

April 12, 1932.

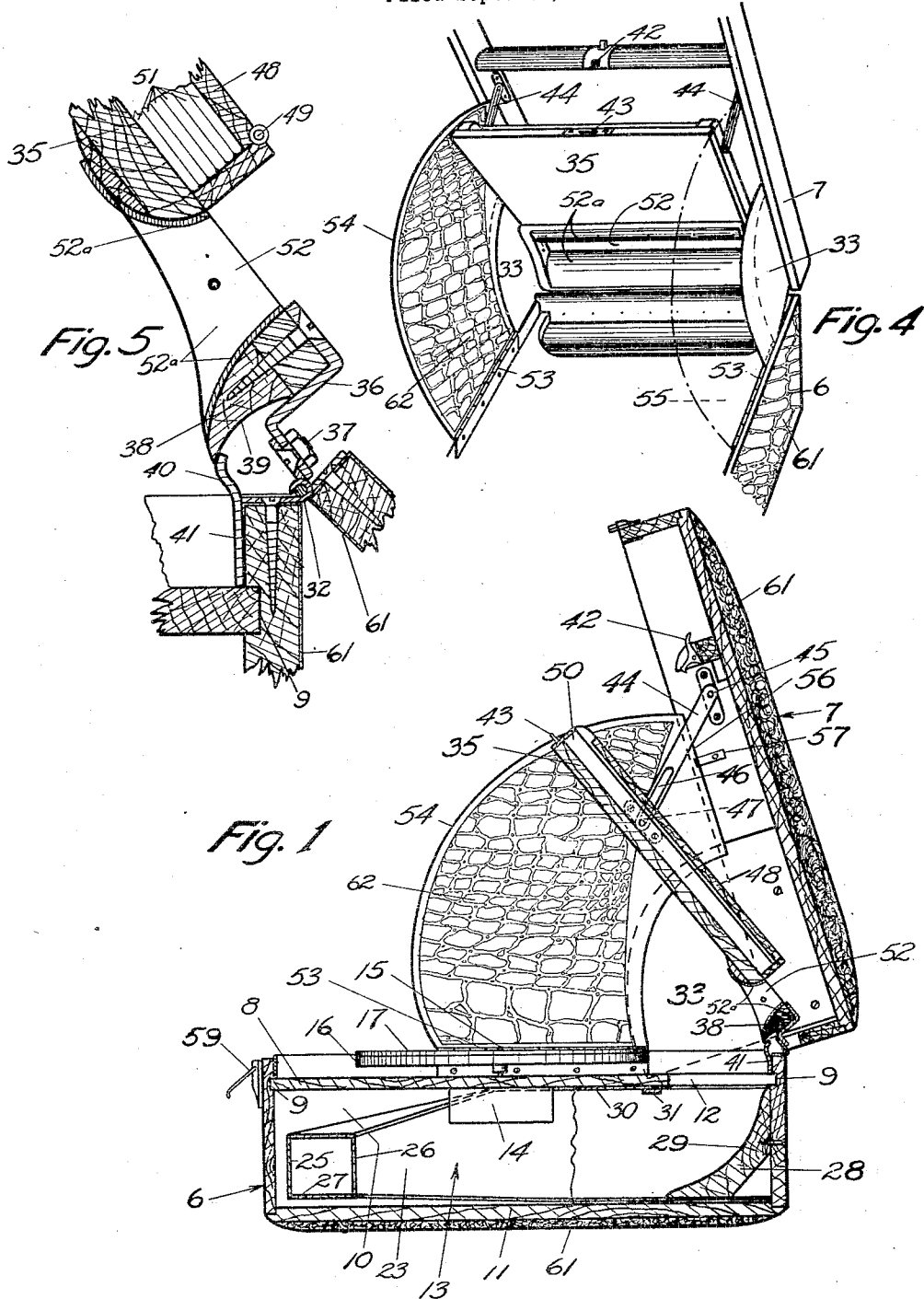
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1,853,210

PHONOGRAPH

Filed Sept. 26, 1930

2 Sheets-Sheet 1



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Fig. 2

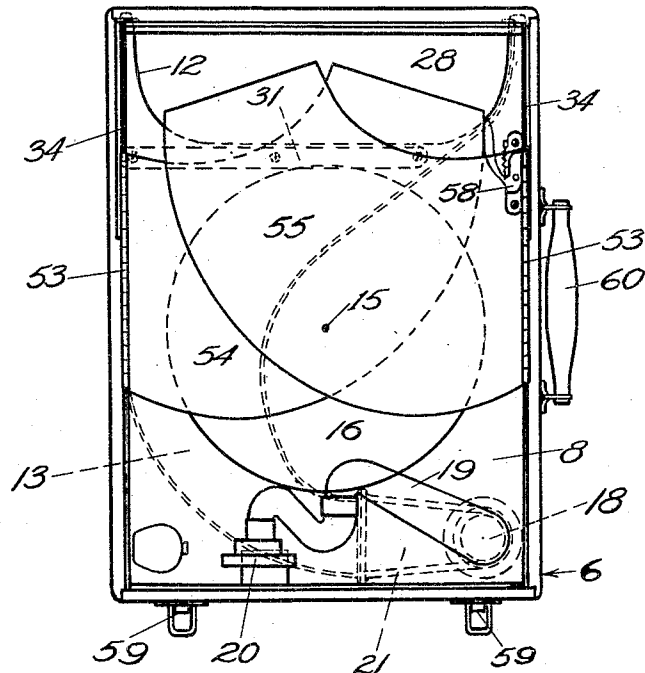
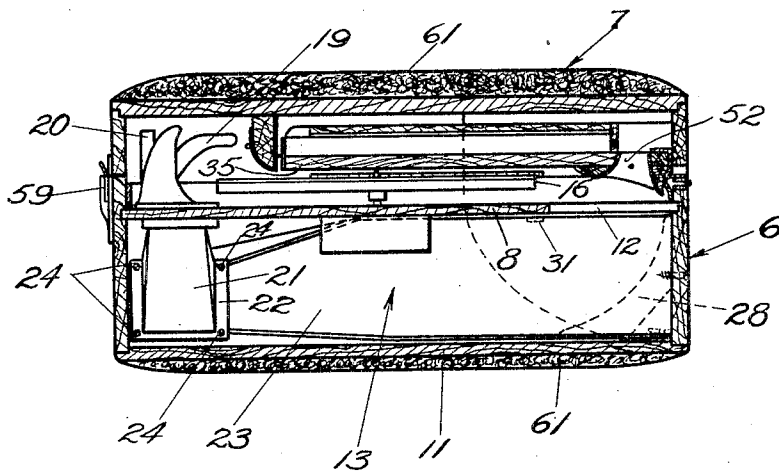


Fig. 3



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## UNITED STATES PATENT OFFICE

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## PHONOGRAPH

Application filed September 26, 1930. Serial No. 484,482.

This invention relates to new and useful improvements in phonographs or talking machines and has particular relation to so-called portable phonographs, being an improvement on the structure shown in my United States Patent 1,776,905 of September 30th, 1930.

An object of the invention is to provide a phonograph which while small and compact and therefore particularly adapted for use as a portable or stowaway phonograph yet is so constructed as to give large volume, its volume and tonal quality corresponding favorably with the volume and tonal quality of floor type phonographs.

Another object is to provide a phonograph including an improved sound amplifying arrangement, the invention particularly relating to the bell or mouth portion of the amplifying system of an acoustic phonograph.

A further object is to provide a portable phonograph including a cover with which side wings co-operate when the cover is open whereby to provide an extension for the horn or amplifier of the phonograph, a portion of said side wings being foldable whereby when the machine is closed as for transportation a compact and relatively small structure is had.

An additional object is to provide a phonograph having characteristics stated and wherein a record carrier or other means within the lid or cover is so constructed that it divides the bell or mouth portion of the amplifier which bell or mouth portion is formed by the cover and side wings in association with the body of the machine.

Other objects and advantages will become apparent from a consideration of the following description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed since changes in the construction, combination and arrangement of parts will readily suggest themselves to those skilled in the art. Since the invention comprehends all such variations and modifications as fall within the scope of the appended claims, reference must be made to the annexed claims

for a definition of the limitations of the invention.

In the drawings:

Figure 1 is a central longitudinal sectional view through the entire machine, the lid or cover being open, and the record carrying panel and horn dividing means being in its lowered position;

Fig. 2 is a plan view of the cabinet or body of the machine, the cover or lid being removed and the foldable portions of the side wings being in folded position;

Fig. 3 is a view looking from the right in Fig. 2, the cover being in place and closed, a side wall of the body and cover being removed, and the record supporting panel being shown in section;

Fig. 4 is a perspective view of the bell or mouth portion arrangement of the amplifier; and

Fig. 5 is an enlarged sectional detail view showing the mounting for the lid or cover and the record carrying panel or horn dividing means.

Referring in detail to the drawings, at 6 is shown the cabinet or body of the machine to one edge of which, preferably the rear edge, there is hingedly secured a lid or cover 7. Within the cabinet or body 6 there is disposed a partition or motor board 8 secured in any suitable manner as for example by having its edges set into the walls of a cabinet or body as shown at 9.

The motor-board or partition 8 is disposed relatively near to the upper edge of the body 6 and a compartment 10 is formed beneath the motor board or between the motor board and the bottom 11 of the cabinet or body. At its rear edge the partition 8 is cut away as at 12 to form an exit for an amplifier 13 disposed within the compartment 10. The amplifier 13 will later be more fully described.

At its under side the partition 8 supports any suitable motor indicated at 14 which through a vertical spindle 15 extending upwardly through the partition, drives a turntable 16. Obviously, the turntable is for the reception of records to be played, a record 17 being shown in place on the turntable. It will be understood that any type of motor

14 may be employed and that any type of turntable 16 may be employed, the particular type of motor or turntable having no relation to the present invention.

5 Through the forward end portion of the partition 8, or through that end or edge portion opposite the end or edge portion which is cut away as 12, the partition is provided with a sound entrance opening 18. A tone  
10 arm 19 carrying a reproducer 20 for co-operation with a record on the turntable 16, is secured to the partition 8 in a position to align its discharge end with the entrance opening 18 through the partition 8.

15 It is to be noted that the entrance opening 18 is located in one corner portion of the partition 8. Secured to the underside of the partition in a position to receive sound through the opening 18 is the entrance portion  
20 of the horn or amplifier 13 which entrance portion may take the form of a casting 21 curving laterally of the cabinet as it curves downwardly and secured as by a flange 22 to the rear or small end of a horn or megaphone 23 which is preferably of metal, as for  
25 example tin.

This horn 23 as shown is substantially rectangular in cross section and comprises top, bottom and side walls and the casting  
30 may be secured to the horn as by bolts 24. As herein disclosed the amplifier 13 is substantially the same as that disclosed in my patent above referred to and extends across the cabinet and then rearwardly therein, increasing  
35 in cross sectional area as it progresses from front to rear, and at its rear or discharge end being substantially the width of the cabinet. The side walls 25 and 26 of the horn portion 23 abut against the rear wall of the cabinet  
40 as does its bottom wall 27. These three walls are held in position and against rattle by means of a block 28 having a curved surface 29 for the purpose of directing the sound upwardly through the cutout portion 12 of  
45 the partition. Top wall 30 of the horn extends to a point substantially flush with the edge of the cutout portion 12 and the rear edge portion of said wall 30 is rigidly secured to the partition as by means of a strap 31.

50 Lid 7 is connected to the cabinet 6 as by means of a hinge 32 and the lid has secured to it a pair of side members or wings 33 preferably of metal. These members or wings 33 are adapted to move into slots 34  
55 in the cabinet when the lid is moved to closed position and when the lid is in open position these members 33 close the corners at the connection between the cover or lid and the cabinet or body. In this manner an  
60 extension of the amplifier 13 is provided since the lid, side wings and partition 8 co-operate to provide a bell or mouth portion for the amplifier.

65 Mounted within the lid and movable about the same axis as that about which the lid

moves, is a record carrier or panel 35. This panel 35 is hingedly mounted through the medium of a bracket 36 bolted or otherwise secured to certain of the leaves of the hinge 32 as at 37. Panel 35 carries a strip 38  
70 curved on its rear side as at 39 and co-operating with the upper edge or lip portion 40 of a metallic strip 41. This is probably best shown in Fig. 5 and the strips 38 and 41 co-operate to provide an unbroken surface at  
75 the hinged connection between the lid and record carrying member and the body.

The panel 35 is movable to a position within the cover 7 where it may be temporarily held by means of a catch 42 co-operating with a catch plate 43. Links 44 pivoted within the lid as at 45 and slotted as at 46 to receive pins 47 on the edges of the panel operate to limit the swinging movement of the panel outwardly of the lid. A  
80 cover 48 is hinged to the panel as at 49 whereby record compartment 50 is provided, records 51 being shown in the compartment in Fig. 5.

The record compartment 50 begins at a point spaced from the rear or lower edge of the panel 35 and between its lower edge and the inner end of the record compartment, the panel 35 has an opening 52 through it, the opening being preferably lined with  
85 metal as at 52a. This opening provides a passage whereby sound passing upwardly through the cut-out 12 in the partition 8 is divided, a portion of the sound passing up forwardly of the panel 35 and the remainder of the sound passing through the opening 52 and up between the cover 48 of the record compartment and the inner side of the cover 7.

Hinged as at 53 to the side walls of the cabinet 6, are a pair of foldable wings or members 54 and 55. These members, when open or in extended positions, are so disposed with relation to the side wings 33 as to overlap the forward edges of such wings and further the members 54 and 55 extend upwardly and at their upper or free edges bear against the inner surface of the side rails or edges of the lid 7 as shown at 56. Members or wings 54 and 55 may be temporarily secured in their extended positions by means of suitable catch members 57. However, this catch means or members 57 need only be used for holding the wings 54 and 55 in their extended positions when the record carrying panel 35 is within the lid and secured by the catch 42. At other times, that is when the panel 35 is in open position it is disposed between the foldable side wings 54 and 55 as shown in Figs. 1 and 4 and will hold them in their extended positions.

It is, of course, only when the panel 35 is in its open or extended position as shown in Figs. 1 and 4 that a divided bell or mouth portion is provided for the amplifier. With  
130

the panel in its closed position, that is, with the panel within the lid and secured by the catch 42 but one large bell or mouth is provided for the amplifier, that bell or mouth being forwardly of the panel 35. However, this bell or mouth portion will be considerably larger than that heretofore provided. Also, when the panel is in open position the double or divided bell or mouth portion is obtained.

When the machine is to be folded as for transportation, it is but necessary to release the members or wings 54 or 55 from the catches 57, to move the panel to a position within the lid and to then fold the wings 54 and 55 one upon the other as shown in Fig. 2. The lid or cover 7 may then be lowered to the position shown in Fig. 3, the lid having been secured in open position by means of a catch member 58 co-operating with one of the wings 33.

Catches 59 may be used for securing the lid or cover in closed position and the cabinet may be provided with a carrying handle 60. Further, the exterior of the cabinet and the lid is preferably covered as with leather or imitation leather as shown at 61. The wings or members 54 and 55 are preferably of metal, as for example brass, and to prevent these parts from unnecessarily vibrating and also to have them so far as possible match the color of the covering material 61, these wings are preferably covered on their inner and outer surfaces with such material designated 62 which may be glued or cemented or otherwise secured to them.

Having thus described the invention, what is claimed is:

1. In a phonograph, a body, a cover hinged to the body at one edge thereof, an amplifier within said body and positioned to discharge sound upwardly toward said cover, wings at the sides of the discharge end of the amplifier and extending between the cover and body whereby said cover, side wings and body co-operate to form a continuation of the amplifier, a dividing means disposed in said continuation, and means hingedly mounting the dividing means for movement into and out of the cover.

2. In a phonograph, a body, a cover hinged to the body at one edge thereof, an amplifier within said body and positioned to discharge sound upwardly toward said cover, wings at the sides of the discharge end of the amplifier and closing the space between the cover and body whereby said cover, side wings and body co-operate to form a continuation of the amplifier, a panel hinged within the cover, and said panel having an opening therethrough for the passage of sound whereby sound discharged from the amplifier passes outwardly of the phonograph between the body and the panel and between the panel and the cover.

3. In a phonograph, a body, a cover hinged

to the body at one edge thereof and in its open position disposed at an angle above the body, an amplifier within said body and positioned to discharge sound upwardly toward said cover, a panel mounted to occupy a position spaced from the cover and body when the cover is in open position, and said panel having an opening for the passage of sound whereby sound discharged by the amplifier passes upwardly at each side of the panel.

4. In a phonograph, a body, a cover hinged to the body at one edge thereof and in its open position disposed at an angle above the body, an amplifier within said body and positioned to discharge sound upwardly toward said cover, a hingedly mounted panel occupying a position spaced from the cover and body when the cover is in open position, said panel adapted to be moved to a position within the cover when the cover is in closed position, and said panel having an opening for the passage of sound whereby sound discharged by the amplifier passes upwardly at each side of the panel when the panel is spaced from the cover and body.

5. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and arranged to discharge sound upwardly toward said cover member, side wings hinged to one of said members and adapted when the cover member is in open position to be moved to positions extending between the body member and the cover member one at each side of the discharge end of the amplifier whereby to co-operate with the body and cover members to form a continuation of the amplifier, a dividing means, means hingedly mounting said dividing means for movement into and out of the cover, and said dividing means in one of its positions arranged in said continuation of the amplifier.

6. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and disposed to discharge sound towards said cover member, side wings hinged to one of said members and adapted when in their extended positions to co-operate with the members whereby to form a continuation of the amplifier, a movable means adapted to occupy a position between said side wings when the side wings are in extended positions whereby to divide the continuation of the amplifier, and said dividing means movable into the cover when the cover is moved to closed position.

7. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and disposed to discharge sound towards said cover member, side wings hinged to one of said members and adapted when in their extended positions to co-operate with the members whereby to form a continuation of

the amplifier, a movable means adapted to occupy a position between the side wings when they are in their extended positions whereby to hold them in such positions, and said movable means dividing the continuation of the amplifier and having an opening therethrough whereby sound discharged from the amplifier passes through the continuation at each side of the means.

8. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and disposed to discharge sound in the direction of said cover member, stiff metal side wings hinged one to each of a pair of opposite portions of one of said members and adapted when in their extended positions to co-operate with the members whereby to form a continuation of the amplifier, and means carried by the other of said members to temporarily secure said side wings in their extended positions.

9. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and disposed to discharge sound in the direction of the cover member, side wings hinged to one of said members and adapted when in their extended positions to co-operate with the members whereby to form a continuation of the amplifier, and a hingedly mounted means adapted to occupy a position between said side wings when the side wings are in extended positions whereby to divide the continuation of the amplifier, said hingedly mounted means adapted to be folded into one of said members when the cover member is to be moved to closed position.

10. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and arranged to discharge sound in the direction of the cover member, side wings hinged to one of said members and adapted when in their extended positions to cooperate with the members to provide a continuation of the amplifier, a dividing means hingedly connected with the other of said members, and said dividing means adapted to be moved to a position between the side wings when the side wings are in their extended positions.

11. In a phonograph, a body member, a cover member hinged to one edge of the body member, an amplifier within the body member and arranged to discharge sound in the direction of the cover member, side wings hinged to one of said members and adapted when in their extended positions to co-operate with the members to provide a continuation of the amplifier, a dividing means hingedly connected with the other of said members, said dividing means adapted to be moved to a position between the side wings when the side wings are in their extended positions, and said side wings and dividing

means adapted to be moved into the respective members to which they are hinged when the cover member is to be moved to closed position.

12. In a phonograph, a body, a cover hinged to the body at one edge thereof, an amplifier positioned to discharge sound upwardly toward said cover, wings at the sides of the discharge end of the amplifier and extending between the cover and body whereby to form a continuation of the amplifier, a dividing means disposed in said continuation of the amplifier, and said dividing means having a sound passage therethrough whereby sound discharged from the amplifier passes outwardly of the phonograph between the body and the dividing means and between the dividing means and the cover.

13. In a phonograph, a body member, a cover member hinged to the body member along one edge thereof, a sound amplifier in said body member and positioned to direct sound upwardly toward the cover member, side wings at each side of the discharge end of the amplifier, other side wings carried by one of said members forwardly of the first mentioned side wings, said second mentioned side wings hingedly mounted and when in their extended positions overlapping the forward edges of the first mentioned side wings and extending from one of said members to the other thereof, and said side wings, body member and cover member co-operating to form a continuation of the amplifier.

14. In a phonograph, a body member, a cover member hinged to one edge of the body member, a sound amplifier in said body member and positioned to direct sound upwardly toward the cover member, side wings carried by the cover member at its hinged edge, said side wings being positioned one at each side of the discharge end of the amplifier when the cover member is open, other side wings carried by the body member forwardly of the side wings carried by the cover member, said second mentioned side wings hingedly mounted and when in their extended positions overlapping the forward edges of the first mentioned side wings and extending from the body member to the cover member, said side wings, body member and cover member co-operating to form a continuation of the amplifier, and said second mentioned side wings foldable into the body member to permit closing of the cover member.

15. A phonograph comprising a body, a cover hinged to one edge of said body, a panel foldable into the cover when the cover is closed and movable to a position between the cover and body when the cover is open, an amplifier within said body and having its discharge opening positioned to direct sound in the direction of said panel, and means whereby the sound directed toward the panel

is divided whereby it passes outwardly of the phonograph a part at each side of the panel.

16. A phonograph comprising a body, a cover hinged to one edge of said body, a panel foldable into the cover when the cover is closed and movable to a position between the cover and body when the cover is open, an amplifier within said body and having its discharge opening positioned to direct sound in the direction of said panel, said discharge opening being substantially the width of said panel, said panel having a passage there-through, and said passage being substantially the width of the panel whereby sound directed toward the panel may pass outwardly of the phonograph at each side of the panel.

17. In a phonograph, a body member, a cover member hinged to the body member along one edge thereof, a sound amplifier in said body member and positioned to direct sound upwardly toward the cover member, side wings at each side of the discharge end of the amplifier, other side wings carried by one of said members forwardly of the first mentioned side wings, said second mentioned side wings hingedly mounted and when in their extended positions extending from one of said members to the other thereof, said side wings, body member and cover member co-operating to form a continuation of the amplifier, and a panel hingedly mounted by one of said members and movable to and from a position to divide said continuation of the amplifier.

18. In a phonograph, a body member, a cover member hinged to the body member along one edge thereof, a sound amplifier in said body member and positioned to direct sound upwardly toward the cover member, side wings at each side of the discharge end of the amplifier, other side wings carried by one of said members forwardly of the first mentioned side wings, said second mentioned side wings hingedly mounted and when in their extended positions extending from one of said members to the other thereof, said side wings, body member and cover member co-operating to form a continuation of the amplifier, a panel hingedly mounted by one of said members and movable to and from a position to divide said continuation of the amplifier, and said panel having an opening there-through whereby sound passes through said continuation of the amplifier at each side of the panel.

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut, this 23 day of September, 1930.

FRANK C. HINCKLEY.