CORNER SPEAKER ENCLOSURE
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The present invention generally relates to a speaker for producing sounds throughout the entire range of audible frequencies with excellent balance and true fidelity. Specifically, the present invention relates to a speaker enclosure constructed primarily to be located in the corner of a room and embodies a closed chamber vented through a triangular opening to three identical triangular horns formed so that they parallel the three corners created by the floor and walls or ceiling and walls of a room.

The present invention is primarily constructed for corner installation but it will also perform well in other locations especially when the three horn openings are permitted to work along a wall, floor or other large flat surface. The basic principle in this invention is that it uses three identical horn openings from which sound from the back of the speaker moves into the three corners formed by the walls and floor or the walls and ceiling of a room in order to efficiently furnish the sound produced from the front of the speaker. In order to accomplish this, the size of the opening feeding from the back of the speaker to the three horns bears a specific relationship to the volume of the inside of the enclosure and the taper or expansion of the horns toward their mouths whereby low frequency sound waves are kept under control.

Of course, the size relationships of the components of the invention may vary so that it may be effectively installed in various size rooms. The flare or taper of the horns is approximately at the rate required to reproduce the lowest note or sound desired. In most cases, this means doubling the throat area of the horn in eighteenth or sixteenth of length. The horn is mounted in a baffle and the sound waves emanating from the back of the speaker will travel through a central opening and thence into and through the identical horns.

Still another object of the present invention is to provide a corner speaker enclosure which is simple in construction, easy to install, efficient in operation and well adapted for its intended purposes.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the speaker assembly of the present invention illustrating the corner enclosure installed in the corner of a room;

FIGURE 2 is a perspective of the unit with the grille cloth and top removed illustrating the orientation of the baffles therein;

FIGURE 3 is a top plan view of the corner speaker enclosure with the top thereof removed;

FIGURE 4 is a transverse, sectional view taken substantially upon a plane passing along section line 4—4 of FIGURE 3 illustrating further structural details of the invention;

FIGURE 5 is a diagonal, sectional view taken substantially upon a plane passing along section line 5—5 of FIGURE 3 illustrating further structural details of the invention; and

FIGURE 6 is a transverse, sectional view taken substantially upon a plane passing along section line 6—6 of FIGURE 3 illustrating further structural details of the enclosure.

Referring now specifically to the drawings, the numeral generally designates the corner speaker enclosure of the present invention which is mounted in the corner of a room defined by the walls 12 and 14 as well as the floor 16 thereof. The corner enclosure 10 could also just as well be mounted at the corner of the room defined by the walls and ceiling or may be mounted in other locations in which the diverging walls thereof are associated with large wall surfaces.

The corner speaker enclosure 10 includes a bottom panel or wall 18 having a center front edge 20 and side front edges 22 and 24 oriented in angular relation to each other and converging side edges 26 and 28 which terminate at a rear corner 30 in FIGURE 5. Extending upwardly from the side edges 26 and 28 is a pair of side walls 32 and 34 which are planar in construction as is the bottom 18. A front panel 36 is attached to and extends upwardly from the top surface of the bottom wall 18 in generally parallel relation to the edge 20 although spaced slightly inwardly. The front panel 36 is provided with an opening 38 and a speaker 40 is mounted on the front panel 36 in any convenient manner in registry with the opening 38 in a conventional manner. The details of the mounting are not illustrated nor are the electrical conductors for providing a power input into the speaker 40.

Attached to the edges of the front panel 36 is a pair of front side walls or panels 42 and 44 which are trapezoidal in configuration and include top edges 46 and 48 parallel with the top edges of the front wall or panel 36 and the side walls 32 and 34. The longer vertical edges of the front side panels 42 and 44 are secured to the side edges of the front panel 36 and the shorter side edges thereof are secured to the inner surfaces of the side walls 32 and 36 respectively and spaced inwardly slightly therefrom. Thus, the bottom edge of the front side panel 42 is designated by numeral 50 and cooperates with the edge portion 22 and a portion of the side edges from the horizontal line 52 to define a right triangular opening. Likewise, the bottom edge 52 of the front side panel 44 cooperates with the edge 24 of the bottom 18 and an adjacent portion of the side wall 34 to form a similar right triangular opening.

A top 54 is attached to the top edges of the front panel 36, front side panels 42 and 44 and a portion of the side walls 32 and 34 with the back edge of the top wall being designated by numeral 56 and cooperating with the intersecting upper edge portions of the side walls 32 and 34 to form a third right triangular opening. All of the right triangular openings are identical in shape and configuration as well as in size and the components of the enclosure are secured together in any suitable manner such as by gluing or the like. In fact, reinforcing blocks or anchoring blocks 58 are employed wherever required for the purpose of securing the various components together. Also, all of the triangular openings are covered by a grille cloth 60 or the like which may be secured in place by a finish molding 62 or the like. The grille cloth may extend completely over the front panel 36, the front side panels 42 and 44 and over only the triangular opening defined by the horizontal line of the portion 54 and the adjacent edges of the side walls 32 and 34. The grille cloth may be secured in any suitable and conventional manner and may be orientated in any suitable manner for decorative purposes. In fact, any suitable conventional finish may be provided for the components which are exposed in order that the corner speaker enclosure of the present invention will match any furniture with which the device is to be used.
Mounted interiorly of the speaker enclosure 10 are three baffles 64, 66 and 68. Each of the baffles 64, 66 and 68 has diverging side edges 70 and 72 which terminate in a wide end edge 74 that is coincident with the hypotenuse of the right triangular openings defined by the edges 50 and 52 of the front side wall panels 42 and 44 and the edge 56 of the top wall 44. Thus, three triangular horns are defined by the three baffles 64, 66 and 68 respectively and the adjacent corners of the enclosure 10 and, of course, the baffles, due to their diverging edges from the wide edge 74 to the narrow edge 76 are inclined so that the volume of the horn or the cross-sectional area thereof will progressively decrease towards the discharge end of the triangular horn. As illustrated in several figures of the drawings, the inner or narrow end edges of the baffles designated by numeral 76 are interconnected with each other in such a manner to leave a bottom opening 78 which communicates with all three of the horns and which forms an exit for sound waves emanating from the rear of the speaker 40 which is retained in a completely enclosed chamber defined by the baffles 64, 66 and 68, the bottom 18, the top 54, the front side walls 42 and 44 and portions of the side walls 32 and 34 whereby sound waves emanating from the rear of the speaker 40 must pass through the opening 78 and then into each of the triangular shaped horns or passageways. Each of the triangular-shaped horns or passageways is of identical construction and is identical in size and each tapers outwardly so that the throat area thereof will double in approximately eighteen inches of length so that any low note or sound desired will be reproduced. While only one speaker has been illustrated, it is pointed out that either or both of the front side panels 42 or 44 may be provided with a speaker with no other alteration to the structure other than providing a suitable aperture in the front side panels. As another variation that could be employed, the dimensional characteristics of the front panel could be varied and could be inclined so that the front side panels 42 and 44 could be eliminated with the front panel being inclined rearwardly and joined with the side walls with the triangular opening still being defined by angular lower edges of the front wall.

With the triangular horns being directed parallel to the corners of a room defined by the floor and walls or the ceiling and walls, the total effect of the sound produced by the speaker assembly of the present invention will be quite effective thereby greatly enhancing the quality and fidelity of the sound produced thereby.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed is as new is as follows:

1. A corner speaker enclosure comprising a hollow cabinet shaped to conform with the corner of a room and including a vertical corner and two horizontal corners extending in diverging relation, said cabinet including an opening at the remote ends of said corners, and a baffle extending diagonally across each corner of the cabinet with the baffle terminating at one edge to define a portion of each of said openings with the baffle defining a passageway decreasing in cross-sectional area towards the point of intersection of the corners of the cabinet, the adjacent ends of said baffle being connected to form an opening remote from the intersection of the corners of the cabinet, a transverse front wall forming a closure for the front of the cabinet except for the openings, a top wall forming a closure for the top of the cabinet except for the opening, and a speaker mounted on the front wall for producing sound, said front wall having opening means therein for allowing sound to emanate forwardly from the speaker, the opening defined by the inner ends of the baffles defining an opening for allowing sounds emanating from the rear of the speaker to pass into the passageways defined by the baffles whereby the tapered passageways define horns for allowing sound to emanate therefrom along the corners of the room.

2. The structure as defined in claim 1 wherein each of said openings is of right triangular configuration, each of said openings being closed with grille means whereby formed a decorative enclosure.

3. The structure as defined in claim 2, wherein each of said openings is identical in size, each of said passageways also being identical in size and shape.

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