Nov. 5, 1929. C. P. MADSEN 1,734,172

PRONOGRAPH

Original Filed May 1, 1925 4 Sheets-Sheet 1

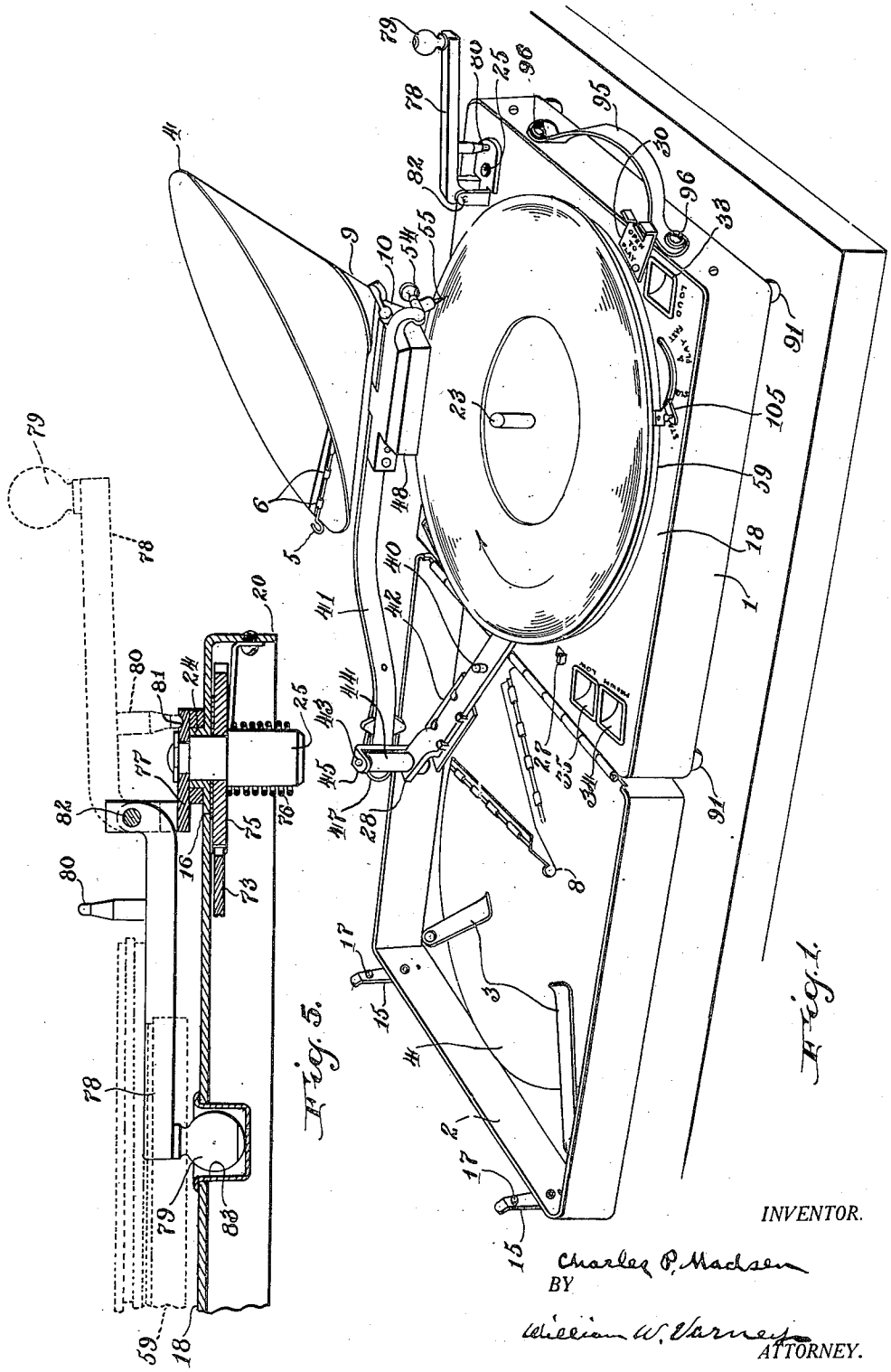


Fig. 1.

Fig. 5.

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PRONOGRAPH

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Fig. 2.

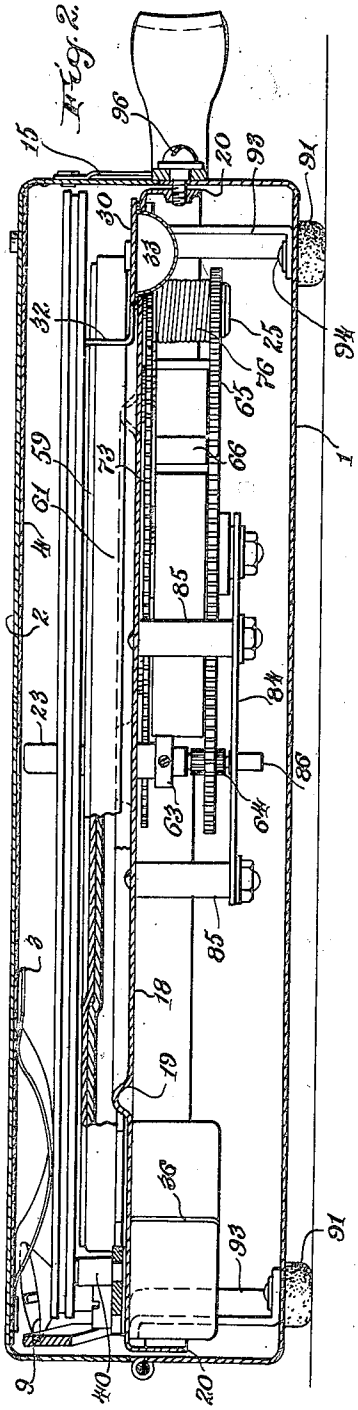
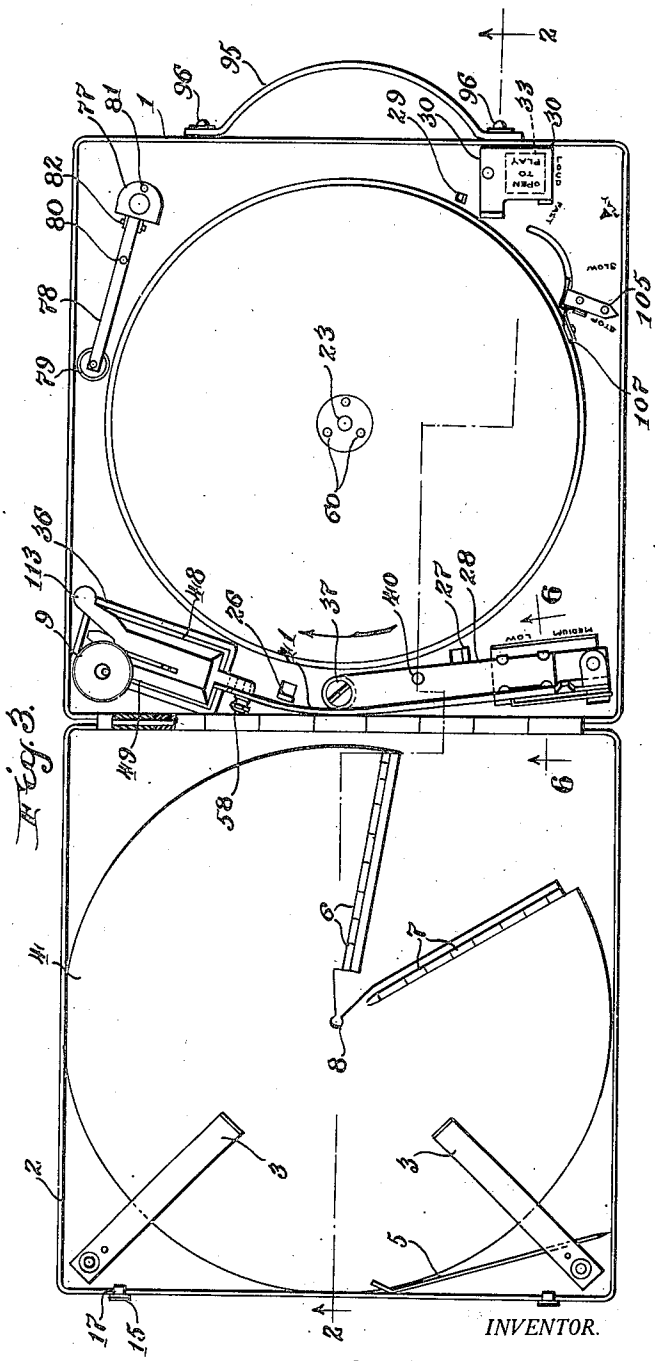


Fig. 3.



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PRONOGRAPH

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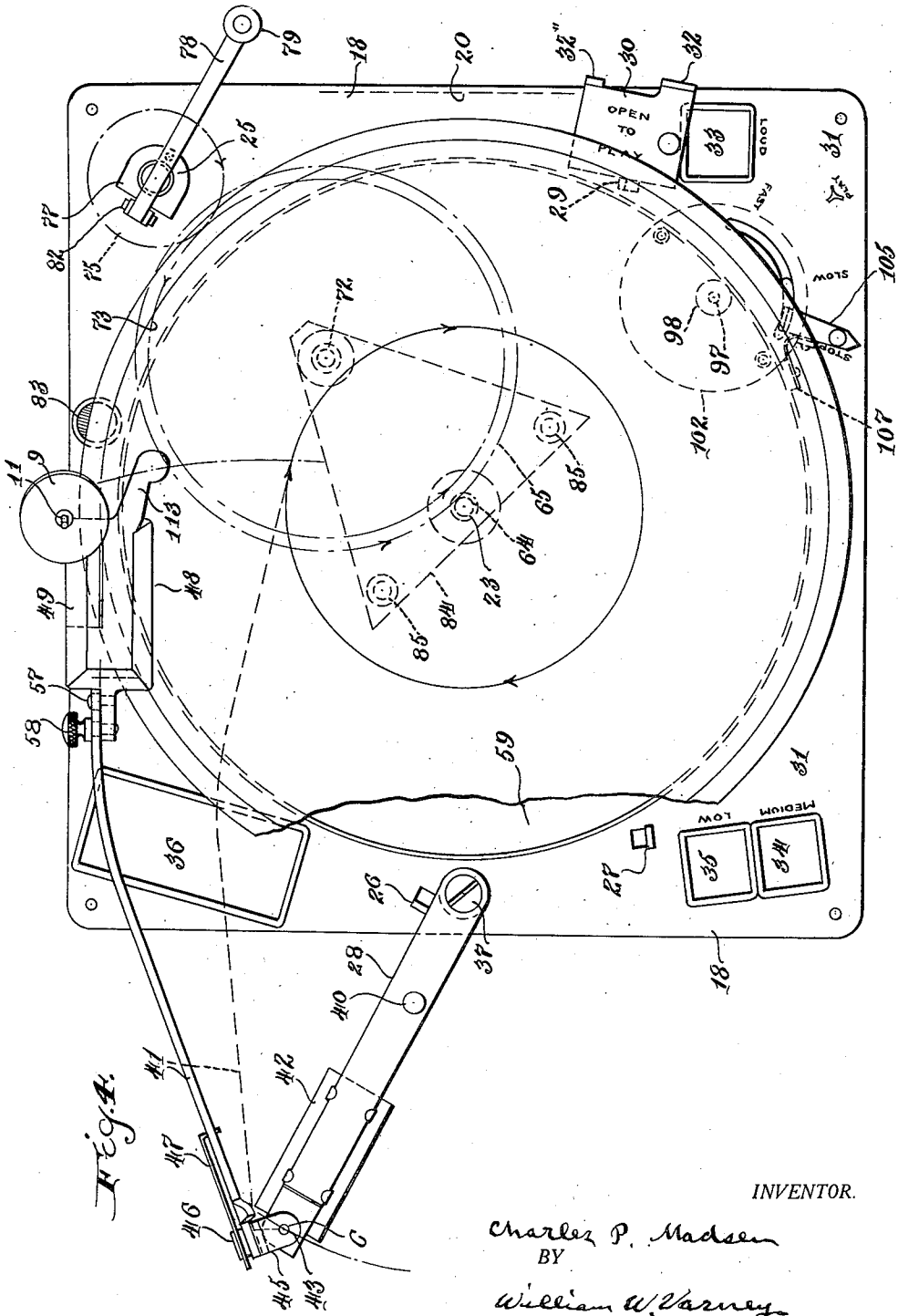


Fig. 4.

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PRONOGRAPH

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Fig. 7.

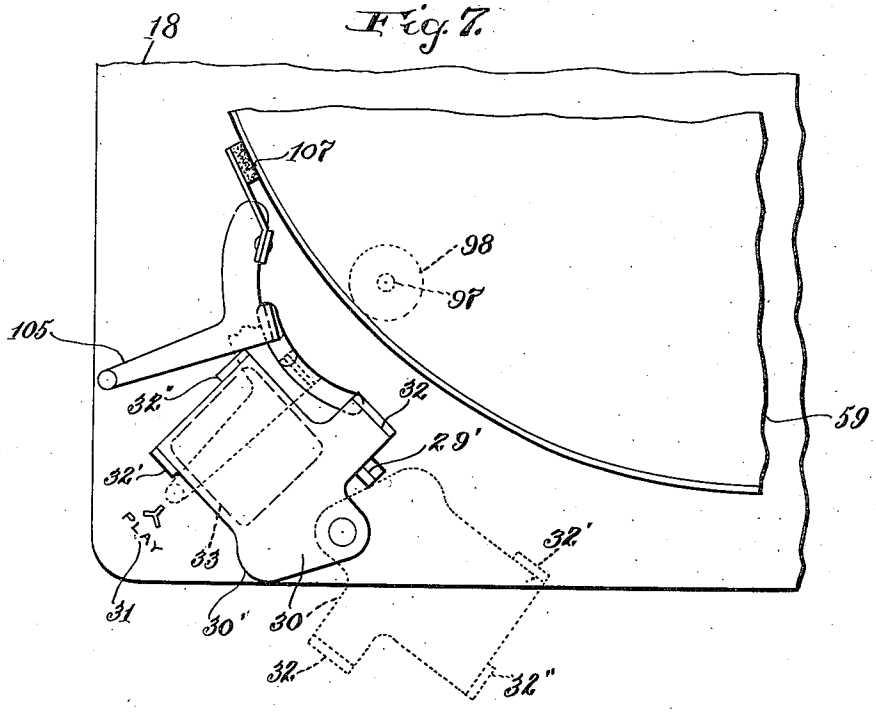


Fig. 8.

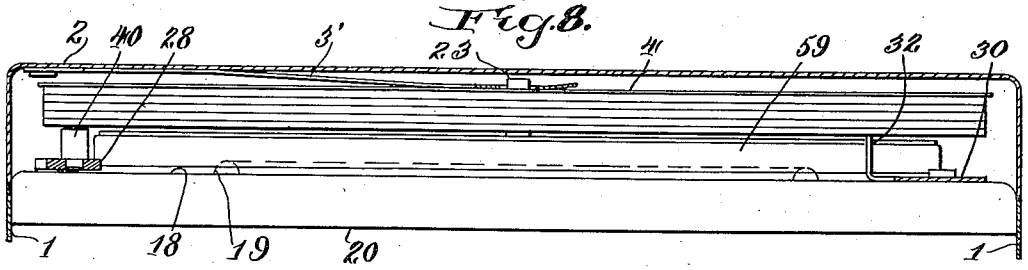
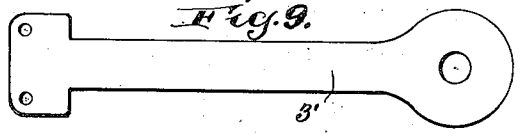


Fig. 9.



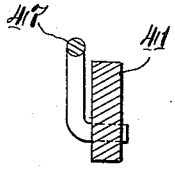
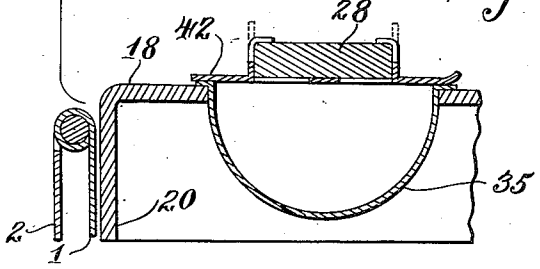


Fig. 6.



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UNITED STATES PATENT OFFICE

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PHONOGRAPH

Original application filed May 1, 1925, Serial No. 27,206. Divided and this application filed July 26, 1927. Serial No. 208,518.

This application is a division of application filed May 1st, 1925, Serial No. 27,206.

The object of my invention is the construction of an improved portable phonograph.

A further object of my invention is the providing in a phonograph an improved support for the reproducing means.

A further object of my invention is the providing in a phonograph means for folding the support for the reproducing mechanism.

A further object of my invention is the providing in a phonograph improved means for storing records carried therein.

A further object of my invention is the providing in a phonograph an improved means for covering receptacles therein for containing the needles.

A further object of my invention is the providing in a phonograph an improved construction whereby stamped operations may be used in its manufacture, including the top motor plate.

A further object of my invention is the providing of a portable phonograph of minimum thickness and dimensions, to accomplish which many novel features have been introduced.

With the foregoing and other objects in view, my invention consists of the novel construction, combination and arrangement of parts as hereinafter specifically described and illustrated in the accompanying drawing, wherein is shown the preferred embodiment of my invention, but it is understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawing of the herein described embodiment of my invention I have odhered to the various figures set forth in my original application; Figure 1 shows my improved phonograph in perspective, open, assembled, and in playing condition, the record in place on the turn-table, and a spare vibrating member stored in the cover; Fig. 2 is a sectional view showing the phonograph in closed position, taken on line 2—2 of Fig. 3; Fig. 3 is a plan view on a reduced scale of the phonograph shown with the cover in open position, but the various movable parts stored or in inoperative position excepting as to the function performed in storing the records, the records which may have been stored in the machine having been removed; Fig. 4 is a plan view of the phonograph without the case or cover in condition for playing, a record being shown on the turn-table partially broken away; Fig. 5 is a sectional view in elevation showing the crank in closed or folded position for transportation, also showing the crank dotted in open position, view also shows the support for the storage of records; Fig. 6 is an enlarged section view taken on line 6—6 of Fig. 3.

Referring to Fig. 4 which shows the cover 30 and the pointer 105, in Fig. 7 a modification of these two elements is shown whereby the same become more foolproof in that cover 30 must be moved out of the way of the record to be played before the pointer 105 can release the brake 107 from the turn-table, cover 30 being provided with projection 32″ which bears against the pointer wedging the same into closed or locked position, 32′ being the handle in Fig. 7. In the modified form the cover 30 must be open when playing, thus uncovering the needle receptacles 33, and while playing pointer 105 partially covers said receptacle, but when the machine is stopped and needles are required the pointer is out of the way, as indicated. Lanced stop 29′ as shown in the modified form in Fig. 7 forms the double function of limiting the movement of cover 30 in both its inner and outer movements. On cover 30 see Fig. 7 is extension 30′ which extends to the limit of the motor plate 18 so that the cover, when in closed position, locks said cover 30 against pointer arm 105 and prevents backlash or movement of either.

Fig. 8 shows a modification of the means of carrying the vibrating members whereby the same are carried on the turntable spindle 23 on top of the stored records and means 3′ provided in the center of the cover to hold the same in position when the case is closed.

Fig. 9 shows a detached plan view of 3′.

Similar numerals refer to similar parts throughout the several views.

1 is the case. 2 is the cover of the case

which is operably hinged to the case 1. 3 are the retaining springs or members in the cover, under which are carried or secured the blanked vibrating member 4. 5 is the securing pin for securing the vibrating member together and operates in raised and depressed portions 6 and 7.

Referring to Fig. 4, 18 is the top plate of the phonograph proper. I have found that a very satisfactory result is obtained by stamping the top plate out of sheet metal. This enables me to provide therein various raised portions, stops, etc. 19 is an annular bead. This stiffens the top plate and further has a tendency to prevent any possible vibration of same or warping which might occur from the various strains exerted upon said top plate, see Fig. 2.

Near one corner of the top plate 18 is a formed-up portion 24 forming a bearing for the winding shaft 25. 26 and 27 are lanced projections forming stops to limit the movement of supporting means 28. 31 are marks in the top plate 18 indicating the correct position of control handle 105. Cover 30 is provided with raised projection 32, which, when the cover is in closed position, acts as a support for stored records, keeping the same from the turn-table, in connection with the other projections described later. This is especially shown in Figs. 2, 3, 4, and 7, said cover being pivotally mounted on top plate 18. 33, 34 and 35 are needle receptacles. 36 is a receptacle in which the reproducer head fits when in closed position, thus protecting the needle and operating parts.

Supporting means 28 is fulcrumed to top plate 18 by bolt 37. On supporting arm 28 is projection 40 forming one of the supports for the records stored over the turn-table, keeping the same clear of said turn-table when said supporting means 28 is in housed or closed position; cover 42, which covers needle receptacles 34 and 35 when said arm is housed, is secured to said supporting means by lanced projections from said cover embracing said supporting means.

59 is the turn-table which is secured to turn-table spindle 23 by screws or other suitable means. On the edge of the turn-table 59 is formed a flange 61.

78 is the winding crank provided with handle 79, and engaging supporting pin 80, which pin forms the double function of supporting the crank while winding, and also engaging the winding bracket in recess 81, thus increasing the rigidity of the winding crank, the said winding crank 78 being fulcrumed to winding bracket 77 at 82 in an offset position to permit the playing of 12" records. The fulcrumed end of winding crank 78 is extended beyond the fulcrum within the jaws of the bracket to provide a stiffening means.

Winding crank 78, when in closed or inoperative position, is of such a height and in such a position to support in conjunction with the other record supporting means, the records which may be stored over the turn-table parallel therewith but not touching the same, which is clearly shown in Fig. 5. In top plate 18 is cup 83 in which handle 79 fits when in an in-operative or stored position, thus insuring the proper location for the same to support the said records and being within the limit of the box when the cover is placed thereon.

Control handle 105 is also provided with the brake 107 for stopping the turn-table. Handle 105 is provided with a friction spring, which rubs on top plate 18, tending to maintain the handle and pointer in set position.

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

1. In a phonograph containing a top plate, means for swingingly mounting, a means of support for a reproducer on said top plate, raised stops lanced from said top plate to limit the movement of said supporting means, so swingingly mounted on said top plate.

2. In a phonograph having a case, a top plate and a reproducer, means for supporting said reproducer consisting of a plurality of members mutually pivoted one of which is fulcrumed on said top plate and another of which carrying the reproducer is fulcrumed to one of said members.

3. In a phonograph having a case and a reproducer, means for swinging said reproducer on a fulcrum located without said case, and means for moving said fulcrum within said case for encased position, comprising arms having a common fulcrum one of said arms supporting said reproducer the other of said arms being mounted within the case whereby said arms may be folded to encasing position within the case.

4. In a phonograph having a case, a reproducer and a top plate, means for swinging said reproducer on a fulcrum located without said case, and means for moving said fulcrum within said case, comprising arms having a common fulcrum, one of said arms supporting said reproducer, the other of said arms constituting a supporting member and being mounted on said top plate whereby said arm may be folded to encasing position within the case, said top plate having a recess, means mounted on one of said arms to cover said recess when the arms are in encased position within the case.

5. In a portable phonograph having a turn-table, a top plate and a carrying case, means for supporting a record carried in said case free of said turn-table over the same and parallel therewith, consisting of movable means mounted on said top plate for supporting the record out of contact of the turn-

table thus forming a plurality of supporting members on the turn-table side thereof.

6. In a portable phonograph having a turn-table and a carrying case, means for supporting a record carried in said case free of said turn-table over the same parallel therewith, consisting of a plurality of swinging stops supporting said record over said turn-table, said stops being mounted within said case to fold out of the way of the record when playing.

7. In a phonograph, a casing, a reproducer, means for supporting the reproducer comprising an arm, a second arm similar to the first mentioned arm said second named arm being pivoted on said casing, a top plate in the casing provided with a recess for needles and a cover on said second mentioned arm to cover said recess in encased position.

CHARLES P. MADSEN.