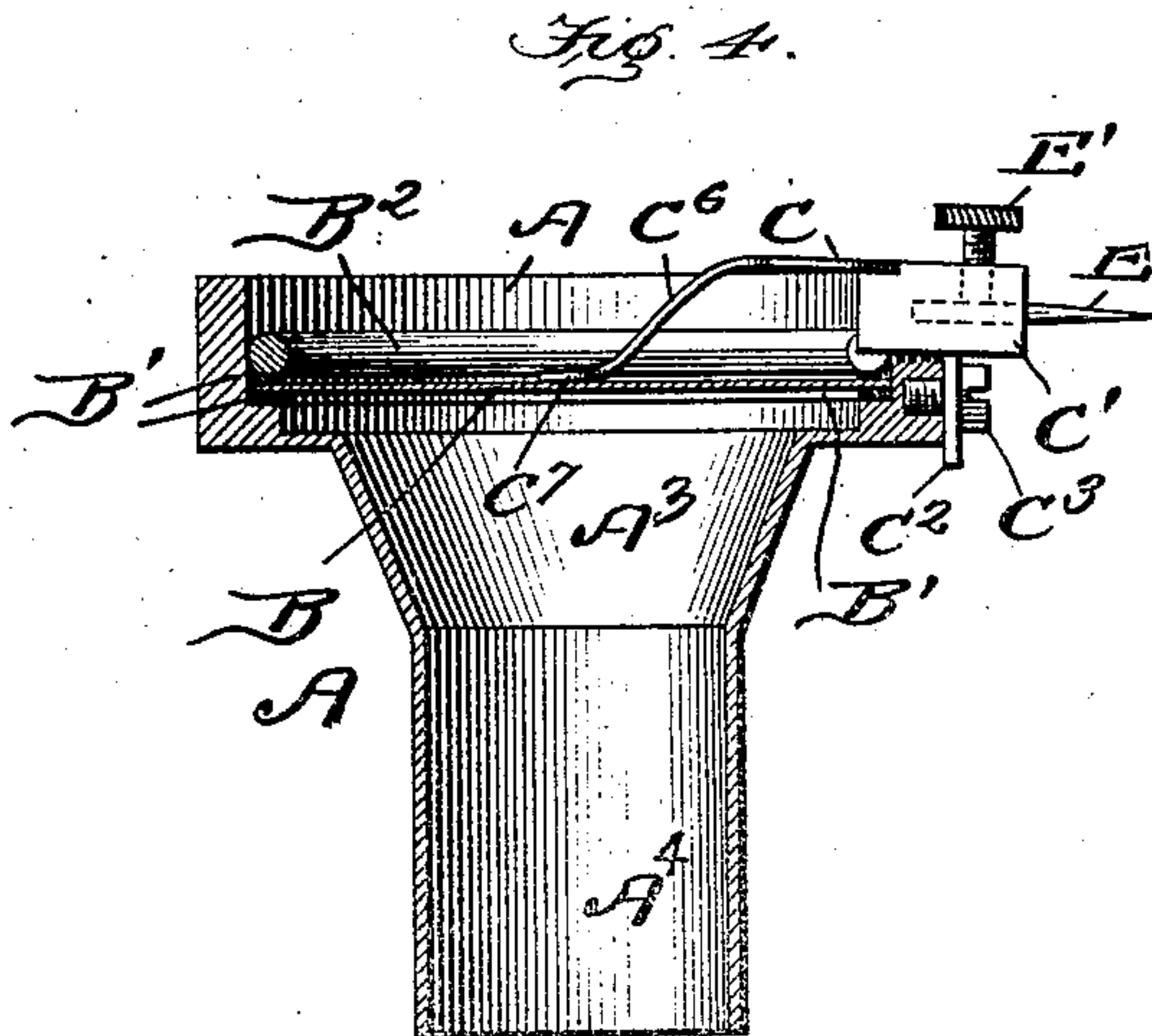
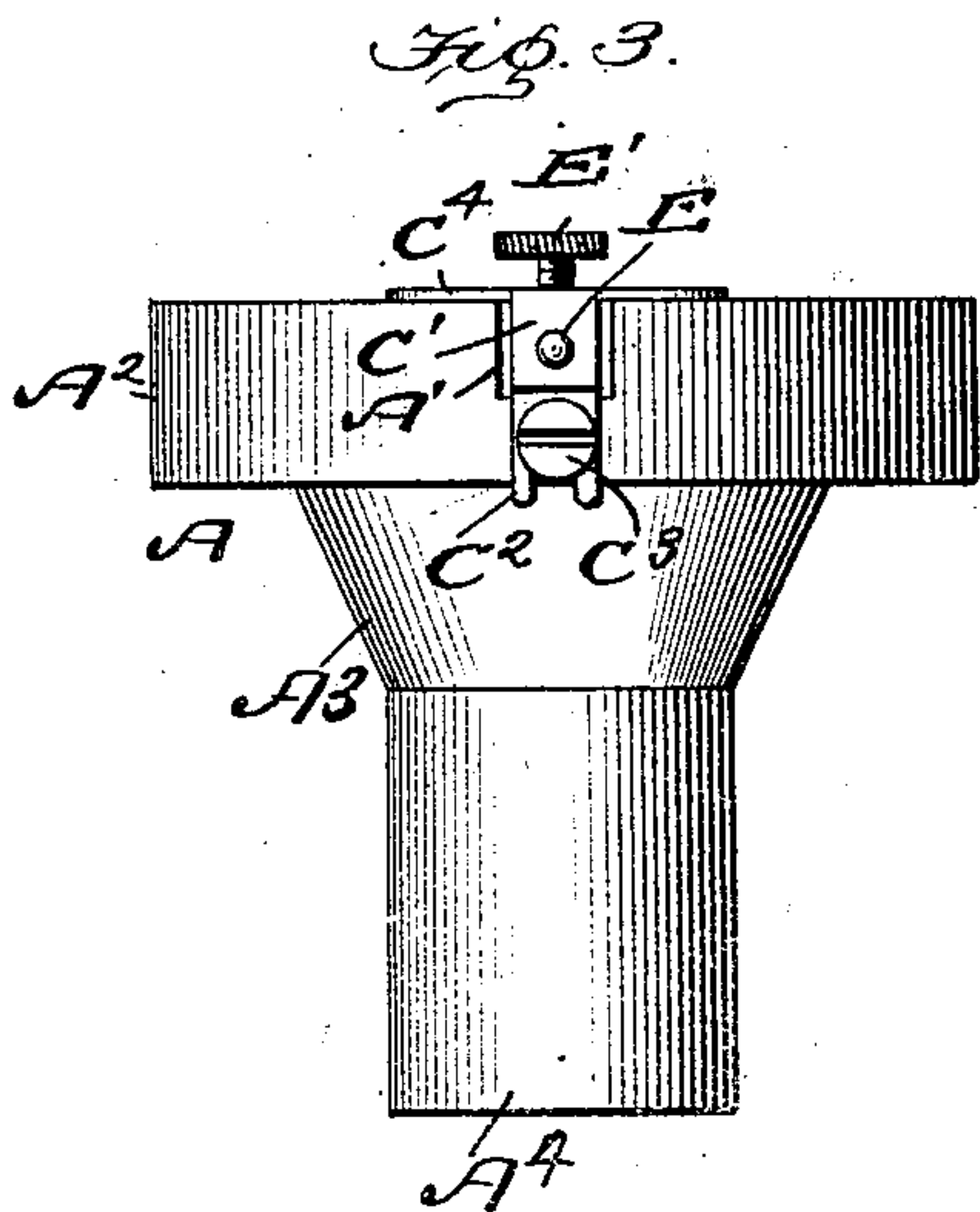
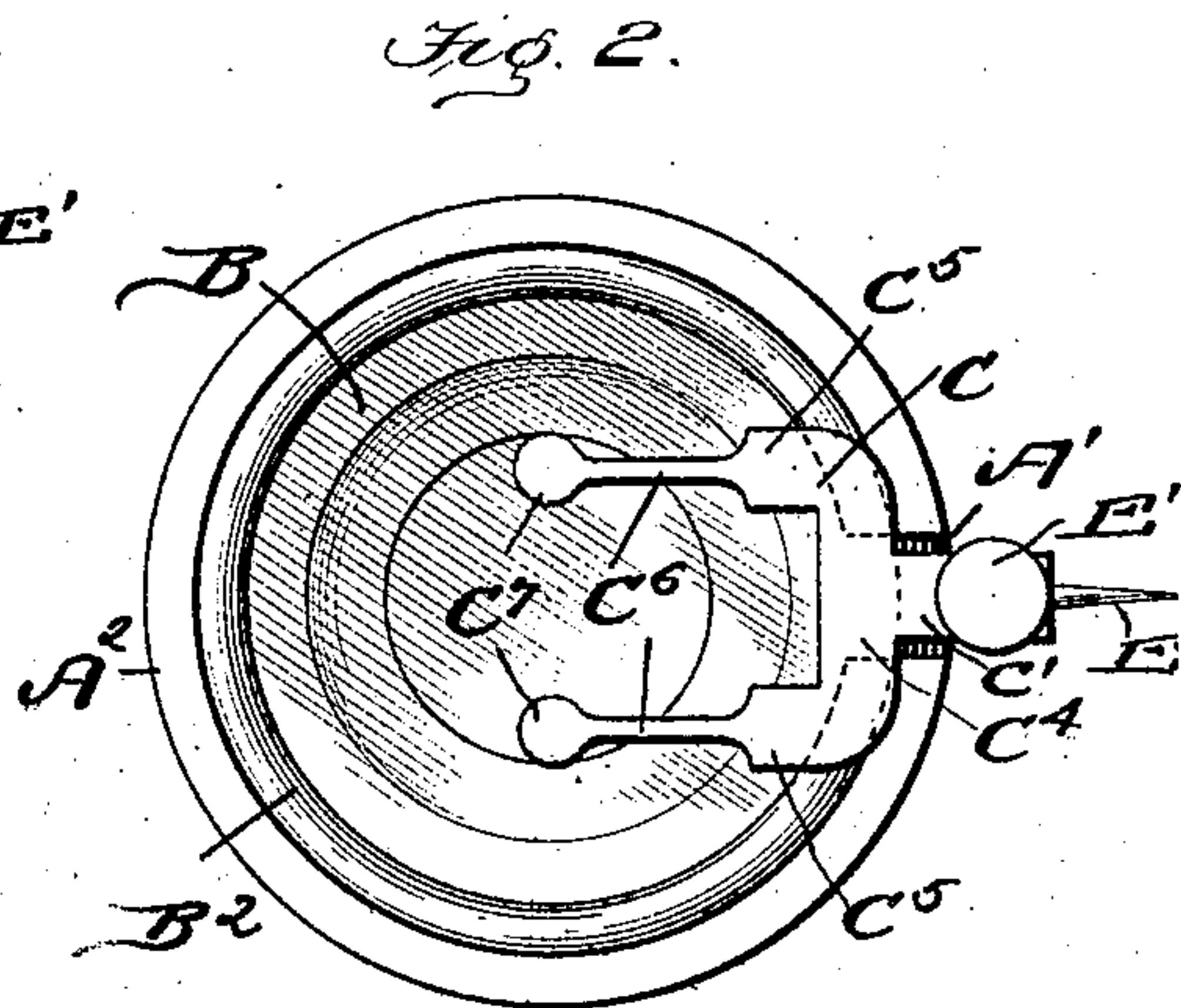
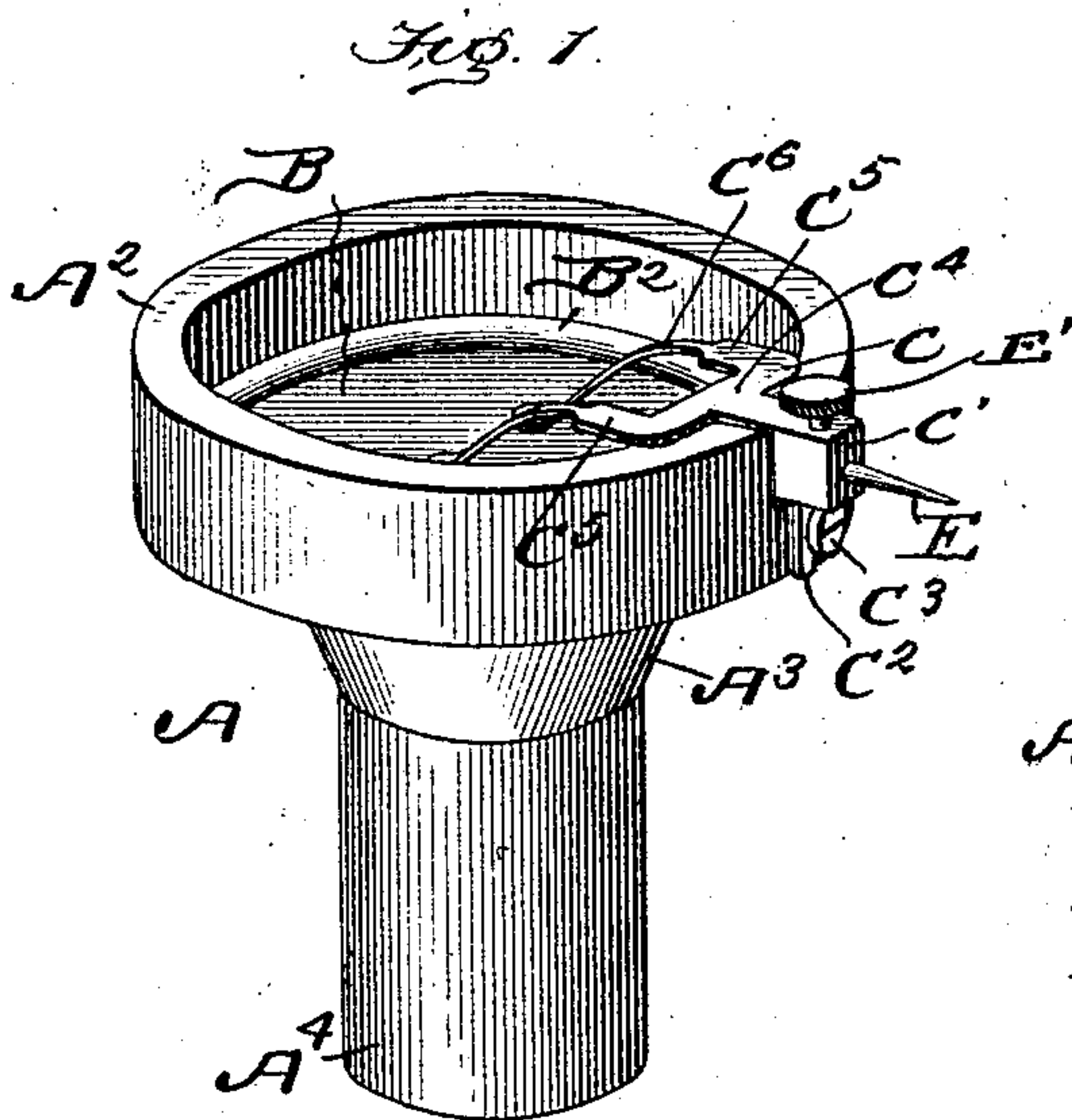


No. 860,604.

PATENTED JULY 16, 1907.

J. F. MURRAY.
GRAPHOPHONE SOUND BOX.

APPLICATION FILED FEB. 15, 1904. RENEWED JUNE 24, 1907.



Inventor

John F. Murray.

Witnesses

W. D. Plouffe,
Clarence Shaw

By

Wm. A. Brock
Attorney

UNITED STATES PATENT OFFICE.

JOHN F. MURRAY, OF LINDSEY, OHIO.

GRAPHOPHONE SOUND-BOX.

No. 860,604.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed February 15, 1904, Serial No. 193,604. Renewed June 24, 1907. Serial No. 380,645.

To all whom it may concern:

Be it known that I, JOHN F. MURRAY, a citizen of the United States, residing at Lindsey, in the county of Sandusky and the State of Ohio, have invented a new and useful Improvement in Graphophone Sound-Boxes, of which the following is a specification.

My invention relates to a reproducer or sound box having a peculiar shape, and having a double armed stylus lever, and needle adapted for use with the hard disk records.

The object of the invention is to obtain a clear, distinct and natural tone.

My invention consists of the novel features of construction and combination of parts hereinafter shown and described, particularly pointed out in the claim, and shown in the accompanying drawings, in which,

Figure 1 is a perspective view of my improved attachment. Fig. 2 is a plan view. Fig. 3 is a side elevation. Fig. 4 is a vertical or longitudinal section.

In constructing my improvement I employ a metal reproducer or sound box A having a mica diaphragm B and the stylus lever C. An interior annular shoulder is formed in the sound box which is cylindrical in form and this shoulder supports the mica disk B between two rubber packing rings B', which are held in place by a split ring B². I am aware that this construction of diaphragm is old and do not claim same. The periphery or rim of the reproducer is cut away as shown at A' on one side and in this cut out portion is arranged a metal block C' from the upper inner edge of which extends the stylus lever C. This block has a depending portion C² vertically slotted and through the slot works a set screw C³ by means of which the block is held to the rim of the sound box A; and the slot permits the adjustment of the block vertically, with respect to the sound box thereby regulating the pressure with which the arms of the stylus lever bears on the diaphragm B. The stylus lever may be integral with or welded to the block, or otherwise secured and consists of laterally extending arms projecting to each side of the block and at right angles to same, as shown at C⁴, the arms are then bent forward as shown at C⁵, and have a reduced portion C⁶ which is curved downward to the diaphragm. the lower ends of the curved portions being formed with circular shoes bent parallel to the diaphragm and se-

cured to same by means of a small amount of wax. These shoes C⁷ rest on the diaphragm slightly to one side of the center of the diaphragm, the shoes being arranged on opposite sides of the center of the said diaphragm.

The sound box A consists of the cylindrical ring-like portion A² in which is held the diaphragm B, and this ring portion is connected to the cylindrical, tubular portion A⁴ by the truncated conical portion A³, this intermediate cone-shaped portion forming a reservoir into which the sound waves produced by the vibrations of the diaphragm are collected and from which they pass into the contracted or tubular portion A⁴. It will be noted from Fig. 2 that the distance between the shoes C⁷ is equal to the diameter of the tubular portion A⁴ less the diameter of the shoes. A socket is formed in the outer end of the block C' in which is placed the usual steel needle E held in place by a set screw E' in the usual manner.

It will be noted that while the arms of the stylus lever rest upon the diaphragm upon opposite sides of the center of the diaphragm and therefore contacts with it at two different points yet both points or shoes of the stylus lever are connected and integral with a common arm C⁴ arranged as previously stated at right angles to the block and both shoes receive uniform impulses and produce synchronous vibrations. The conical shaped reservoir C³ collects and passes these vibrations into the tubular portion and a stronger and more natural tone is produced than by the usual construction.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is,

In a device of the kind described, the combination with a sound box provided with a cut out portion in the rim, of a block arranged in said cut out portion, a vertically forked depending portion extending from the bottom of said block, a set screw on the periphery of said rim for engaging the fork, a diaphragm within the sound box, a U-shaped arm extending from the block above said diaphragm downwardly curved portions upon the ends of the U-shaped block, said curved portions terminating in flat shoes adapted to rest upon the diaphragm, for the purpose described.

JNO. F. MURRAY.

Witnesses:

C. G. BOWERS,
I. N. OVERMYER.