D. S. EDMONDS.

TALKING MACHINE.

APPLICATION FILED NOV. 19, 1907.

915,022.

Patented Mar. 9, 1909.

Fig. 1,

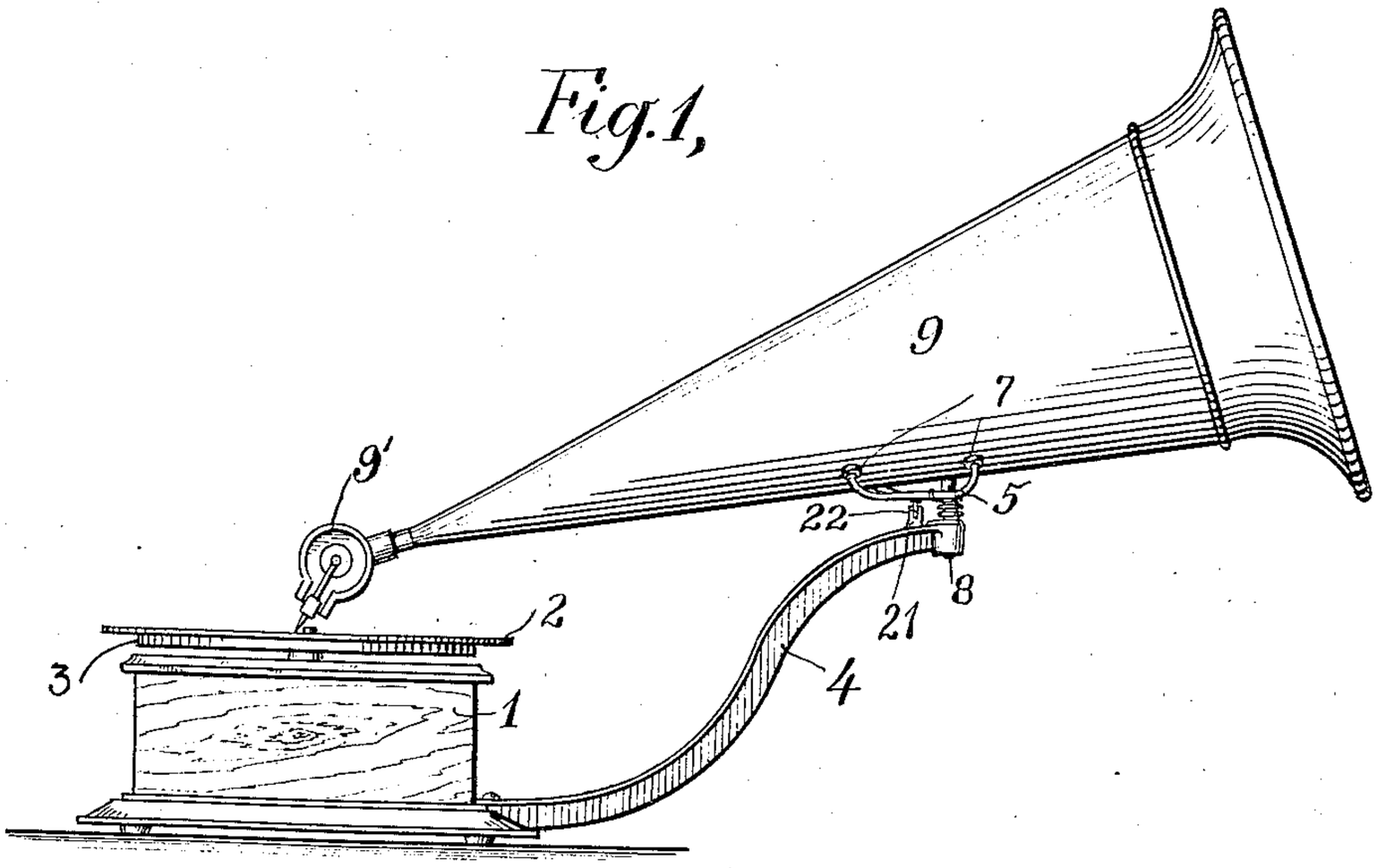


Fig. 2,

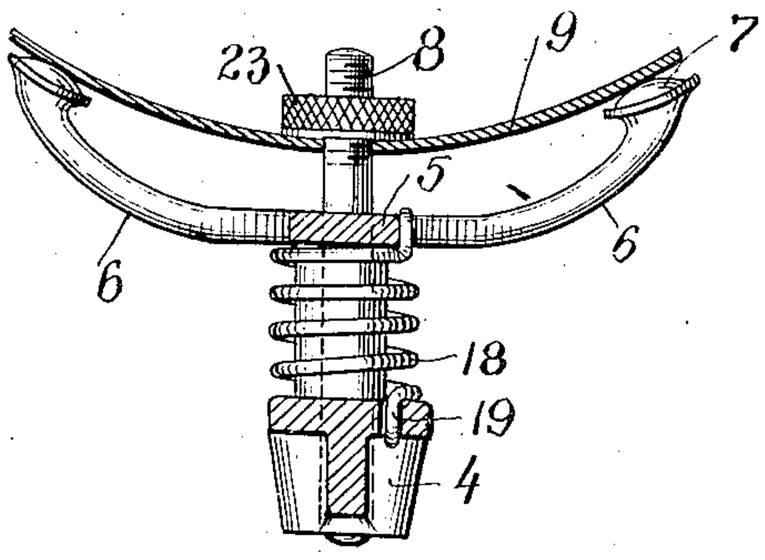


Fig. 3,

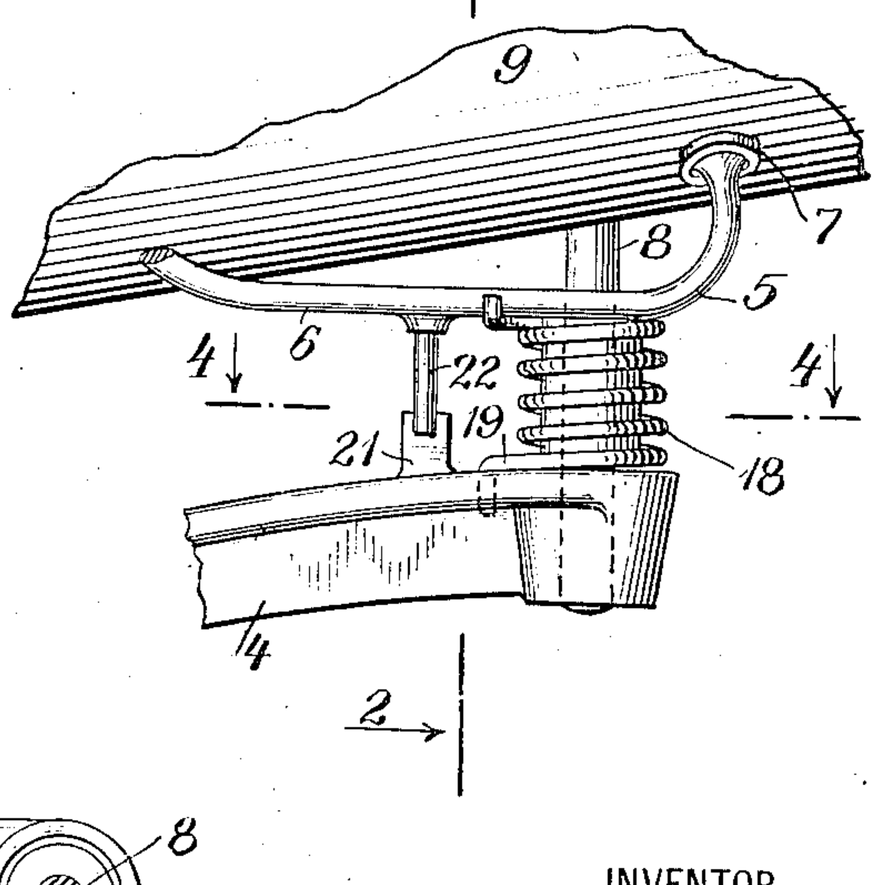
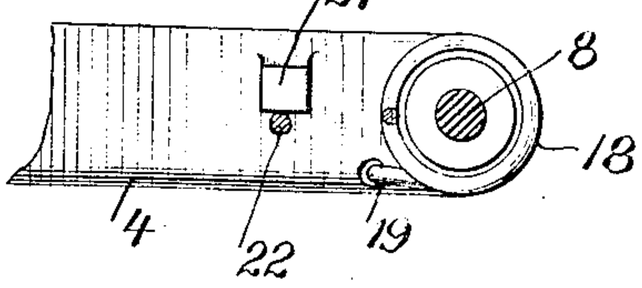


Fig. 4,



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UNITED STATES PATENT OFFICE.

DEAN S. EDMONDS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO HAWTHORNE & SHEBLE MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TALKING-MACHINE.

No. 915,022. Specification of Letters Patent. Patented March 9, 1909.

Original application filed January 31, 1907, Serial No. 354,972. Divided and this application filed November 19, 1907. Serial No. 402,906.

To all whom it may concern:

Be it known that I, DEAN S. EDMONDS, a citizen of the United States, residing in the borough of Manhattan, in the city, county, and State of New York, have invented a certain new and useful Improvement in Talking-Machines, of which the following is a specification.

This invention relates to talking-machines, particularly those of the type employing a disk sound-record.

The invention is directed to the provision of means for exerting a yielding pressure upon the part carrying the reproducing mechanism, to move the latter across the grooved portion of the record disk, rather than permitting the sound-box to be propelled across the disk by the record-groove.

In accordance with the invention, the reproducing mechanism is moved across the disk by the yielding-pressure device in correspondence with the rotation of the disk, so that the stylus will track in the record-groove and give a faithful reproduction of the recorded sound, the sound-box being restrained against too rapid movement by the wall of the record-groove toward the end of the spiral. The provision of such a yielding-pressure device for feeding the stylus across the record offers many advantages; the stylus will move automatically under the pressure into the beginning of the record-groove, the wear on the record is materially decreased, and when a groove-wall is worn through the machine will not repeat. In accordance with the invention, a spring is employed for providing the yielding pressure. The reproducing mechanism may be secured to one end of a sound-conveying device, such as a tone-arm or amplifying-horn, and this device may be pivotally mounted upon a suitable support adjacent to the holder for the sound-record. The spring is preferably arranged between this support and the sound-conveying device and exerts yielding pressure on the latter to turn it about its pivot so as to move the reproducing mechanism across the record. With such a spring, I also employ means for precluding movement of the sound-box entirely across the record to the center thereof. Such means is of importance, in order to guard against injury to the stylus and sound-box, for if the reproducing mechanism were moved by the yielding-pressure device beyond the end of the record-groove, the stylus and the lever carrying the same might engage the shaft of the record-holder or such a projection as is sometimes provided on the holder extending through an opening in the record.

I have illustrated an embodiment of my invention in the accompanying drawings, in which—

Figure 1 is an elevation of a talking-machine; Fig. 2 is a section through the support and cradle on line 2—2 of Fig. 3; Fig. 3 is an enlarged detail view of some of the parts shown in Fig. 1; and Fig. 4 is a detail view in section on line 4—4 of Fig. 3.

Referring to these drawings, the machine comprises a motor-box 1 having therein a suitable motor driving a turntable 2, on which rests the record-disk 3 having a record-groove therein on one or both of its faces. Secured to the box is an outwardly-extending supporting arm 4 having a vertically disposed opening through its outer end. A cradle 5, having arms 6 with pads 7 on their ends, has a downwardly extending pin 8 secured thereto and extending into the opening in the arm 4, this pin serving as a pivot about which the cradle 5 and the sound-conveying tube 9 carried thereby turn. Pin 8 may also be extended upwardly through an opening in tube 9, and the tube may be secured thereto by a nut 23, as shown in Fig. 2. A spring 18 is coiled about the pivot 8 of the cradle 5 and the end of arm 4, one end 19 of this spring being secured in an opening in the arm 4 and the other being caught around a part of the cradle 5. In order to arrest the movement of the cradle 5 and the horn 9 and reproducing mechanism 9′ carried thereby when the stylus of the reproducing mechanism has reached the end of the record-groove, coacting surfaces are provided on the cradle or a part moving therewith and upon the support for the cradle, which surfaces are brought into engagement at the conclusion of the reproduction to arrest further movement. Thus, a projection 21 is shown as formed upon the arm 4 and extending upwardly therefrom, and a pin 22 is provided depending from the cradle 5 in position to engage the projection 21. These parts are so

positioned that they come into engagement immediately after the stylus reaches the end of the record-groove, so as to preclude further turning movement of the cradle 5 under the influence of spring 18. As thus constructed, when the motor is started and the stylus point positioned at the beginning of the record-groove, the spring 18 will exert yielding pressure upon the cradle 5, the sound-conveying device 9 and the reproducing mechanism secured upon the end of the latter, to move the reproducing mechanism across the record in correspondence with the rotation of the latter, too rapid movement of the reproducing mechanism being precluded by the coaction of the stylus with the wall of the record-groove. The pressure exerted by the spring is a yielding one, and the spring is restored to potential relation in restoring the reproducing mechanism to its initial position for coaction with the beginning of the record-groove again. With this construction, great care in positioning the stylus-point at the beginning of the groove is unnecessary, as the point may be placed on the plane portion of the disk beyond the groove and the spring will carry it over and into the groove, thereby assuring the reproduction of the entire announcement and selection. With such a yielding-pressure device, the wear on the record-groove is considerably less and when a wall of the groove has been worn through repetition of the recorded sounds in the groove adjacent to this wall will not take place. At the conclusion of the reproduction, the stops 21 and 22 come into engagement to preclude further turning movement of the reproducing mechanism under the influence of spring 18.

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

1. In a talking-machine, the combination of a holder for a disk sound-record and means for rotating the same and the record thereon, reproducing mechanism including a stylus, a pivoted sound-conveying device carrying said mechanism, and a coiled spring concentric with the pivot of said device and exerting a yielding pressure thereon to move the same about its pivot and carry the said mechanism across the record, said stylus being restrained in such movement by the record-groove and said spring being restored to potential relation in restoring said device to initial position, substantially as set forth.

2. In a talking-machine, the combination of a motor-box, a turntable supported thereon, a disk sound-record on said turntable, an arm secured to and extending outwardly from said box, a sound-conveying tube pivotally mounted on said arm, a sound-box carried thereby and having a stylus bearing in the record-groove, and a spring connected at one end to said arm and at the other to said tube for exerting a yielding pressure on the tube to turn it on its pivot and carry the stylus across the record, said stylus being restrained in such movement by the record-groove, substantially as set forth.

3. In a talking-machine, the combination of a motor-box, a turntable supported thereon, a disk sound-record on said turntable, an arm secured to and extending outwardly from said box, a sound-conveying tube pivotally mounted on said arm, a sound-box carried thereby and having a stylus bearing in the record-groove, a spring connected at one end to said arm and at the other to said tube for exerting a yielding pressure on the tube to turn it on its pivot and carry the stylus across the record, said stylus being restrained in such movement by the record-groove, and stops for arresting the movement of the tube and stylus after the latter has reached the end of the record-groove, substantially as set forth.

4. In a talking-machine, the combination of a holder for a sound-record, means for rotating the same and the record thereon, a support, a sound-conveying device pivotally mounted on said support, reproducing mechanism including a stylus carried by said device, a spring exerting yielding pressure on said device to move the reproducing mechanism across the sound-record so that the stylus may track in and be restrained by the record-groove, said spring being restored to potential relation in restoring said device to initial position, and surfaces on said support and device brought into engagement by the movement of said device under the influence of said spring to arrest the movement of the reproducing mechanism, substantially as set forth.

5. In a talking-machine, the combination of a motor-box, a turntable supported thereon, a disk sound-record on said turntable, an arm secured to and extending outwardly from said box, a cradle having a plurality of outwardly extending supporting-arms pivotally mounted on the end of said arm, a horn tapered from end to end supported on the ends of the supporting-arms of said cradle, a sound-box secured on the smaller end of said horn having a stylus tracking in the groove in said sound-record, and means associated with said arm and cradle for exerting yielding pressure on said horn to move said sound-box in a plane substantially parallel to the surface of the sound-record so that the stylus thereof may track in and be restrained by the record-groove, substantially as set forth.

6. In a talking-machine, the combination of a motor-box, a turntable supported thereon, a disk sound-record on said turntable having a laterally-undulating record-groove

of substantially uniform depth therein, an arm secured to and extending outwardly from said box, a cradle having a plurality of outwardly-extending supporting-arms pivotally mounted on the end of said arm, a horn tapered from end to end secured upon the supporting-arms of said cradle, a sound-box secured on the smaller end of said horn having a stylus tracking in the groove in said sound-record, and means between said arm and cradle for exerting yielding pressure on said horn to move said sound-box across said sound-record so that the stylus thereof may track in and be restrained by the record-groove, said means being so arranged that restoring said sound-box to its initial position restores said means to potential position, substantially as set forth.

This specification signed and witnessed this 2d day of November, 1907.

DEAN S. EDMONDS.

Witnesses:

I. BARTLETT,

I. MCINTOSH.