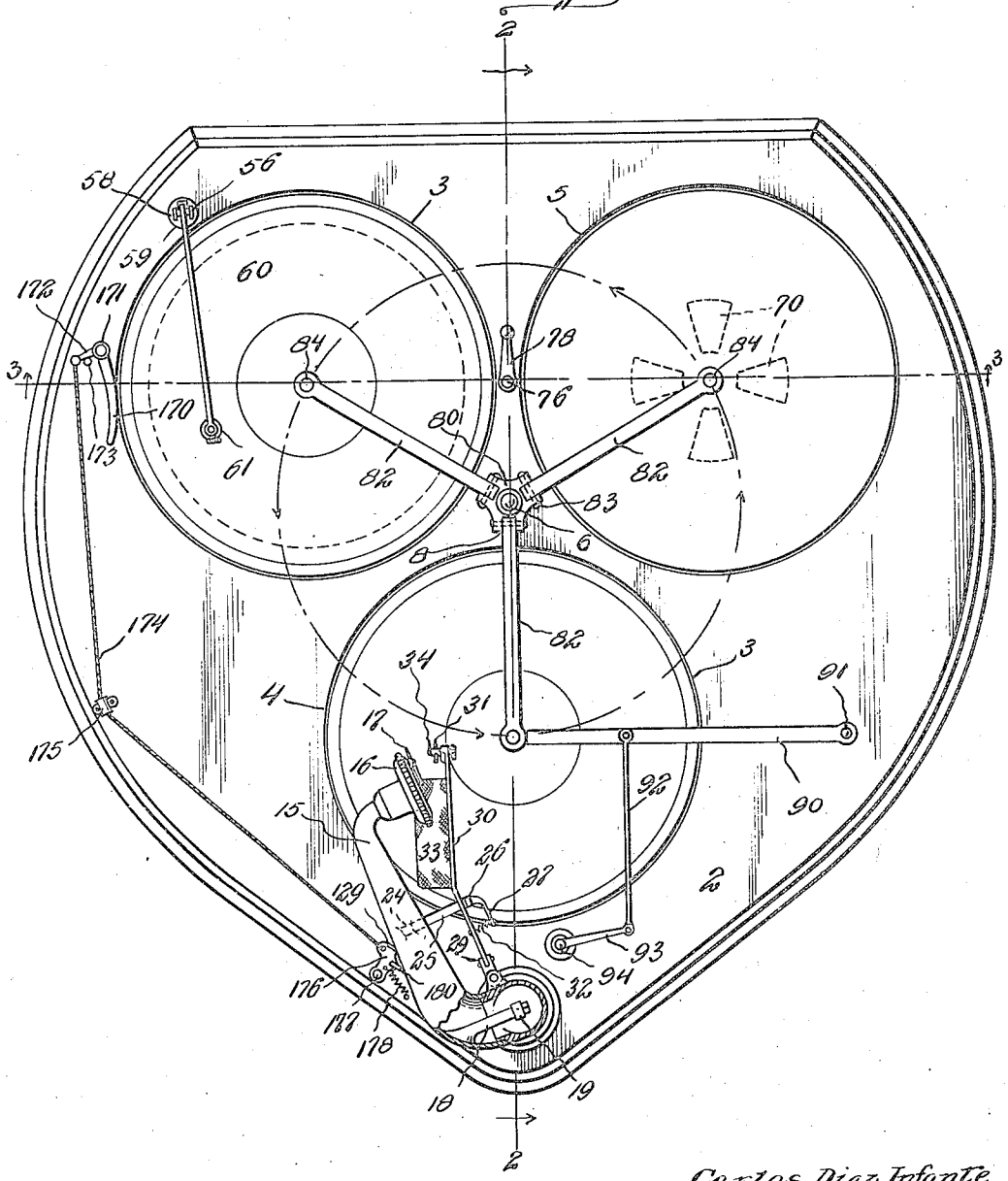
Aug. 21, 1923. 1,465,909

CARLOS DIAZ INFANTE

AUTOMATIC PHONOGRAPH

Filed Dec. 30 . 1921 5 Sheets-Sheet 1

Fig. 1.



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CARLOS DIAZ INFANTE

AUTOMATIC PHONOGRAPH

Filed Dec. 30, 1921 5 Sheets-Sheet 2

Fig. 2.

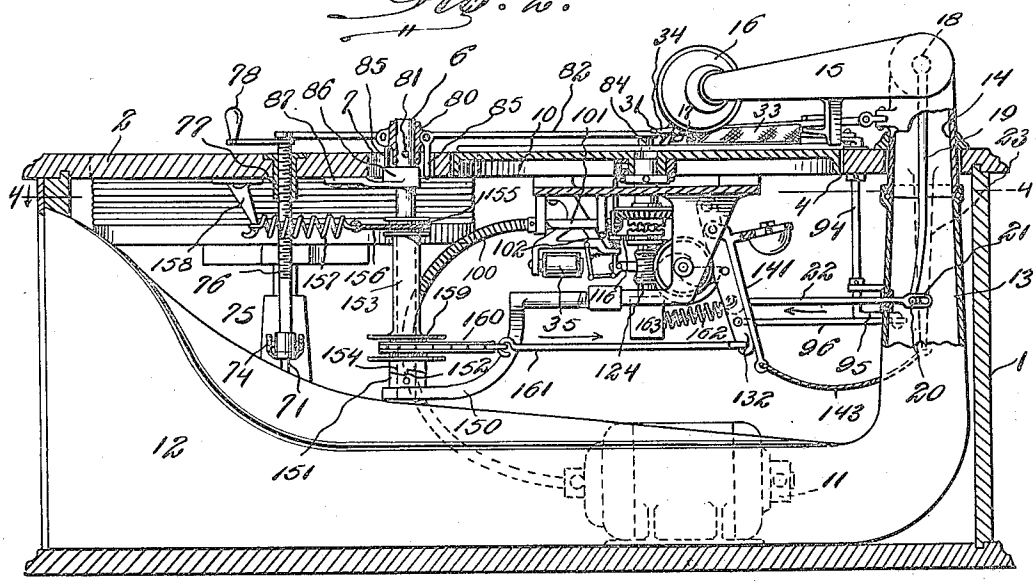
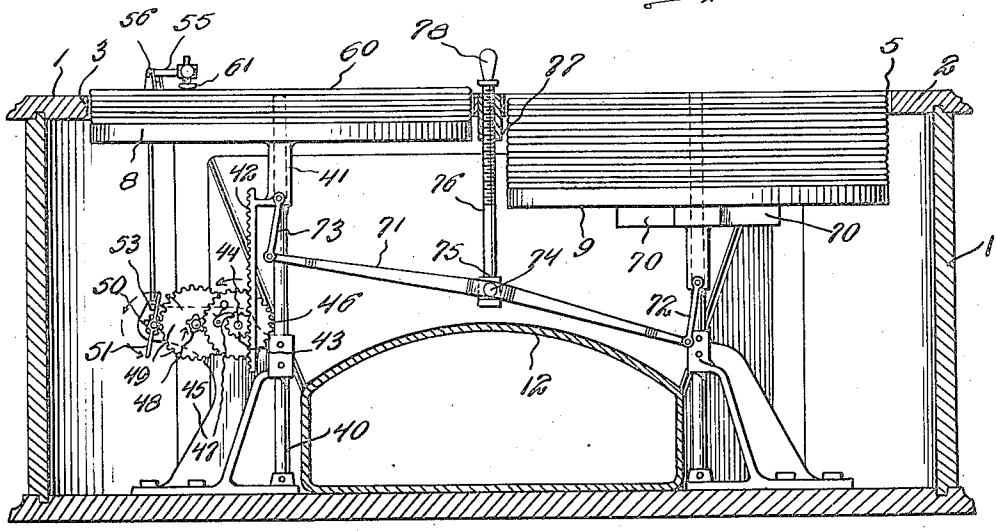


Fig. 3.



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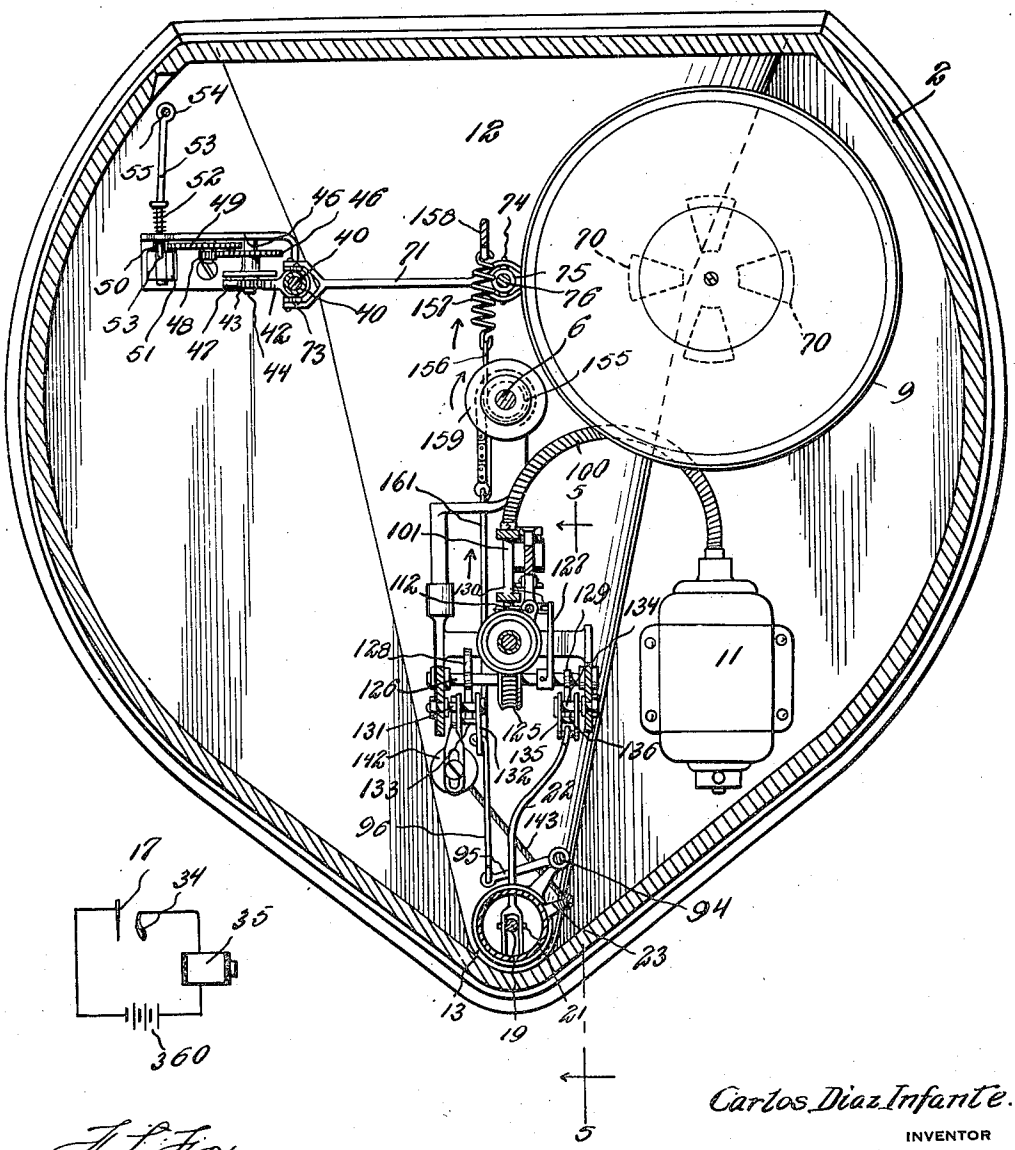
Aug. 21, 1923. 1,465,909

CARLOS DIAZ INFANTE

AUTOMATIC PHONOGRAPH

Filed Dec. 30, 1921 5 Sheets-Sheet 3

Fig. 4.



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AUTOMATIC PHONOGRAPH

Filed Dec. 30, 1921 5 Sheets-Sheet 4

Fig. 5.

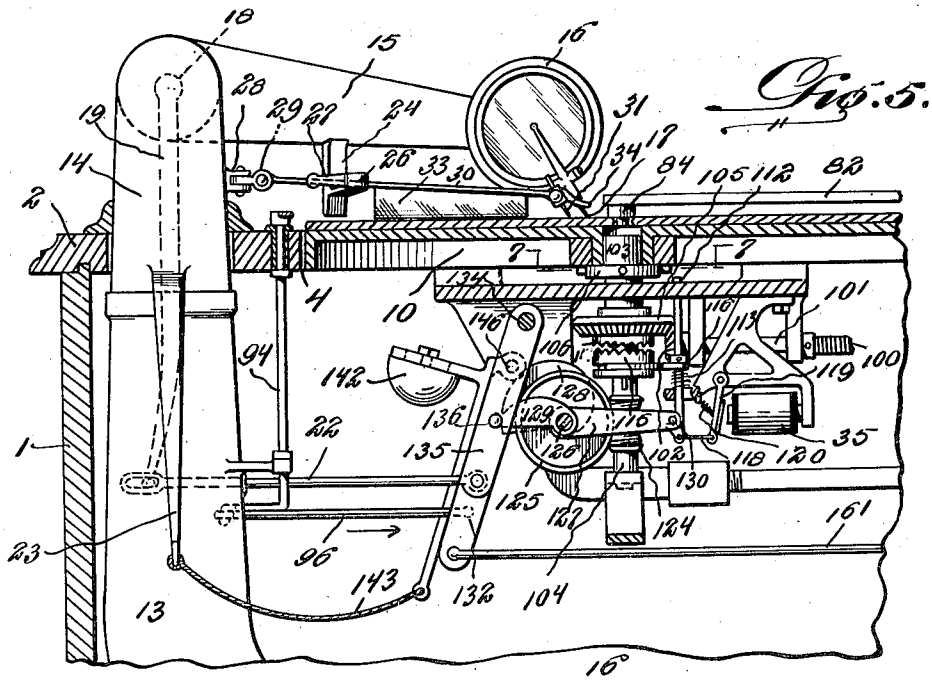
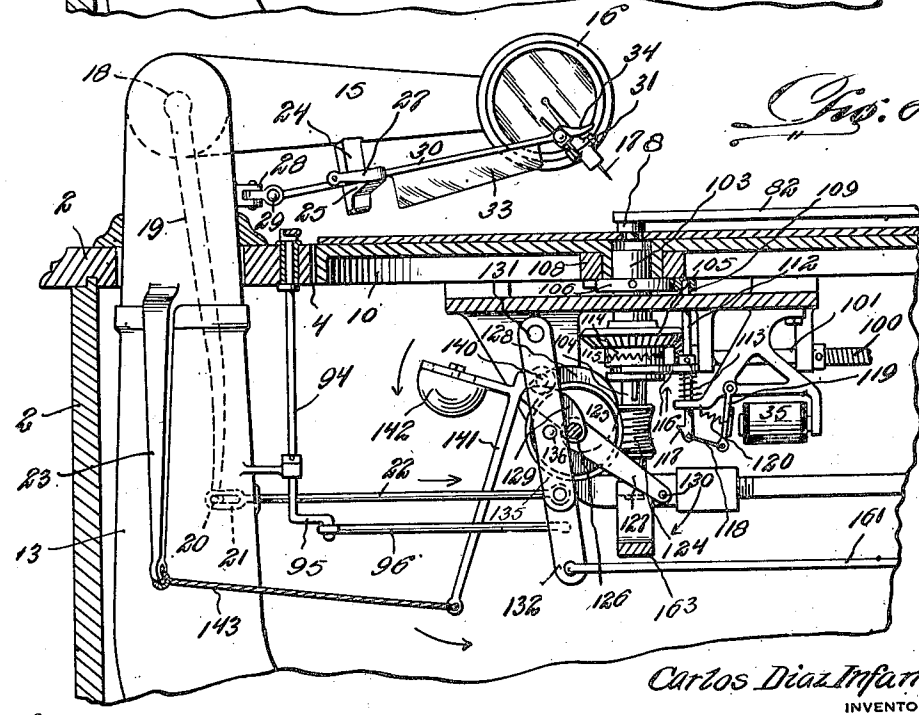


Fig. 6.



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AUTOMATIC PHONOGRAPH

Filed Dec. 30, 1921 5 Sheets-Sheet 5

Fig. 7.

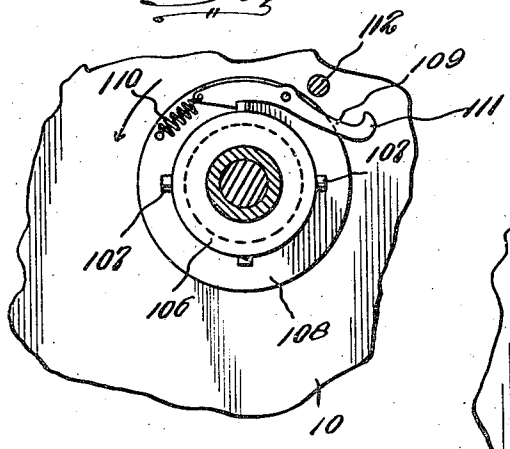


Fig. 8.

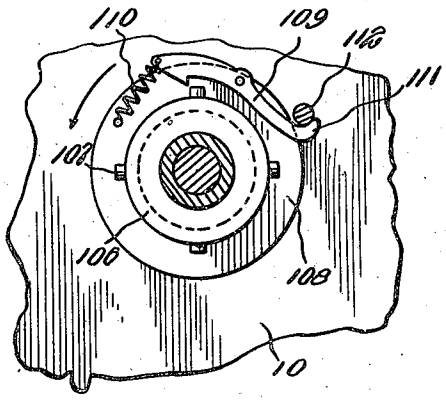
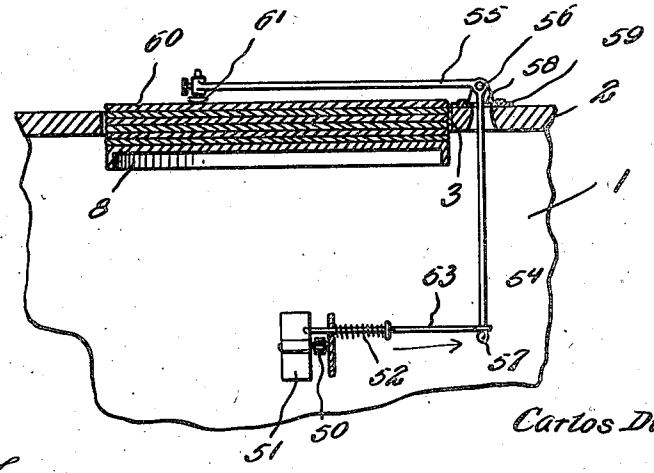


Fig. 9.



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Patented Aug. 21, 1923. 1,465,909

UNITED STATES PATENT OFFICE.

CARLOS DIAZ INFANTE, OF LEON, MEXICO.

AUTOMATIC PHONOGRAPH.

Application filed December 30, 1921. Serial No. 526,054.

To all whom it may concern:

Be it known that I, CARLOS DIAZ INFANTE, a citizen of the Republic of Mexico, residing at Leon, Gto., Mexico, have invented new and useful Improvements in Automatic Phonographs, of which the following is a specification.

The chief object of my said invention is the provision of an organized phonograph mechanism that is automatic in that it is possessed of the capacity of function of playing a multiplicity of records one after the other in the sequence in which the records are initially arranged by an attendant one upon another on a vertically movable delivery platform; the records being delivered in succession from the series on the said platform to a rotary table for cooperation with a reproducer, and being transferred one by one from the said rotary table to a vertically movable receiving platform, it being understood that while a record is on the rotary table the record is played or reproduced, and is not transferred to the receiving platform to give place to a following record until the playing of the first record is completed. Thus when the organized mechanism is supplied with a pluraltiy of records superimposed on the delivering platform, and is placed in operation, it will operate until all of the records are played in the sequence in which they are placed on the delivery platform, the uppermost record being played first, and the lowermost record played last. From this it follows that an attendant or other person in authority may arrange various programs to be played by the mechanism by simply varying the arrangement of the records on the delivery platform precedent to each operation of the mechanism, and it will also be manifest that when desired the attendant may remove some or all of the used records and may replace the same with new records.

Another object of the invention is the provision of an attachment whereby the mechanism is adapted to handle records of different diameters in succession—i. e., when desired twelve inch records and ten inch records may be manipulated and played in the apparatus.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed.

In the accompanying drawings, forming part of this specification:—

Figure 1 is a top plan view, partly in section, showing the organized mechanism constituting the preferred embodiment of my invention.

Figure 2 is a vertical section taken in the plane indicated by the line 2—2 of Figure 1, looking in the direction indicated by arrow.

Figure 3 is a vertical section taken at right angles to Figure 2 and in the plane indicated by the line 3—3 of Figure 1, looking in the direction indicated by arrow.

Figure 4 is a horizontal section taken in the plane indicated by the line 4—4 of Figure 2, looking downwardly.

Figure 5 is an enlarged detail section, taken in the plane indicated by the line 5—5 of Figure 4, looking in the direction indicated by arrow.

Figure 6 is a view taken in the same plane as Figure 5, but showing the parts in different positions as hereinafter explicitly referred to.

Figure 7 is an enlarged detail horizontal section taken in the plane indicated by the line 7—7 of Figure 5, looking downwardly, and hereinafter specifically referred to.

Figure 8 is a view similar to Figure 7 but with the latch lever in a different position for a purpose hereinafter brought out.

Figure 9 is a detail vertical section, taken at right angles to Figure 3, and contributing to the illustration of the governor mechanism shown near the left hand side of Figure 3.

Figure 10 is a diagrammatic view showing the normally open circuit including the terminal 34, the electro-magnet 35 and a source of electric energy designated 360.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

Among other elements my novel phonograph comprises a casing 1 with a top wall 2. In the said top wall 2 are provided three circular openings numbered 3, 4 and 5, respectively, and grouped in the relation illustrated about a central vertical shaft 6 which extends through an opening 7 in the top wall 2, as best shown in Figures 1 and 2.

Vertically alined with the opening 3 is the vertically movable delivery platform which

is designated by 8, and vertically alined with the opening 5 is the vertically movable receiving platform, designated by 9, the said platform being of circular form.

Arranged in the opening 4 is the rotary table on which records are rotated one by one, the said table being designated by 10, and being best shown in Figures 2, 5 and 6.

In the casing 1 is arranged an electric motor 11, and also in the casing is disposed a horn 12, with an upstanding portion 13. Appropriately joined to and extending from the upstanding portion 13 of the horn 12 is a tubular upstanding member 14 which extends through the casing top 2, and is in communication with the upstanding portion 13, and is adapted to be turned about its axis on said upstanding portion 13. Communicating with and hingedly connected in appropriate manner with the upstanding member 14 is a vertically adjustable swinging tone arm 15 on the forward portion of which is a sound box 16, equipped with a stylus 17 and also equipped with the other appurtenances common to a phonograph sound box. Fixed to the vertically adjustable or movable tone arm 15, Figure 1, is an arm 18 which is arranged within the tone arm 15 and is disposed in the center of movement thereof and is extended into the upper portion of the member 14. Fixed to the said arm 18 and extending downwardly through the member 14 and the horn portion 13 is an arm 19, Figures 2, 5 and 6. The said arm 19 has a lateral projection 20 at its lower end, disposed in the slotted portion 21 of a rod 22. Consequently when the rod 22 is moved in the direction indicated by arrow in Figure 6, the tone arm 15 and its appurtenances will be raised as shown in Figure 6, and when the rod 22 is permitted to move in the opposite direction the sound box end of the tone arm 15 will gravitate. It will also be noticed by comparison of Figures 2, 5 and 6 that the tubular member 14 is provided with a pendent exterior arm 23, and that the tone arm 15 is provided with an exterior pendent arm 24 on which is a lateral arm 25 with a stop 26 at its outer end and also with a rearwardly directed arm 27. Hinged at 28, Figures 1, 5 and 6, on the outer side of the tubular member 14 is a horizontally swinging bracket 29, and hingedly connected to the said bracket 29 is a rod 30 which rests and is movable laterally on the arm 25 and is provided at its forward end with a needle 31 adapted to traverse the groove in a record at a point inwardly beyond the stylus 17 of the reproducing means. A retractile spring 32, Figure 1, is interposed between the rod 30 and the rearwardly directed portion 27 of the arm 25 and has a tendency to move the said rod 30 toward the right in Figure 1. On the rod 30 is carried a wiper 33 which frictionally engages the upper side of the record on the rotary table 10 and serves to remove particles from the said surface, and also serves when the needle 31 is in engagement with the wall at the inner end of the groove to enable the frictional contact between the record turning in the direction indicated by arrow in Figure 1 and the wiper 33 to hold the said needle 31 against the said inner wall. Thus it will be seen that prior to the completion of the playing of the record on the table 10, the rod 30 will be held against further inward movement until a portion of the stylus arm on the sound box contacts with a terminal 34 on the rod 30 when an electric circuit containing a source of electric energy 360 and a magnet 35 will be completed for a purpose hereinafter set forth. By reference to Figure 6 it will be understood that the rod 30 is adapted to be swung upwardly with the tone arm 15, and by reference to Figure 1 it will be noted that when the needle 31 is traversing the groove in the record, the spring 32 will tend to move the rod 30 toward the stop 26.

As best shown in Figure 3 the delivery platform 8 is guided on a fixed upright rod 40, the said platform 8 having a sleeve 41 which loosely receives the said rod 40. On the said sleeve 41 is a pendent rack bar 42 which is intermeshed with a pinion 43 on a shaft 44, mounted in a stationary standard 45. Also mounted on the shaft 44 is a spur gear 46 on which is a spring backed pawl 47 that engages the pinion 43 in such manner that the platform 8 is adapted to be moved downwardly without the transmission of rotary motion to the gear 46, but when the platform 8 is moved upwardly the pawl by cooperation with the pinion 43 will operate to turn the gear 46 in the direction indicated by arrow in Figure 3. The said gear 46 is intermeshed with a pinion 48 fixed with respect to a gear 49, and the said gear 49 is intermeshed with a pinion 50, Figures 3 and 9, which pinion 50 is fixed with respect to a fan 51. Normally resting in the path of the blades of the fan 51 is a rod 53 which has an eye 54 to loosely receive one arm of a right angle lever 55, fulcrumed at 56 on a standard at the upper side of the top 2 of the casing 1. On the rod 53 is an expansion spring 52 that tends to move the rod in the direction indicated by arrow in Figure 9. At the lower end of its pendent arm the lever 55 is provided with an enlargement 57, arranged below the eye 54. It will also be noticed, Figure 9, that the standard to which the lever 55 is pivoted is provided with a base 58 which is adapted to be turned within an annular flange 59. This provision permits of the upper arm of the lever 55 being swung off and on the uppermost record 60 on the delivery platform

8. At its outer end the said upper arm of the lever 55 is provided with a shoe 61, of wood, felt or other appropriate material, to bear upon the upper side of the uppermost record 60. It will be apparent from this that when the delivery platform 8 is at rest the rod 53 will rest in the path of the fan 51 and hold the said fan against rotation. It will also be apparent that when the uppermost record on the delivery platform 8—i. e., the record that is above the surface of the top 2, is moved edgewise from under the shoe 61, the upper arm of the lever 55 will be permitted to move downwardly, the spring 52 serving at that time to assist in withdrawing the rod 53 from the path of the fan 51. Then when the platform 8 is moved upwardly by means hereinafter described, it will be observed that the fan 51 will be rotated and will serve as a wind brake to govern and render even the upward movement of the delivery platform 8. This operation will continue until the succeeding record on the platform 8 assumes a position slightly above the plane of the casing top 2 when the said record will have rocked the lever 55 sufficiently to replace the rod 53 in the path of the fan 51 and thereby stop the upward feed of the delivery platform 8.

The receiving platform 9 is weighted at its underside, as designated by 70 and is therefore heavier than the delivery platform 8, so that when the said delivery platform 8 is released for vertical movement as just described, the gravitational action of the receiving platform 9 will operate through a rocking beam 71 to move the delivery platform 8 upwardly. The said beam 71 is connected by links 72 and 73 with the platform 9 and the platform 8, respectively, and it is fulcrumed at 74 on a block 75, connected in swivelled manner to the lower end of a threaded rod 76. The said rod 76 bears in an interiorly threaded nut 77 carried by the top 2, and is provided at its upper end with an appropriate finger piece 78. The rod 76 is adjusted downwardly when it is desired to adapt the apparatus for the handling of a large number of records, and is adjusted upwardly when it is desired to adjust the apparatus for the handling of a less number of records. By reference to Figure 3 it will be observed that the rod 40 rests in the central openings of all of the records superimposed on the platform 8 except the central opening of the uppermost record which occupies a plane above that of the upper side of the casing top 2. In other words the upper end of the rod 40 is flush with the upper side of the top 2 so that the uppermost record is free to be moved edgewise over the upper side of the top 2 and over the upper end of the rod 40.

For the purpose of moving the records one by one from a position above the delivery platform 8 to a position above the rotary table 10, and from the latter position to a position above the receiving platform 9, I provide the mechanism best shown in Figures 1 and 2 and which comprises in addition to the shaft 6 a hub 80, pinned at 81 to the shaft 6 and three equi-distant radial arms 82 hinged at 83 to the said hub 80, whereby they are adapted to swing upwardly and downwardly on the hub. Each of the said arms 82 is provided at its outer end with a depending stud 84, and each is provided at its inner end with a depending arm 85. From this it follows that when the shaft 6 is turned above its axis through a third of a revolution, the upper ends of the arms 82 will be moved through a third of a revolution so as to enable one arm 82 to move the uppermost record above the delivery platform 8 from a position above the said platform to a position above the rotary table 10, and this coincident with the movement through the medium of the preceding arm 82 of the record on the rotary table 10 from a position above the said rotary table 10 to a position above the receiving platform 9. During the said movement the remaining arm 82 is moved idly through a third of a circle. In other words the remaining arm which had in a preceding operation moved in a record from above the table 10 to a position above the receiving platform 9, will be moved upwardly to disengage its stud 84 from the said record, and will then be moved in the direction indicated by arrow in Figure 1 until its stud 84 enters the central opening in the uppermost record on the delivery platform 8. For the purpose of so raising the last mentioned arm 82 I provide the stationary cam 86 which loosely surrounds the shaft 6 and is connected at 87 to the underside of the casing top 2. Manifestly the said cam 86 by cooperation with the pendent portion 85 on the last mentioned arm 82, will raise the outer end of the said arm 82 as the record engaged thereby approaches a position above the receiving platform 9 so that the stud 84 of the arm will be disengaged from the central hole in the record, and will then be free to move over the record in the direction indicated by arrow in Figure 1 as well as over the upper side of the top 2 and the upper side of the uppermost record on the delivery platform, and will also be free to drop into the central opening in the last-named record.

In order to positively stop the turning movement of the hub 80 and the arms 82, I provide a stop lever 90, Figure 1, pivoted at 91 to the upper side of the casing top 2 and adapted to be arranged with its free end in opposed relation to the end of the arm 82 that is in vertical alinement with the center of the rotary table 10. The said stop lever

90 is connected by a link 92 with a crank 93 on the upper end of a vertical shaft 94, Figures 1, 2, 5 and 6, the said shaft 94 being provided at the lower end with a crank 95, to which is connected a rod 96, so that when the said rod 96 is moved in the direction indicated by arrow in Figure 5, the lever 90 will be moved out of the path of the mentioned record-transferring arm 82.

Connected through the medium of a flexible shaft 100 with the armature shaft of the electric motor 11 is a horizontal shaft 101, Figures 2, 4, 5 and 6, journaled in suitable bearings within the casing 1. At its end remote from the flexible shaft 100 the shaft 101 is provided with a bevel gear 102, and at this point I would state for the sake of clearness that motion is taken from the shaft 101 to rotate the rotary table 10, and to rotate the hub 80 and the arms 82. For the rotation of the table 10 I employ a sleeve 103 loose on an upright shaft 104, the said sleeve 103 having fixed thereon a bevel gear 105 which is intermeshed with the gear 102, and also having fixed thereon a hub 106, Figures 5 to 8, the said hub 106, being provided with four equi-distant radial studs 107. The table 10 loosely surrounds the upper portion of the sleeve 103, and fixed to the underside of the table 10 is an annulus 108 on which is fulcrumed a latch lever 109, subject to the action of a retractile spring 110 and having a toe 111. When the said toe 111 brings up against a rod 112 after the manner shown in Figure 8 the latch lever 109 will be disengaged from the particular stud 107, and hence while the hub 106 will continue to rotate, the rotation of the table 10 will be stopped. The rod 112 is vertically movable, and when the said rod 112 is released, as hereinafter described, and is moved upwardly by an expanison spring 113, Figures 5 and 6, the rod will be in the position shown in Figure 6, and adapted to cooperate with the latch lever 109 in the manner described. When the said rod 112 is in the lowermost position shown in Figure 5 it will offer no interference whatever to the rotation of the table 10 with the hub 106.

The sleeve 103 is provided at its lower end with a clutch member 114, and keyed and movable vertically on the shaft 104 is a complementary clutch member 115. The clutch member 115 is connected through the medium of a bifurcated arm 116 with the rod 112 so that upward movement of the clutch member 115 will attend upward movement of the rod 112, and downward movement of the rod 112 will be attended by downward movement of the clutch member 115. At its lower end the rod 112 is provided with a toe 117. The rod 112 is capable of lateral movement as well as up and down endwise movement, and the lower portion of the said rod 112 is connected by a link 118 with the armature lever 119 of the electro-magnet 35 so that when the said electro-magnet 35 is energized as before described the rod 112 or rather the lower portion of said rod will be positively moved toward the right in Figures 5 and 6, for a purpose hereinafter set forth. A spring 120 serves to move the armature 119 toward the left in Figures 5 and 6 when the magnet 35 is deenergized.

Fixed on the shaft 104 is a worm 124, Figures 2, 5 and 6, and intermeshed with the said worm 124 is a worm gear 125. The said worm gear 125 is fixed on a shaft 126, and also fixed on the shaft 126 is an arm 127, a cam 128, and a comparatively small cam 129. The arm 127 is provided with a lateral projection 130 for cooperation with the toe 117 on the rod 112. Pivoted at 131 is a link 132 which is connected with the rod 96 and is provided with a transverse pin 133 for cooperation with the cam 128, and pivoted at 134 is a compartively short link 135, which is connected with the rod 22 and is provided with a transverse pin 136 for cooperation with the cam 129. Pivotally connected at 140 is a bell crank 141 one arm of which is provided with an adjustable weight 142 and the other and pendent arm of which is connected by a cable 143 with the before mentioned pendent arm 23 on the tubular member 14.

The lower end of the shaft 6 is stepped in a bracket 150 stationary in the casing 1 as best shown in Figure 2, and pinned on the shaft 6 and arranged immediately above the bracket 150 is a clutch member 151 having three equi-distant abutments 152. Loose on the shaft 6 is a sleeve 153. This sleeve 153 is provided at its lower end with a clutch member 154 corresponding to and engaged with the clutch member 151. On the upper end of the sleeve 153 is a circumferentially grooved portion 155, and connected to and adapted to be wound on the said portion 155 is a cable 156 connected to one end of a retractile spring 157 the other end of which is connected to a pendent hook 158 on the underside of the casing top 2. Also carried by the sleeve 153 is a lower circumferentially grooved portion 159, and connected to and adapted to be wound in reverse direction on the said portion 159 is a cable or chain 160. Connected to and interposed between the link 132 and the cable or chain 160 is a rod 161. It will also be observed by reference to Figure 2 that a retractile spring 162 is interposed between and connected to the link 135 and the lower bearing 163 of the shaft 104.

From the foregoing description of the construction, it will be readily understood that with the shaft 101 continuously driven by the electric motor 11, and with the delivery platform 8 supplied with a plurality of superimposed records, and with a record

in working position on the rotary table 10, the operation of the phonograph is as follows:—

The playing of the record on the rotary table 10 is attended by inward movement of the rod 30 and the stylus 17 on the tone arm 15, and when the electric circuit including the magnet 35 is closed by contact between the arm of the stylus 17 and the terminal 34, the electro-magnet 35 is energized and the armature 119 is attracted to the magnet 35. This has the effect of withdrawing the toe 117 on the rod 112 from engagement with the lateral projection on the arm 127, with the result that the arm 127 is released, and the rod 112 is forced upwardly by the spring 113 to stop the rotary table 10. Said spring 113 also serves to put the clutch member 115 into engagement with the clutch member 114. When the arm 127 is released as stated and the clutch member 115 is engaged with the clutch member 114, the shaft 104 will be rotated as will also the worm thereon whereupon the worm gear 125 and the shaft 126 will also be rotated to move the cams 128 and 129. When the cams 128 and 129 are moved as stated, the links 132 and 135 will be released by their respective cam, whereupon the retraction of the spring 157 will rotate the sleeve 153 and take up on the portion 159 of the sleeve the cable or chain 160. It will also be noted that the said rotation of the sleeve 153 will have the effect of enabling the clutch member 154 to engage a fresh set of teeth on the clutch member 151 so that when the rod 161 is moved toward the left in Figure 6 by the action of the cam on the link 132, the shaft 6 will be turned in the direction of the arrows in Figure 1 through one-third of a revolution, with the result that a played record will be transferred from the rotary table 10 to the receiving platform 9, and a fresh record will be transferred from the delivery platform 8 to the rotary table 10; it being understood that previous to the operation described the stop lever 90 will have been moved out of the path of the arm 82 over the rotary table 10 by the first described movement of the link 132, the said movement of the link 132 serving to rock the upright shaft 94 and swing the stop lever 90 through the medium of the link 92. It will be remembered that when the rod 112 is released and moved upward by the spring 113, rotation of the table 10 is stopped; and it will also be understood that subsequent to the transfer described, the stop lever 90 will be returned to the position shown in Figure 1. The release of the short link 135 from its respective cam slightly precedes the release of the long link 132 from its respective cam, and this has the effect of raising the tone arm 15 for the movement of the tone arm to the initial playing position before the gravitation of the weight 142 starts by the rocking of the bell crank 141 to turn the tubular member 14 about its axis and thereby return the tone arm 15 to the initial playing position. In this connection it will be understood that the bell crank 141 is pivoted to the long link 132. When the tone arm is returned to the initial playing position the said arm gravitates to put the stylus 17 and the needle 31 into engagement with the groove in the record on the rotary table 10, and at the same time the cams will have operated to return the links 132 and 135 from the positions shown in Figure 6 to the positions shown in Figure 5 with the result that the rod 112 will be drawn downwardly to release the latch lever 109, and the clutch member 115 will be disengaged from the clutch member 114. The following rotation of the table 10 will then be attended by the playing of the record on the said table until the said playing is completed when the operation before described will be repeated. While the tone arm 13 and its appurtenances are in raised position it will be understood that the transferring arms 82 are turned through a third of a revolution by the action of the large cam 128 against the pin of the long link 132, and precedent to the correct placing of a record on the table 10, the stop lever 90 is moved to the position shown in Figure 1 by the long link 132 through the medium of the rod 96, the rock shaft 94 and the link 92. It will also be understood that when the tone arm 15 is lifted in the manner and for the purpose described, the electric circuit referred to will be interrupted and the magnet 35 will be deenergized. This will be better understood when it is stated that on the lifting of the tone arm 15 and the rod 30, the retractile spring 32, Figure 1, will operate to move the rod 30 in a direction away from the tone arm so as to carry the terminal 34 away from the stylus arm on the tone arm. It will also be understood in this connection that the action of the rotating record against the wiper 33 is stronger than the spring 32 so that when the needle 31 is against the inner wall of the groove in the record, there will be no liability of the spring 32 moving the rod 30 further toward the center of the record. From this it follows that incident to the completion of the playing of a record, the tone arm 15 will move inwardly until the arm of its stylus brings up against the terminal 34.

When the uppermost record on the delivery platform 8 is a twelve inch record, the tone arm 15 must be moved outward to a greater extent than when a ten inch record is uppermost on the delivery platform 8. Therefore, I provide the attachment shown at the left of Figure 1. The said attachment comprises a lever 170 pivoted at 171

on the casing top and having an arm 172 adapted to bring up against a stop 173. The said attachment also comprises a cable 174, movable through a fixed guide 175 on the casing top 2, and a pivoted stop member 176, the said stop member being pivotally connected at 177 to the top of the casing 1, and being subject to the action of a rectractile spring 178, and being equipped with a projection 179 and a second projection 180, each of the said projections being designed to offer an abutment to the arm 24 on the tone arm 15. The operation of the attachment will be understood when it is stated that when a ten inch record is shifted or transferred from a position above the delivery platform 8, the said record will not move the lever 170, and hence there will be no movement of the stop lever 176, with the result that the projection 179 will limit the outward movement of the tone arm 15. When, however, a twelve inch record is transferred, the said twelve inch record will swing the lever 170 outward so that the stop lever 176 will be swung outward, and the outward movement of the tone arm 15 will be limited by the projection 180 on the stop lever 176.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear and exact understanding of the said embodiment. I do not desire, however, to be understood as confining myself to the said specific construction and relative arrangement of parts inasmuch as in the future practice of the invention various changes and modifications may be made such as fall within the scope of my invention as defined in my appended claims.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:—

1. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means, means to actuate the said several means, a differential movable stop for the reproducing means, and movable means operable by records of different diameters and connected with said stop.

2. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means, means to actuate the said several means, a swinging stop having spaced abutments for the reproducing means, a lever positioned to be moved by edgewise movement of records of different diameters en route between the storing means and the rotating means, and a connection between said stop and lever.

3. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means, means to actuate the said several means, a swinging stop having spaced abutments for the reproducing means, a lever positioned to be moved by edgewise movement of records of different diameters en route between the storing means and the rotating means, and a conection between said stop and lever; the said stop being spring actuated, and the said connection being effected through an appropriately guided cable.

4. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means; the last-named or actuating means being associated with means to automatically control the same, and the transferring means comprising gravitational arms with studs to engage apertures in records and means to automatically raise each arm incident to the movement of the same between the center of the rotating means and the center of the played record receiving means.

5. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means; the last-named or actuating means being associated with means to automatically control the same, and the storing means being equipped with a governor to control the

movement of records and movable means normally holding the governor against operation and operable by movement of the foremost record of the storing means.

6. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means; the last-named or actuating means being associated with means to automatically control the same, and the storing means being equipped with a governor comprising a train of gears operable by movement of said means, a wind brake operable by said gears, a movable stop for cooperation with said wind-brake, and a lever connected to said stop and having an arm opposed to and movable by the foremost record of the storing means.

7. In a phonograph, the combination of movable means to store records for delivery one by one, a governor to control the movement of said means, and movable means normally holding the governor against operation and operable by movement of the foremost record of the storing means.

8. In a phonograph, the combination of movable means to store a plurality of records for delivery one by one, gravitational means to receive records one by one, and a connection between the storing means and the gravitational receiving means whereby the former is moved by gravitation of the latter.

9. In a phonograph, the combination of movable means to store a plurality of records for delivery one by one, gravitational means to receive records one by one, and a connection between the storing means and the gravitational receiving means whereby the former is moved by gravitation of the latter; the said connection being susceptible of vertical adjustment and adjustable fixture.

10. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means, a motor, circuit closing means and an electro-magnet arranged in a normally open circuit with the reproducing means and a source of electric energy, and means controlled by said magnet to stop the rotating means, release and move the transferring means and also move the reproducing means, and then lock the transferring means against movement and re-establish rotation of the record-rotating means.

11. In a phonograph, the combination of movable reproducing means, record-rotating means, means to store a plurality of records for delivery one by one, means to receive records one by one after the playing of the same, means to transfer records one by one from the storing means to the rotating means and to transfer records one by one from the rotating means to the receiving means, a motor, circuit closing means and an electro-magnet arranged in a normally open circuit with the reproducing means and a source of electric energy, and means controlled by said magnet to stop the rotating means, release and move the transferring means and also move the reproducing means, and then lock the transferring means against movement and reestablish rotation of the record-rotating means; the said circuit-closing means comprising a rod connected and movable vertically and laterally with the reproducing means and also movable independently of said means and equipped with a needle and a wiper.

In testimony whereof I affix my signature.

CARLOS DIAZ INFANTE.