

P. CATUCCI.
 PHONOGRAPH SOUND BOX.
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1,059,345.

Patented Apr. 22, 1913.

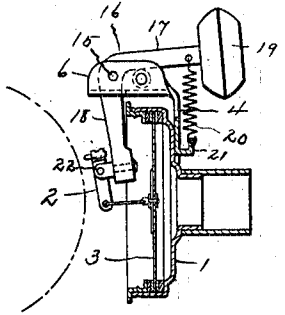


Fig. 2.



Fig. 9.

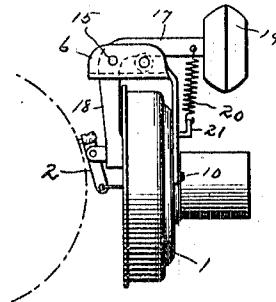


Fig. 1.

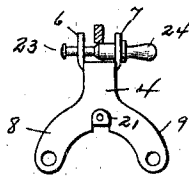


Fig. 3.

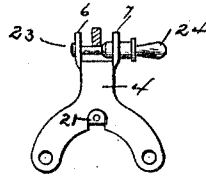


Fig. 4.

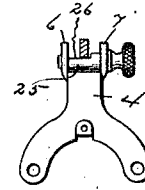


Fig. 5.

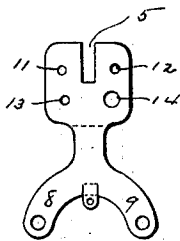


Fig. 8.

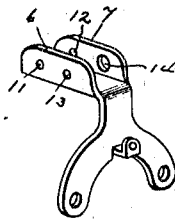


Fig. 7.

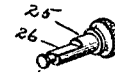


Fig. 6.

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PHONOGRAPH SOUND-BOX.

1,059,345.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed March 11, 1911. Serial No. 613,814.

To all whom it may concern:

Be it known that I, PLINY CATUCCI, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Phonograph Sound-Boxes; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to make, construct, and use the same.

My invention relates to that class of sound boxes wherein the reproducing stylus is caused to follow a helical groove in a cylindrical phonograph record, and its particular purpose is to so construct the stylus holder and its connected parts as to permit of a universal movement of the stylus point, as it follows such groove: that is to say, if at any portion of the record groove, it should deviate from a true helix as is often the case, the stylus point will bear directly into the groove, and not upon the sides thereof; resulting in a more perfect reproduction of the selection upon the record.

A further object is the material simplification of the structure of the parts and a consequent reduction in the cost of manufacture, at the same time, preserving all of the requisites of a perfect sound box.

Another object accomplished by my improvement is the simplifying of the means for throwing the recording or reproducing stylus out of action during the replacing of a blank or record.

In another application, I have set forth the details of the construction of the sound box proper, and of the stylus holder and its connection with the diaphragm, and they need not be repeated here; but the following description will be confined to the details of the universal connections and shifting devices, with only such reference to the parts disclosed in said other application as may be necessary to a full understanding of the present improvement. The said application bears Ser. No. 613,813 filed Mar. 11, 1911.

In the drawings Figure 1 is a side elevation, partly in section, of the box with the stylus out of action. Fig. 2 is a side elevation with the stylus in action. Fig. 3 is a rear view of the supporting bracket, showing one form of shifting device in position to throw the stylus out of action. Fig. 4 is

a similar view with the stylus in action. Fig. 5 is a similar view of a modified form of shifting device. Fig. 6 is a perspective view of a detached shifting device such as shown in Fig. 5. Fig. 7 is a perspective view of the supporting bracket. Fig. 8 is a plan of the bracket head before bending the same to shape. Fig. 9 is an edge view of the stylus holder.

Similar letters of reference refer to like parts throughout the specifications and drawings.

As above stated, the sound box proper 1, the stylus holder 2, the diaphragm 3, and its connection with the stylus holder, are in all substantial respects like those described in my application above referred to.

Upon the rear side of the box 1, is rigidly secured, the bracket 4, with its upper end slotted as at 5, and having the upwardly flanged bearing lugs 6 and 7. The two legs 8 and 9, are for the purpose of affording a broad base by which the bracket is secured to the box 1, by means of the screws or rivets 10. The flanged bearing lugs 6 and 7, are formed by bending the metal of which the bracket is made, at right angles to its plane, providing the pivot bearing apertures 11 and 12, and the shifting device apertures 13 and 14, the latter being somewhat larger than the aperture 13. The head of the bracket, that is, the part having the bearing lugs 6 and 7, is bent at right angles to the general plane of the bracket, so as to overhang and project forward of the box 1, as shown in Figs. 1 and 2.

Mounted within the channel formed by the lugs 6 and 7, upon a pivot pin 15, which is inserted through the apertures 11 and 12, is the two-armed stylus lever 16, one arm 17, lying horizontally in the channel and the other arm 18, extending vertically through the slot 5, down in front of the diaphragm 3, the slot 5, acting as a guide to confine the movements of the arm 18, within a vertical plane at right angles to the plane of the diaphragm. The stylus-lever thus formed is in fact a lever bent substantially at its middle to form the two right angled arms 17 and 18 with the pivot pin 15 located at their angle. The horizontal arm 17, is provided with a weight 19, whose tendency is to tilt the lower end of the arm 18, forward or away from the diaphragm 3. In some cases I may supplement the weight with a

spring 20, the upper end of which is connected to the arm 17, and its lower end to a laterally projecting lug 21, upon the bracket 4, as shown. Or if desired, I may dispense with the weight 19, and use the spring alone, according to the class of record being reproduced. I wish it to be understood that I do not confine myself to the weight alone or the spring alone, as in some cases one will operate to give a better reproduction, while in others, to get the best results both weight and spring must be used.

At the lower end of the arm 18, is an aperture into which is swiveled the eye-pin 22, in the slotted outer end of which is pivoted the stylus holder 2, as shown, the construction being such that the point of the stylus may sway from side to side upon the eye-pin 22, as it follows the record groove, and yet not interfere with its following the excavations and elevations in the bottom of the groove.

As a means for shifting the stylus point into and out of contact with a record, I may use the shifting pin 23, which is located in the apertures 13 and 14, as shown. This pin has two diameters, upon either of which the arm 17, may rest. The two diameters are connected with a slight cone so that the sliding of the pin endwise under the arm 17, will either raise or lower the arm 17, and consequently move the arm 18 toward or away from the diaphragm, as the arm 17, rides upon the large or the small diameter of the pin 23. The handle 24, integral with the pin 23, projects outside the lug 7, whereby the pin may be readily manipulated, the other end being headed to prevent detachment.

In Figs. 5 and 6, I have shown a slight modification of the shifting device. In this case, I use a cylindrical pin 25, with a knurled head for turning the same. A portion of this pin is cut away or halved, as at 26, so that as the arm 17, rides upon the cutaway part, the arm 18, is shifted away from the diaphragm to bring the stylus point upon the record; but when the pin 25, is rotated to bring the cylindrical surface of the pin beneath the arm 17, then the arm 18, is shifted toward the diaphragm, and consequently, the stylus point will be raised from the record, as will be readily understood.

The sound box as thus described is designed for use in connection with the phonographs illustrated and described in my prior patent applications, Ser. Nos. 592,818, filed Nov. 17, 1910; and 630,170 filed May 29, 1911; and it will be noted that when in position on either of such phonographs, the plane of the diaphragm 3 will be vertical while the arm 17 of the stylus lever 16 will be substantially horizontal and the arm 18 will be substantially vertical.

It will be thus seen that by the construction described and illustrated, I am able to produce a sound box, at once simple in construction, which contains all of the requisites of a perfect mechanism, cheap to manufacture, easy to operate and not liable to disarrangement.

I claim:

1. In a sound box for phonographs, the combination of a box body, a diaphragm secured therein a bracket secured to the box body, said bracket having an arm projecting above and in front of said diaphragm, a stylus lever having a horizontal arm and a vertical arm, said lever being pivotally supported intermediate its ends upon the arm of said bracket, a stylus holder connected to said diaphragm and to the vertical arm of said stylus lever, and a weight secured to the horizontal arm of said lever.

2. In a sound box for phonographs, the combination of a box body, a diaphragm secured therein, a bracket secured to the box body, said bracket having an arm projecting above and in front of said diaphragm, a stylus lever having a horizontal arm and a vertical arm, said lever being pivotally supported intermediate its ends upon the arm of said bracket, a stylus holder connected to said diaphragm and to the vertical arm of said stylus lever and a spring connecting the horizontal arm of said lever with said bracket.

3. In a sound box for phonographs, the combination of a box body, a diaphragm secured therein, a bracket secured to the box body, said bracket having an arm projecting above and in front of said diaphragm, a stylus lever having a horizontal arm and a vertical arm, said lever being pivotally supported intermediate its ends upon the arm of said bracket, a stylus holder connected to said diaphragm and to the vertical arm of said stylus lever, a weight secured to the horizontal arm of said lever and a spring connecting the horizontal arm of said lever with said bracket.

4. In a sound box for phonographs, the combination of a diaphragm, a supporting box therefor, a bracket secured to the rear face of said box, and having an arm projecting above and forward of said diaphragm, a stylus lever having its arms at right angles to each other, and pivotally connected at its angle to said bracket arm, a stylus holder connected to said diaphragm, a universal joint connection between the extremity of one arm of said stylus lever and said holder, and a weight secured to the other arm of said lever.

5. In a sound box for phonographs, the combination of a diaphragm, a sound box for supporting said diaphragm, a bracket mounted upon said box, said bracket having a forwardly projecting channeled arm, a

- stylus lever pivoted in the channeled arm of said bracket, a stylus holder connected to said diaphragm, a universal joint connection between said lever and said holder, 5 gravity actuated means for tilting said lever and said holder into one of their respective positions, and manually operated means for tilting and holding said lever and holder into their reverse positions.
- 10 6. In a sound box for phonographs, the combination of a diaphragm, a supporting box for said diaphragm, a bracket mounted on said box and having an overhanging channeled arm, a stylus lever having hori- 15 zontal and vertical arms pivotally supported between its ends on the channeled overhanging arm of said bracket, a stylus holder connected to said diaphragm, a universal joint connection between said holder and the vertical arm of said stylus lever, a weight 20 mounted on the horizontal arm of said lever for tilting the stylus holder into one of its respective positions, and manually operated means for tilting and operating the lever and holder into their respective reverse po- 25 sitions.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."