A. FISCHER.

TALKING MACHINE SOUND BOX.

APPLICATION FILED JAN. 17, 1910.

1,013,146. Patented Jan. 2, 1912.

Fig. 1.

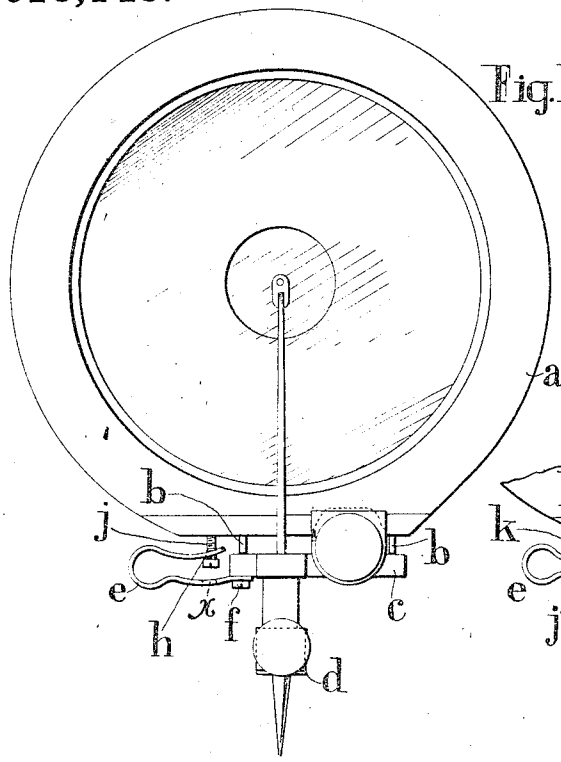


Fig. 2.

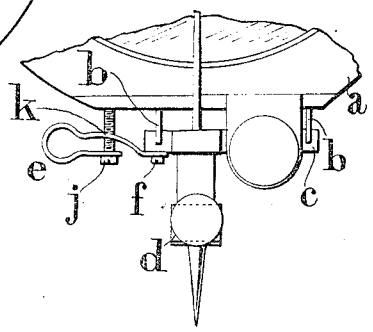


Fig. 3.

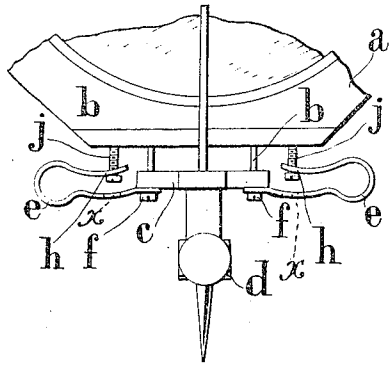
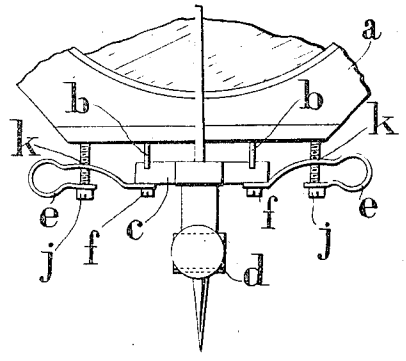


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TALKING-MACHINE SOUND-BOX.

1,013,146. Specification of Letters Patent. Patented Jan. 2, 1912.

Application filed January 17, 1910. Serial No. 538,496.

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, West Kensington, in the county of London, England, have invented certain new and useful Improvements Relating to Talking-Machine Sound-Boxes; 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 talking machine sound boxes and refers to an arrangement by means of which an extremely sensitive springing of the stylus bar and its associated parts may be effected.

The improvement is applicable to any sound box which has a rocking plate, a spindle or the like in connection with the stylus holder, and the essential principle of the invention is to so adapt a spring or springs in connection with the said rocking plate, spindle or the like that such spring or springs keep the rocking plate, spindle or the like pressed upon its seating, without a tendency to tilt the plate or spindle upon such seating.

According to one way of carrying out my invention, I employ a flat spring, one end of which, is doubled back over itself, the other end being preferably screwed to the rocking plate or the like. The spring toward the bent over end is slotted in two places, and an adjustable screw is passed through the slots into the shell of the sound box, or into lugs or the like formed on the sound box shell. Other devices engaging the bent over end of the spring may also be employed.

According to another way of carrying out my invention, I double back a flat spring under itself, and in place of passing a screw through a slot in one bend of the spring and again through the spring and into the shell of the sound box or into a lug attached thereto, I pass a screw or the like through the bent under end of the spring not connected to the rocking plate or the like, thus attaching this end of the spring directly to the sound box or to a lug attached thereto, such attachment being fixed or movable by means of a slot in the end of the spring as may be desired; a hole may be made in the bend of the spring coming over the end thus attached in order to facilitate the fixing and adjustment of the screw.

The invention may be applied to sound boxes generally, but is especially suitable for application to a sound box of the type for which I obtained Letters Patent No. 904523. And in order that my said invention may be better understood, I will now proceed to describe the same with reference to the drawing accompanying this specification, in which—

Figure 1, is a plan view of one form of the invention; Fig. 2, is a like view of a slightly modified form of the invention; Fig. 3, is a view similar to Fig. 1, but employing two springs; and, Fig. 4, is a view similar to Fig. 2, but also employing two springs.

Referring to the drawings:—*a* represents the shell of the sound box.

b are guide bearings.

c is a spindle to which is attached a stylus holder *d*.

e is a spring doubled back under itself, as shown, with one end attached to the spindle *c* beneath the bearing surface at *f*. The spring *e* is perforated or slotted at *h*. *j* is a screw passing through this perforation or slot into the shell *a* of the sound box. When desired a hole *x* may be made in the part of the spring coming opposite the screw *j* to facilitate the fixing and adjustment of the said screw *j*.

Referring to the form of the device shown at Fig. 2, in this case the spring *e* is doubled back over itself, as will be seen from the drawing and one end is again attached beneath the bearing surface *f*. At the other end the screw *j* passes through a perforation or slot at *k* in the spring into the shell of the sound box.

The form of the device shown at Fig. 3 is similar to that shown at Fig. 1, except that two springs *e* and associated parts are provided and attached at each end of the spindle *c*, and the small arm controlled by springs described in connection with my aforesaid former Letters Patent is dispensed with.

The form of the device shown at Fig. 4, is similar to that shown with respect to Fig. 2, but here again the two springs *e* are provided, one at each end of the spindle *c*, and the aforesaid arm controlled by springs is also dispensed with.

The bent under springs shown at Figs. 1

and 3 are different in action to the bent over springs shown at Figs. 2 and 4, as when the screw *j* is tightened in the first case, the other end of the spring is pulled toward the bearing surfaces, while when it is tightened in the latter case, the other end of the spring is pressed down, both forms have, however, the function of keeping the rocking plate, spindle or the like in contact with the bearing surfaces.

I prefer to attach the end of the spring or springs beneath the bearing surface at *f* and in the longitudinal axis of the rocking plate or spindle, as shown on the figures, but to suit requirements it may be attached to the other side, the bearing side, of the rocking plate or spindle, or in any other position, where flat springs or other spring devices are generally employed on sound boxes.

It will be observed that in each of the modifications of the invention shown in the drawings the spring is made of a flat piece of spring metal bent upon itself and having two substantially parallel arms, one of which is rigidly secured to the spindle and the other adjustably secured to the casing in such manner that the spring itself may rock at its end about a fulcrum approximately in line with the axis about which the spindle rocks. In this way the spindle is accurately held on its bearings with a yielding pressure which may be given a very delicate adjustment. The preferred construction and one which has now been very extensively used is shown in Fig. 3. This construction although it differs only slightly from the others gives far better results. In this case the ends of the springs engaged by the screws *j* are approximately in line with the edges of the bearings *b* so that when the spindle rocks a rocking motion is given to the springs about an axis substantially in line with the axis about which the spindle turns.

It will be understood that I may vary the shape of the spring provided that it is of such nature as described and shown.

Although I have described the invention as applied to a sound box of the type described in my former aforesaid Letters Patent it will be understood that I may adopt a spring or springs of the kind described wherever suitable to sound boxes for the purpose of exerting a pressure upon a rocking plate or spindle and holding same in this way on bearings such as knife edges, points, domes or other supporting devices.

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 connected with the diaphragm, a spindle carried by the stylus bar and arranged transversely thereto, bearing surfaces on the casing on which the spindle rocks, and a spring consisting of a flat piece of metal bent upon itself and having two substantially parallel arms parallel with the spindle and one of which is rigidly secured to the spindle and the other adjustably secured to the casing but held approximately in line with the spindle.

2. In a sound box for talking machines, the combination with a casing and its diaphragm of a stylus bar connected with the diaphragm, a spindle carried by the stylus bar and arranged transversely thereto, bearing surfaces on the casing on which the spindle rocks, a spring made of a metal strip bent upon itself and having one end attached to one end of the spindle and the other end connected with the casing by adjustable devices which hold it approximately in line with the axis of rotation of the spindle, and means for yieldingly supporting the opposite end of the spindle.

3. In a sound box for talking machines the combination with a casing and its diaphragm, of a stylus bar connected with the diaphragm, a spindle carried by the stylus bar and arranged transversely thereto, bearing surfaces on the casing on which the spindle rocks, and a spring at each end of the spindle made of a metal strip bent upon itself and having one end attached to one end of the spindle and the other end connected with the casing by adjustable devices which hold it approximately in line with the axis of rotation of the spindle.

4. In a sound box for talking machines the combination with a casing and its diaphragm of a stylus bar connected with the diaphragm, a spindle carried by the stylus bar and arranged transversely thereto, bearing surfaces on the casing on which the spindle rocks, and a spring projecting from each end of the spindle and each made of a metal strip bent upon itself and having one end attached to one end of the spindle and the other end arranged approximately in line with the axis of rotation of the spindle, and adjustable screws engaging the free ends of the springs and attaching them to the casing, said springs being formed with openings opposite the heads of the screws to facilitate the screw adjustment, substantially as described.

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

ALEX FISCHER.

Witnesses:
A. E. VIDAL,
H. E. G. ROWLEY.