connection provided between the sound box and its tubular support also acts advantageously in the operation of the machine.

Having thus fully described this invention, I claim and desire to protect by Letters Patent of the United States:

1. In a talking machine, the combination with a sound conveying tube, of a support therefor comprising a shoe carried by said support and engaging said tube, said shoe being mounted to oscillate upon an axis fixed and transverse to said tube.

2. In a talking machine, the combination with a sound conveying tube, of a fixed support having an opening in which said tube telescopes, and shoes engaging said tube and carried by said support, said shoes being mounted to oscillate upon an axis fixed and extending diametrically of said opening.

3. In a talking machine, the combination with a sound conveying tube, of a fixed sup-

port having an opening in which said tube telescopes, oppositely disposed shoes slidably engaging said tube, and fixed pivots carried by said support and engaging said shoes, said tube being thus mounted upon a universal joint.

4. In a talking machine, the combination with a sound conveying tube having a flange at one end thereof, of a fixed support having an opening therein adapted to receive said flange, said flange being provided with a circumferential groove, shoes carried in said groove, and pivots carried by said support and engaging said shoes.

5. In a talking machine, the combination with a sound conveying tube having a spherical flange at one end thereof, said flange having a circumferential groove, of a fixed support having an opening therein adapted to receive said flange, pivots carried by said support, and shoes carried in said groove, and engaged by said pivots.

6. In a sound reproducing machine, the combination of a sound conveying tube, a support therefor, and an element interposed between said tube and said support, said element being mounted to oscillate upon an axis fixed and transverse to said support, and having sliding engagement with said tube.

7. In a sound reproducing machine, the combination of a sound conveying tube and a support therefor provided with an opening, the end of said tube being inserted in said opening and provided with a peripheral groove, shoes oppositely disposed in said groove, said shoes being mounted to oscillate about a fixed axis extending transversely of said opening.

8. In a sound reproducing machine, the combination of a sound conveying tube and a support therefor provided with an opening, the end of said tube being inserted in said opening and provided with a peripheral groove, shoes oppositely disposed in said groove, and a fixed pivotal connection between each of said shoes and said support.

9. In a sound reproducing machine, the combination with a sound conveying tube, of a fixed collar for supporting the same, and pivots passing through the walls of said collar to hold said tube in position, said tube being mounted to oscillate either vertically or horizontally.

10. In a sound reproducing machine, the combination of a sound conveying tube and a collar for supporting the same, oppositely arranged pivots passing through the walls of said collar and shoes journaled on said pivots, said tube being rotatably mounted on said shoes.

11. In a sound reproducing machine, the combination of a sound conveying tube and a support therefor comprising oppositely arranged fixed pivots suitably mounted and

shoes pivotally mounted on said pivots, said tube being rotatably supported on said shoes.

12. In a sound reproducing machine, the combination of a sound conveying tube having a peripheral groove in one end, a support, and elements slidably arranged in said groove and fixed means for pivotally mounting said elements on said support.

13. In a sound reproducing machine, the combination of a sound conveying tube, a support therefor, said tube being movable vertically on said support, and means fixed with respect to said support for holding said tube in a raised position.

14. In a sound reproducing machine, the combination of a sound conveying tube, a support therefor, said tube being movable vertically on said support, and a spring catch fixedly secured on said support for holding said tube in a raised position.

15. In a sound reproducing machine, the combination of a sound conveying tube, a support therefor, said tube being movable vertically on said support, a spring catch fixedly mounted on said support, and means on said tube for engaging with said catch to hold said tube in a raised position.

16. In a sound reproducing machine, the combination of a sound conveying tube, a support therefor, said tube being movable vertically on said support, and a spring catch mounted in said support, said tube being provided with a recess adapted to lock with said catch when said tube is in a raised position.

17. In a talking machine, the combination with a sound conveying tube, of a horizontal pivot for one end of said tube, said end being provided with recesses, and a spring pressed pin adapted to engage said recesses.

18. In a talking machine, the combination with a sound conveying tube, of a fixed support having an opening therein, horizontal pivots carried by said support and adapted to cooperate with the end of said tube to allow the same to turn on a horizontal axis, the end of said tube being provided with recesses, and a spring pressed pin also carried by said support and adapted to engage said recesses.

19. In a talking machine, the combination with a sound conveying tube having a flange at one end thereof, said flange having a circumferential groove therein, shoes carried by said groove, a fixed support having an opening within which said flange is adapted to fit, pivot pins or screws passing through said support and adapted to engage said shoes, and a spring pressed pin also carried by said support and adapted to engage said groove in said flange, and also adapted to engage a second recess in said tube.

20. In a talking machine, the combination with a sound conveying tube, of a support for the outer end of said tube permitting

universal movement of said tube about said support, and a spring pressed pin carried by said support and adapted to engage said tube when it is moved vertically upward, and to retain said tube in such upward position.

21. In a talking machine, the combination with a sound conveying tube, of a support for the outer end of said tube permitting universal movement of said tube about said support, a spring pressed pin carried by said support, and a recess within said tube adapted to receive and retain said pin when the sound conveying tube is moved vertically upward.

22. In a talking machine, the combination with a sound conveying tube, of a support for the outer end of said tube, permitting universal movement of said tube about said support, a spring pressed pin carried by said support and adapted to engage said tube when it is moved vertically upward, and means for retaining said tube in such upward position free to be rotated.

23. In a talking machine, the combination with a sound conveying tube, of a support for the outer end of said tube, permitting universal movement of said tube about said support, a spring pressed pin carried by said support and a recess within said tube adapted to receive and retain said pin when the sound conveying tube is moved vertically upward, thereby holding the said tube elevated and also adapted to retain said pin when the said tube is moved laterally while in such elevated position.

24. In a talking machine, the combination with a sound conveying tube, of a support for the outer end of said tube allowing universal movement of said tube about said support, and means for engaging the outer end of said tube when the inner end of said tube is elevated to retain the said tube in an elevated position free to be rotated within its support.

25. In a sound reproducing machine, the combination with a sound conveying tube and a sound box carried thereby, of a support for said tube and means for adjusting said support vertically.

26. In a sound reproducing machine, the combination of a bracket, a collar adjustably supported on said bracket, and an amplifying horn supported in said collar.

27. In a sound reproducing machine, the combination of an arm carrying a sound box, a collar in which said arm is mounted, a supporting rod for said collar, and a bracket in which said rod is adjustably mounted.

28. In a sound reproducing machine, the combination of a sound conveying arm and a horn angularly connected together, a collar located at the joint between said arm and said horn, and means for adjusting said collar vertically.

29. In a sound reproducing machine, the combination with a sound conveying tube and a horn, of means for mounting the same consisting of a bracket, a collar embracing said tube and horn, and means for adjustably supporting said collar on said bracket.
30. In a sound reproducing machine, the combination with a sound conveying tube and a horn, of means for mounting the same, consisting of a bracket and means for adjustably supporting said tube and horn on said bracket.
31. In a talking machine the combination of an arm carrying a sound box, a bearing-head in which said arm is mounted, an eccentric supporting rod on said bearing-head and a bracket in which said rod is adjustably mounted.
32. A support for a sound reproducer comprising a vertically adjustable guide, a tubular arm forming a continuation of the reproducer and terminating within the guide, and supporting means interposed at diametrically opposite points between the arm and guide to serve as bearings upon which the arm is suspended free to swing vertically and horizontally.
33. In a sound reproducing machine, the combination of a sound conveying tube and a fixed collar for supporting the same, said tube being mounted in said collar to oscillate in all positions thereof upon the same two axes fixed with respect to said collar.
34. In a sound reproducing machine, the combination of a sound conveying tube, a fixed collar, and means between said collar and said tube and adjustable from the outside of said collar for holding said tube in position, said tube being mounted in said collar to oscillate in all positions thereof upon the same two axes fixed with respect to said collar.
35. In a sound reproducing machine, the combination of a sound conveying tube and fixed means for supporting the same, said tube being mounted to oscillate upon either of two axes fixed with respect to said means.
36. In a sound reproducing machine, the combination of a sound conveying tube, a fixed collar, and means between said collar and said tube and adjustable from the outside of said collar for holding said tube in position, said tube being mounted in said collar to oscillate in all positions thereof upon the same two axes.
37. In a sound reproducing machine, a mounting for a swinging reproducer arm comprising fixed pivots, the inner end of said arm being mounted to swing horizontally and vertically on said pivots.
38. In a sound reproducing machine, a mounting for a swinging reproducer arm comprising fixed pivots, the inner end of said arm being mounted to have universal movement upon said pivots.
39. In a sound reproducing machine, the combination of a sound-conveying tube and a fixed collar for supporting the same, and pivots passing through the walls of said collar and engaging said tube to hold the same in position, said tube being mounted to have universal movement on said pivots.
40. In a sound reproducing machine, the combination of a sound-conveying tube and a fixed collar for supporting the same, and oppositely arranged pivots passing through the walls of said collar, the inner end of said tube being mounted to have universal movement upon said pivots.

In witness whereof I have hereunto set my hand this 20th day of April, 1904.

JULIUS JETTER.

Witnesses:

LEWIS H. VAN DUSEN,
EDW. W. VAILL, Jr.

Corrections in Letters Patent No. 960,645.

It is hereby certified that in Letters Patent No. 960,645, granted June 7, 1910, upon the application of Julius Jetter, of Camden, New Jersey, for an improvement in "Talking-Machines," errors appear in the printed specification requiring correction as follows: Page 4, line 47, after the word "mounted" the words *in said means* should be inserted; same page, lines 47-48, the words "upon either of" should be stricken out and the words *in all positions thereof upon the same* be inserted instead; 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 5th day of July, A. D., 1910.

[SEAL.]

F. A. TENNANT,
Acting Commissioner of Patents.

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