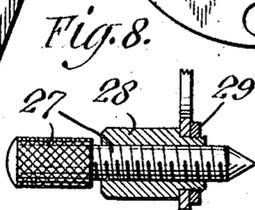
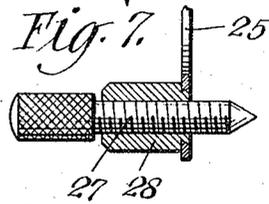
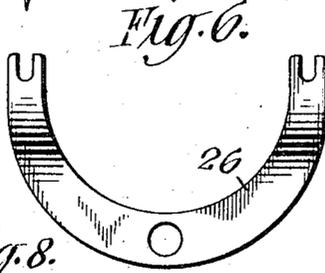
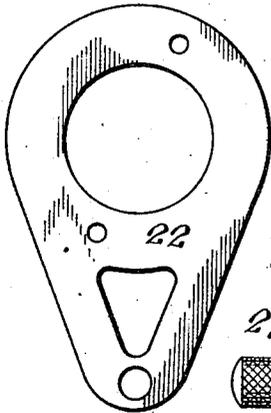
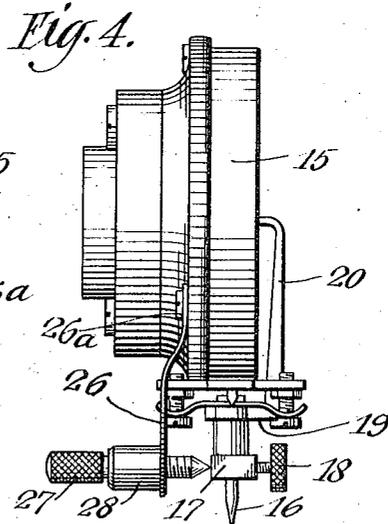
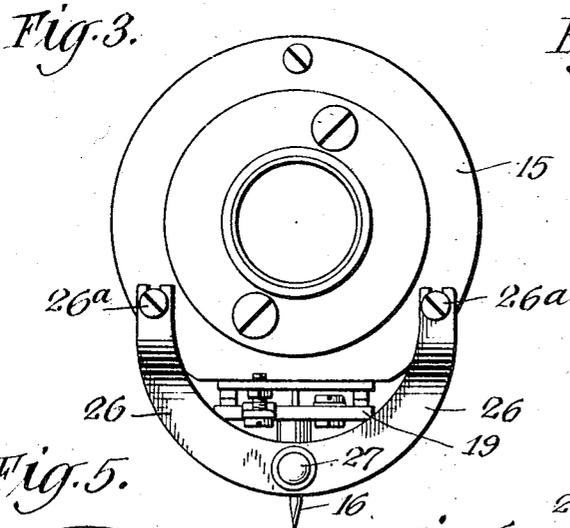
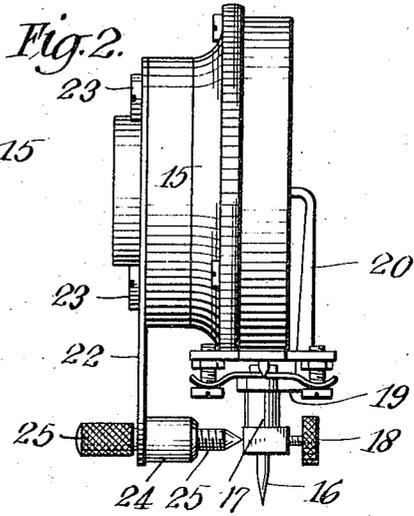
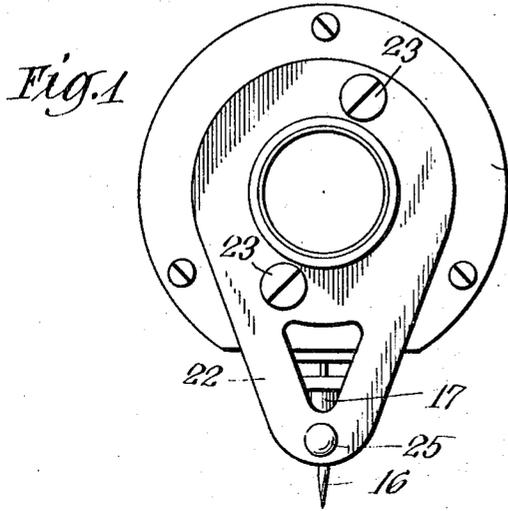


A. RECTOR.
 SOUND MODIFYING MEANS.
 APPLICATION FILED MAY 5, 1917.

1,275,089.

Patented Aug. 6, 1918.
 2 SHEETS—SHEET 1.



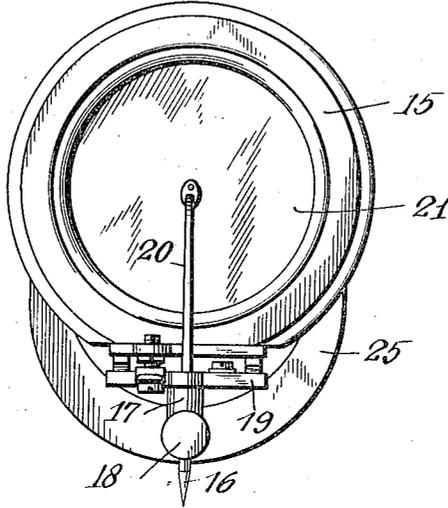
Inventor
 Alcom Rector
 By his Attorney
 Conklin C. Billings

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Fig. 9.



Alvan Rector Inventor
By his Attorney
Wendell C. Billings

UNITED STATES PATENT OFFICE.

ALCORN RECTOR, OF CLEVELAND, OHIO.

SOUND-MODIFYING MEANS.

1,275,089.

Specification of Letters Patent.

Patented Aug. 6, 1918.

Application filed May 5, 1917. Serial No. 166,612.

To all whom it may concern:

Be it known that I, ALCORN RECTOR, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Sound-Modifying Means, of which the following is a specification.

My invention relates to sound reproducing devices used with and which form a part of phonographs, graphophones, and like machines of the class commonly known and referred to as talking machines; and the object, thereof is to provide an auxiliary mechanism or device adapted to cooperate with the vibrating stylus present in sound reproducing devices of the type or kind in common use, and the purpose of which is to eliminate or reduce to a minimum the grating, scratching, and other objectionable noises foreign to the selection recorded upon the record and intended to be reproduced, but which noises are nevertheless emitted in the use of most reproducers; the elimination of the objectionable noises, however, being accompanied by no material reduction in the volume or change in the quality of the selection reproduced in the use of my invention.

In various prior devices designed to improve the quality of the sound reproduced by neutralizing noises foreign to the selection to be rendered, the vibratory movement of the stylus has ordinarily been opposed or dampened by a spring member acting in opposition to the movement of the stylus through a soft, yielding, or resilient member; and in such devices such modification or reduction of the objectionable noises referred to as has been secured has been accompanied by a considerable reduction of the volume of the selection intended to be reproduced, as well as also by a more or less undesirable change in the quality of the tone produced. In my device, however, the movement of the vibrating stylus is communicated to a member adapted to partake of the movement of the stylus or stylus carrying member through a non-yielding connection, engagement, or contact between the

two and, while the objectionable noises hereinbefore referred to are eliminated or reduced to a minimum particularly those of high pitch which are the more troublesome, there is no concomitant material reduction in the volume of the sound produced, or change in the quality of the tone of the selection recorded and reproduced.

With the above and other objects of invention in view, my invention consists in the improved sound modifying means for use with sound reproducing devices illustrated in the accompanying drawings and hereinafter described and claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which my invention relates.

In the drawings accompanying and forming a part of the specification:

Figure 1 is a view showing my device in end elevation and as attached to the diaphragm casing of a common type of sound reproducing device;

Fig. 2 is a view showing a side elevation of the elements shown in Fig. 1;

Fig. 3 is a view showing an end elevation of a modified form of my device, as seen from a position to the left of Fig. 4;

Fig. 4 is a view showing the elements shown in Fig. 3 in side elevation;

Fig. 5 is a view showing the resilient support of the form of my device shown in Figs. 1 and 2, detached;

Fig. 6 is a similar view showing the form of resilient support employed in the form of my invention shown in Figs. 3 and 4;

Figs. 7 and 8 are a fragmentary sectional views showing the threaded sleeve carried by the resilient support of my device, and the adjustable member thereof carried by said sleeve;

Fig. 9 is a view showing an end elevation of the form of my device shown in Figs. 3 and 4, as seen from a position to the right of Fig. 4.

Referring to the drawings, the reference numeral 15 designates the diaphragm support or casing of an ordinary pattern or type of sound reproducing device designed for use with phonographs and similar machines,

and 16 designates the vibrating stylus which traverses the groove in the record and is caused to vibrate by the undulations thereof; the stylus being in turn commonly supported and carried by a suitable stylus carrying member 17 within which it is held by a set screw 18. The stylus carrying member is carried by an oscillating support 19, from which an arm 20 extends, and the extremity of which arm contacts with the diaphragm 21 of the reproducer and imparts vibratory motion thereto.

The mechanism above referred to through which motion is transmitted from the vibrating stylus to the diaphragm, is similar to mechanism employed in several well known forms or makes of sound reproducing devices. It will be appreciated, however, that the particular mechanism chosen for the purpose of explaining my device forms no part of my invention, that the mechanism in question in fact differs in detail in various forms of sound reproducing devices known and in more or less common use, and that my invention is applicable to and capable of use generally with sound reproducing devices having a vibrating stylus, irrespective of the form of the mechanism through which the diaphragm is operated from the vibrating stylus.

Referring now more particularly to Figs. 1 and 2, the reference numeral 22 designates a suitable resilient support secured to the diaphragm casing 15 by means of screws 23, and to the free end of which a sleeve 24 is secured; and the reference numeral 25 designates an adjustable member carried by the sleeve 24 and in threaded engagement therewith in the embodiment of my invention illustrated.

The free end of the adjustable member 25 contacts with the stylus carrying member 17, and the contact or engagement between said free end and the stylus carrying member is non-yielding in character; so that vibratory movement will be transmitted from the stylus to the adjustable member 25, sleeve 24, and the free end of the resilient support 22 (which elements collectively form a member associated with the stylus and adapted to partake of the movement thereof), through a non-yielding connection or contact between the stylus and the element or elements of my device which partake of the movement of the stylus.

My invention, broadly considered, is not limited to any form of resilient supporting member, nor to any particular manner of or scheme for supporting the fixed end or portion of the resilient support, although the said fixed portion is preferably secured to the diaphragm casing, as above stated; and Figs. 3 and 4 show an equivalent resilient support 26 of curved or semi-circular form, the free ends thereof being secured to a dif-

ferent portion of the diaphragm casing by means of screws 26^a. The adjustable member 27 in this form of my invention is substantially the same in form as the member 25, and the sleeve 28 corresponds with the sleeve 24, but is located upon the opposite side of the resilient support than the sleeve in the form first described, because of the fact that the supporting member is secured to a different part of the diaphragm casing.

The sleeve may be secured to the resilient support in any way, as by reducing the end thereof and passing the reduced portion through a hole in the support and upsetting or riveting the extremity thereof, as shown in Fig. 7, or by means of a nut 29 as shown in Fig. 8, or otherwise, as will be appreciated.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:—

1. In combination in a sound reproducing device, a vibrating stylus carrying member; a resilient support; and a vibrating member separate from said stylus carrying member and carried by said support, and to which motion is communicated through a non-yielding contact between the same and said stylus carrying member.

2. In combination in a sound reproducing device, a vibrating stylus, a resilient support, a threaded sleeve carried by said support, and a vibratory threaded member carried by said sleeve and operated by said stylus through a non-yielding contact.

3. In combination in a sound reproducing device, a vibrating stylus carrying member, a resilient support, and a vibrating adjustable member carried by said support and contacting with said stylus carrying member, the contact between said adjustable and stylus carrying members being non-yielding in character.

4. In combination in a sound reproducing device, a vibrating stylus carrying member, a resilient support, a vibratory threaded sleeve carried by said support, and a threaded member separate from said stylus carrying member and carried by said sleeve, and the free end of which contacts with said stylus supporting member, the contact between said free end and said stylus carrying member being non-yielding in character.

5. In combination in a sound reproducing device and with the diaphragm casing and vibrating stylus carrying member thereof, a resilient support carried by said casing, and an adjustable member carried by said support and contacting with said stylus carrying member, the contact between said adjustable and stylus carrying members being non-yielding in character.

6. In combination in a sound reproducing device and with the diaphragm casing and vibrating stylus carrying member thereof, a resilient support carried by said casing, a

sleeve carried by said support, and an adjustable member carried by said sleeve and contacting with said stylus carrying member, the contact between said adjustable and stylus carrying members being non-yielding in character.

In witness whereof I have hereunto set

my hand at Cleveland, Ohio, this 27th April, 1917.

ALCORN RECTOR.

In presence of—

M. SARABA,
LOUIS ENGLANDER.