June 27, 1933. T. J. SCOFIELD 1,915,954

LOUD SPEAKER SYSTEM

Filed Aug. 25, 1932

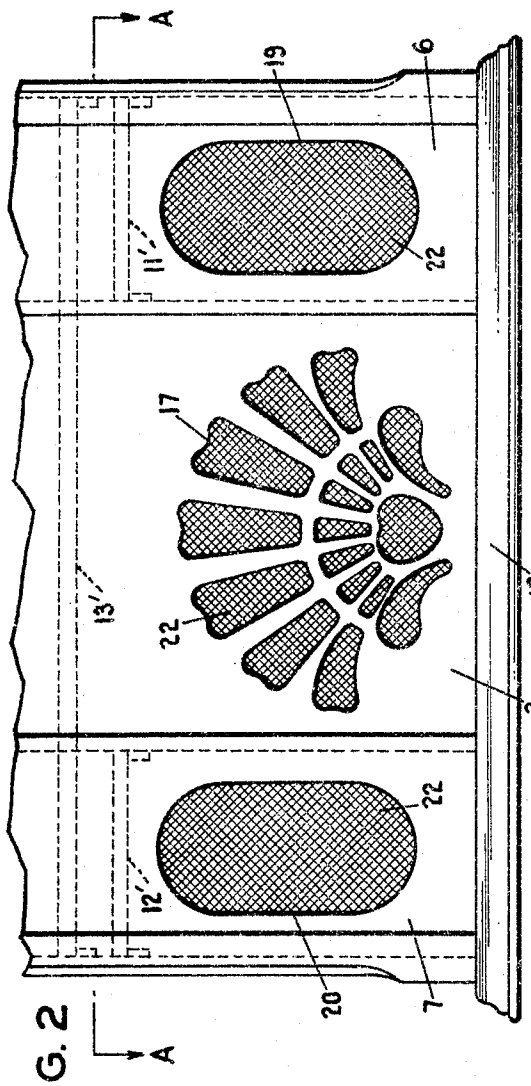


FIG. 2

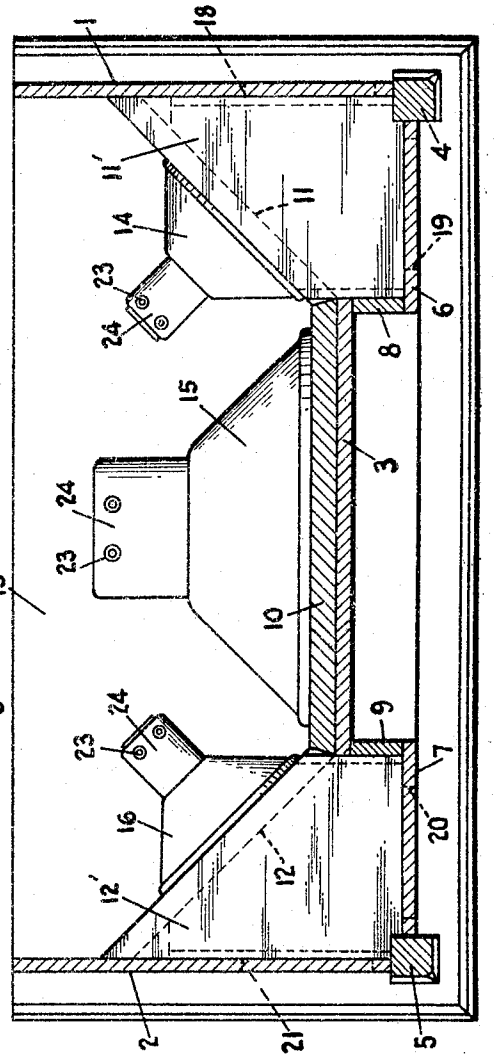


FIG. 1

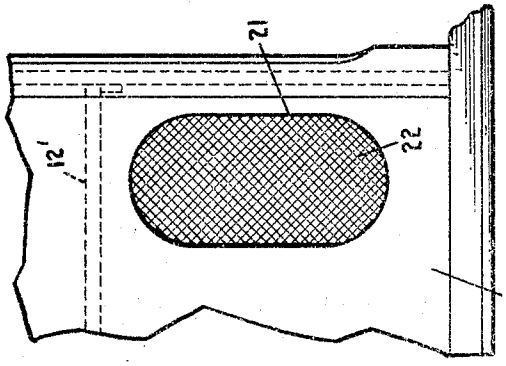


FIG. 3

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LOUD SPEAKER SYSTEM

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This invention relates to loud speakers and other sound producing devices such as are used in radio sets, phonographs, public address systems, talking pictures, etc.

An object of the invention is to use a plurality of sound producing devices in adjacent position without interference between the sounds produced thereby.

Another object of the invention is to produce a loud speaker so arranged that the sound does not appear to proceed from one spot as is usual in loud speaker production.

Other objects of the invention will appear in the following description reference being had to the drawing in which:

Fig. 1 is a sectional plan view of the loud speakers arranged in a radio set, the section being taken on line A . . . A of Fig. 2.

Fig 2 is a front view of the loud speaker part of a radio set shown in Fig. 1.

Fig. 3 is a partial end view of the loud speaker part of the set shown in Figs. 1 and 2.

It has been found desirable in sound producing systems to employ a plurality of loud speakers, as commonly called. It has been the custom to arrange these loud speakers so that they either throw the sound waves in one direction or concentrate them as near as possible at one point. Neither of these prior schemes has been satisfactory.

In my improvement I position the loud speakers, three being shown by way of example, so their axes are divergent outwards, as clearly shown in Fig. 1.

In the drawings the cabinet or housing has side pieces or panels 1 and 2 and a central front panel 3. In Fig. 1 I have shown the front panel set inwards but it may, if desired, extend from one corner post 4 to the other post 5. The two auxiliary front panels 6 and 7 extend from the corner posts 4 and 5 and are joined to strips 8 and 9 secured to the front panel 3, although panel 3 could reach across the full width of cabinet as above suggested. Partitions or baffles 10, 11 and 12 are positioned as shown in Fig 1 so that the baffle 10 is parallel and adjacent the front panel 3 and the baffles 11 and 12 are angularly positioned in relation to the panels 1, 6 and 2, 7, respectively. The baffle 10 rests against the edges of baffles 11 and 12 and is preferably glued or otherwise secured thereto at an angle. The baffles 11 and 12 are similarly positioned or secured in respect to the panels 1 and 2. Top pieces 11′ and 12′ together with the bottom 13, furnish additional baffles to prevent the vibrating air column from following a short-circuiting path from front to rear inside the cabinet. The chassis shelf 13′ and bottom 13 likewise act as top and bottom baffles for the loud speaker 15. One or more of these additional baffles may be omitted to produce the desired tonal effect and with this in view I have omitted in some cases the bottom member 13 under the speakers.

The speaker may be of any desired type. The cones or horns 14, 15 and 16, as the case may be, are fitted against the baffles 10, 11 and 12 and such baffles have openings therein, corresponding to the shape of the cones.

The panels 1, 6, 3, 7 and 2 have openings therein in any desired form but by way of example I have shown the front panel 3 as having an ornamental design formed by a plurality of slots 17 and the remaining four openings 18, 19, 20 and 21 with parallel vertical sides and circular tops and bottoms. All these openings may be covered with suitable gauze fabric or other material, as indicated at 22 in Figs. 2 and 3.

The binding posts 23 of the driving elements 24 (shown conventionally in the drawings) permit the connection of such elements in series or parallel relation, as desired. These elements would be connected to vacuum tube amplifiers in a well understood way, but as these form no part of my invention they are not shown in the drawing.

When the set is functioning the loud speaker 15 directs the air impulses or vibrations roughly perpendicularly to the front panel 3 though of course these vibrations spread or fan outwardly to considerable extent as they travel from the front panel. The loud speaker 14 directs its impulses angularly toward the corner of the cabinet and out through the openings 18 and 19 while the loud speaker 16 sends its impulses out angularly through the openings 20 and 21.

With the arrangement described the plurality of speakers produce a pleasing tonal effect as the sound comes from one one center of origin and appears to issue from all parts of the room.

Having described my invention, what I claim is:

1. In sound production, a cabinet having front and side panels with openings therein, a plurality of baffle boards having their adjacent edges meeting and positioned to form an angle between adjacent boards, said baffle boards having openings therethrough and a sound producing device positioned adjacent each of said openings.

2. In sound production, a cabinet having front and side panels with openings therein, a baffle board extending parallel to the front panel and having an opening therethrough, additional baffle boards extending angularly across the front corners of the cabinet each having an edge abutting against an edge of the first baffle board and the other of its edges abutting against one of said side panels, said second mentioned baffle boards having openings therethrough and a sound producing device positioned adjacent the opening in each of said baffle boards.

3. In sound production, a cabinet having front and side panels with openings therein, a baffle board extending parallel to the front panel and having an opening therethrough, a second baffle board extending angularly across the corner of the cabinet with one of its edges abutting against an edge of the first panel and the other of its edges abutting against one of said end panels, the second mentioned baffle board having an opening therethrough and a sound producing device positioned adjacent the opening in each of said baffle boards.

4. In sound production, a cabinet having front and side panels with openings therein, a sound producing device positioned in said cabinet to direct its sound perpendicularly through the front panel and an additional sound device positioned to direct its sounds diagonally through a front corner of the cabinet.

5. In sound production, a cabinet having front and side panels with openings therein, a sound producing device positioned in said cabinet to direct its sound perpendicularly through the front panel and an additional sound device positioned to direct its sounds diagonally through each of the front corners of the cabinet.

6. In sound production, a cabinet having front and side panels with openings adjacent the front corners, the front panel also having a central opening, a sound producing device positioned in said cabinet to direct its sound perpendicularly through said central opening and additional sound producing devices positioned in said cabinet to direct their sounds diagonally through the other openings adjacent the corners.

In testimony whereof, I have signed my name to this specification this twentieth day of August, 1932.

THEODORE J. SCOFIELD.