

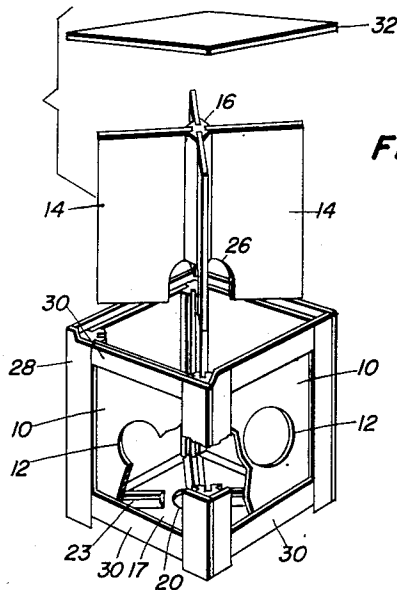
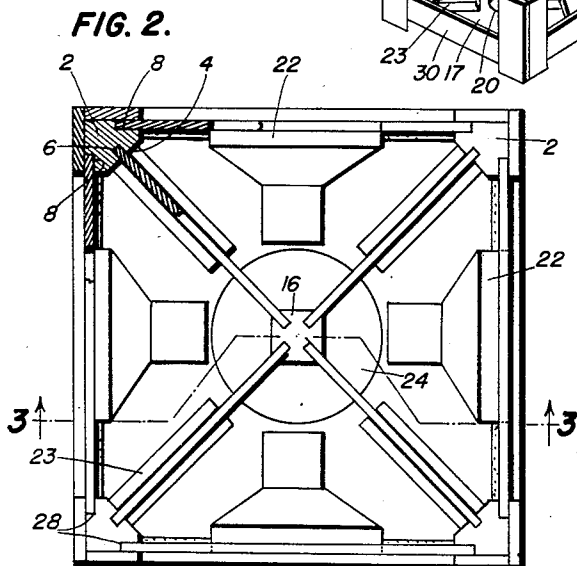
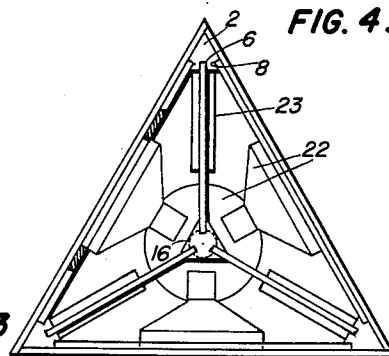
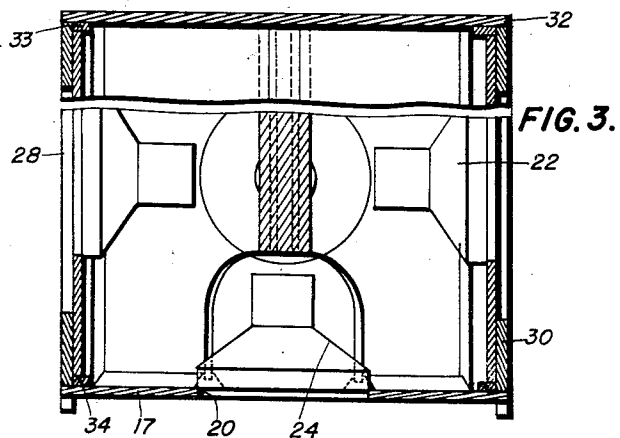
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CUBIC LOUD SPEAKER CABINET

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CUBIC LOUD-SPEAKER CABINET

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This invention is a loud speaker unit containing a multiplicity of loud speakers, directed in four or five different directions, for filling a large room or hall with speeches or music, clearly and without objectionable echoes. More specifically, the invention comprises a six-sided box or cabinet preferably exactly cubical. The cabinet has four vertical sides containing four large apertures. Diagonally extending partitions inside the cabinet define four different or individual compartments, one adjacent each of said apertures. A loud speaker is mounted in each of said individual compartments and directed outwardly through its respective aperture. The cabinet is preferably mounted centrally in the room or hall, preferably from the ceiling, with the four loud speakers facing in four directions, 90° apart, so that the sound is projected in all directions, toward the four walls of the hall or room.

If, as is usually the case, the hall is longer than it is wide, the two loud speakers facing lengthwise of the hall will be supplied with more power for sending stronger sound waves lengthwise of the hall.

In addition to the four radially mounted loud speakers just described, the installation also includes a fifth loud speaker mounted centrally in the bottom of the cabinet and directed downwardly, thereby giving a very uniform distribution of sound through the room.

Individual switches for each loud speaker, or a suitable multi-way switch, is provided so that any one of the five loud speakers may be turned on or off. Suitable rheostat means may be provided in the circuit for each loud speaker, so that its volume may be individually controlled.

The invention will be described in more detail in connection with the accompanying drawing wherein:

Fig. 1 is an exploded perspective view of the preferred embodiment of the loud speaker unit of the present invention, without the top cover;

Fig. 2 is a top plan view of the unit with the top cover removed;

Fig. 3 is a partial vertical cross-section, taken on the line 3-3 of Fig. 2, and

Fig. 4 is a top plan view of a modification, with the top cover removed.

Referring now to the drawings, illustrating the invention in more detail, the cabinet comprises vertical corner posts 2 of substantial size; one corner of each of these posts is beveled at 45° to form a diagonal face 4 provided with a vertically extending longitudinal groove 6. The adjacent faces of corner post 2 are each provided with a

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vertically extending longitudinal groove 8. The sides of the cabinet are formed by panels 10 of laminated plywood seated in the facing grooves 8. Each of these panels 10 is provided with a loud speaker aperture 12.

The interior of the cabinet is divided into four individual compartments by vertical partitions 14, the outer edges of which are mounted in grooves 6 of the corner posts, while their inner edges are mounted in suitable grooves in a center post 16.

The bottom 17 of the cabinet is secured to the bottom of each of the corner posts 2 and is provided with a central loud speaker aperture 20.

A loud speaker 22 is mounted in each of the four compartments defined by the diagonal partitions, each loud speaker being mounted to face outwardly through the corresponding aperture 12 for its compartment. These loud speakers face in four directions, 90° apart, so that the sound waves therefrom are directed radially and horizontally in four different directions.

The bottom 17 of the cabinet is provided with four horizontally and diagonally extending groove moldings 23 for receiving the lower edges of each of the four vertical partitions 14.

The slide-in partitions 14 define four compartments, and the four air columns in these compartments pick-up, resonate and amplify the sound waves from the respective units 22 in each compartment. These vibrating air columns increase the volume and fidelity of the emanating sound.

By reason of the cubical construction, the sound waves emanating from the five units 22 and 24 blend and coalesce in mid-air, at a distance about twice the length of one edge of the cube. This also increases the smoothness and fidelity of the resonated sound waves.

A fifth loud speaker 24 is mounted centrally in the bottom of the cabinet, the center post 16 being cut away to accommodate this fifth loud speaker, while the vertical partitions 14 are provided with parabolic cut-outs 25 for accommodating this fifth speaker.

The outside of the cabinet is provided with vertical finish strips 28 and horizontal finish strips 30.

The cabinet is completed by a top cover 32 mounted on the upper ends of the corner posts and the upper edges of the side panels 10, and being insulated therefrom by a strip of felt 33 for absorbing any vibration. A strip of felt 34 may also be provided between the lower ends of the corner posts, the lower edges of the panels and the bottom 17 of the cabinet.

The top cover may be provided with suitable

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ventilating openings, screened to keep out the dust.

As already mentioned, the circuit for each of the five loud speakers may be individually controlled so that any number of them may be put into operation in any combination. Furthermore, the power supplied to each loud speaker may be varied as desired for controlling its volume. Electrical devices for accomplishing these results are conventional and are not illustrated. Where the cabinet is used in a long hall, the loud speakers facing lengthwise of the hall will be supplied with more power.

Where the cabinet is suspended from the ceiling, the upper ends of the corner posts may carry suspension eyelets. Where the cabinet rests on the floor, it will be provided with suitable legs to space it about five or six inches above the floor, on rubber or insulated casters.

The preferred embodiment of this invention is a four-sided box with four loud speakers extending in four directions 90° apart. However, the basic idea involved can also be carried out in a three-sided cabinet, having three vertical panels, with inner partitions corresponding to partitions 14, dividing the interior in three compartments. A loud speaker is mounted in each of the three compartments, and these three speakers would, of course, be 120° apart, instead of 90° apart, as with the four-sided construction.

There has thus been described a loud speaker cabinet which fills a large room or hall very uniformly so that anyone in any portion of the hall may hear very clearly and without echoes. While the invention has been illustrated in some detail, it should be understood that the invention should not be limited to the precise details illustrated, but may be carried out in other ways.

I claim as my invention:

1. A cubic sound resonator, comprising four corner posts, one corner of each of said posts being beveled at 45°, each bevel face being provided with a vertical longitudinal groove, the two adjacent faces of each of said corner posts being provided with outer longitudinal grooves, apertured panels, four in number, mounted in the pairs of said outer longitudinal grooves that face each other, diagonal partitions mounted in the grooves in the beveled faces of the posts, for de-

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fining four individual compartments adjacent respectively to the apertures in the panels, and four loud speakers, mounted respectively in each of said four compartments and placed to face horizontally outwardly through respective apertures in the panels, in four different directions 90° apart.

2. The combination as claimed in claim 1, including in addition, a fifth loud speaker mounted in the bottom part of the cabinet and directed downwardly.

3. A loudspeaker unit, comprising four corner posts, a vertical longitudinal groove in each of said corner posts, apertured panels, four in number, mounted against said corner posts for defining the four vertical sides of a cabinet, diagonal partitions mounted in the grooves in said corner posts, for defining four individual compartments adjacent respectively to the apertures in the panels, and four loud speakers, mounted respectively in each of said four compartments and placed to face horizontally outwardly through respective apertures in the panels, in four different directions 90° apart.

4. The combination as claimed in claim 3, including in addition, a fifth loudspeaker mounted in the bottom part of the cabinet and directed downwardly.

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