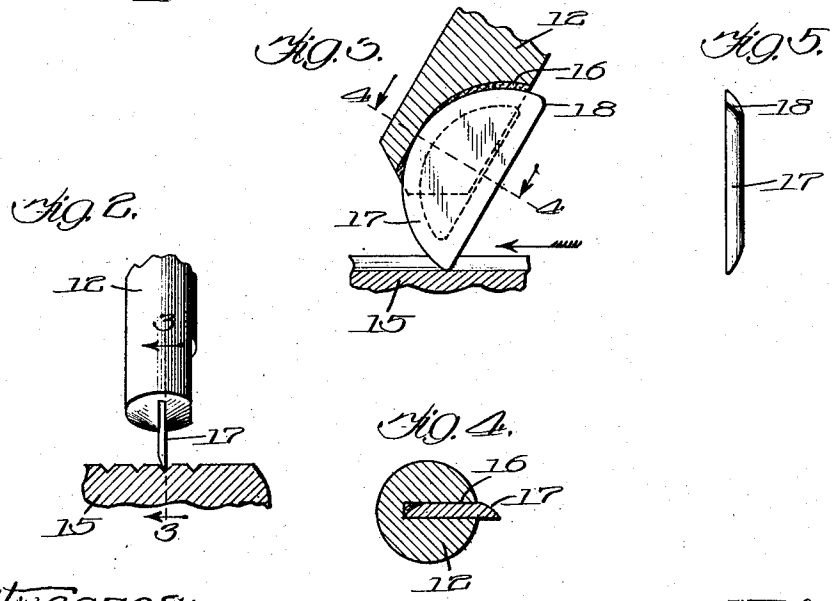
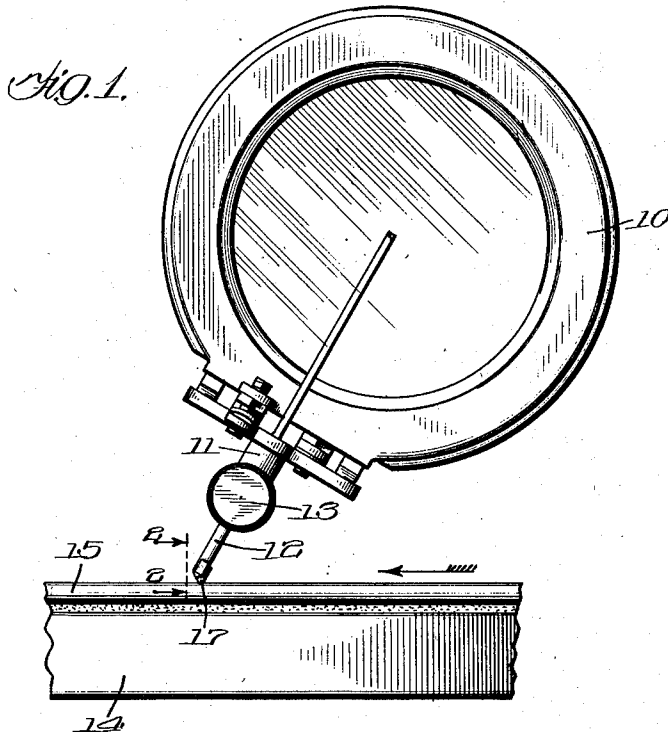


S. LEVIN.
 STYLUS FOR SOUND REPRODUCING MACHINES.
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SAMUEL LEVIN, OF HIGHLAND PARK, ILLINOIS.

STYLUS FOR SOUND-REPRODUCING MACHINES.

1,003,474.

Specification of Letters Patent. Patented Sept. 19, 1911.

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To all whom it may concern:

Be it known that I, SAMUEL LEVIN, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Styli for Sound-Reproducing Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to styli for sound-reproducing machines of the gramophone type, and has for its object to produce a new and improved form of stylus which may be used a great many times without injury either to the stylus or to the disk record so that the operator is relieved of the necessity of changing the stylus at each operation as is necessary in the use of a stylus of the ordinary type. I accomplish this object by the use of a stylus having a jewel point of a peculiar form, as illustrated in the drawings and hereinafter specifically described.

That which I believe to be new is set forth in the claims.

In the drawings,—Figure 1 is a fragmentary side view of the rotary table and record disk of an ordinary gramophone, with the ordinary reproducer in position thereon with the stylus engaging the sound-groove in the record, the view being toward the center of the rotary table. Fig. 2 is an enlarged detail, being a very much enlarged section on the line 2—2 of Fig. 1, and showing the sound-groove in the record. Fig. 3 is a still more enlarged detail, being an enlarged section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 3. Fig. 5 is a view of the jewel as seen from the right in Fig. 3.

Referring to the several figures of the drawings, in which the corresponding parts are indicated by like reference characters,—10 indicates a reproducer of the ordinary general type, of which 11 indicates the socket-member in which the stylus 12 is to be inserted, being retained in position therein by the set-screw 13.

14 indicates the rotary table upon which the sound-record 15 is revolved in the direction indicated by the large arrow in Fig. 1.

As best shown in Figs. 3 and 4, the stylus proper or stem 12 is provided with a deep groove 16 at one side at the lower end. 17 indicates a jewel secured in said groove by

means of cement or in any other suitable manner. As best shown in Fig. 3, the jewel is substantially in the shape of a semi-circle, with the straight side of the jewel set at an angle of approximately sixty degrees to the face of the record, and with the curved portion of the periphery of the jewel in advance in the direction of the movement of that portion of the record with which the jewel is in contact. That is to say, the straight edge of the jewel is first brought into contact with the successive variations in the record groove. The edge of the jewel which is toward the center of the record is rounded off (see Figs. 2, 4 and 5) so that the jewel is in effect substantially plano-convex, the edge which is toward the outside being also very slightly rounded as are also the points of the jewel, as best shown at 18 in Fig. 3.

I have found by experience that a stylus of this character is very efficient. The sound-groove of the record does not become quickly worn but on the contrary the record still retains its superiority after having been used a great many times with a single stylus. The jewel is large enough in cross-section to insure its being not easily broken, and its peculiar shape with the flat face outside enables the stylus to traverse the groove many times following closely the original sinuous outline without materially wearing away the fine points along the sides of the groove. Moreover, I have found that as the jewel is gradually worn, the wear is such as to preserve substantially the original shape of the engaging point of the jewel.

What I claim as my invention and desire to secure by Letters Patent is,—

1. A stylus for sound-reproducing machines of the gramophone type, the operative point of which is plano-convex, the edge of said point which first engages the variations of the record groove being straight and set at an angle to the face of the record.

2. A stylus for sound-reproducing machines of the gramophone type, the operative point of which is formed of a thin substantially plano-convex jewel whose lower pointed end is defined by a straight line and a curved line, said jewel being positioned so that its straight edge first engages the variations of the record groove in the rotation of the record, said straight edge being set at an angle to the face of the record.

3. A stylus for sound-reproducing machines of the gramophone type, the operative

point of which is formed of a thin substantially plano-convex jewel whose lower pointed end is defined by a straight line and a curved line, said jewel being positioned so that its straight edge first engages the variations of the record groove in the rotation of the record, said straight edge being at an angle to the face of the record the convex face of said jewel being positioned toward the center of the record.

4. A stylus for sound-reproducing machines of the gramophone type, the operative point of which is formed of a semi-circular plano-convex jewel having its edges and its points slightly rounded, said jewel being positioned so that its straight edge first engages the variations of the record groove in the rotation of the record, said straight edge being at an angle to the face of the record.

5. A stylus for sound-reproducing machines of the gramophone type, the operative point of which is formed of a semi-circular plano-convex jewel having its edges and its points slightly rounded, said jewel being positioned so that its straight edge first engages the variations of the record groove in the rotation of the record, said straight edge being at an angle to the face of the record, the convex face of said jewel

being positioned toward the center of the record.

6. A stylus for sound-reproducing machines of the gramophone type, comprising a stem and a thin substantially semi-circular plano-convex jewel secured to the lower end of said stem with the straight edge substantially parallel with the stem.

7. A stylus for sound-reproducing machines of the gramophone type, comprising a stem and a thin substantially plano-convex jewel secured to the lower end of said stem, the lower pointed end of said jewel being defined by a straight line and a curved line, said straight edge being substantially parallel with the stem.

8. A stylus for sound-reproducing machines of the gramophone type, comprising a stem and a thin substantially plano-convex jewel secured to the lower end of said stem, the lower pointed end of said jewel being defined by a straight line and a curved line, said straight edge being substantially parallel with the stem, the operative point and the edges of said jewel being slightly rounded.

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