April 21, 1953 M. F. MURRAY 2,635,882

DOLL

Filed May 24, 1948 2 SHEETS—SHEET 1

Fig. 1.

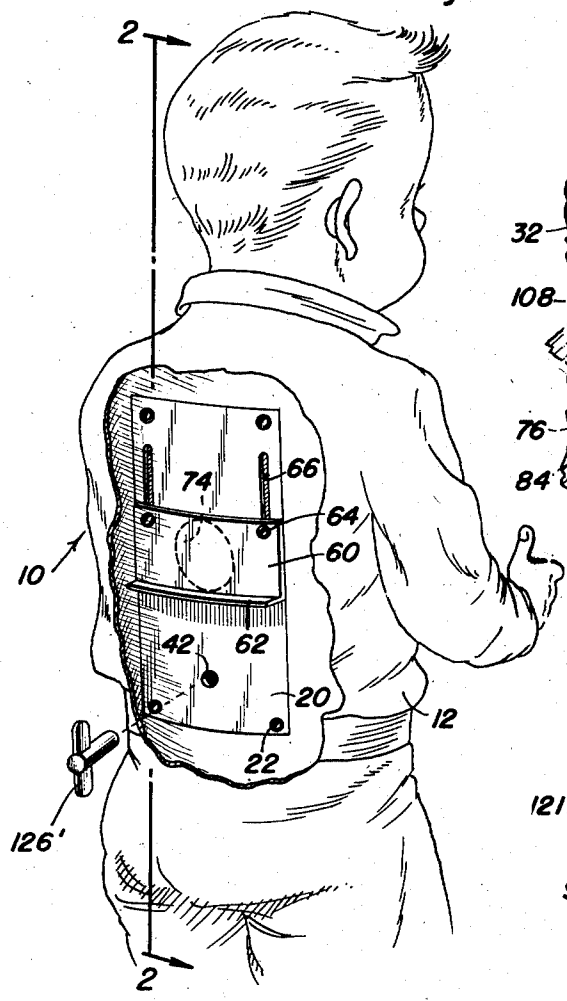


Fig. 5.

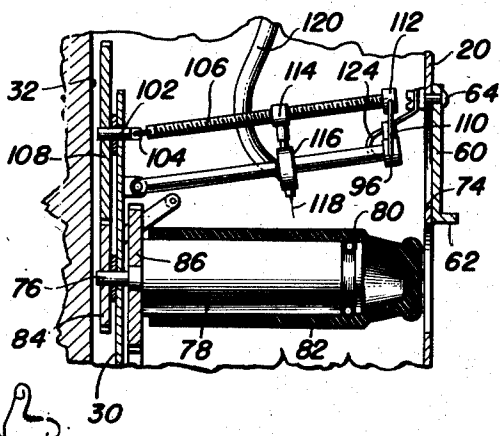


Fig. 6.

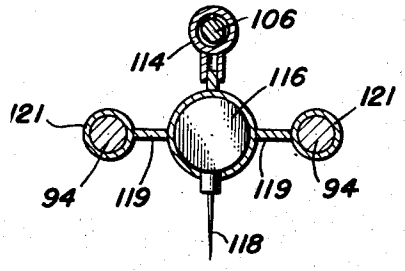
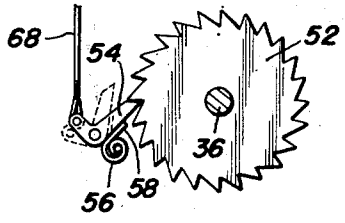


Fig. 7.



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DOLL

Filed May 24, 1948 2 SHEETS—SHEET 2

Fig. 2.

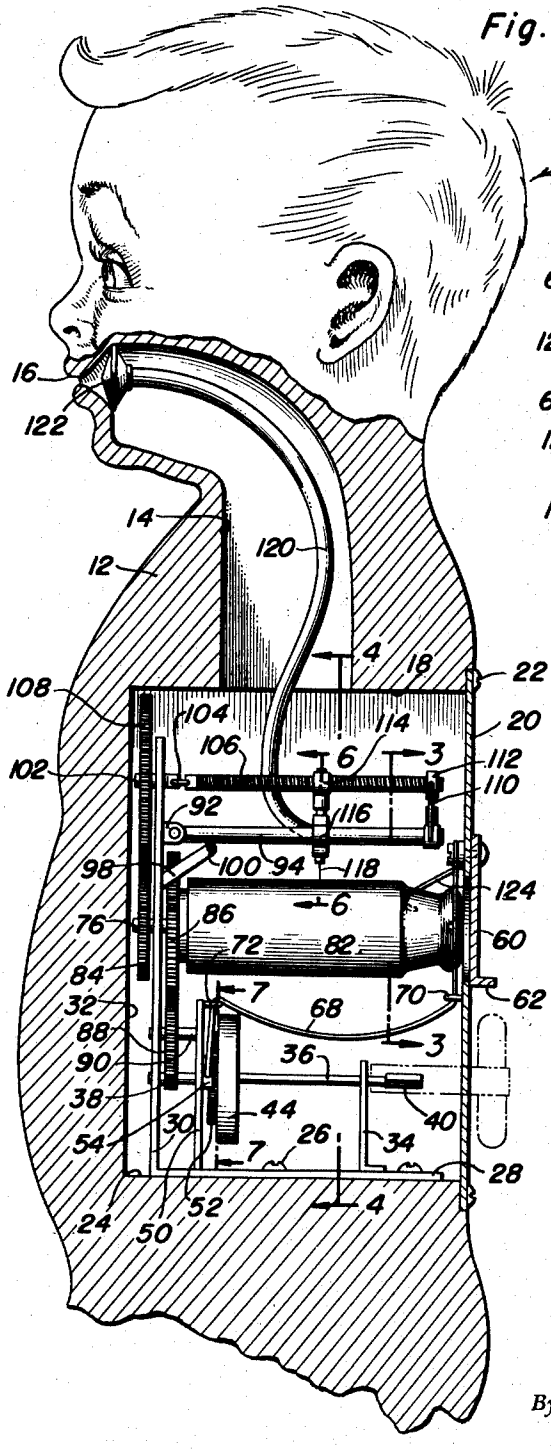


Fig. 3.

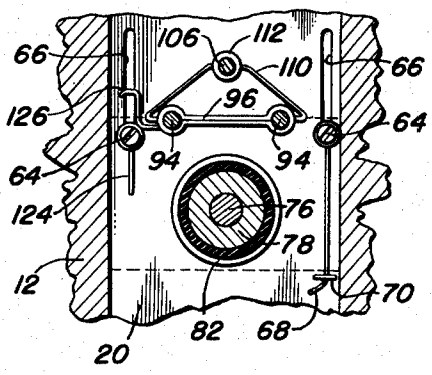
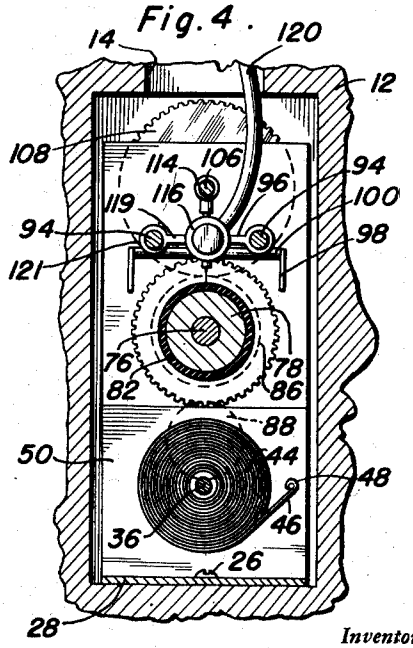


Fig. 4.



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UNITED STATES PATENT OFFICE

2,635,882

DOLL

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Application May 24, 1948, Serial No. 28,789

22 Claims. (Cl. 274—1)

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This invention relates to new and useful improvements in toy figures or dolls and the primary object of the present invention is to provide a doll including a novel and improved speaking unit mounted therein whereby the said doll will talk, sing or speak, thus providing a highly entertaining article for children.

Another object of the present invention is to provide a toy or educational device for children and the like including a figure or doll and a novel and improved phonograph or sound producing mechanism that is so designed as to receive cylindrical records which are quickly and readily applied to or removed from the sound reproducing mechanism in a convenient manner.

Another object of the present invention is to provide a doll having a chamber in which there is mounted a record player, a closure for the chamber, and novel and improved means operatively connected to the closure and the record player to automatically stop or brake the record player during the opening of the closure.

Another important object of the present invention is to provide a doll having a chamber provided therein, a hinged frame supporting a needle holder and sound box, a closure for the chamber, and novel and improved means for raising the frame to disengage the needle holder from a record during the opening of the closure.

Still another object of the present invention is to provide a talking doll or figure including a rotary record holder and embodying a main spring which is conveniently wound to rotate the said record holder mechanically.

A further object of the present invention is to provide a doll including a sound reproducing mechanism that is extremely small and compact in structure.

A still further aim of the present invention is to provide a sound reproducing device for toy dolls that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of the construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present invention, and with parts removed therefrom for the convenience of explanation;

Figure 2 is a longitudinal sectional view taken substantially on the plane of section line 2—2 of Figure 1;

Figure 3 is a fragmentary longitudinal vertical sectional view taken substantially on the plane of section line 3—3 of Figure 2;

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Figure 4 is a fragmentary longitudinal vertical sectional view taken substantially on the plane of section line 4—4 of Figure 2;

Figure 5 is a similar view as Figure 2, and showing the closure in a raised or open position, and with parts removed therefrom;

Figure 6 is a fragmentary longitudinal vertical sectional view taken substantially on the plane of section line 6—6 of Figure 2; and

Figure 7 is an enlarged fragmentary vertical sectional view taken substantially on the plane of section line 7—7 of Figure 2.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a figure or doll of any suitable size, shape, design or material having a body portion 12, a throat portion or passage 14, and a mouth or opening 16 that communicates with the throat 14.

The body portion 12 is provided with a chamber 18 the rear open end of which is closed by a substantially rectangular plate 20 that is removably secured to the rear portion of the body 12 by fasteners or the like 22.

Removably secured to the bottom wall 24 of the chamber 18, by fasteners or the like 26, is a support or anchor plate 28 having an upstanding leg or plate 30 that is spaced from the inner wall 32 of the said chamber 18.

Rotatably supported by the leg 30 and an angle member 34 fixed to the plate 28, is a substantially horizontal drive shaft 36 the forward terminal of which supports a drive gear 38 and the rear terminal of which terminates in a substantially rectangular member 40 that registers with a key receiving opening 42 provided in the plate 20.

Embracing the drive shaft 36, is a spiral spring or main spring 44 one end, the innermost end, of which is fixed to drive shaft 36 and the remaining end of which terminates in a hook 46 that engages a pin 48 which projects outwardly from an upstanding wall 50 fixed to the anchor plate 28.

Suitably fixed on the drive shaft 36, between the wall 50 and the spring 44, is an annular toothed plate or ratchet 52 that is engageable with a substantially L-shaped pawl or dog 54 which is pivoted to the wall 50.

A spring 56 carried by the wall 50 has a free bearing end 58 that engages the pawl 54 to normally urge the same out of engagement with the ratchet 52, as shown best by dotted lines in Figure 7.

The numeral 60 represents a substantially rectangular closure the lower edge of which is turned outwardly to provide a finger-engaging flange 62. Projecting outwardly from the closure 60, is a pair of spaced parallel fasteners or guide pins 64 that slidably engage substantially vertical guide slots 66 provided in the plate 20.

Engaging one of the fasteners 64, is one end of a flexible cord or element 68 that extends downwardly through an eye element or guide 70 fixed to the plate 20, downwardly through a further guide or eye element 72 fixed to the wall 50, and is connected to the pawl 54. It is noted that the slack in the cord 68 is such that when the closure 60 is raised to an open position relative to the access opening 74 and the plate 20, the cord 68 will become taut to pivot the pawl 54, against the action of spring 56, into engagement with the ratchet 52, thus locking the drive shaft 36 against rotation.

Rotatably supported by the upright 30, is a driven shaft 76 on which there is fixed a conventional, substantially frusto-conical cylinder-receiving member 78 having a locking ring 80 for supporting a cylindrical record 82 thereto.

The shaft 76 projects forwardly from the upright 30, and fixed thereto in any suitable manner is an annular gear 84 for a purpose which will later be more fully apparent. Also fixed on the shaft 76, between the member 78 and the rear face of the upright 30, is an annular gear 86 that engages an idler gear 88 mounted on a shaft 90 that is rotatably carried by the upright 30 and wall 50. The gear 88 engages the gear 38 whereby the driven shaft 76 will be rotated by the drive shaft 36.

Hinged to a pair of spaced parallel ears 92 that project outwardly from the upright 30, are the forward ends of a pair of spaced parallel guide bars or rails 94, the rear ends of which are connected by support straps or braces 96 that will retain the said guide bars 94 spaced parallel to each other.

Fixed to the rear face of the upright 30, is a pair of spaced parallel, upwardly and rearwardly inclined support arms 98 between which there extends a cross bar or stop 100 that will support the bars 94 in a substantially horizontal position.

Rotatably supported on the upper end of the upright 30, is a shaft 102 that is coupled by a pivotal connection as at 104 to an externally threaded rod or actuating bar 106. The shaft 102 supports a gear 108 that engages the gear 84 carried by the shaft 76, whereby the rod 106 will be rotated with the shaft 76 and the drive shaft 36.

Upwardly converging arms 110 are pivotally fixed to the straps 96 and these arms 110 are pivoted to and support a bearing 112 for the rod 106. In this manner, the rod 106 will be retained spaced parallel to the guide bars 94.

Movable on the rod 106 is a traveling member 114 that supports a depending sound box 116 having a needle 118 removably secured thereto which engages the cylindrical record 82. The sound box 116 includes outwardly projecting arms 119 having sleeves 121 that slidably engage bars 94.

Connected in a conventional manner to the sound box 116, is a flexible tube 120 that extends through the throat 14 to the mouth 16. A resonant diaphragm 122 is carried by the tube 120 and is positioned in the mouth 16.

Removably secured to one of the fasteners 64, is an arcuate lift arm or finger 124 that will engage a further arm 126 projecting from the straps 96 to raise the frame or bar 94 and rod 106 when the closure is open, thus disengaging the needle 118 from the cylindrical record 82.

In the practical use of the present invention, a key 126' is extended through the opening 42 so that the said key will engage the member 40 at the end of the drive shaft 36. By rotating the key 126', the spring 44 will be in tension so that when the closure 60 is in a closed position, the spring 44 will unwind to drive the cylinder 82. Also, the rod 106 will be rotated so that the traveling member 114 will move toward the plate 20 and the needle 118 will engage the cylindrical record 82 to emit sound or tone from the resonator diaphragm 122.

When the closure 60 is raised to an open position, the cord 68 will pull the pawl or pivot the pawl into engagement with the ratchet 52 thus locking the drive shaft 36 against rotation and the cylinder 82 will not rotate. Simultaneously with the stopping of the drive shaft 36, and the raising of the closure 60, the finger 124 will engage the finger 126 to pivot or raise the bars 94 and 106, thus disengaging the needle 118 with the cylindrical record 82. The record 82 may then be removed through the access opening 74 and replaced by a further record.

Obviously, the doll 10 may be suitably painted, colored, or shaped and the same may be covered with desirable garments so that the said doll will resemble an actual figure, infant or the like.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having thus described the invention, what is claimed as new is:

1. A phonograph comprising a housing having an access opening, a slidable closure for the access opening, a support mounted in the housing, a rotary cylinder holding member carried by the support, means carried by the support for rotating the holding member, a frame hinged to said support and movable toward and away from the holding member, a sound box slidably carried by said frame and supporting a needle that will engage a cylinder on the holding member when the frame is moved toward the holding member, means for moving the box longitudinally of the holding member, means for braking the rotating means, means carried by said closure for raising said frame from the holding member upon opening of said closure, a sound tube carried by said box, a resonant diaphragm carried by said tube and a connection between the braking means and the closure for urging the braking means to its brake-applying position during opening of the closure.

2. The combination of claim 1, wherein said last mentioned means includes an arm carried by said closure.

3. The combination of claim 1, wherein said rotating means includes a drive shaft and a ratchet carried by said drive shaft, and said braking means includes a locking pawl normally disengaging said ratchet to permit rotation of said drive shaft, said connection including a flexible member joining said pawl to said closure for actuation of the former into locking engagement with said ratchet during opening of said closure.

4. The combination of claim 1, wherein said rotating means includes a drive shaft, a driven

shaft, gears connecting said drive shaft to said driven shaft, and a spring for driving said drive shaft.

5. The combination of claim 1, wherein said box moving means includes a rotary screw, and means operatively connecting said screw to said rotating means.

6. The combination of claim 1, wherein said frame includes a pair of spaced parallel guide bars, and means carried by said support for holding said bars in a substantially horizontal position.

7. A phonograph comprising a body, a chamber provided in said body and having an access opening, a slidable closure for said access opening, a support mounted in said chamber including an upright, a drive shaft carried by said support, means for driving said drive shaft, a driven shaft carried by said upright for supporting a cylinder, gear means connecting said drive shaft to said driven shaft, a frame hinged to said upright and movable toward and away from the driven shaft, said frame including a pair of guide bars, a sound box slidably carried by said guide bars, means connected to said driven shaft for actuating said box, said box supporting a needle, that will engage a cylinder on the driven shaft when the frame is moved toward the driven shaft, a sound tube carried by said box, a resonant diaphragm carried by said tube, a braking mechanism for said first-named means, and means carried by said closure for raising the frame and the sound box away from the driven shaft and for simultaneously urging the braking mechanism to its brake-applying position.

8. A phonograph comprising a body, a chamber provided in said body having an access opening, a slidable closure for said access opening, a support mounted in said chamber including an upright, a drive shaft carried by said support, means for driving said drive shaft, a driven shaft carried by said upright for supporting a cylinder, gear means connecting said drive shaft to said driven shaft, a frame hinged to said upright and movable toward and away from the driven shaft and including a pair of guide bars, a sound box slidably carried by said guide bars, means for moving said box longitudinally of said driven shaft, said box supporting a needle that will engage a cylinder on the driven shaft when the frame is moved toward the driven shaft, a sound tube carried by said box, a resonant diaphragm carried by said tube, a locking pawl pivoted on said support, a ratchet carried by said drive shaft for engaging said pawl, means normally urging said pawl out of engagement with said ratchet, and means for actuating said pawl into engagement with said ratchet and for also raising the frame and the sound box from the driven shaft.

9. A phonograph comprising a support body, a chamber provided in said body having an access opening, a slidable closure for said access opening, a support mounted in said chamber including an upright, a drive shaft carried by said support, means for driving said drive shaft, a driven shaft carried by said upright for supporting a cylinder, gear means connecting said drive shaft to said driven shaft, a frame hinged to said upright and movable toward and away from the driven shaft, said frame including a pair of guide bars, a sound box slidably carried by said guide bars, means for moving said box longitudinally of said driven shaft, said box supporting a needle that will engage a cylinder on the driven shaft when the frame is moved toward

the driven shaft, a sound tube carried by said box, a resonant diaphragm carried by said tube, a locking pawl pivoted on said support, a ratchet carried by said drive shaft for engaging said pawl, means normally urging said pawl out of engagement with said ratchet, means connecting said pawl to said door for actuating said pawl into locking engagement with said ratchet during opening of said closure and an arm carried by the closure for raising the frame and the sound box during opening of said closure.

10. The combination of claim 9, wherein said means for moving said box includes a threaded rod, and means operatively connecting said rod to said driven shaft for rotation of the former with the latter.

11. A doll comprising a miniature figure having a chamber provided therein, said chamber having an access opening, a slidable closure for the access opening, a support mounted in the chamber, a rotary cylinder holding member carried by the support, means carried by the support for rotating the holding member, a frame hinged to the support for vertical swinging movement toward and away from the holding member, a sound box slidably carried by said frame and supporting a needle that will engage a cylinder on the holding member when the frame is moved toward the holding member, means for moving the box longitudinally of the holding member, means for braking the rotating means, and means carried by the closure for simultaneously raising the frame relative to the holding member and urging the braking means to its brake-applying position during opening of the closure.

12. The combination of claim 11 wherein said last-mentioned means includes a flexible connection between said closure and said braking means and an arm carried by the closure for engaging and lifting the frame.

13. A doll comprising a miniature figure having a chamber provided therein, said chamber having an access opening, a slidable closure for said access opening, a support mounted in the chamber, a rotary cylinder holding member carried by the support, a frame hinged to said support and paralleling the holder member when in use, a sound box slidably carried by the frame and supporting a needle that will engage a cylinder on the holding member when the frame is parallel to the holding member, means for rotating said holding member, a driving means connected to said means for rotating said holding member and including a feed screw supporting said box, means for braking the rotating means, a flexible connection between said sliding closure and said braking means whereby said braking means will be urged to its brake-applying position during opening of said closure, and an arm carried by said closure for engaging and lifting the frame away from the holding member during opening of the closure.

14. A doll comprising a miniature figure having a chamber therein, said chamber having an access opening, a slidable closure for the access opening, a mechanical reproducing system mounted in said chamber and including a braking mechanism and a vertically swingable sound box supporting frame, a flexible connection between said closure and said braking mechanism for urging the braking mechanism to its brake-applying position upon opening of the closure, and an arm carried by the closure for raising the frame during opening of the closure to raise the sound box to an inoperative position.

15. A phonograph comprising a housing having an access opening, a single slidable closure for the access opening, a support mounted in the housing, a rotary cylinder holding member carried by the support, means carried by the support for rotating the holding member, an elongated frame hinged at one end to said support and overlying said holding member, said frame paralleling said holding member normally, a sound box slidably carried by the frame and supporting a needle that will engage a cylinder on the holding member when the frame is disposed parallel to said holding member, means for moving the box longitudinally of the holding member, means for braking the rotating means, means carried by the closure for raising the frame from the holding member and the sound box to an inoperative position upon opening of the closure, and a connector between the braking means and the closure for urging the braking means to its brake-applying position during opening of the closure.

16. The combination of claim 15 wherein said means carried by said closure for raising the frame includes a resilient arm attached to the closure and underlying the end of the frame remote from the support.

17. The combination of claim 15 wherein said frame includes a pair of spaced parallel guide bars pivoted at one of their ends to said support, said frame also including a rotary feed screw also paralleling said guide bars.

18. A phonograph comprising a supporting body having a chamber therein and an access opening for the chamber, a slidable closure for the access opening, a support mounted in said chamber including an upright, a drive shaft carried by said support, means for driving said drive shaft, a driven shaft carried by said upright for supporting a cylinder, gear means connecting said drive shaft to said driven shaft, an elongated frame hinged at one end to said upright and movable toward and away from the driven shaft, said frame including a pair of guide bars, a sound box slidably carried by said guide bars, means connected to said driven shaft for actuating said box and including a feed screw and a pivot securing one end of said feed screw to said driven shaft, a braking mechanism for said first-named means, and means carried by said closure for raising the frame and the sound box away from the driven shaft and for simultaneously urging the brake mechanism to its brake-applying position whereby the phonograph will be inactive as the closure is moved to its closed position to permit unrestricted removal of a cylinder from the driven shaft.

19. A phonograph comprising a casing, said casing having an access opening, a slidable closure for said access opening, a support mounted in said housing and including an upright, a drive shaft carried by said support, means for driving said drive shaft, a driven shaft carried by said upright for supporting a cylinder, gear means connecting said drive shaft to said driven shaft, an elongated frame hinged at one end to said upright and movable toward and away from the driven shaft, said frame including a pair of parallel guide bars, a sound box slidably carried by said guide bars, means for moving said box longitudinally of said driven shaft, said box supporting a needle that will engage a cylinder on the driven shaft when the frame is moved toward the driven shaft, a locking pawl pivoted on said support, a ratchet carried by said drive shaft for engaging said pawl, means normally urging said pawl out of engagement with said ratchet, and means for actuating said pawl into engagement with said ratchet and for also raising the frame and the sound box from the driven shaft.

20. A phonograph comprising a housing, said housing having an access opening, a single slidable closure for the access opening, a support mounted in the chamber, a rotary cylinder holding member carried by the support, means mounted on the support for rotating the holding member, an elongated frame hinged at one end to the support for vertical swinging movement toward and away from the holding member, a sound box slidably carried by said frame and supporting a needle that will engage a cylinder on the holding member when the frame is moved toward the holding member, means for moving the box longitudinally of the holding member, means for braking the rotating means, and means carried by the closure engaging the end of said frame remote from the support for raising the frame relative to the holding member upon opening of the closure, and means connecting said closure to said braking means for urging the braking means to its brake-applying position during opening of the closure.

21. The combination of claim 20 wherein said means carried by the closure for raising the frame includes an arm attached to said closure and underlying the end of said frame remote from the support.

22. A phonograph comprising a housing, said housing having an access opening, a slidable closure for said access opening, a support mounted in the housing, a rotary cylinder holding member carried by the support, an elongated frame disposed laterally of the support and including first and second end portions, the first end portion of said frame being pivoted to said support for vertical swinging movement of said frame toward and away from said holding member, a sound box slidably carried by the frame and supporting a needle that will engage a cylinder on the holding member when the frame is parallel to the holding member, means for rotating said holding member, a driving means operatively connected to said holding member operating in unison with the latter and including a feed screw supporting said box, means for braking the rotating means, means carried by said closure for engaging the second end portion of said frame to raise the frame from the holding member upon opening of the closure, and a connection between said sliding closure and said braking means for forcing the braking means to its brake-applying position during opening of said closure.

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