

J. A. SOLER.  
 GRAPHOPHONE ATTACHMENT.  
 APPLICATION FILED OCT. 24, 1908.

1,001,780.

Patented Aug. 29, 1911.

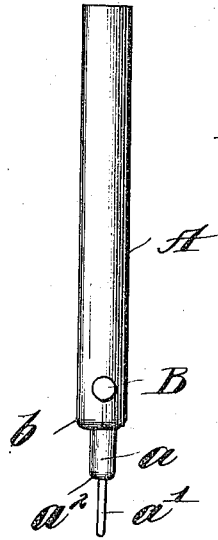


Fig 1.

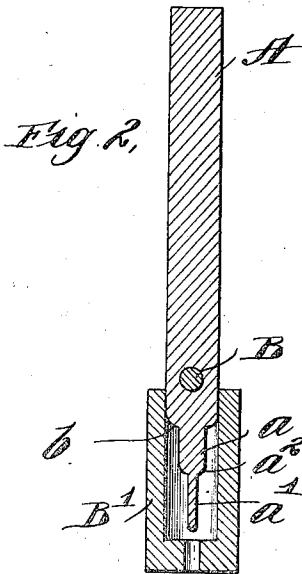


Fig 2.

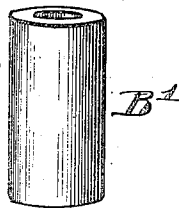


Fig 3.

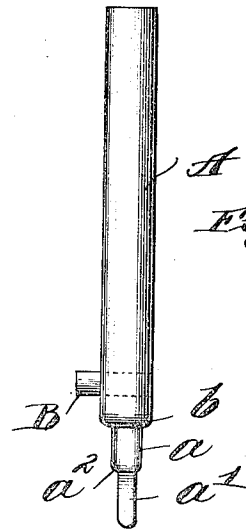


Fig 4.

Witnesses:

W A Paulschmitt

James C. Brown

Inventor:

Joseph A. Soler

By

James C. Brown  
 Atty

# UNITED STATES PATENT OFFICE.

JOSEPH A. SOLER, OF CHICAGO, ILLINOIS.

GRAPHOPHONE ATTACHMENT.

1,001,780.

Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed October 24, 1908. Serial No. 459,308.

To all whom it may concern:

Be it known that I, JOSEPH A. SOLER, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Graphophone Attachments, of which the following, taken in connection with the drawing, is a description.

My invention has for its object the production of a needle designed to be used in graphophones to reproduce the sound from the record.

Heretofore it has been customary to use a needle so constructed that one or two operations thereof dulls the point and it has to be replaced by a new one very frequently, and which, by the frictional contact with the disk over which the needle is moving, wears out the disk in a comparatively short time. This necessitates constantly replenishing the needles and buying new records. By my improved needle these objections are overcome by the use of a needle having a point made of tempered steel, or a jewel and with care can be used on fifty or more records. By tempering the steel and shaping the shank of the needle as shown, it is operated on a record with less friction, thereby greatly prolonging the life of the record, at the same time eliminating the grating and scratching occasioned by the use of the ordinary needle and reproducing the voice or music from the record with a much smoother and sweeter tone than is now possible, with the old style needles.

In the accompanying drawings forming part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated the essential features of my invention, although the same may be carried into effect in other ways without in the least departing from the spirit thereof.

In the drawings in which all of the figures are greatly magnified, Figure 1 is a front elevation of my invention showing the position of the needle in the record; Fig. 2 is a sectional view of the needle with the cap secured thereon; Fig. 3 is a side elevation of the cap; and Fig. 4 is an enlarged side elevation of the needle.

In carrying out my invention A represents the needle shank which may be of a size suitable to fit into the socket of any

machine now on the market. At the lower end of the shank the diameter thereof is made smaller as at *a*, and is then shaped into the needle point *a'*. The needle point *a'* is rectangular in cross section, the front edge thereof being shown in Figs. 1 and 2 and a side view in Fig. 4.

At a suitable place above the narrow edge of the needle point is an indicator or guide B which may be a small projection on the shank or may be a pin secured in an aperture in the shank, the purpose of this indicator being to insure the proper position of the needle when inserted into the socket of the machine. In the construction of the needles the point *a'* is hardened by a tempering process which renders it practically a diamond point and by elongating the point as shown in the drawing the rectangular portion thereof *a'* may be used upon a record until it is worn to the shoulder *a''*, which will require from fifty to seventy five records of the ordinary size.

To protect the point of the needle when not in use I provide a cap B' which is cylindrical in shape, the bore thereof being closed at one end. This cap fits over the needle point and is held by frictional contact into engagement with the shank at the largest diameter thereof just above the shoulder *b*. By placing the cap upon the needle when it is not in use prevents any scratching of the record by accidental displacement and also protects the point of the needle.

The advantages of my invention will be apparent to those skilled in the art.

My improvements are very simple in construction, comprising few parts, can be easily and cheaply manufactured and placed in position, and are effectual in all respects in the performance of their functions.

Slight changes may be made in the details of construction, and in the size, shape and proportions of the parts without departing from the spirit of my invention or limiting its scope, and I therefore do not wish to be limited to the details as here shown, but contemplate such changes in the shape and proportions of the shank as found desirable in order to fit different makes of machines.

I claim:—

A needle of the class described comprising a shank having an elongated point of

tempered steel, shoulders  $b$  and  $a^2$  surrounding said shank, said shank having an opening therethrough extending in the line the needle is to travel, and an adjustable indicator positioned in said opening, substantially as described.

In testimony whereof I have signed this

specification in the presence of the two subscribing witnesses.

JOSEPH A. SOLER.

Witnesses:

JAMES P. CRANE,  
CHARLES I. COBB.