

No. 811,568.

PATENTED FEB. 6, 1906.

G. A. MANWARING.
GRAPHOPHONE REPRODUCER.
APPLICATION FILED JAN. 12, 1904.

Fig. 1.

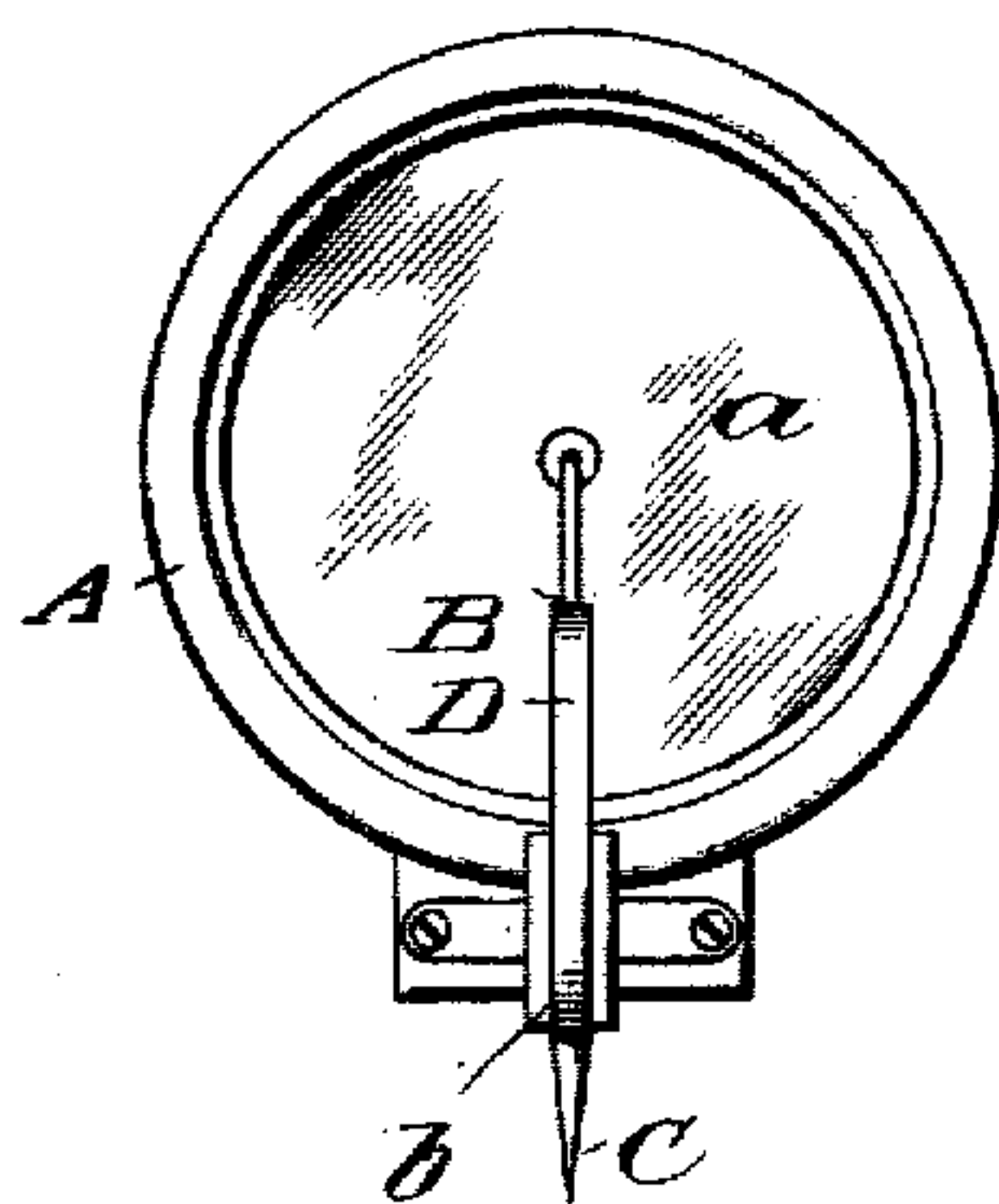


Fig. 2.

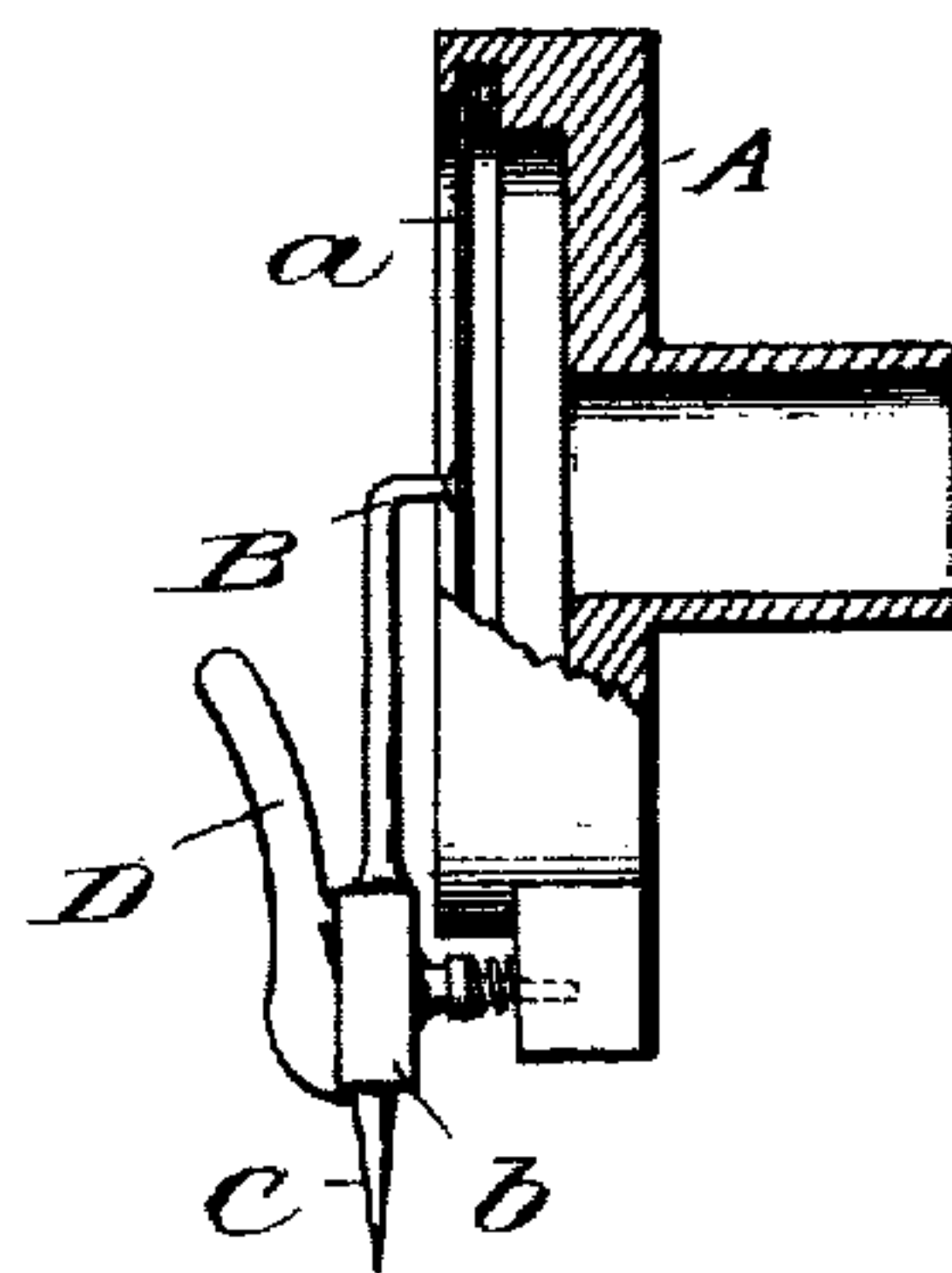


Fig. 3.

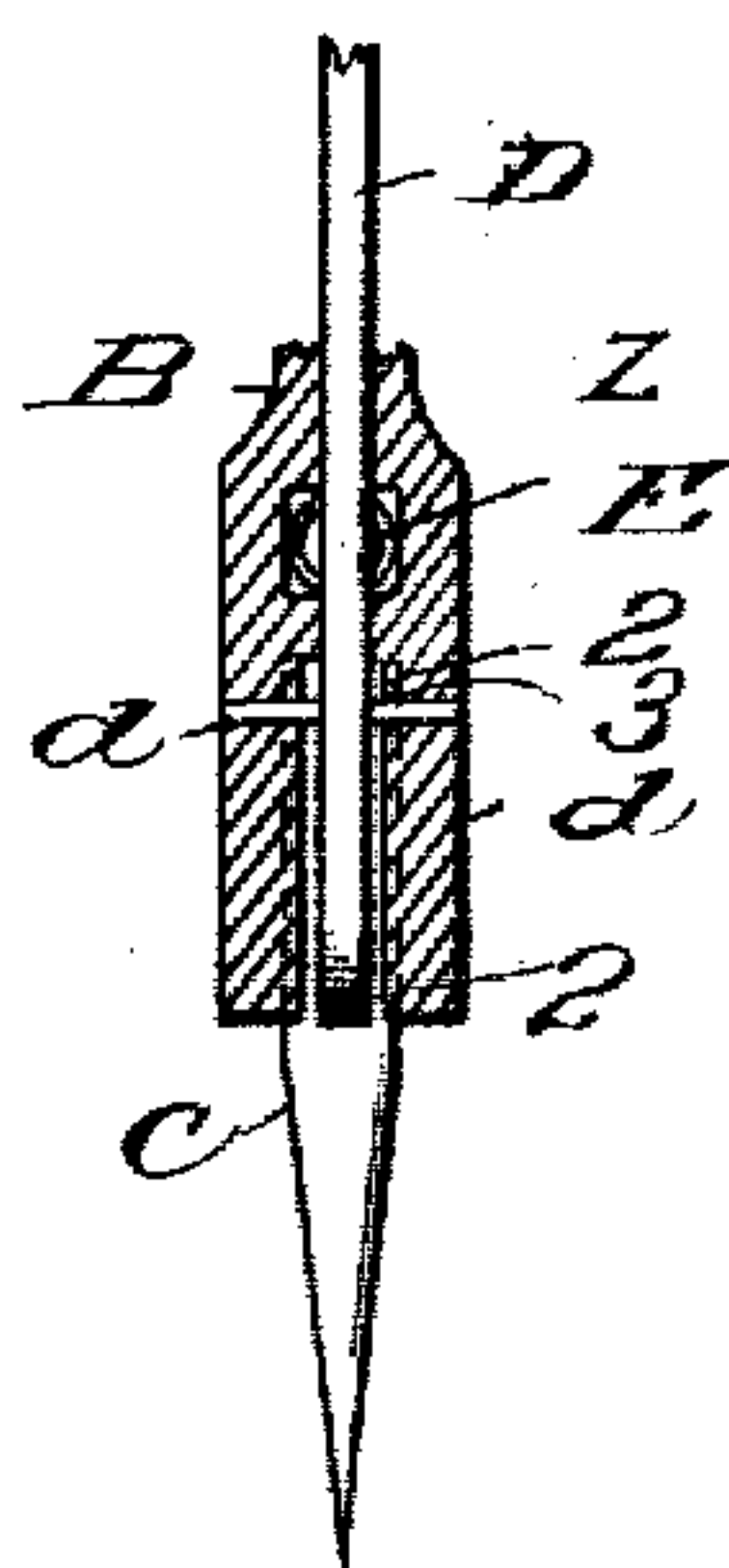
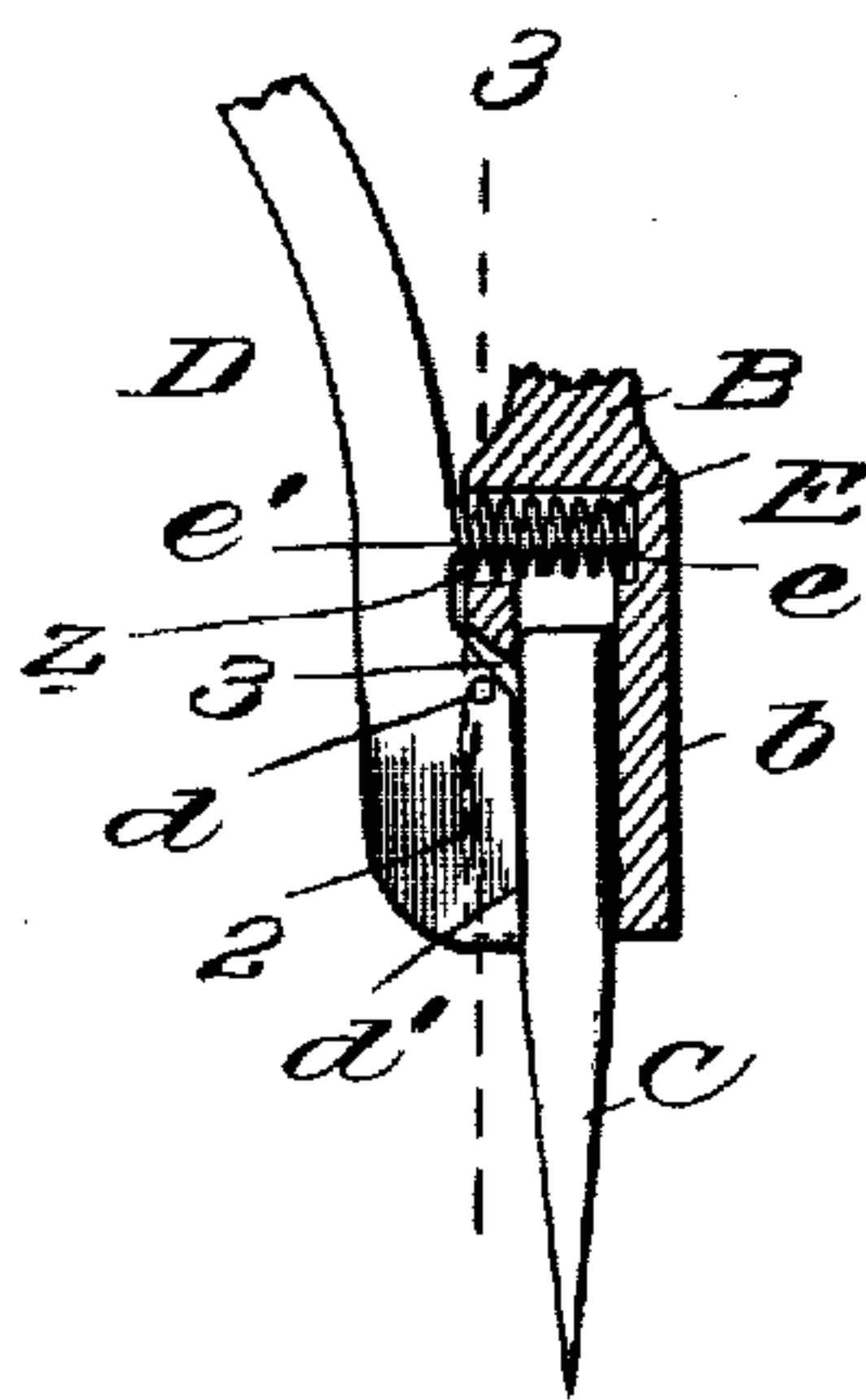


Fig. 4.



Inventor

George A. Manwaring.

Witnesses

Wm B. Perkins
Gustave R. Thompson.

By

Mauro. Cameron, Lewis Massie

Attorneys

UNITED STATES PATENT OFFICE.

GEORGE ABBOTT MANWARING, OF BAYONNE, NEW JERSEY, ASSIGNOR TO
AMERICAN GRAPHOPHONE COMPANY, OF WASHINGTON, DISTRICT OF
COLUMBIA, A CORPORATION OF WEST VIRGINIA.

GRAPHOPHONE-REPRODUCER.

No. 811,568.

Specification of Letters Patent.

Patented Feb. 6, 1906.

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To all whom it may concern:

Be it known that I, GEORGE ABBOTT MANWARING, of Bayonne, county of Hudson, State of New Jersey, have invented a new and useful Graphophone-Reproducer, which invention is fully set forth in the following specification.

My invention relates to means for securing in place the needle of a reproducer, and its purpose is to permit the needle to be readily inserted in place and to expedite the substitution of a fresh needle for an old one. At the present time these needles are held in the needle-receiving barrel by a set-screw, and to put in a fresh needle the screw has to be turned several revolutions, and then after the old needle is removed and the new needle put in place the screw has to be turned back several revolutions, all of which calls for considerable time and trouble. By means of my present invention most of this is avoided. The use of a split spring-socket for holding the needle has also been proposed; but no means (such as a lever) have been provided for releasing the pressure upon the needle to permit ready removal of the same and substitution of a fresh needle.

My invention will best be understood by reference to the accompanying drawings, showing the preferred embodiment thereof, in which—

Figure 1 is a face view, and Fig. 2 is a side view, partly broken away, of a reproducer equipped with my novel means for holding the needle in place. Fig. 3 is a sectional view through the barrel of the stylus-bar on line 3, Fig. 4, the stylus-clamping lever being shown in elevation. Fig. 4 is a longitudinal sectional view at right angles to Fig. 3.

A is a reproducer, and B is a stylus-bar attached thereto and secured at one end to the diaphragm *a*, while at its outer end is the usual barrel *b* for receiving the needle, all of which is as usual. Instead of securing the needle C in place by a set-screw, as heretofore, I make use of the following construction. The longitudinal slot 2 in the side of the barrel communicates with the central bore thereof, and a transverse seat 3 is made, as indicated. In this slot 2 is pivoted, as at *d*, a lever D, whose lower end enters the slot 2 and is held against the needle C by a spring E, that is seated in the transverse opening or re-

cess *z* through the side wall of the barrel and opening into the central bore of the barrel at its closed upper or inner end. The coiled spring E rests at its inner end against a seat *e* and at its other or outer end encircles a projection *e'* on the lever D above its pivot *d*. At its clamping end the lever has an elongated straight gripping surface or face *d'*, making extended contact with the straight side of the needle, thereby rigidly holding the latter in its socket and avoiding relative movement of the parts, which would prevent accurate and faithful operation of the parts when actuated by a sound-record groove to transmit vibrations to the diaphragm. Above the pivot *d* the lever D is in the form of a handle or projection suitable for manually depressing the lever on its pivot against the tension of spring E.

The mode of operation is obvious. Push the handle of lever D toward the reproducer, (to the left in Figs. 2 and 4,) insert the needle, and release the handle, whereupon the needle will be securely held in place. To put in a fresh needle, press the handle as before and let the old needle drop out, whereupon a new needle may be readily inserted.

Having thus described my invention, I claim—

1. In a reproducer, the combination of a needle-receiving barrel having an axial bore and having also a longitudinal slot communicating with said bore for substantially the full length of the latter, and a spring-pressed lever pivoted in the upper end of said slot and having its lower face located entirely within said slot, whereby said face may present an extended bearing-surface against the side of an unnotched needle, the upper end of said lever being extended to provide a thumb-piece.

2. In a reproducer, a diaphragm, a stylus-bar connected therewith, a needle barrel or socket at one end of the stylus-bar, a hand-operable clamping-lever pivoted to the barrel and having an elongated gripping-surface extending longitudinally of the barrel and adapted to make extended engagement with the surface of a needle when in place in the barrel, and a spring acting on the lever to normally press its gripping-surface into clamping engagement with the needle.

3. In a reproducer, a diaphragm, a stylus-

bar connected therewith, a needle barrel or
socket at the outer end of the stylus-bar, a
hand-operable clamping-lever pivoted to the
barrel and extending longitudinally with re-
5 lation thereto, said lever having on one side
of its pivot toward the open end of the barrel
a gripping-face adapted to engage the sur-
face of a needle in the barrel through a slot
or opening in the wall of said barrel, and a
10 coiled spring housed in a transverse recess or
chamber opening at one side of the barrel
said spring pressing at its outer end against

the lever on the other side of its pivot thereby
normally forcing the gripping-surface of said
lever into clamping engagement with the 15
needle.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

GEORGE ABBOTT MANWARING.

Witnesses:

C. A. L. MASSIE,
RALPH LANE SCOTT.