LOUDSPEAKER MOUNTING ARRANGEMENT

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Filed Jan. 3, 1966, Ser. No. 518,152

1 Claim. (Cl. 317—101)

ABSTRACT OF THE DISCLOSURE

An arrangement for mounting a loudspeaker to a circuit board comprising a mounting bracket including oppositely extending mounting and positioning tabs, the loudspeaker being adjustably connected to the mounting bracket between the positioning tabs in such a manner that the electrical terminals of the loudspeaker and the mounting tabs of the mounting bracket are received by associated apertures in the circuit board.

This invention relates to loudspeaker mounting arrangements, and particularly to an arrangement for attaching a loudspeaker to a circuit board.

Loudspeakers are conventionally attached in a radio or like device by means of screws, rivets, or fastening devices. Such previous arrangements involve the cost not only of the fastening means, but also the additional cost of subsequent soldering of the lead wires from the loudspeaker to the circuits contained in the chassis.

An object of the invention is to provide an improved loudspeaker mounting arrangement.

Another object is to provide an improved loudspeaker mounting arrangement which does not require the use of conventional fastening and wiring arrangements.

A further object is to provide a loudspeaker mounting arrangement in which the loudspeaker can be directly dip-soldered to a circuit board.

Other objects will be apparent from the following description and claim, and from the accompanying drawing.

The invention comprises, briefly and in a preferred embodiment, a loudspeaker provided with mounting tabs and electrical terminals extending therefrom for simultaneous dip-soldering to a circuit board for both mechanical and electrical attachment thereto. In accordance with a feature of the invention, a bracket is provided which is attached to the loudspeaker and which is provided with outwardly extending prongs for being dip-soldered to a circuit board.

In the drawing, FIG. 1 is a perspective view of a loudspeaker provided with a bracket attached thereto in accordance with a preferred embodiment of the invention, FIG. 2 is a perspective view of the bracket, and FIG. 3 is a side view, partly in cross-section, of the loudspeaker in combination with a printed circuit board, ready for dip-soldering of the loudspeaker to the circuit board.

A loudspeaker 11 comprises a frame 12 and magnetic structure 13. A metal bracket 14 is attached to the magnetic structure 13 by means of a rivet 16 or other suitable means. In the example shown, the rivet 16 holds together the magnet structure 13. The bracket 14 is provided with a U-shaped slot 17 around the attachment opening 18, as shown, so that the main portion of the bracket 14 will be somewhat flexible with respect to the point of attachment to the loudspeaker, to permit loudspeaker alignment with respect to a cabinet. A plurality of tabs 21, 22, 23 extend upwardly from the bracket 14 so as to surround the edges of the magnetic structure 13 for accurate positioning of the bracket 14 thereon. A plurality of mounting tabs 26, 27, 28 extend downwardly from the bracket 14, as shown, and preferably at least one of the tabs 26 is provided with an offset end portion 29.

The loudspeaker 11, with its tabs and bracket 14 attached thereto, is attached to a printed circuit board 31 by inserting the offset bracket tab 26 through a suitable opening 32 of the circuit board, and then tilting the loudspeaker so that the remaining tabs 27 and 28 enter other openings in the circuit board. The offset end portion 29 of the tab 26 extends under the circuit board and helps to hold the loudspeaker in place until the bracket tabs 26, 27, 28 are soldered to metal areas 30 carried by the circuit board.

The loudspeaker 11 is provided with electrical terminals 36, 37, 38 extending therefrom in a direction parallel to the tabs 26, 27, 28. The arrangement is such that the tabs 26, 27, 28 and electrical terminals 36, 37, 38 extend approximately the same distance from the loudspeaker 11.

The circuit board 31 is provided with suitable openings 41, 42 for receiving the electrical terminals.

The circuit board 31 also may, of course, contain electrical circuit components 43, 44.

After the loudspeaker 11 and components 43, 44 are positioned on the circuit board 31, as shown in FIG. 3, a container 46 of molten solder 47 is brought upwardly, as indicated by the arrow 48, so that the solder 47 engages the various mounting tabs 26, 27, 28 and electrical terminals 36, 37, 38 as to simultaneously solder them to the various conductors 30 and 33, 34 carried by the circuit board 31. Lead wires of other components 43, 44 become soldered to the circuit board at the same time.

Thereafter, the solder container 46 is removed, leaving the loudspeaker 11 both mechanically and electrically attached and connected to the circuit board 31, this being achieved by the normal dip-soldering and not requiring any additional steps or procedures.

The invention achieves its objectives of providing a simple, convenient, and low-cost arrangement for simultaneously attaching a loudspeaker both electrically and mechanically to a circuit board.

While a preferred embodiment of the invention has been shown and described, various other embodiments and modifications thereof will be apparent to persons skilled in the art, and will fall within the scope of invention as defined in the following claim.

I claim:

1. A loudspeaker mounting arrangement for a loudspeaker having a plurality of electrical terminals extending therefrom, said arrangement comprising:

(a) a bracket attached to said loudspeaker at a single point and including a plurality of mounting tabs extending therefrom,
(b) the electrical terminals of the loudspeaker and said mounting tabs being substantially mutually parallel and adapted to be soldered to a circuit board, and
(c) said bracket having a U-shaped slot extending therethrough around the point of attachment of said loudspeaker to said bracket thereby permitting adjustable alignment of said loudspeaker with respect to said bracket.

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