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TADASHI IGARASHI

3,045,776

SPEAKER MOUNTING DEVICE

Filed March 25, 1959

Fig. 1

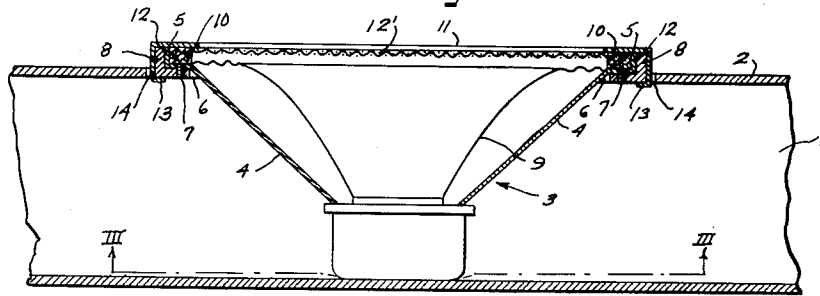


Fig. 2

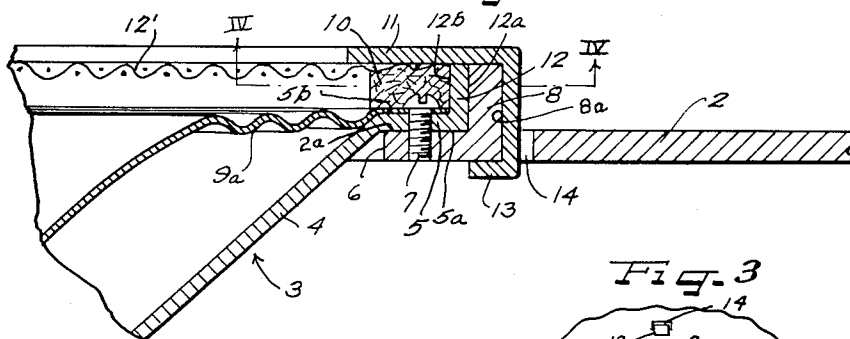


Fig. 4

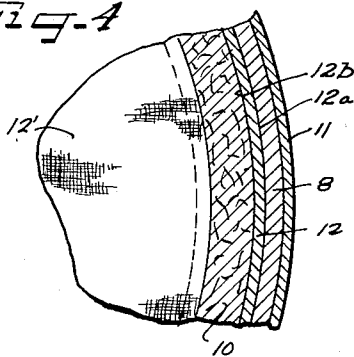
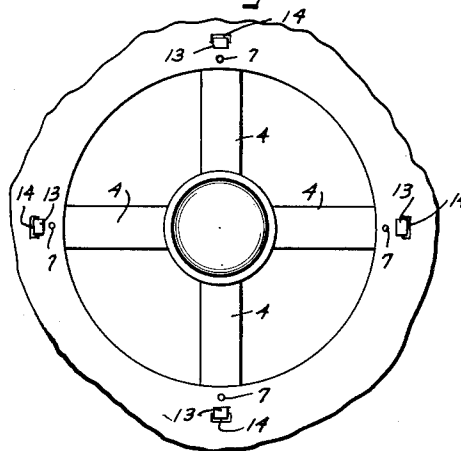


Fig. 3



INVENTOR.

Tadashi Igarashi

BY

Kell, Sherman, Morris, Guss, Simpson
ATTORNEYS

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SPEAKER MOUNTING DEVICE

Tadashi Igarashi, Suginami-ku, Tokyo, Japan, assignor to Sony Kabushikihaisha (Sony Corporation), Tokyo, Japan, a corporation of Japan

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1 Claim. (Cl. 181--31)

This invention relates to a speaker mounting device, and more particularly to such a device for mounting a speaker to a panel or a front plate of a radio receiving set.

In a heretofore known speaker mounting device for a small portable radio set, it has been usual to mount a speaker to a panel or a front plate of a case from the inner side thereof.

It is, therefore, necessary to provide a case having a depth large enough to receive the whole length of a speaker.

It is an object of this invention to provide a speaker mounting device in which the speaker can be fitted into a window or opening formed in a panel or front plate of a case, from the outside thereof so that the depth of the case can be made as small as possible.

It is another object of this invention to provide a speaker mounting device in which at least the front surface of a speaker is disposed to be the same plane as that of the panel or be slightly extended from the outside face of the panel so that the depth of the case may be correspondingly minimized.

It is a further object of this invention to provide a radio receiving set such as a small portable transistor radio receiving set in which a speaker can be removed and mounted from the outside of the case and inspection of the same can easily be attained from the outside of the case.

Other objects, features, and advantages of this invention will be more apparent from the following detailed description taken in connection with the accompanying drawing.

FIGURE 1 is a cross-sectional view of a speaker constructed and mounted in a case in accordance with this invention;

FIGURE 2 is an enlargement of a portion of the sectional view of FIGURE 1;

FIGURE 3 is a cross-sectional view, on a reduced scale, taken substantially along line III—III of FIGURE 1; and

FIGURE 4 is a partial cross-sectional view taken along line IV—IV of FIGURE 2.

Referring to the drawing, 1 is a case of a small and portable radio receiving set such as a transistor radio receiver and 2 a front plate or a panel of the case. Reference numeral 3 generally designates a speaker which includes a conventional frame 4.

In accordance with this invention the speaker 3 is put into the case passing through a window or opening 6 formed on the panel 2 until the back face 5a of a flange 5 formed at the periphery of the frame 4 abuts an outer face portion 2a of the panel 2 about the opening 6,

The flange is then secured to the panel by means of screws 7, if desired. The panel 2 is provided with an integral ring portion 8 projecting outwardly from the outer face of the panel 2 and spaced radially outwardly from the edge of the opening 6 in coaxial relation thereto.

The flange 5 has a peripheral edge portion 12, the radially outwardly facing surface 12a thereof being engaged with the radially inwardly facing surface 8a of the ring portion 8. The outer edge 9a of a generally

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conical diaphragm 9 is pressed on the front face 5b of the flange 5 by a cushion ring 10 such as made of felt and rubber, the radially outwardly facing surface 10a of the ring 10b attached to the radially inwardly facing surface 12b of the peripheral edge 12 of the flange 5.

On the peripheral edge 12 and the cushion ring 10 can be arranged a decoration plate, fabric salan or grille 12' to protect the diaphragm 9.

The speaker is held in position by a cover 11 having lugs 13 which are extended from spaced points of the peripheral edge thereof and inserted into corresponding recesses 14 formed in the plate 2 outside the ring 8 and then the end of the lugs are bent inwardly as shown in the drawing.

It will be apparent that the depth or height of the case can be minimized in this invention by at least the width of the panel 2 or the total sum widths of the flange 5, cushion ring 10 and the cover 11 as compared with an ordinary radio set.

It has been appreciated in a portable radio apparatus that the dimension especially the width or the height of the case of the apparatus is possibly minimized.

The construction and arrangement according to this invention enables to make compact the assembly of the portable radio apparatus to meet the above mentioned desire.

Besides, according to this invention, the speaker can readily be mounted to and removed from the panel of the case from the outside of the case.

The inspection of the inner connections, parts and speaker itself can also easily be made by removing the speaker, as desired.

While I have explained a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made and I, therefore, contemplated by the appended claims to cover any such modifications as fall within the spirit and scope of my invention.

What I claim is:

In an electro-acoustical device, a transducer including a frame and a generally conical diaphragm in said frame, a flange formed at the periphery of said frame and having a back face and a front face, a case including a panel having an opening therein receiving said transducer with said back face being engaged with the outer face of said panel about said opening, a cushion ring holding a peripheral portion of said diaphragm against said front face, an integral forwardly extending peripheral edge portion formed on said flange outside said cushion ring, a grill having a peripheral edge portion disposed against the outer face of said cushion ring, an outer ring projecting outwardly from said panel in surrounding relation to said integral forwardly extending peripheral edge portion on said flange, a cover ring engaging the peripheral edge portion of said grill to hold said grill and cushion ring in position, said panel having recesses therein outside said outer ring, and lugs extending inwardly from said cover ring through said recesses with the inner ends of said lugs being bent radially inwardly to hold said rings and said grill in position.

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