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(54) **Toy blocks**

(57) The present invention is related with toy blocks (1), for which extrusions have been formed on at least one side (2) and on the other side of which indents reaching from the edge into the block have been formed (3), whereby the width, shape and mutual distance of the extrusions reaching out of the edge of the block correspond to the width, shape and mutual distance of the

indents reaching from the edge of the block into the block. Also, an opening (4) has been formed in the centre of the block (1), and the diameter of that opening corresponds to the width of the extrusion formed on the side of the block, and that at least two radial slits (5) with direction from the central opening towards the corners or sides of the block have been formed.

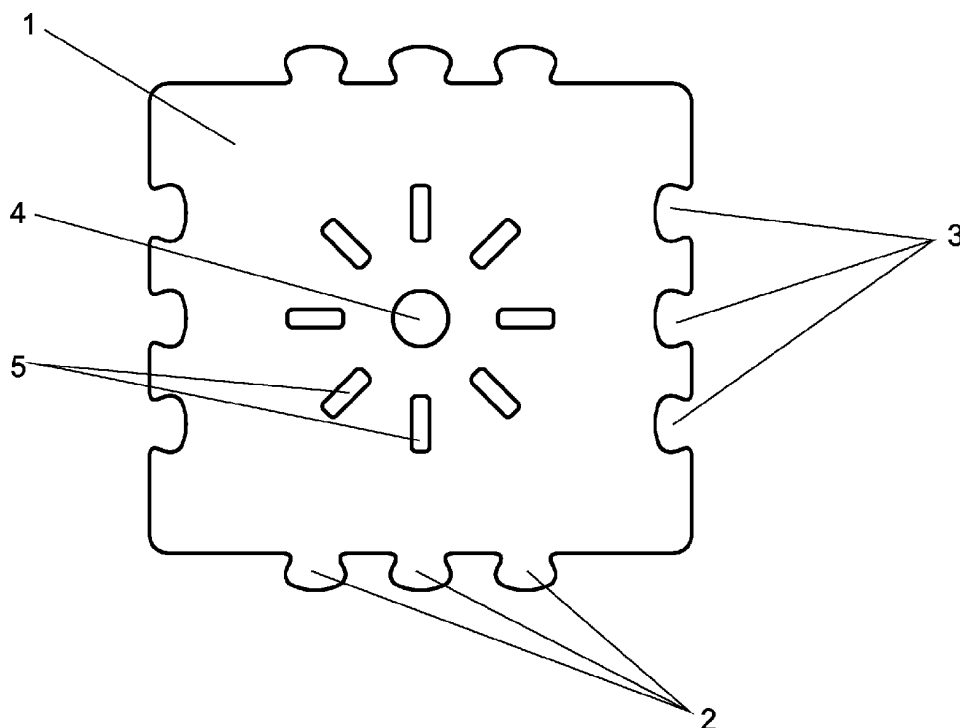


FIG 1

Description

Technical Field

[0001] The present invention relates to the field of toys, more precisely, to the field of separate elements or blocks of structures or constructions put together from details.

Background Art

[0002] Prior art provides various elements or blocks of connectable structures to be used for playing. For example, Lego® blocks, enabling to build most diverse structures from separate individual elements - cars, houses, animals, etc. Still, the elements have been prepared from relatively resilient material and are of small size.

[0003] Prior art provides also puzzle-type three-dimensional cubes, made of soft material, and the linkable elements of which are the six sides of the cube, the sides of which offer the cut-outs of different shape, size and dimensions, so that only one combination of cut-outs formed on the side of the cube is possible for connecting the sides of two cubes.

[0004] Meanwhile, there is a demand for structures, designed specifically for infants, made of soft elements, from which it would be easy to build play structures/buildings. Also, problem derives from the connection of elements formed of soft material, so that possible connections would stay together after constant exploitation and that the elements of similar construction could be used for building various play structures.

Summary of invention

[0005] The purpose of present invention is to create a block for playing, made of soft material, from which infants could prepare various play structures, e.g. houses, cars, ships, etc. For that purpose the block has been designed in a way that at least one side of the block is equipped with protrusions, to the shape of which correspond at least the indents on the side of the other block. For example, one rectangular block can have for example protrusions created on two sides and indents created in two other sides, whereby the shape of the protrusions or indents corresponds respectively to the shape of the protrusions or indents of the other block.

[0006] Also, a circular opening has been formed in the centre of the block, with a diameter that corresponds to the width of the protrusions on the edge of the block. From the opening in the centre of the block cut-outs or slits extend radially, and which have width that corresponds to the thickness of the block and length that corresponds to the width of the protrusions extending from the edge of the block. Also, the distance of slits from the opening in the centre of the block corresponds to the distance between the protrusions located at the side of the block. In that manner, rectangular or square-shaped blocks can be connected to each other diagonally. Also,

blocks can be prepared that have the shape of a triangle or a trapeze.

Brief description of drawings

[0007] The present invention is described hereinafter by referring to attached drawings where:

[0008] Fig 1 illustrates the rectangular block according to present invention,

10 [0009] Fig 2 illustrates the alternative embodiment of the rectangular block according to present invention,

[0010] Fig 3 illustrates a trapezoid block according to present invention,

15 [0011] Fig 4 illustrates the alternative embodiment of the trapezoid block,

[0012] Fig 5 illustrates the triangular block according to present invention,

[0013] Fig 6 illustrates the toy block of the round shape,

20 [0014] Fig 7 illustrates on alternative embodiment (3-D) of the present invention.

Description of embodiments

25 [0015] A toy block 1 is made for example of thin (thickness approximately from 5 to 20 mm), flexible material, which can be rubber-like material or polyurethane foam. In the preferred embodiment the material should be flexible, without sharp corners and edges, with certain stiffness i.e. like material used for covering the stadium tracks (from polyurethane foam).

30 [0016] The block size would be in the preferred embodiment 30 x 30 cm, but also the other dimensions can be used such as 15 x 15 cm or 60 x 60 cm. The main goal of the invention is to enable to build for example palace or boat from the toy blocks so that the children can go inside the palace or boat or car which makes play more fun and enjoyable. The additional advantage of the size and material of the toy blocks is that when the child jumps to the building it will collapse relatively slightly without damaging the toy blocks.

35 [0017] Also, inventors of present invention have tested during the development the various PE (polyethylene) and EVA (ethylene vinyl acetate) materials primarily for their conformity with safety requirements of the EN-71 standard. Cardboard or paperboard can also be used as the material for the block however the materials having above-mentioned properties (flexible etc.) would be preferred. In the Fig 1 is illustrated a rectangular block 1, the two opposite sides of which have protrusions 2, level with its plane, extending from the side of the block, at equal distances from each other and with equal width. The other two opposite sides of the same block have indents 3 with equal width and at equal distances from each other, extending into the plane of the block. The width and shape of indents 3 and distance from each other corresponds to the shape and width and distance from each other of the protrusions 2 extending from the other edges of the same block 2. Given configuration enables to connect

with each other two blocks 1 in a way that the protrusions 2 of one block fit exactly into the indents 3 of the other block. In that manner it is possible to build play structures of different design, e.g. houses, cars, boats, ship etc.

[0018] The protrusion 2, displayed in the figure, has been formed into a shape, which includes a wider head-section 7 and narrower neck-section 6. Similar shape has been provided for the indent, so that the indent begins from the edge of the block by a narrower neck-section 8 and ends with a wider head-section 9. The dimensions of the parts 6, 7 of the protrusion 2 correspond to the dimensions of the parts 8, 9 of the indent 3. By employing given configuration, the protrusion 2 of one block fits into the indent 3 of the other block and blocks would not detach from each other that easily. For creating shapes from blocks that have corners, e.g. cuboid, cube or others, the neck-section 6 of the protrusion of one block passes the neck-section 8 of the indent of the other block and the head-section 7 of the protrusion stays fixed behind the head-section 9 of the indent, because the thickness-directional edge that is perpendicular to the surface of the block, is straight, however the shape of the edge of the other block's indent is curved. By using elastic material for preparing the blocks, however, it would be possible to separate the blocks from each other by exerting minor force.

[0019] In the Fig 2 is illustrated the alternative embodiment of the toy block, providing one pair of protrusions extending from the two closest edges of the block and another pair of indents extending into the two closest edges of the block. Whereby, the shape, width and distance between the protrusions and indents correspond to each other.

[0020] The drawings Fig 3 and 4 illustrate various embodiments of the trapezoid block, the nature of which corresponds to the configuration described above.

[0021] In the Fig 5 is illustrated a triangular block for play, which has protrusions extending from its two sides and indents extending into its one side.

[0022] In addition to the protrusions 2 and indents 3 provided in the structure of the block for play 1, there is an opening 4 formed into the centre of the block (see fig 1), which has a diameter that corresponds to the width of the protrusion 2 extending from the edge of the block 1. Radial slits 5 have been formed relative to the opening 4 in the centre of the block 1, with the width of these slits corresponding to the thickness of the block 1 and the distance of the ends of these slits from the opening 4 of the block 1 corresponds to the distance between two protrusions 2 extending from the edge of the block 1. The length of radial slits 5 corresponds to the width of the protrusion 2 formed at the edge of the block 1, so that the protrusions 2 of one side of a block 1 equipped with protrusions can be fitted into the opening 4 provided in the centre of another block 1, and whether into the slits 5 positioned diagonally relative to the block 1 or into the slits 5 with direction towards the sides. In that manner it would be possible to create even more different play

structures. The central opening and the slits radially extending from it form an element with the shape of a sun in the centre of the block, as displayed on drawings fig 1 and fig 2.

[0023] The toy blocks according to the present invention are prepared from soft material, for example by way of drop forging, whether then by having protrusions extending from two opposite sides and indents extending into other opposite sides of the block or having protrusions located on closest sides and corresponding indents. Using other materials is not restricted, e.g. plastics, etc can also be used very successfully.

[0024] It is known to those skilled in the art that there can be several alternatives to preparing the protrusions and indents of the block for play as well as for the central opening and radial slits, which all remain within the limits of features opened and protected by the claims of the appended patent application. For example, the toy block can have a round shape (see Fig 6) or semicircle, so that specifically configured protrusions extend from it along the perimeter of the circle or semicircle, which protrusions correspondingly fit into the indents of the other block. In addition it is possible to make the toy block in the shape of tube so that on end of the tube will have protrusions and other end will have indents and the slits are formed in the wall of the tube.

[0025] In alternative embodiments the main thickness or height of the toy block can be greater than the thickness of the material in the edges where the protrusions are formed (see Fig 7). This makes possible to manufacture cube or brick like toy blocks (3-D), for example the cube is with size 30 x 30 x 30 cm and the thickness of the material in the edges where the protrusions are formed is 15 mm) which creates possibility to join such a toy block with other thin toy blocks where the thickness is substantially smaller than size of the toy block (2-D) for example the size is 30 x 30 cm and the thickness is 10 mm. The protrusion can be formed for example in all sides of the cube or they can be formed so that three sides will have protrusions and their corresponding opposite sides will have indents. In addition the radial slits can be formed in the sides of the cube whereas the width of the slit corresponds to the thickness of the thin toy block. To the person skilled in the art is apparent that alternatively all combinations of the forming the protrusion, indents and slits to the sides of said cube or brick like toy block are possible.

[0026] Also, only the central opening can be formed in the centre of given block, into which the protrusion of another block could be inserted, so that a steering wheel could be created for example to a car or ship made from blocks. It is known to those skilled in the art that all these possible shapes of blocks and positions of protrusions and indents are connected with the concept of present invention and are protected by the claims of appended patent application.

[0027] It is also known to those skilled in the art that a block can be made from any suitable and harmless ma-

terial, by following the mutual position and conformity of dimensions of protrusions and indents formed at the sides of toy blocks and of the opening formed in the centre of blocks and the radial slits as described in the embodiments and protected by the claims.

Claims

1. A toy block (1), with protrusions (2) formed on at least one side and indents (3) extending into the block formed on the other side, **characterised by** that the width, shape and distance between the protrusions (2) extending from the edge of the toy block (1) corresponds to the width, shape and distance between the indents (3) extending into the toy block (1), and that at least two radial slits (5) have been formed, heading from the opening (4) in the centre of the block towards the outside, either to the corners or sides of the block (1). 10
2. The toy block according to claim 1, **characterised by** that an opening (4) has been formed in the centre region of the block (1), the diameter of which is corresponding to the width of the protrusion (2) extending from the block (1). 15
3. The toy block according to claim 2, **characterised by** that the width of the radial slit (5) corresponds to the thickness of the block (1) and the length of the slit (5) corresponds width of the protrusion (2) extending from the side of the block (1), and that the distance of the end of the slit (5) located at the central side of the block (1) from the edge of the opening (4) in the centre of the block (1) corresponds to the distance between the two protrusions (2) extending from side of the block (1). 20
4. The toy block according to claims 1, 2 or 3, **characterised by** that the pair of opposite sides of a rectangular toy block (1) have protrusions (2) extending from the sides and that the other pair of opposite sides have accordingly indents (3) extending into the block. 25
5. The toy block according to claims 1, 2 or 3, **characterised by** that the pair of proximate sides of a rectangular block (1) have protrusions (2) extending from the sides and that the other pair of proximate sides have accordingly indents (3) extending into the block. 30
6. The toy block according to claim 1, **characterised by** that the protrusion (2) of the block (1) has been shaped in a way that it entails a narrower neck-part (6) and wider head-part (7), and that the indent (3) of the block (1) has been shaped in a way that it entails a narrower neck-part (8) and wider head-part (9), whereby the dimensions of the parts (8, 9) of the indent (3) correspond to the dimensions of the parts (7, 8) of the protrusion (2) of the block (1). 35
7. The toy block according to claims 1 or 2, **characterised by** that three protrusions (2) have been formed on one pair of opposite sides of the block (1) and three indents (3) have been formed on the other pair of opposite sides. 40
8. The toy block according to claim 7, **characterised by** that an opening (4) and eight slits (5) has been formed in the centre of the rectangular block (1), which are of equal distances from each other, positioned radially and headed from the centre towards the corners and sides. 45
9. The toy block according to claims 1 or 2, **characterised by** that the block (1) is round-shaped or semi-circle and at least four protrusions (2), positioned at equal distances, have been formed along the perimeter of the block. 50
10. The toy block according to claims 1, **characterised by** that the toy block is formed from the material having the flexibility with certain stiffness. 55
11. The toy block according to claims 10, which is **characterised by** that the material is rubber-like material or polyurethane foam.

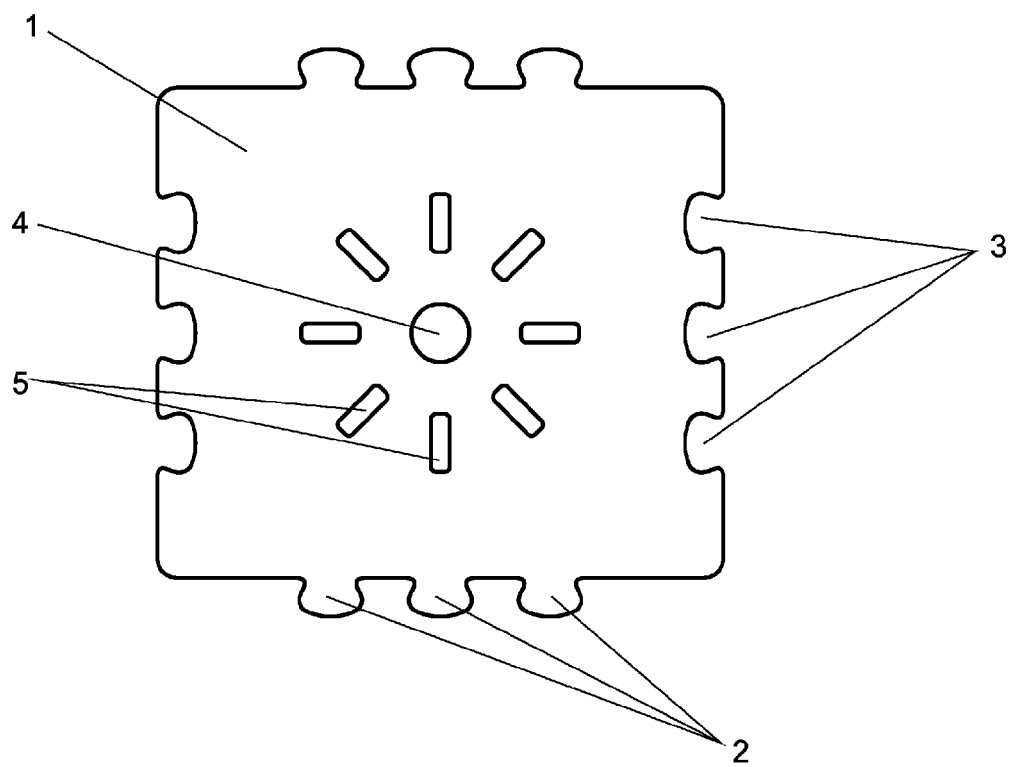


FIG 1

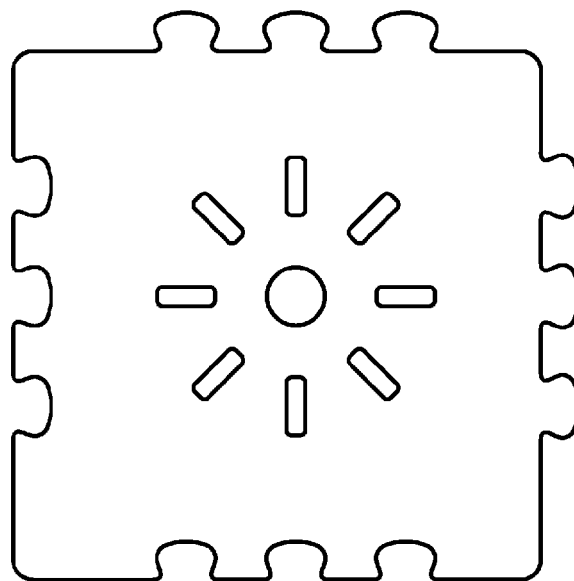


FIG 2

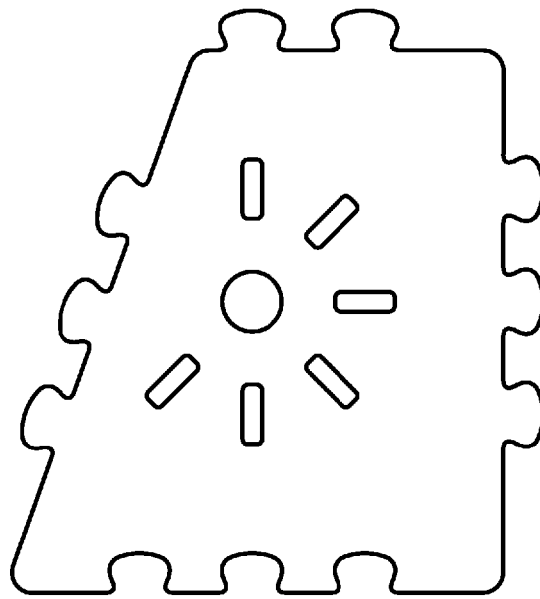


FIG 3

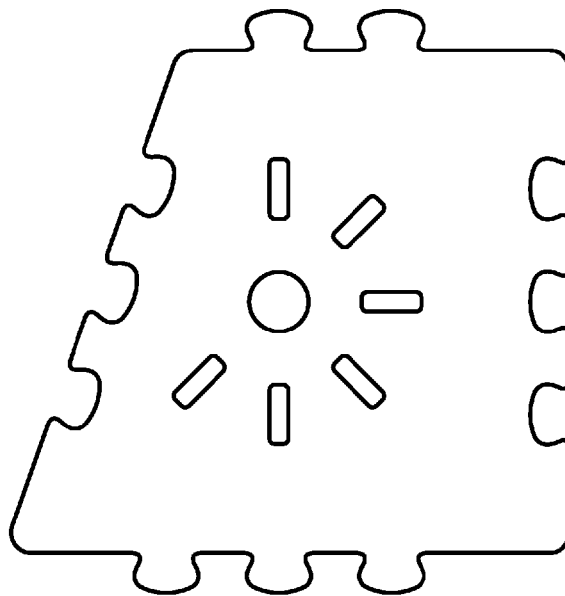


FIG 4

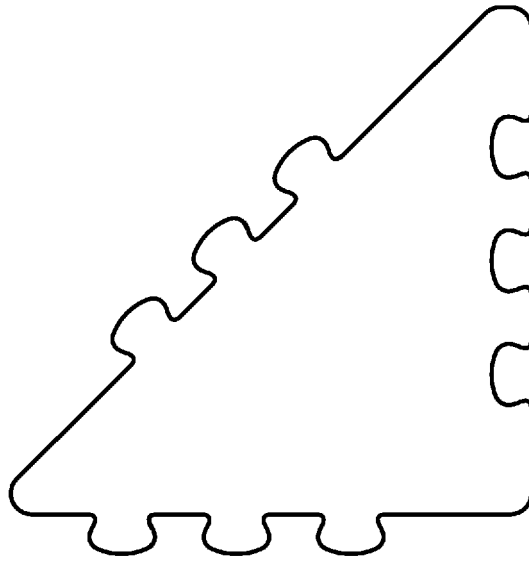


FIG 5

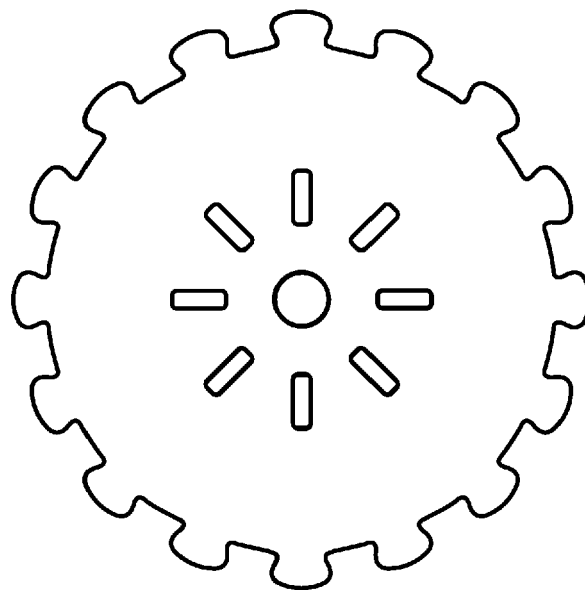


FIG 6

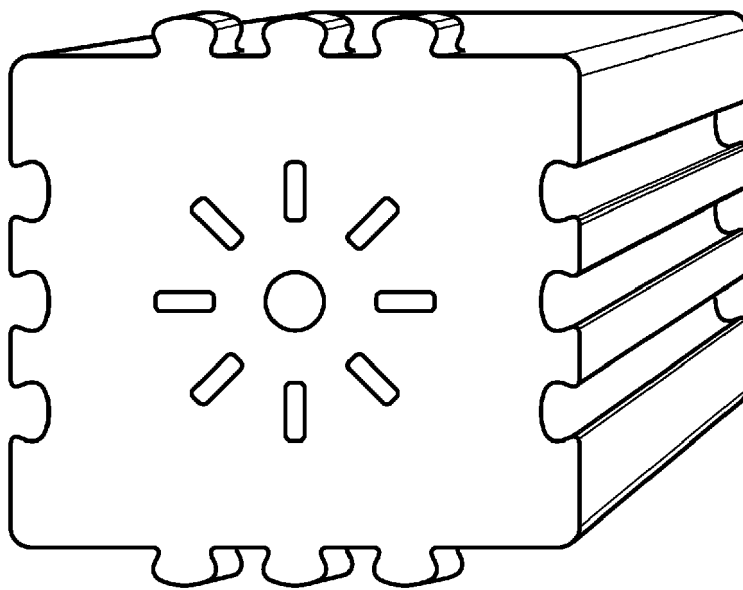


FIG 7



EUROPEAN SEARCH REPORT

Application Number
EP 09 18 0962

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Place of search Munich		Date of completion of the search 28 June 2010	Examiner Shmonin, Vladimir
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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