



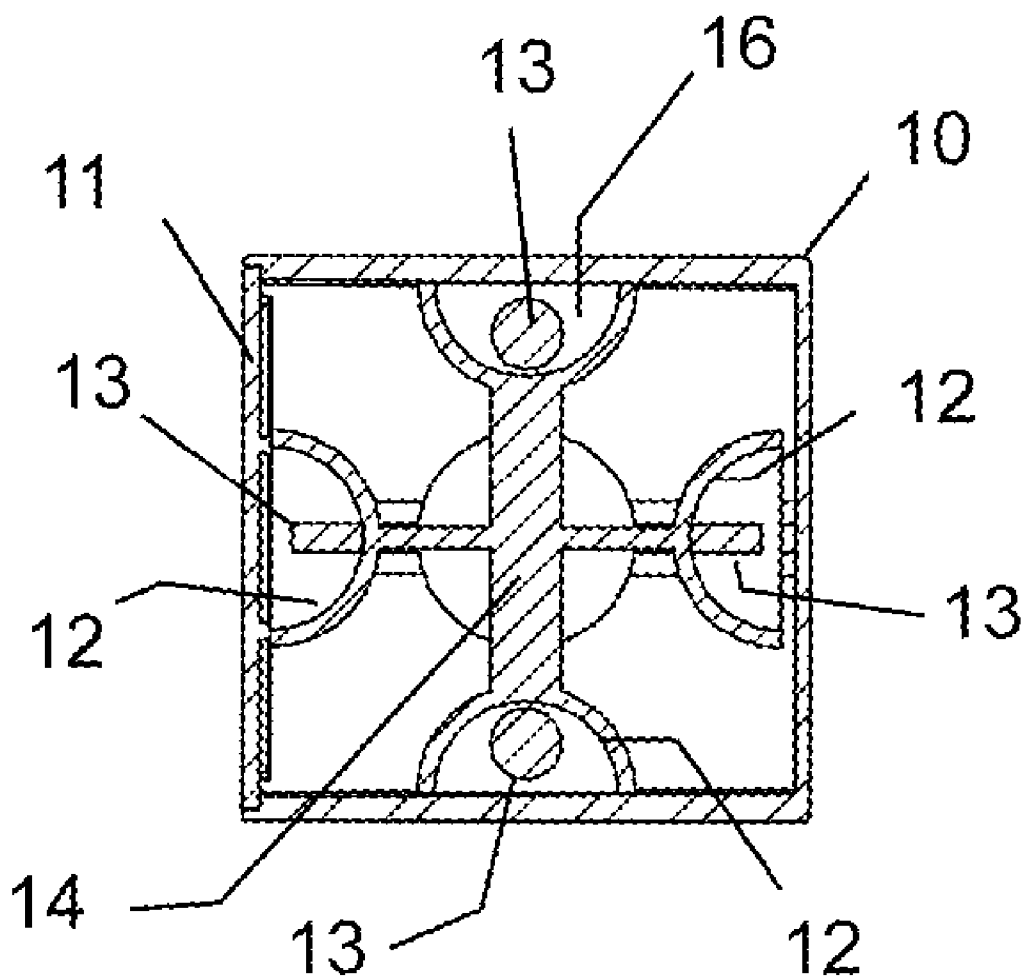
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MAK(10) **Pub. No.: US 2012/0309259 A1**(43) **Pub. Date: Dec. 6, 2012**(54) **MAGNETIC TOY BLOCK**(52) **U.S. Cl. 446/92**(76) **Inventor: Kai-Shun MAK, Kowloon (CN)**(21) **Appl. No.: 13/181,730**(22) **Filed: Jul. 13, 2011**(30) **Foreign Application Priority Data**

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A63H 33/04 (2006.01)(57) **ABSTRACT**

A toy block includes a body having external faces. A compartment is located behind each of the external faces and houses a magnet located freely within the compartment and adapted to turn upon magnetic interaction with another magnet external of the body so as to align attractively therewith. Two such toy blocks can be brought together face-to-face in any orientation and the magnet of one block will turn automatically into N-S alignment with a magnet of the other block so that the blocks attract and connect.



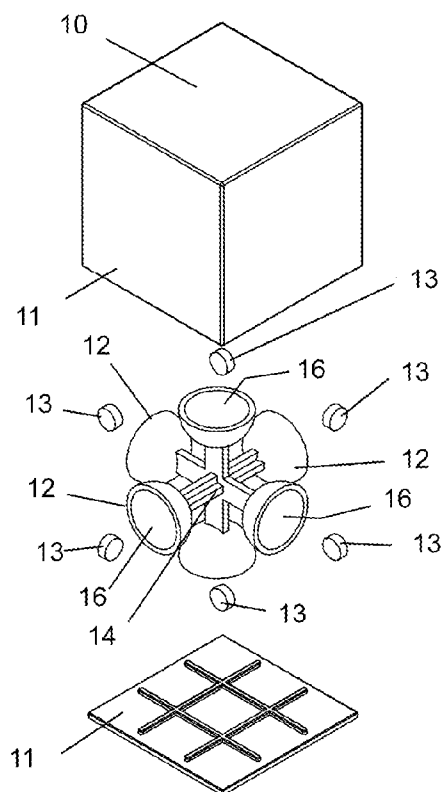


Fig. 1

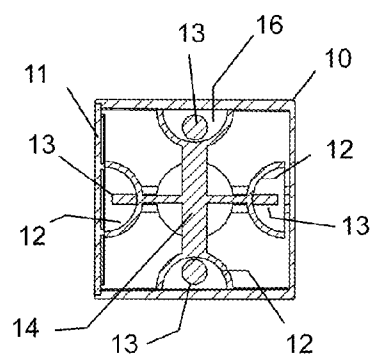


Fig. 2

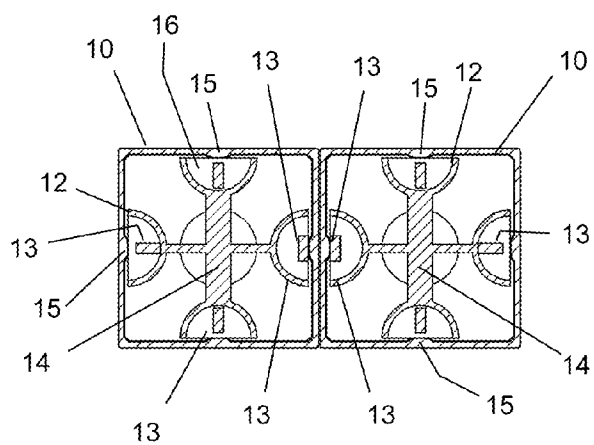


Fig. 3

MAGNETIC TOY BLOCK

BACKGROUND OF THE INVENTION

[0001] The present invention relates to toy blocks which can be attached to one and other by children to build structures. The invention more particularly, although not exclusively, relates to such toy blocks having magnetic attachment means.

[0002] Magnetically connectable toy blocks are known to be formed of plastics material into which magnets and optionally, pieces of ferrous metal are embedded. The magnet of one building block must be aligned with the metallic insert of another for attraction to occur in order that the blocks mutually connect. On the other hand, in order for a magnet of one block to be attracted to a magnet of another block, they must be aligned with correct N-S attractive polarity. N-N or S-S alignment will result in repulsion. Of course, if the metallic insert of one block is aligned with a metallic insert of another block, there will be no attraction. Children might be frustrated by this requirement to align the blocks correctly.

[0003] An improved magnetic toy block is provided to overcome or substantially ameliorate at least one of the above disadvantages.

SUMMARY

[0004] There is disclosed herein a toy block, comprising:

[0005] a body having a plurality of external faces;

[0006] a compartment located behind one of the external faces; and

[0007] a magnet located freely within the compartment and adapted to turn upon magnetic interaction with another magnet external of the body so as to align attractively therewith.

[0008] Preferably, the body defines an overall internal volume and the compartment is smaller than said overall internal volume.

[0009] Preferably, the toy block further comprises a plurality of said compartments, each located behind a respective one of said external faces, and a plurality of said magnets, each located freely within a respective one of said compartments.

[0010] Preferably, the toy block further comprises an internal frame supporting or having integrally formed therewith a plurality of cups, each cup cooperating with the body to define a respective one of said compartments.

[0011] Preferably, said frame is formed separately to the body for insertion therein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] A preferred form of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

[0013] FIG. 1 is a schematic parts-exploded perspective illustration of a toy block;

[0014] FIG. 2 is a schematic cross-sectional elevation of the assembled toy block; and

[0015] FIG. 3 is a schematic cross-sectional elevation of a pair of toy blocks mutually attached by a magnetic attraction.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0016] In the accompanying drawings there is depicted schematically a toy block 10 comprising a plastics body made up of six square walls 11 each having an external face and one of which is formed separately as an attachable panel which is depicted at the bottom of FIG. 1. This panel might be ultrasonically welded or otherwise affixed to close the cube.

[0017] On the inside face of each wall 11 is a central landing 15 to be described.

[0018] An internal frame 14 has six outwardly facing cups 12. These are either moulded integrally with the frame 14 or attached thereto. When the frame 14 is inserted into the body 10, each cup 12 abuts or comes into close proximity with the inside face of each wall 11 to define a compartment 16. There are six such compartments—one of which comprises the interface of a cup with the separately formed panel.

[0019] A small magnetic disk 13 is located within each compartment 16. The magnets 13 are dimensioned to reside within the compartments 16 so that they can flip upside-down and turn freely.

[0020] When two of the blocks 10 are brought into mutually adjacent proximity as illustrated in FIG. 3, the adjacent magnets interact with one another and at least one of them will turn into N-S (North-South) attractive alignment whereupon they will bear against the respective landing 15 and the blocks will be mutually retained by magnetic attraction.

[0021] Moreover, the blocks 10 can be connected to one another in any orientation and the child need not turn the blocks to provide N-S alignment of the internal magnets.

[0022] It should be appreciated that modifications and alterations obvious to those skilled in the art are not to be considered as beyond the scope of the present invention. For example, the compartments 16 could be formed integrally with the body 10, rather than providing an internal frame 14.

1. A toy block, comprising:

a body having a plurality of external faces;

a compartment located behind one of the external faces; and

a magnet located freely within the compartment and adapted to turn upon magnetic interaction with another magnet external of the body so as to align attractively therewith.

2. The toy block of claim 1, wherein the body defines an overall internal volume and the compartment is smaller than said overall internal volume.

3. The toy block of claim 2, comprising a plurality of said compartments, each located behind a respective one of said external faces, and a plurality of said magnets, each located freely within a respective one of said compartments.

4. The toy block of claim 3, further comprising an internal frame supporting or having integrally formed therewith a plurality of cups, each cup cooperating with the body to define a respective one of said compartments.

5. The toy block of claim 4, wherein said frame is formed separately to the body for insertion therein.

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