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(54) **Structure of pieces of a 3D jigsaw puzzle**

(57) A 3D jigsaw puzzle includes puzzle pieces (2) each having multiple arms (211) and cutouts (212) structurally complementary to the arms (211) of an adjacent puzzle piece (2). A surface engagement (A) exists between a peripheral edge defining each of the arms (211) of a puzzle piece (2) and a peripheral edge defining each

of the cutouts (212) of the adjacent puzzle piece (2) so that the two adjacent puzzle pieces (2) are combined. A linear engagement (B) exists between opposite sides defining each arm (211) of the puzzle piece (2) and opposite sides defining each cutout (212) of the adjacent puzzle piece (2).

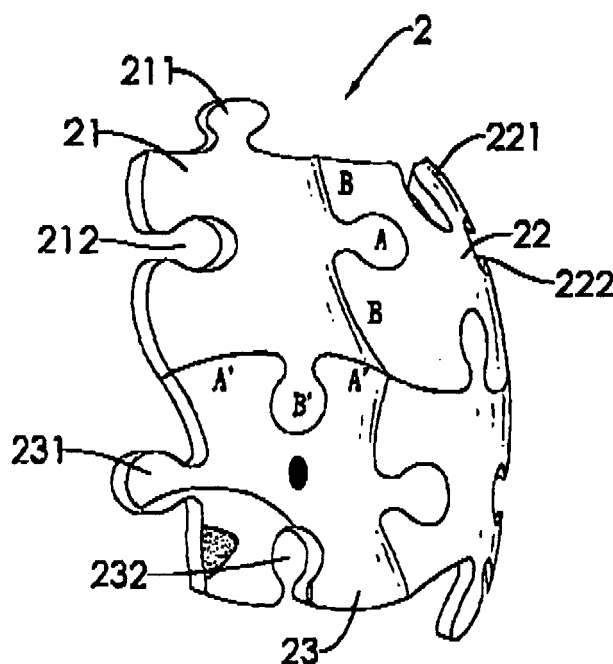


FIG.3

Description

1. Field of the Invention

[0001] The present invention relates to a 3D jigsaw puzzle, and more particularly to the structure of puzzle pieces of a three dimensional jigsaw puzzle.

2. Description of Related Art

[0002] After a common 3D jigsaw puzzle is completed, due to mutual combination between two adjacent puzzle pieces, the jigsaw puzzle is able to stand on its own on a surface. However, because the overall structural relationship depends on the mutual complementarily arms and cutouts from two adjacent puzzle pieces, top edge and bottom edge of the cylindrical jigsaw puzzle are structurally weak due to there being no support thereto such that when an impact is applied to the top edge and bottom edge of the completed jigsaw puzzle, the jigsaw puzzle is easily destroyed or damaged. In addition to that drawback, the conventional puzzle pieces, when combined, are engaged with one another via complete engagement between two adjacent peripheral edges of the two adjacent puzzle pieces, which increases the difficulty in completing the jigsaw puzzle especially in the final stage of completing the jigsaw puzzle. That is, the arms of the conventional puzzle piece are rigid such that when the two adjacent puzzle pieces are to connect to one another in the final phase to complete the jigsaw puzzle, the player of the jigsaw puzzle has to try very hard to combine the two adjacent puzzle pieces so as to complete the jigsaw puzzle, which somewhat decreases the fun of playing the jigsaw puzzle.

[0003] To overcome the shortcoming of the conventional cylindrical jigsaw puzzle, an improved jigsaw puzzle composed of puzzle pieces interconnected to one another is introduced to obviate the aforementioned problems.

[0004] The primary objective of the present invention is to provide a 3D jigsaw puzzle having multiple puzzle pieces each having multiple arms and cutouts structurally and complementarily corresponding to the arms of an adjacent puzzle piece so that the two adjacent puzzle pieces are able to be combined. Further, a peripheral edge defining each of the arms is able to have a full engagement with a peripheral edge defining each of the cutouts of the adjacent puzzle piece and vice versa such that a surface engagement is established between the peripheral edges defining the arms and cutouts of two adjacent puzzle pieces.

[0005] Another objective of the present invention is that opposite sides defining the arms are able to have linear engagement with opposite sides defining the cutouts of the adjacent puzzle piece and vice versa.

[0006] Still another objective of the present invention is that a peripheral edge defining each of the two opposite sides of either the arms or the cutouts is provided with a

wedged-shape cutout so as to facilitate linear engagement between two adjacent puzzle pieces.

[0007] Other objects, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

In the drawings:

10 **[0008]**

Fig. 1 is a perspective view of the 3D jigsaw puzzle of the present invention;

15 Figs. 2 is an partially exploded perspective view of the 3D jigsaw puzzle of the present invention;

Fig. 3 is a perspective view showing the engagement between two adjacent puzzle pieces;

Fig. 3A is a plan side view showing the surface engagement between two adjacent puzzle pieces; and
Fig. 3B is a plan side view showing the linear engagement between two adjacent puzzle pieces.

25 **[0009]** With reference to Figs. 1, 2 and 3, it is noted that the 3D jigsaw puzzle (1) of the present invention includes puzzle pieces (2) interrelated with and interconnected to one another so as to complete a three dimensional jigsaw puzzle.

30 **[0010]** Each of the adjacent puzzle pieces is provided with arms and cutouts structurally complementary to the arms of an adjacent puzzle piece. Taking the puzzle pieces (21,22,23) for example, the puzzle piece (21) has arms (211) and cutouts (212), the puzzle piece (22) has arms (221) and cutouts (222), and the puzzle piece (23) has arms (231) and cutouts (232). Each of the arms (211,221,231) is structurally complementary to the cutouts of the adjacent puzzle piece so that by extending the arms of one puzzle piece into the cutout of the adjacent puzzle piece, two adjacent puzzle pieces are combined.

40 **[0011]** In order to facilitate the combination of two adjacent puzzle pieces, e.g. (21,22), engagement between the peripheral edges defining each of the arms (211,221) and each of the cutouts (212,222) is a surface engagement (A), as shown in Fig. 3A. That is, there is a full engagement existed in the engagement between the peripheral edges of the arms and of the cutouts. Also, the same structural relationship exists between the two adjacent puzzle pieces (21,23).

50 **[0012]** Furthermore, opposite sides defining the arms, e.g. (21,22), are able to have linear engagement (B), as shown in Fig. 3B, with opposite sides defining the cutouts of the adjacent puzzle piece and vice versa.

55 **[0013]** The same structural relationship exists between the two adjacent puzzle pieces (21,23). That is, engagement between the peripheral edges defining each of the arms (211,231) and each of the cutouts (212,232) is a surface engagement. That is, there is a full engagement existed in the engagement between the peripheral

edges of the arms and of the cutouts.

[0014] Furthermore, opposite sides defining the arms, e.g. (21,23), are able to have linear engagement with opposite sides defining the cutouts (212,232) of the adjacent puzzle pieces (21,23) and vice versa. In order to have the linear engagement between two opposite sides defining each of the arms and of the cutouts in two adjacent puzzle pieces, a wedged-shape cutout (C) is defined in a peripheral edge defining each of the opposite sides of the arms and of the cutouts of the puzzle pieces. 5 10

[0015] It is concluded that with the existence of the surface engagement in the peripheral edges defining each of the arms and of the cutouts and the linear engagement in the opposite sides defining each of the arms and of the cutouts, the combination of two adjacent puzzle pieces are much easier than the existing puzzle pieces. Furthermore, each of the arms and the cutouts are circular shape. 15

[0016] It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent: indicated by the broad general meaning of the terms in which the appended claims are expressed. 20 25

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Claims

1. A 3D jigsaw puzzle comprising puzzle pieces (2) each having multiple arms (211) and cutouts (212) structurally complementary to the arms (211) of an adjacent puzzle piece (2), **characterized in that:** 35

a surface engagement (A) exists between a peripheral edge defining each of the arms (211) of a puzzle piece (2) and a peripheral edge defining each of the cutouts (212) of the adjacent puzzle piece (2) so that the two adjacent puzzle pieces (2) are combined, 40

a linear engagement (B) exists between opposite sides defining each arm (211) of the puzzle piece (2) and opposite sides defining each cutout (212) of the adjacent puzzle piece (2). 45

2. The jigsaw puzzle as claimed in claim 1, wherein a wedged-shape cutout (C) is defined in a peripheral edge defining each of the two opposite sides of the arms (211) and of the cutouts (212) of the puzzle pieces (2). 50
3. The jigsaw puzzle as claimed in claim 1 or 2, wherein the arms (211); and the cutouts (212) are circular in shape. 55

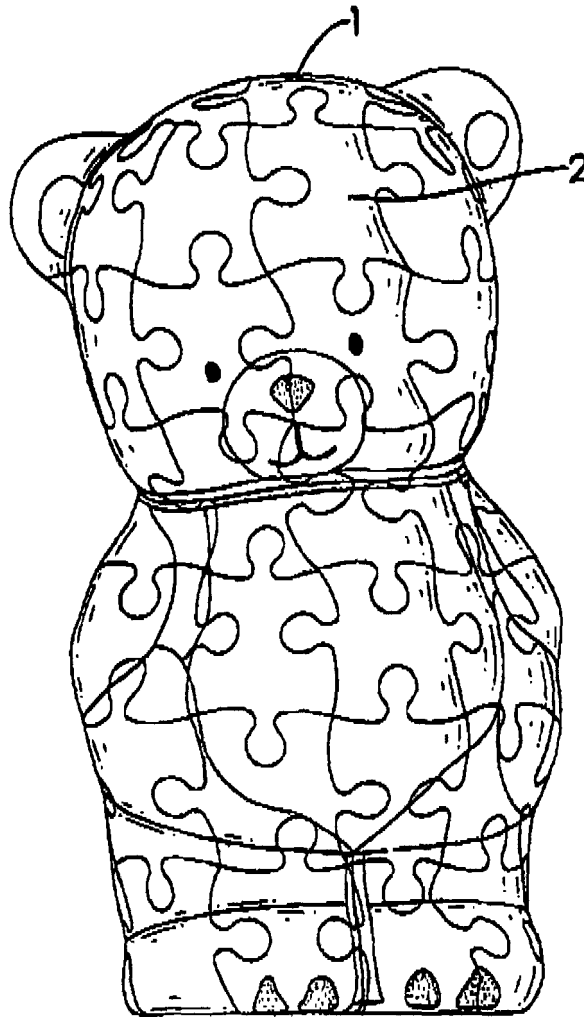


FIG.1

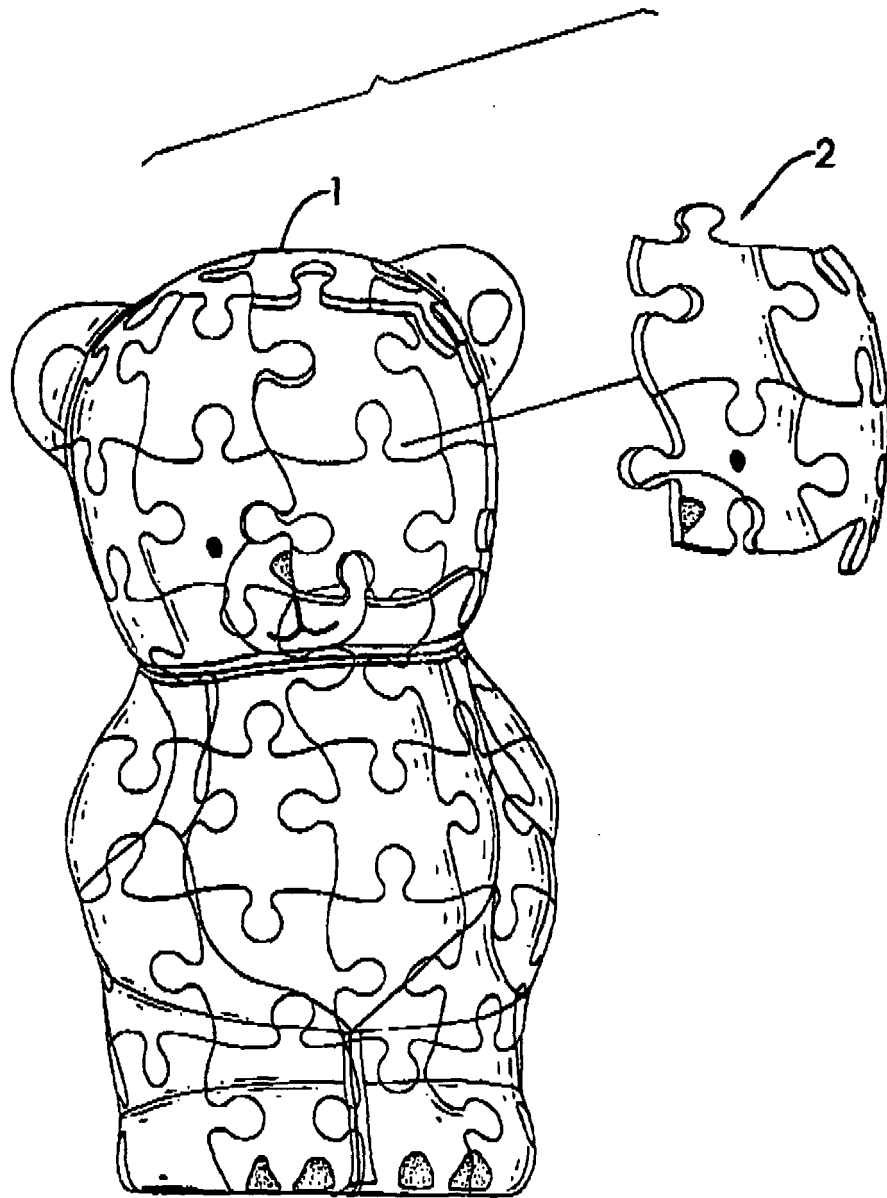


FIG.2

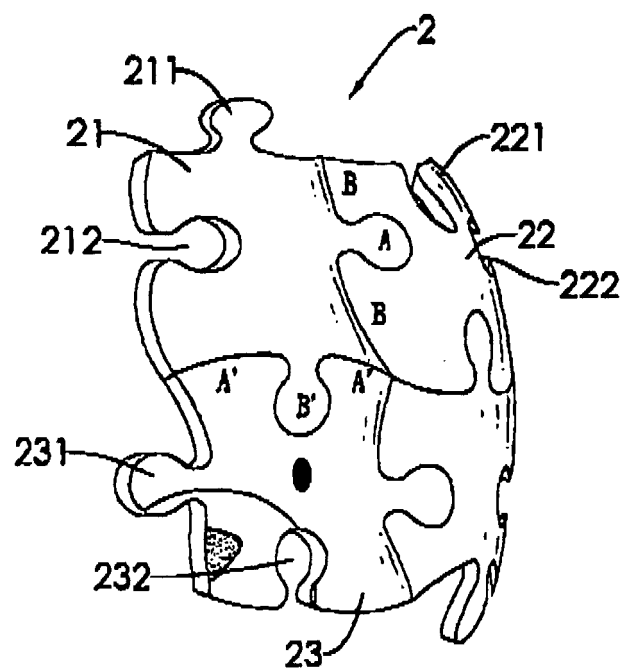


FIG.3

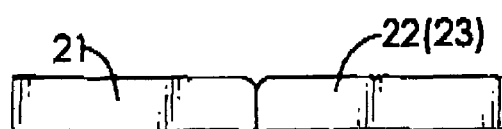


FIG. 3A

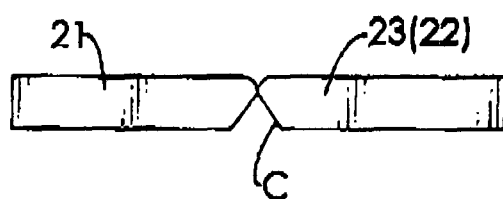


FIG. 3B



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 00 9224

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 October 2006	Examiner Shmonin, Vladimir
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 00 9224

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-10-2006

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