

936,272.

Patented Oct. 5, 1909.

Fig. 1

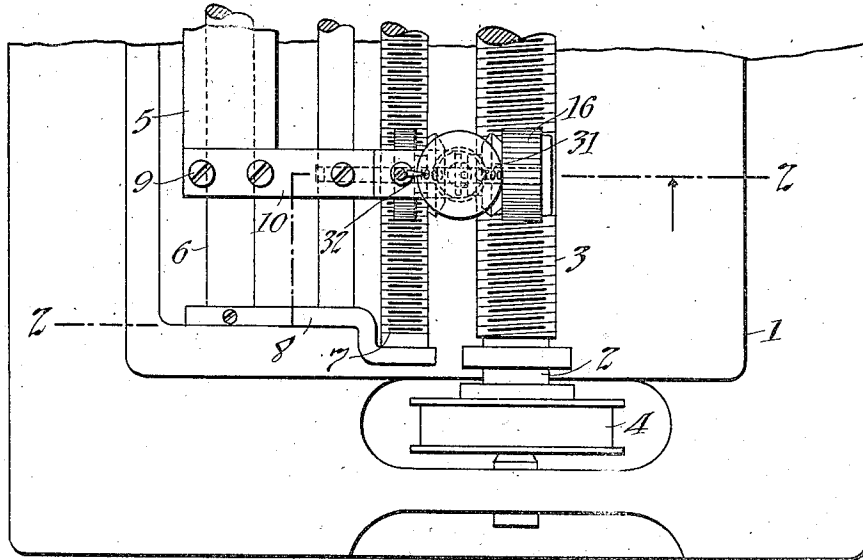
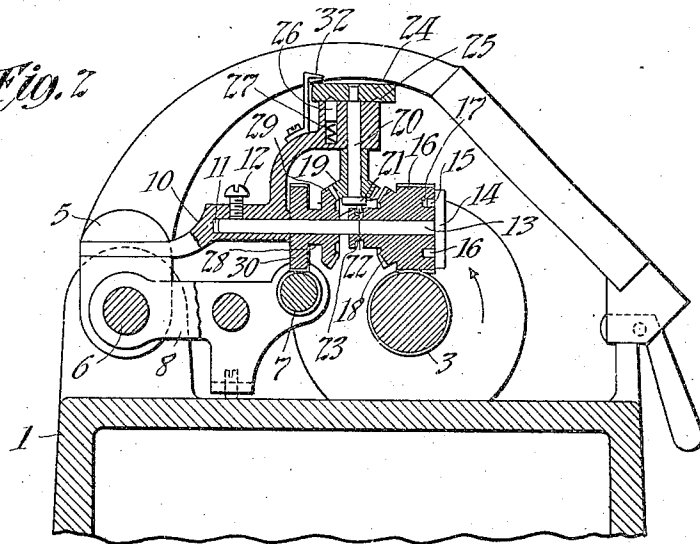


Fig. 2



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UNITED STATES PATENT OFFICE.

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PHONOGRAPH.

936,272.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. ORT, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Phonographs, of which the following is a description.

My invention relates to means adapted to cooperate with the feed screw of a phonograph for imparting a progressive movement to the sound box carriage and comprises interchangeable means for feeding the same at either of two desired rates of speed, as for example at speeds suitable for operating upon records having either one-hundred or two hundred threads per inch.

My invention relates more particularly to feeding mechanism of the general type shown and broadly claimed in an application filed by me on January 20, 1908, Serial No. 411,834, and has for its object the provision of improved means for locking the worm gear against rotation, for unlocking the same and transmitting the rotation thereof to a gear which cooperates with a rack or abutment for feeding the carriage, for shifting or sliding the worm gear and for locking said shifting means, all as will be more particularly set forth and claimed.

Reference is hereby made to the accompanying drawing of which—

Figure 1 is a plan view of a portion of a phonograph showing my invention applied thereto, and Fig. 2 is a section on line 2—2 of Fig. 1.

The phonograph shown is of ordinary form and comprises a base or body 1, a main shaft 2 journaled therein and provided with a feed screw 3 of fine pitch, such as one-hundred threads per inch, and a drive pulley 4. The sound box carriage 5 slides upon the back rod 6 and there is a fixed rack or abutment 7 carried by a frame 8 which is secured to the rod 6. Secured to the carriage 5 by the screws 9, and extending forwardly therefrom, is an arm 10. This arm is provided with a socket 11, and within the same and secured by the set screw 12 is a forwardly extending pin 13 which carries at its end a locking disk 14 having a stud 15. There is a worm gear 16 journaled on said pin 13 and engaging the thread of the feed screw 3. This gear is slidable along the pin 13. There

are a number of sockets 17 formed in the face of the worm gear 16, each of which is adapted to receive the stud 15 of the disk 14 for locking these parts together when the gear 16 is in its extreme forward position. Integral with said gear is a bevel gear 18 which is adapted to engage a similar gear 19 when the gear 16 is in its extreme rearward position. In this position the disk 14 and gear 16 are out of locking relation and the gear 18 rotates the gear 19. The last named gear is journaled on a vertical pin 20, the lower end of which is provided with a disk 21 which supports the gear 19 and there is a pin 22 extending downward from said disk into engagement with a groove 23, formed on the hub of the gear 16. The upper end of the pin 20 is provided with a head 24, in the lower surface of which are formed a number of notches or depressions 25 adapted to receive the upper end of a locking bolt 26 situated within a socket formed in the arm 10 and pressed upward by a spring 27.

There is a sleeve 28 rotatable upon the pin 13 and formed with a bevel gear 29 which engages the gear 19, and with a spur gear 30 which engages the rack 7. The head 24 is provided with indicating numerals or indicia 31 which cooperate with a pointer 32 secured to the arm 10 for designating the rate of feed of the sound box carriage.

When the parts are in the position shown in Fig. 2, the worm gear 16 is locked to the disk 14, being held in locked position by the pin 20 and stud 23 carried thereby. In this position the worm gear 16 is incapable of rotation and therefore acts as an ordinary feed nut to feed the carriage at a rate suitable for operating upon records having one-hundred threads to the inch, and the indicating numerals 100 upon the head 24 are opposite the pointer 32. When the head 24 and pin 20 are rotated through an angle of 180° the worm gear 16 is unlocked from the disk 14, and the bevel gear 18 brought into mesh with the gear 19. With the parts in this position the gear 16 is rotated by the feed screw 3 and imparts a rotation in the opposite direction to the spur gear 30 and the latter by reason of its engagement with the rack 7, imparts a forward progressive movement to the sound box carriage at a rate suitable for operating upon records having two-hun-

dred threads per inch, said rate of speed being designated by the numerals 200 which are then opposite the pointer 32.

Having now described my invention, what I claim is:

1. In a phonograph, the combination of the rotating feed screw and traveling carriage, of means for operatively connecting the same for progressing the carriage at different speeds comprising a worm gear in engagement with said feed screw and carried by said carriage, rotary means engaging an abutment, and rotary means for interchangeably locking said worm gear and unlocking the same and operatively connecting it with said abutment engaging means, substantially as set forth.

2. In a feeding mechanism for phonographs, the combination with the feed screw and movable carriage, of a worm gear connected to the carriage and movable therewith and engaging said feed screw, a stationary abutment extending parallel to the said feed screw, rotary means engaging the abutment and movable longitudinally of the same, connections between said worm gear and rotary means comprising bevel gears and means for locking the worm gear against rotation and simultaneously breaking the said connections, substantially as set forth.

3. In a feeding mechanism for phonographs, the combination with the feed screw and movable carriage, of a stud carried by the carriage, a worm gear slidable thereon and engaging said screw, a stationary abutment extending parallel to said screw, rotary means engaging said abutment and mounted on said stud, gear means interposed between said rotary means and worm gear, means for locking said worm gear against rotation and out of connection with said gear means, and means for unlocking said worm gear and moving it into connection with said gear means, substantially as set forth.

4. In a feeding mechanism for phonographs, the combination with the feed screw, abutment, rotary means engaging said abutment and said screw, means supporting the same, means for locking the last named rotary means against rotation, and eccentric means for moving said last named rotary means into engagement with said locking means and out of connection with said first named rotary means or out of engagement with said locking means and into connection with said first named rotary means, substantially as set forth.

5. In a phonograph, the combination of the worm gear 16, bevel gears 18, 19 and 29, feeding means driven by said last named

gear and means for interchangeably locking said worm gear and for coupling the same in driving relation to said train of bevel gears, substantially as set forth.

6. In a phonograph, the combination of the bevel gear 19 mounted on a vertical axis, a bevel gear 18 and worm gear mounted on an axis at right angles to that of said gear 19, and means concentric with the gear 19 for shifting said bevel gear 18 into and out of engagement with the bevel gear 19, substantially as set forth.

7. In a phonograph, the worm gear 13 adapted to engage the feed screw, a bevel gear carried thereby and having a groove 23 and an eccentric stud 22 in engagement with said groove, substantially as set forth.

8. In a phonograph, the combination of a vertical rotatable gear-shifting member 20, a bevel gear 19 mounted thereon, and indicating means applied to said gear-shifting member for designating the rate of feed of the sound box carriage, substantially as set forth.

9. In a phonograph, the combination of the worm gear 16 and rotary feed member 28, means for connecting said worm gear and feed member comprising a bevel gear and a pin concentric therewith, and means carried by said pin and said worm gear, whereby a rotary movement of the pin imparts a sliding movement to said worm gear, substantially as set forth.

10. In a phonograph, the combination of the worm gear 16 and rotary feed member 28, means for interchangeably connecting said worm gear and feed member comprising a bevel gear and a pin concentric therewith, means carried by said pin and said worm gear whereby a rotary movement of the pin imparts a sliding movement to said worm gear, and means for locking said pin, substantially as set forth.

11. In a phonograph, the combination of the worm gear 16 and rotary feed member 28, means for interchangeably connecting said worm gear and feed member comprising a bevel gear and a pin concentric therewith, means carried by said pin and said worm gear whereby a rotary movement of the pin imparts a sliding movement to said worm gear, and indicating means applied to said pin for designating the rate of feed of the sound box carriage, substantially as set forth.

This specification signed and witnessed this 13th day of April 1908.

JOHN F. OTT.

Witnesses:

DELOS HOLDEN,
FRANK D. LEWIS.