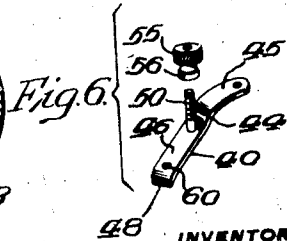
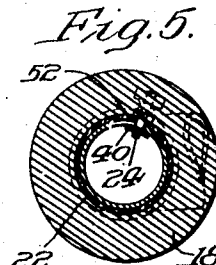
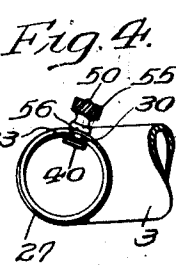
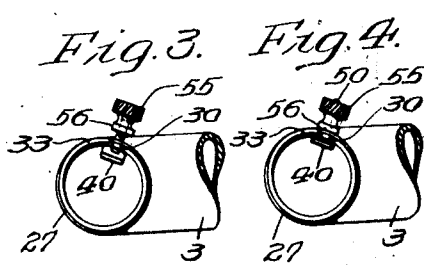
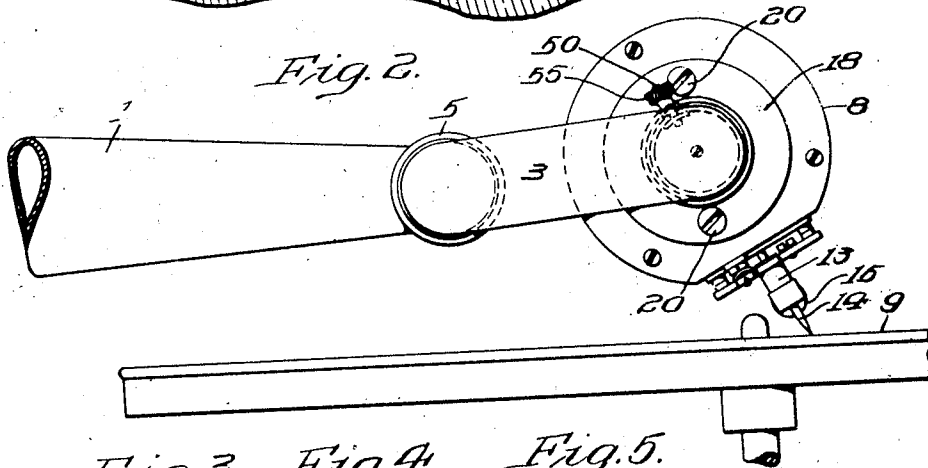
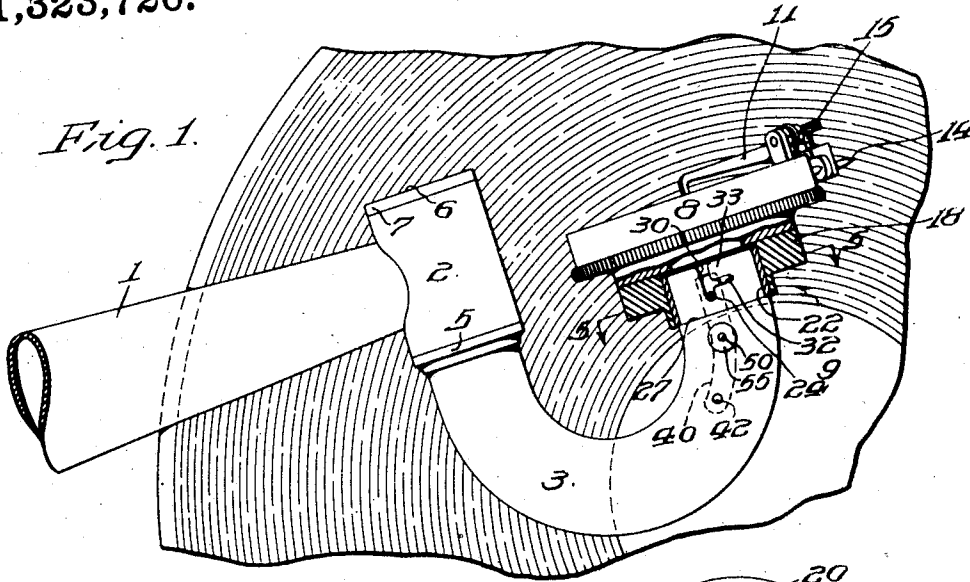


L. Y. SQUIBB.
TALKING MACHINE.
APPLICATION FILED NOV. 4, 1915.

Patented Dec. 2, 1919.

1,323,726.



WITNESS

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BY

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UNITED STATES PATENT OFFICE.

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TALKING-MACHINE.

1,323,726.

Specification of Letters Patent.

Patented Dec. 2, 1919.

Application filed November 4, 1915. Serial No. 59,486.

To all whom it may concern:

Be it known that I, LLOYD Y. SQUIBB, a citizen of the United States, and a resident of Camden, county of Camden, and State of New Jersey, have invented certain new and useful Improvements in Talking-Machines, of which the following is a specification, reference being had to the accompanying drawing.

Among the principal objects of my invention are to provide new and improved means for attaching the sound box of a talking machine to the sound-conveying means thereof whereby the parts may be readily assembled in operative relation, and as easily separated when desired, and which shall serve to firmly secure the sound box upon the sound conveyer when in operation. Further objects of my invention are to provide new and improved means for attaching a sound box to the sound conveyer of a talking machine which will serve to prevent or nullify any lost motion or play between the assembled parts, which shall be neat and inconspicuous in appearance, which may be readily operated, and which shall be devoid of numerous or intricate parts. A still further object of my invention is to provide means of this nature which are adapted for use in connection with talking machines of the types at present in use without the necessity of material change therein, and which may be so arranged as to maintain the sound box in proper relation with the sound conveyer when positioned thereon in such manner that the stylus or needle will always assume the proper angular relation with the record surface over which it travels.

My invention further includes all of the other various novel features of construction and arrangement hereinafter more definitely specified and described.

In the accompanying drawing in which a preferred embodiment of my invention is illustrated, Figure 1 is a top plan view, partially in section, of a portion of a talking machine showing a sound box and a portion of a sound conveyer constructed in accordance with such embodiment of my invention in operative position above a record surface; Fig. 2 a side elevation thereof; Fig. 3 an elevation of the end of a portion of the sound conveyer with the sound box removed; Fig. 4 a similar view with certain of the parts in a slightly different position; Fig. 5 a trans-

verse section on the line 5—5 in Fig. 1, looking in the direction of the arrows, and Fig. 6 a perspective view of a detail of the device.

For the purposes of illustration I have shown my invention in connection with portions of a talking machine of well-known form, although the invention is well adapted for use with substantially any style or type of talking machine in connection with which it may be desired to employ the same. In that form of talking machine which I have shown in the drawing, sound-conveying means, comprising a tone arm 1 having a transverse sleeve 2 adjacent its end, are provided, the sleeve affording a bearing for one end of a U-shaped tubular portion or "goose-neck" 3 having a peripheral flange 5 abutting against one end of the transverse portion 2, a cap 6 threaded into the end of the goose-neck within the transverse sleeve 2 and having a flange 7 abutting against the other end of the sleeve serving to position the goose-neck therein, the parts being arranged in such manner that the goose-neck may be freely rotated about the longitudinal axis of sleeve 2 for the purpose of raising the sound box 8 out of operative relation with the record disk 9 in the well-known manner, movement of the goose-neck longitudinally of the axis of the sleeve being prevented by the contact of the flange 5 and corresponding flange 7 on cap 6 with the ends thereof. The sound box 8 may be of any desired or preferred construction, the form shown in the drawing comprising a suitably mounted stylus lever 11 provided with a sleeve 13 for the reception of the stylus or needle 14, which may be maintained in operative relation in the sleeve by means of a set screw 15 in the well-known manner. A backing 18 of flexible or other suitable material is provided and secured to the body of the sound box by means of screws 20 or in any other suitable manner, the backing preferably comprising a central cylindrical opening or bore having a metallic lining or sleeve 22 suitably secured therein, the sleeve being provided with a short radially inwardly projecting pin 24 for a purpose to be hereinafter described.

The free or outer end of the goose-neck may preferably be slightly reduced in diameter so as to form a nice working fit within the sleeve 22, a peripheral shoulder being thus produced on the exterior of the

goose-neck against which the end of sleeve 22 is preferably adapted to abut when the sound box is positioned upon the goose-neck, as hereinafter described. In the outer end of the goose-neck a slot 30 extending inwardly substantially parallel to the longitudinal axis thereof is provided, the width of the slot being very slightly greater than the diameter of pin 24, so that the pin may be readily moved back and forth therein, and if desired, another slot or cut 32 may be formed in the wall of the goose-neck substantially at right angles to slot 30 and preferably about midway of the length thereof, this cut extending peripherally around the goose-neck for a short distance so as to leave a portion 33 of the wall of the goose-neck free upon three sides, this part of the wall being preferably sprung or bent outwardly slightly out of the line of the true circle formed by the end of the goose-neck for a purpose to be hereinafter described.

Within the interior of the goose-neck and beneath the slot 30 is located a suitable spring 40, best shown in Fig. 6, the longitudinal axis of which may preferably be curved in substantial conformity with the axis of that portion of the goose-neck to which the spring is attached, the inner end of the spring being fixedly and permanently secured to the goose-neck preferably by a suitable rivet 42 extending through the wall thereof, or if desired, the spring may be secured in position in any other suitable manner. The length of the spring is such that its outer or free end will preferably terminate a short distance from the extreme outer end of the goose-neck beneath the slot 30, and while the spring may be of any suitable or desired shape, I prefer to form the same with a suitable offset 44 in such manner that portions of the body of the spring will lie in separate substantially parallel planes, so that when the spring is secured in position as heretofore described, the inner portion 45 thereof will lie closely adjacent the wall of the goose-neck and preferably in contact therewith, while the outer portion 46 will be out of contact with the wall of the goose-neck and removed therefrom for a distance substantially equal to the depth of the offset 44, in such manner that when the sound box is positioned on the goose-neck, as hereinafter described, the end of the pin 24 will normally be out of contact with the spring 40, the depth of the offset being just sufficient to permit the movement of the pin 24 in slot 30 without the end of the pin coming in contact with the surface of the spring. In some constructions, however, it may be desirable, instead of forming the spring with a distinct offset so that the ends of the spring will be in separate but substantially parallel planes, to omit the offset and bend

the spring diagonally downwardly from its point of attachment to the goose-neck, so that the outer portion 46 thereof will be normally out of contact with the interior of the goose-neck in a manner similar to that heretofore described in connection with the preferred form of spring. Furthermore, if desired, the extreme outer extremity of the spring may be curved slightly downwardly as at 48, and as best shown in Fig. 6.

Securely affixed to the spring, preferably about midway of its length and extending outwardly from its surface, is a suitable stud 50 threaded upon its upper extremity and adapted, when the spring is secured in position in the goose-neck as hereinbefore described, to extend through a suitable aperture 52 formed in the wall of the goose-neck, the length of the stud being such that it will normally project for a relatively considerable distance beyond the exterior of the goose-neck to afford space for the reception of a suitably interiorly threaded thumb nut 55, preferably provided with a milled head adjacent its upper extremity and a flange 56 at its lower extremity adapted for engagement with the exterior of the goose-neck when the nut is screwed down upon the stud, as best shown in Fig. 4. It will be evident that when the nut is backed off or unscrewed upon the stud so that the flange 56 is entirely out of contact with the goose-neck, the parts will normally assume substantially the relation shown in Fig. 3; that is, with the outer portion 46 of the spring entirely out of contact with the interior of the goose-neck, and that by screwing the nut downwardly upon the stud toward the spring, the flange 56 may be brought into contact with the exterior surface of the goose-neck, and that thereafter a continued rotation of the nut in the same direction will serve to draw the stud upwardly through aperture 52 and, in turn, to draw the portion 46 of the spring toward the wall of the goose-neck, the parts being preferably arranged and proportioned in such a way that the outer portion 46 of the spring may in this manner be brought into contact, or substantial contact with the goose-neck, as shown in Fig. 4. Adjacent the outer end of the spring a suitable aperture 60 is provided and positioned directly beneath slot 30, the diameter of the aperture being slightly greater than the diameter of pin 24, so that the pin may readily pass therethrough, the aperture being preferably so located longitudinally of the spring that it will register with the pin 24 when the end of sleeve 22 contacts with the shoulder 27 upon the goose-neck, as best shown in Fig. 1.

The various parts of the device having been constructed preferably as hereinbefore described, and the spring 40 attached to the goose-neck by the rivet 42, or in any other suitable manner, in such position that the

aperture 60 will lie beneath slot 30 and stud 50 extend through aperture 52 in the goose-neck to receive thumb nut 55 upon its outer extremity, the sound box may be assembled upon the goose-neck by slipping the end of sleeve 22 over the outer extremity of the former and then rotating the sound box until pin 24 is brought opposite the mouth of slot 30, the extreme outer edges of which may be slightly curved or beveled, as best shown in Fig. 1, to facilitate the bringing of the pin into engagement with the slot. If nut 55 has been backed off sufficiently, as shown in Fig. 3, the sound box may now be slid longitudinally of the slot without the end of pin 24 contacting with spring 40 until the end of sleeve 22 contacts with shoulder 27, in which position pin 24 will be in alinement with the aperture 60 in the spring. If thumb nut 55 be now rotated toward the goose-neck, the outer portion 46 of the spring may be drawn up into contact, or substantial contact with the wall of the goose-neck, the end of pin 24 which projects into the interior thereof, engaging within aperture 60 in the spring in such manner that the parts will assume the relation shown in Fig. 5, thus securely locking the pin in the aperture in the spring, and in turn the sound box upon the goose-neck. It will be evident that the sound box may be readily removed from its assembled relation with the sound conveyer by backing off the thumb nut 55 for a sufficient distance to allow the spring to automatically clear the end of the pin 24, after which the sound box may be readily slid longitudinally along the goose-neck and removed therefrom.

It will further be evident that any looseness or play between sleeve 22 and the goose-neck due to an imperfect fit between these parts, will be minimized by the action of portion 33 of the goose-neck wall which is necessarily compressed slightly inwardly from its normal position when the sound box is in position, and which by its constant tendency thereafter to assume its normal position will assist in holding the sleeve tightly against the goose-neck, and that, furthermore, the contact of the end of sleeve 22 with shoulder 27 will also assist in preventing any possible movement due to looseness between the sleeve and the goose-neck. Moreover, if desired, instead of first loosening thumb nut 55 before positioning the sound box on the sound conveyer, it is possible in certain constructions to assemble the sound box thereon when the outer portion 46 of spring 40 is in contact or substantial contact with the interior of the goose-neck, as shown in Fig. 4, as in such case, if the spring be sufficiently flexible, the contact of the end of pin 24 with surface of the spring as the sound box is slid along the

goose-neck will depress the spring sufficiently to permit of the passage of the pin over said surface until it registers with aperture 60, after which the spring will immediately snap up over the pin, and thus lock the sound box in position, from which position it may be readily removed after loosening the thumb nut to allow the spring to disengage itself from the pin, as hereinbefore described.

In the preferred embodiment of my invention, I preferably position the slot 30 substantially at the top of the goose-neck when the same is in "playing" position, as best shown in Fig. 2, pin 24 being so located in the sleeve that when the pin is in engagement with the slot, the angle of the axis of the stylus bar 13, and thus of the stylus 14, with respect to the record 9 will be such as to obtain the best results, but it will be evident that the slot may be located at any desired point about the periphery of the end of the goose-neck, the pin 24 being correspondingly suitably positioned in the sleeve in order to preserve the desired angle between the axis of the stylus bar and the face of the record, and that once the relative location of the slot and pin have been properly determined it is impossible to assemble the sound box upon the sound conveyer in such manner that an improper angle of inclination between the stylus and the record can result.

While I have herein described and illustrated a preferred embodiment of my invention in considerable detail, I do not desire to limit myself specifically thereto, as it will be evident that various changes and modifications may be made in the details and arrangement of the various parts of the device without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. In a talking machine, the combination with a sound conveying means, of a sound box, flexible means carried by said sound conveyer normally tending to move away from said sound box and means operative to flex said first-mentioned means toward said sound box to lock said sound box on said sound conveying means and secure the same in locked position.

2. In a talking machine, the combination of a sound conveyer and a sound box each having interengaging portions, one of said portions being provided with a spring having an aperture therein and the other of said portions being provided with a pin adapted to engage in said aperture, said spring tending to normally disengage said pin therefrom, and manually operated means for locking said pin in said aperture.

3. In a talking machine, the combination with sound conveying means having a slot, of a sound box including a sleeve operative to surround the end of said sound conveyer and a pin operative to project therein through said slot, a spring within said sound conveyer and having an aperture, and means including a stud in fixed relation with said spring and projecting through the wall of said sound conveyer, and cooperating means therefor operative to flex said spring toward the wall of said sound conveyer and lock said pin in said aperture.

4. In a talking machine, the combination with a sound conveyer having a slot, and a sound box having a pin adapted to enter said slot, of means to lock said sound box upon said sound conveyer comprising flexible means having an aperture and secured in said sound conveyer beneath said slot, only a portion of said means being normally in contact with said sound conveyer, a threaded stud projecting through the wall of said sound conveyer and secured to said flexible means, and a thumb nut on the outer end of said stud, the rotation of said thumb nut being operative to draw said flexible means toward said slot to engage said aperture with said pin.

5. In a talking machine, the combination of a sound conveyer having a slot, a sound box having a pin adapted to enter said slot and project within said sound conveyer, and means operative to lock said sound box on said sound conveyer comprising flexible means secured within said sound conveyer and a threaded stud and a nut operative to draw said flexible means into engagement with the wall of said sound conveyer to engage said pin.

6. In a talking machine, the combination of sound conveying means, a flexible member carried by said sound conveying means provided with a curved end and having an aperture therein adjacent said end, of a sound box adapted to be inserted over said sound conveying means, said sound box being provided with a projection, said projection being adapted to engage the curved end of said flexible means to flex said means and cause said projection to enter said aperture and

means for locking said projection in said aperture.

7. In a talking machine, the combination of sound conveying means and a sound box adapted to be positioned therein, said sound conveying means being provided with a longitudinal and transverse slot to provide an integral spring tab adapted to engage a portion of said sound box, a spring carried by said sound conveyer and having an aperture therein, said spring normally tending to move away from said sound box, a pin carried by said sound box and means operative to flex said spring toward said sound box to bring said aperture into locking engagement on said pin to secure said sound box and sound conveyer together.

8. In a talking machine, the combination with sound conveying means provided with a slot, of a sound box having a sleeve operative to surround the end of said sound conveyer and a pin operative to project therein through said slot, a spring within said sound conveyer and having an aperture, means comprising a stud in fixed relation with said spring and projecting through the wall of said sound conveyer, operative to flex said spring toward the wall of said sound conveyer to lock said pin in said aperture, and flexible resilient means integral with said sound conveyer to engage said sleeve and operate to hold the sound conveyer and sound box against relative movement.

9. In a talking machine, the combination with sound conveying means provided with a shoulder, a spring carried by said sound conveying means and provided with an aperture, of a sound box having a sleeve and a pin adapted to be engaged with said spring through the aperture therein and means to lock said pin in said aperture with the sleeve of the sound box engaging the shoulder of said sound conveying means.

In witness whereof I have hereunto set my hand this third day of November, A. D. 1915.

LLOYD Y. SQUIBB.

Witnesses:

GEORGE K. HELBERT,
ALEXANDER PARK.