

F. L. DYER.
TALKING MACHINE.
APPLICATION FILED AUG. 18, 1910.

1,049,215.

Patented Dec. 31, 1912.

3 SHEETS-SHEET 1.

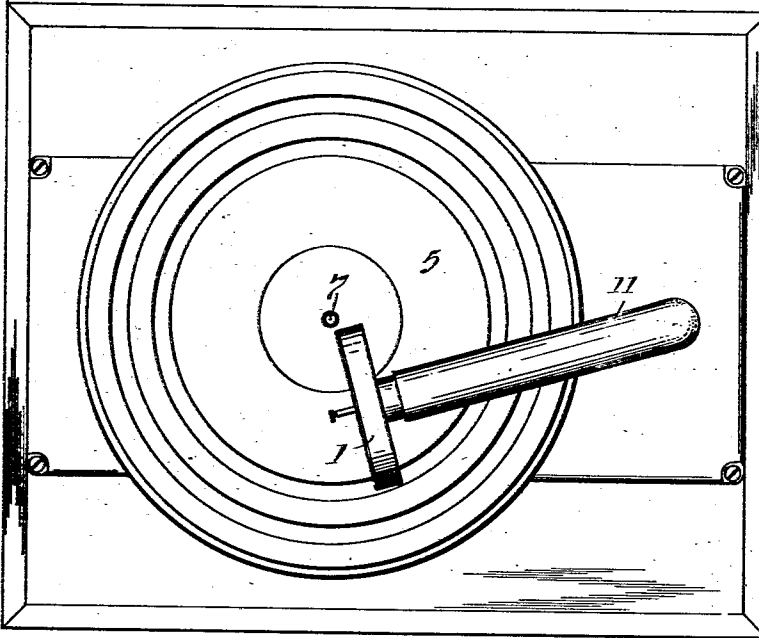


Fig. 1

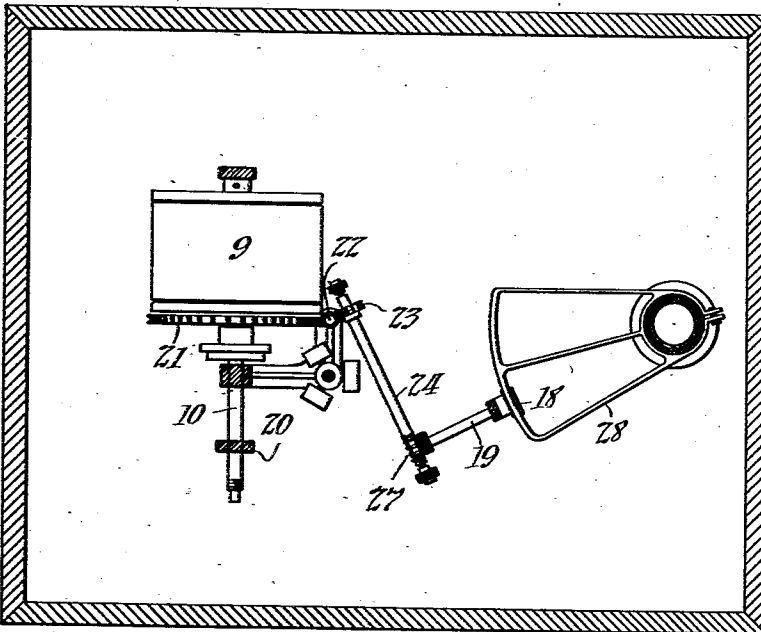


Fig. 2

Witnesses:

Robert M. Sutphen
Dyer Smith

Inventor:

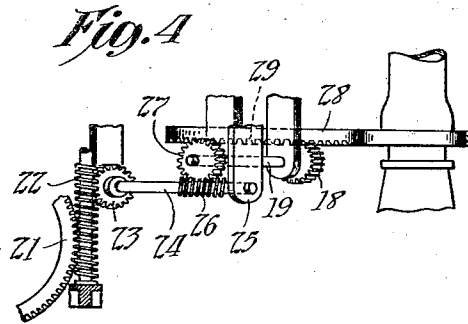
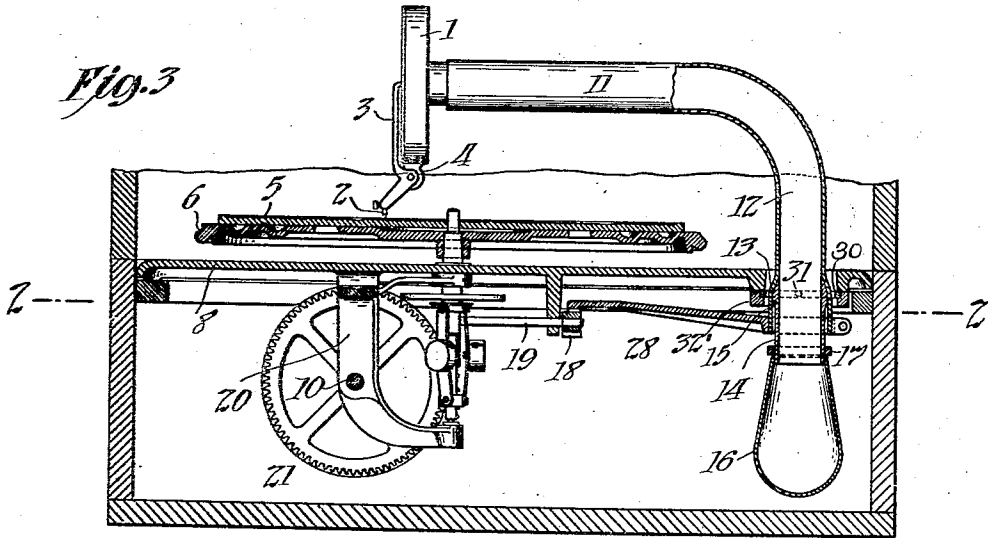
Frank L. Dyer

F. L. DYER.
TALKING MACHINE.
APPLICATION FILED AUG. 18, 1910.

1,049,215.

Patented Dec. 31, 1912.

3 SHEETS—SHEET 2.



Witnesses:
Robert M. Sutphen.
Dyer Smith

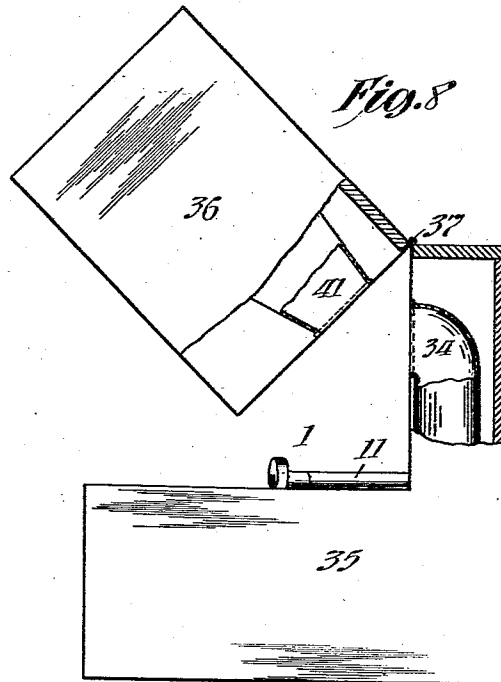
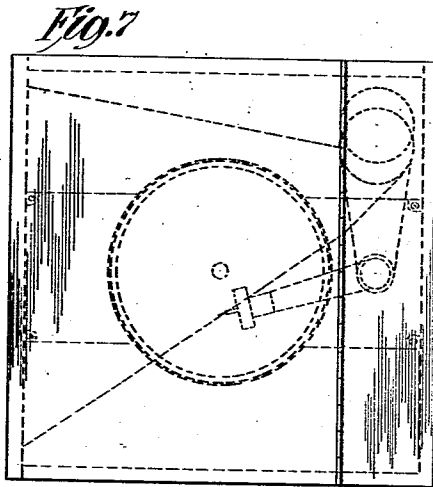
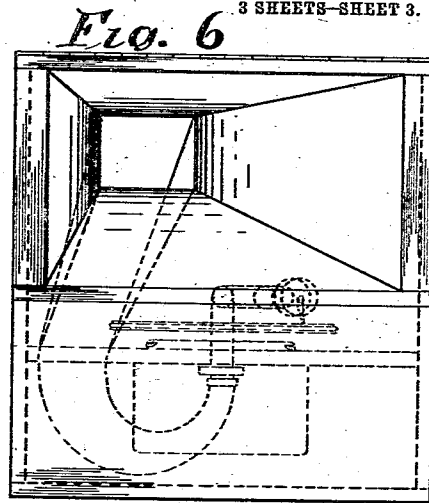
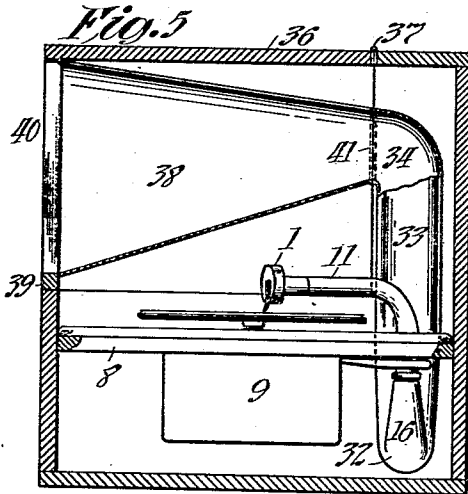
Inventor:
Frank L. Dyer

F. L. DYER.
TALKING MACHINE.
APPLICATION FILED AUG. 18, 1910.

1,049,215.

Patented Dec. 31, 1912.

3 SHEETS-SHEET 3.



Witnesses:
Robert M. Sutphen
Dyer Smith

Inventor:
Frank L. Dyer

UNITED STATES PATENT OFFICE.

FRANK L. DYER, OF MONTCLAIR, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THOMAS A. EDISON, INCORPORATED, OF WEST ORANGE, NEW JERSEY, A COR-
PORATION OF NEW JERSEY.

TALKING-MACHINE.

1,049,215.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed August 18, 1910. Serial No. 577,774.

To all whom it may concern:

Be it known that I, FRANK L. DYER, a citizen of the United States, and a resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Talking-Machines, of which the following is a description.

My invention relates to talking machines, and my object is to produce an improved device for feeding the reproducer and stylus carried thereby across a rotatable sound record of the disk type. I mount the sound conveying tube upon which the reproducer is carried by means of a ball and socket joint upon a fixed tube forming part of or connecting with the amplifying horn. By this ball and socket joint construction, the reproducer is free to be moved across the face of the record to give the feed, and also is free to be moved toward and away from the record surface. The movable hollow arm or tube carries a geared sector or other desired engaging means, which, upon the lowering of the reproducer to cause the stylus to engage a record, moves into mesh with a gear or other driving device connected with the motor. Thus, the feed may be engaged or disengaged at any point in the reproduction of a record by merely lowering the reproducing stylus into tracking position upon a record or raising it therefrom.

My invention also comprises an improved construction of a talking machine inclosed within a cabinet in which the sound amplifying horn is carried by the hinged cover of the cabinet.

Other objects of my invention comprise the construction of parts and combinations of elements hereinafter more fully described and set forth in the appended claims.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings forming part of this specification, in which—

Figure 1 represents a plan view of a reproducing talking machine embodying my invention. Fig. 2 represents a horizontal cross section taken on line 2—2 of Fig. 3. Fig. 3 represents a central vertical cross section through the talking machine shown in Fig. 1, certain parts being shown in side elevation. Fig. 4 is an enlarged detail per-

spective view of certain parts shown in Figs. 2 and 3. Fig. 5 is a vertical cross section of a talking machine similar to that shown in Fig. 3, provided with a hinged cover carrying the amplifying horn, certain parts being shown in side elevation. Fig. 6 is a front view of the machine and cabinet shown in Fig. 5. Fig. 7 is a plan view of the same, and Fig. 8 is a side elevation, the cover being shown in raised position.

Referring to the drawings, the reproducer 1 is provided with stylus 2 mounted in any suitable way, and connected with the diaphragm of the reproducer as by lever 3 pivoted at 4 to reproducer 1, stylus 2 being adapted to track a sound record 5 of the disk type mounted upon turn-table 6 supported by vertical spindle 7 which is rotatably mounted in horizontal member 8 and is adapted to be rotated by motor 9 mounted upon shaft 10, as is common. Reproducer 1 is mounted upon the end of sound conveying tube 11 which extends horizontally across record 5 rearwardly from reproducer 1 and thence bends downwardly, as shown at 12, extending through an opening in horizontal member 8. The downwardly directed portion 12 of tube 11 is provided toward its lower end with a swelling 13 approximately spherical in shape. The tube 14 extends upwardly within the lower end of downwardly directed portion 12 of tube 11 and is formed at its upper end with an approximately spherical swelling 15 upon its exterior, which is adapted to fit within the interior surface of spherical portion 13 of tube 12 to form a ball and socket joint. The lower end of tube 14 extends into the upper end of stationary tube 16, which is integral with or connected to the sound amplifying horn of the talking machine. Tube 14 may be secured to horn 16, or it may simply engage within the upper end of the same as shown, a collar or shoulder 17 upon the lower end of tube 14 resting upon the upper end of tube 16, as shown, to support tube 14.

Motor 9 is provided with a chain of gears connecting the shaft 10 thereof with a gear 18 which is shown as a spur pinion mounted upon horizontal shaft 19. Motor shaft 10, which is supported by bracket 20 from horizontal member 8, has a large worm wheel 21. This meshes with a worm 22 mounted vertically which in turn meshes with a worm wheel 23 mounted upon shaft 24 supported

by bracket 25. Shaft 24 has a worm 26 formed thereupon which meshes with a worm wheel 27 secured to shaft 19 upon the opposite end thereof from gear 18.

5 The lower end of rotatable tube 12 has a sector 28 secured thereto below the swelling 13. This sector is provided upon its lower face with gear teeth 29 adapted to mesh with gear 18 when stylus 2 is in operative

10 position to track the record 5 upon turntable 6. When it is desired to stop the feed or to move the stylus to track a different part of the record, reproducer 1 is simply raised, the tube 11 swinging backwardly as

15 surface 13 thereof slides over swelling 15 of tube 14, causing sector 28 to move out of engagement with gear 18. When the stylus is moved back into operative position, the sector engages gear 18, whereupon, if the

20 motor 9 is running, the stylus will be fed positively across the record. If desired, means may be employed to prevent lateral oscillation of hollow arm 11 about its ball and socket joint in a direction at right

25 angles to the plane of Fig. 3 of the drawings. I have shown one such means in the drawings, in which a ring 30 is mounted within the opening in member 8 through which tube

30 12 descends, surrounding spherical portion 13 of tube 12 but out of contact with the same, sufficient space being left between swelling 13 and ring 30 to permit the necessary movement of stylus 2 toward and away from record 5. A pair of pins axially in

35 line with each other, of which one is shown in Fig. 3 at 31, are secured in ring 30 and extend through swelling 13 of tube 12 to the inner surface thereof, tube 12 being rotatably mounted upon the inner ends of pins

40 31. Ring 30 is slidable within a recess provided therefor in its seat in the lug 32' depending from member 8, so that when stylus 2 is fed across the record, ring 30 turns in its seat and when the stylus is raised out of

45 contact with the record, tube 12 pivots about pins 31, surface 13 sliding over surface 15.

Tube 16 may be integral with or connected to the horn or sound amplifier in any desired manner. As shown in the drawings,

50 tube 16 bends upwardly as shown at 32 and joins the vertically rising portion 33 of the horn, which has a forwardly extending elbow 34. The machine is preferably mounted in a cabinet 35, to which cover 36 is

55 hinged on the top thereof, as shown at 37. Sound amplifying horn 38 is secured within cover 36, having its exit end situated in the front side 39 of the cover, which is provided with an opening 40 within which the exit

60 end of horn 38 fits. Elbow 34 of sound conveying tube 33 abuts against the end 41 of horn 38 when the cover is closed, as shown in Fig. 5, to form one continuous horn.

It is obvious that my invention is not

65 limited to the particular details of construc-

tion described, but is as broad as the appended claims.

Having now described my invention, what I claim and desire to protect by Letters Patent is as follows:—

1. In a device of the class described, the combination of a supporting member, a record support above said supporting member, a sound conveying tube, a sound box carried thereby and having its interior connected therewith, said tube extending rearwardly across said support from said sound box and thence downwardly through said supporting member, said downwardly extending portion having a pivotal connection with the supporting member, whereby the tube may be pivotally moved about a pair of axes at right angles to each other, and the end of said portion being below such pivotal connection, driving means supported below said supporting member, and engaging means carried by the end of said tube below the pivotal connection of the same with the supporting member, positioned to move into engagement with said driving means when said tube is swung to operatively position said sound box, substantially as described.

2. In a device of the class described, the combination of a supporting member, a record support above said supporting member, a sound conveying tube, a sound box carried thereby and having its interior connected therewith, said tube extending rearwardly across said support from said sound box and thence downwardly through said supporting member, said supporting member having a bearing for said tube providing for movement of the rearwardly extending portion of the same toward and away from the record support, driving means below said supporting member, and engaging means carried by the downwardly extending portion of said tube below said bearing positioned to move into engagement with said driving means when said tube is swung to operatively position said sound box, substantially as described.

3. In a device of the class described, the combination with a horizontal supporting member, a record support above said member, a sound conveying tube carrying a sound box, said tube extending rearwardly from said sound box and thence through said supporting member, said supporting member having a connection with the tube providing for movement of the rearwardly extending portion of the same toward and away from the record support and for movement substantially parallel to said support, rotating means below said supporting member, and means carried by the end portion of said tube below said connection positioned to move into engagement with said rotating means when said tube is swung to operatively position said sound box to

thereby move the sound box across said record support, substantially as described.

4. In a device of the class described, the combination of a sound conveying tube, a
5 sound box carried thereby and having its interior connected therewith, said tube extending rearwardly from said sound box and thence downwardly, a horizontal supporting member having an aperture through
10 which the downwardly extending portion of said tube extends, a ring horizontally and rotatably mounted in the walls of said aperture, the tube being pivotally connected to said ring at diametrically opposite points,
15 driving means beneath said supporting member, and engaging means carried by the downwardly extending portion of said tube below said supporting member, positioned to move into engagement with said driving
20 means when said tube is swung to operative position said sound box, substantially as described.

5. In a device of the class described, the combination of a sound conveying tube, a
25 sound box carried thereby and having its interior connected therewith, said tube ex-

tending rearwardly from said sound box and thence downwardly, a horizontal supporting member having an aperture through which the downwardly extending portion of
30 said tube extends, a ring horizontally and rotatably mounted in the walls of said aperture, the tube being pivotally connected to said ring at diametrically opposite points, a fixed tube extending upwardly within the
35 lower end of said downwardly extending portion and having a ball and socket joint connection therewith, driving means beneath said supporting member, and engaging means carried by the downwardly ex-
40 tending portion of said tube below said supporting member, positioned to move into engagement with said driving means when said tube is swung to operative position
45 said sound box, substantially as described.

This specification signed and witnessed
this 16th day of August 1910.

FRANK L. DYER.

Witnesses:

DYER SMITH,
FRANK D. LEWIS.