July 1, 1969 A. J. CARSELLO ET AL 3,452,836

ACOUSTICAL CHAIR

Filed April 17, 1967 Sheet 1 of 2

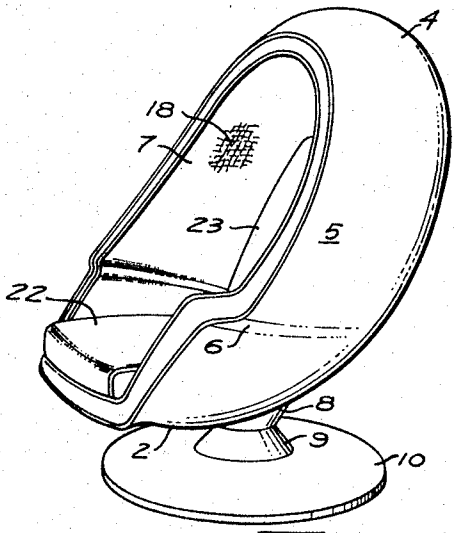

FIG. 1

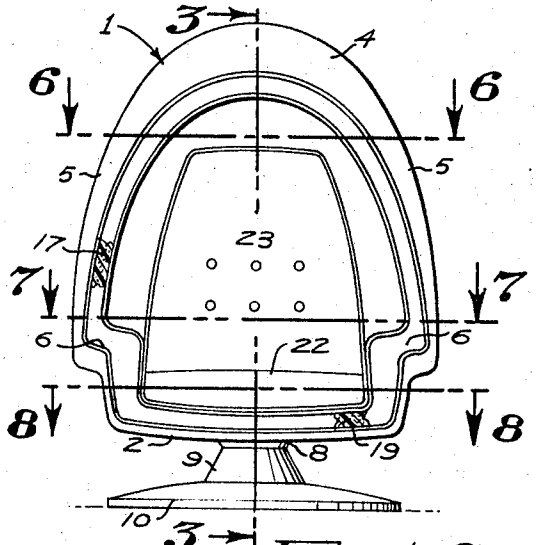

FIG. 2

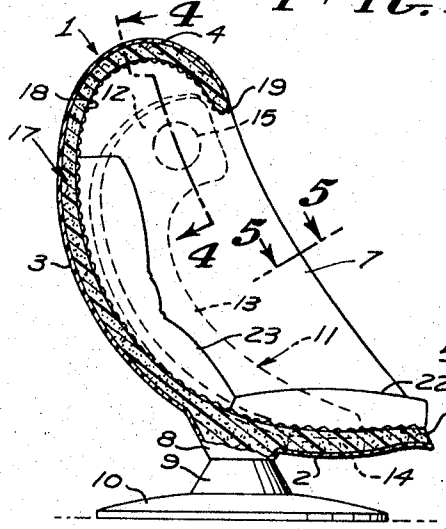

FIG. 3

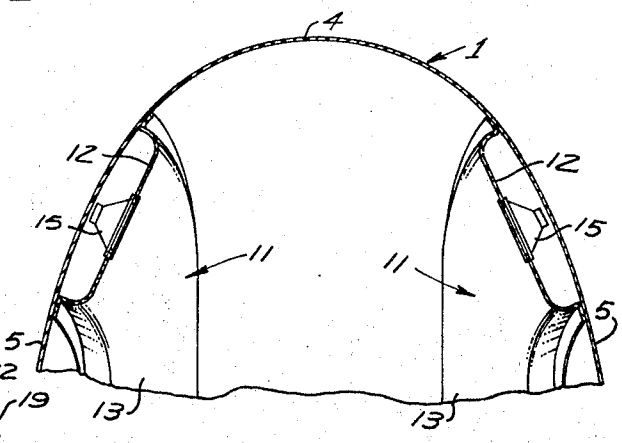

FIG. 4

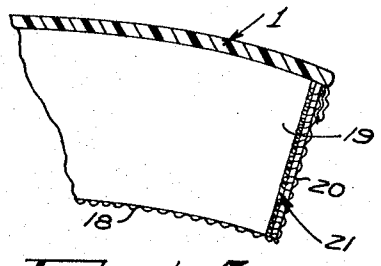

FIG. 5

ANTHONY J. CARSELLO
EDMUND M. DIGIULIO
INVENTORS

BY Lyon & Lyon

ATTORNEYS

July 1, 1969 A. J. CARSELLO ET AL 3,452,836

ACOUSTICAL CHAIR

Filed April 17, 1967 Sheet 2 of 2

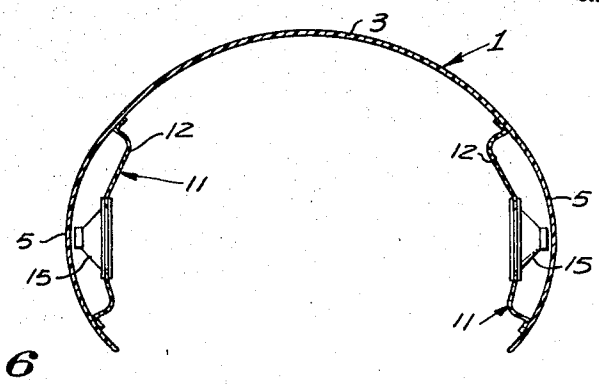

FIG. 6

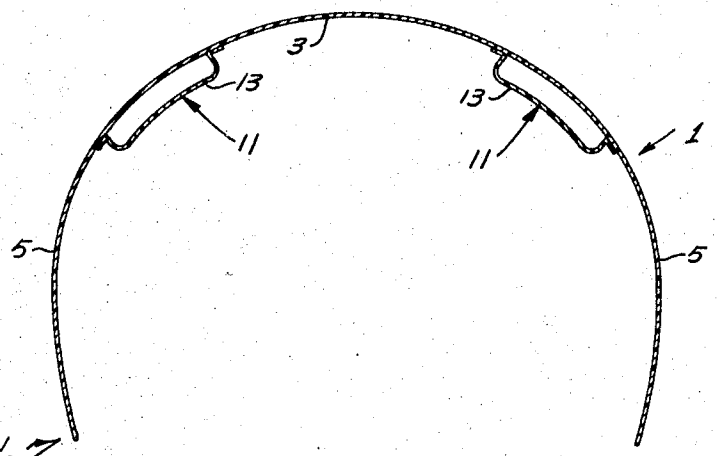

FIG. 7

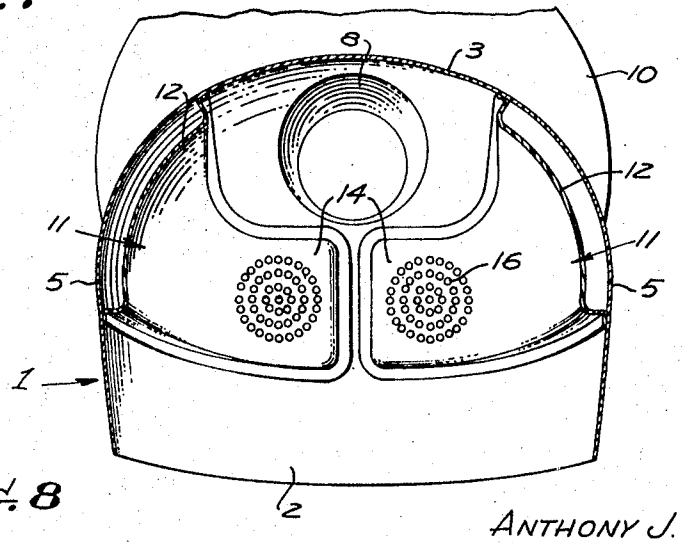

FIG. 8

ANTHONY J. CARSELLO
EDMUND M. DI GIULIO
INVENTORS

BY Lyon & Lyon
ATTORNEYS

United States Patent Office 3,452,836 Patented July 1, 1969

3,452,836

ACOUSTICAL CHAIR

Anthony J. Carsello, Los Angeles, and Edmund M. Di Giulio, Sherman Oaks, Calif. (both of 1728 S. La Cienega, Los Angeles, Calif. 90035)

Filed Apr. 17, 1967, Ser. No. 631,428
Int. Cl. G10k 13/00
U.S. Cl. 181—31
5 Claims

ABSTRACT OF THE DISCLOSURE

A chair which partially surrounds the occupant and is provided with a stereophonic speaker system including baffle ducts for the sound originating behind the speakers, the walls of the baffle ducts also serving to reinforce the chair.

Objects of the invention

The objects of this invention are to provide:

First, an acoustical chair which utilizes a shell open at the front side and otherwise enclosing the occupant at the top, back and sides, the contour of the chair being such that a pair of speakers located opposite the head of the occupant are acoustically related to produce a stereophonic effect.

Second, an acoustical chair which incorporates novel baffle ducts extending from the speakers to the underside of the chair and also serving to reinforce the chair.

Third, an acoustical chair which tends to confine the sound to the region within the chair, enabling the occupant to enjoy the music at rather high volume while minimizing the sound level in the area surrounding the acoustical chair.

Fourth, an acoustical chair which incorporates a lining and covering that improves the acoustical effect and which may be removed and interchanged with a minimum of effort.

Description of drawings

FIGURE 1 is a perspective view of the acoustical chair.

FIGURE 2 is a front view thereof.

FIGURE 3 is a sectional view thereof, taken through 3—3 of FIGURE 2.

FIGURE 4 is an enlarged fragmentary sectional view, taken through 4—4 of FIGURE 3, with the padding and lining removed.

FIGURE 5 is an enlarged fragmentary sectional view, taken through 5—5 of FIGURE 3.

FIGURES 6 and 7 are enlarged sectional views, taken through 6—6 and 7—7 of FIGURE 2, the views being limited to the planes in which the sections have been taken, and the padding and lining being omitted.

FIGURE 8 is an enlarged sectional view, taken through 8—8 of FIGURE 2, also with the padding and lining omitted.

Specification

The acoustical chair includes a shell **1**, preferably formed of fiber glass. The shell includes a seat portion **2** and a back portion **3**, curving upwardly therefrom. Continuing from the back is a head covering portion **4**. In profile, the seat and back portions and the head covering portion are collectively C-shaped, as indicated in FIGURE 3.

Continuing laterally from these portions are two side enclosing portions **5** which are offset at their lower regions to form arm rest shoulders **6**. The shell thus forms a complete enclosure except for a front opening **7**.

The seat portion **2** is provided with a downwardly extending mounting boss **8**, which is secured to a pedestal

9, extending upwardly from a suitable base **10**. The mounting boss **8** and pedestal **9** may be fixed to each other, or a suitable bearing may be interposed so that the shell **1** may rotate on the base **10**.

The side enclosing portions **5** are provided with a pair of opposed baffle ducts **11**, having upper ends **12** located in the upper regions of the side portions. The baffle ducts are preferably formed of fiber glass and are joined to the shell along their side margins. The baffle ducts curve downwardly and rearwardly from their upper ends along the side margins of the back **3**, forming essentially parallel and vertically extending portions **13**. The lower ends **14** of the ducts extend over the seat portion **2** and are inturned toward each other.

The upper ends of the baffle ducts support a pair of speakers **15** which are directed toward the region occupied by the head of a person seated in the chair. The shell **1** is provided with vents **16**, in the form of perforations, located under the lower ends of the baffle ducts **11**.

The shell **1** is lined with padding **17**, preferably formed of a foamed elastomer. The padding is covered with a fabric lining **18**. The padding **17** forms around the margins of the front opening **7**, a forwardly facing terminal edge **19** which is covered by a marginal portion **20** of the fabric **18**. The confronting surfaces of the terminal edge **19** and the margins **20** are covered with the elements of a fastening means **21** which may comprise a pressure sensitive cement and a compatible surface therefor, or may comprise a first element containing a multiplicity of hooks and a second element formed of a felt-like material into which the hooks embed such as disclosed in Patents 2,717,437, 3,009,235, 3,147,528 and 3,154,837, or other fastening means may be employed. The fastening means, per se, is conventional; however, by arranging the fastening means around the margins of the opening, the lining becomes readily removable.

In addition to the fabric lining **18**, a seat cushion **22** is placed on the seat portion **2** and a back cushion **23** is placed against the back portion **3**.

Operation of the acoustical chair is as follows:

The speakers are preferably connected to a stereophonic reproducing system, through leads not shown, or the stereophonic use or components thereof may be located in the bottom of the shell or in the base structure on which it is mounted. In any case, the head of a person occupying the chair is essentially midway between the speakers, and thus in the most favorable position to sense a truly stereophonic sound. Interference due to the out-of-phase impulses produced at the back side of the speakers is eliminated by the baffle ducts **11**. Also, by reason of the padding **17**, and the lining **18**, and to some extent the cushions **22** and **23**, sufficient absorption takes place that the quality of the sound is greatly improved. While the distance between the speakers and the listener's ears is not great, it is substantially greater than would be the case if earphones were worn by the person. Apparently the subtle changes of the sound received by each ear as a person moves his head within the space between the speakers is analogous to the effect produced if the person were in the room in which the sound was originally produced.

It should be noted that the sound level within the shell is substantially greater than the sound level externally of the shell, so that one seated in the shell may set the sound level to his own desire without unduly raising the sound level in the room occupied by the acoustical chair.

While a particular embodiment of this invention has been shown and described, it is not intended to limit the same to the details of the construction set forth, but instead, the invention embraces such changes, modifications and equivalents of the various parts and their rela-

tionships as come within the purview of the appended claims.

We claim:

1. An acoustical chair, comprising:
(a) a shell having an open front side, said shell otherwise forming a bottom wall merging into an upwardly curving back wall, which, in turn merges into an overlying top wall continuing at a greater rate of curvature forwardly and then downwardly to form a domed canopy; said back wall and top walls curving laterally and merging into side walls the forward edges sloping continuously downward to the front edge of said bottom wall, the lower margins of said side walls joining abruptly to said bottom wall and having inwardly directed essentially horizontal offset portions;
(b) a pair of speakers mounted in said side walls below said top wall and directed toward the head of the occupant;
(c) a pair of baffle ducts having input ends terminating at said speakers and curving downwardly therefrom in conformity with said side walls and having output terminals under said bottom wall;
(d) a padded lining for said shell and covering said offset portions to form arm rests;
(e) and seat and back cushions for said bottom and back walls.

2. An acoustical chair, as defined in claim 1, wherein:
(a) said padded lining includes a layer of padding material terminating at the margins of said opening;
(b) and a fabric covering overlying said padding and including a margin adjacent the margins of said opening and confronting said padding;
(c) and a separable fastening means including elements secured to said padding and said covering at least in the region adjacent the margins of the opening in said shell.

3. An acoustical chair, comprising:
(a) a shell having an open front side, said shell otherwise forming bottom, back, side and top walls the margins of which merge into each other, thereby to enclose an occupant except for said open front side;

(b) a pair of speakers mounted at opposite sides of said shell and directed toward the head of an occupant;
(c) a pair of channel shaped baffle ducts supporting said speakers and bonded by their margins to said shell to form reinforcement means therefor, said ducts following the contour of said shell to the underside of said bottom wall.

4. An acoustical chair, comprising:
(a) a continuous padded shell having, essentially the contour of an egg with its longitudinal axis tilted backward from a vertical axis and open at its forward side; said shell dimensioned to receive and, in effect, encase a person to provide an acoustical environment substantially isolated from the exterior of the shell; whereby sounds produced within the shell are, to a major extent, confined therein; and sounds produced externally of the shell are, to a major extent, excluded therefrom;
(b) stereophonic speakers located within said shell and directed into the upper portion thereof;
(c) means defining baffle ducts underlying the shell padding and leading from said speakers to the underside of said shell.

5. An acoustical chair, as defined in claim 4, wherein:
(a) said baffle ducts are formed by channel members bonded to and reinforcing said shell.

References Cited

UNITED STATES PATENTS

1,855,146	4/1932	Jones	181—0.5
3,113,633	12/1963	Eberhardt et al.	181—31
3,237,713	3/1966	Leslie	181—31

FOREIGN PATENTS

1,014,167	8/1957	Germany.

STEPHEN J. TOMSKY, *Primary Examiner.*

U.S. Cl. X.R.

179—146