May 30, 1933. C. L. McDERMOTT 1,912,291

PHONOGRAPH DOLL

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Fig. 1.

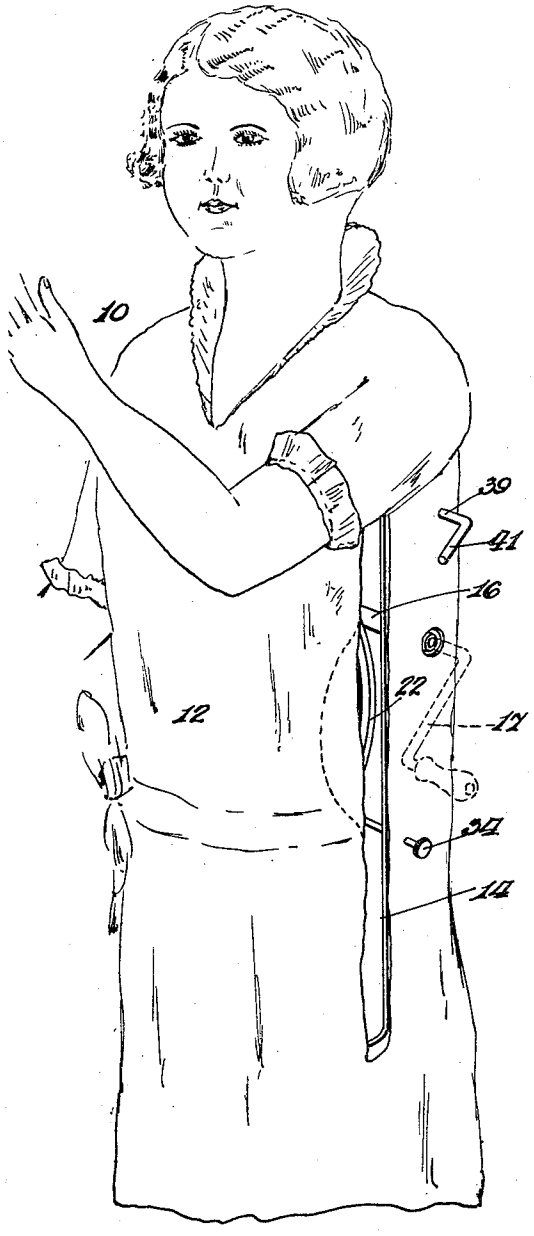
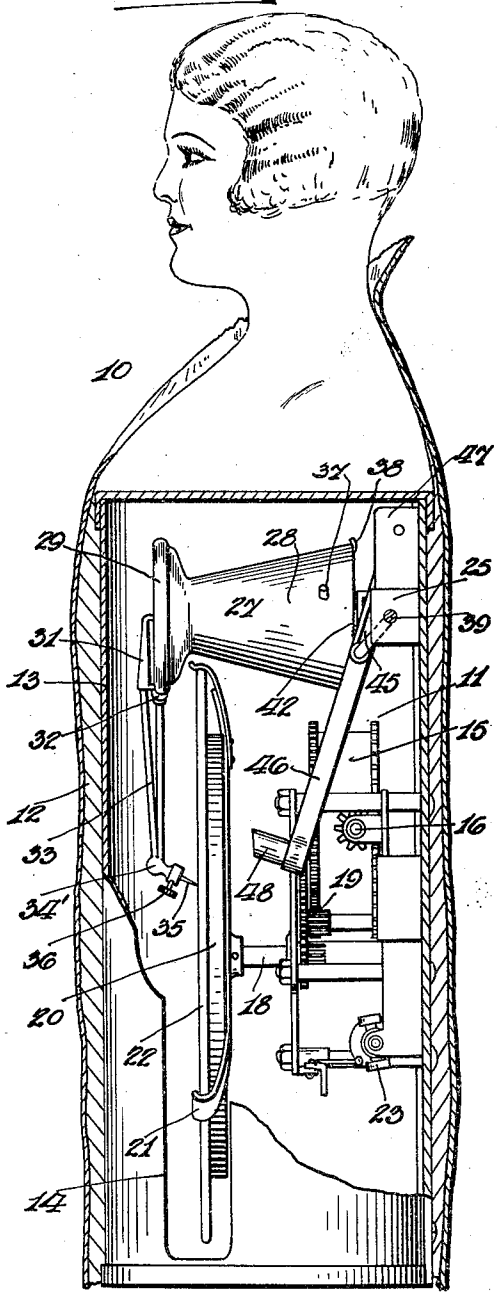


Fig. 2.



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WITNESS: [illegible]

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Fig. 3.

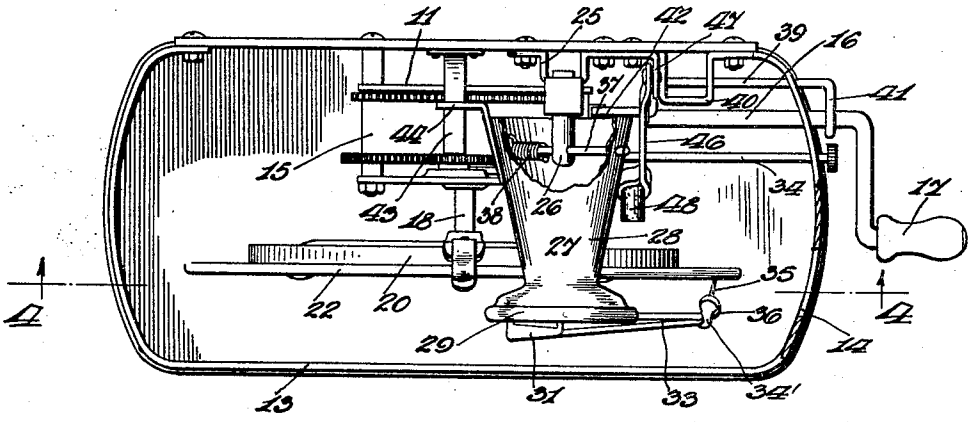
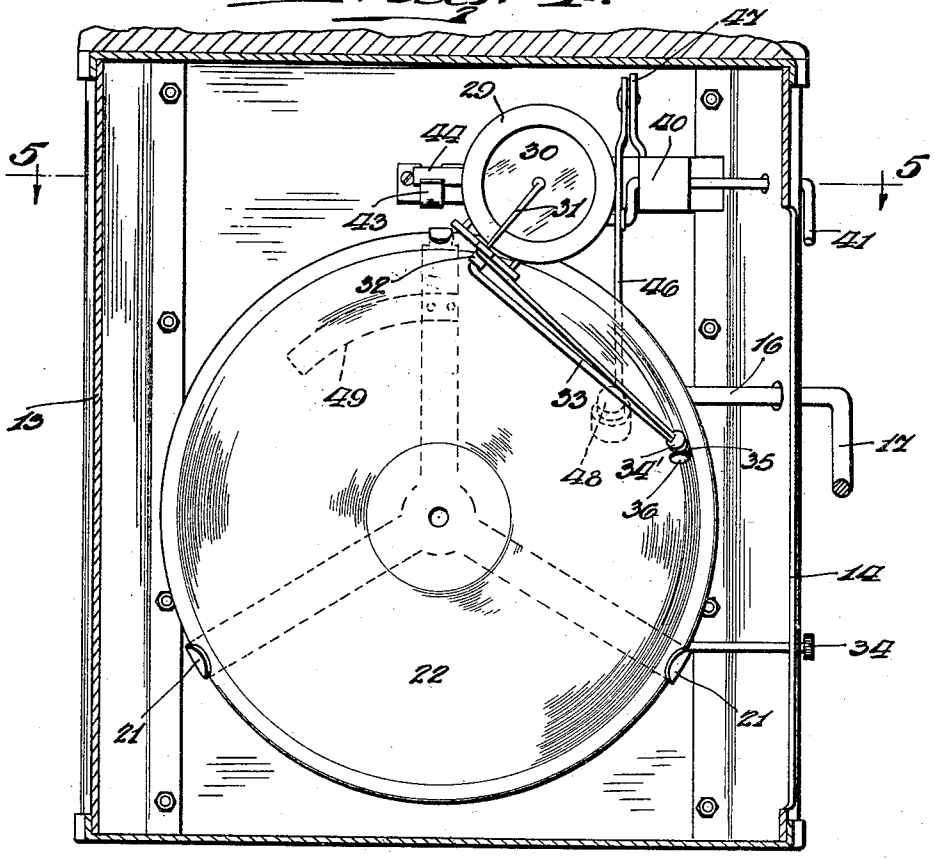


Fig. 4.



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PHONOGRAPH DOLL

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Fig. 5.

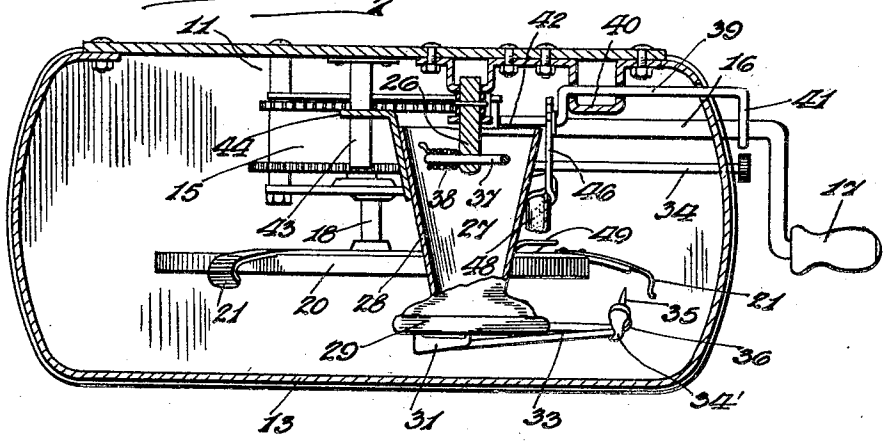
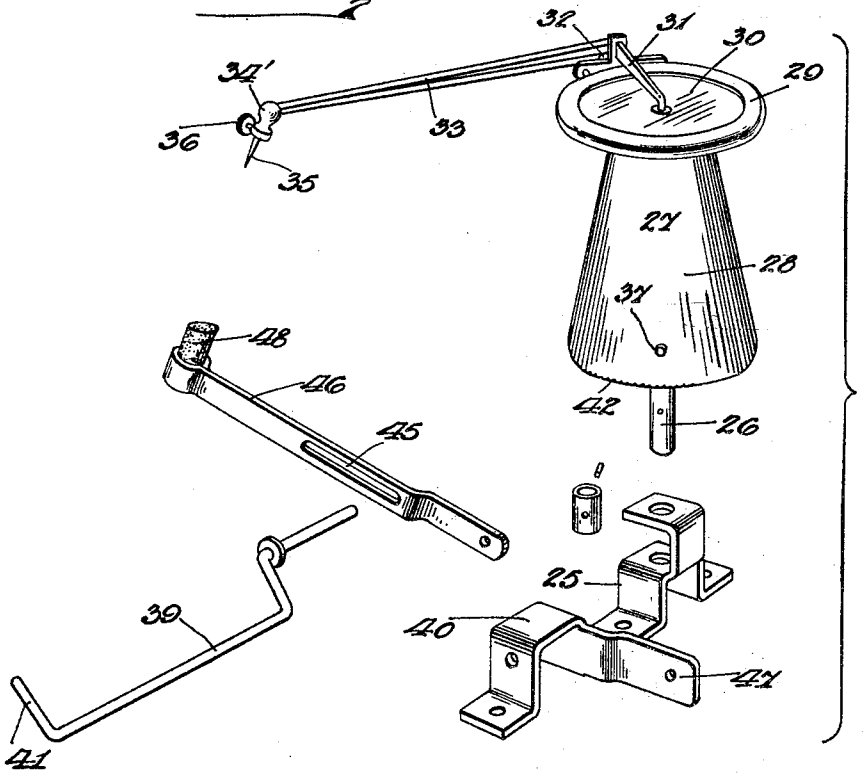


Fig. 6.



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Patented May 30, 1933 1,912,291

UNITED STATES PATENT OFFICE

CHARLES L. McDERMOTT, OF NAMPA, IDAHO

PHONOGRAPH DOLL

Application filed June 8, 1932. Serial No. 616,156.

This invention relates to phonograph dolls. This application is a substitute for application Sr. No. 265,381, filed March 28th, 1928, allowed February 5th, 1930, and which was abandoned.

The primary object of this invention resides in a doll having phonograph mechanism contained in the body thereof for interchangeably receiving and playing phonograph records of the disk type, the sound produced thereby being emitted through the body, rather than through the head of the doll.

Another object of the invention is to provide a sound reproducing mechanism which is constructed as a unit for mounting within the body of a doll, which facilitates the easy and quick assembly of the same therein.

A further object of the invention is the provision of a sound producing mechanism in which a record disk may be removably held upon a rotatable turn-table to prevent the accidental separation of the record disk therefrom regardless of the angle at which it may be disposed, and to further provide a novel construction of reproducer for supporting a playing needle in relation to the record disk so that it positively engages the record disk under all conditions.

A further object is to provide phonograph mechanism within the body of a doll which includes a means operable from the exterior of the doll for successively moving the playing needle away from the record disk upon the completion of the playing of a record, stopping the rotatable turn-table, and returning the needle to a position adjacent the periphery of the record disk for the replaying of the record or for engagement with the first sound groove of a substitute record, and for facilitating the changing of the playing needle when necessary.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, as particularly pointed out in the appended claims, and are illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my improved phonograph doll.

Fig. 2 is a vertical longitudinal sectional view therethrough.

Fig. 3 is a horizontal sectional view therethrough.

Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 4; and

Fig. 6 is a disassembled perspective view of the reproducer and its operating parts.

Referring to the drawings by reference characters, the numeral 10 designates my improved phonograph doll in its entirety which has a phonograph mechanism 11 mounted in the body 12 thereof. The phonograph mechanism 11 is built as a unit and includes a sheet metal housing 13 having an elongated slot 14 provided in the side wall thereof and which opens through one side of the body of the doll below one of the arm pits, and through which the sound from the sound producing unit within the housing is emitted. The housing may be fixedly mounted within the body of the doll in any suitable manner, and the usual stuffing and covering applied thereover to conceal the same.

Mounted within the housing is a spring motor 15 which is of any well-known construction having a winding shaft 16 which opens through the side of the doll to receive the winding crank handle 17 shown in Figure 1. The spring motor 15 imparts rotation to a driven rotatable shaft 18 journalled in the housing extending transversely thereof by means of a gear train 19, while a turn-table 20 is fixedly mounted to the driven shaft and is disposed on a plane or in alignment with the slot 14. Spring clips 21 are carried by the turn-table to engage the edge of the record disk 22 which is insertable through the slot 14, and which securely hold the record disk upon the turn-table to prevent shifting of the record disk thereon during the changing of the position of the doll during handling thereof. The spring motor 15 includes the usual speed governor 23 which

is regulated by a stem 34 extending to the exterior of the doll to control the speed of rotation of the turn-table. The motor may be of any standard construction so it is not believed necessary to go into detail, other than to say that it imparts rotation to the turn-table through the gear train 19, and it is wound up by the use of the handle 17.

Fixedly mounted upon the rear wall of the housing is a bracket 25 which has a stub shaft 26 turnably mounted therein and which has its axis parallel to the axis of the driven shaft 18. The stub shaft 26 turnably and tiltably supports a sound or phonograph reproducer 27 which includes a bell shaped horn 28 open at one end and closed at its other by the reproducer head 29 having the usual diaphragm 30. Phonograph reproducers of the type shown in the drawings are provided with a stylus bar 31 which carries a socket 32 for the customary needle. However, due to the peculiar arrangement of the turn-table with respect to the reproducer, I find it necessary to provide an extension bracket 33 for the reproducer, which is made of a single length of wire bent midway between its ends and having one of its ends fixedly secured in the socket 32 and its other end fixed to the stylus bar or the mounting therefor. The arms which form the bracket converge outwardly while a needle socket 34′ is provided on the outer end of the bracket for receiving the playing needle 35, held therein by a set screw 36. The reproducer extension bracket extends to a position over the record disk to permit the needle 35 to engage the grooves therein, and in a direction toward the slot 14, so that the bracket may be swung to a position so that a person may insert their hand through the slot to change the needle as it becomes necessary. The means for swinging the reproducer and for lifting the same from engagement with the record disk will now be explained.

The reproducer 27 is mounted on the stub shaft 26 by passing a transverse shaft 37 through the outer end of the same, and swingingly mounting the horn 28 upon the transverse shaft, whereupon the reproducer may turn with the stub shaft, and swing with respect thereto on the transverse shaft 37. The object of turnably mounting the reproducer is to allow the same to turn as the bracket 33 moves over the record during the playing of the same and to facilitate the return of the bracket after a record has been played, while the reproducer is pivoted on the transverse shaft to allow the bracket to swing toward or away from the record disk for engaging and disengaging the needle therewith. For forcing the needle into engagement with the record disk and for preventing it from jumping any of the sound grooves during the handling of the doll during the playing of a record, I provide an expansion coil spring 38 mounted on the transverse shaft 37 and having its ends respectively connected to said shaft and horn 28. This tends to pitch the reproducer in a direction toward the turn-table in a playing condition. For manually tilting the reproducer against the action of the spring 38 to lift the needle out of the sound grooves and return it to starting position, I provide a crank shaft 39 journalled in a bracket 40 supported by the back wall of the housing 11. The outer end of the crank shaft extends to the exterior of the doll and has a handle 41 by which a turning movement may be manually applied. The inner crank end of the crank shaft 39 is movable in the path of the serrated edge 42 of the horn 28, whereby rotation of the crank shaft will simultaneously tilt the reproducer to lift the needle free of the record and also turn the reproducer until the crank moves away from the serrated edge, at which time the reproducer bracket carrying the playing needle is in a position adjacent the starting edge of the record disk. As the crank completes its turn and moves away from the edges of the horn, the spring 38 will tilt the reproducer and again cause the needle to engage the record disk. A flat spring 43 is mounted in the path of an arm 44 carried by the horn 38 to limit the return movement of the reproducer to bring the playing needle to the proper position.

The starting and stopping of the turn-table is also controlled by the crank shaft 39 which passes through an elongated slot 45 in an arm 46 pivoted at one end to bracket 47, while the free end extends to a position adjacent the back side of the turn-table for engagement therewith and carries a block of felt 48. The backside of the turn-table carries a flat spring stop 49 which is so positioned that when the arm 46 is actuated by the crank shaft to cause the belt block 48 to strike against the backside of the turn-table, the turn-table will turn until the spring stop engages the block, whereupon one of the spring clips 21 of the turn-table will be in a position to be reached through the slot 14 to release the clip to facilitate the attachment and removal of a record disk from the turn-table. The crank shaft 39 imparts a rocking movement to the arm 45 to cause the stop to be "on" when the reproducer is out of engagement with the record disk, and to be in an "off" position when the reproducer is in engagement with the record disk.

From the foregoing description, it will be understood that I have provided a novelty doll having a phonograph mounted within the body thereof which is capable of interchangeably receiving and playing record disks, the sound being emitted through a slot in the side of the body through which the record disks are inserted to and from the turn-table. The record disks are se-

curely held upon the turn-table and the reproducer is maintained upon the record disk during operation, so that the doll may be held in various positions without interfering with the operation of any of the working parts. The phonograph mechanism is constructed in a unit which facilitates the assembling of the doll and effects a saving in cost of manufacture.

While I have described what I deem to be the most desirable embodiment of my invention, it is obvious that many of the details may be varied without in any way departing from the spirit of my invention, and I therefore do not limit myself to the exact details of construction herein set forth nor to anything less than the whole of my invention limited only by the appended claims.

What is claimed is:

1. In a phonograph mechanism, a sound reproducer comprising a horn-shaped casing, a diaphragm at one end thereof, the center of which is in alignment with the longitudinal axis of said casing, a stylus bar operatively connected to said diaphragm, an elongated wire bracket arm fixedly connected to said stylus bar, and a needle receiving socket provided in the outer end of said bracket arm.

2. In a phonograph mechanism, a rotatable turn-table adapted to support a record disk, a turnable stub shaft, a reproducer tiltably mounted on said stub shaft, spring means acting upon said reproducer to tilt the same toward said turn-table to cause the same to engage a record disk to be held thereon, a notched surface provided on said reproducer, and a turnable crank shaft engageable with said notched surface for tilting said reproducer against the action of said spring means and for imparting a turning movement thereto.

3. In a phonograph mechanism, a rotatable turn-table adapted to support a record disk, a turnable stub shaft, a reproducer tiltably mounted on said stub shaft, spring means acting upon said reproducer to tilt the same toward said turn-table to cause the same to engage a record disk to be held thereon, a notched surface provided on said reproducer, and a turnable crank shaft engageable with said notched surface for tilting said reproducer against the action of said spring means and for imparting a turning movement thereto, and stop means for limiting the turning movement of said reproducer in one direction.

In testimony whereof I hereby affix my signature.

CHARLES L. McDERMOTT.