Abstract: The present disclosure provides a three-dimensional game board having a base and a plurality of tiles positionable on the base. Tiles may be spaced apart from the base in an adjustment direction by spacers. The tiles may be movably supported by supports coupled to a frame. The supports may extend through cavities in the tiles and tiles may move in the adjustment direction while supported by the supports. The frame may be positioned on the base, and the act of positioning the frame on the base may cause certain tiles to be spaced apart from the base by corresponding spacers.
SYSTEM AND METHOD FOR PROVIDING AN ADJUSTABLE GAME BOARD

Technical Field

[0001] The present disclosure relates to game boards, and in particular to three-dimensional tiled boards for games such as checkers, chess, and the like.

Background

[0002] Two-dimensional grids are widely used for board games such as chess, checkers, and the like. These grids are often provided by tiled boards on which playing pieces may be placed. Pieces may be moved from tile to tile according to the spatial relationships of those tiles. For example, the king piece in a standard game of chess may move to any unoccupied tile adjacent to the tile on which the king piece is currently located, and may not generally be moved to a non-adjacent tile (except in certain circumstances, such as when castling).

[0003] In recent years, a variety of novel games and alternative versions of existing games have been developed for three-dimensional game boards (see, e.g., US Patent Nos. 5358252, 5860651, and 6276685). In such games, certain tiles on the game board are not coplanar with other tiles; for example, certain tiles may be raised or lowered relative to other tiles, and/or may be set at an angle relative to other tiles.

[0004] A variety of three-dimensional game boards have been developed for playing such games. Such game boards are commonly specifically adapted for a particular set of rules and provide a fixed three-dimensional arrangement of tiles. In some cases, a game board adapted for use with one set of rules may be unsuitable for use with a different set of rules. Further, some sets of rules may be playable on a plurality of game boards. A player desiring to play with several sets of rules (and/or with one set of rules on a variety of game boards) may need to have access to a plurality of game boards in order to do so. This may be inconvenient and/or uneconomical.

[0005] There is a general desire for a game board that ameliorates some of the above-identified deficiencies.

[0006] The foregoing examples of the related art and limitations related thereto are intended to be illustrative and not exclusive. Other limitations of the related art will become apparent to
those of skill in the art upon a reading of the specification and a study of the drawings.

Summary

[0007] The following embodiments and aspects thereof are described and illustrated in conjunction with systems, tools and methods which are meant to be exemplary and illustrative, not limiting in scope. In various embodiments, one or more of the above-described problems have been reduced or eliminated, while other embodiments are directed to other improvements.

[0008] One aspect of the invention provides a three-dimensional game board. Another aspect of the invention provides a method for arranging one or more of a plurality of tiles on the game board. The game board has a base having a first surface, a plurality of tiles positionable on the surface, the plurality of tiles comprising a first tile having a first face and a second tile having a second face, and a first spacer positionable between the first tile and the surface. The first tile is spaced apart from the surface in an adjustment direction while the first spacer is positioned between the first tile and the surface. The first face is out-of-plane with the second face while the first spacer is positioned between the first tile and the base.

[0009] In some embodiments, the base comprises one or more spacer retainers. The first spacer is retainable by a first spacer retainer of the one or more spacer retainers. Further, the first spacer is positionable between the first tile and the base while retained by the first spacer retainer. In some embodiments, the first spacer retainer comprises an indentation defined by the surface. In some embodiments, the first spacer retainer comprises a magnetic attractor causing the first spacer to be magnetically attracted to the first spacer retainer.

[0010] In some embodiments, the base comprises a plurality of spacer retainers and the first spacer retainer is one of the plurality of spacer retainers. The first spacer is one of a plurality of spacers. The plurality of spacers is retainable in a substantially random arrangement by the plurality of spacer retainers. The plurality of spacer retainers are spaced apart, and the plurality of spacers are movable along the surface of the base between adjacent spacer retainers. In some embodiments, at least one of the plurality of spacers is reliable along the surface of the base.

[0011] In some embodiments, the game board comprises a second spacer. The second spacer is larger in an adjustment dimension than the first spacer and is positionable between the second
tile and the base. The second tile is spaced apart from the base in the adjustment direction by a second adjustment distance while the second spacer is positioned between the second tile and the base. The first tile is spaced apart from the base in the adjustment direction by a first adjustment distance while the first spacer is positioned between the first tile and the base. The first adjustment distance is less than the second adjustment distance.

[0012] In some embodiments, the game board comprises a frame positionable on the base and one or more supports coupled to the frame. The plurality of tiles is supportable by the one or more supports. The first tile is supported by a first support of the one or more supports and ismovable in the adjustment direction relative to the first support.

[0013] In some embodiments, the first tile defines a cavity extending through the first tile in a longitudinal direction. The first tile is positionable to cause a portion of the first support to extend through the cavity. The cavity has a greater dimension in the adjustment direction than the portion of the first support. In some embodiments, the first tile comprises a support retainer at an end opposing the first face in the adjustment direction and the first support is retainable in the cavity by the support retainer.

[0014] In some embodiments, the one or more supports comprise a plurality of supports extending in a longitudinal direction and spaced apart in a transverse direction. The longitudinal and transverse directions are substantially parallel to the planar surface and each of the plurality of supports supports a subset of the plurality of tiles.

[0015] In some embodiments, the base comprises one or more engagement members for engaging one or more dividers. The one or more dividers define a plurality of regions and restrict movement of the first spacer to one of the plurality of regions when engaged with the base. In some embodiments, the one or more engagement members comprise a plurality of apertures defined by the base and at least one of the one or more dividers comprises an elastic cord having flanges at opposing ends. The elastic cord is receivable by at least two of the plurality of apertures and, when the elastic cord is received by the at least two apertures, the elastic cord extends between the at least two apertures and resiliently held in place by the flanges.

[0016] In some embodiments, the method comprises positioning a first spacer between a
first tile of the plurality of tiles and a base of the game board, thereby spacing the first tile apart from the base in an adjustment direction. The method further comprises positioning a second tile of the plurality of tiles relative to the base so that a face of the first tile is out-of-plane with a face of the second tile. In some embodiments, positioning a first spacer comprises retaining the first spacer by a first spacer retainer of the base. Retaining the first spacer by a first spacer retainer may comprise magnetically attracting the first spacer toward the first spacer retainer.

[0017] In some embodiments, the first spacer retainer is one of the plurality of spacer retainers and the first spacer is one of a plurality of spacers. The method further comprises retaining the plurality of spacers by the plurality of spacer retainers in a substantially random arrangement. In some embodiments, retaining the plurality of spacers by the plurality of spacer retainers in a substantially random arrangement comprises propelling the plurality of spacers to roll on the base. At least some of the plurality of spacers roll between adjacent spacer retainers.

[0018] In some embodiments, positioning the second tile relative to the base comprises positioning a second spacer between the second tile and the base, thereby spacing the face of the second tile apart from the base in an adjustment direction by a second adjustment distance. The face of the first tile is spaced apart from the base in the adjustment direction by a first adjustment distance. The first adjustment distance is less than the second adjustment distance.

[0019] In some embodiments, the method comprises positioning a frame on the base and moving the first tile in the adjustment direction relative to a first support supporting the first tile. The frame is coupled to one or more supports supporting the plurality of tiles. In some embodiments, the method further comprises extending a portion of the first support through a longitudinal cavity defined by the first tile and retaining the portion of the first support in the cavity by a support retainer of the first tile. In some embodiments, positioning the frame on the base causes the first tile to be spaced apart from the base by the first spacer.

[0020] In some embodiments, the method comprises engaging one or more dividers with a plurality of engagement members. The one or more dividers define a plurality of regions and restrict movement of the first spacer to one of the plurality of regions when engaged with the base. In some embodiments, the one or more engagement members comprise a plurality of apertures defined by the base and at least one of the one or more dividers comprises an elastic
cord having flanges at opposing ends. Engaging the one or more dividers with the plurality of engagement members comprises receiving the elastic cord by at least two of the plurality of apertures, thereby causing the elastic cord to extend between the at least two apertures and to be resiliently held in place by the flanges.

[0021] In addition to the exemplary aspects and embodiments described above, further aspects and embodiments will become apparent by reference to the drawings and by study of the following detailed descriptions.

Brief Description of the Drawings

[0022] Exemplary embodiments are illustrated in referenced figures of the drawings. It is intended that the embodiments and figures disclosed herein are to be considered illustrative rather than restrictive.

[0023] Figure 1 is a perspective view of an example embodiment of a three-dimensional game board according to the present disclosure.

[0024] Figure 2 is an exploded perspective view of the three-dimensional game board of Figure 1, exposing tiles, frame, base, and spacers.

[0025] Figure 3 is a plan view of an example base of the three-dimensional game board of Figure 1.

[0026] Figure 4 is a plan view of the three-dimensional game board of Figure 1.

[0027] Figure 5 is a cross-sectional view of the three-dimensional game board of Figure 1 taken along 5-5 (shown in Figure 4).

[0028] Figure 6 is a cross-sectional view of an example embodiment of a tile of the three-dimensional game board of Figure 1 taken in a plane orthogonal to 5-5.

[0029] Figure 7 is an exploded perspective view of a second example embodiment of three-dimensional game board, exposing tiles, frame, base, and spacers

[0030] Figure 8 is a plan view of an example base of the three-dimensional game board of Figure 7.
Description

[0031] Throughout the following description specific details are set forth in order to provide a more thorough understanding to persons skilled in the art. However, well known elements may not have been shown or described in detail to avoid unnecessarily obscuring the disclosure. Accordingly, the description and drawings are to be regarded in an illustrative, rather than a restrictive, sense.

[0032] Some embodiments provide a three-dimensional game board having a base and a plurality of tiles positionable on the base. Tiles may be spaced apart from the base in an adjustment direction by spacers. In some embodiments, the tiles are movably supported by supports coupled to a frame. In some embodiments, the supports extend through cavities in the tiles and tiles move in the adjustment direction while supported with only one degree of freedom by the supports and the frame. In some embodiments, the frame is positioned on the base, and the act of positioning the frame on the base causes certain tiles to be spaced apart from the base in the adjustment direction by corresponding spacers positioned on the base.

[0033] Figure 1 shows an example game board 10 having tiles 12, a frame 20 and a base 30. Although the example game board 10 shows square tiles 12 arranged in an 8 x 8 grid (a format used by popular variants of chess and checkers), it will be understood that some embodiments comprise other arrangements of tiles 12, such as a 6 x 6 grid, a 10 x 10 grid, a 2 x 12 grid, a star-shaped arrangement (such as is often used for Chinese checkers), round arrangements, octagonal arrangements, hexagonal arrangements, asymmetrical arrangements, and/or other arrangements.

[0034] In the illustrated example embodiment, tiles 12 are arranged in a grid extending in longitudinal direction 6 and transverse direction 8. Each tile has a face 16 for the placement of game pieces. Like a typical chessboard, tiles 12 of example game board 10 have white and black faces 16 (illustrated as white and shaded faces 16, respectively, in the drawings) which alternate in both longitudinal and transverse directions 6, 8. It will be understood that tiles 12 may be arranged in different patterns and/or may comprise colors other than white and black.

[0035] Tiles 12 include first tile 12A and second tile 12B. Although, in the depicted
configuration, most of the faces 16 of the plurality of tiles 12 are co-planar (i.e. most faces 16 have the same elevation in adjustment direction 9), the respective faces 16A and 16B of tiles 12A and 12B are out-of-plane with the faces 16 of the majority of tiles 12 (i.e. they have different elevations in adjustment direction 9). In the depicted example, faces 16A and 16B of first and second tiles 12A and 12B are also out-of-plane with each other; that is, face 16B is at a greater elevation in adjustment direction 9 than face 16A. By providing certain tiles 12 with faces 16 occupying different elevations in adjustment direction 9, game board 10 provides a three-dimensional playing surface.

[0036] Figure 2 shows an exploded view of example game board 10, exposing a frame 20 having supports 22, a base 30, and spacers 40. Frame 20 retains tiles 12. In some embodiments, frame 20 is removably positionable on base 30. Supports 22 support tiles 12 so that, when frame 20 is removed from base 30, tiles 12 move with frame 20 without losing their arrangement in longitudinal and transverse directions 6, 8. Tiles 12 can move relative to one another in adjustment direction 9. In other words, both frame 20 and supports 22 support tiles 12 with one degree of freedom.

[0037] Tiles 12 may abut one another and thereby support each other instead of, or in addition to, being supported by supports 22. In some embodiments, supports 22 extend in longitudinal direction 6 through cavities 14 defined by tiles 12, as described in greater detail below with reference to Figures 5 and 6. In some embodiments, frame 20 and/or supports 22 are omitted. For example, in some embodiments, tiles 12 are supported with only one degree of freedom (i.e. so that tiles can move only in adjustment direction 9 relative to one another, and not in longitudinal direction 6 or transverse direction 8) in any suitable manner. For example, tiles 12 could be provided with tongue-and-groove or mortise and tenon-like joints along their adjacent edges to support tiles 12 with only one degree of freedom without the need for frame 20 and/or supports 22.

[0038] Spacers 40 interpose base 30 and one or more tiles 12, thereby spacing apart one or more tiles 12 from base 30 in adjustment direction 9. Spacers 40 may be any suitable shape for spacing tiles 12 apart from base 30 and supporting tiles 12 in an elevated position in adjustment direction 9 when spacers 40 are positioned between tiles 12 and base 30. For example, spacers
40 may be substantially spherical, rectangular, cylindrical, irregular, and/or asymmetrical. Spacers 40 have sufficient structural integrity to support tiles 12 when some degree of weight is applied to tiles 12 (e.g. the weight of a game piece). Throughout this disclosure, a tile 12 is said to be "on" base 30 when any part of the tile 12 either (a) abuts first surface 31 of base 30, and/or (b) is spaced apart from base 30 by a spacer 40. For example, each tile 12 in Figure 1 is on base 30.

[0039] In some embodiments, spacers 40 are retained by spacer retainers 32 provided on surface 31 of base 30. Surface 31 faces tiles 12 when frame 20 is positioned on base 30. In some embodiments, spacer retainers 32 are arranged in a pattern corresponding to the pattern of tiles 12. For example, spacer retainers 32 may be arranged such that, when tiles 12 are on base 30, each spacer retainer 32 is positioned opposite a corresponding tile 12 in adjustment direction 9. In some embodiments, each spacer retainer 32 is positioned centrally relative to its corresponding tile 12 (i.e. the centers of tile 12 and the corresponding spacer retainer 32 may align in directions 6, 8 when tile 12 is on base 30). For example, Figures 3 and 4 show corresponding views of an example base 30 (shown alone in Figure 3) and a complete game board 10 (shown with tiles 12 and frame 20 on base 30 in Figure 4). In the example depicted in Figures 3 and 4, spacer retainers 32 are arranged in an 8 x 8 grid corresponding to the example arrangement of tiles 12.

[0040] Spacers 40 may be retained by spacer retainers 32 through any suitable means. For example, in some embodiments, spacers 40 are substantially spherical and spacer retainers 32 comprise indentations defined by surface 31. Such spacer retainers 32 may retain spacers 40 through, for example, the force of gravity. In some embodiments, spacer retainers 32 retain spacers 40 by providing a shape complementary to spacers 40. For example, spacer retainers 32 may comprise curved indentations for retaining curved spacers 40, cuboid indentations for retaining cuboid spacers 40, cylindrical protrusions for retaining spacers 40 having cylindrical cavities, and/or other suitable shapes. Alternatively, or in addition, spacer retainers 32 may comprise magnets (not shown), and spacers 40 may be magnetically attracted thereto. For example, spacers 40 may comprise a magnetically attractive metal.

[0041] In some embodiments, the arrangement of tiles 12 in adjustment direction 9 may be
randomizable through the substantially random arrangement of spacers 40. For example, spacer retainers 32 may be spaced apart on base 30 and/or surface 31 so that spacers 40 are permitted to travel along base 30 and/or surface 31 between adjacent spacer retainers 32. Spacers 40 may travel by, for example, rolling (e.g. such as when spacers 40 are substantially spherical or otherwise reliable), sliding, or the like. Spacers 40 may be retained by spacer retainers 32 in a substantially random arrangement by propelling spacers 40 along base 30 and/or surface 31 and allowing spacers 40 to fall into, be attracted to, or otherwise be retained by spacer retainers 32 substantially randomly. For instance, a user may throw spacers 40 onto surface 31. As another example, a user may place spacers 40 onto surface 31 in a random or predetermined arrangement (e.g. to recreate a particular three-dimensional arrangement of tiles 12).

[0042] In the illustrated embodiment, a user may throw, drop, roll, or otherwise propel spacers 40 onto surface 31 of base 30. Spacers 40 are substantially spherical and thus roll on surface 31 between spacer retainers 32. Spacer retainers 32 comprise curved indentations and spacers 40 roll into those indentations and are retained thereby. In some embodiments, spacer retainers 32 restrain spacers 40 from moving prior to and/or during the process of positioning frame 20 on base 30. Spacer retainers 32 may cooperate with tiles 12 to retain spacers 40 when frame 20 is positioned on base 30; for example, tiles 12 may bear against spacers 40 and press them more firmly into spacer retainers 32, thereby assisting with the retention of spacers 40.

[0043] In some embodiments, spacers 40 are be prevented and/or discouraged from traveling away from (and/or off of) base 30 in longitudinal and/or transverse directions 6, 8 by a boundary 34.

[0044] In some embodiments, spacers 40 may be of varying sizes, thereby allowing different tiles 12 to be spaced apart from base 30 by varying distances in adjustment direction 9. For example, a first spacer 40A may be smaller than a second spacer 40B in adjustment direction 9. For instance, the first and second spacers 40A and 40B may be spheres and first spacer 40A may have a smaller diameter than second spacer 40B. As another example, spacers 40A and 40B may be rectangular prisms and spacer 40B may be larger in adjustment direction 9 without necessarily being larger in longitudinal and/or transverse directions 6, 8, thereby allowing both spacers 40A and 40B to be inserted into a spacer retainer 32 which comprises a rectangular
indentation with corresponding dimensions in longitudinal and/or transverse directions 6, 8.

[0045] For instance, in the example arrangement depicted in Figures 1 and 2, first spacer 40A is retained by a first spacer retainer 32A corresponding to first tile 12A and second spacer 40B is retained by a second spacer retainer 32B corresponding to second tile 12B. Second spacer 40B is larger in an adjustment dimension than first spacer 40A, causing second tile 12B to be spaced apart further in adjustment direction 9 from base 30 than first tile 12A.

[0046] In some embodiments, the act of positioning frame 20 on base 30 causes certain tiles 12 (e.g. first tile 12A) to be spaced apart from base 30 by spacers 40 (e.g. first spacer 40A). For example, spacers 40 may be retained by spacer retainers 32 prior to frame 20 being positioned on base 30. After spacers 40 are retained by spacer retainers 32, frame 20 may be positioned on base 30, thereby positioning tiles 12 on base 30 (in some cases indirectly, i.e. some tiles 12 are spaced apart from base 30 by spacers 40).

[0047] In some embodiments, tiles 12 which are not spaced apart by spacers 40 abut surface 31 directly, whereas tiles 12 which abut spacers 40 are spaced apart from base 30 by spacers 40 in adjustment direction 9. Faces 16 of tiles 12 which are spaced apart from base 30 by spacers 40 are thus at different elevations in adjustment direction 9 relative to base 30 than faces 16 of non-spaced-apart tiles 12. In some embodiments, supports 22 space tiles 12 apart from surface 31 by a first distance in adjustment direction 9 (e.g. tiles 12 may hang from supports 22), and spacers 40 act to space tiles 12 apart from surface 31 by a second, larger, distance in adjustment direction 9.

[0048] In some embodiments, frame 20 may be separated entirely from base 30, without any coupling between frame 20 and base 30. Such embodiments may permit a user to, for example, lift frame 20 off of base 30, place spacers 40 on base 30 (e.g. retained by spacer retainers 32), and position frame 20 on base 30 by dropping frame 20 on base 30. In some embodiments, such as the longitudinally and transversely symmetric embodiment depicted in Figures 1-4, frame 20 may be positioned on base 30 in any one of a plurality of orientations. For example, frame 20 may be rotated 90 degrees (in the plane defined by longitudinal and transverse directions 6, 8) and placed on base 30.
In some embodiments, frame 20 is coupled to base 30. For example, frame 20 may be pivotably coupled to base 30 along an edge (e.g. by a hinge), thereby permitting game board 10 to be "opened" by pivoting frame 20 away from base 30 and "closed" by pivoting frame 20 toward base 30. As another example, frame 20 may be fixedly coupled to base 30, and tiles 12 may be temporarily spaced apart from base 30 by a mechanism other than spacers 40 to permit spacers 40 to move between spacer retainers 32. For instance, game board 10 may be flipped upside down, thereby permitting the force of gravity to space tiles 12 apart from base 30, during which time spacers 40 may be encouraged to move (e.g. by shaking game board 10). In some fixedly-coupled embodiments, spacers 40 may be insertable and/or removable from in between base 30 and tiles 12 through a passage defined in base 30 and/or frame 20.

In some embodiments, frame 20, supports 22, and/or tiles 12 cooperate to permit tiles 12 to move in adjustment direction 9 while being supported by supports 22, frame 20, and/or tiles 12. Figure 5 depicts a cross-sectional view of game board 10 along the line 5-5 (shown in Figure 4). Supports 22 are coupled to frame 20 (e.g. supports 22 may be integrally formed with frame 20) and extend in longitudinal direction 6 through cavities 14 of tiles 12. In some embodiments, cavities 14 have a greater dimension in adjustment direction 9 than the supports 22 extending therethrough (e.g. cavities 14 may be elongated in adjustment direction 9 relative to the corresponding dimension of supports 22), thereby allowing for movement of tiles 12 in adjustment direction 9 while supports 22 extend longitudinally through cavities 14.

In some embodiments, supports 22 comprise flexible material, such as flexible plastic, flexible metal, cord, and/or the like. For example, supports 22 comprise high-tensile strength wire (such as, e.g., fishing wire). In some embodiments, supports 22 may comprise rigid material, such as rigid plastic, rigid metal, wood, and/or the like. For example, supports 22 may comprise rigid poles (such as, e.g., plastic and/or wooden poles).

Supports 22 can be coupled to frame 20 via any suitable mechanism. In some embodiments, supports 22 are coupled to frame 20 via anchors (not shown). For instance, supports 22 may be tied to, adhered to (e.g. with glue), frictionally retained by, otherwise coupled to frame 20 by anchors, which may comprise screws, hooks, clamps, and/or any other suitable mechanism. In some embodiments, supports 22 are tied, adhered, frictionally retained
by, or otherwise coupled directly or indirectly to frame 20. In some embodiments, supports 22 may be integrally formed with frame 20 (e.g. as shown in Figure 5), such as by injection molding, carving, three-dimensional printing, and/or by other methods of formation. In some embodiments, supports 22 are plastic rods integrally formed with a plastic frame 20.

[0053] Tiles 12 may be secured to supports 22 in any suitable manner. In some embodiments, supports 22 are retained in cavities 14 of tiles 12. Figure 6 shows an example tile 12 in cross-section having an example support retainer 26. Support retainer 26 prevents tile 12 from moving beyond support 22 in adjustment direction 9, thereby retaining support 22 in cavity 14. In some embodiments, support retainer 26 is integrally formed with tile 12 (e.g. as depicted in Figure 6). In some embodiments, cavity 14 has an opening in adjustment direction 9 and support retainer 26 blocks prevents the passage of at least a part of support 22 through that opening. In such embodiments, support retainer 26 may comprise, for example, a peg inserted through tile 12, a plate coupled to surface 18 of tile 12 across an opening of cavity 14, a staple coupled to surface 18 across an opening of cavity 14, and/or any other suitable element for retaining support 22 in cavity 14. Cavity 14 does not necessarily have an opening in adjustment direction 9. For example, cavity 14 may be a longitudinal passage extending through tile 12, and surface 18 of tile 12 may be substantially continuous to provide support retainer 26.

[0054] Figure 7 shows an exploded view of another example embodiment of a game board 50. Throughout Figures 7 and 8, like reference numerals are used to denote equivalent features to those of Figures 1-6. Game board 50 is generally similar to game board 10, but incorporates additional and/or alternative features which allow a user to restrict the movement of spacers 40 to particular regions of surface 31. Game board 50 comprises a base 60. Dividers 52 may engage with base 60 and extend along surface 31 of base 60, thereby dividing surface 31 of base 60 into a plurality of regions 62 (shown more clearly in Figure 8). Base 60 may comprise engagement members 51 with which dividers 52 may engage. For example, in some embodiments, engagement members 51 comprise apertures 56 which may receive and/or support dividers 52.

[0055] Dividers 52 may be fixedly or removably engaged with base 60. In some embodiments, a user may engage dividers 52 with base 60 in a user-defined arrangement, thereby creating user-defined regions 62. Thus, in some embodiments, a user may constrain the
permutations of arrangements of tiles 12 according to their preference; for example, the user may choose to place spacers 40 only in a particular region 62, thereby ensuring that tiles 12 located outside of that region 62 will not be spaced apart by a spacer 40. For instance, in a game board 50 having an 8 x 8 grid of tiles 12 (as with a conventional chess board), a user may arrange dividers 52 to define a region 62 which excludes the two outermost rows at either end of the board (i.e. the rows on which chess pieces are placed at the beginning of a conventional chess game) and includes the rows therebetween. The user may then place spacers 40 only in that region 62, thereby ensuring that the starting rows will not be adjusted in adjustment direction 9 by spacers 40 while still permitting the random distribution of spacers 40 within the region 62.

[0056] Dividers 52 may comprise any suitable shape, dimension, and/or material for extending along surface 31 and obstructing the movement of spacers 40. Dividers 52 may engage with base 60 in any suitable way. For example, dividers 52 may comprise elastic cords engageable at opposing ends with boundary 54 of base 60 (as shown in Figures 7 and 8) and engagement members 51 may comprise apertures 56 defined by boundary 54. As another example, dividers 52 may comprise rigid walls which may engage with surface 31 and/or boundary 54 and engagement members 51 may comprise grooves defined by surface 31 and/or boundary 54. Any suitable number of dividers may engage with base 60, subject to the constraints imposed by base 60 (e.g. depending on the number of grooves and/or apertures 56 provided by base 60, discussed below).

[0057] In some embodiments, including (for example) the embodiment of Figures 7 and 8, dividers 52 comprise elastic cords 57 having flanges 58 at either end. Boundary 54 may comprise apertures 56 which are sized so that elastic cords 57 may pass therethrough but flanges 58 may not. In some embodiments, boundary 54 is elongated in adjustment direction 9 (relative to boundary 34 of game board 10) to accommodate apertures 56. Each end of an elastic cord 57 may be slotted into an aperture 56 and held in place by flanges 58. Elastic cord 57 is resilient and sized so that elastic cord 57 is held taut when engaged with at least some pairs of apertures 56.

[0058] In some embodiments, frame 70 is wider than base 60 and/or boundary 54 in longitudinal and/or transverse directions 6, 8, thereby permitting frame 70 to be placed on base 60 without colliding with dividers 52 when engaged with base 60. In some embodiments, frame
70 is sized so that at least a portion of boundary 54 and flanges 58 protruding outwardly from boundary 54 fit inside a perimeter of frame 70. In some embodiments, frame 70 comprises engagement members 51 for receiving dividers 52 instead of or in addition to base 60.

[0059] There may be varying distances between apertures 56, so in some embodiments elastic cord 57 has an unstretched length which is no greater than the shortest distance between two apertures 56 on opposing sides of base 60 and a maximum stretched length no less than the longest distance between two apertures 56 on opposing sides of base 60. For instance, in an example embodiment where apertures 56 are provided on opposing sides of base 60, elastic cord 57 may have an unstretched length no greater than the width of base 60 in transverse direction 8 and a maximum stretched length no greater than the diagonal distance across base 60. In some embodiments, elastic cord 57 has larger or smaller stretched and/or unstretched lengths depending on the physical arrangement of apertures 56.

[0060] Boundary 54 may comprise any suitable arrangement of apertures 56; for example, Figure 8 shows an embodiment having transversely-opposing apertures 56 (i.e. apertures 56 are arranged on opposing sides of base 60). In some embodiments, boundary 54 comprises longitudinally-opposing apertures 56 (not shown) instead of, or in addition to, transversely-opposing apertures 56. For example, boundary 54 may comprise apertures 56 on each side, and not merely on two opposing sides. In some embodiments where boundary 54 comprises both transversely-and longitudinally-opposing apertures 56 (i.e. so that adjacent walls of boundary 54 may each have apertures 56), elastic cord 57 has an unstretched length which permits elastic cord 57 to be held taut between at least some pairs of apertures 56 on non-opposing sides of base 60. Since such non-opposing apertures 56 may be relatively near to each other than opposing apertures 56, elastic cord 57 may have a correspondingly shorter unstretched length.

[0061] Figure 8 more clearly illustrates an example arrangement of dividers 52 on base 60. A first divider 52A is held taut between a first aperture 56A and a second aperture 56B (which, in the depicted example, is defined by an opposing side of boundary 54 relative to first aperture 56A). A second divider 52B is held taut between a third aperture 56C and a fourth aperture 56D. First and second dividers 52A, 52B define a first region 62A (shown with shading) between them. Second and third regions 62B, 62C are defined between boundary 54 and the first and
second dividers 52A, 52B, respectively. In some embodiments, an aperture 56 may accommodate multiple dividers 52. In some embodiments, dividers 52 may cross paths, thereby increasing the number of regions 62 defined between dividers 52 and/or boundary 54. More or fewer dividers 52 may be engage with base 60, thereby providing more or fewer regions 62.

[0062] Spacers 40 may be placed within particular regions 62 and may be obstructed (by dividers 52) from moving into other regions 62. For example, a user may choose to randomly place spacers only within first region 62A. Thus, spacers 40 may be prevented from adjusting the spacing of tiles 12 corresponding to spacer retainers 32 within other regions 62B, 62C while still being permitted to move substantially freely and randomly within first region 62A.

[0063] As another example, a user may choose to randomly place a first set of spacers 40 within first region 62A and a second set of spacers 40 within second region 62B. The first and second sets of spacers 40 may differ in terms of number of spacers 40 and/or the characteristics of the spacers 40 (e.g. size or dimension, including in adjustment direction 9). For instance, the first set of spacers 40 may comprise more large spacers 40 than the second set of spacers 40. Such an arrangement of spacers 40 will cause a larger proportion of tiles 12 spaced apart from base 60 by a large amount to be located in first region 62A than in second region 62B. Even where the first and second sets of spacers are the same, differences in regions 62A and 62B may result in the topological differences; for example, if first region 62A is smaller than second region 62B, first region 62A may have a denser population of adjusted tiles 12.

[0064] As another example, equally-sized regions 62A and 62B may be provided with identical sets of spacers 40, thereby ensuring that spacers 40 are not disproportionately clustered in one of regions 62A and 62B. For instance, a single divider 52 may extend transversely across base 60 and bisect base 60 into two equally-sized regions 62 (each region corresponding to one player's half of game board 60; this arrangement of regions 62 is not shown in the drawings), and identical sets of spacers 40 may be placed in each of those regions 62. Such an arrangement may ensure that tiles 12 which are adjusted in adjustment direction 9 are distributed roughly equally between each player's side of game board 60.

[0065] Returning to Figure 7, in some embodiments frame 70 defines one or more apertures 72. Apertures 72 extend longitudinally or transversely along frame 70. Apertures 70 permit a
user to pass spacers 40 therethrough, thereby allowing a user to place spacers 40 on base 60 without necessarily removing frame 70 from base 60 and/or by only partially removing frame 70 (e.g. by lifting one side of frame 70 having an aperture 72 away from base 60). In some embodiments, base 60 is correspondingly shaped so as not to obstruct spacers 40 being passed through apertures 72. In some embodiments, apertures 72 are unbounded in adjustment direction 9; that is, apertures 72 may comprise indentations in frame 70 in adjustment direction 9. In some embodiments, apertures 72 are bounded in adjustment direction 9; that is, apertures 72 may comprise longitudinally and/or transversely-oriented holes, channels, or other passages in frame 70.

[0066] In some embodiments, game board 10 is used by moving at least a portion of frame 20 away from base 30 (e.g. by lifting frame 20 away from base 30, pivoting frame 20 away from base 30 about a hinged edge, and/or otherwise exposing at least a portion of base 30) and placing spacers 40 on surface 31. As described above, spacers 40 may be randomly distributed on surface 31 by, for example, propelling spacers 40 along surface 31. Spacers 40 may be retained by spacer retainers 32, as described above. Alternatively, or in addition, a user may deliberately place one or more spacers 40 at particular positions on surface 31, which may involve retaining such spacers 40 with particular space or retainers 32.

[0067] Frame 20 may then be placed on base 30, thereby causing one or more tiles 12 to abut the correspondingly-placed spacers 40. Tiles 12 abutting spacers 40 are spaced apart from base 30 in adjustment direction 9; the distance by which a tile 12 are spaced apart from base 30 is determined, at least in part, by a dimension of the corresponding spacer 40. Supports 22 may prevent tiles 12 from being spaced apart from base 30 by more than a predetermined distance when frame 20 is positioned on base 30; for example, supports 22 may be retained in apertures 14 by spacer retainers 26. Tiles 12 which do not abut spacers 40 are positioned relative to base 30 by the movement of frame 20 into position relative to base 30. Such tiles 12 either abut surface 31 or are spaced apart from base 30 to a lesser degree than tiles 12 abutting spacers 40. Thus, faces 16 of tiles 12 form a three-dimensional surface based on the placement of spacers 40.

[0068] Frame 70 and base 60 of game board 50 may similarly be used with spacers 40, tiles 12, and/or other elements described above. Further, as described above, a user may engage
dividers 52 with base 60 to define regions 62. The user may place spacers 40 within regions 62 by, for example, propelling spacers 40 along surface 31 within a particular region 62 and/or deliberately placing spacers 40 in particular positions within a region 62. Dividers 52 may engage with base 60 by slotting elastic cords 57 through apertures 56 so that flanges 58 are positioned exterior to boundary 54, thereby pulling elastic cords 57 taut across surface 31. Dividers 52 obstruct the movement of spacers 40, as described above. Dividers 52 may be placed by a user while frame 70 is moved away from base 60.

In some embodiments, a user may insert spacers 40 into the space between surface 31 and tiles 12 by passing spacers 40 through an aperture 72 in frame 70. In some embodiments, the user may pass spacers 40 through apertures 72 while frame 70 is positioned on base 60 (e.g. where base 60 is correspondingly shaped to permit such passage of spacers 40). In some embodiments, the user must at least partially move frame 70 away from base 60 in order to allow spacers 40 to pass through aperture 72 without being obstructed by boundary 54. In some embodiments, the user may flip game board 50 upside down so that tiles 12 are spaced apart from base 60 while inserting spacers 40 through apertures 72.

Many games may be played using game boards 10, 50. For example, game boards 10, 50 may be used to play chess, checkers, other games which use a tiled board, and/or variants thereof. One example of a game which may be played with game boards 10, 50 is a "king of the hill" variant of chess. In this example game, a user places a single spacer 40 on surface 31, thereby causing a single tile 12 to be elevated in adjustment direction 9 relative to other tiles 12. The players may arrange their chess pieces on tiles 12 as in a customary game of chess. The first player to place his or her king piece (not shown) on the elevated tile 12 wins. As will be apparent from the foregoing disclosure, game boards 10, 50 may be used to play a variety of games instead of, or in addition to, this example game. The use of game boards 10, 50 is not restricted to any one game or set of rules.

Interpretation of Terms

Unless the context clearly requires otherwise, throughout the description and the claims:
"comprise", "comprising", and the like are to be construed in an inclusive sense, as opposed to an exclusive or exhaustive sense; that is to say, in the sense of "including, but not limited to";

"connected", "coupled", or any variant thereof, means any connection or coupling, either direct or indirect, between two or more elements; the coupling or connection between the elements can be physical, logical, or a combination thereof; elements which are integrally formed may be considered to be connected or coupled;

"herein", "above", "below", and words of similar import, when used to describe this specification, shall refer to this specification as a whole, and not to any particular portions of this specification;

"or", in reference to a list of two or more items, covers all of the following interpretations of the word: any of the items in the list, all of the items in the list, and any combination of the items in the list;

the singular forms "a", "an", and "the" also include the meaning of any appropriate plural forms;

the term "plurality" means two or more than two.

[0072] Words that indicate directions such as "vertical", "transverse", "horizontal", "upward", "downward", "forward", "backward", "inward", "outward", "vertical", "transverse", "left", "right", "front", "back", "top", "bottom", "below", "above", "under", and the like, used in this description and any accompanying claims (where present), depend on the specific orientation of the apparatus described and illustrated. The subject matter described herein may assume various alternative orientations. Accordingly, these directional terms are not strictly defined and should not be interpreted naffowly.

[0073] Specific examples of systems, methods and apparatus have been described herein for purposes of illustration. These are only examples. The technology provided herein can be applied to systems other than the example systems described above. Many alterations, modifications, additions, omissions, and permutations are possible within the practice of this invention. This invention includes variations on described embodiments that would be apparent to the skilled addressee, including variations obtained by: replacing features, elements and/or acts with
equivalent features, elements and/or acts; mixing and matching of features, elements and/or acts from different embodiments; combining features, elements and/or acts from embodiments as described herein with features, elements and/or acts of other technology; and/or omitting combining features, elements and/or acts from described embodiments.

[0074] It is therefore intended that the following appended claims and claims hereafter introduced are interpreted to include all such modifications, permutations, additions, omissions, and sub-combinations as may reasonably be inferred. The scope of the claims should not be limited by the preferred embodiments set forth in the examples, but should be given the broadest interpretation consistent with the description as a whole.
WHAT IS CLAIMED IS:

1. A game board comprising:
   - a base having a surface;
   - a plurality of tiles positionable on the surface, the plurality of tiles comprising a first tile having a first face and a second tile having a second face;
   - a first spacer positionable between the first tile and the surface, the first tile spaced apart from the surface in an adjustment direction while the first spacer is positioned between the first tile and the surface, the first face out-of-plane with the second face while the first spacer is positioned between the first tile and the surface.

2. A game board according to claim 1 wherein the base comprises one or more spacer retainers on the surface, the first spacer retainable by a first spacer retainer of the one or more spacer retainers, the first spacer positionable between the first tile and the base while retained by the first spacer retainer.

3. A game board according to claim 2 wherein the first spacer retainer comprises an indentation defined by the surface.

4. A game board according to any one of claims 2 to 3 wherein the first spacer retainer comprises a magnetic attractor causing the first spacer to be magnetically attracted to the first spacer retainer.

5. A game board according to any one of claims 2 to 4 wherein:
   - the base comprises a plurality of spacer retainers and the first spacer retainer is one of the plurality of spacer retainers;
   - the first spacer is one of a plurality of spacers, the plurality of spacers retainable in a substantially random arrangement by the plurality of spacer retainers.

6. A game board according to claim 5 wherein the plurality of spacer retainers are spaced apart, and the plurality of spacers are movable along the surface of the base between adjacent ones of the spacer retainers.
7. A game board according to claim 6 wherein at least one of the plurality of spacers is rollable along the surface of the base.

8. A game board according to any one of claims 1 to 7 comprising:
   a second spacer, the second spacer larger in the adjustment dimension than the first spacer, the second spacer positionable between the second tile and the base, the second tile spaced apart from the base in the adjustment direction by a second adjustment distance while the second spacer is positioned between the second tile and the base; wherein the first tile is spaced apart from the base in the adjustment direction by a first adjustment distance while the first spacer is positioned between the first tile and the base, the first adjustment distance being less than the second adjustment distance.

9. A game board according to any one of claims 1 to 8 comprising:
   a frame positionable on the base; and one or more supports coupled to the frame, the plurality of tiles supportable by the one or more supports; wherein the first tile is supported by a first support of the one or more supports and is movable in the adjustment direction relative to the first support.

10. A game board according to claim 9 wherein:
    the first tile defines a cavity extending through the first tile in a longitudinal direction; the first tile is positionable to cause a portion of the first support to extend through the cavity; and
    the cavity has a greater dimension in the adjustment direction than the portion of the first support.

11. A game board according to claim 9 wherein the first tile comprises a support retainer at an end opposing the first face in the adjustment direction, the first support retainable in the cavity by the support retainer.

12. A game board according to any one of claims 9 to 11 wherein:
the one or more supports comprise a plurality of supports extending in a longitudinal direction and spaced apart in a transverse direction, the longitudinal and transverse directions substantially parallel to the surface; and each of the plurality of supports supports a subset of the plurality of tiles.

13. A game board according to any one of claims 1 to 12 wherein the base comprises one or more engagement members for engaging one or more dividers, the one or more dividers defining a plurality of regions and restricting movement of the first spacer to one of the plurality of regions when engaged with the base.

14. A game board according to claim 13 wherein the one or more engagement members comprise a plurality of apertures defined by the base and at least one of the one or more dividers comprises an elastic cord having flanges at opposing ends, the elastic cord receivable by at least two of the plurality of apertures and, when the elastic cord is received by the at least two apertures, the elastic cord extending between the at least two apertures and resiliently held in place by the flanges.

15. A method for arranging one or more of a plurality of tiles on a game board, the method comprising:

   positioning a first spacer between a first tile of the plurality of tiles and a base of the game board, thereby spacing the first tile apart from the base in an adjustment direction; and

   positioning a second tile of the plurality of tiles relative to the base so that a face of the first tile is out-of-plane with a face of the second tile.

16. A method according to claim 15 wherein positioning a first spacer comprises retaining the first spacer by a first spacer retainer of the base.

17. A method according to claim 16 wherein retaining the first spacer by a first spacer retainer comprises magnetically attracting the first spacer toward the first spacer retainer.

18. A method according to any one of claims 15 to 17 wherein the first spacer retainer is one of the plurality of spacer retainers and the first spacer is one of a plurality of spacers and the
method further comprises retaining the plurality of spacers by the plurality of spacer retainers in a substantially random arrangement.

19. A method according to claim 18 wherein retaining the plurality of spacers by the plurality of spacer retainers in a substantially random arrangement comprises propelling the plurality of spacers to move along the base, at least some of the plurality of spacers moving between adjacent spacer retainers.

20. A method according to claim 19 wherein propelling the plurality of spacers to move along the base comprises rolling at least one of the plurality of spacers along the surface of the base.

21. A method according to any one of claims 15 to 20 wherein positioning the second tile relative to the base comprises positioning a second spacer between the second tile and the base, thereby spacing the face of the second tile apart from the base in an adjustment direction by a second adjustment distance; and wherein the face of the first tile is spaced apart from the base in the adjustment direction by a first adjustment distance, the first adjustment distance being less than the second adjustment distance.

22. A method according to any one of claims 15 to 21 comprising:
   positioning a frame on the base, the frame coupled to one or more supports supporting the plurality of tiles; and
   moving the first tile in the adjustment direction relative to a first support supporting the first tile.

23. A method according to claim 22 comprising extending a portion of the first support through a longitudinal cavity defined by the first tile and retaining the portion of the first support in the cavity by a support retainer of the first tile.

24. A method according to any one of claims 22 to 23 wherein positioning the frame on the base causes the first tile to be spaced apart from the base by the first spacer.

25. A method according to any one of claims 15 to 24 comprising engaging one or more dividers with a plurality of engagement members, the one or more dividers defining a plurality of
regions and restricting movement of the first spacer to one of the plurality of regions when engaged with the base.

26. A method according to claim 25 wherein the one or more engagement members comprise a plurality of apertures defined by the base and at least one of the one or more dividers comprises an elastic cord having flanges at opposing ends, and wherein engaging the one or more dividers with the plurality of engagement members comprises receiving the elastic cord by at least two of the plurality of apertures, thereby causing the elastic cord to extend between the at least two apertures and to be resiliently held in place by the flanges.
A. CLASSIFICATION OF SUBJECT MATTER
IPC: A63F 3/02 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: A63F 3/02 (2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Databases used: Canadian Patent Database; Questel Orbit; USPTO West, Google Patents
Search words used: three dimensional, board game, chess, checkers, spacers, sphere(ical), ball, tile(s), moveable.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>A</td>
<td>US 6,257,575 (Ortega) 10 July 2001 (10-07-2001)</td>
<td>1 to 26</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

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15 November 2016 (15-11-2016)

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