P. WEBER.

TALKING MACHINE.

APPLICATION FILED AUG. 22, 1911.

1,133,685. Patented Mar. 30, 1915.

Fig. 4

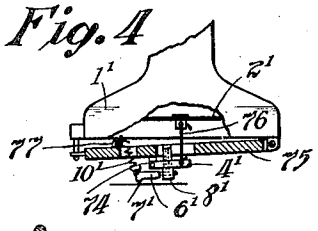


Fig. 1

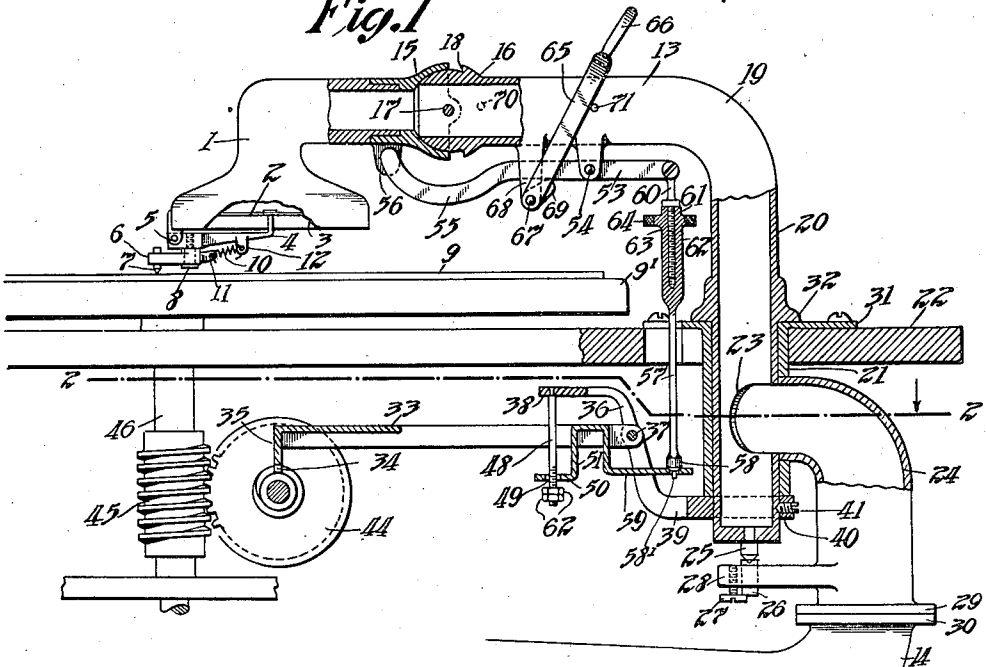


Fig. 2

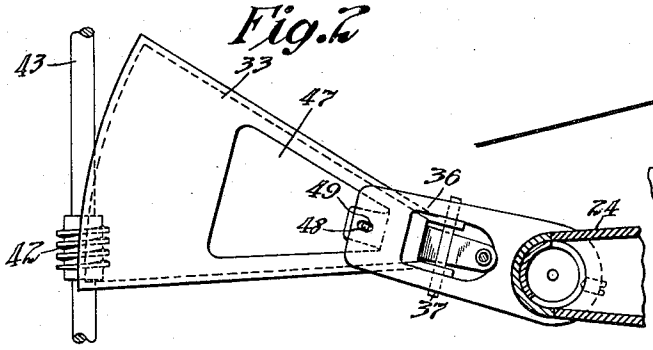
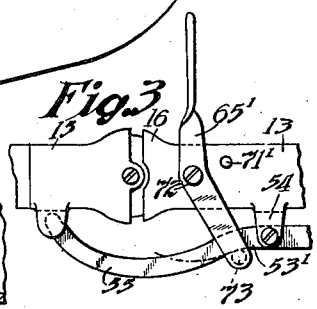


Fig. 3



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UNITED STATES PATENT OFFICE.

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TALKING-MACHINE.

1,133,685. Specification of Letters Patent. Patented Mar. 30, 1915.

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To all whom it may concern:

Be it known that I, PETER WEBER, a citizen of the United States, and a resident of Orange, 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 more particularly, but not exclusively, to machines of the type in which a flat or disk record having vertically undulating record impressions is operated upon.

The principal object of my invention is the provision of improved means for controlling the feeding of the reproducer across the record surface, these means being preferably so constructed and arranged as to position the reproducer on or withdraw the same from the record surface simultaneously with the engagement and disengagement resepectively of the usual feed nut and feed screw.

Another object of my invention is to provide a novel construction and mounting for the reproducer, whereby the stylus is permitted to follow the record groove regardless of irregularities therein. In conformity with this last named object, I preferably mount the stylus supporting member movably with respect to the body of the reproducer so that the stylus has great freedom in tracking the record groove and a mounting of small inertia is obtained.

In order that my invention may be better understood, attention is hereby directed to the accompanying drawings forming part of this specification, and in which—

Figure 1 represents an elevation partly in section of a portion of a talking machine embodying my invention; Fig. 2 represents a plan view partly in section taken on the line 2—2 of Fig. 1 of certain details of construction; Fig. 3 represents a side elevation of a modified form of a detail of construction; and Fig. 4 represents a side elevation partly in central vertical section of a modified form of reproducer constructed in accordance with my invention.

In all of the views, like parts are designated by the same reference numerals.

Referring to the drawings, the sound reproducer 1 comprises a diaphragm 2 mounted in a casing or support 3, an arm 4 hinged to the casing as at 5, and connected to the center of the diaphragm, and an arm 6 carrying a stylus 7 and pivoted, as at 8, to the arm 4. The arms 4 and 6 extend substantially parallel to the diaphragm 2 and the surface of a record 9 mounted on the rotatable table or support 9′, the arm 6 being preferably yieldably held in its central position, as by a tension spring 10 connected to an extension 11 on said arm and a lug 12 depending from the arm 4.

The reproducer shown and described above is adapted for use with records having vertically undulating record impressions, the mounting of the stylus in the pivoted arm 6 permitting the stylus to oscillate laterally and thereby faithfully follow the record groove regardless of the irregularities therein.

The reproducer is secured to the arm 13 of a sound conveyer or conduit leading to an amplifier 14, this arm being provided with a ball and socket joint comprising two members 15 and 16 connected by a pivot 17, whereby an up and down movement of the reproducer is permitted. This movement of the reproducer is limited by the engagement of the member 15 with the shoulder 18 on the member 16. The arm 13 of the sound conveyer is rearwardly directed from the reproducer, as shown, to a bend 19 whence it descends vertically as shown at 20 through a bearing 21 in the top 22 of the motor casing. The vertically directed portion 20 of the said arm is preferably closed at its lower end and is provided with a lateral opening 23 in register with the opening in the end of the horizontal portion of an angular sound conduit 24 which is rigidly secured to the bearing 21. The opening 23 is made of considerable width so as to permit pivotal movement of the arm 13 without closing or partially closing the said opening in the conduit 24. The lower end of vertical portion 20 of the arm 13 carries a pivot 25 whereby the said arm is rotatably mounted on a bearing 26 which is supported upon and capable of being adjusted vertically by a screw 27 mounted in a flange 28 projecting from the conduit 24. This conduit and the inner end of the amplifying horn 14 are secured together by flanges 29 and 30. The bearing 21, as shown, is provided with a flat plate-like portion 31 secured to the top of the motor casing, the vertical portion 20 of the arm 13 being provided with an annular projecting portion 32 adapted to en-

gage the portion 31 of the bearing 21 to support the arm 13 when the pivot 25 is sufficiently lowered or is removed.

In order to provide means for positively feeding the reproducer across the record surface, I provide a sector 33 having gear teeth 34 upon a flange 35 at the forward end thereof, this sector being supported from the inclined central portion of a bracket 36 by a horizontal pivot 37. The bracket 36 is provided at its ends with upper and lower horizontal portions 38 and 39 respectively, the lower portion 39 being formed with a collar 40 surrounding the portion 20 of the pivoted sound conduit and secured thereto by a screw 41. The teeth 34 on the sector are adapted to be held by the action of gravity on the pivoted sector in mesh with a suitable driving member, such as a worm 42 mounted on a shaft 43 connected by suitable gearing 44 and 45 to the motor shaft or spindle 46 which carries the record support 9'. The sector 33 is provided with an opening 47 through which extends a vertical pin 48 supported by the portion 38 of the bracket 36. This pin extends near its lower end through an elongated radial slot 49 in a flange 50 projecting horizontally from a downwardly directed portion 51 of the sector. By reason of the above construction, the rack 33 is capable of a limited up and down movement about its pivot 37, so as to permit the teeth 34 to be engaged with and disengaged from the worm 42. Nuts 62 are threaded on the lower end of the pin 48 to limit the downward movement of the sector when the worm 42 or the motor is removed.

In the embodiment shown in Fig. 1, the teeth on the sector are disengaged from the worm 42 and the reproducer lifted from the record surface by the following mechanism: A lever 53 is pivoted between lugs 54 depending from the arm 13 and is provided at its forward end with a curved portion 55, the outer end of which is adapted to engage the member 15 between depending ears or lugs 56. The lever 53 is pivotally connected at its opposite end with a link 57 provided at its lower end with an enlarged head 58 bearing on the top of the extension 59 on the sector 33, the head 58 being provided with a pin 58' extending loosely through an opening in said extension. This link is preferably formed in two sections 60 and 61 having a threaded connection as shown at 62 so as to make possible an adjustment of the effective length of the link. The section 61 is weighted as shown at 63 to hold the head 58 in engagement with the sector, a knurled flange 64 being provided on the section 61 to adjust the length of the link. A forked lever 65 provided with a handle 66, extends over the arm 13 and is secured at its lower end to a pivot 67 mounted in depending lugs 68 on the said arm 13, a cam or projection 69 being also secured to the pivot 67 between the lugs 68 and being adapted to engage the forward arm of the lever 53. The numerals 70 and 71 represent stops for limiting the movement of the lever 65. It is evident that by merely drawing the lever 65 forwardly, the rear arm of the lever 53 is depressed to cause the link 57 to raise the forward end of the sector and thereby disengage the teeth 34 on the sector from the worm 42 and the forward arm of said lever 53 is raised to lift the reproducer from the record surface.

In the modification shown in Fig. 3, the lever 65' is pivoted intermediate its ends, as at 72, to the arm 13 and is provided adjacent its lower end with a pin or projection 73 adapted to engage the curved portion 55 of the lever 53' to cam the forward end of the latter upwardly and lift the reproducer from the record surface, when the upper end of the lever 65' is moved rearwardly. The numeral 71' represents a stop for limiting the movement of the lever 65' when the reproducer is lifted from the record surface.

In Fig. 4 I have shown a form of my improved reproducer provided with a floating weight. In this figure the arm or lever 6' is provided with a stylus 7', and is supported, as by a pivot 8', from the arm 4' which is pivoted at one end, as at 74, to a floating weight 75 hinged to the diaphragm casing or support 1'. The opposite end of the arm 4' is connected, as by a link 76 to the center of the diaphragm 2'. A spring 10' connected to the stylus carrying end of the arm 6' and to a hook 77 on the floating weight serves to hold the said arm in central position. The arms 4' and 6' are located substantially parallel to the floating weight and the diaphragm 2' and are adjustable similarly to the arms 4 and 6 shown in Fig. 1 during the tracking of the record groove by the stylus.

While I have described particular mechanism for the sake of clearness, it is obvious that my invention is not limited to the specific details of construction described, but that many modifications may be made therein without departing from the spirit of my invention.

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

1. In a talking machine, the combination of a rotatable record support, an arm pivoted to move transversely of said support, a sound box supported by said arm and movable toward and away from the record surface, a stylus carried by said sound box, a lever carried by said arm and adapted to effect movement of the sound box, feeding means connected with said arm, driving means for said feeding means, adjustable

means operatively connecting said lever and said feeding means, and means for moving said lever to cause said connecting means to disengage said feeding means from said driving means and to move said sound box away from the record support substantially as described.

2. In a talking machine, the combination of a rotatable record support, an arm pivoted to move transversely of said support, a sound box supported by said arm and movable toward and away from the record surface, a stylus carried by said sound box, a lever carried by said arm, and adapted to effect movement of the sound box, feeding means connected with said arm, driving means for said feeding means, an adjustable link for operatively connecting said lever and said feeding means, and means for moving said lever to disengage said feeding means from said driving means and to move the sound box so as to disengage the stylus from the record surface, substantially as described.

3. In a talking machine, the combination with a record support, a reproducer, and means for supporting said reproducer, of driving means, pivotally mounted feeding means coacting with said driving means, a lever separate from said feeding means, adjustable means operatively connecting said lever and said feeding means, and means for moving said lever to cause said connecting means to move said feeding means about its pivot to thereby disengage the same from said driving means, substantially as described.

4. In a talking machine, the combination with a record support, a reproducer, and means for supporting said reproducer, of driving means, feeding means coacting with said driving means and connected with said supporting means for feeding the reproducer across the record surface, a lever pivoted to said supporting means, a weighted link connected with said lever and engaged with but not secured to said feeding means, and means for moving said lever to disengage said feeding means from said driving-means, substantially as described.

5. In a talking machine, the combination with a record support, a reproducer, and means for supporting said reproducer, of driving means, feeding means coacting with said driving means and connected with said supporting means for feeding the reproducer across the record surface, a lever pivoted to said supporting means, a weighted link connected with said lever and engaged with but not secured to said feeding means, means for moving said lever to disengage said feeding means from said driving means, and means for limiting the movement of said feeding means, substantially as described.

6. In a talking machine, the combination with a record support, a reproducer, and means for supporting said reproducer, of driving means, feeding means coacting with said driving means, and means comprising a lever pivoted to said supporting means and a weighted link for disengaging said feeding means from said driving means, said link being pivotally connected to said lever at one end and operatively connected to said feeding means at its other end, substantially as described.

7. In a talking machine, the combination with a record support, a reproducer, and means for supporting said reproducer, of driving means, feeding means coacting with said driving means and means comprising a lever and an adjustable link for disengaging said feeding means from said driving means, said link being connected at one end to said lever and being engaged with but not secured to said feeding means at its other end, substantially as described.

8. In a talking machine, the combination of a record support, an arm pivoted to move transversely of said support, a sound box supported by said arm and movable toward and away from said support, driving means, feeding means comprising a member secured to said arm and a member pivotally connected to the first member and coacting with said driving means, and means for simultaneously moving said second named member of the feeding means about its pivot to disengage the same from said driving means and for moving said sound box away from said record support, substantially as described.

9. In a talking machine, the combination of a record support, an arm pivoted to move transversely of said record support, a sound box supported by said arm and movable with respect thereto toward and away from said record support, driving means, feeding means comprising a member secured to said arm and a device movably connected to said member and coacting with said driving means, and unitary means for moving said device to disengage the same from said driving means and for moving said sound box with respect to said arm and away from said record support, substantially as described.

This specification signed and witnessed this 17th day of August 1911.

PETER WEBER.

Witnesses:
FREDERICK BACHMANN,
ANNA R. KLEHM.