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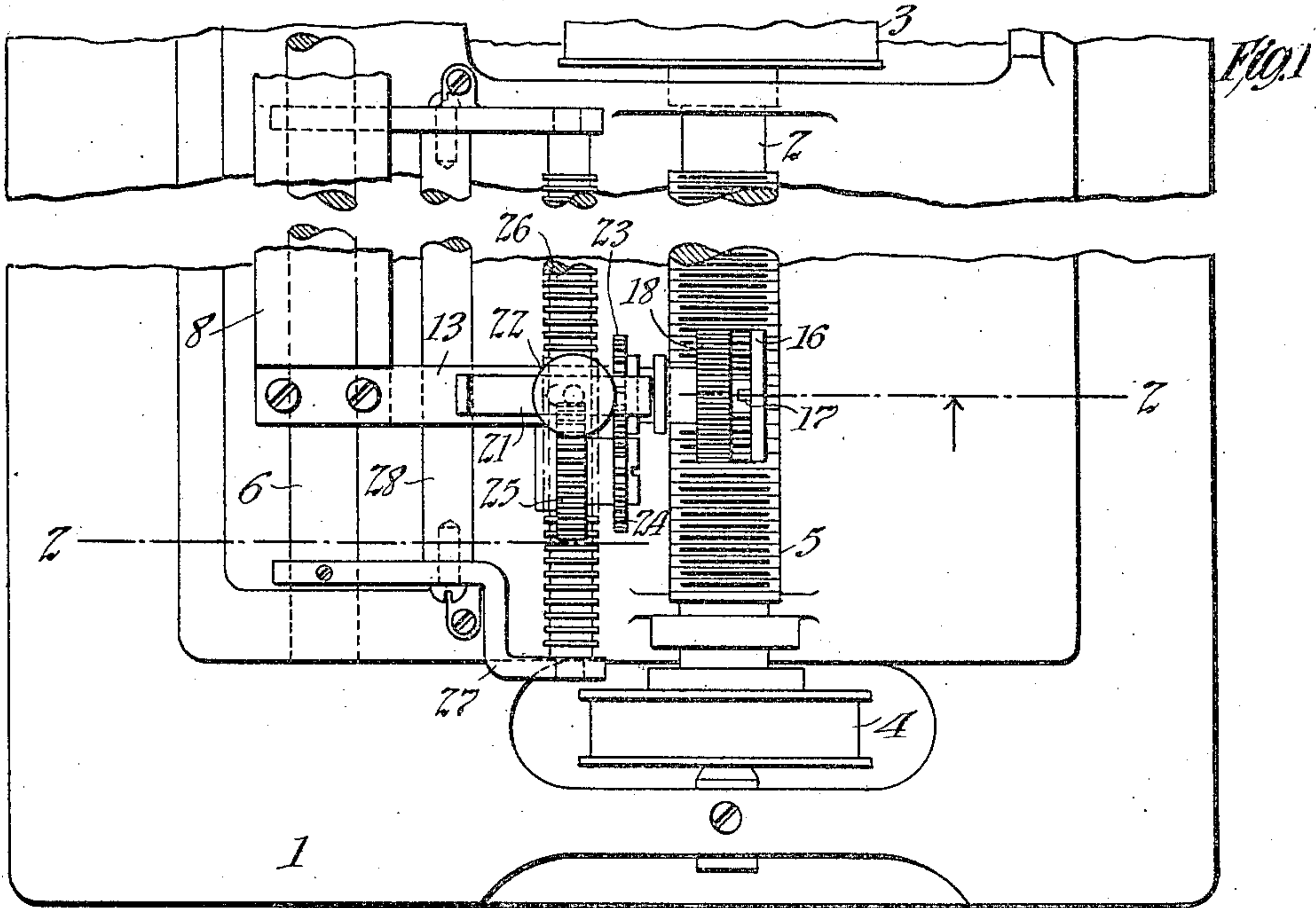
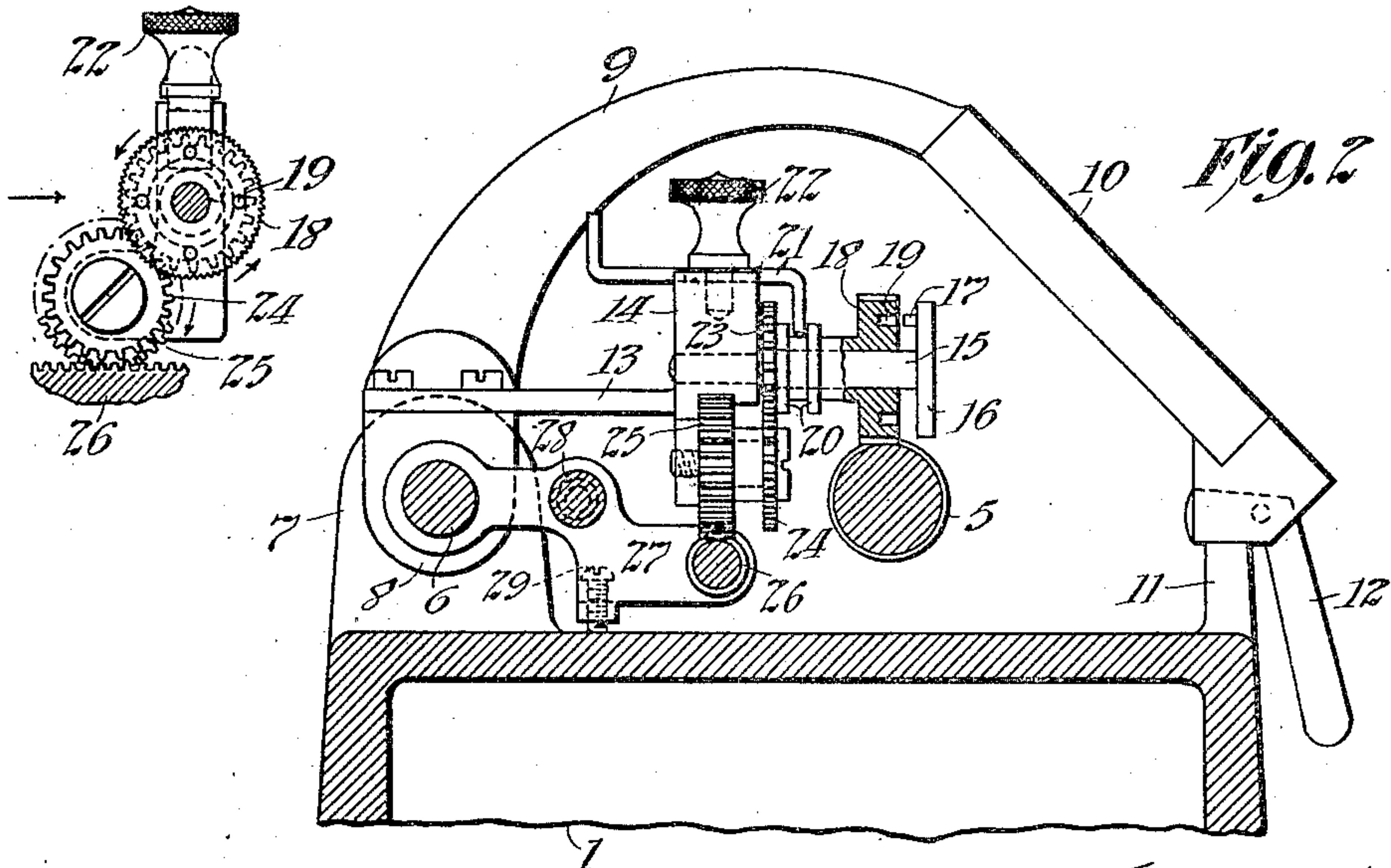


Fig. 3



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## FEED MECHANISM FOR PHONOGRAPHS.

936,270.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed January 20, 1908. Serial No. 411,834.

*To all whom it may concern:*

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

My invention relates to various new and useful improvements in phonographs, and particularly to means whereby the carriage may be fed with respect to the record or blank at two distinct rates of movement, corresponding preferably to one hundred threads per inch and two hundred threads per inch respectively.

The improved mechanism is of the type disclosed in application of Herman Wolke, filed September 12, 1907, Serial No. 392,480, wherein the faster movement of the carriage is effected by the direct feeding of a worm locked against rotation and engaged by a feed screw, so that the worm acts practically as a nut; while the slower movement is secured by a differential action, the worm being rotated by the feed screw, and effecting longitudinal movement with respect to a stationary abutment.

The object of my invention is to provide an improved mechanism for the purpose which can be applied as a separate attachment to a phonograph and which shall be of simple construction and efficient in operation.

The present improvements have been designed particularly for use with phonographs of the Home type, in which the feed screw is formed on the mandrel shaft, but, with suitable modifications, the improvements may be applied to other types of talking machines without departing from the spirit of my invention.

In order that the invention may be better understood, attention is directed to the accompanying drawings in which—

Figure 1, is a plan view of a portion of a Home phonograph, embodying my present improvements in their preferred form; Fig. 2, a cross-sectional view on the line 2—2 of Fig. 1; and Fig. 3, a front view of the worm and differential gearing.

In the above views, corresponding parts are represented by the same numerals of reference.

The phonograph is provided with the

usual bed plate 1, on which is mounted the shaft 2, carrying the mandrel 3, and driven by a pulley 4, in the usual way. The shaft 2 is formed with the ordinary feed screw 5. The usual guide rod 6, is mounted in the standard 7, and longitudinally movable on the guide rod is the sleeve 8 from which extends the arm 9, formed with an eye 10, for receiving the recording or reproducing device, the forward end of the arm 9 traveling on a straight edge 11, with which engages a cam lift lever 12, all of these elements being of the usual construction. Ordinarily a flat spring extends forwardly from the top of the sleeve 8, and carries a nut which engages the feed screw 5, but this spring and nut are removed to make way for the present attachment. Instead of the spring, I make use of an arm 13, carrying at its forward end a block 14, from which extends a stationary stub shaft 15, having at its extremity a disk 16, provided with an inwardly extending pin 17. Mounted on the shaft 15 is a worm wheel 18, formed with a plurality of openings 19, (four being shown) with one of which the pin 17, is adapted to engage when the worm wheel is moved forwardly. The sleeve of the worm wheel 18 is provided with a pair of rings 20, between which engages the down turned end of the adjusting arm 21, adapted to be clamped in position by a thumb nut 22. By moving the adjusting arm forwardly, the worm wheel 18 may be moved to engage one of the openings 19 with the pin 17, so as to lock the worm wheel to the stationary disk 16. This movement of the worm wheel does not affect its engagement with the feed screw 5. The inner end of the worm sleeve carries a gear 23, which when the worm wheel is in the position shown in Fig. 2, meshes with and drives a gear 24 connected to the gear 25. In order to secure a differential feed movement from the worm wheel 18, when the latter is permitted to turn freely, an abutment should be provided with which the gear 25 or gear 24 may engage, and in the present case this abutment is a rack 26 (illustrated as a round bar with parallel teeth cut thereon) which is carried in arms 27 hung on the guide rod 6, and suitably stiffened by a connecting brace 28, thereby forming practically a rigid frame for supporting the rack 26. This frame may be adjusted by a screw 29, so that when the worm



wheel 18 engages the feed screw 5, the gear 25 will engage the rack 26. When the parts are in the position shown in Figs. 1 and 2, a differential feed is effected, the worm wheel being rotated by the feed screw and rotating the gears 23, 24, and 25, so as to cause the gear 25 to travel slowly in a longitudinal direction with respect to the rack and effect a feed movement of the carriage at a very slow rate. With the parts of the proportion shown in the drawings, such a feed movement will be equivalent to a direct feed of two hundred threads per inch. When, however, the worm wheel 18 is shifted forwardly so as to cause the pin 17 to enter one of the openings 19 to lock the worm wheel, it will act practically as a stationary nut and permit the carriage to be fed directly to the feed screw. It will be observed that when the worm wheel is thus moved forwardly, the gear 23 will be withdrawn from mesh with the gear 24, so as to permit the gears 24 and 25 to turn freely as the carriage is advanced by the direct feed movement, as will be understood.

Having now described my invention what I claim as new and desire to secure by Letters Patent, is as follows:—

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

2. In a feeding mechanism for phonographs, the combination of a movable carriage and a feed screw, of a worm wheel con-

nected to the carriage and movable therewith and engaging said feed screw, a stationary abutment extending parallel to the feed screw, a wheel engaging the abutment and movable longitudinally of the same, connections between the worm wheel and said wheel, means for locking the worm wheel against rotation and for simultaneously breaking the connections between the worm wheel and wheel, and means for adjusting the abutment with respect to said wheel, substantially as set forth.

3. In a feeding mechanism for phonographs, the combination of a movable carriage and a feed screw, of a worm wheel connected with the carriage and engaging said feed screw, a stationary abutment extending parallel with the feed screw, a pair of inter-meshing gears, one connected to the worm wheel and the other coöperating with the abutment, and means for shifting the worm wheel longitudinally so as to disengage said gears and simultaneously lock the worm wheel against rotation, substantially as set forth.

4. In a feeding mechanism for phonographs, the combination with a movable carriage and a feed screw, of a worm wheel connected with the carriage and engaging said feed screw, a stationary abutment extending parallel with the feed screw, a pair of inter-meshing gears, one connected to the worm wheel and the other coöperating with the abutment, means for shifting the worm wheel longitudinally so as to disengage said gears and simultaneously lock the worm wheel against rotation, and means for locking the worm wheel in either of its extreme positions, substantially as set forth.

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

JOHN F. OTT.

Witnesses:

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