

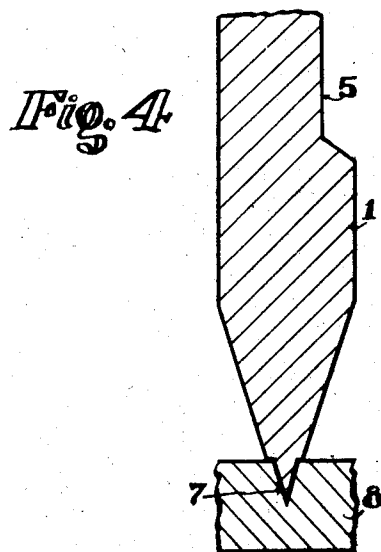
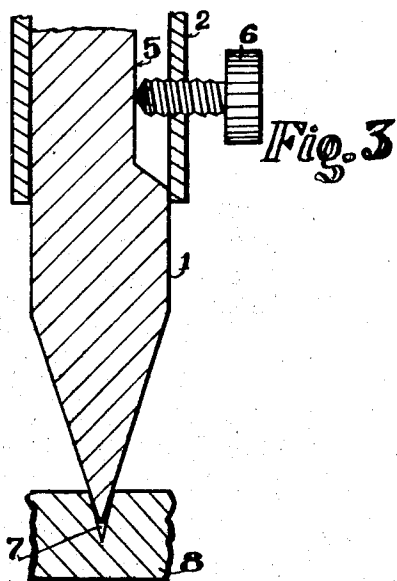
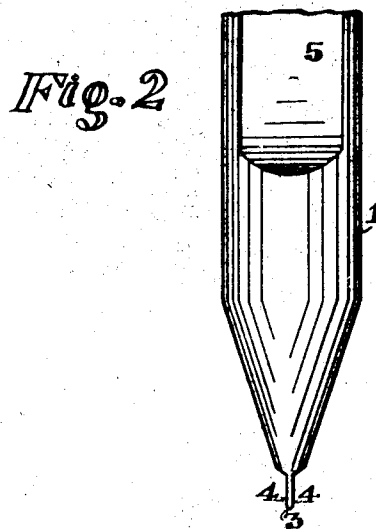
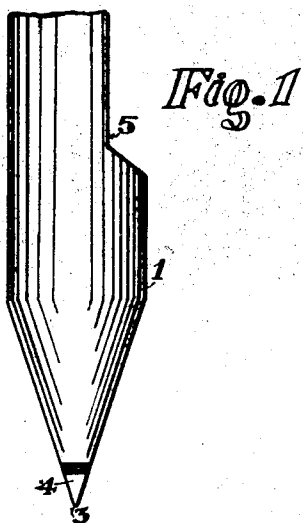
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SOUND REPRODUCING NEEDLE

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SOUND-REPRODUCING NEEDLE.

Application filed May 16, 1927. Serial No. 191,652.

This invention relates to improvements in sound reproducing needles of the kind used in connection with phonographs.

An object of my invention is to provide an improved phonograph needle adapted for use with phonographs having more satisfactory wearing and reproducing qualities than the needles now in use.

Another object of my invention is to provide an improved phonograph needle having a pointed needle part which upon use adapts itself to the size and shape of a phonograph record groove, thereby enabling the production of tones that are more satisfactory than those produced with needles now commonly used.

Another object of my invention is to provide an improved phonograph needle having a construction which permits its being used for a great number of times with continued satisfactory results.

Other advantages more or less apparent will present themselves or will be specifically pointed out in the description to follow.

In the accompanying drawings:

Fig. 1 is a side elevation of a phonograph needle embodying my invention;

Fig. 2 is a side elevation of the needle as viewed from a point at right angles to the illustration shown in Fig. 1;

Fig. 3 is a sectional view of the needle, a part of a sound box of a phonograph, and a part of a phonograph record, showing the position the needle assumes with reference to the groove of the record when it is being used for the first time; and

Fig. 4 is a sectional view of the needle and a part of a phonographic record, showing the position it assumes with reference to the groove of the record after it has been used for some time.

Referring to the drawings, the numeral 1 represents the body portion of my improved phonograph needle, the upper or blunt end of which may be attached in the usual manner to the sound box 2 of a phonograph or other sound reproducing device. The body portion, adjacent but below its central part is tapered and assumes a gradually narrower width than its upper part, finally terminating in a slightly pointed end 3. Two of the narrowed and opposite sides of the body portion adjacent the pointed end 3, as shown by the numeral 4, are flattened, thereby causing the lower end of the body portion

to be of considerably less thickness than its width. One of the sides of the body portion, above the tapered part thereof is cut out or flattened, as shown at 5, to provide a suitable means for grasping the needle and properly positioning it in operative position in the sound box 2 of a phonograph. The said flattened surface 5 lies at right angles to the flattened sides 4 of the tapered part of the body portion, and the thumb-screw 6 of the sound box 2 bears against the same when the needle is inserted into the sound box, thereby causing the flattened sides 4 of the body portion to become positioned crosswise in the groove 7 of a phonograph record 8.

As shown in Figs. 3 and 4, the needle is placed in an operating position within the groove 7 of the phonograph record 8, with the pointed end 3 located inside the said groove and the lower end of the flattened sides 4 positioned across the said groove. The needle may be so positioned by grasping the flattened surface 5 of the body portion 1 and placing it in the sound box of a phonograph with the flattened sides 4 extending crosswise within the groove 7 of the record 8. As shown in Fig. 3 the narrow edges of the flattened sides 4 adjacent the pointed end 2 of the needle, when the same is being used for the first time, contact against only a small part of the surface of the walls of the record groove 7. After continued contact, however, with the said walls of the groove of the rotating phonograph record 8, the edges of the flattened sides 4 gradually wear down until a shoulder is formed which rests on the ridges of the said groove, and the pointed end occupies practically the entire width of the said groove, as shown in Fig. 4. The flattened sides 4 of the body portion 1, where contact with the walls of the record groove 7 occurs, gradually wear down with the shoulders above the ridges of the said groove becoming wider upon continued use.

The pointed end of the body portion 1, where the flattened sides 4 occur, being much wider than its thickness, prevents a blunted end from being formed, as is the result with other phonograph needles upon continued use.

The improved needle herein shown and described, because of its flattened end construction, may be used to play as many as

three or four hundred records, with satisfactory tones being reproduced in each instance.

Unlike other needles now in use, the pointed end of the needle, having a greater width than thickness, wears down until it assumes and for a long time maintains practically the same size and shape of the record groove, thereby firmly contacting with the walls of the said groove and assisting in the reproduction of tones which are of the most satisfactory nature.

Although I have shown but one form my improved reproducing needle may assume, it is evident to those skilled in the art that the principles of my invention may be embodied in a number of forms as satisfactory as the one illustrated. I therefore do not desire to have my invention limited to the construc-

tion shown and described but rather desire it to be included broadly within the spirit of the appended claims.

Having described my invention, what I claim is:

1. A phonograph needle comprising a body portion having a tapered end part which is provided with flattened sides adjacent its extreme end, the lateral edges of the said flattened sides being inclined from the end.

2. A phonograph needle comprising a body portion, a tapering part extending from the body portion, the said tapering part being cut away at two of its opposite sides at points adjacent its end to provide flattened sides, the edges of the said flattened sides being inclined from the extreme end.

LEON F. DOUGLASS.