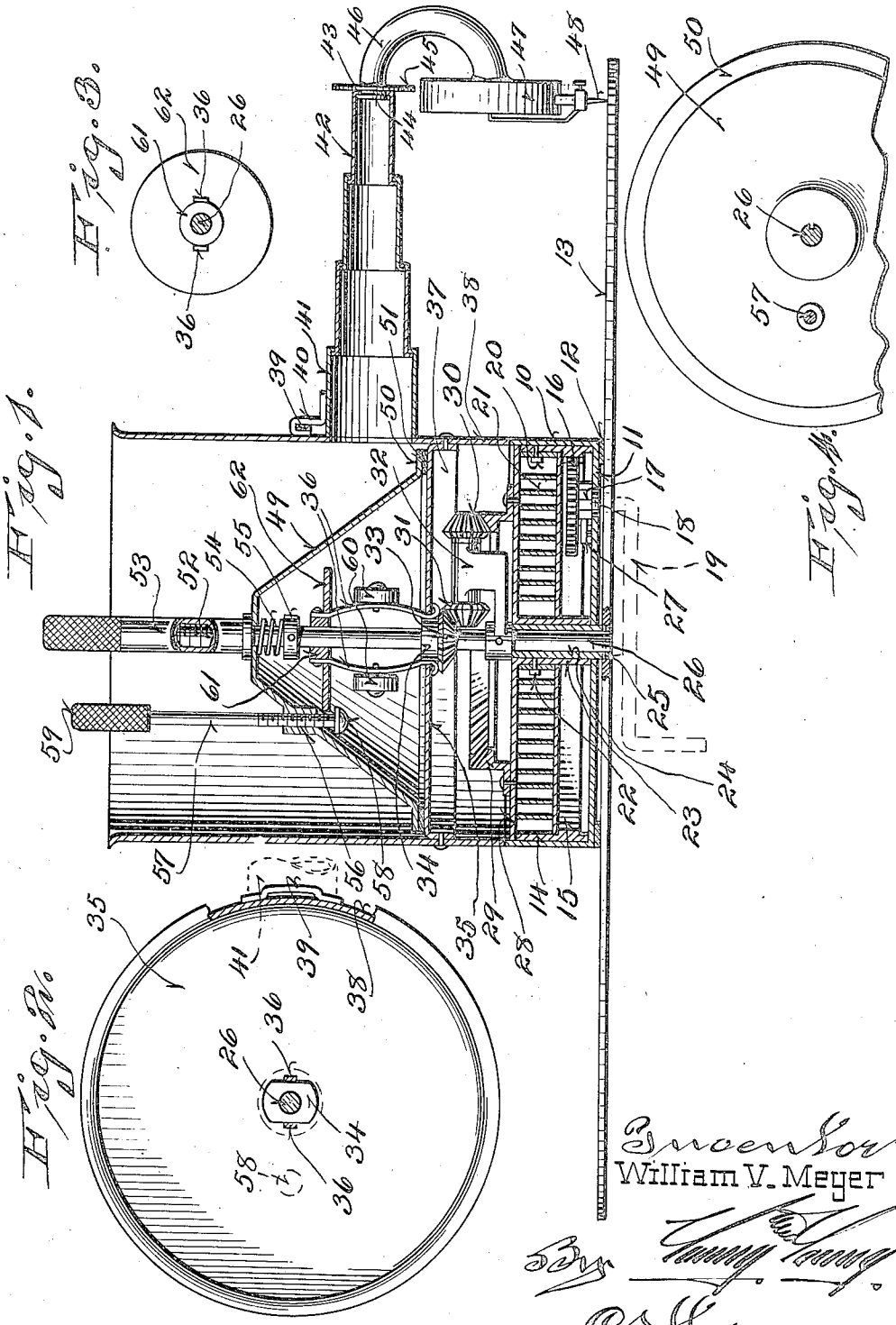
July 24, 1923. 1,462,867

W. V. MEYER

PHONOGRAPH

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UNITED STATES PATENT OFFICE.

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PHONOGRAPH.

Application filed July 22, 1922. Serial No. 576,723.

To all whom it may concern:

Be it known that I, WILLIAM VICTOR MEYER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Phonographs; and I do hereby declare that the following is a full, clear, and exact description thereof.

The invention relates to phonographs. It comprises a base adapted to be positioned on a disk record, a horn rotatable on the base, means for rotating the horn, a reproducer, and a telescopic tone arm affixed to the horn, the tone arm moving inwardly to collapsed position on the rotation of the horn.

The primary object of the invention is the provision of a phonograph operating in an entirely new manner. The record is entirely stationary, and the stylus and reproducer and parts cooperating immediately therewith are located on the record, when the record is being played.

The provision of a rotatable reproducer and tone arm is a marked novelty, thus the device is adapted to afford entertainment and may be used for purposes of advertisement, as its unusual principles of operation are adapted to attract considerable attention.

A further object of the invention is the provision of a phonograph that is small, all parts lying within the face of an ordinary disk record. The tone arm is collapsible, and may be positioned in the horn so that the device takes up a minimum of room, and may be conveniently shipped and carried about from place to place.

A further object of the invention is the provision of an especially simple structure easy to manufacture, made up of a minimum number of parts and inexpensive.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

Figure 1 is a vertical central section thru the phonograph and tone arm.

Figure 2 is a plan view with the cone removed, parts being broken away to show the means for retaining the tone arm in position.

Figures 3 and 4 are detail views.

A base comprising a cylindrical wall 10 and a flat bottom 11 therefor, has a felt pad 12 secured to its bottom and adapted to contact with a record disk 13 to prevent rotation of the base with respect to the disk. Interiorly disposed and in contact with cylindrical wall 10, is an annulus 14, having an interior gear 15 thereon, meshing with a gear 16 rigid with ratchet 17, having a stub 18 rotatable in bottom 11. A crank 19 is shown in dotted lines, and may be applied on the removal of record 13 to stub 18 for the rotation of gear 16. This operates to turn annulus 14, which, by pin 20, is secured to the end of a spiral spring 21, the inner end of which is secured by pin 22 to a depending sleeve 23, which is rotatable on an inner sleeve 24, secured by pin 25 to shaft 26 which is maintained stationary in the operation of the device. Sleeve 23 may be omitted.

Dog 27 cooperates with ratchet 17 to prevent the release thereof, after the winding of the spring. To play the record, sleeve 24 is inserted in the opening in the record, and pad 12 is rested on the face of the record. The tension of the spring acts thru sleeve 23, to rotate plate 28 rigid with the sleeve. This operates to rotate cup-gear 29 secured to plate 28. The cup-gear meshes with bevel gear 30 rigid with bevel gear 31, the shaft for the bevel gears rotating in bracket 32, secured to shaft 26. Bevel gear 31 rotates bevel gear 33, which is provided with a collar 34 upwardly extending thru an opening in diaphragm 35. The diaphragm fits closely about the collar, which is cylindrical in shape but cut away at opposite portions to receive the ends of springs 36 which are maintained in contact with diaphragm 35. Diaphragm 35 is provided with a circumferential depending flange 37, secured to cylinder 38. The rotation of gear 33 and collar 34 operates thru the diaphragm to turn cylinder 38. The cylinder is provided with an opening, above which a retaining band 39 is transversely disposed,

adapted to receive a hook 40, rigid with section 41 of a tone arm. The tone arm is made up of a plurality of telescopic sections, the outermost one 42 of which has an inwardly directed flange 43 received between bead 44 and a collar 45 on U-tube 46, carrying reproducer 47 and stylus 48. The reproducer may be rotated about section 42 and brought adjacent to, or removed from, record 13. As the record is being played, the tone arm is rotated, and stylus 48 travels in the groove in the record, moving inwardly and collapsing the tone arm. Hook 40 provides a ready means of affixation of the tone arm, and on removal of the arm, it may be collapsed and positioned in cylinder 38 so that it will take up a minimum of room, and may be easily shipped and transported from place to place.

The sounds transmitted thru the tone arm are received in the cylinder 38, and directed outwardly by a truncated cone 49, the large bottom of which is provided with a lateral flange 50, carrying a felt pad 51. Shaft 26 extends upwardly thru cylinder 38, and has a threaded portion 52. An elongated brake 53 is threaded on this portion, its upper end being knurled to facilitate manual adjustment. Cone 49 is flattened at its upper end. A spring 54 envelops shaft 26 immediately adjacent the upper end of the cone, the spring being supported by shoulder 55 carried by the shaft. When brake 53 is rotated to move downwardly, pad 51 on cone 49 is brought in contact with diaphragm 35. This prevents rotation of cylinder 38 with respect to the shaft. On the movement upwardly of brake 53, pad 51 is removed from diaphragm 35, spring 54 operating to move cone 49 upwardly. Brake 53 may be used at any time at which a brake on the ordinary phonograph is operated. Cylinder 38 operates substantially as a horn as the sound waves expand in traveling outwardly between the cylinder and cone 49.

Cone 49 is threaded at 56 to receive an adjuster rod 57, having a head 58 at its lower end. The rod has a knurled handle 59, which may be rotated by the fingers to raise or lower the head 58. Springs 36 have weights 60 intermediate their ends, and are outwardly disposed. The upper ends of the springs are secured to a collar 61, which is rigid with a disk 62. In the playing of the record, diaphragm 35, springs 36, weights 60, collar 61 and disk 62 are rotated. The rotation of these parts tends to move weights 60 outwardly against the action of the springs 36. This causes a downward movement of collar 61 and disk 62. Obviously the greater the speed of rotation, the greater the distance of movement of disk 62. If disk 62 is brought in contact with head 58, the frictional action of the parts tends to retard the rotation. Thus the speed will be decreased until the disk 62 is scarcely in contact with the head 58. It is apparent, therefore, that by regulating the height of the head 58, the speed of rotation of disk 62, and consequently of the cylinder 38, may be controlled.

I claim:

1. The combination of a record and a phonograph located entirely above said record and operable on said record while said record is stationary for reproducing the sound recorded by said record said phonograph being supported entirely by said record.

2. The combination of a member adapted to rest centrally upon a disc record, a tone arm, a reproducer on said arm and means co-operating with said member and said arm to rotate said arm for reproducing the sound recorded by said record.

3. The combination of a member adapted to be inserted into the opening in a disc record, a tone arm and reproducer on said arm and means for rotating said tone arm, said member cooperating with said means and said tone arm to maintain said means and said tone arm in position on said record.

4. The combination of a disk record, a base thereon, a horn rotatable on said base, means for rotating said horn, a tone arm secured to the side of said horn and rotatable therewith, said horn having an opening therein for the transmission of sound from said tone arm, a conical member in said horn, a rigid member secured to said horn and adapted to cooperate in one position with said conical member for retarding the rotation of said horn, and means for controlling the position of said conical member.

5. In a device of the class described, the combination of a base adapted to rest on a record, a cylinder having an opening therein rotatable on said base, a telescopic tone arm secured to said cylinder at said opening and a reproducer on said tone arm.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

WILLIAM VICTOR MEYER.