

A. HAYES.
NEEDLE OR STYLUS.
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1,061,070.

Patented May 6, 1913.

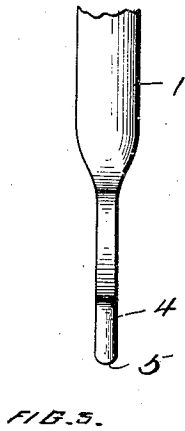


FIG. 5.

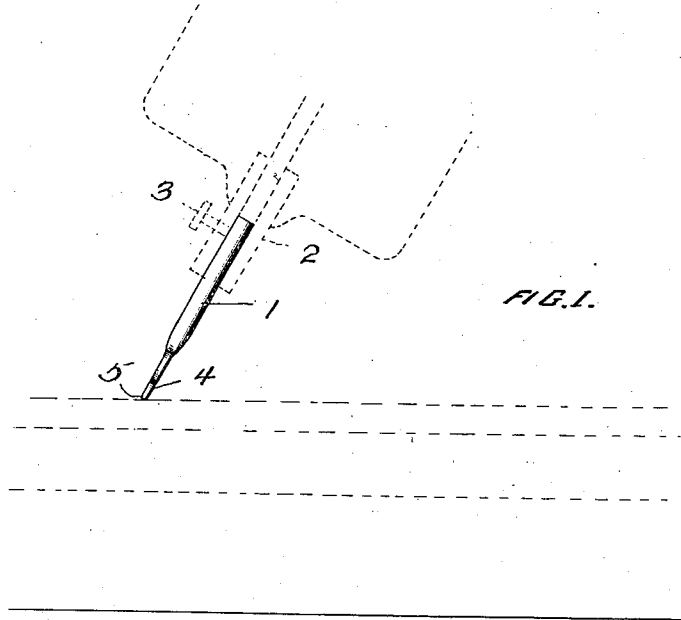


FIG. 1.

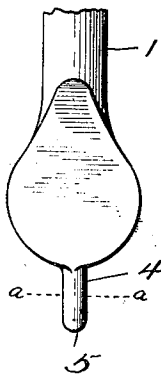


FIG. 2.

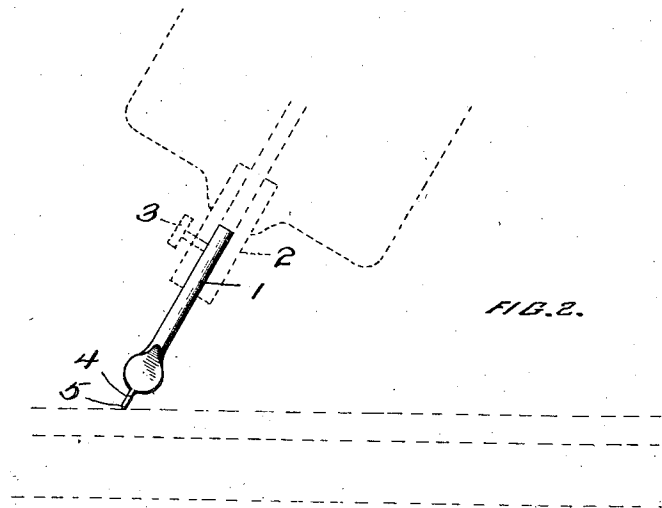


FIG. 3.

WITNESSES:
W. F. Royle
Parker Cook

FIG. 5.



INVENTOR
Albert Hayes,

BY
A. P. Brinkley
ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT HAYES, OF SALT LAKE CITY, UTAH.

NEEDLE OR STYLUS.

1,061,070.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT HAYES, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake, State of Utah, have invented certain new and useful Improvements in Needles or Styli, of which the following is a description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in needles or styli for use in connection with sound boxes of graphophones or gramophones and has for its object to provide a needle or stylus which can be used with the least possible wear either upon the needle itself or upon the record and which can be so shifted as to modify the character of the tone produced as the groove of the record is brought into contact with the end of the needle.

With these objects in view my invention consists in the construction hereinafter described and claimed.

Referring to the drawings, Figure 1 is a side elevation of a needle or stylus embodying my invention, the needle or stylus being turned into position to give a loud or full tone. Fig. 2 is a similar view but showing the needle turned into position to give a soft or subdued tone. Fig. 3 is a detail view of the needle or stylus as shown in Fig. 1, but on an enlarged scale. Fig. 4 is a detail view of the needle or stylus as shown in Fig. 2, but on an enlarged scale, and Fig. 5 is a cross sectional view on line *a-a* of Fig. 4.

In the drawings 1, indicates the shank of the needle which is preferably cylindrical in cross section and is adapted to be received in a holder 2 in which it is secured by set screw 3. The needle has a cylindrical outer end portion 4 adapted to be received in the groove of the record disk or cylinder and to receive and transmit vibrations caused by the irregularities in the sides of the grooves. The extreme end 5 of the end portion 5 is rounded so that it will not cut

or plow into the bottom of the groove of the record disk or cylinder and the end portion is of the same diameter throughout its length from its point to its upper end at which it merges into a flattened portion 6.

The thickness of this flattened portion being preferably substantially the same as the diameter of the cylindrical end portion 4 while the shank 1 is of much greater diameter. When the needle is set in the position in which it is shown in Fig. 1 this flattened portion 6 adds to the rigidity of the needle as regards any lateral movement, but when it is set in the position shown in Fig. 2 this flattened portion being thinner than the shank is resilient and yielding and to a certain extent takes up the vibrations so that they are transmitted to the diaphragm of the sound box less forcibly than when the needle is set as in Fig. 1.

While I am aware that the broad idea of a needle having a flattened portion between its point and its shank is not new I believe that I am the first to use such a flattened portion in connection with a needle having its end portion adapted to be moved laterally by the irregularities of the groove of the record and of the same diameter from its extreme end to the point at which it merges with the flattened portion.

Having thus described my invention what I claim is:

A needle of the character described having a shank of relatively large diameter and an end portion of relatively small diameter and a relatively broad flattened portion between the shank and the end portion, the end portion being blunt at its extreme end, cylindrical throughout its length and extending directly from the lower end of the flattened portion.

This specification signed and witnessed this 8th day of March, A. D. 1913.

ALBERT HAYES.

In the presence of—

A. P. GREELEY,
H. P. HOWARD, Jr.