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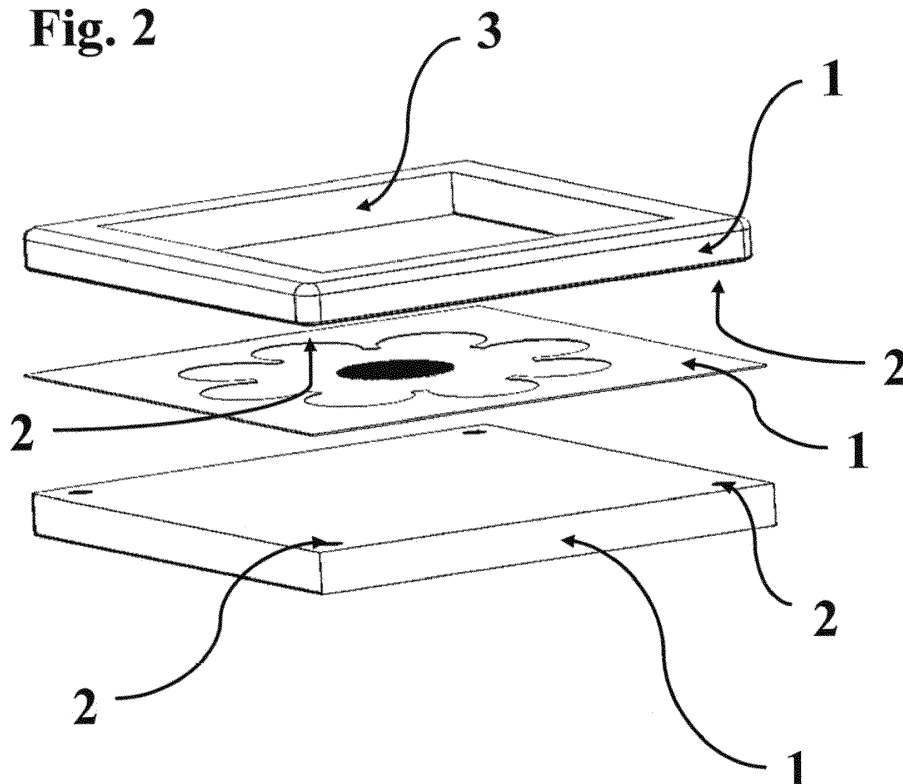
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(54) **A PLAY BLOCK WITH INTERCHANGEABLE GRAPHICS AND A SET OF SUCH BLOCKS**

(57) The play block with interchangeable graphics, intended to create a set of blocks in order to obtain a graphic pattern or a shape, wherein the play block consist of at least two parts (1), that are held together by connecting elements (2) and/or by mutually adjusted oppos-

ing surfaces of parts (1), while at least one part (1) contains replaceable graphics and at least one part (1) is a fixed carrier for block handling. The invention further relates to a set of play blocks that consist of at least two blocks configured in planar and/or spatial configuration.

Fig. 2



Description

TECHNICAL FIELD

[0001] This invention relates to a play block of any shape, designed to create a block assembly in order to obtain graphical pattern or shape, in which each playing block is formed by at least two parts that are in contact with each other, or the proximity of mutually matching opposing surfaces, and where at least one part serves as a graphics carrier.

[0002] In one configuration, at least one part serves as a fixed carrier used for handling the block and the other part is fitted with graphics. In such case both parts are fitted with magnetically reacting elements, ensuring cohesion of parts or at least one part contains connecting elements that connect the parts, which suitably involves the part serving as a fixed carrier for handling the block. The part representing the fixed carrier for handling the block may partly or fully frame the part serving as a graphics carrier.

[0003] In a suitable optional configuration with three block parts, at least one outer part is at least partly transparent, ensuring visibility of graphics located on the carrier inserted between the two outer parts of the block - see e.g. Figure 2.

BACKGROUND OF THE INVENTION

[0004] Currently, there is a number of toys, puzzles and products available, where the main principle involves assembling a certain graphical pattern. Planar 2D or spatial 3D structures are known. These products are intended mainly for playing and to support creative thinking of children and adults, depending on their complexity. Among the most well-known are classic wooden blocks with pictures, so-called jigsaw puzzles with pictures or the matching card game or dominoes. Their common characteristic is that carriers made of various materials e.g. wooden blocks, puzzle cardboard base, matching game paper base, carry attached integrated graphical elements e.g.

- a. Permanently attached pictures on wooden block puzzles
- b. Permanently attached pictures to cardboard base in the case of puzzles
- c. Pictures printed directly on paper in the case of the matching game
- d. Pictures and images on domino pieces

[0005] Their main disadvantage is that graphical elements cannot be replaced on their carrier.

[0006] After piecing the puzzle together, the only possibility for the user is to take the puzzle apart and piece it back together - i.e. the same repetitive cycle for a single product. Limited variability is offered, for example, by a set of spatial cubes, where each side of the cube is fitted

with a different picture. However, in this case, this is also a single-purpose product and if the client requires higher variability, he or she is forced to purchase new sets involving graphical images, including the carriers, which is financially more demanding and also requires more storage space. Environmental aspect of the product is also a disadvantage, as new carriers have to be produced for each picture element.

[0007] On the market with toys or logical games, there aren't many puzzles or play sets on which the user alone could, without the use of additional material such as glue, attach a graphical element and replace it if the need arises.

[0008] The solution presented by this invention is mainly usable in the sphere of educational toys, where one set of play blocks can be used for various games or for the same game, but always with a different picture.

[0009] Thus, the main idea is the interchangeability of pictures or graphics on the main carrier, in this case the play block, which is part of a block set carrying a required graphical image or creating a required shape.

DISCLOSURE OF THE INVENTION

[0010] The basis of the invention is a play block of any shape intended to create a set of blocks to obtain a graphical image or a shape, where each play block consists of at least two parts that stick together upon contact or upon proximity of two opposing surfaces and where at least one part serves as a graphic carrier.

[0011] In one configuration at least one of the parts serves as a fixed carrier intended for handling the block and the other is the graphic carrier. In such case, both parts are fitted with magnetically reacting elements ensuring cohesion of parts or at least one part contains connecting elements joining these parts, which suitably involves the part serving as a fixed carrier for handling the block.

[0012] In a suitable optional configuration with three block parts, at least one outer part is at least partly transparent and/or contains an opening, ensuring visibility of graphics located on the carrier inserted between the two outer parts of the block - see e.g. Figure 2.

[0013] The visibility of the inserted graphical element located on the part serving as the graphics carrier between two outer blocks is ensured by a suitable opening in the play block or by using transparent material on the block's outer part.

[0014] Play blocks are fitted with at least one element ensuring their mutual, temporary connection for a required duration.

[0015] In order to separate the play blocks from one another, certain force has to be used. However, no part of the play blocks will suffer damage during the separation process. The process of joining and disconnecting may then be repeated.

[0016] Connecting elements, that ensure mutual connection of play block parts, are located opposite one an-

other on the connecting parts and/or on the surfaces in a way that they fit tightly against each other when put into proximity or fit into one another. Connection may be also achieved by magnetically reacting elements that can be located in a part of the surface or on the entire surface of the connected elements, e.g. in case of magnetic paper that serves as a graphics carrier.

[0017] Following generally known principles may be used to ensure mutual connection of two elements:

- magnets or magnetic paper;
- connecting elements such as screw connections, nuts, rivets, springs etc. that are fitted in the connecting parts of the block;
- connected elements created by a special shaping of the parts, using protrusions and recesses;
- combination of various materials in the blocks, where one part is flexible and the other fixed, which allows cohesion by friction or by fitting one part on the other, etc.

[0018] The manner of connection of individual block parts is not limited in any way since a professional in the given technical field may choose an equivalent combination and manner of connection without any special effort.

[0019] The graphics carrier is inserted either between contact surfaces of two parts of the block or directly on the fixed carrier used for handling the block. Optionally, the graphics carrier may be inserted in a cutout or in an opening created by one of the blocks and attached in any way by at least on connecting element. The size and the shape of the inserted carriers fitted with graphics are defined depending on the shape and the size of the cutout or of the opening in the relevant block part, in which it should be placed.

[0020] By suitable adjusting of blocks, e.g. by combining protrusions and recesses of one or more parts, and fixed carrier for handling the block, it is possible to connect and create 3D object sets, e.g. a cube as shown on Figures 15 and 16. Individual blocks can be interconnected on one level or perpendicularly to each other. A block set thus can be two or three-dimensional.

[0021] The following structural materials may be used in block parts:

- Metals and alloys (e.g. steel, aluminium etc.)
- Plastics
- Rubber or silicone
- Glass
- Wood and waste wood products
- Paper and paper waste products
- Cork

[0022] The following basic structural materials may be used for inserted elements:

- Metals and alloys (e.g. steel, aluminium etc.)

- Plastics
- Rubber or silicone
- Glass
- Wood
- Paper
- Cork
- Solid organic substances (plant leaves, seeds, etc.)
- Solid inorganic elements (pebbles, sand etc.)

10 BRIEF DESCRIPTION OF DRAWINGS

[0023]

Figure 1 depicts examples of shapes of individual blocks and block sets creating the final graphical pattern or shape;

Figure 2 depicts the axonometric top view of a block consisting of three parts, where one part contains the opening that allows the displaying of the graphics carrier, while the parts are connected by magnets located in the corners of the parts;

Figure 3 depicts the axonometric view of the block from the bottom according to Figure 2;

Figure 4 depicts the axonometric top view of a block consisting of three parts, where the top part is transparent and allows displaying of the graphics carrier, while the parts are connected by magnets located in the corners of the parts;

Figure 5 depicts the axonometric bottom view of the block according to Figure 4;

Figure 6 depicts the axonometric top view of optional block configuration consisting of three parts, where the top part is transparent and allows displaying of the graphics carrier, while the parts are connected by magnets located in the corners of the parts;

Figure 7 depicts the axonometric bottom view of the block according to Figure 6;

Figure 8 depicts the axonometric top view of optional configuration of the block consisting of three parts, where the top part is transparent and allows the displaying of the graphics carrier, while the parts are connected by pins and intentionally created openings in the corners of the parts;

Figure 9 depicts the axonometric bottom view of the block according to Figure 8;

Figure 10 depicts the axonometric top view of the connecting element detail in configuration given on Figures 8 and 9;

Figure 11 depicts the axonometric top view of an optional block configuration consisting of three parts, where the top part is transparent and allows the displaying of the graphics carrier, while the parts are connected on their periphery by hooks on one part and recesses on the other part;

Figure 12 depicts the axonometric top view of the connecting element detail on configuration given on Figure 11;

Figure 13 depicts the axonometric top view of op-

tional block configuration consisting of three parts, where the top part is transparent and allows the displaying of the graphics carrier, while the parts are connected in a way that the top, transparent part is fitted into the bottom part and held in place by the inner walls of the bottom part.

Figure 14 depicts the axonometric view of six block sets spatially connected to form a cube, indicating the connection of the transparent top part, graphics and the graphics carrier;

Figure 15 depicts the axonometric view of three blocks intended for spatial connection;

Figure 16 depicts the axonometric view of six blocks spatially connected to form a cube;

Figure 17 depicts the frontal and the rear axonometric view of a block containing recesses and protrusions on the edges for mutual spatial connection of two and more blocks;

EXAMPLES OF EMBODIMENT OF THE INVENTION

Example 1

[0024] Technical solution representing a play block of any shape, intended to create a set of blocks in order to obtain a graphical image or a shape, where each play block consists of two parts 1, which stick together upon contact or upon proximity of opposing surfaces and where at least the top part 1 serves as the graphics carrier. The top part 1 is made of magnetic paper and the bottom part 1 serves as a fixed carrier used to handle the block and is fitted with magnet connecting elements 2.

Example 2

[0025] Technical solution according to Figures 4 to 12, representing a play block of any shape, intended to create a set of blocks in order to obtain a graphical image or a shape, where each block consists of three parts 1, which are held together upon contact or upon proximity of opposing surfaces and where the middle part 1 serves as a graphics carrier, while the bottom part 1 and the top part 1 are mutually connected by any connecting elements 2.

Example 3

[0026] Technical solution according to Figures 2 and 3, where, as opposed to Example 2, the top part 1 is fitted with an opening 3 to display the middle part 1, which serves as the graphics carrier.

Example 4

[0027] Technical solution according to Example 1, 2 or 3. Where all outer parts 1 serving as fixed carriers for handling the block are made of transparent material and part 1, serving as the graphics carrier, is fitted with graphics

ics on both sides.

Example 5

[0028] Technical solution according to Figure 13, where the top part 1 is transparent and allows displaying of part 1 serving as the graphics carrier, while parts 1 are connected in manner, where the top part 1 made of a transparent material is fitted in the bottom part 1 and held on its outer periphery by the walls of the bottom part 1.

Example 6

[0029] Set of blocks according to any of the preceding examples, where a block contains recesses (5) and/or protrusions (4) on the edges for mutual spatial and/or planar connection of two and more blocks.

INDUSTRIAL UTILIZATION

[0030] The invention is intended mainly for the area of entertainment and education.

Claims

1. The play block with interchangeable graphics, intended to create a set of blocks in order to obtain a graphic pattern or a shape, **characterized by the fact** that the play block consist of at least two parts (1), that are held together by connecting elements (2) and/or by mutually adjusted opposing surfaces of parts (1), while at least one part (1) contains replaceable graphics and at least one part (1) is a fixed carrier for block handling.
2. The play block according to claim 1, **characterized by the fact** that the top part (1) or the internal part (1) contains replaceable graphics and the bottom part (1) is a fixed carrier for block handling and at the same time contains replaceable graphics.
3. The play block according to claim 1 or 2, **distinguishes by the fact** that the top part (1) and/or the bottom part (1) contains an opening (3) for displaying of the graphics and/or is made of transparent material.
4. The play block according to claim 1 or 2, **characterized by the fact** that the top part (1) is made of magnetic paper and the bottom part (1) is fitted with magnetic connecting elements (2).
5. The play block according to claim 1 or 2, **characterized by the fact** that the top part (1) is fitted into the bottom part (1) and kept in place at its outer periphery by the internal walls of the bottom part (1).

6. The play block according to any of the Claims 1 to 5, **characterized by the fact** that it contains recesses (5) and/or protrusions (4) on the edges of one or more parts for mutual spatial and/or planar connection of two and more blocks. 5
7. Set of play blocks according to any of the claims 1 to 6, **characterized by the fact** that it consist of at least two blocks configured in planar and/or spatial configuration. 10

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List of reference marks

- 1 - part
- 2 - connecting elements
- 3 - opening
- 4 - protrusion
- 5 - recess

Fig. 1

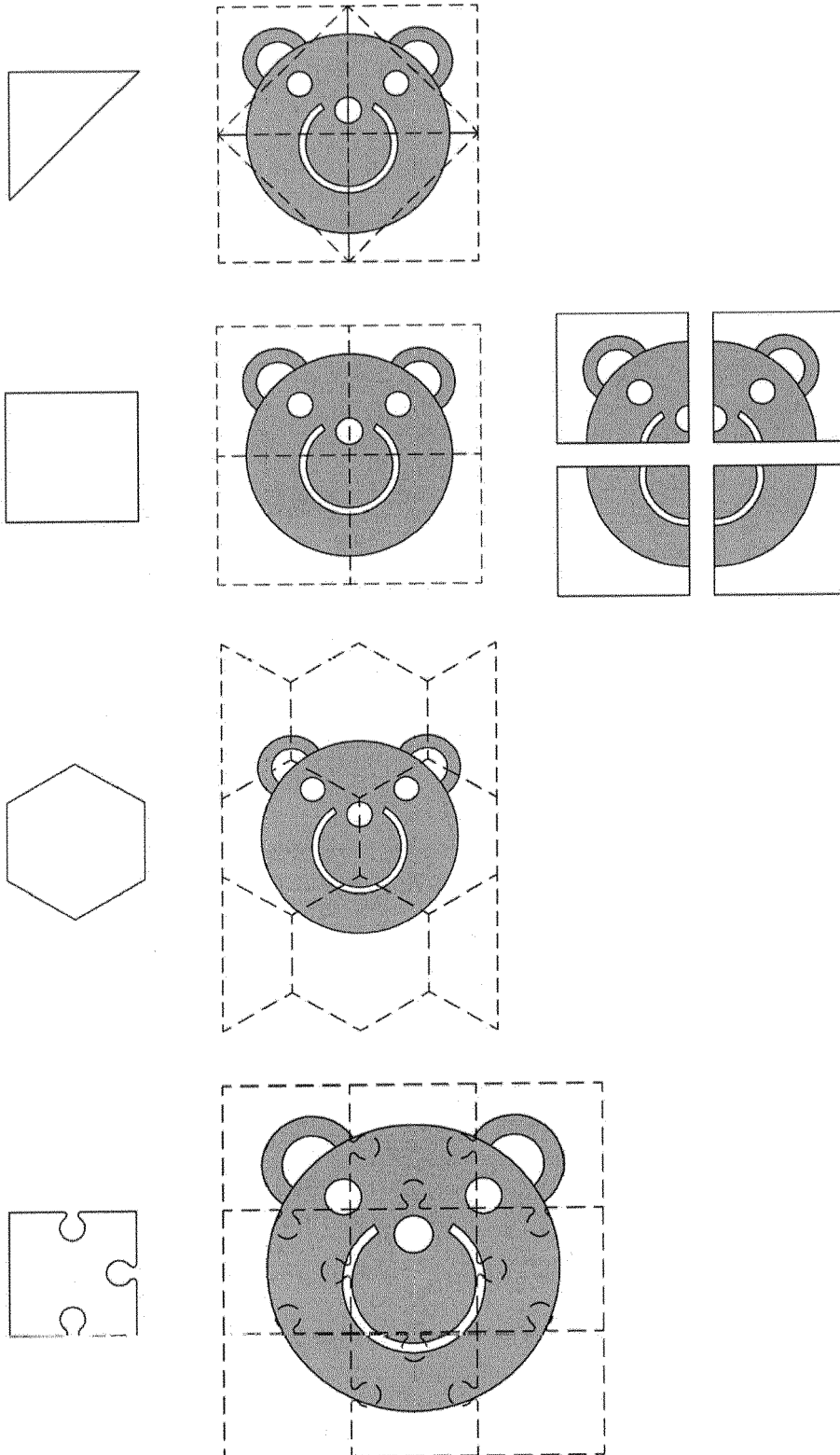


Fig. 2

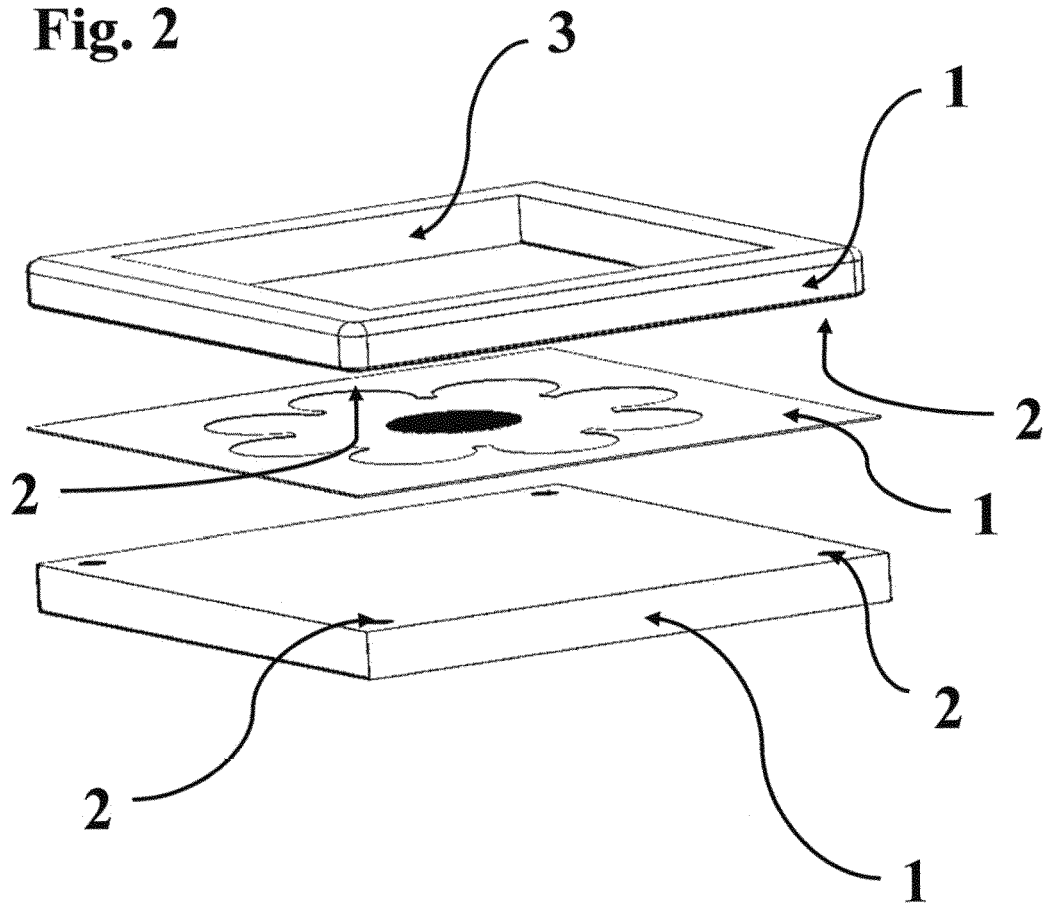


Fig. 3

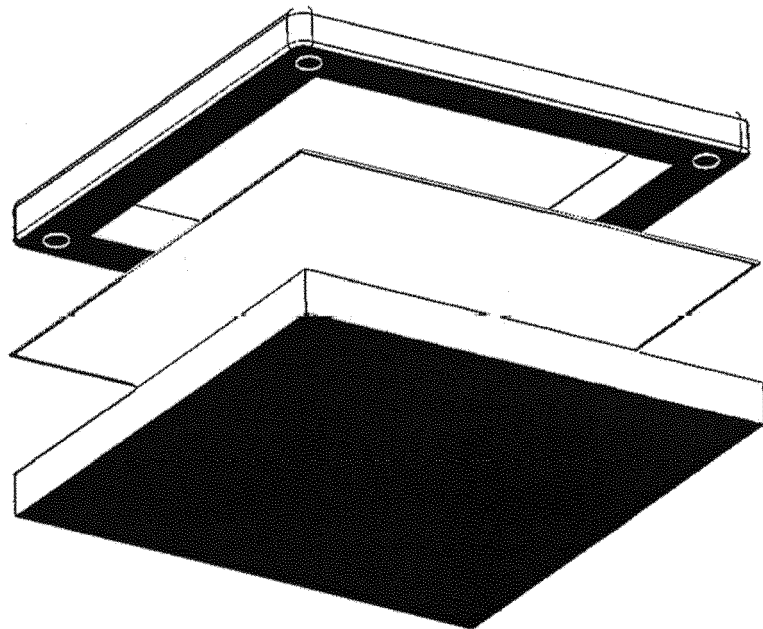


Fig. 4

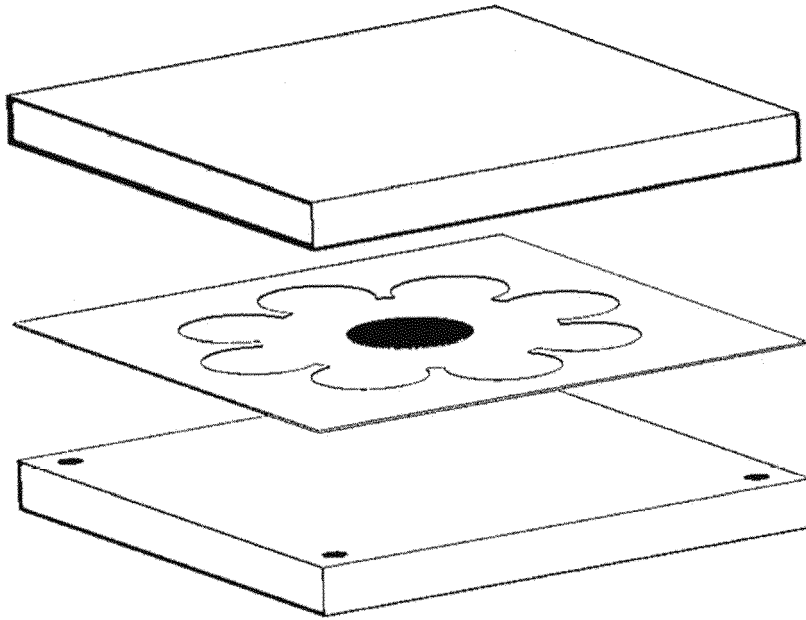


Fig. 5

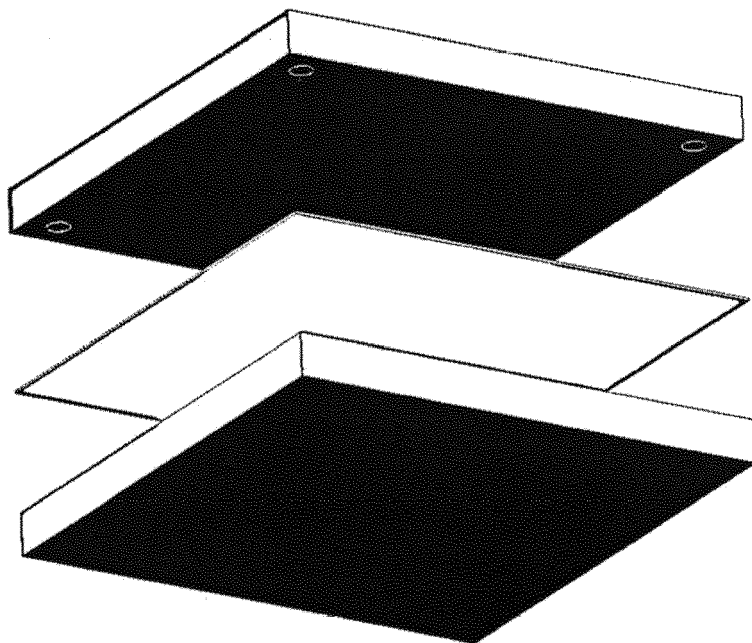


Fig. 6

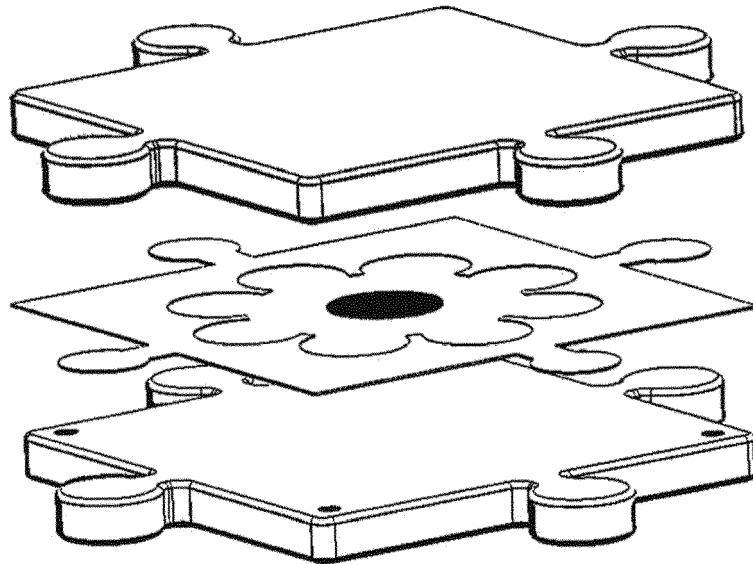


Fig. 7

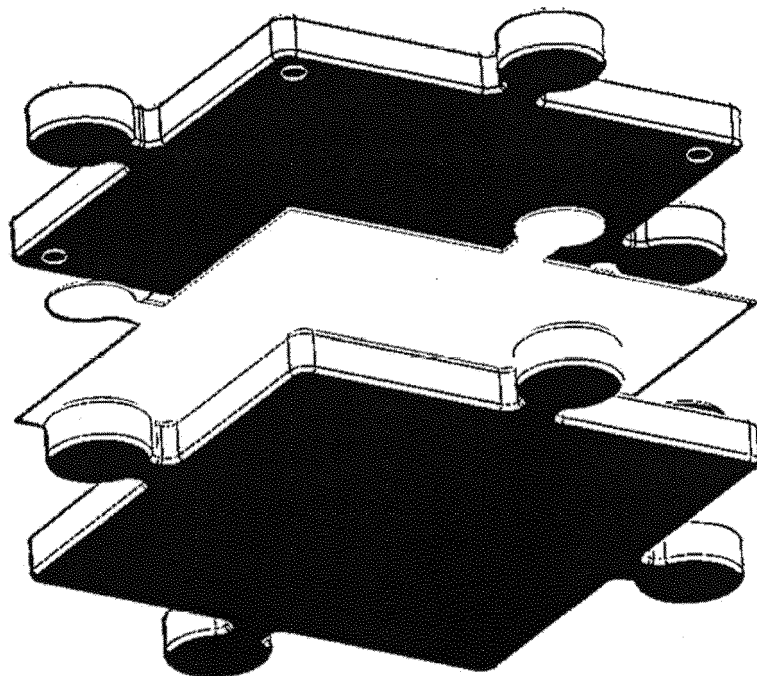


Fig. 8

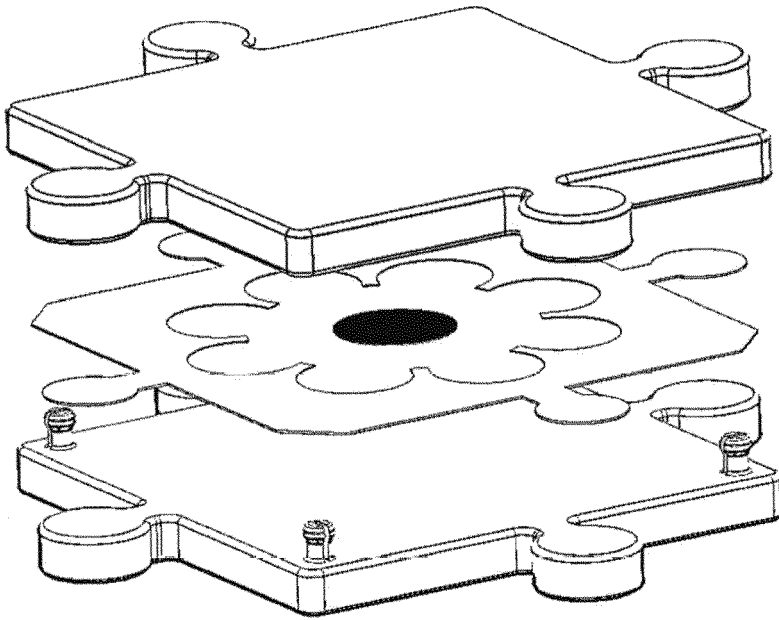


Fig. 9

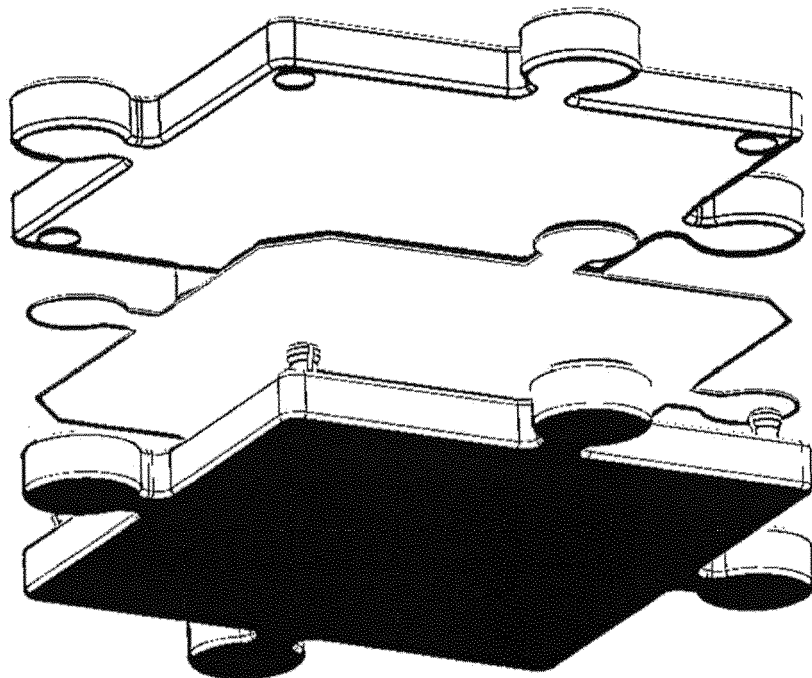


Fig. 10

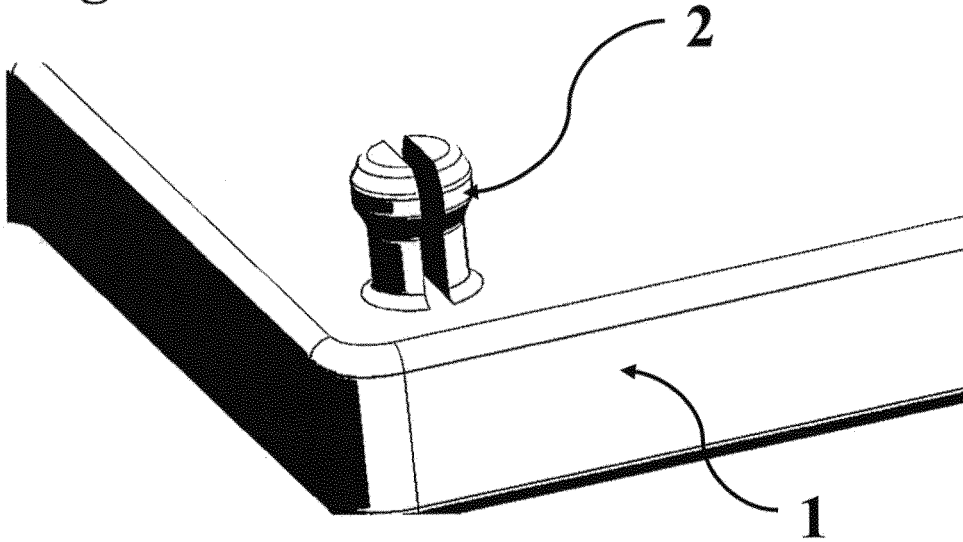


Fig. 11

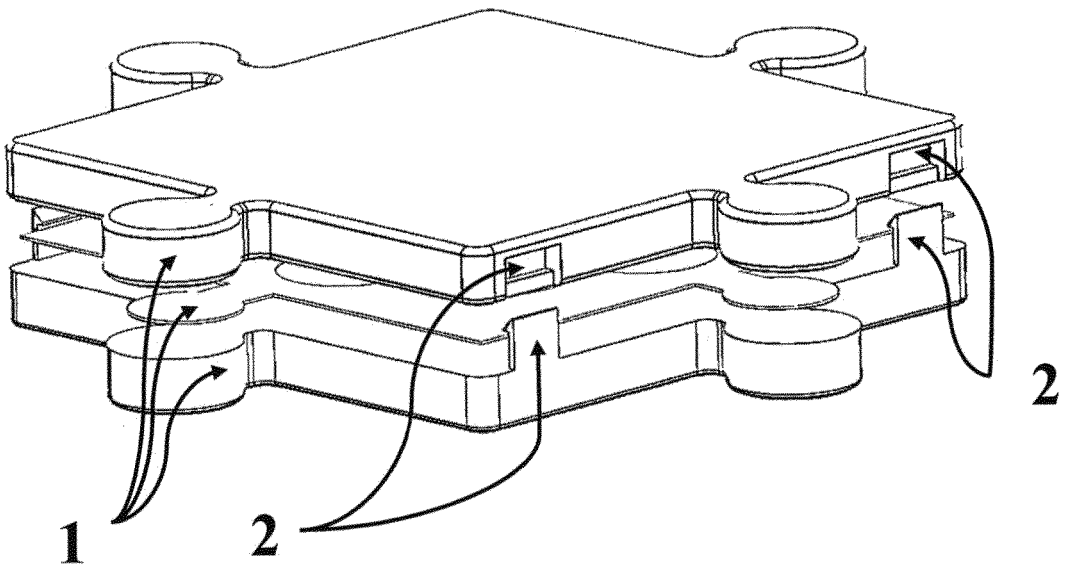


Fig. 12

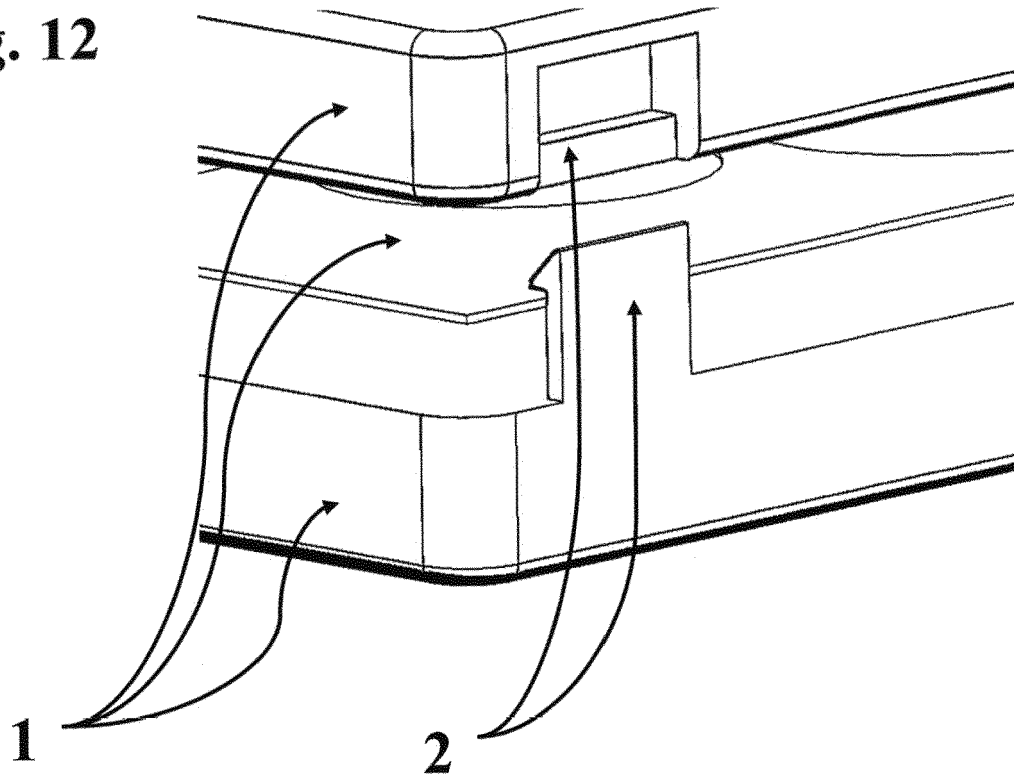


Fig. 13

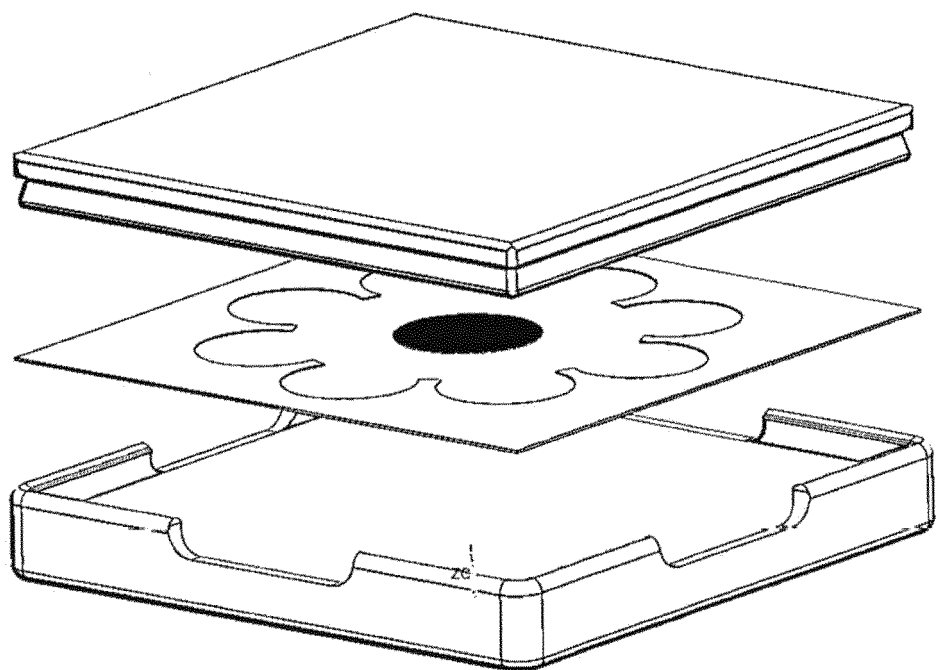


Fig. 14

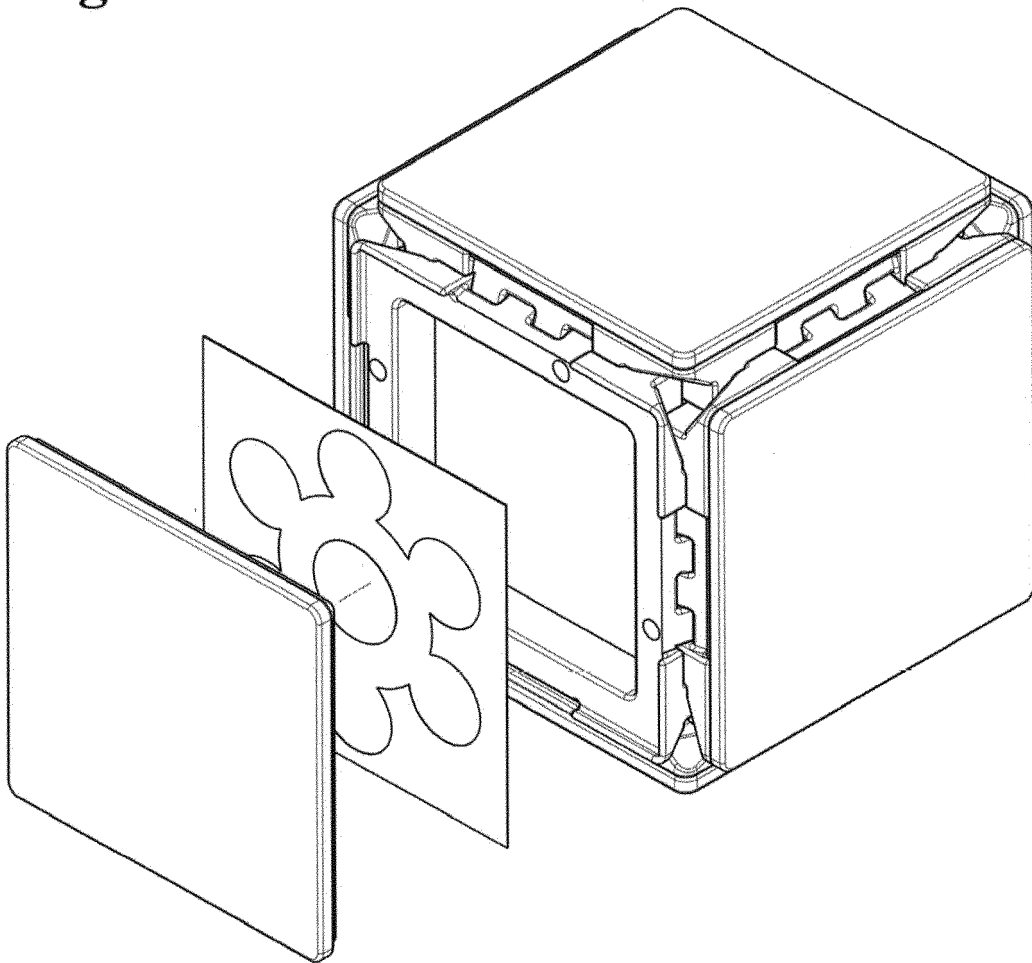


Fig. 15

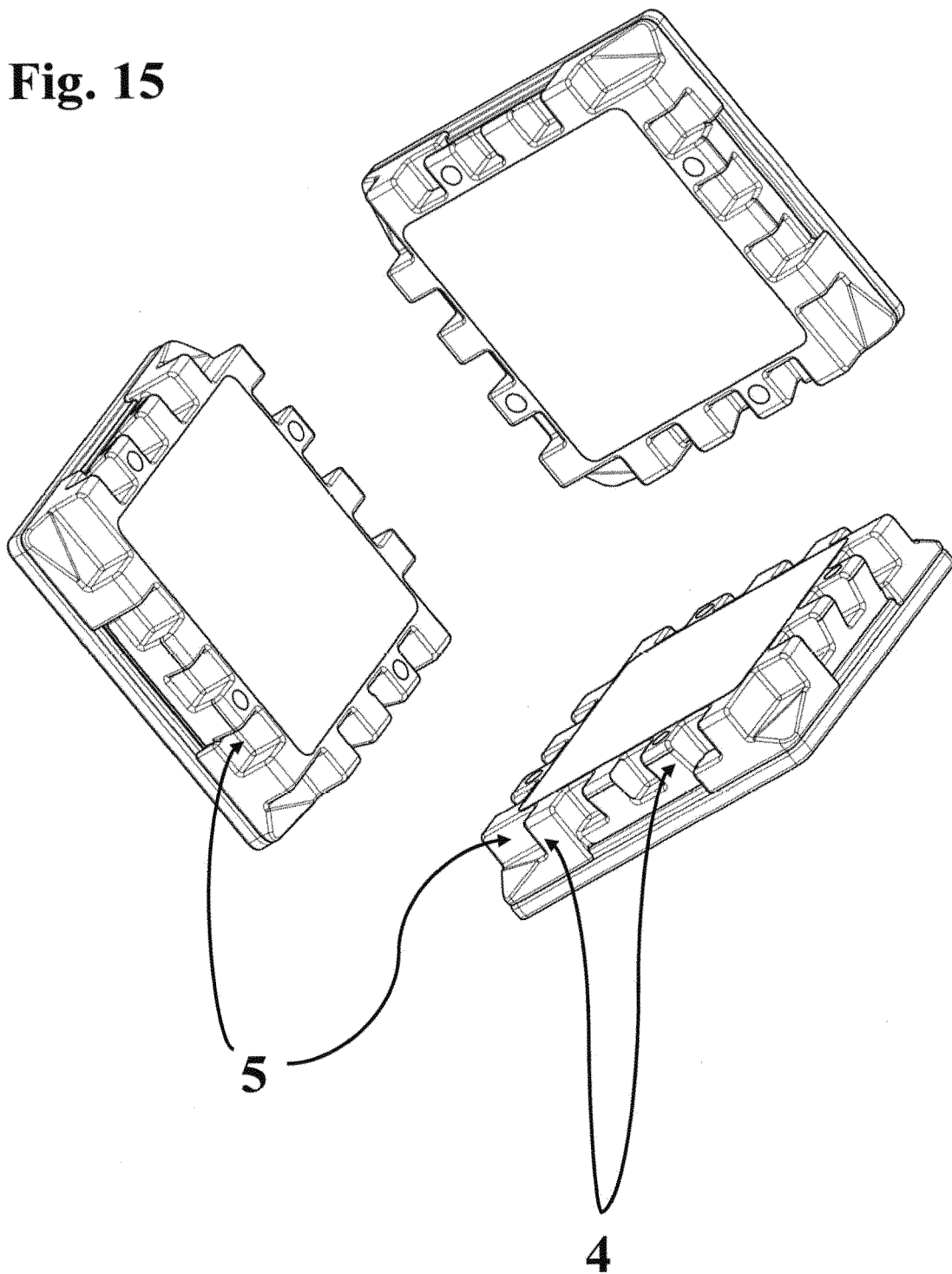


Fig. 16

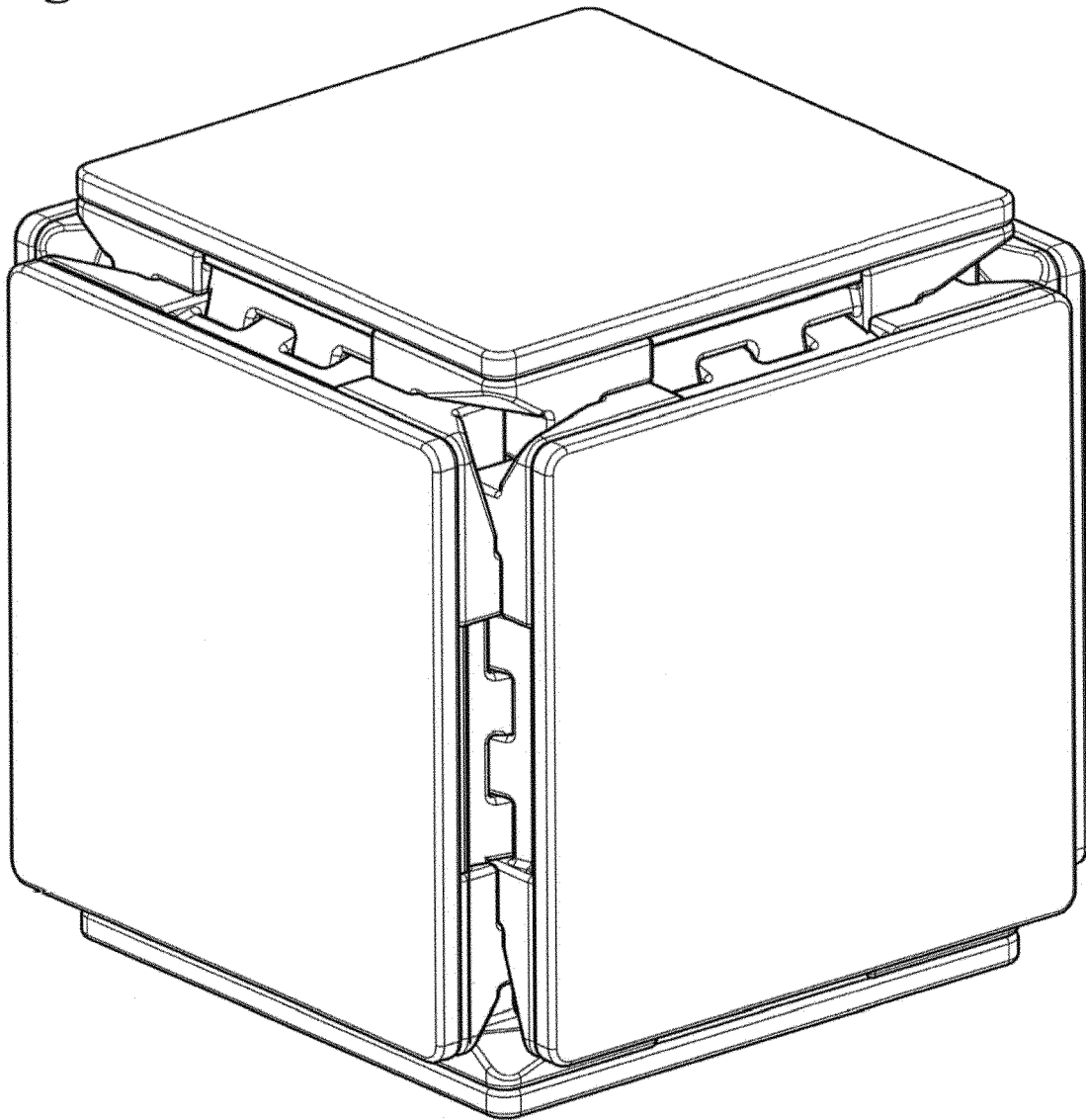
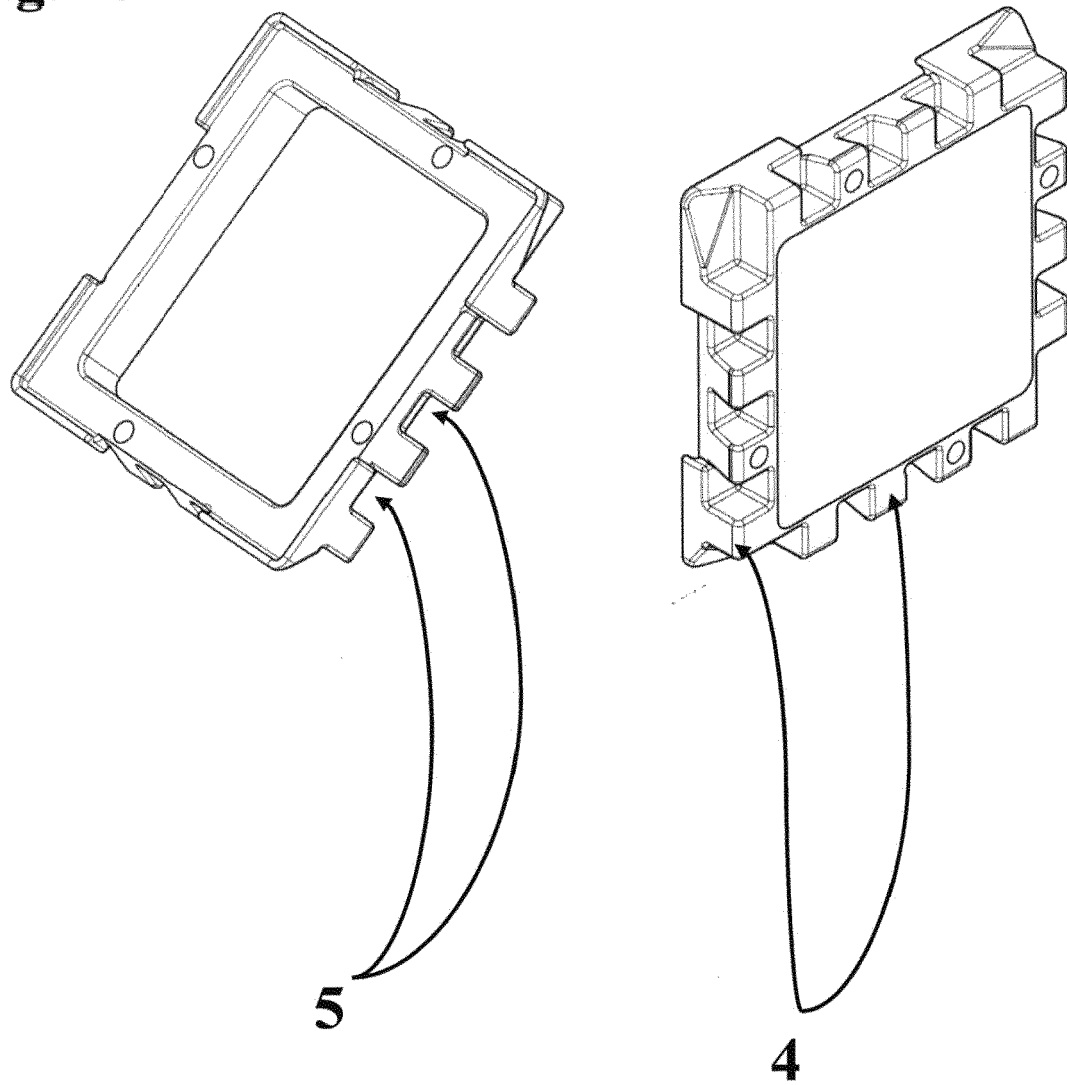


Fig. 17





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Application Number
EP 18 00 0564

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Place of search Munich		Date of completion of the search 23 November 2018	Examiner Bagarry, Damien
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