

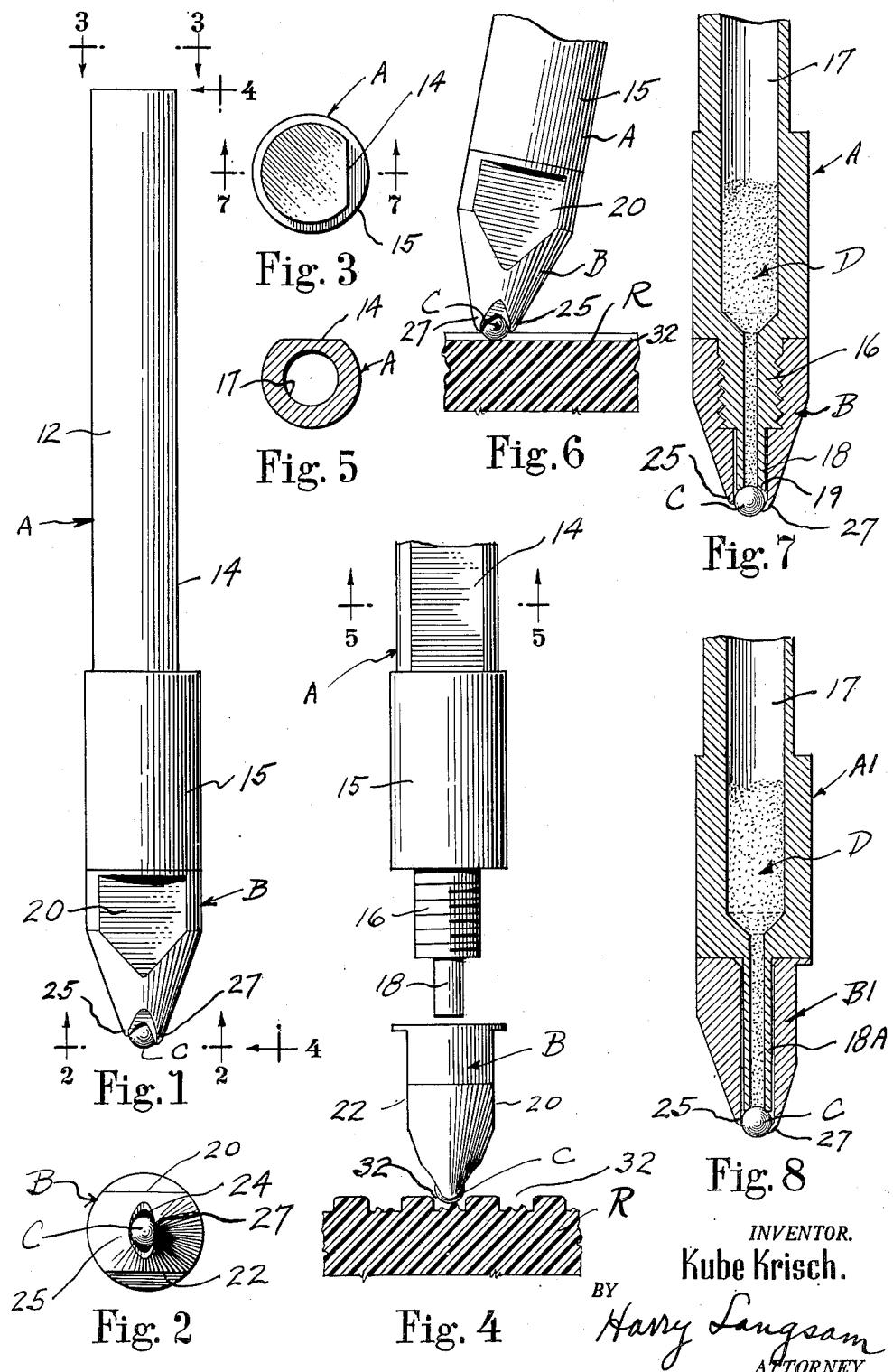
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PHONOGRAPH NEEDLE

Filed May 18, 1949



## UNITED STATES PATENT OFFICE

2,629,605

## PHONOGRAPH NEEDLE

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2 Claims. (Cl. 274—38)

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My invention relates to a phonograph needle that relates particularly to a phonograph needle wherein a lubricating substance is supplied to the phonograph record contact member.

In my previously filed patent application, Serial No. 28,139, filed May 20, 1948, wherein I disclose a ball-bearing needle, I have made certain improvements on said needle which provide for easier adjustment and replacement of the parts.

It is an object of my invention to provide a phonograph needle which will provide a lubricant upon the surface of the needle to reduce wear of the record and to polish the record.

Another object of my invention is to provide a phonograph needle wherein the lubrication or the ball-bearing may be replaced.

Another object of my invention is to provide a needle wherein vibration of sound due to the contacting of the edge of the groove by the race which holds the ball-bearing is eliminated.

Another object of my invention is to provide a ball-bearing needle wherein the reproducing surface of the ball-bearing rides completely within the record groove.

Other objects of my invention are to provide an improved device of the character described, that is easily and economically produced, which is sturdy in construction, and which is highly efficient in operation.

With the above and related objects in view, my invention consists in the details of construction and combination of parts, as will be more fully understood from the following description, when read in conjunction with the accompanying drawing in which:

Fig. 1 is a side view of a phonograph needle embodying my invention wherein the ball race is cut away to prevent the race from engaging a side of the record groove.

Fig. 2 is a view of Fig. 1 as seen from the line 2—2 of Fig. 1.

Fig. 3 is a top end view of the needle shown in Fig. 1 as seen from the line 3—3 of Fig. 1.

Fig. 4 is a view of the phonograph needle with the cap and its ball-bearing contact removed from the cylindrical stem member.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary side view showing the point in contact with the phonograph record.

Fig. 7 is a sectional view taken along the line 7—7 of Fig. 3 showing a screw tip.

Fig. 8 is a modification of the needle embodying my invention showing a plain tip.

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wherein similar reference characters refer to similar parts, I show a phonograph needle having a hollow stem, generally designated as A, which is adapted to fit within the crystal or magnetic pick-up of a record player, a ball-bearing holder, generally designated as B, and a ball-bearing, generally designated as C. The stem A comprises a hollow cylindrical member 12 having an inner bore 17 and its outer surface 12 has a flat side 14. The lower end of the body A is threaded at 16 above its discharge nozzle 18. A tapped nozzle, generally designated as B, has two flat sides or may be knurled in order to enable the nozzle to be gripped so that it may be turned on or off the threaded end 16. The nozzle B has an elliptical opening 24 within which a ball-bearing, generally designated as C, is held by two claws, 25, 27 one of which is longer than the other. It is to be observed that the two claws are in the same diameter of the end of the nozzle so that a space is left between each holding claw 25, 27 whereby the ball-bearing C only engages the bottom or sides of the record groove. This construction prevents undue noises from creeping into the pick-up by preventing the edge of the nozzle from contacting the side wall of the record groove.

A graphite or other lubricating substance, generally designated as D, may be rolled upon the phonograph record by the ball-bearing C.

The discharge nozzle 18 has its opening directly upon ball-bearing C so that the surface of the ball-bearing rolls upon the lubricant directly upon the record.

In Fig. 8 I show a modification of my invention wherein the hollow lubrication holding stem A has an elongated discharge nozzle opening 18A and wherein a force-fit ball-bearing nozzle B holds the ball-bearing C against the discharge opening 18A. The ball-bearing C rolls within a groove 32 of a phonograph record R, performing the operation of reproducing an undulation in a phonograph pick-up which is subsequently reproduced as sound and at the same time wiping a lubricant upon the record groove to prevent or reduce wear without affecting the tone quality. The nozzle B likewise has two claws 25, 27 at its tip. One claw is longer than the other and the claws act as a race for a ball-bearing riding in the groove of the record thus transmitting the vibrations in the record groove to the pick-up. A suitable lubricant in the reservoir, such as "Lubicoid," graphite, rouge, or a combination of lubricants serve to lubricate the

Referring now in greater detail to the drawing,

ball-bearing and also to polish and preserve the record.

Although my invention has been described in considerable detail, such description is intended as being illustrative rather than limiting, since the invention may be variously embodied, and the scope of the invention is to be determined as claimed.

I claim as my invention:

1. A phonograph needle comprising a hollow casing, a threaded stem on the end of said casing, a hollow ball bearing holder threadedly engaged to said threaded stem, a ball bearing contact adapted to ride within the groove of a disc phonograph record, a single pair of spaced narrow claws attached to said holder to hold said ball bearing contact, one of said claws being longer than the other whereby the pick-up effect of the needle will not be affected when the needle is inclined, and a continuous passageway from the hollow casing to said ball bearing contact. 10 15 20

2. The invention of claim 1 embodying a lubri-

cant within said hollow casing and being adapted to be guided through said passageway to said ball bearing.

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