THREE-DIMENSIONAL GAME APPARATUS

ABSTRACT: A three-dimensional game apparatus including a
game board and player tokens adapted for selective associa-
tion with each other and the game board so that they may be
aligned in horizontal, diagonal or vertical patterns in three
planes. The object of play is to effect player token occupancy
of three playing positions in a planar or an interplanar line.
The game apparatus also includes magnetic player tokens
whose like-poles repel each other to provide for three-dimen-
sional alignment of player tokens in different planes.
THREE-DIMENSIONAL GAME APPARATUS

BACKGROUND OF THE INVENTION

Many three-dimensional “tic-tac-toe” game devices have been proposed, but for the most part they are patterned after the familiar two-dimensional game of “tic-tac-toe.” In other words, most devices have supporting structures which define three different planes for positioning player pieces. Each of the planes provides nine token positions in a rectangular layout, forming lines of three player positions in rectangular and square relation like the two-dimensional game. The planes are stacked such that interplanar lines pass through corresponding token positions in each of the three planes. Such mentioned devices are shown, for example, in U.S. Pat. No. 2,333,473 and 2,801,107. Scoring usually takes place in these games by aligning three player tokens in one planar or interplanar line.

The remaining types of similar three-dimensional games which have heretofore been suggested can be collectively grouped as devices which provide four or more different planes for positioning player pieces. Usually these types of games provide for 64 or more playing positions. Play with these devices can become complex and players tend to lose interest. The players also have difficulty even visually following the conduct of play and keeping score. In short, these latter mentioned devices are more confusing than entertaining.

Accordingly, three-dimensional game devices patterned after the familiar two-dimensional “tic-tac-toe” have mentioned their popularity, primarily because of their simplicity. However, there is one common major disadvantage associated with these “tic-tac-toe” devices. After a few games are played, the players realize that there is one position out of 27 possible positions which is unique. It is located at the point of symmetry, that is, the central position in the plane intermediate the two other planes of the supporting structure. That unique position affords a much greater number of possibilities to score when compared with any other playing position in the three-dimensional apparatus. Consequently, the player who occupies that position has a decided or valuable advantage over his opponent. Moreover, the player who occupies that position is predetermined by which player proceeds first. Such predetermination of a decided advantage tends to diminish the appeal for the three-dimensional “tic-tac-toe” games.

An additional disadvantage of most three-dimensional games of all types discussed above has been the necessity for the player tokens used in the conduct of play to be attached to the game board structure or to each other in order to suspend them vertically in predetermined positions to provide for a three-dimensional array. Such attachment and detachment of player tokens slows down play and is exhausting. Also, other devices which heretofore have been proposed usually require complicated superstructures for supporting player tokens. These superstructures usually introduce confusion into game play. It is hard to distinguish available player positions from unavailable positions, as well as scoring alignment of tokens from other chaff in the three-dimensional array.

SUMMARY OF THE INVENTION

This invention is directed to a new concept in three-dimensional game devices. This invention provides for a three-dimensional game apparatus which retains certain desirable features of the familiar “tic-tac-toe” two-dimensional game, but without the decided disadvantage of the herebefore proposed three-dimensional devices mentioned above. Particularly, this invention provides for a new game board structure having a symmetrical pattern of player positions in which no one position is unique. Thus, no one player has a decided advantage over his opponent which is predetermined by who proceeds first.

In one of its aspects, this invention provides for a three-dimensional game apparatus having three different planes. Each plane has a coplanar pattern of playing positions cor-

responding to the other planes such that interplanar parallel lines intersect such corresponding playing positions. The object of the game is for a player to effect token occupancy of three playing positions in a planar or an interplanar line to score. The game apparatus includes a game board having a supporting surface defining one plane and the coplanar pattern of playing positions. Since each coplanar pattern of playing positions corresponds to the other planes, the supporting surface defines a pattern which corresponds to the remaining two planes. The pattern of playing positions on the game board is defined by the intersections of a plurality of coplanar lines with each coplanar line having only three playing positions. The total number and locations of the playing positions in the pattern are such that there is no single position which, by reason of its coincidence with the point of symmetry of the interplanar pattern, is unique as compared with the other playing positions.

More specifically, one form of the game board according to this invention includes a flat playing surface having illustrated thereon eight playing positions arranged in three parallel rows containing three, two and three playing positions, respectively. Six coplanar rows are thus provided each having three playing positions in a row. Such pattern can be defined by the intersections of six lines formed by the diagonal coplanar superimposition of a first parallelogram on a second parallelogram. This is done in such a manner that each side of a pair of opposite sides of the first parallelogram is aligned and connected with a side of the second parallelogram to form one of the parallelogram coplanes. The remaining opposite sides of each parallelogram form four coplanar lines. Accordingly, in total, the intersections of the six lines formed by the superimposition of the parallelograms define eight playing positions.

The playing board having the eight playing positions just mentioned can be used with a number of playing tokens, for example 24, adapted for selective association with the pattern illustrated on the game board surface. Round discs or rings can be selectively associated with the game board defining the playing positions for placement either in a planar row of three along the surface of the board or by vertical stacking one on top of the other to obtain three-in-a-row either horizontally, diagonally or vertically. When a player effects three tokens in a row, he scores.

As will be appreciated, a significant aspect of the three-dimensional game apparatus just described, is the maintenance of the desirable features of two-dimensional “tic-tac-toe,” including simplicity. However, and importantly, the playing positions in the pattern are such that there is no single position which, by reason of its coincidence with the point of symmetry of the pattern, is unique as compared with the other playing positions. Accordingly, unlike conventional three-dimensional “tic-tac-toe” devices, this game board apparatus eliminates the decided disadvantages which are associated with such a unique position which has tended to diminish the appeal of three-dimensional “tic-tac-toe” games.

In another of its significant features, the three-dimensional apparatus of this invention eliminates completely the disadvantages associated with the attachment of player pieces either to each other or to the game board during the conduct of play as mentioned in the prior art devices above. This particular advantage is achieved among a number of other advantages according to this invention by employing magnetic game pieces which by reason of their repelling polarities cooperate with one another to suspend them spatially without physically attachment with each other.

The unique attributes of the magnetic player piece version of this invention can be best understood by reference to one of its more preferred embodiments. A three-dimensional supporting structure is provided, having a base board and eight pins extending vertically from the base in a symmetrical pattern referred to above. The base and the eight pins are made of wood with the pins physically secured to the base board. Magnetic player pieces in the form of rings or washers, that is, circular discs having hollowed out portions for removable slid-
ing engagement of the pins therewith are provided. This permits the magnetic playing pieces to be positioned on said pins with the like-poles of said pieces adjacent or facing each other. Under these conditions the magnets will repel one another and cause the uppermost magnets on the pins to be suspended in space on the pin. Accordingly, occupancy of the player’s pieces in each of the uppermost planes in this instance depends upon their magnetic repulsion capability.

This magnetic version of the game apparatus of this invention affords a number of advantages. It adds a new dimension of interest to three-dimensional devices. It also permits the visual observation of the conduct of the game without confusion which is usually encountered in the superstructures of other three-dimensional devices. Moreover, the removal and placement of magnetic pieces is afforded in such an easy manner that no delay is caused in the conduct of play.

The other advantages and significant features of a three-dimensional game apparatus embodying the principles of this invention are further understood with reference to the drawing in which:

FIG. 1 is a perspective view of one embodiment of the three-dimensional game device of this invention with associated magnetic playing pieces illustrating play;

FIG. 2 is a side elevational view of the game device of FIG. 1 taken on the left-front, but showing only the row of game pieces nearest the front side.

FIG. 3 is a diagrammatic perspective view of a board playing surface (or structure of FIG. 1) which illustrates a pattern of coplanar playing positions for one plane of a three-dimensional device in accordance with this invention and illustrates another embodiment of the invention.

FIG. 4 is an alternative embodiment of this invention showing other vertical support means for a column of magnetic playing pieces.

With reference to the drawing, one specific form of the three-dimensional game apparatus 10 of this invention is shown in FIG. 1. The game apparatus includes a game board 13 having a supporting surface 12 defining one plane and a coplanar pattern of playing position areas (diagrammatically best illustrated in FIG. 3). The game board has vertical support means including pegs or pins 13 fixed thereto. Pins 13 are arranged in three parallel rows containing three, two and three pins, respectively, providing for six coplanar rows each having three pins in a row. This symmetrical pattern of eight pins 13 in which no pin is uniquely positioned is also diagrammatically shown in FIG. 3.

The player tokens 15 comprise rings of magnetic material whose inner hollows are adapted for removable sliding engagement of said pins therewith to position the player tokens 15 on pins 13 with the like-poles of magnetic tokens 15 facing each other (as shown in FIG. 2, extreme left pin 13). The magnetic playing tokens are shown having different colors or features which distinguish a set of player pieces of one player from the set of player pieces of another player. The polarities of magnetic player tokens are marked or designated as at 16 (not all markings shown) so that a player can readily detect their like-poles which will repel one another to suspend one player piece above another on pins 13 to provide a three-dimensional, interspatial array of player tokens relative to one another.

The magnetic player tokens 15 or rings can be made of suitable permanent magnetic materials. Such materials can be painted or otherwise colored to permit them to be distinguished from each other. By reversing their common magnetic fields, the magnets repel each other causing the upper tokens 15 to suspend themselves in space on the pin 13. A simple way to keep the token magnetic fields in opposition to one another is to play the marked tokens face down in the top and bottom planes (first and third planes) while playing the center token with like-poles of magnetic playing tokens 15 facing each other. FIG. 3 illustrates such play in progress. To score, a player must get three of his tokens 15 in a row either diagonally, horizontally or vertically. Each of these alignments counts one point.

The method of scoring can best be understood with reference to FIG. 2 in which three player tokens 15 are suspended vertically in a row along broken-line A. Alternatively, the three player tokens 15 extending horizontally along broken-line B counts one point. The remaining way to score is along broken-line C which illustrates three player tokens 15 in a diagonal line. A token may be a part of more than one row, for example, with reference to FIG. 2, the top player token on the farthest left pin 13 is in two lines, the vertical line A and the diagonal line C. In this event, a player can count this token in forming three-in-a-row vertically as well as three-in-a-row diagonally. There are 38 potential ways to score in the apparatus of FIG. 1, but a close game will generally run six to five.

It is to be appreciated, in the specific embodiment just described, there is no unique playing position. Each of the three planes of playing positions has the coplanar playing position pattern shown in FIG. 2. The game board surface 12 defines one plane and supports the tokens 15 in that plane. Board surface 12 also defines the coplanar pattern of playing positions (FIG. 3) on the surface 12 at the bases of pins 13. The playing positions in the two remaining planes correspond to the plane defined by board surface 12 such that interplanar parallel lines along vertically extending pins 13 intersect such corresponding playing positions.

With particular reference to FIG. 3, the playing positions 20 in each plane can be defined by the intersections 21 of a plurality of coplanar lines 22. Each coplanar line 22 has only three playing positions thereon. The number (eight) and locations of the playing positions 20 in the pattern of FIG. 3 are such that there is no single position 20 coplanarly or interplanarly which, by reason of its coincidence with the point of symmetry of the pattern, is unique as compared with the other positions 20. Accordingly, there is no decided disadvantage in the game of this invention as there is in “tic-tac-toe” devices of the rectangular three-in-a-row type discussed above. Moreover, this invention eliminates that aspect of predetermination of outcome which is also inherently involved in known three-dimensional devices.

The additional advantages of this invention are also illustrated in the drawing. The arrangement of the of the magnetic playing pieces suspended spatially on the pins is unique. It employs the new concept in which player position occupancy on a vertical axis depends upon magnetic repulsion. This permits the opposing players to easily observe the differentiating colors of each of its pieces and to keep score. Moreover, the magnetic suspension of tokens permits the ready positioning and removal of the tokens on the pins without having to physically secure them to keep them in different planes. This game has also maintained the desirable feature of simplicity of the traditional three-in-a-row “tic-tac-toe” game, but avoids the undesirable complicating features of prior art devices employing four or more rows three-dimensionally.

It will be understood, of course, that a playing board in an alternative form of the invention need not be provided with pins. Instead, plastic tubes 23 can be effectively used to support the magnetic tokens to permit suspension by reason of opposite polarities. (This is shown in FIG. 4). Moreover, as discussed above, in one of its aspects the game apparatus according to this invention provides a new concept in a game format having playing positions illustrated on pins 13. A game board surface 25 can simply be marked with the pattern of playing positions 20 illustrated in FIG. 3 and tokens 24 can be merely placed on the board surface to effect token oc-
5 occupancy of the board surface positions. Other tokens 24 can then merely be vertically stacked upon one another to effect token occupancy in each of the other planes and scoring takes place in the same manner with reference to broken lines A, B, C of FIG. 2 and the above description. Of course, when employing this aspect of the invention, the tokens need not be magnetic and support means for vertical stacking need not necessarily be present. For example as shown in FIG. 3, the tokens 24 can be flat discs which can be easily stacked or even the tokens 15 shown in the drawing. Alternatively, it may be desirable to use vertical support means such as pins 13 to align nonmagnetic ring tokens 15 vertically along interplanar lines.

It will thus become obvious to those of ordinary skill in the art, in view of the above description of this invention, its preferred form and explanations of other forms that there are other forms which come within the true scope of this invention and are intended to be embodied herein.

1. In a three-dimensional game apparatus consisting of three different planes, each plane having a coplanar pattern of playing positions corresponding to the other planes such that interplanar parallel lines intersect such corresponding playing positions, with the object of a player being to effect player token occupancy of three playing positions in a planar or an interplanar line, the improvement which comprises a game board having a supporting surface defining one plane and the coplanar pattern consisting of a symmetrical array of eight playing positions, the playing positions defined by the intersections of six lines formed by the diagonal coplanar superimposition of a first parallelogram on a second parallelogram in a manner such that each side of a pair of opposite sides of the first parallelogram is aligned and connected with a side of the second parallelogram to form one of said coplanar lines and the remaining opposite sides of each parallelogram intersect the diagonally opposite corners of the other parallelogram to form four of said coplanar lines, wherein there is no single playing position which, by reason of its coincidence with the point of symmetry of the interplanar pattern, is unique as compared with the other positions.

2. The three-dimensional game apparatus according to claim 1 wherein the four playing positions defined by the corners of each parallelogram remaining unintersected by the other parallelogram form a substantially square outline.

3. The three-dimensional game apparatus according to claim 1 wherein said eight playing positions are illustrated by markings on said game board surface and the apparatus further comprises player tokens adapted for selective placement on the surface markings to effect token occupancy of said positions and for vertical stacking upon one another to effect token occupancy in each of said other planes.

4. The three-dimensional game apparatus according to claim 1 further comprising:

support means extending vertically along said interplanar parallel lines from said board surface in the areas of the eight coplanar playing positions for supporting player tokens along said interplanar lines; and

player tokens adapted for selective placement on said support means to effect token occupancy of the playing positions.

5. The three-dimensional game apparatus according to claim 4 wherein said player tokens comprise magnetized player pieces for placement on said support means with the like-poles of said pieces facing each other to effect occupancy of the playing positions.

6. The three-dimensional game according to claim 5 wherein said support means comprise pins and said player tokens comprise magnetized player pieces having hollowed out portions for removable sliding engagement of said pins therewith to position said player pieces on said pins to effect token occupancy of the playing positions with the like-poles of said magnetized pieces facing each other.

7. In a three-dimensional game apparatus having three different planes, each plane having a symmetrical coplanar pattern of playing positions corresponding to the other planes such that interplanar parallel lines intersect such corresponding playing positions, with the object of a player being to effect player token occupancy of three playing positions in a planar or an interplanar line, the improvement which comprises:

a game board having a supporting surface defining one plane and the coplanar pattern consisting of eight playing positions defined by the intersections of six lines formed by the diagonal coplanar superimposition of a first parallelogram on a second parallelogram in a manner such that each side of a pair of opposite sides of the first parallelogram is aligned and connected with a side of the second parallelogram to form one of said coplanar lines and the remaining opposite sides of each parallelogram intersect the diagonally opposite corners of the other parallelogram to form four of said coplanar lines, wherein there is no single playing position which, by reason of its coincidence with the point of symmetry of the interplanar pattern, is unique as compared with the other positions, support means comprising pins extending vertically along said interplanar parallel lines from said board surface in the areas of the eight coplanar playing positions for supporting player tokens along said interplanar lines, and

player tokens comprising magnetized player pieces having hollowed out portions for removable sliding engagement of said pins therewith to position said player pieces on said pins to effect token occupancy of the playing positions with the like-poles of said magnetized pieces facing each other.