Invertible Floating Game Board with Ping-Pong and Pool Table Surfaces

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Abstract

An invertible floating game board provides one hard dense surface for ping-pong and the other for pool. One embodiment comprises a box of molded plastic, the interior being filled with low density (one to three pounds/cubic foot) foamed polystyrene or polyeurethane. The pool table surface has a rail around it and pockets in the corner. The pockets are provided with drain holes which drain water when the pool table surface is uppermost and which vent air when the Ping-pong table surface is uppermost. The Ping-pong table surface has a removable barrier or "net." The game board is preferably anchored in a swimming pool by two weights, one for each side, connected by ropes to the midpoint of each side of the board. In a second embodiment, side walls are glued to the side edges of a sandwich structure comprising the foamed plastic and hard surface layers.

12 Claims, 11 Drawing Figures
INVERTIBLE FLOATING GAME BOARD WITH PING-PONG AND POOL TABLE SURFACES

This application is a continuation-in-part of my co-pending application Ser. No. 163,909, filed July 19, 1971, now abandoned. This invention relates to a floating game board. An object of the invention is to provide a floating game board for use in swimming pools. I have found that the movement of the board introduces additional factors of chance, or skill, or both, into certain games involving a rolling or a bouncing ball.

For instance, in Ping-pong, the bounce of the ball is affected both by the angle of the table with respect to the horizontal and by the direction and rate of movement. In a pool-type game, the path of the rolling ball is also affected, requiring the development of skills not encountered on the usual stationary pool table.

Although the game board may be free-floating, preferably I provide means for anchoring it at the shallow end of the pool so that the players can stand on the pool bottom while playing. The anchoring means is arranged so as to permit the board to pitch or roll under the action of any waves which may be present in the pool. Lacking such waves, the board may be set into motion manually.

One of the problems encountered in the design of such a board is to provide a surface which is sufficiently hard and smooth as to be suitable for the particular game, such as Ping-pong or pool, and at the same time to incorporate into the board sufficient buoyancy as to cause it to float, and preferably above the mean water level. More specifically, the density of the material suitable for such a surface is generally incompatible with the amount of buoyancy required to provide a playing surface which is substantially buoyant from overlapping waves.

Furthermore, a hollow board is not particularly suitable because of the improbability of maintaining a hollow structure free from cracks or leaks, considering the usage encountered in handling the board.

According to my invention, I provide a game board having a central portion comprising a block of a low density foamed plastic material having hard dense surface providing means overlying each surface thereof, the four side edges of the block being protected by side walls which, with respect to one of the surface providing means, extends upwardly and beyond same to provide a rail or cushion for a pool table surface.

The hard dense surface providing means for the pool table and Ping-pong table surfaces may be the horizontal walls of a box-type structure, the interior of which is filled with the foamed plastic material, or they may be the outer elements of a composite structure.

Other objects, features and advantages will become apparent as the description proceeds.

In the drawings:
FIG. 1 is a perspective view of a preferred embodiment of my invention;
FIG. 2 is an end view thereof;
FIG. 3 is a plan view of the reverse side;
FIG. 4 is a section taken along line 4—4 of FIG. 3;
FIG. 5 is a section taken along line 5—5 of FIG. 3;
FIG. 6 is a section taken along line 6—6 of FIG. 3;
FIG. 7 is a view similar to FIG. 4 showing a modified construction;
FIG. 8 is a plan view of a second embodiment of my invention;
FIG. 9 is a vertical section taken along line 9—9 of FIG. 8;
FIG. 10 is a vertical section taken along line 10—10 of FIG. 8; and
FIG. 11 is a view similar to FIG. 10 showing a modified construction.

The game board 10, as shown in FIG. 2, floats in water 31 of a swimming pool or the like, and is maintained in position by anchor means 11 which rest at the bottom of the pool, preferably in the shallow end. The game board 10 has a central portion bounded by four side walls 18. As shown in FIGS. 1 and 2, the obverse surface 12, which faces upwardly, is adapted for a bouncing ball game, such as Ping-pong, whereas the reverse surface 13, shown in FIG. 3, is adapted for a rolling ball game, such as pool. The obverse surface is adapted to receive a net 14 which, in the embodiment shown, is formed of a rigid material such as clear plastic. The reverse surface 13 is provided with pockets 15 at the corners.

The central portion comprises a block 21 of low density foamed plastic material having hard dense surface providing means overlying each surface of the block 21, such as horizontal members 17, 22, as shown in FIGS. 3–6, or such as the outer elements of a composite structure 36 as shown in FIGS. 8–11.

In FIGS. 3–6, the four side walls 18 form a part of a box-like structure 16 which also includes a bottom wall 17. The side walls 18 are provided with a shoulder 20 adapted to receive a cover 22.

The box structure 16 is preferably a molded plastic piece of a reasonably rigid material. In the alternative, it can be a fabricated structure of a suitable waterproof bonded plywood or hard board having its exposed surfaces covered with a suitable water resistant coating.

Suitable plastic materials are polycarbonate resin and ABS resin, both of which provide a hard dense surface suitable for bouncing and rolling ball-type games. However, certain foamed plastics, sometimes referred to as structural foams, combine a somewhat lower density with satisfactory structural and surface characteristics. A preferred material is an integral skin polyurethane foam, rigid type, having a density of from 20 to 35 pounds per cubic foot. The higher density gives a harder surface, the preferred density being substantially 30 pounds per cubic foot. For a 30 pound density, the wall thickness is substantially 5/8 inches for the bottom 17 and the cover 22 and the upper part 26 of the side walls 18. The lower part of the side walls is substantially one inch thick.

The interior of the structure is filled with a low density foamed plastic material 21, such as foamed polyurethane or foamed polyurethane. Preferably, it is in the form of a closed cell board or billet cut to a block of the proper dimensions and having a density of from one to seven pounds per cubic foot, with densities in the one to three pound range being preferred. Thus, substantially the entire interior volume of the space enclosed between the cover 22 and the bottom wall 17 is occupied by the foamed plastic material. The cover 22 is then secured to the shoulder by a suitable cement 23. In the alternative, the polyurethane foam may be foamed in situ.

All foams mentioned herein, either as constituting the structure 16, 22, or the block 21, are water imperme-
ous by virtue either of a closed cell structure, or of an integrally formed skin.

The net 14 is provided with foot portions 24 which extend into and fit into a slot 25 molded into the box-like structure 16, as shown in FIG. 6, or end posts fitting into holes 40, as shown in FIG. 10.

That portion of the side walls 18 which extend beyond the cover 22 provide a rail or cushion 26 against which the ball rebounds in a rolling ball-type of game, such as pool.

It will be noted that the four corners of the cover are shaped to provide a curved depending portion 27 which form the pockets 15. The cover 22 is preferably a plastic molded part so that the curved portions 27 are integral with the remainder, although the cover may be formed of a coated plywood or hard board with cut-out corners, and the curved pocket portions 27 can be separate molded parts which are suitably joint to the plywood by a waterproof cement.

Drain holes 19 are preferably provided for each of the pockets as shown in FIGS. 1 and 5. Whereas the rail 26 cooperates with the high degree of buoyancy in tending to prevent waves from lapping over the surface 13, when this does occur, one or more of the pockets 15 depending on the slope of the surface acts as a sump to collect this water. Since the surface 13 is normally considerably above the level of the water 31, the water level within the pocket 15 will be substantially below the surface 13. If the board is rocking, water collected during the depressed position will drain out of the pocket when it is elevated.

The drain holes 19 also permit the venting of air when the board is in the FIG. 1 position. By preventing the entrapment of air by the rails 26, the stability of the board is improved.

The midpoints of each side wall 18 have eye bolts 28 extending horizontally therefrom, preferably inserted during the molding operation. The anchor means 11 include a weight 29, such as a plastic covered metallic body of lead or steel. A flexible rope 30 connects the weight 29 with the eye bolts 28. The arrangement permits a variation in the length of the anchor so that the board may be located in different depths of the pool. Also, a certain amount of slack may be introduced into the anchoring means to permit a certain degree of roll of the board. If desired, four anchors can be provided, one at each corner of the board, but the present arrangement is preferred because it provides a pivoting action which permits the board to pitch with the waves, which adds to the fun of the game.

The board may be made of any suitable size compatible with the strength of the plastic material of which the parts 16 and 22 are formed. For instance, a board of substantially 3½ by 7½ feet is large enough to afford enjoyment at both Ping-pong and pool type games. In the example shown, foam block 21 is substantially 3½ inches thick, and the total height of the side walls 18 is seven inches.

A modified arrangement is shown in FIG. 7 in which the box-like structure 16 has a central web 32, the upper flange of which constitutes the pool table surface 13. The separate cover part 33, which is cemented to the lower edge 34 of the side walls 18, corresponds in function to the bottom wall 17 of FIG. 4 in providing the Ping-pong surface 12.

This arrangement utilizes a thinner wall section than the FIG. 4 arrangement, and is therefore more suitable for ordinary unfoamed plastic material such as polycarbonate or ABS.

In the embodiment of FIGS. 8-11, the central portion of the game board is a composite structure 36. The side walls 18' are secured to the four side edges of the composite structure 36 by a suitable adhesive 37, such as an epoxy cement. The side walls 18' are strips of wood, preferably redwood or cedar 1½ or 2 inches thick. The pockets 15' extend into the side walls 18', being formed by drilling. Drain holes 19' are provided. The side walls also have sockets 40 to receive the end posts of a suitable net (not shown) of clear rigid material like the net 14. Eye bolts for anchor means may be provided as in FIGS. 1 and 2 but it has been found that the games may be played with a free floating board.

In FIGS. 9 and 10, the composite structure 36 comprises a foam block 21 and hard dense surface providing means in the form of a coating 38 of a suitable hard tough-setting resin which is compatible with the material of the foam block 21. For example, with a foamed polyurethane block 21, a urethane coating may be sprayed on. In the alternative, a sand filled urethane may be flowed on to the foam block, the pockets 15' being plugged. Then the pocket surfaces may later be provided with a suitable coating. The coating 38 is preferably from 1/16 to ⅛ inch thick. The pool table surface may then be provided with flocking or a water resistant thin fabric which does not detract from the hard and smooth characteristics of the surface providing means 38 which adapt the surface to a rolling ball game.

In the modification of FIG. 11, the composite structure 36' is a preformed sandwich comprising a urethane foam 21' sandwiched between sheets 39 of hard plastic which comprise the hard dense surface providing means.

An important feature of my invention is that by incorporating the low density foamed plastic 21 between two hard dense surface providing means or sheets to provide a sandwich type structure, either playing surface 12 or 13 will extend above the mean water level by 2 or 3 inches, representing from 50 to 75 percent of the distance between those surfaces. Thus, either playing surface is substantially free from water.

Although only preferred embodiments of the present invention have been described herein, it will be understood that various modifications and changes may be made in the constructions shown without departing from the scope of the invention, as pointed out in the appended claims.

I claim:

1. A floating game board comprising a central portion and four side walls, said central portion comprising a block of low density foamed plastic material, first surface providing means overlying one surface of said foamed plastic material, and second surface providing means overlying the other surface, said two surface providing means overlying exposed hard dense surfaces suitable for rolling and bouncing ball type of games, said side walls extending beyond said first surface providing means to provide a rail which completely surrounds said first surface providing means, the surface thereof providing a pool table surface, pockets formed at the corners of said first surface providing means, said second surface providing means providing a Ping-pong table surface when said game board is inverted, and means providing a socket for receiving foot portions of a net on said Ping-pong table surface.
2. A floating game board as claimed in claim 1 which includes net means removably mounted on said net receiving means.

3. A floating game board as claimed in claim 1 which includes anchor means, said anchor means including a plurality of weights adapted to rest on a pool bottom, and a rope connecting each weight to said board.

4. A floating game board as claimed in claim 3 in which said anchor means comprises two weights and two ropes, and means located at the midpoint of each longitudinal side edge of said board to which one of said ropes may be secured.

5. A floating game board comprising a central body portion and four side walls, said central body portion comprising a block of low density foamed plastic material, first surface providing means overlying one surface of said foamed plastic material, and second surface providing means overlying the other surface, said two surface providing means providing exposed hard dense surfaces suitable for rolling and bouncing ball type of games, said side walls extending beyond said first surface providing means to provide a rail which completely surrounds said first surface providing means, the surface thereof providing a pool table surface, pockets formed at the corners of said first surface providing means, drain holes extending from said pockets through said side walls, second surface providing means providing a Ping-pong table surface when said game board is inverted, and means providing a net forming a barrier removably secured to said Ping-pong table surface.

6. A floating game board comprising an open box-like structure having side walls and a bottom wall having an exposed surface, said side and end walls each providing an upwardly facing shoulder, a cover secured to said shoulders and fitting within upper portions of said side and end walls, said upper portions extending beyond said cover to provide a rail which completely surrounds said cover, the upper surface of said cover providing a pool table surface, pockets formed at the corners of said cover, low density foamed plastic material located beneath said cover and substantially filling the space enclosed thereby, and anchor means for locating said game board in a pool, the exposed surface of said bottom wall providing a Ping-pong table surface when said game board is inverted, and means providing a net forming a barrier removably secured to said Ping-pong table surface.

7. A floating game board as claimed in claim 6 in which said box-like structure and said cover are plastic molded parts of polyurethane foam having a density of from 20 to 35 pounds per cubic foot.

8. A floating game board as claimed in claim 7 in which said density is substantially 30 pounds per cubic foot.

9. A floating game board as claimed in claim 7 in which said low density foamed plastic material has a density of from one to seven pounds per cubic foot.

10. A floating game board comprising an open box-like structure having side walls and a central web providing a horizontal wall, said side walls each having an upper portion and a lower portion, the edges of said lower portions being co-planar, a cover secured to said wall edges and providing an enclosed space, one surface of said cover being an exposed surface, said upper portions providing a rail which completely surrounds said horizontal wall, the upper surface of said horizontal wall providing a pool table surface, pockets formed at the corners of said cover, foamed plastic material located within said enclosed space and substantially filling same, and anchor means for locating said game board in a pool, the exposed surface of said cover providing a Ping-pong table surface when said game board is inverted, and means providing a net forming a barrier removably secured to said Ping-pong table surface.

11. A floating game board comprising a central portion and four side walls, said central portion comprising a block of low density foamed plastic material, first surface providing means overlying one surface of said foamed plastic material, and second surface providing means overlying the other surface, said two surface providing means providing exposed hard dense surfaces suitable for rolling and bouncing ball type of games, said side walls extending beyond said first surface providing means to provide a rail which completely surrounds said first surface providing means, the surface thereof providing a pool table surface, pockets formed at the corners of said first surface providing means, drain holes extending from said pockets through said side walls, second surface providing means providing a Ping-pong table surface when said game board is inverted, and means for mounting a net on said Ping-pong table surface, the density of said block being sufficiently low that the overall density of said game board is less than half the density of water so that either of said surfaces will extend above the mean water level by a distance greater than half of the distance between said table surfaces, said pockets being of a depth greater than half of the distance between said table surfaces, and drain holes communicating with the lower portions of said pockets.

12. A floating game board as claimed in claim 11 in which said drain holes extend from said pockets through said side walls.