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Powell

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[54] **ENVIRONMENTAL CHAIR**

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[52] **U.S. Cl.** **297/217,** 297/184, 297/188

[51] **Int. Cl.** **A47c 7/62**

[58] **Field of Search** ..... 297/217, 184, 188; 312/7 R, 7 TV

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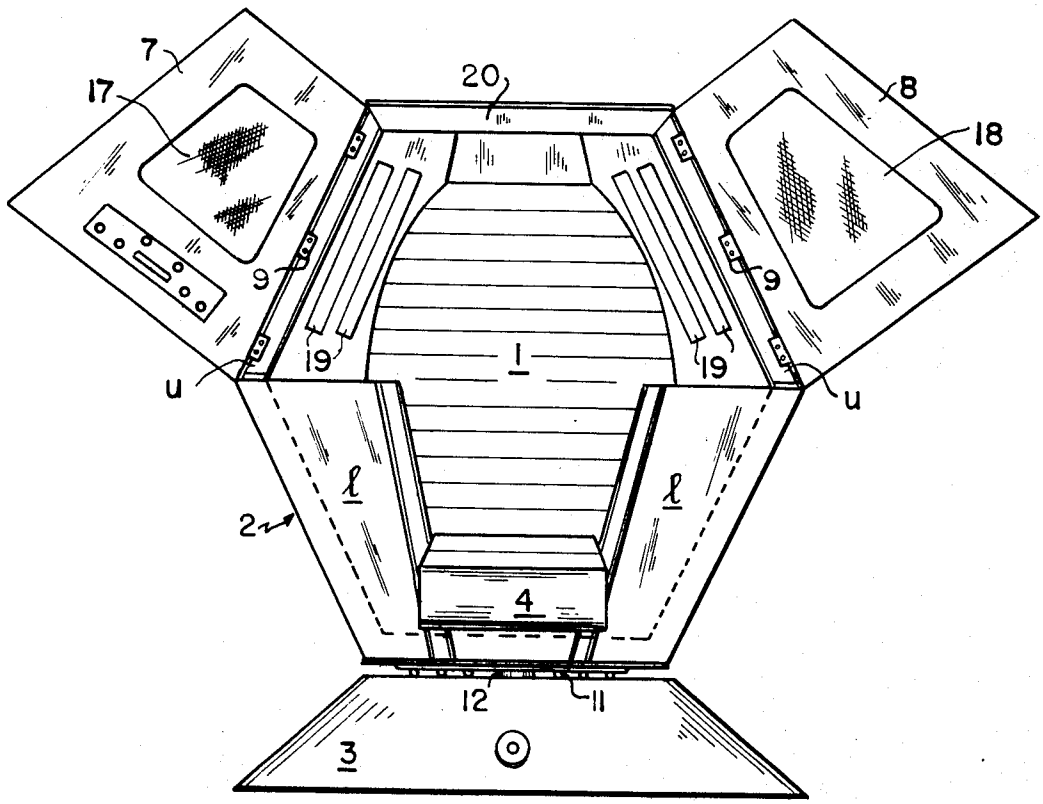
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Attorney—David C. Hanson

[57] **ABSTRACT**

A controlled environment chair comprising a reclining seat substantially entirely enclosed within a shell about the seat. Opposite the backrest of the seat is an opening to permit access to the seat. Two portions of the shell adjacent the opening having inwardly directed sound speakers are hingedly attached to the shell such that they may be swung outward. The chair has over the shoulder reading lights and mood lights in the ceiling of the shell.

9 Claims, 9 Drawing Figures



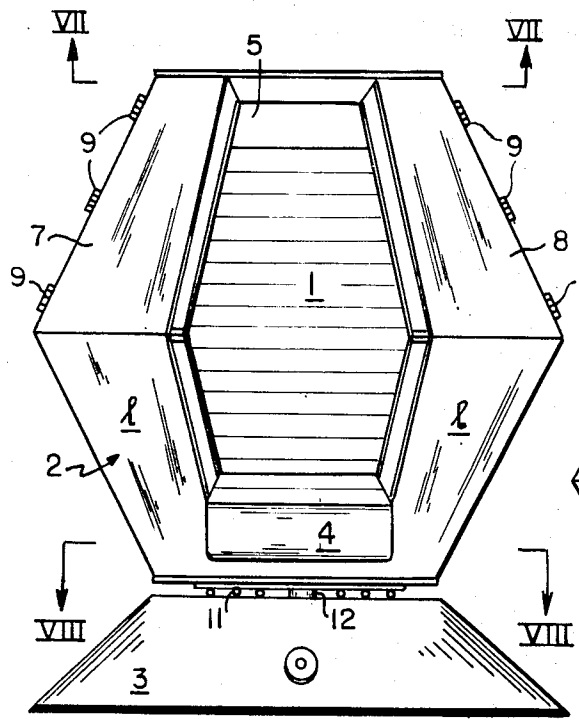


Fig. 1

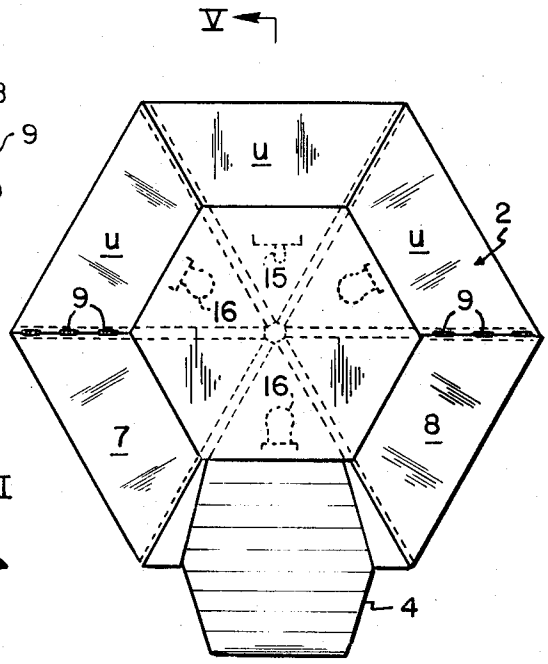


Fig. 2

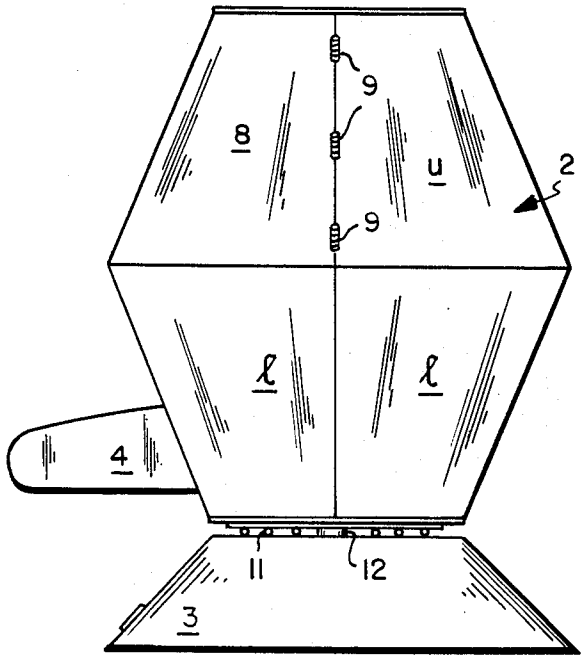


Fig. 3

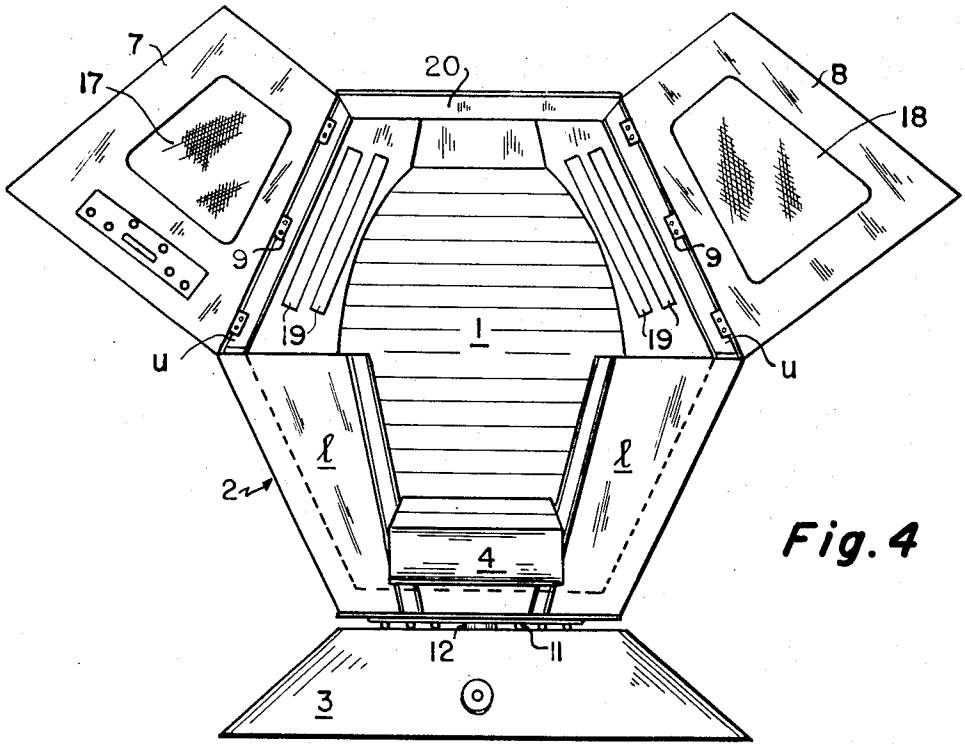

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11
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Fig. 4

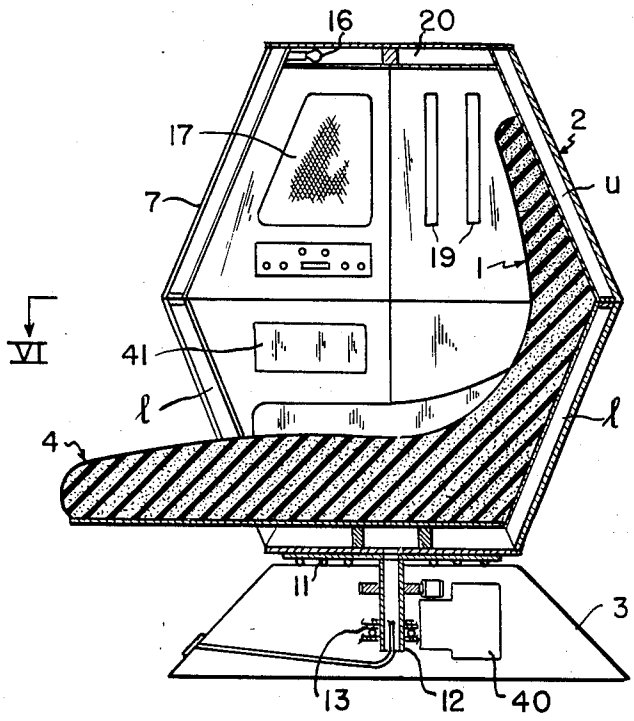

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Fig. 5

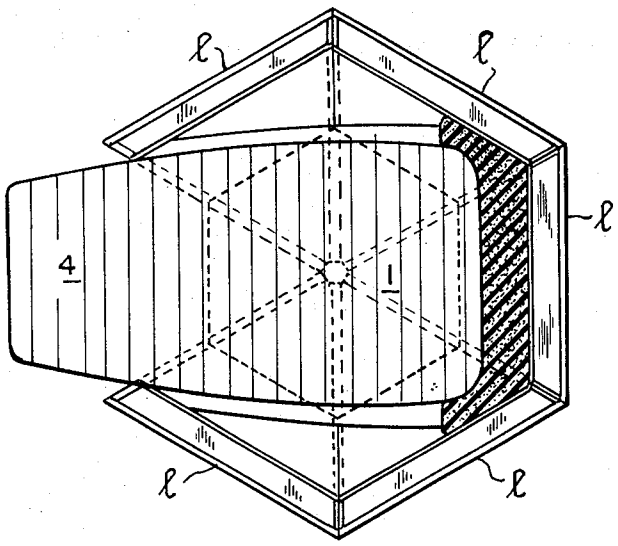


Fig. 6

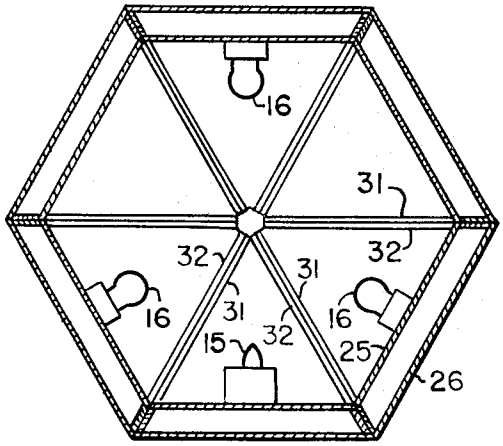


Fig. 7

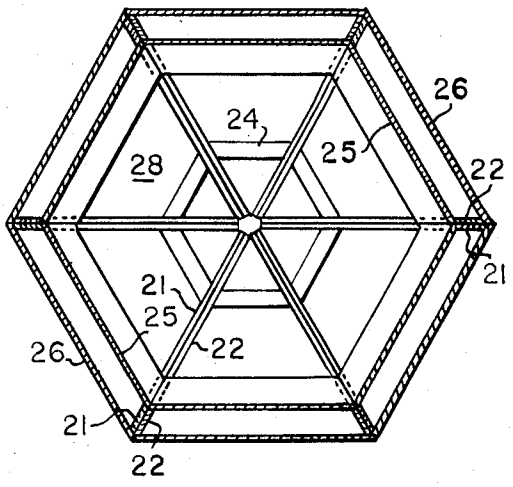


Fig. 8

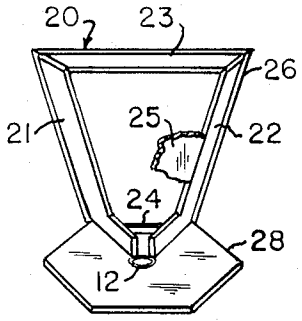


Fig. 9

ENVIRONMENTAL CHAIR

In this day and age of road race life style, one seldom has the opportunity for total withdrawal and introspection. Often the home is filled with distracting influences which inhibit one seeking to reflect inwardly and thereby relax. This invention is directed to a new concept in controlled environment furniture wherein a user may seek refuge from his normal surroundings and adjust the conditions within the chair to suit his personal psychological needs. It is an advantage according to this invention that one or more persons may sit back in an environmental chair semi-secluded from their surroundings and fix the lighting and sound conditions within the chair to provide almost instant psychological refreshment. It is yet another advantage according to this invention that the chair may function as a speaker cabinet for the entire room within which the chair is positioned. It is yet another advantage that the chair is adapted to modular construction. Still further, the chair may be easily assembled and disassembled for moving from place to place.

Basically, according to this invention, a chair comprises a reclining seat substantially and entirely enclosed in a shell about the seat. There is an opening in the shell opposite the backrest of the seat to permit access to the seat. Two portions of the enclosure adjacent the opening having sound speakers therein are hingedly attached such that the speakers may be swung outward thereby permitting music played through the speakers to be enjoyed by a person outside of the seat. The hinged section should be arranged so that they face at an angle of about 50° to 70° from the direction the occupant of the chair is facing when in the inward position. Preferably, reading lights are provided above the shoulders of the occupant. Still further, it is preferred that mood lights are provided in the ceiling of the chair.

According to a preferred embodiment of this invention, a chair is provided comprising a reclining body rest substantially entirely enclosed in the shell of a frustrumated dipyramid. The shell has substantially parallel and horizontal top and bottom sections comprising the ceiling and floor of the enclosure. The shell has a plurality of trapezoidal wall sections comprising the remainder of the enclosure. The trapezoidal sections are the faces of a frustrumated dipyramid having as their base the sides of the polygon comprising the base of the dipyramid. Preferably, the base polygon of the dipyramid has at least six sides. It should be understood that the dipyramid may be irregular in the sense that the trapezoidal sections need not be of identical shape for the top frustrumated pyramid and the bottom frustrumated pyramid comprising the dipyramid shell. The bottom or floor of the shell is pivotally attached to a base such that it may be rotated about a substantially vertical axis. The opening is provided in the enclosure by the omission of at least one pair of trapezoidal sections having a common base. Preferedly, a foot rest extends outwardly from the opening. There is at least one trapezoidal section in the upper pyramid adjacent each side of the opening having a sound speaker therein hingedly attached such that the insides of these sections may be swung outwardly.

The base polygon for the dipyramid may be any number of regular or irregular polygons. However, the regular hexagon has been found to be the optimal base polygon for the frustrumated dipyramidal shell used in the preferred embodiments of this invention. In this way,

the backrest of the chair may be positioned along one pair of trapezoidal faces having an adjacent base and the opposite pair removed to provide the opening. The hinged trapezoidal sections are thereby directed inwardly at the optimum angle for music enjoyment and the trapezoidal sections to which the hinged sections are hingedly attached are arranged to contain lights which direct lighting at a preferred angle over the shoulders of the persons sitting within the chair. However, it should be understood that other configurations are suitable, for example, opposite parallel edges of the base polygon can be elongated such that the chair may be designed to provide space for more than one occupant. Less than six sides to the polygonal base is generally unsuitable.

Further features and other objects and advantages of this invention will become clear from the following detailed description made with reference to the figures in which:

FIG. **1** is a front elevation of an environmental chair according to this invention in which the hinged sections are closed;

FIG. **2** is a plan view of FIG. **1**;

FIG. **3** is a side view of FIG. **1**;

FIG. **4** is a front elevation in which the hinged sections are opened;

FIG. **5** is a section view along lines V—V of FIG. **2**;

FIG. **6** is a section view along lines VI—VI of FIG. **5**;

FIG. **7** is an enlarged scale section view along lines VII—VII of FIG. **1**;

FIG. **8** is an enlarged scale section view along lines VIII—VIII of FIG. **1**; and,

FIG. **9** is a perspective view of the modules used in the construction of chairs according to a preferred embodiment of this invention.

Referring now to FIGS. **2, 3** and **4,** an environmental chair according to this invention comprises a seat **1** surrounded by an enclosure **2,** pivotally mounted to a base **3.** The seat, preferably a reclining seat, has a foot rest **4.** A portion of the enclosure is omitted providing an opening **5** which enables a person to enter the seat **1.** In the embodiment shown in the drawing, the foot rest **4** extends outwardly through the opening **5.** Adjacent the drawings are right and left hinged sections **7** and **8,** which are attached by hinges **9** to the enclosure **2.** Contained in these hinged sections are right and left sound speakers **17** and **18** as shown in FIG. **4.** The bottom of the enclosure **2** is arranged to rotate on the top platform of the base **3.** Preferably, thrust bearings **11** separate the bottom of the enclosure and the top platform of the base. A pipe **12** is secured to the bottom of the enclosure and journaled in a bearing **13** to maintain the axial alignment of the chair when it is rotated. The chair is provided with over the shoulder reading lights **19** and over the head mood lights **16.**

According to a preferred embodiment of this invention, the outer shell of the enclosure **2** has the shape of a frustrumated dipyramid. A pyramid is simply a solid, the base surface of which is a polygon and the side surfaces of which are triangles, each triangle having a side line of the base for its base line and the vertices of the triangles meeting in one point, which is called the apex. The base may be a regular polygon. A frustrumated pyramid is simply a pyramid wherein a plane parallel to the base plane removes a portion of the pyramid including the apex. In this instance the side surfaces become a trapezoidal rather than a triangular shape. A

true dipyramid is two pyramids joined base to base, one being the reflection of the other through the plane of the base. However, as used in the specification, a dipyramid may comprise two pyramids having the same base elements, but not necessarily being a reflection through the base plane. In other words, the altitudes of the pyramids may be different. The trapezoidal faces u of the upper pyramidal surface may have one shape whereas the trapezoidal faces *l* of a lower pyramidal surface may have another shape. It is preferable that the trapezoidal surfaces of at least all the bottom and at least all the top surfaces be the same shape and size. This enables the novel modular construction.

Referring to FIGS. **8** and **9**, according to a preferred embodiment of this invention, the shell is constructed of modules or repeatable structure units **20** comprising two substantially L-shaped ribs **21** and **22.** The angle between the legs of the L-shaped ribs must be substantially greater than **90** degrees. The modules **20** have an upper crosspiece **23** and a lower crosspiece **24.** The ribs **21** and **22** and the upper crosspiece **23** may conveniently be fabricated from ¾ inch plywood. The lower rib may, for example, be 2 × 4 inch lumber. The inner face **25** of the module is paneled with, for example, ½ inch plywood which completes the structural elements of the module.

The framework of the shell may be constructed from these modules. The lower part of the shell is formed by assembling five modules on a lower floor **28.** The modules are not only secured to the floor **28** but to each other by passing fasteners between adjacent ribs **21** and **22.** An upper floor may then be placed over the ribs **21** and **22.**

The framework of the upper portion of the shell or upper shell may be made by assembling three modules on the upper ceiling of the shell. This would comprise the rear portion of the upper shell as the hingedly attached speaker portions complete the upper shell structure.

The outer surface of the shell is paneled with a decorative paneling, for example, chromium plexiglass. Any number of decorative panelings are suitable according to this invention.

The five upper crosspieces **23** of adjacent modules assembled as the framework of the lower shell provide a joining surface upon which the framework of the upper shell may rest. Preferably, the upper and lower shell are arranged for quick disengagement, including the electrical and sound wiring passing therebetween.

Referring to FIG. **7**, in a preferred embodiment, the spaces between the ribs **31** and **32** provide a compartment for the mood lights, often referred to as psychedelic lights. Red, yellow and blue electric lights are mounted in the spaced compartments and in another compartment may be mounted a strobe light. The lights are covered in the compartments by a translucent lower ceiling. The lights may be controlled to permanently or continually turn on and off together or in combinations to provide various visual mood inducing effects in several ways. Suitable adjustable switching circuits are well known to electronics hobbyists. On the other hand, the lights may be controlled by sophisticated electronic equipment that responds to the sound of the music played over the sound speakers. Such equipment is available, for example, under the trade name Knight manufactured by Allied Radio Electronics Corporation.

It is preferred that the controls for the mood lights, the reading lights and the speakers be mounted within the shell for adjustment by the occupant.

Referring now to FIG. **5**, the thrust bearing between the shell and the base may simply comprise a metal sheet fastened to the bottom surface of the shell upon which bears furniture ball bearings (approximately ½ inch diameter) which are individually contained in a case having a nail on one side. The nail is driven into the top surface of the base.

A pipe **12** is journaled in the base at **13** and fastened to the lower floor. In this way, the axial alignment of the base and shell are mentioned. The pipe is opened at both ends whereby electrical wiring may enter the shell and not be disconnected when the chair is rotated. According to one embodiment of this invention, the shell is rotated by a reversible motor **40** mounted in the base **3** and drivingly connected to the pipe **12.** Hence, the occupant may enter the chair and thereafter adjust his position.

The speakers may play music in cooperation with a tape recorder **41** mounted in the inner wall of the lower shell as shown in FIG. **5** or may cooperate with a tape recorder or record player that is external to the chair.

Having thus described my invention with the detail and particularity as required by the Patent Laws, what is desired to have protected by Letters Patent is set forth in the following claims.

I claim:

1. A chair comprising a seat substantially entirely enclosed in a shell about the seat with a permanent opening therein sufficient to permit access to the seat, two portions of the shell adjacent the opening being hingedly attached such that the inside of those portions may be swung outward, there being sound speakers mounted in said hinged portions whereby music played through the speakers can be enjoyed by an occupant of the chair or persons outside of the chair when the hinged portions of the shell are swung outward.

2. A chair according to claim **1** having reading lights mounted in the interior of the shell to provide over the shoulder lighting.

3. A chair according to claim **2** having mood lights mounted in the ceiling thereof comprising colored lights and a strobe light that may be played in various mood creating combinations.

4. A chair according to claim **3** rotatably secured to a base such that it may be turned on a generally vertical axis.

5. A chair comprising a reclining body rest substantially entirely enclosed in the shell of a frustrumated dipyramid, said shell having substantially parallel and horizontal top and bottom sections comprising a ceiling and floor, said shell having face sections comprised of a plurality of trapezoidal sections having as their bases a side of the polygon comprising the base of the dipyramid, said base polygon having at least six sides, there being an opening provided in the enclosure by the omission of at least one pair of trapezoidal faces having a common base, there being at least one face section on each side of the opening above the base polygon hingedly attached such that the insides of those portions may be swung outward and there being sound speakers mounted in said hingedly attached sections whereby music played through the speakers can be enjoyed by an occupant of the chair or persons outside of

the chair when the hinged portions of the shell are swung outward.

6. A chair according to claim 5 having reading lights mounted in the interior of the shell to provide over the shoulder lighting.

7. A chair according to claim 6 having mood lights mounted in the ceiling thereof comprising colored lights and a strobe light that may be played in various mood creating combinations.

8. A chair according to claim 7 rotatably secured to a base such that it may be turned on a generally vertical axis.

9. A chair according to claim 5 comprising a frame constructed from a plurality of modules comprised of two L-shaped ribs having lower legs and substantially upright legs, said ribs arranged with their lower legs converging a top crosspiece laid across the substantially upright legs, a lower crosspiece between the lower legs and a trapezoidal panel secured to the substantially upright legs.

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