A. FISCHER.

SOUND BOX FOR TALKING MACHINES.

APPLICATION FILED OCT. 18, 1909.

1,013,145. Patented Jan. 2, 1912.

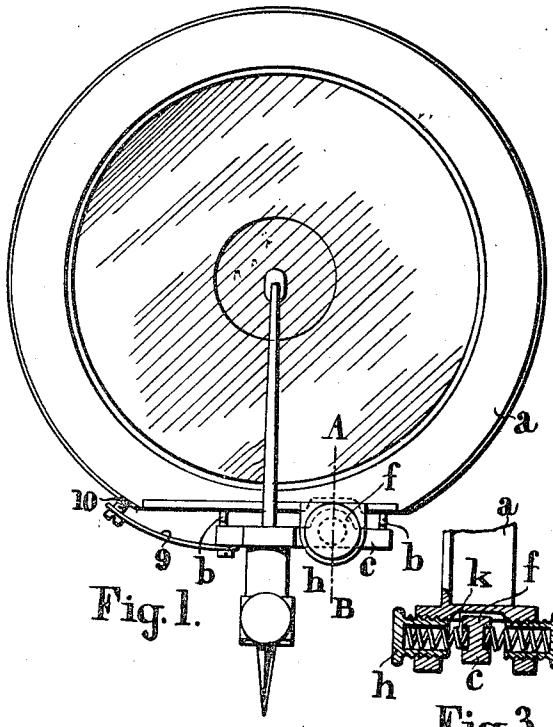

Fig. 1.

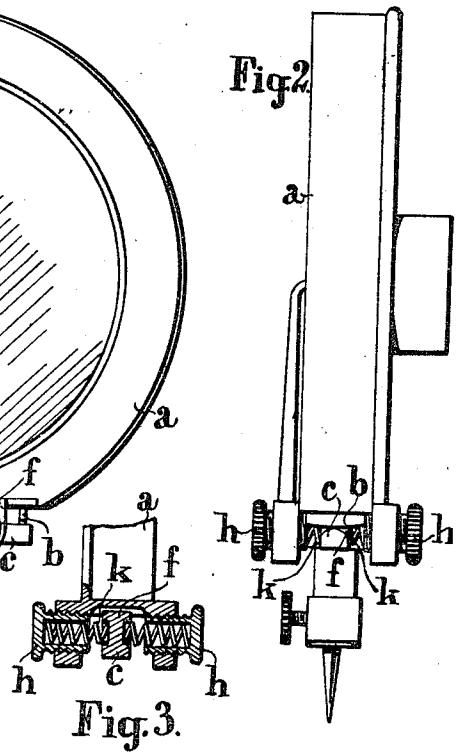

Fig. 2.

Fig. 3.

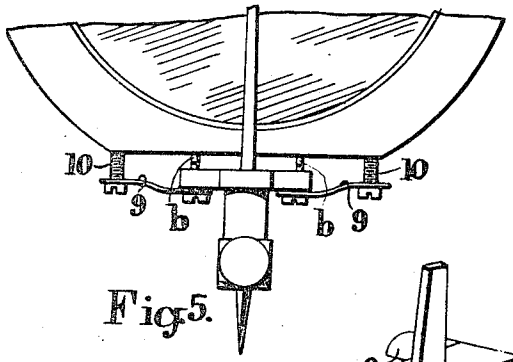

Fig. 5.

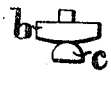

Fig. 6.

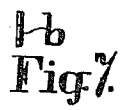

Fig. 7.

Fig. 8.

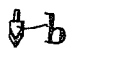

Fig. 9.

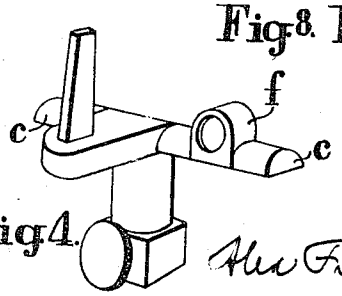

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ALEX FISCHER, OF KENSINGTON, LONDON, ENGLAND.

SOUND-BOX FOR TALKING-MACHINES.

1,013,145. Specification of Letters Patent. Patented Jan. 2, 1912.

Application filed October 18, 1909. Serial No. 523,243.

To all whom it may concern:

Be it known that I, ALEX FISCHER, a subject of the King of England, residing at 8 Maclise road, Kensington, in the county of London, England, have invented certain new and useful Improvements in the Construction of Sound-Boxes for Talking-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sound boxes for talking and like machines and has for its object to improve the connections between the stylus bar and sound box disclosed in my Patent #904,523, November 24, 1908.

To these ends the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like letters refer to like parts in all the views:—Figure 1 is an elevational view of a sound box made in accordance with my invention; Fig. 2 is a side view of the same; Fig. 3 is a sectional detail view of certain parts; Fig. 4 is a perspective view of the spindle and connecting parts; Fig. 5 is a view of a modified form of the invention; and Figs. 6, 7, 8, and 9 are views of the bearings for the spindle.

a is the shell of the sound box provided with convex bearing surfaces formed of thin plates or blocks *b*. It will be observed from the various figures that these bearing surfaces *b* are convex instead of concave as in my patent above, and form parts of a circle, the radius of which is equal to the vertical distance between the point of connection of the stylus bar with the diaphragm and the surface of the spindle nearest thereto.

c is the spindle which may be circular, partly circular, rectangular or of any other convenient shape in cross section.

k shows the spiral controlling springs, *h* shows hollow nuts and *f* shows a small arm. The arm *f* projects inwardly from the spindle toward the sound box, and the spiral controlling springs *k* are above the axis of the spindle as shown at Figs. 1 to 4. The shell of the sound box may be hollowed out to accommodate the small arm *f*, see Fig. 3.

To render the mounting of the end of the spindle *c*, which is farther from the springs *k*, more efficient, I fix to the underside thereof, that is the side opposite the bearing side, one end of a flat spring 9 the other end of which is provided with a slot through which a screw 10 fixed to the casing of the sound box passes.

Referring now to the form shown in Fig. 5, which is intended more especially for the construction of a cheaper sound box than that already described, in this case the springs *k*, hollow nuts *h* and brackets *g* shown in my patent before mentioned are dispensed with and in their place a second flat spring 9 is attached at the side of the spindle opposite the bearing surfaces and at the opposite end to the first spring 9.

Referring to the details shown at Figs. 6 to 9, Fig. 6 shows a convex bearing with a partly circular spindle end resting thereon. Fig. 8 shows a convex bearing with the spindle end rectangular in cross section resting thereon. Figs. 7 and 9 show two forms of bearing surfaces, which may be formed of thin metal plates, as will be seen from Fig. 7, or thicker plates with beveled edges, as shown in Fig. 9, so as to reduce the bearing surface to a desired suitable size.

Although I have explained my invention as applied to a sound box such as that described and shown in the specification of my former aforesaid Letters Patent, I wish it to be understood that I do not intend to confine the application of the herein specified improvements to such sound boxes, only, but I desire it to be understood that I may employ convex bearing surfaces with spindle ends circular, partly circular, rectangular or of other suitable shape in cross section also with sound boxes of other construction.

By the construction shown the spindle *c* has both a rocking movement on the curved bearings *b* and also a pendulous-like swinging movement thereon which enables the needle to follow the record accurately and respond thereto with great delicacy so that the finest shades of tone may be reproduced by the diaphragm.

What I claim and desire to secure by Letters Patent of the United States of America, is:—

1. In a sound box for talking machines,

the combination with a casing and its diaphragm of a stylus bar attached to the diaphragm, a spindle carried by the stylus bar, and a pair of convex guide bearings for the spindle on the casing each having a bearing surface curved in the arc of a circle whose radius is approximately equal to the distance between the point of connection of the stylus bar with the diaphragm and the surface of the spindle nearest thereto, whereby the spindle has both a rocking movement on said bearings and also a pendulous swinging movement thereon.

2. In a sound box for talking machines, the combination with a casing and its diaphragm of a stylus bar attached to the diaphragm, a spindle carried by the stylus bar, a pair of convex guide bearings for the spindle on the casing each having a bearing surface curved in the arc of a circle whose radius is approximately equal to the distance between the point of connection of the stylus bar with the diaphragm and the surface of the spindle nearest thereto, and adjustable yielding devices pressing said spindle against its bearings.

3. In a sound box for talking machines, the combination with a casing and its diaphragm of a stylus bar attached to the diaphragm, a spindle carried by the stylus bar, a pair of convex guide bearings for the spindle on the casing each having a bearing surface curved in the arc of a circle whose radius is approximately equal to the distance between the point of connection of the stylus bar with the diaphragm and the surface of the spindle nearest thereto, an arm projecting inwardly from the spindle toward the casing, and yielding devices carried by the casing pressing on opposite sides of said arm.

In testimony whereof, I affix my signature, in presence of two witnesses.

ALEX FISCHER.

Witnesses:
A. E. VIDAL,
L. SIMMONDS.