Title: MODULAR TILE AND BLOCK KIT

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Abstract: The present application provides a modular tile and block kit comprising one or more tiles and one or more connectors for connecting adjacent tiles. The connectors are adapted to be positioned within channels on surfaces of adjacent tiles. The present application also provides tiles for use in a modular tile assembly.
MODULAR TILE AND BLOCK KIT

FIELD

[0001] The present application pertains to the field of tiles and tiling. More particularly, the present application relates to modular tile and block kits.

BACKGROUND

[0002] Interlocking tiles are commonly used in landscaping, flooring, building construction, art work or for puzzles and games. Typically, individual tiles are placed adjacent to each other and are interconnected to form a larger tile assembly. The connection between individual tiles can range from a simple abutment of adjacent sides or edges of the tiles, or can include interconnecting a portion of one tile with a complementary portion of an adjacent tile. This interconnection can be integral to the individual tiles, or can be facilitated by an external interconnecting means.

[0003] Puzzles, particularly of the jigsaw type, are popular recreational diversions which employ interlocking pieces. Puzzles offer not only entertainment to the user, but can also help develop and fine tune motor skills and spatial reasoning, particularly in children. There are a number of types of puzzles, each offering a particular level of difficulty based on, for example, the size and number of puzzle pieces, diversity of colours and patterns appearing on the pieces, and the means of connecting different pieces within a puzzle assembly, including the complexity of the interconnecting means.

[0004] While the entertainment component of a number of puzzles ends when the puzzle assembly is completed, other puzzles can be multi-functional. Often times, puzzles are not intended to challenge the mind but are instead are intended to be used once the pieces are ultimately assembled. Puzzle pieces can be arranged in an assembly to form one or more completed images or tangible components that can provide other uses for the puzzle. If a completed image is assembled, it can be used as a display (such as a photograph or work of art), a reading tool (such as shapes, text or colours), or can contain tactile features that can be used in connection with other toys, puzzles or games.
For example, a puzzle can be assembled to form the image of a patchwork of "roads", presented in an urban landscape, often with buildings, trees or other landmarks. Children use miniature model cars to simulate driving on the roads. Thus, puzzles of this sort can offer hours of entertainment beyond the initial assembly of the puzzle.

Puzzles of this sort are often difficult to assemble, and require manual dexterity. There is typically a requirement to attach specific pieces in a specific orientation or arrangement in order to ensure a proper assembly. This can aggravate or distract younger users.

Typical puzzles contain pieces having "male" and "female" portions thereon. The "male" portion - such as a tab - extends outward from the piece to engage with a "female" portion - such as a slot - thereby forming a connection between the two pieces. Depending on the orientation of the portions, the access between male and female can be within adjacent sides, or beneath a surface of one or both of the pieces, such as in cases where the female portion is recessed and hidden from view. Because of the fixed nature of the male and female portions, a successful connection between adjacent pieces is dependent on the spatial alignment and orientation of the portions with each other, as well as a proper fit between the male and female portions. Failure to meet these criteria can lead to an improper and unstable connection, and an unattractive assembly.

Puzzles comprising pieces having male and female components are well known in the art. US Patent No. 5,823,531 (Huber), US Patent No. 5,609,910 (Blackburn), US Patent No. 4,404,476 (Marsh), US Patent No. 3,579,882 (Miyahune), GB Patent No. 816,076 (Tacey) and Greek Patent document 900100876 disclose puzzles with typical tab-and-slot pieces. These require careful orientation of the pieces to ensure a proper connection between male and female portions of adjacent pieces.

Other puzzle-type assemblies are shown in US Patent No. 4,822,051 (Nowak), US Patent No 3,921,312 (Fuller), US Patent No. 4,478,583 (Sellers), and US Patent No. 1,225,305 (Barnard). The pieces have a "tongue-and-groove" connection means, whereby the "tongue" of one piece slots into the "groove" of an adjacent piece. However, this orientation allows adjacent pieces to inadvertently "slide" against each other, which can compromise the integrity and appearance of the overall puzzle assembly. US Patent No. 2,445,421 (Davis) provides a combination of tab-and-slot and tongue-and-groove.
Another tongue-and-groove assembly is shown in US Patent No. 2,923,551 (Pope). In this example, dove-tailed tabs on the edges of pieces slide into corresponding slots to form an assembly, such as a wall. Replacing an individual piece within the assembly (such as to change a colour or design), however, requires the removal of one or more pieces above the desired piece, which can be technically difficult for younger users.

There is a need for a more versatile modular tile assembly with a simpler attachment mechanism.

This background information is provided for the purpose of making known information believed by the applicant to be of possible relevance to the present invention. No admission is necessarily intended, nor should be construed, that any of the preceding information constitutes prior art against the present invention.

SUMMARY

An object of the present invention is to provide a modular tile and block kit.

In accordance with an aspect of the present invention, there is provided a modular tile assembly kit comprising a plurality of tiles, and one or more connectors configured to attach to one or more of said plurality of tiles for connecting with another one or more of said plurality of tiles. The kit can further comprise one or more structures, such as blocks, which are configured to receive said one or more connectors and connectable with one or more of said plurality of tiles or with one or more additional structures.

In accordance with another aspect, there is provided a tile for use in the modular tile assembly kit, comprising a channel within a surface of the tile for receiving a connector, the connector being adapted for connecting the tile with an adjacent tile.

In a further aspect, there is provided a connector for the modular tile assembly kit, the connector comprising: a bar portion having first and second ends; a first arm at the first end of the bar and generally perpendicular to the bar in a plane, the first arm having first and second portions; a second arm at the second end of the bar and being generally perpendicular to the bar in said plane, the second arm having first and second portions; the bar, first arm and second arms having a coplanar surface, wherein the first end of the bar is positionable within
a channel on a surface of the tile extending inwardly from an edge of the tile, and the first arm is positionable within a cross channel generally perpendicular to said channel. The second end of the bar is positionable within a corresponding channel on a surface of an adjacent tile extending inwardly from an edge of the adjacent tile, and the second arm is positionable within a corresponding cross channel on the surface of the adjacent tile and generally perpendicular to said corresponding channel.

[0017] Advantageously, the present invention provides a tile assembly with increased flexibility and utility. The versatility of the connector permits its use with any suitable tiles having compatible channels thereon. Unlike typical tiles of the puzzle type which require mating "male" and "female" portions of the same shape and dimension, the connector as described herein can be made universally compatible with tiles having a complementary channel arrangement. The compatibility allows for locking of adjacent tiles by the connector, thus reducing shifting or other disorientation of the tiles within the tile assembly.

[0018] Further, the connector is ideally placed within the channels on the bottom side of tiles from a bottom-to-top direction, rather than in an edge-to-edge direction. Thus, adjacent tiles can be dropped and added (and, by corollary, lifted and removed) from the tile assembly. This is particularly useful for connecting adjacent tiles in a section of a tile assembly where movement within a confined space is compromised (such as against a wall or other structure abutting an exterior edge of the assembly). Individual tiles do not require a "male" portion which protrude out from an edge of the tile, thereby allowing the edges of the tiles at the perimeter of the tile assembly to be flush, rendering the tile assembly more aesthetically pleasing.

BRIEF DESCRIPTION OF THE FIGURES

[0019] For a better understanding of the present invention, as well as other aspects and further features thereof, reference is made to the following description which is to be used in conjunction with the accompanying drawings, where:

[0020] Figure 1 provides a view of a top surface of an exemplary tile as described herein;

[0021] Figure 2 provides a view of a bottom surface of an exemplary tile as described herein;
[0022] Figure 3 shows a view of a bottom surface of another exemplary tile as described herein;

[0023] Figure 4 shows a connector as described herein;

[0024] Figure 5 shows a bottom surface of the tile from Figure 2, with a connector of Figure 4 engaged therewith;

[0025] Figure 5A shows a side view of the connection of Figure 5;

[0026] Figure 6 shows a view of a bottom surface of adjacent tiles connected with a connector of Figure 4;

[0027] Figure 6A shows another embodiment of the bottom surfaces of adjacent tiles connected with a connector of Figure 4;

[0028] Figure 7 shows a bottom surface of a structure as described herein;

[0029] Figure 8 shows the bottom surface of the structure of Figure 7 with a connector engaged therewith;

[0030] Figure 9 shows a top surface of an exemplary tile with a connector engaged therewith;

[0031] Figure 10 shows an exemplary tile assembly of a adjacent tiles and a structure connected therewith;

[0032] Figure 11 shows an exemplary "road" tile assembly as described herein.

[0033] Figure 12 shows different embodiments of tiles (Fig. 12A) and a connector (Fig. 12B) for use in the present assembly;

[0034] Figure 13 shows an exemplary assembly of stacked tiles and structures that can be made with the tiles of Fig. 12A and connector of Fig. 12B.

[0035] Figure 14 shows an exemplary tile assembly grid as viewed from the bottom surface of adjacent connected tiles.
5 DETAILED DESCRIPTION

[0036] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs.

[0037] As used in the specification and claims, the singular forms "a", "an" and "the" include plural references unless the context clearly dictates otherwise.

[0038] The term "comprising" as used herein will be understood to mean that the list following is non-exhaustive and may or may not include any other additional suitable items, for example one or more further feature(s), component(s) and/or ingredient(s) as appropriate.

[0039] As used herein, a "tile" is a member having at least one substantially planar surface. The tiles can have any number of edges, such as one, two, three, four or more edges, and can be any thickness, shape or size. By "substantially planar", it is intended to include tiles having one or more flat surfaces, or having one or more surfaces comprising recesses or channels (as described below), but ideally having at least one surface which is parallel to a surface on which the tile is placed (such as a floor, an adjacent tile, or the like). The tiles as described herein are used together, either separately or conjoined, to form a modular tile assembly. Tiles can also be circular or have one or more curved edges. The tiles are ideally of a shape such that one or more edges of each tile abuts one or more edges of an adjacent tile when placed together. Adjacent tiles need not be the same size or shape, nor have the same number or length of edges.

[0040] As used herein, a "structure" is a member which can be used with one or more tiles. Structures are placed on top, below, and/or beside adjacent tiles, and can be connected therewith, or with other structures. A structure may or may not have at least one planar surface. Suitable structures can include blocks to represent different features of a modular tile assembly, including buildings, people, flora (such as trees or the like), or any member as desired by the user.

[0041] A "modular tile assembly" as described herein is an assembly comprising a number of components but, ideally, comprises a plurality of interconnecting tiles and/or structures.
Exemplary tiles which can be used in accordance with the present assembly are shown in Figs. 1 and 2. In one particular embodiment, a tile 10 is four-sided, such as square or rectangular shaped. A typical tile has a top surface 10, a bottom surface 14, and one or more edges 16. Tiles can be made of any durable material. Examples include wood (or wood-like material, such as particle board or synthetic wood), plastic (including polymer-based plastics, including poly(methyl methacrylate) and the like), cardboard, gypsum, glass or metal. The tiles can be of any desired thickness and flexibility.

Ideally, a top surface 12 of a tile is substantially planar, though any desired surface landscape may be envisioned. This can help produce a more attractive assembly surface as well as promoting a more entertaining experience for the user. To achieve this overall smooth surface, the tiles should ideally be substantially flush when the edges of adjacent tiles abut each other. The top surface can be devoid of any colour or design; however, either surface can be covered with a protective material, such as stain-resistant compound or the like. The top surface can be ornamented with a decoration or image.

Tiles need not be four-sided; indeed, tiles can be circular or of another shape such as a triangle, "star"-shape, pentagon, hexagon, etc. The shapes of the tiles need not be regular and can be oblong (i.e., a form being elongated in one direction), including oval or irregularly shaped tiles.

When in a tile assembly, the top surface of a tile is displayed upward to the user while the bottom surface is faced downward toward the surface on which the tile assembly is constructed. Adjacent tiles interconnect via one or more of the edges of the respective tiles. Any or all of the edges of a tile can connect with any or all of the edges of an adjacent tile.

In one embodiment, a tile for use in the modular assembly as described herein has one or more recesses on the bottom surface for permitting connection with an adjacent tile. Recesses are typically in the form of a channel cut out of a bottom surface. The channels can be any depth but typically do not extend through to the top surface of the tile. An exemplary tile displaying the channels on the bottom surface of a tile is shown in Figure 2. An edge channel (such as edge channels 18, 21 and 22) extends from an edge (such as edges 16B, 16A and 16C, respectively) of the tile inward generally perpendicularly thereto. An edge channel, such as edge channel 18 can extend beyond a cross channel 20 (continuing as cross channel 23), or can terminate at a cross channel (such as edge channel 26 which terminates at cross
channel 27). A cross channel 20 forms a "T" or cross intersection with the edge channel 18. The cross channel 20 can extend all or part of a length parallel to one edge 16. In the example shown, edge channel 18 terminates at cross channel 20. Cross channel 20 extends from edge channel 22 on edge 16C to edge channel 21 on opposite edge 16A of the tile. In addition, cross channel 20 can itself be an intersecting channel to one or more other cross channels, such as cross channels 23 and 25, for example.

[0047] Edge channel 26 is framed by edge portions 52 and 54, and cross channel 20 is framed by bottom surface 14, and edge portions 52 and 54. Edge portions 52 and 54 are generally flush with bottom surface 14 to ensure that the tile maintains stability when placed on a surface, such as a floor or table.

[0048] Figure 3 shows another embodiment of a bottom surface of a tile. In this example, the tile comprises four edge channels 30 which terminate at four cross channels 32, which together form a square around the bottom surface of the tile.

[0049] As would be appreciated by the skilled person, a tile can have any number of edge channels. As mentioned above, a tile can have any number of edges and does not need to be square or rectangular. Therefore, depending on the number of edges of the tile, any number of the edges can have one or more (or no) edge channels. Further, edge channels can be spaced apart at any desired location. In other words, the edge channels and corresponding cross channels need not be regularly spaced or distributed on a tile. Indeed, a tile having a plurality of edges can have one or more of these edges with or without an edge channel extending therefrom.

[0050] The channels permit the placement of connectors therein, such as connector 40 as best shown in Fig. 4. The connector 40 is ideally of a durable material, such as wood, metal or plastic. The connector can also be sufficiently flexible to permit a twisting or rotating action thereof. In one embodiment, connector 40 is a member having the shape of an “H” or the like and is generally of three components: arms 42 and 44, and bar 46 which connects the arms. The connector 40 can be of any dimension, and can include arms or a bar of any desired length, thickness or proportion. In some embodiments, the bar 46 of the connector 40 is longer than either of the arms 42, 44. The connector can have arms with rounded edges rather than sharp, square edges, thus rendering the connectors less of a safety hazard for younger users.
Fig. 5 shows one example of a connector inserted within channels within the bottom surface of a tile. Tile 50 has a pattern of channels similar to that shown in Fig. 2. Connector 40 is inserted into the channels of the tile 50. Arm 44 comprises first arm end 56 and second arm end 58, which extend on either side of bar 46. To insert the connector, arm 44 is placed into cross channel 20, and bar 46 is inserted into edge channel 26. Placement of the connector into the channels can be achieved by any desired means, such as "dropping" the connector into the channels, by placing the arm into the cross channel first, or by placing the bar into edge channel first. Placement of the connector terminates when the connector fits snugly within the channels. Ideally, the cross channel and edge channel should be sufficiently deep so that a connector will fit within the channels such that the arms and/or bar of the connector do not protrude beyond the bottom surface 14 of the tile, maintaining the connector substantially flush with the bottom surface of the tile. Thus, one indication that the connector is firmly placed is when the bottom surface of the connector (i.e., the surface not in contact with the channel) is substantially flush with the bottom surface 14 of the tile, and/or with the edge portions 52 and 54. In this typical arrangement, a portion of the bar 46 and a second arm 42 of connector 46 will extend beyond one edge 16 of the tile 50. This portion of the bar and second arm are now in position to connect to an adjacent tile. Another view of the connector attached to a tile is shown in Fig. 5A.

Connectors can fit in any compatible channels that are wide enough to receive a connector. Thus, the arms 42, 44 and bar 46 of a connector can be just wide enough or narrower than a cross channel and edge channel, respectively.

It is contemplated that the connector can be of any particular shape or size to permit connection of adjacent tiles. For example, the bar 46 can be longer to permit multiple tiles or structures to be placed adjacent to each other using only one connector. Further embodiments of the connector (not shown) can include multiple bars and/or multiple arms to permit multiple connections of adjacent tiles and/or structures. Connectors can also be different shapes, not exclusively “H” shaped. For example, they can be "S", "Y" or "T" shaped, providing at least one bar to fit within the edge channel.

Any number of connectors may be used to connect any number of tiles to form the modular tile assembly as described herein. This flexibility permits modular tile assemblies of any desired shape or size to be formed. For instance, in some embodiments, the arms of a connector can be oriented within adjacent edge channels, leaving the bar and lower portions...
of the arms exposed rather than inserted within the edge channel. However, in most embodiments, it is contemplated that the connector will be inserted with the arms in the cross channel and a portion of the bar within the edge channel, as this arrangement provides greater stability for "locking" the connector into place within the channels of the tile. This greater stability also reduces any shifting of tiles that may occur if the tile assembly is jostled or otherwise disoriented. Connectors with longer bars can be used with tiles having longer edge channels with corresponding cross channels positioned further from the side of the tile, i.e., further towards the interior of the bottom surface of the tile. This particular arrangement may be desirable to enhance stability of the tile assembly.

[0055] Fig. 6 shows a connection between adjacent tiles viewed from the bottom. Bottom surfaces 14, 70 of two adjacent tiles 50 and 60 are shown. The arm 44 and bar 46 of connector 60 are placed within the channels of tile 50 as described above. Arm 42 and a portion of bar 46 are positioned outside of tile 50, such that arm 42 and the portion of bar 46 jut outward from edge 16. To connect to adjacent tile 60, arm 42 is inserted into cross channel 32 and the portion of bar 46 is inserted into edge channel 30 of tile 60. The connector 46 can then be pressed within the channels (either by pressing on the connector directly, or by pressing the top surface of the tile) such that the connector 40 is substantially flush with the bottom surface 70 of the tile 60. In this ideal arrangement, the addition of connector 40 is complete when the surface of the connector is substantially also flush with edge portions 72 and 74 of tile 60. Ideally, the connector should be substantially flush with the bottom surface to maintain a smooth surface without any protruding portions which could impair the stability of the tile assembly when placed on a surface, such as a table or floor.

[0056] Like-shaped tiles need not connect to like-shaped tiles. For example, a square tile need not connect with another square tile. As shown in Fig. 6A an edge 65 at the long end of a rectangular tile 61 can connect with a corresponding portion of an edge 16 of a square tile 60.

[0057] Alternatively, the connector can be placed in the channels by inserting arms 42 and 44 into multiple edge channels, such as adjacent edge channels 18 and 26. Thus, to connect a first tile with a second tile, portions of the arms extending beyond the side of the tile can be inserted into edge channels of an adjacent tile.
[0058] It is desirable, but not required, that the connector is firmly held within the channels to ensure that the connector does not readily become disengaged during use of the tile assembly. In a typical assembly, insertion of the connector into the channels "locks" the connector in place. This is achieved because the arm(s) of the connector are held in place by the walls of the cross channel, which provide resistance against an edge of the connector arm(s). A firmly placed connector will reduce shifting or other movement of the connector within the channels, thus maintaining the connector flush with the bottom surface of the tile and improving stability of the tile.

[0059] The connector can be used to connect tiles with tiles or with other pieces which can be used in the modular tile assembly. For example, "three-dimensional" structures (i.e., pieces which extend upward or downward from a plane parallel to the top and/or bottom surface of a tile) can be connected to tiles or to each other via a connector as described herein. Fig. 7 shows one exemplary embodiment of a structure, as shown from the bottom surface. Exemplary structures can include buildings, bridges, or natural scenery such as trees. Ideally, these structures can have portions thereof, such as on a bottom surface thereof, that contain channels for receiving a connector similar to the tiles described herein. In some embodiments, the structures can have a base resembling a tile and having channels recessed therein similar to other tiles of the assembly.

[0060] As best shown in Fig. 8, connector 40 is attached to structure 86 in a similar manner as with tiles 50 and 60 described herein. Arm 44 is inserted into cross channel 84, while a portion of bar 46 extends through edge channel 82. Arm 46 and an exterior portion of bar 46 extend away from the structure and are available to connect to an adjacent tile or structure, as desired.

[0061] Figs. 9 and 10 show tiles and structures arranged with the bottom surfaces facing downward toward a fixed surface. In Fig. 9, tile 10 has top surface 12, and connector 40 is shown extending from the tile, including the portion of the bar 46 and arm 42, which are available to connect with an adjacent tile or structure. In Fig. 10, tile 10 is connected to tile 92 and structure 86. The openings of edge channels 30 and 94 are shown. These edge channels are available for receiving additional connectors to connect any more desired tiles and/or structures. Unlike traditional puzzle pieces, a tile as described herein does not have "male" portions extending outward from an edge of the tile. Thus, a tile can be readily
positioned against a fixed structure (such as a wall or the like) if desired, or additional objects can be placed immediately adjacent a tile without having interference from a male portion.

[0062] The top surface of any of the tiles can be ornamented with any desired design. In one example, a portion of a roadway is present on the top surface of the tile. Adjacent tiles, when assembled, display a lattice of interconnecting "roads" on the surface of the tiles. A user, such as a child, can "drive" a toy vehicle on the lattice of roads. An example of this layout is shown in Fig. 11.

[0063] Further, one or more tiles can be modified to include a three-dimensional structure thereon if desired. The structure can optionally have channels for receiving a connector on a top surface of the structure for connecting additional levels of adjacent structures which are added on top of each other, if desired. In some embodiments, the top surface of a tile need not be planar and can have channels similar to the bottom surface. In this way, for example, tiles can be "stacked" on to each other and connected to adjacent "stacked" tiles and/or structures.

[0064] Fig. 12 shows a different embodiment of a tile and connector that can be used in a modular assembly as described herein. Tiles 96 are "double sided", that is, they have edge channels and cross channels on both the top and bottom surfaces. In Fig. 12A, the top surfaces 102 of the tiles are shown with connector 100. This permits further tiles and/or structures to be placed on top of the tiles. As would appreciated, a connector for use with the top surface of a tile need not be substantially flush with the top surface. This is because, unlike the bottom surface, it is typically not required for the top surface to be in contact with a floor, fixed platform, or the like. In these embodiments, connectors for use with the top surface can be thicker than connectors used for a bottom surface. An exemplary connector of this sort is shown in Fig. 12B. Thick connector 100 has a higher profile than connector 40. Using thick connector 100, additional tiles and/or structures can be stacked on top of each other, with one connector inserted into the cross channels of adjacent (i.e., stacked) tiles. Thus, the thick connector 100 can be used to "lock" stacked tiles/structures together, reducing the likelihood of the stacked tiles and/or structures from toppling over.

[0065] Fig. 13 shows an exemplary assembly of stacked tiles and structures that can be used with the double sided tiles of Fig. 12A and thick connector of Fig. 12B.
Fig. 14 shows an exemplary layout of tiles in a tile assembly as described herein. Multiple connectors 40 are shown. The connectors can be positioned at suitable locations within the edge channels and cross channels on the bottom surface of the tiles. The tiles can be any combination of square, rectangular, or other shaped tiles to form the tile assembly. Similarly, one or more structures may be added if desired. As would be understood, this assembly represents only one of an infinite number of combinations of tiles that can be achieved.

In other embodiments, the tile assembly as described herein can be used for applications such as flooring, landscaping, building construction, or for decorative purposes. Conveniently, the tiles in such an assembly can be added, replaced or removed without significant disruption of the assembly.

All publications, patents and patent applications mentioned in this Specification are indicative of the level of skill of those skilled in the art to which this invention pertains and are herein incorporated by reference to the same extent as if each individual publication, patent, or patent applications was specifically and individually indicated to be incorporated by reference.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.
THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A modular tile assembly kit comprising:
   a plurality of tiles, and
   one or more connectors configured to attach to one or more of said plurality of tiles for connecting with another one or more of said plurality of tiles.

2. The kit of claim 1, further comprising one or more structures which are configured to receive said one or more connectors.

3. The kit of claim 2, wherein the structures are connectable with one or more of said plurality of tiles or with one or more additional structures.

4. A tile for use in the modular tile assembly kit of claim 1, comprising
   a channel within a surface of the tile for receiving a connector, the connector being adapted for connecting the tile with an adjacent tile.

5. The tile of claim 4, wherein the connector comprises a bar portion having first and second ends;
   a first arm at the first end of the bar and generally perpendicular to the bar in a plane,
   the first arm having first and second portions; and
   a second arm at the second end of the bar and being generally perpendicular to the bar in said plane, the second arm having first and second portions;
   the bar, first arm and second arms having a coplanar surface.

6. The tile of claim 5, wherein the first end of the bar is positionable within a channel on a surface of the tile extending inwardly from an edge of the tile, and the first arm is positionable within a cross channel generally perpendicular to said channel.

7. A connector for the modular tile assembly kit of claim 1, said connector comprising
   a bar portion having first and second ends;
   a first arm at the first end of the bar and generally perpendicular to the bar in a plane,
   the first arm having first and second portions; and
a second arm at the second end of the bar and being generally perpendicular to the bar in said plane, the second arm having first and second portions;
the bar, first arm and second arms having a coplanar surface.

8. The connector of claim 7, wherein the first end of the bar is positionable within a channel on a surface of the tile extending inwardly from an edge of the tile, and the first arm is positionable within a cross channel generally perpendicular to said channel.

9. The connector of claim 7, wherein the second end of the bar is positionable within a corresponding channel on a surface of an adjacent tile extending inwardly from an edge of the adjacent tile, and the second arm is positionable within a corresponding cross channel on the surface of the adjacent tile and generally perpendicular to said corresponding channel.

10. The connector of any one of claims 7 to 9, in the shape of an “H”.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A63H 33/08 (2006.01) , A63F 9/10 (2006.01) , A63F 9/12 (2006.01) , E04C 2/40 (2006.01) .
E04F 13/07 (2006.01) , E04F 13/076 (2006.01) , E04F 13/21 (2006.01) , E04F 15/00 (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: A63H 33/08 (2006.01) , A63F 9/10 (2006.01) , A63F 9/12 (2006.01) , E04C 2/40 (2006.01) .
E04F 13/07 (2006.01) , E04F 13/076 (2006.01) , E04F 13/21 (2006.01) , E04F 15/00 (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)
TotalPatent, Canadian Patent Database, WEST, keywords: connect, tile, puzzle

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>US2407927A: (Hayden, E.) 17 September 1946 (17-09-1946)</td>
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[X] See patent family annex.

Further documents are listed in the continuation of Box C.

Date of the actual completion of the international search: 03 July 2013 (03-07-2013)
Date of mailing of the international search report: 30 July 2013 (30-07-2013)

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, CI 14 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001-819-953-2476

Authorized officer
AiTiie Dunse
819-934-0086

Form PCT/ISA/210 (second sheet ) (July 2009)
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