

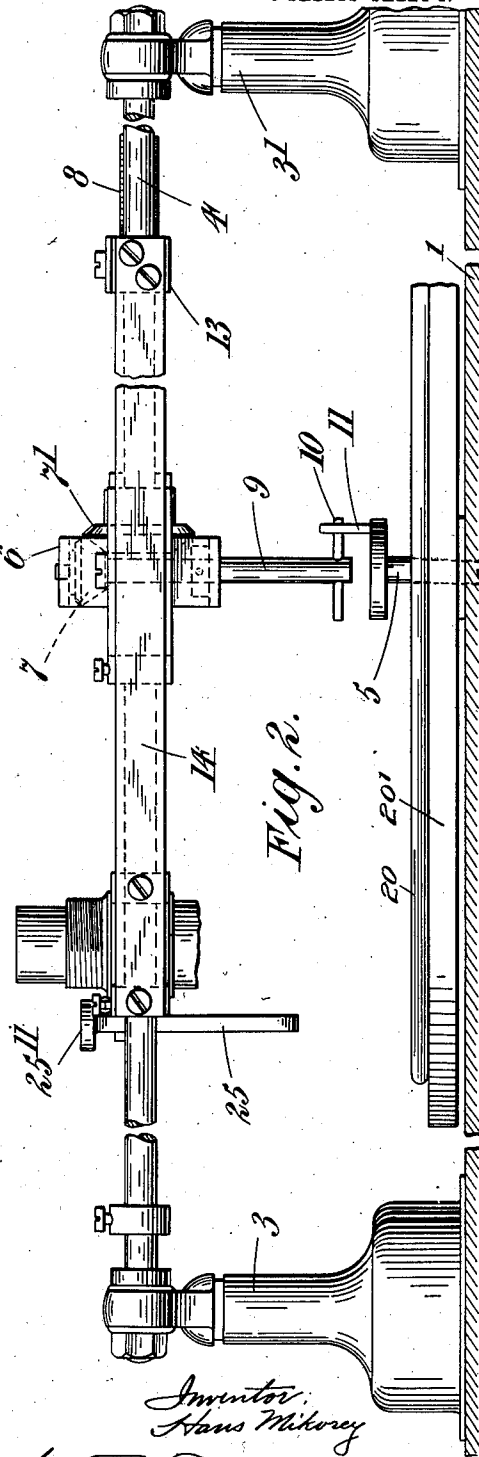
APPLICATION FILED JAN. 16, 1912.

Patented May 21, 1912.

Fig. 1.

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H. MIKOREY.
TALKING MACHINE.

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1,027,350.

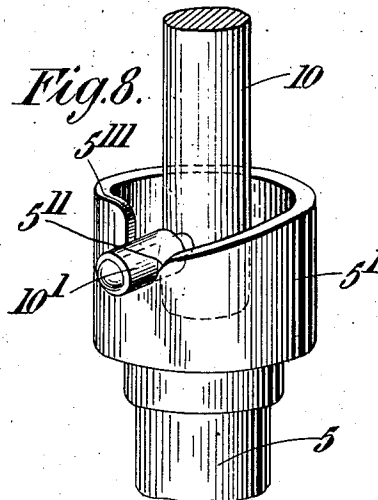
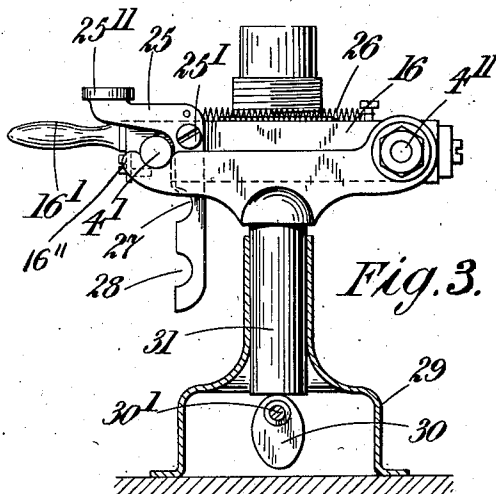
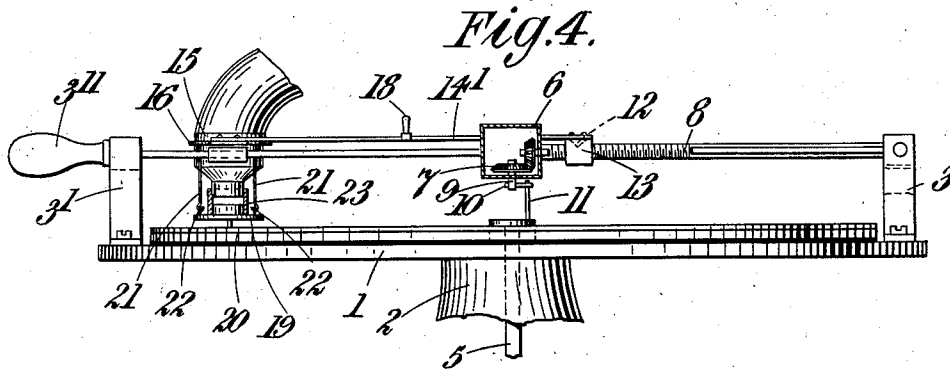
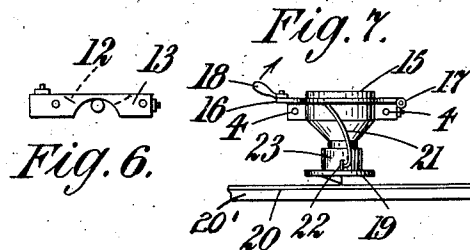
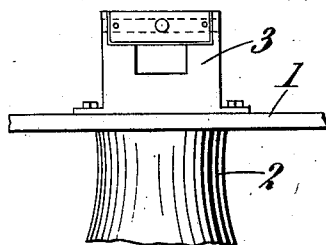


Fig. 5.



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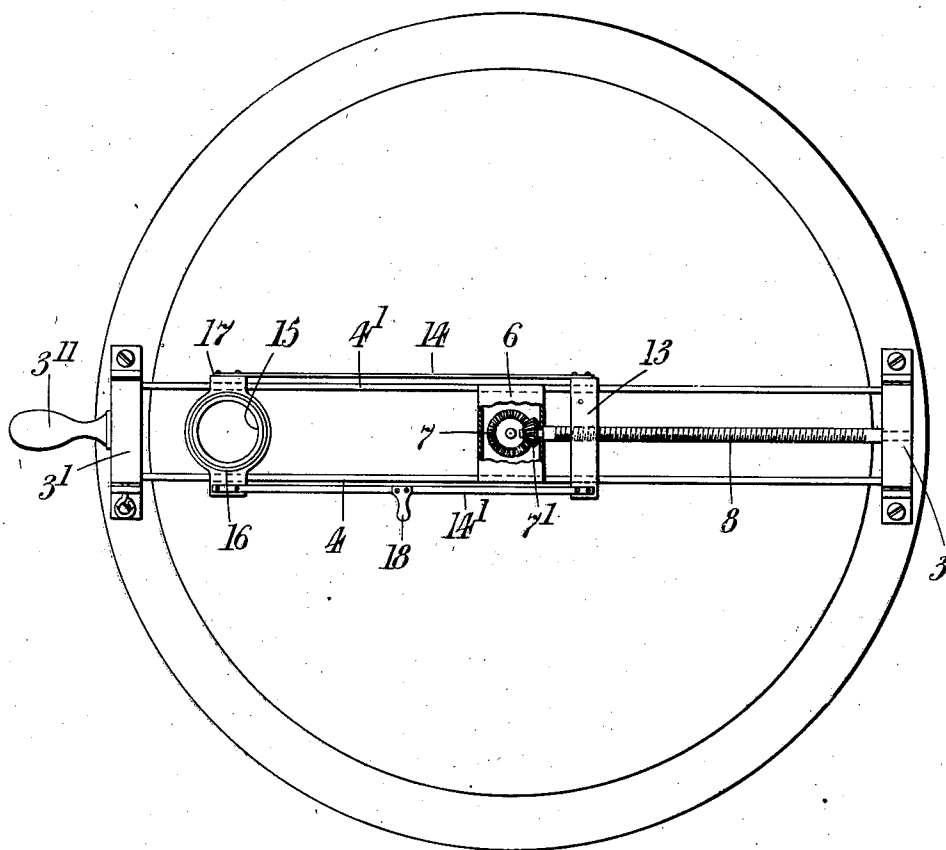
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TALKING MACHINE.
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Fig. 4.^a



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UNITED STATES PATENT OFFICE.

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TALKING-MACHINE.

1,027,350.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed January 16, 1912. Serial No. 671,433.

To all whom it may concern:

Be it known that I, HANS MIKOREY, a subject of the Emperor of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Talking-Machines, of which the following is a specification.

This invention relates to talking machines and more especially to a guide for the sound-box holders thereof.

The machine is adapted for use as a recorder as well as a reproducer. The guide can be fitted to any machine as well as to apparatus especially constructed.

The novel features of the machine according to this invention consist broadly in the employment of a guide-bridge spanning the record tablet and capable of being thrown back about an axis parallel with its length, while it can also be lifted bodily together with a diaphragm-holder, a direct driving mechanism and a screw gear for traversing the diaphragm-holder for which it acts as a guide in its movement over the record; and in a construction and arrangement of the parts such that when the bridge is lifted the traversing gear is immediately declutched from the driving motor, while conversely the bridge when lowered at any position of the traversing gear as promptly puts the latter into operation again by clutching with the said driving motor without the need of careful centering. It is preferred in such a mechanism that the bridge should have the diaphragm-traversing-guide in one half, and the screw or other traversing gear in the other half with a dividing box wherein a direct gear drive, screw, or the like is contained. In addition to the two movements which may be given to the bridge, the diaphragm-holder may itself be swung back about a pivot formed by one of the guide-bars of the bridge, and when so moved, takes the traversing nut out of engagement with the traversing screw.

A further feature is a device on the guide by means of which the sound-box is lifted from the record disk whenever the spindle is made to run idly.

Constructions according to this invention are illustrated in the accompanying drawings, wherein—

Figure 1 is a plan showing only the bridge and its pertinent gear and omitting the base

table and record tablet of the machine; Fig. 2 is a side elevation with parts of the machine broken away; Fig. 3 is an end view of Fig. 2 showing one mode of mounting the bridge; Fig. 4 illustrates a somewhat different construction, and particularly an alternative mode of mounting the bridge; Fig. 4^a shows a plan of Fig. 4; Figs. 5, 6 and 7 are detail views relating to the device of Fig. 4, and Fig. 8 is a perspective view of a detail usable on either form of machine as illustrated.

Like letters of reference refer to like parts throughout these drawings.

To the base-plate 1 of the machine, which is secured upon the casing 2, brackets 3, 3¹ are mounted and bear the bridge formed by two guide rods 4, 4¹. This bridge is so arranged as to span the record tablet 20, borne by the table 20¹ which receives motion from any suitable clock-work mechanism contained within the base 1, and having a driving spindle 5 shown partly dotted in Fig. 2. Not only may the bridge be swung about a pivot out of the way, but it can also be raised bodily, carrying with it all the driving mechanism clear away from the record. Fig. 3 and the corresponding figures show such a construction, but in the alternative of Fig. 4 the bridge is shown pivoted in one of the end standards 3 and as provided with a handle 3¹¹ for swinging it in a vertical plane about the said pivot. The bridge is divided at about its center by an open casing 6 placed immediately over the driving spindle 5 of the machine and containing bevel gears 7, 7¹ journaled in the sides of the casing. The casing 6 is secured to the guide rods 4, 4¹. The horizontal gear 7 is secured to a short spindle 9 from which projects at right angles a pin 10 to engage a driver pin 11 which projects from the head of the spindle 5 for the purpose of transmitting the drive. Fig. 8 shows a modified form of the pin drive in which the spindle 5 has a head 5¹, the upper face of which is notched at 5¹¹ and has suitably curved edges 5¹¹¹ in the neighborhood of the notch. The pin 10 bears a roller 10¹ which can freely revolve upon it. The vertical part of the bevel gear 7¹ is secured to a screw-threaded spindle 8 mounted in one half of the bridge between the guide rods 4, 4¹ and journaled in the casing 6 and in the bracket 3¹. It will be seen that when the spindle 5 rotates, the driver

pin 11 will transmit the driving effort to the spindle 8.

The arrangement of driving head illustrated in Fig. 2 is not always desirable for the reason that, when the bridge has been raised to take the recording or reproducing stylus off the record tablet and declutch the driving motor and traversing gear, it may occur that—the record being assumed to be rotating—on lowering the bridge the driver 11 may take up the drive on one side of the driver-pin 10 or on the other, that is to say, it may revolve through nearly 180° before traversing commences, and the result is that through starting to traverse at a point different from that at which traversing ended when the bridge was lifted, either part of the recorded sounds are erased or missed as the case may be, or an objectionable hiatus is left in the record. Similarly, in the device of Fig. 4 the position of the driver-pin 10 may be such that when the bridge is lowered the stylus will descend on to the record at once without hindrance and without promptly actuating the traverse.

By employing the device of Fig. 8 the bridge when lowered in the wrong position is prevented from descending so far as to bring the stylus into contact with the record tablet by the fact that the driver-pin 10¹ must be adjacent to the shoulder 5¹¹, and cannot be so in any but the correct position because it will contact with a part of the top surface of this driving head. The latter surface is so formed as to gradually lower the driver-pin until it rests in the notch 5¹¹ at the base of the shoulder 5¹¹. The precise configuration shown for the head 5¹ need not be adhered to, so long as the desired conditions are secured.

On one of the guide rods 4 a cross head 13 slides and is provided with a nut 13¹ which engages with the screw 8 and being connected by a bar 14 to the sound-box holder 16 causes the latter to slide over the guide bars 4, 4¹ when the screw is rotated with the nut 13¹ in engagement. The sound-box holder 16 and the cross-head 13 can not only slide along the guide 4, but can also be swung about the same as a pivot. Further, as seen in Fig. 3, the whole bridge can also be swung about pivots 4¹¹ so as to lift the sound-box holder, the driving gear, the screw and the rest of the parts carried upon the bridge clear of the record disk.

Means are provided whereby when the sound box holder is moved from the record disk support independent of any adjustment of the bridge or guide for such holder it may be retained in its elevated position. Such means are particularly illustrated in Fig. 3 and comprise a bell crank latch 25 pivotally supported on the sound box holder at 25¹ and provided with two notches 27, 28 in its dependent arm which notches are adapted to

engage the rod 4¹ of the bridge or guide for the sound box holder when said holder is rocked about the other guide rod 4¹¹. The other arm of said bell crank latch is provided with a key or head 25¹¹ by means of which it may be rocked to disengage either of the notches 27, 28 from the rod 4¹, a spring 26 acting to engage the latch with said rod 4¹. The key 25¹¹ is located adjacent the handle 16¹ by which the sound box holder is rocked so that it may be readily manipulated while the holder is being shifted.

The method of raising the whole guide together with the various parts borne by it is illustrated more particularly in Fig. 3. Each of the end standards 29 contains cams 30 pivoted at 30¹, while short pillars 31 bear upon the cams and slide within the standards which are made hollow. The cam 30 is rotated by means of a suitable connection so as to act upon the under side of the pillars 31 and force them upward, thus raising the guide by the operation of the eccentric portion of the cams. The arrangement is precisely the same in each standard, so that a lift parallel with the record disk is given to the bridge. Normally the parts are in the relation shown in Fig. 3, and in this position the reproducing or recording stylus would be in operation, while to bring about a cessation of its action, the cams 30 are turned, as explained, by any suitable means. A spring lock comprising a spring blade 16¹¹ secured to the part 16 and a pin 16¹¹¹ projecting from the blade under the guide-bar 4¹ is provided to act as a check whereby accidental pivotal movement of the diaphragm-holder 16 is prevented. It should be noted that such pivotal movement also brings about the disengagement of the nut 13 from the traversing screw 8.

In Figs. 4 and 4^a, the cross head 13 is connected by means of two guide bars 14, 14¹ to the sound-box holder 15 which slides upon the rods 4, 4¹ in one half of the bridge. One of the bars 14 extends directly from the cross head 13 to the holder 15 and is secured thereto. The boss or eye for receiving the sound-box holder is hinged at 17. The object of this arrangement is to lift off the soundbox 19 from the record disk 20 in order to avoid injury to the latter whenever the guide is raised by means of a handle 18 provided for the purpose. In either modification, whenever the sound-box holder is lifted the cross head 13 is lifted from the spindle 8 so that no motion is transmitted. The diaphragms are preferably so held that their action is normal to the disk.

In Fig. 7, the eye 16 has two hooks 21 secured to it which engage with eyes 22 of the sound-box and lift the latter from the record disk. The sound-box is introduced into a sleeve 23 adjustably mounted on the holder

15. This method of securing the sound-box does not, however, form part of the present invention.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a machine of the character described, the combination with a rotatable support for a record disk, and driving devices for rotating said support, of a guide for a sound box extending over the disk support and adapted to be bodily rocked about a horizontal axis, a sound box movable longitudinally of the guide and adapted to be adjusted to and from the disk support independently of any adjustment of the guide, means for adjusting the sound box and guide vertically in parallelism with the disk support, and means for connecting the sound box with the driving devices of the disk support to move the box longitudinally of its guide.

2. In a machine of the character described, the combination with a rotatable support for a record disk, and driving devices for rotating said support, of a guide for a sound box extending over the disk support and adapted to be bodily adjusted vertically in parallelism with the disk support and to be rocked about an axis parallel with its length, a sound box supported by the guide, and means for connecting the sound box with the driving devices of the disk support to move the box longitudinally of its guide.

3. In a machine of the character described, the combination with a rotatable support for a record disk, and driving devices for rotating said support, of a pair of relatively stationary standards, a guide for a sound box extending over the disk support and engaged with the standards by means permitting it to be adjusted bodily vertically, said guide being further adjustable about a longitudinal, horizontal axis, a sound box engaging the guide and adapted to be adjusted to and from the disk support independently of any movement of the guide, and means for connecting the sound box with the driving devices of the disk support to move the box longitudinally of the guide.

4. In a machine of the character described, the combination with a rotatable support for a record disk, and driving devices for

rotating said support, of a pair of relatively stationary standards, a guide for a sound box extending over the disk support and having depending members telescopically connected with the standards, means for adjusting the guide bodily vertically, said guide being further adjustable about a longitudinal, horizontal axis, a sound box engaging the guide and adapted to be adjusted to and from the disk support independently of any movement of the guide, and means for connecting the sound box with the driving devices of the disk support to move the box longitudinally of the guide.

5. In a machine of the character described, the combination of a rotatable support for a record disk, a vertical driving shaft for the disk support having at its upper end a tubular head provided with a peripheral notch, a guide for a sound box extending over the disk support and adapted to be rocked about a horizontal axis, a feed screw carried by said guide, gearing for rotating the screw including a depending shaft having a radial projection adapted to enter the notch in the head on said vertical shaft, a sound box on the guide, and a nut connected with the sound box and engaging the feed screw.

6. In a machine of the character described, the combination of a rotatable support for a record disk, a vertical driving shaft for the disk support having at its upper end a tubular head provided with a peripheral notch, a guide for a sound box extending over the disk support and adapted to be rocked about a horizontal axis, a feed screw carried by said guide, gearing for rotating the screw including a depending shaft having a radial projection adapted to enter the notch in the head on said vertical shaft, and a sound box supported by the guide and having means engaging the feed screw, said box being movable to and from the disk support independently of any adjustment of the guide.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HANS MIKOREY.

Witnesses:

HENRY HASPER,

LOUIS G. DREYFUS, Jr.