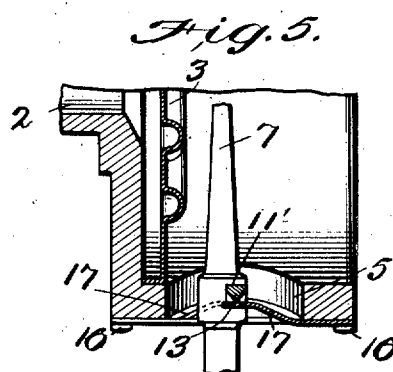
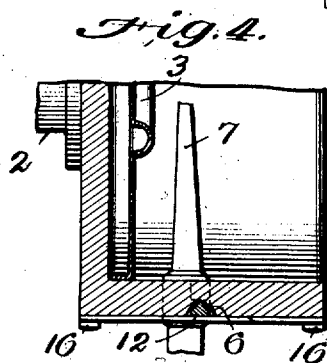
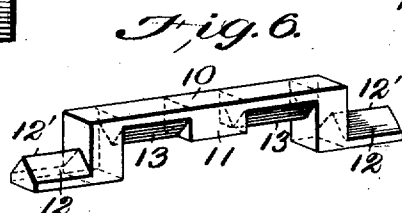
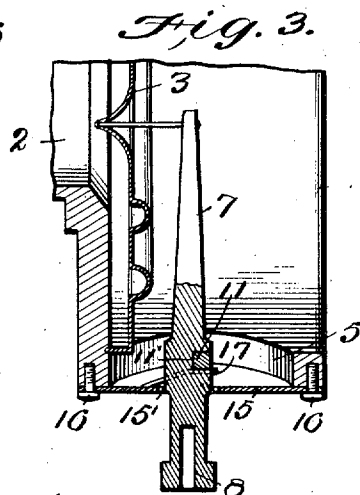
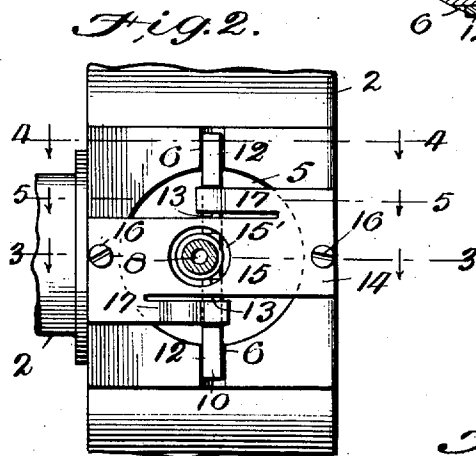
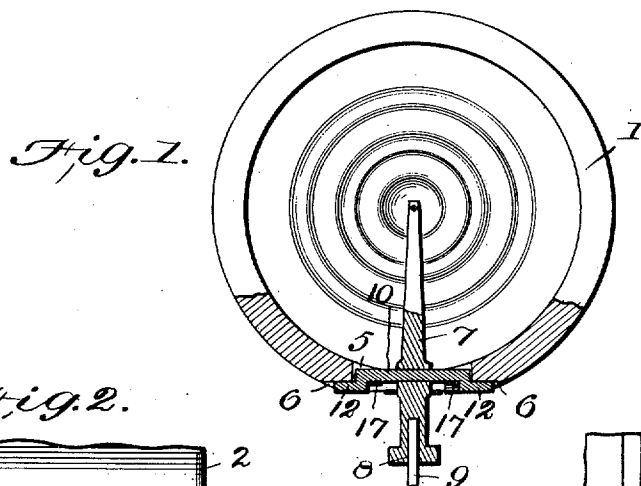


J. C. ENGLISH.
SOUND BOX FOR SOUND RECORDING AND REPRODUCING MACHINES.
APPLICATION FILED MAY 31, 1908.

940,796.

Patented Nov. 23, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN C. ENGLISH, OF CAMDEN, NEW JERSEY, ASSIGNOR TO VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

SOUND-BOX FOR SOUND RECORDING AND REPRODUCING MACHINES.

940,796.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed May 31, 1906. Serial No. 819,426.

To all whom it may concern:

Be it known that I, JOHN C. ENGLISH, a citizen of the United States, and a resident of the city of Camden, State of New Jersey, have invented certain new and useful Improvements in Sound-Boxes for Sound Recording and Reproducing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in sound boxes; and the objects of my invention are, to provide a simple and durable mounting for a stylus bar by which the bar will be held yieldingly in place to oscillate without restraint upon a fixed axis; and to provide other improvements as will appear hereinafter.

In the drawings, Figure 1 is an elevational view, partly in section, showing the stylus bar mounted upon the sound box casing in accordance with my invention; Fig. 2 is a bottom plan view of the same, part of the stylus bar being removed to show the mounting for the stylus bar; Fig. 3 is a vertical longitudinal section on the line 3—3 of Fig. 2; Fig. 4 is a vertical longitudinal section on the line 4—4 of Fig. 2; Fig. 5 is a corresponding section on the line 5—5 of Fig. 2 and Fig. 6 is a perspective view of the support upon which the stylus bar is mounted.

The sound box casing 1, may be of the usual opened end construction having an orifice 2 in the rear end thereof to which the sound conveying tube may be connected in any suitable manner. The diaphragm 3 may also be of any well known type, but I prefer to employ one in which the peripheral portions are turned at right angles to the face of the diaphragm to form a cylindrical flange 4 by which the whole diaphragm is stiffened and by which it is secured within the sound box, either by cement or by its contact with the walls of the casing.

Through one of the sides of the casing is provided an opening 5, which may be of any suitable shape and of a size to permit the insertion of the stylus bar therethrough and on opposite sides of the said opening I provide grooves 6 of any suitable cross section, and arranged in a plane parallel to the plane of the diaphragm.

Attached at its inner end to the diaphragm and passing through the opening 5 in the casing of the sound box, is the stylus bar 7, the lower end of said stylus bar being provided with the usual socket 8 in which the needle 9 may be secured in any well known manner.

The stylus bar 7 is mounted on a stylus supporting bar 10, which in this instance is formed of a square rod bent into substantially a U-shape, as shown in Fig. 6. The middle of this stylus supporting bar 10 is left square as at 11, and is tightly fitted within a notch 11' cut in the side of the stylus bar. The stylus bar support may be retained in said notch either by being braced therein, or by a pin, as desired. The outer ends 12 of the stylus bar support are provided with knife edges 12' adapted to be seated in the grooves or bearings 6 in the sound box casing, and on either side of the square portion 11 of the stylus bar support I provide reversed knife edges 13 which are in alinement with the knife edges 12'. While I have shown the stylus bar support as made of a rod square in cross section, the said support may be made of any desired section, so long as it can be rigidly secured to the stylus bar, and can be provided with a surface which when engaged by the spring, or other yielding means, will be held within its bearings without offering any resistance to the free oscillation of the stylus bar.

Secured to the sound box casing 1 is a spring 14, the object of which is to yieldingly hold the knife edges 12' within the grooves 6 of the sound box casing. The form of spring which I have especially adapted for this purpose consists of a strip or plate of thin spring metal secured at opposite ends to the sound box casing by screws 15—16. On opposite sides of said body portion 15, and extending lengthwise of the body portion in opposite directions and inwardly, are leaf springs 17—17', the free ends of which are bent upwardly as shown in Fig. 5, to engage the knife edges 13—13' of the stylus bar support, the springs extending transversely of the knife edges. The main or body portion of the spring 15 is provided with a suitable aperture 15' through which the stylus bar passes. Instead of the leaf spring for holding the stylus bar within its bearings, any other form

of spring which will perform the same functions may be used without departing from the spirit of my invention.

In a sound box constructed and assembled in the manner above set forth the springs 17—17 act upon the stylus bar support on a knife edge which is in alinement with the knife edges upon which the stylus bar oscillates. As the stylus oscillates, there is no relative motion between the stylus bar support and the springs 17—17, which hold the stylus bar support within its bearings; that is to say, the function of the spring is merely to hold the stylus bar support in position on the sound box without applying any tension to the stylus bar or offering any resistance to the tendency of the same to freely oscillate upon its bearings in response to the vibrations transmitted through the same.

While I have in the above specification described in detail one embodiment of my invention, changes in details and arrangement of the various parts may be made without departing from the spirit and scope of my invention as pointed out in the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:—

1. In a sound box, the combination with a stylus bar provided with a knife edge, of a mounting for said stylus bar, and a spring arm extending transversely of and bearing against said knife edge to hold said bar upon its mounting.

2. In a sound box, the combination with a casing having an aperture in one side thereof, of a stylus bar extending through

said aperture and journaled upon the outside of said casing, and an apertured plate secured to the outside of said casing and surrounding said bar to hold said bar yieldingly in position, said plate being provided with a spring arm integral therewith and bearing against a knife edge provided therefor on said bar, and extending transversely of said knife edge.

3. In a sound box, the combination with a stylus bar, of a mounting therefor and an apertured plate surrounding said bar, said plate being provided with oppositely extending spring arms integral therewith and extending transversely of and contacting with knife edges provided on said stylus bar to hold said bar upon its mounting.

4. In a sound box, the combination with a casing provided with an aperture in one side thereof, of a stylus bar extending through said aperture, trunnions carried by said bar and mounted to oscillate in grooves provided therefor in the surface of the sound box casing, and a spring plate provided with an aperture through which said bar extends, said plate being secured to said casing and being provided with spring arms integral therewith and bearing against and extending transversely of knife edges provided therefor upon said trunnions to hold said bar yieldingly in position.

In witness whereof I have hereunto set my hand this 28th day of May, A. D. 1906.

JOHN C. ENGLISH.

Witnesses:

ALEXANDER PARK,
ALSTON B. MOULTON.

It is hereby certified that in Letters Patent No. 940,796, granted November 23, 1909, upon the application of John C. English, of Camden, New Jersey, for an improvement in "Sound-Boxes for Sound Recording and Reproducing Machines," an error appears in the printed specification requiring correction as follows: Page 1, line 70, the word "braced" should read *brazed*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of December, A. D., 1909.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.