C. PALMER.

PHONOGRAPH RECORD CLEANER AND LUBRICATOR.

APPLICATION FILED MAY 6, 1916.

1,225,847. Patented May 15, 1917.

Fig. 1.

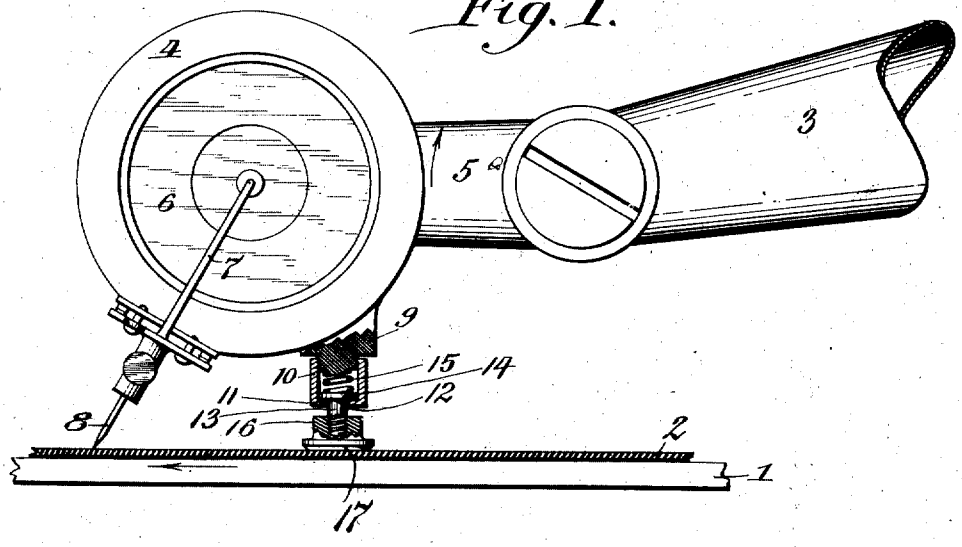
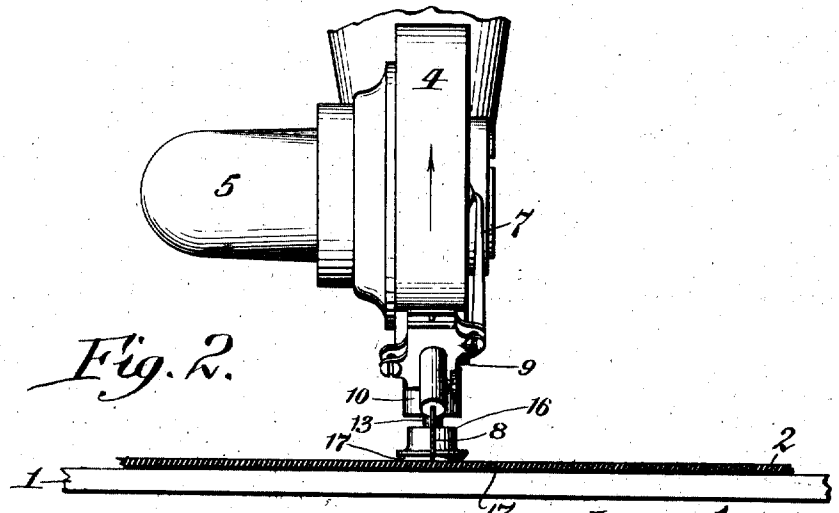


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PHONOGRAPH-RECORD CLEANER AND LUBRICATOR.

1,225,847. Specification of Letters Patent. Patented May 15, 1917.

Application filed May 6, 1916. Serial No. 95,899.

To all whom it may concern:

Be it known that I, CHARLES PALMER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Phonograph-Record Cleaners and Lubricators, of which the following is a specification.

This invention relates to a device for automatically cleaning and lubricating the sound grooves of a phonograph playing record.

The object of the invention is to provide a wiping and oiling device for sound producing and receiving machines which will properly lubricate and also remove the grit from the portion of the playing record which is to be engaged an instant later by the vibrating or sound needle of the machine.

A further object is to provide an automatically operating device which will permit of readily removing or replacing a playing record on the machine, which will be strong and durable, which may be readily cleaned and oiled and which may be produced at low cost.

In the accompanying drawings:

Figure 1 is a side elevation of a fragmentary sectional elevation of a phonograph equipped with my invention. Fig. 2 is a front elevation of the same.

Similar characters of reference indicate corresponding parts in both views.

1 represents a horizontally rotatable turn table upon the upper side of which a disk-shaped phonograph record 2 is adapted to be removably supported, said table and disk to be turned together by any suitable operating means and the surface of the record being provided with the usual tone producing grooves, lines or indentations.

Above the turn table is arranged the tapering tone tube or hollow arm 3 such as is customarily employed in phonographs and which is pivotally mounted on the stationary frame, not shown, of the machine, so as to swing in a horizontal plane.

Pivotally connected to the forward end of said tone arm, so as to swing in a vertical plane, is a gooseneck or sound box tube 5 which is capable of rising and falling freely relative to said tone arm. Secured to the forward end of said gooseneck is a sound box 4 of the usual and well known form and on one side of this box is mounted a diaphragm 6. Pivoted on the lower part of said sound box is a vibrating lever 7 which is operatively associated at its upper end with said diaphragm.

Detachably secured to the lower part of said lever 7 is a tracing needle 8 whose lower pointed end is adapted to engage with the sound grooves that are arranged spirally in the upper surface of the phonograph record 2. As the tone arm 3 is gradually carried across over the upper side of said phonograph record, the tracing needle engages with the sound grooves of the record. The foregoing parts may all be of usual and well known construction and my improvements which coöperate therewith are preferably constructed as follows:

Mounted on the lower rear portion of the sound box is a vertically depending lug 9 which is preferably arranged longitudinally in line with the needle and which is provided with an external screw thread at its lower end. Mounted upon said lug is a guide sleeve 10 provided on the upper part of its bore with an internal screw thread engaging with said thread of the lug 9. The lower end of said sleeve is provided with a horizontal head 11 having a vertical guide opening 12. Moving loosely up and down in said opening is the stem 13 of a plunger which is provided at its upper end with a head 14. The plunger is yieldingly forced downwardly by a vertical compression spring 15 interposed between the upper side of the head 14 and the lower face of the depending lug 8. Onto the lower end of the plunger stem 13 is screwed a supporting shoe 16 whose lower surface is provided with a pad or wiper 17 of felt or other soft material which in the operative position of the sound box and needle rests on the record immediately in front of the latter.

As the phonograph playing record rotates with its turn table, the felt wiper 17 will brush off the grit and dust from the record in advance of the needle. This pad is preferably soaked with a suitable lubricating oil or substance so as to lubricate the grooved surface of the record as the pad rests upon the latter while in motion. By this means the record is not only cleaned but the wear on the same is reduced to a minimum and the objectionable noise caused by the friction of the constant rubbing of the needle against the moving face of the record materially lessened. It will be noted that the

compression spring 15 relieves the needle of a large part of the dead weight of the sound box 4 so that the wear of the needle on the record is still more reduced. Such a cleaning and lubricating device is not confined, of course, to a disk phonograph or to any one type of disk phonographs but may be used on any sound apparatus where a needle moves in the sound groove of an impression record, the one relatively to the other. Furthermore, the cleaner and lubricator may be otherwise supported although in the preferred construction shown, the cleaning and oiling of the felt pad is most convenient by reason of the fact that it may be readily thrown back with the sound box so as to present the lower rubbing surface of the pad or wiper upwardly.

By loosely fitting the plunger or guide rod in the guide sleeve and interposing a spring between the plunger and sound box the pad can swivel or tilt and change its position for adapting the same to the surface of records which may vary in thickness and the pad can also bear yieldingly against the record and accommodate itself to the length of the needle resting on the record.

I claim as my invention:

A phonograph comprising a needle adapted to engage a record, a sound box on which said needle is mounted, and a cleaning device mounted on said box and comprising a supporting lug depending from the box and provided with a screw thread, a guide sleeve having a thread at its upper end which engages with the thread of said lug and having a head at its lower end which is provided with a guide opening, a plunger having a guide rod arranged in said opening and a head at its upper end arranged in said sleeve, a spring arranged in said sleeve between said head and said lug, and a shoe having a screw connection with the lower end of said rod and provided on its underside with a felt pad adapted to rest on said record.

CHARLES PALMER.