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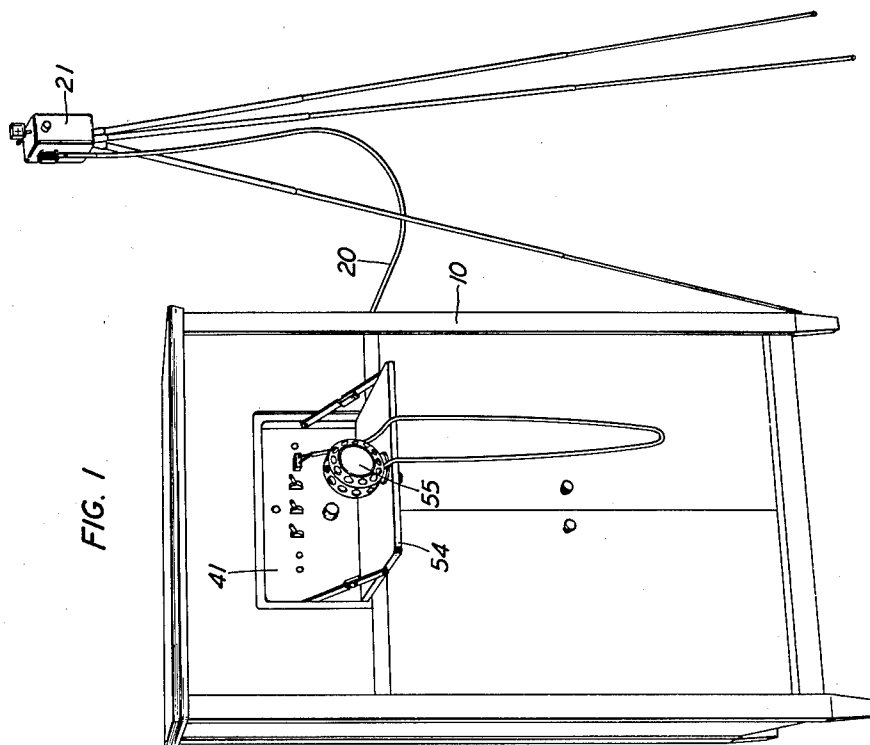
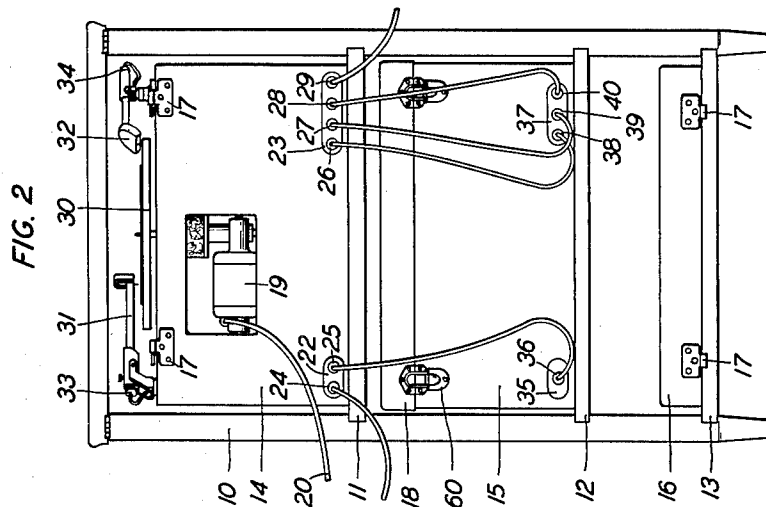
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1,979,113

SOUND RECORDING AND REPRODUCING MACHINE

Filed April 14, 1932

2 Sheets-Sheet 1



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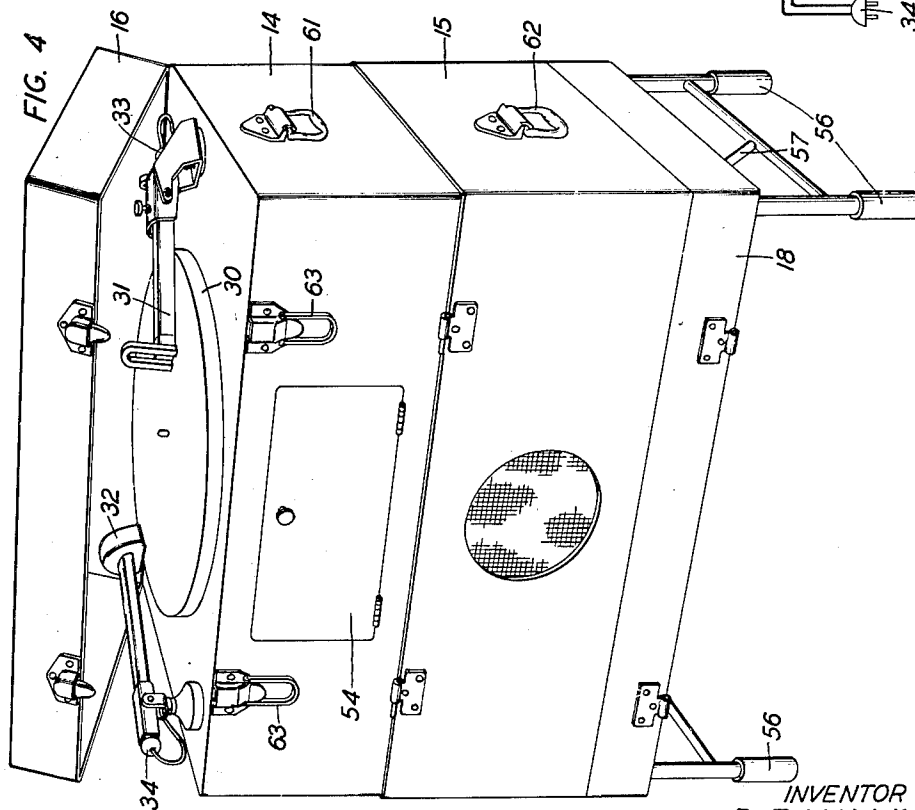
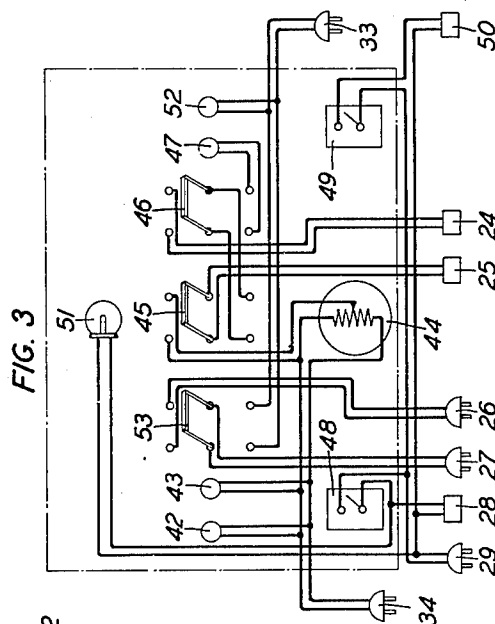
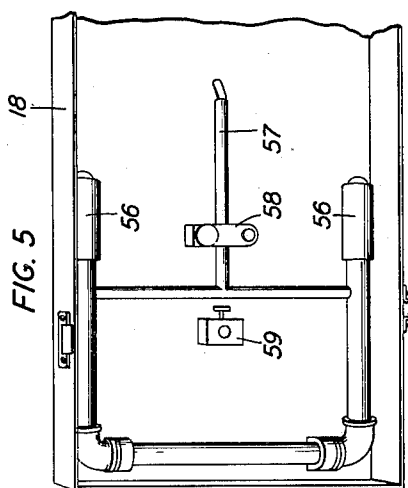
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SOUND RECORDING AND REPRODUCING MACHINE

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UNITED STATES PATENT OFFICE

1,979,113

SOUND RECORDING AND REPRODUCING
MACHINE

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Application April 14, 1932, Serial No. 605,273

3 Claims. (Cl. 179—100.11)

This invention relates to sound recording and reproducing machines and particularly to those the component parts of which are adaptable to a plurality of uses.

5 The sound transmission art as at present developed embraces a variety of fields which includes not only those concerned with the transmission of messages but also numerous other fields calculated to amuse as well as to instruct or to inform. Such fields, for example, are the familiar radio, phonograph and sound picture fields, each of which has been highly developed in a way peculiar to itself and to such an extent as to become an almost indispensable part of the average individual's daily life. Each of these subdivisions of the art, however, employs a quantity of apparatus which, in most cases, is expensive and bulky and ill-adapted to installation in a home or small room.

20 Numerous attempts have been made to simplify the various sound transmitting machines by combining two or more in one cabinet and eliminating duplicate apparatus. Such a combination is disclosed, for example, in U. S. Patent 1,745,118 to E. S. Pridham et al., January 28, 1930 and comprises a combination of a radio and phonograph in a single cabinet with a sound projector common to both, and other similar combinations such as a phonograph and sound picture machine or a recorder and reproducer have also been devised. None of these, however, provides facilities which are adequate for the present demand for entertainment and instruction and at the same time is compact enough for home use.

35 The object of this invention is to provide a sound translating machine which is capable of a diversity of uses and yet is of such size and construction as to be suitable for use either in a home or in a classroom or auditorium.

40 In its preferred form this invention comprises a cabinet of about the size of a phonograph cabinet with all the essential apparatus arranged in two distinct and removable units. These units are (1) a phonograph recorder and reproducer with suitable driving mechanisms therefor and (2) an amplifier and loud speaker for the phonograph unit. They are constructed so as to be readily carried from place to place and to facilitate this the electrical connections between the units are conveniently made entirely by means of plugs and cords which are easily removed when the units are to be transported separately. A feature of the invention is a novel container construction for the units whereby they may be

set up ready for operation outside the cabinet. This feature and others will become apparent from the following specification taken together with the accompanying drawings illustrating the preferred form of the invention in which:

Fig. 1 is a front elevation of the cabinet in perspective showing the control panel, and a microphone and motion picture camera connected to the phonograph unit;

Fig. 2 is a rear elevation of the cabinet showing how the two units are placed in the cabinet;

Fig. 3 is a diagram of the connections to the panel of the phonograph unit and to the plugs and cords leading to the second unit or accessory apparatus;

Fig. 4 is a perspective showing the two units set up outside the cabinet; and

Fig. 5 is a partial bottom view in perspective of the cover of the amplifier unit which is used to support both units when they are set up as in Fig. 4.

In Fig. 2, 10 is the cabinet with shelves 11, 12 and 13 provided therein upon which are placed the two units 14 and 15 and the cover 16 of the unit 14. The cover 16 is provided with hinges 17, 17 made to be readily separated to permit the removal of the cover when unit 14 is placed in the cabinet 10. Unit 15 is also provided with a hinged cover 18 which may be left on when the unit is used in the cabinet. From the drive motor 19, made accessible through an opening in the back of unit 14, power is supplied to the flexible shaft 20 which is detachable and may be connected to a camera 21 (Fig. 1) or to a motion picture projector (not shown) for recording or reproducing sound pictures. The electrical connections to the phonograph unit 14 are brought out to a number of sockets and plugs located in recesses 22 and 23 near the base of the unit. In recess 22 is the socket 24 for connecting the units to the output of a radio set and the socket 25 for connecting the units to the input of the amplifier located in unit 15. In the larger recess 23 is located a plug 26 for the loud speaker connection, a plug 27 for the amplifier output, a socket 28 for the power pack included in unit 15 and a plug 29 for connecting the unit to a source of electrical energy. The object of the recesses is to minimize the danger of damage to the plugs and sockets when the unit is being transported.

On the top of unit 14 is a turntable 30, a pivoted recorder 31 and an electrical reproducer 32. The electrical connections to the recorder and reproducer are the plugs 33 and 34, respectively. The

cover 16 fits over these mechanisms and protects them when the unit is being moved.

Unit 15 contains a conventional amplifier, power pack and loud speaker and for the sake of simplicity these units will not be described here. The external connections to this unit are made, as in the phonograph unit, through several plugs and sockets located in recesses near the base of the units. In the first recess 35 is a socket 36 for the amplifier input and in the second recess 37 is a plug 38 for the loud speaker, a plug 39 for the amplifier output and socket 40 for the power pack.

The connections to the control panel 41 of Fig. 1 are shown diagrammatically in Fig. 3. At the left is the plug 34 of the reproducer which is connected to the two monitor jacks 42 and 43, a volume control 44 and to the upper prongs of a double-pole double-throw switch 45. The blades of this switch are connected to the socket 25 of the plug for the amplifier input connection and the other two prongs are connected to the blades of the double-pole double-throw microphone radio switch 46. The upper two prongs of switch 46 are connected to the socket 24 for the radio connection and the lower two prongs are connected to the microphone jack 47. The plug 29 for the source of electrical energy is connected to an amplifier switch 48, a motor switch 49 and a motor plug 50. This plug is used merely so that the motor can be removed readily when desired without disturbing any of the wiring and is enclosed in the phonograph unit. The amplifier switch 48 is in series with the power pack socket 28. A lamp 51 across the power pack leads serves as an indicator of the operative position of the amplifier switch 48. The recorder plug 33 is connected to a monitoring jack 52 and to the lower pair of prongs of the double-pole double-throw switch 53. The blades of this switch are connected to the output of the amplifier and the upper two prongs of the switch are connected to the plug 26 for the loud speaker.

The panel 41 on which the above switches, jacks and volume control are mounted is also set in a recess to protect the controls. The manner of using the controls is believed to be obvious to those skilled in the art and no description thereof will be given here. The entire panel may be closed-in by means of a hinged shelf 54 secured to the unit and shown in Figs. 1 and 4. The shelf provides a convenient support for a microphone 55 or other articles used in connection with the apparatus.

In Fig. 4 the units are shown set up for operation independently of the cabinet. The phonograph unit 14 is mounted on the amplifier unit 15 which is built slightly larger than unit 14 so that its sides form a retaining ledge for the unit. The cover 18 of the amplifier unit is used as a support for the entire machine. This is made possible by means of the built-in folding legs 56 which are comprised of a pair of pivoted U-shaped members held in place by a rotatable brace 57. This is shown in detail in Fig. 5. For

the folded position locking means 58 is used, while for the open position locking means 59 is used. The cover 16 of the phonograph unit may be entirely removed if desired.

The electrical connections are made as before since they are not dependent in any way upon the cabinet. When the units are to be separated the plugs and cords are simply removed, the covers 16 and 18 placed on their respective units and secured thereto by means of metal straps 59 and 60. Handles 61 and 62 are provided to assist in carrying the units about.

The above construction of the recording and reproducing phonograph permits it to be used in any surroundings and on any location provided with a suitable source of electrical energy. For home or more permanent use it can be enclosed in the decorative cabinet. For temporary use as on public occasions it can be set up as in Fig. 4. Removing it from the cabinet requires but a few minutes since all the parts are conveniently assembled in two small separate units that can be transported in almost any kind of conveyance. It is adapted to be used as a phonograph, a recorder, a sound recording or reproducing apparatus for sound pictures and a radio recorder, and a change-over from one use to another can be accomplished by merely operating one or two switches.

What is claimed is:

1. A sound apparatus comprising two distinct, separable and separately contained units, one containing phonograph mechanisms, the other containing electric current amplifying devices and an electromechanical translating device, external apparatus comprising a microphone, a radio receiving apparatus, a source of electrical energy, a motion picture camera and projector, and detachable means for making electrical and mechanical connections between the units and with external apparatus as desired to form a phonograph reproducer, recorder, radio recorder, sound picture recording or reproducing machine or a local sound reinforcing system.

2. Sound apparatus comprising two distinct and separable units, one containing phonograph mechanisms, the other containing electric current amplifying devices and a sound translating device, enclosing means for each unit comprising a container with a removable top, folding legs within one of the tops whereby the top so equipped can be used to support said units when placed one upon the other, and detachable means for making electrical connections between the units to form an operative portable sound recorder or reproducer.

3. An electrical phonographic device comprising two distinct and separable units, a container for each unit, a removable cover for each container, means on one unit adapted to receive and support the other unit when the cover of the first-mentioned unit is removed, and means in the removed cover adapted to support both units.

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