Dec. 2, 1969 M. J. J. SUGDEN 3,481,603

GAME PIECE WITH VISUALLY DISTINGUISHABLE PLAYING SYMBOLS

Filed July 3, 1967 2 Sheets-Sheet 1

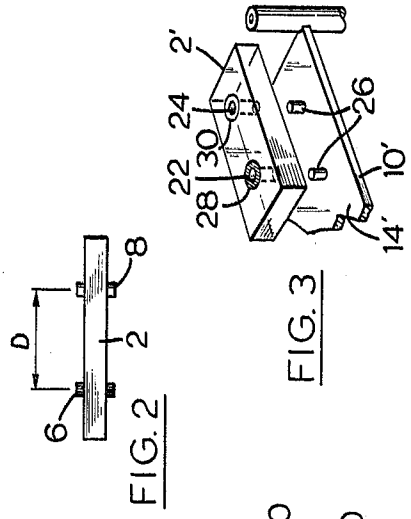


FIG. 3

FIG. 2

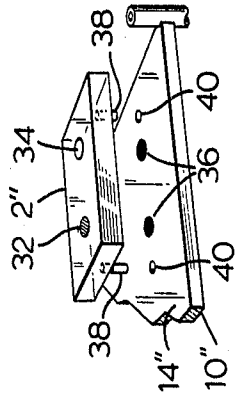


FIG. 4

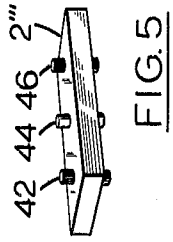


FIG. 5

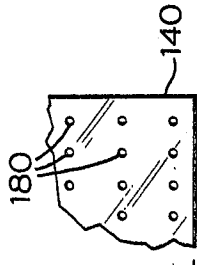


FIG. 6

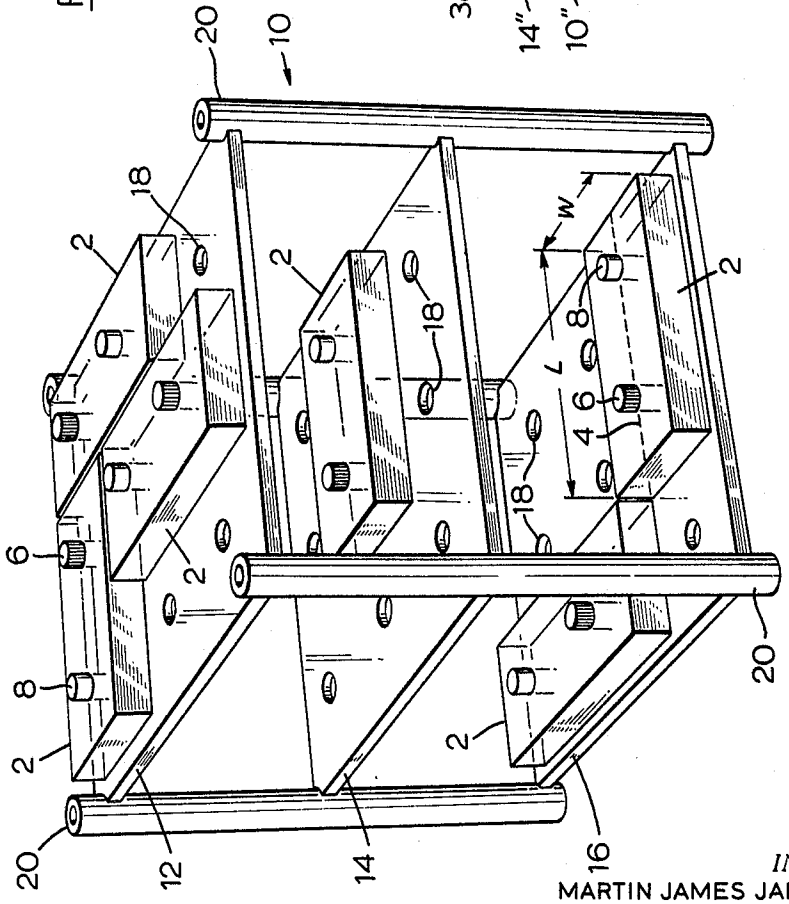


FIG. 1

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GAME PIECE WITH VISUALLY DISTINGUISHABLE PLAYING SYMBOLS

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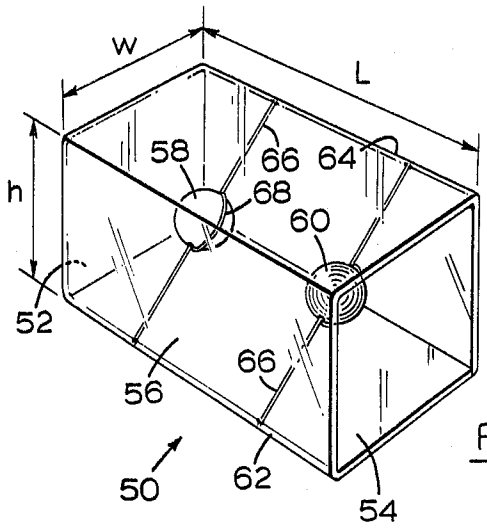


FIG. 7

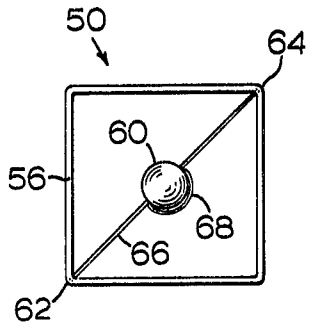


FIG. 8

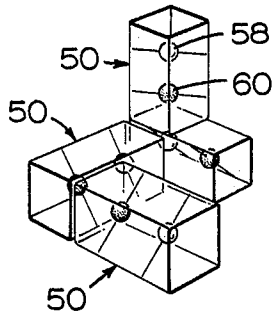


FIG. 9

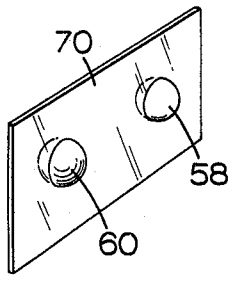


FIG. 10

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GAME PIECE WITH VISUALLY DISTINGUISHABLE PLAYING SYMBOLS

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Int. Cl. A63f 3/00; A63h 33/08
U.S. Cl. 273—130 10 Claims

ABSTRACT OF THE DISCLOSURE

A three-dimensional tic-tac-toe game, having rectangular transparent game pieces each having two differently coloured playing symbols spaced along its length, one for each player. A player putting a game piece in play therefore positions, not only his own symbol, but also his opponent's. In one embodiment, the game pieces are thin and cooperate with a game board having transparent shelves, the playing symbols being pegs coloured differently from each other and insertable into holes in the shelves. Alternatively the pegs may be carried by the board and received in holes in the thin game pieces, a different colour being associated with each hole. In another embodiment, the game pieces are elongated members of square cross section and are stacked on their ends or sides on an ordinary flat surface, no game board being needed.

This invention relates to a game piece and to a game to be played therewith. More particularly, it relates to an improved game piece suitable for playing a three-dimensional version of tic-tac-toe, and to such game piece in cooperation with a playing board therefor.

A number of approaches are possible in attempting to create a three-dimensional game of tic-tac-toe. A typical approach may involve a three layer array of shelves each having a three by three grid of markings, on which opaque game pieces of a duality of shapes or colours are to be deposited in their proper places in an effort by each player to be first to obtain (or not to obtain, as the case may be) a row of three like pieces in any direction.

However, such a 3 x 3 x 3 array requires 27 individual game pieces, while a more challenging 4 x 4 x 4 array requires 64 game pieces. The pieces must necessarily be relatively small in relation to the game board if they are to be seen properly in relation to one another and without obscuring the various game piece positions from the eyes of the players. The handling of such a number of necessarily small opaque objects and their placement upon a game board shelf tend to be tedious and difficult. The number of these small objects, typically spherical or cylindrical in shape, is constantly subject to decimation as the pieces roll off tables, under furniture, etc., as well as suffering the usual careless moving about by children.

Accordingly, the present invention provides a new game piece more easily handled than game pieces of the type discussed and which, because of its nature, which will be described shortly, reduces by a factor of at least two the number of game pieces required to play the game. In addition, game pieces according to the present invention add an additional subtle complexity to the game since, as will be described, each move made by either player (in the case of a two player game) will contribute to the game structure a move by that player's playing symbol and a move by the other player's playing symbol.

A typical game piece according to the present invention is an elongated rectangular member, of length equal to twice its width, and with two spaced playing symbols along its length, one symbol being different from the other and each symbol being associated with one player. Thus, when one player makes a move by putting a game piece in play and thereby positioning his symbol, he simultaneously further advances the game by positioning his opponent's symbol. In one embodiment of the invention, the game pieces cooperate with a game board having transparent stacked shelves, with a pair of differently coloured pegs in the game pieces (one player uses the pegs of one colour; the other player uses the other colour pegs) cooperating with holes in the game board shelves. In another embodiment, no game board is used, and the game pieces, which may typically be one inch by one inch, by two inches in length, are simply stacked or arranged as desired.

Further objects and advantages of the invention will appear from the following description, taken together with the accompanying drawings, in which:

FIG. 1 is a perspective view illustrating game pieces in position on a game board according to the present invention;

FIG. 2 is a side view showing a game piece according to the present invention;

FIG. 3 is a perspective view of a modified game piece and a portion of a modified game board according to the invention;

FIG. 4 is a perspective view of another embodiment of a game piece and a portion of a game board according to the invention;

FIG. 5 is a perspective view of a further embodiment of a game piece according to the invention;

FIG. 6 is a plan view of a portion of a further modified game board;

FIG. 7 is a perspective view showing another game piece according to the present invention;

FIG. 8 is an end view of the game piece of FIG. 7;

FIG. 9 shows the initial stages of a typical game using game pieces of the type shown in FIG. 7; and

FIG. 10 shows an insert member, containing coloured beads, for use in the game piece of FIG. 7.

Reference is first made to FIGS. 1 and 2, where there are shown a plurality of game pieces **2**, each such game piece being an elongated rectangular member preferably having a length L equal to twice its width W. Each game piece **2** is preferably made of clear glass or transparent plastic and has a longitudinal central axis shown in dotted lines at **4**, along which are located two spaced pins or pegs **6** and **8**, respectively. The pegs **6** and **8** each project a short distance from either side of the game piece **2**, as best shown in FIG. 2, and the centre of each peg is spaced from the end of the game piece **2** most closely adjacent such peg by a distance equal to one quarter of the length L. The distance between the centres of pegs **6** and **8**, denoted by dimension D, is thus equal to one half of length L.

The pegs **6** and **8** are preferably of coloured plastic, the pegs **6** all being of one colour and the pegs **8** all being of a different colour. For example, the pegs **6** may be red and the pegs **8** may be yellow. In a sample game made in accordance with the present invention, the pegs **6** and **8** were constituted simply by short cylindrical sections cut from red and yellow plastic knitting needles, respectively, the cut sections being inserted in holes drilled in the body of the game piece **2** and held in place by friction or glue.

Cooperating with the game pieces **2** is a board generally indicated at **10** and including three shelves **12**, **14** and

16, each of transparent plastic and each containing a 3 x 3 square grid of holes 18. Each hole 18 is of a size to receive the pegs 6 and 8 of the game piece 2, the distance between the centres of holes 18 in directions parallel to the edges of the shelves being equal to distance D in order that the game pieces 2 may be fitted on the shelves 12, 14, 16 in the positions shown. The shelves are supported in parallel stacked relation by four corner posts 20 which may be permanently connected to the shelves. Alternatively, the corner posts 20 may be detachably connected to the shelves 12, 14 and 16 by any suitable means, so that the game board 10 may be disassembled when not in use.

During play, each player chooses one colour as his own, and attempts to obtain, or not to obtain, a selected geometrical configuration, e.g., three pegs of his colour in a row. As may be seen, each move made by either player contributes to the game structure (i.e., to the progress of the game) a peg of that player's own colour and a peg of the opponent's colour simultaneously, so that each player, in attempting to obtain (or not to obtain) a row of three pegs of his colour, will be constrained to place one end of the game piece (containing his colour peg) in the position most advantageous to his goal, and to place the other end of the game piece (containing the peg of his opponent's colour) in a position most disadvantageous to his opponent's goal. This adds an additional interesting complexity to the game, and in addition it reduces both the number of game pieces required to play the game and the number of moves necessary to complete a game.

Moreover, the handling qualities of a game piece of such dimensions as to contain two pegs spaced suitably apart are much enhanced over those of a smaller game piece containing only one peg. The game piece according to the present invention is of sufficient weight and of such relative size that it is more comfortably handled and less easily lost than twice the number of tiny pegs or spheres which may easily slip through the fingers and provoke annoyance, and in addition the game piece has alternative uses as a building block.

Further, the engagement of the protruding pegs 6 and 8 with the holes 18 in the game board shelves permits the tilting of the game board to an angle of nearly 90° before the game pieces fall away from the game board. This tilting permits movement of the game board by the players so that they can see completely through the structure from various angles for the purposes of determining the disposition of the various game pieces and thus the progress of the game.

It will be appreciated that the game piece and board just described are exemplary only, and numerous modifications may be made in both within the scope of the present invention. For example, instead of holes in the game board 10 and cooperating pegs in the game pieces 2, there may be provided pegs in the game board and cooperating holes in the game pieces 2. Such a structure is shown in FIG. 3, where a game piece 2' is shown provided with a pair of spaced holes 22 and 24 in locations corresponding to those of pegs 6 and 8, and a game board 10' includes shelves such as shelf 14' having pegs 26 spaced to cooperate with the holes 22 and 24. In a structure such as that shown in FIG. 3, the pegs 26 of the game board will all be clear or of the same colour and indicia will be provided to distinguish the holes 22 and 24 from each other. For example, a ring 28 of one colour may be provided around the hole 22 and a ring 30 of a second and different colour may be provided around the hole 24, so that holes of one colour will be associated with one player and holes of the other colour will be associated with the other player.

Although it is preferred that the game pieces and game board be of transparent material, and that the indicia differentiating the two pegs (or holes) on each game piece be constituted by a pair of different colours, other arrangements may be used. For example, other indicia could be used to distinguish between the two pegs (or holes) on each game piece, e.g., a numeral "1" could be used for one peg or hole on the game piece and the numeral "2" for the other peg or hole on the game piece.

Although it is preferred that cooperating pegs and holes be used as mating devices to connect the game pieces 2 to the playing board 10, it will be appreciated that projections of various shapes may be employed on the game pieces 2 (or board 10) with correspondingly shaped depressions or apertures in the board 10 (or playing piece 2). For example, either conical or semispherical projections from the game piece 2 could be provided in place of pegs 6 and 8, with correspondingly shaped apertures in the shelves of the board 10. Alternatively, the game may be built with no cooperating projections and indentations at all, the game pieces 2 merely having two differentiated spots, e.g., a red spot and a yellow spot, corresponding to the pegs 6 and 8, and the shelves of the board 10 having a plurality of spots, e.g., black spots, marking the locations with which the coloured spots are to cooperate. Such an arrangement would of course be more difficult to use in play, since the game pieces would tend not to remain in position and since the game board with the game piece in place could not be tilted to facilitate inspection of the progress of the game.

If desired, the arrangement of FIG. 4 may be used. In FIG. 4 there is shown a clear plastic game piece 2'' bearing two coloured spots 32 and 34, each of these spots being of a different colour. These spots cooperate with black spots 36 on a shelf 14'' of game board 10''. Mating means are provided to connect the game piece 2'' to the shelf 14'' but the functions of the mating means and playing spots have now been differentiated. In the device of FIG. 4, the mating means comprise a pair of clear plastic pegs 38 projecting from opposite ends of the game piece 2'' and cooperating with a plurality of apertures 40 in the shelf 14''.

If three people are to play the game, two methods of approach are possible. In the first method, a single game piece 2''' may be provided with three coloured pegs (or holes) 42, 44 and 46, as shown in FIG. 5. Each of these pegs will be of a different colour and one colour will be associated with each player, e.g., red for the first player, yellow for the second player, and blue for the third player. Enough holes will be provided in the shelves of the game board to accommodate a plurality of game pieces 2'''. In the second approach, a structure such as that shown in FIGS. 1 to 4 may be employed, but three sets of game pieces are provided, namely, game pieces with pegs (or holes or spots) of first and second colours, game pieces with first and third colours, and game pieces with second and third colours. As before, one colour is associated with each player. Therefore when a player's turn to make a move arrives, he will select a game piece containing a peg (or hole or spot) of his colour, but he will have a choice at this time as to which opponent's colour to select.

A characteristic of the game is that spaces may develop which cannot be filled later due to the arrangement of game pieces on a shelf. Such a space appears at the forward right hand corner of upper shelf 12 in FIG. 1. This characteristic, which adds to some extent to the complexity of strategy of play, is due to the fact that the game pieces are double game pieces, instead of single game pieces.

Although the game pieces have all been shown as elongated rectangular members, other shapes, e.g., ellipses, may be used for the game pieces. In fact, square game pieces may also be used, but in that case, a different type of grid would have to be employed on the shelves of the playing board. In the grid of FIG. 1, the holes 18 may be considered as being located at the intersections defined by one set of equally spaced parallel lines meeting at right angles another set of equally spaced parallel lines. With a square game piece, the spacing of one set of such lines would be greater than that of the other set, as shown for

holes **180** in shelf **140** of FIG. 6, and, of course, the character of the game would also be somewhat different.

In addition, although the geometrical configuration described as being the object of the game to achieve or not to achieve has been three game board holes or markings in a row, other configurations, e.g., and L shaped configuration, may be selected instead.

Reference is next made to the embodiment of FIGS. 7 to 10, where a game piece **50** that needs no game board is illustrated. The game piece **50**, as viewed from above, is of the same rectangular shape as game piece **2**, but is of height *h* equal to its width W. Typical dimensions for height *h*, width W, and length L are 1 inch, 1 inch and 2 inches, respectively. The ends **52, 54** of the game piece **50** are open, and the wall **56** of the game piece is made of a simple sheet of plastic, typically about 1/16 inch in thickness.

Positioned along the central longitudinal axis of the game piece **50** are a pair of differently coloured indicia **58, 60**. The indicia **58, 60** may typically be ¼ inch diameter glass or plastic beads, strung between opposite edges **62, 64** of the game piece on nylon thread **66** glued or otherwise fastened to the wall **56**. The thread **66** runs from one edge, e.g., edge **62**, of the game piece, passes through a hole in the centre of a bead, loops around part of the outer surface of the bead as shown at **68** to re-enter the hole in the bead, passes through the bead again, and continues on to the opposite edge **64** of the game piece. The loop **68** holds the bead in position on the thread.

With the game pieces **50**, play is similar to that with the game pieces **2**, except that no playing board is needed. The game pieces are simply stacked as desired on any flat surface, as shown in FIG. 9, which illustrates the initial stages of a typical game. The object of the game, as before, will usually be for a player to line up three beads of his colour in a row. Rules that may be adopted to improve the game are that (a) no player can win if he aligns three of his beads and three of his opponents' beads in a row at the same time, (b) no "overhangs" are permitted (an overhang occurs when a game piece is partly supported by another game piece but partly juts out into space).

Various methods may be adopted for holding the beads **58, 60** along the central longitudinal axis of the game piece **50**, as alternatives to the thread approach illustrated in FIGS. 7 and 8. For example, as shown in FIG. 10, the beads **58, 60** may be mounted in a thin transparent sheet **70**. The sheet **70** will then be attached diagonally inside the game piece **50**, between the edges **62, 64**.

The game piece **50** could, if desired, be made of solid plastic, with the indicia constituted either by coloured beads imbedded in the plastic or by coloured voids in the plastic. However, when the game piece **50** is of solid construction, it may be difficult at times to see the players' indicia (because of light refraction), and therefore the thin-walled open ended construction shown is preferred.

What I claim as my invention is:

1. A three-dimensional tic-tac-toe game apparatus comprising: a flat transparent sheet, and a plurality of game pieces for placement on said sheet, each game piece comprising:

(a) a thin, solid elongated body member having top and bottom opposed rectangular faces of length substantially equal to twice their width, said top face having a longitudinal axis of symmetry extending the length thereof,

(b) said body member being made of transparent material,

(c) two discrete playing symbols in said top face and spaced apart along said axis, each being spaced from the end of said body member by a distance substantially equal to one quarter of the length of said body member, and one of said playing symbols being of different appearance from the other,

(d) and a pair of first mating devices located in said bottom face each directly below a respective playing symbol in said top face, and said transparent sheet having a plurality of second mating devices arranged in rows and columns defining a series of squares, the distance between adjacent second mating devices along said rows and columns being equal to the distance between said playing symbols, said first and second mating devices being adapted to interengage when a said game piece is placed on said sheet to prevent said game piece from sliding on said sheet.

2. A game apparatus according to claim **1** wherein one of said playing symbols is of a different colour from the other of said playing symbols, said difference in appearance of said playing symbols being provided by said difference in colour.

3. A game apparatus according to claim **2** wherein said first mating devices are formed by a pair of parallel pegs, said body member having through openings extending perpendicularly between said top and bottom faces and said pegs being disposed in said through openings and projecting perpendicularly from said bottom face, said second mating devices being apertures in said sheet to receive said pegs, the tops of said pegs being coloured differently from each other to constitute said playing symbols and being positioned in said openings to be visible from the top of said game piece, said different coloring providing said different appearance.

4. A game apparatus according to claim **3** wherein said pegs project equal distances from said top and bottom faces, the lower projecting portions being differently colored so that the projections from either of said top and bottom faces may be used as playing symbols and the projections from the other of said top and bottom faces may be used as mating devices.

5. A game apparatus according to claim **2** wherein said second mating devices are formed by parallel pegs projecting vertically upwardly from said sheet, and said first mating devices comprise apertures in said body member to accommodate said pegs, said differently coloured playing symbols being a pair of coloured markings one associated with each of said apertures so that one aperture may be distinguished visually from the other.

6. A game piece for a three-dimensional game of tic-tac-toe, said game piece comprising:

(a) an elongated body member of transparent material, said body member having four rectangular side faces each of the same length and width, said body member being of square cross section and having square ends, so that it may be disposed on any of said sides or on either of said ends, said member having a longitudinal axis of symmetry between said ends,

(b) and two discrete playing symbols within said body member and between said faces, said playing symbols being different in appearance from each other and being spaced apart along said axis, said symbols being visible from all sides of said body member.

7. A game piece according to claim **6** wherein said side faces are formed of thin transparent material, the interior of said body member being substantially open between said side faces, said playing symbols being bodies of maximum dimension substantially less than the distance between said side faces, and means supporting said bodies between said faces.

8. A game piece according to claim **7** wherein said bodies are of different colours and each is substantially centered within the interior of said body member relative to said side faces, said difference in appearance of said playing symbols being provided by the difference in colour of said bodies.

9. A game piece according to claim **8** wherein said bodies are spherical in form.

10. A game piece according to claim 8 wherein the length of said side faces is equal to twice their width.

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U.S. Cl. X.R.

46—25; 273—137