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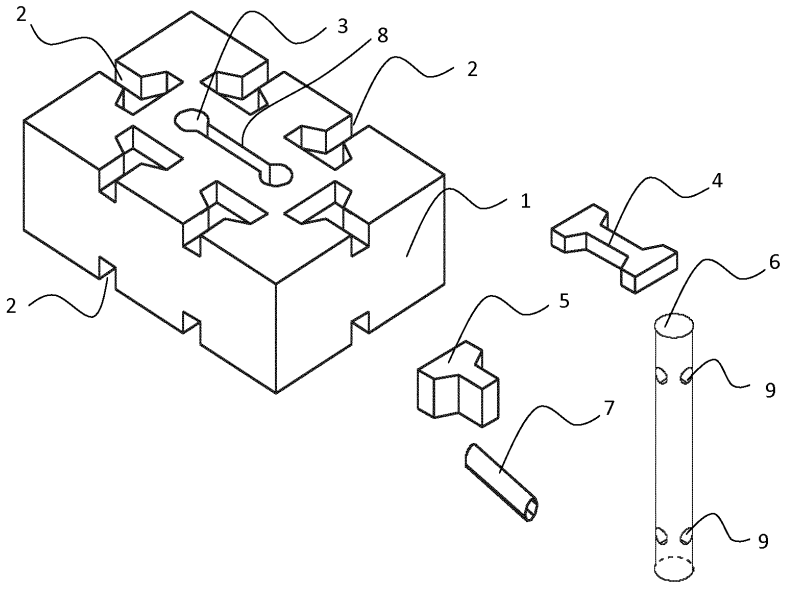
(54) SYSTEM OF BLOCKS THAT ARE INTERLOCKED BY MEANS OF GEOMETRICAL BODIES

(57) The next invention relates a mutual tie block system to create a monolithic shape applicable in construction, toy industry and almost any application. This block is built by a polyhedrical body **(1)** with a rectangular parallelepiped shape with a group of wedges located in the lower size of the block **(2)** and boreholes upon the faces of the block. These wedges and boreholes have been designed to admit geometrical elements as ties, long ties **(4),** short ties **(5),** vertical ties **(6)** and pins in order to avoid horizontal and/or vertical movement between side by side sized blocks and creating a new geometric body, perfectly engaging the blocks. Ties engage block rows and columns, getting them together tightly. It's a clean, fast and simple process and easy to assemble, and it can be easily adapted to any constructive or didactic requirement and as well as new block union system, without using binders.

FIGURE Nº1



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Description

DESCRIPTION OF WHAT IS KNOWN IN THE MATTER

[0001] In the present time there are various technical solutions for new geometric bodies building using unit prefabricated blocks. Almost all of them bind together by creating rows and columns and using a binder between them to get a monolithic body. A little portion of whole amount of blocks are used to make walls and these blocks fit one another by using external anchors to maintain its stability.

[0002] In search of nearby presented design inventions is the patent application request 200301260, requested by PALIMONDIAL S.A, DIIN021/01, out of use in the present time, which proposes a block design with geometry that allows a block to fit into another through a side flange, but requiring the use of a binder. However, block design that tie together presented in this application match each other using pieces that fit in the blocks, tying them and forming a cohesive body. The design requires no binder, depends solely on the locks. It provides a limitless variety of designs and construction and educational applications. Easy to assemble and disassemble, portable, reusable, clean and environmentally friendly.

INVENTION IN-DEPTH DESCRIPTION

[0003] The following model is made up by a polyhedral body with a rectangular parallelepiped shape **(1),** with a group of wedges in the lower size of the block **(2),** and boreholes **(3)** in the upper and lower faces of the polyhedral. These polyhedrical shapes **(1)** are engaged one another by geometrical bodies that fit in the wedges **(2)** who differ themselves according to position and action, long tie **(4),** short tie **(5),** vertical tie **(6)** and the pin as is shown in **fig. n° 1.**

[0004] The rectangular parallelepiped **(1)** is engaged to another with the same geometry by long ties **(4)** who are sized on two fits that are lineally coincident and avoid longitudinal movement of polyhedrical shapes **(1),** as is shown in **fig.** n° **3.**

[0005] Short tie **(5),** sized over two vertically coincident wedges, avoid transverse movement of polyhedrical bodies **(1)** that have been sized one on top of the other, as is shown in **fig. n° 3.**

[0006] Vertical movement of the polyhedrical column is restricted by long vertical ties sizing **(6),** with two boreholes **(9)** in 90 degrees and sized in every long t corner **(6),** as is shown in **fig. n° 1.** Tie **(6)** is inserted in the borehole **(3)** of the polyhedral **(1),** lower tie boreholes **(6)** meet the canal **(8)** of the lower size of the block **(1).** The pin **(7)** goes in the lower size of the canal through the pinhole **(9),** as is shown in **fig. 3.**

[0007] After that it goes through the block borehole **(3)** sized in the upper lock location **(6)** who is secured in the lower block. The bolt is stuck in the upper block **(7)** and this make lower and upper blocks be secured in vertical movement, **fig. n° 3.**

BRIEF FIGURES DESCRIPTION

[0008]

Figure 1 is a three-dimensional block view of this invention and block ties.

Figure 2 is a three-dimensional block view of this invention and the position that occupy their ties.

Figure 3 is a three-dimensional view of block locked between itself and the placement of its ties.

Figure N ° 4 is a view on floor of the block. There is the position of ties and boreholes.

Figure N ° 5 is a front view of the block. Ties location are shown on the front side.

Figure No. 6, is a side view of the block. It can be observed in the side face (transverse) location of ties.

PARTS AND PIECES

[0009]

A With number 1 "body block" is identified
B With number 2 "underneath wedges" is identified
C With number 3 "borehole" is identified
D With number 4 "long tie" is identified
E With number 5 "short tie" is identified
F With number 6 "vertical tie" is identified
G With number 7 "pin" is identified
H With number 8 the "channel" is identified
I With number 9 "pin hole" is identified

Claims

1. Mutual tie block system, for buildings construction, in which each block is made by wedges in the lower side of the block and boreholes where a geometric element is inserted that ties a block with another **CHARACTERIZED by** a block who has polyhedrical geometric and/or cylindrical body in which upper and lower faces has underneath wedges and boreholes, where elements or ties with the same geometry can fit and with dimensions slightly lower than wedges and boreholes dimensions, ties that couple blocks together.

2. Mutual tie block locking according to claim 1, **CHARACTERIZED by** cylindrical geometry and the set of polyhedrical wedges and boreholes.

3. Mutual tie block locking according to claim 1, **CHARACTERIZED by** polyhedrical geometry block and a set of cylindrical wedges and boreholes.

4. Mutual tie block locking according to claim 1, **CHAR-**

ACTERIZED by lateral block faces wedges.

5. Mutual tie block locking according to claim 1, **CHARACTERIZED by** wedges in all block faces.

6. Mutual tie block locking according to claim 1, **CHARACTERIZED by** cylindrical wedges.

7. Mutual tie block locking according to claim 1, **CHARACTERIZED by** lateral faces boreholes.

8. Mutual tie block locking according to claim 1, **CHARACTERIZED by** boreholes in all the block faces.

9. Mutual tie block locking according to claim 1, **CHARACTERIZED by** polyhedrical boreholes.

10. Mutual tie block locking according to claim 1, **CHARACTERIZED by** a cylindrical tie that fits the wedge.

11. Mutual tie block locking according to claim 1, **CHARACTERIZED by** a cylindrical tie that is inserted into the borehole and has ending side cylindrical boreholes in which a pin is inserted.

12. Mutual tie block locking according to claim 1, **CHARACTERIZED by** a polyhedrical tie that is inserted in the borehole and has ending side polyhedrical boreholes where a pin is inserted.

13. Mutual tie block locking according to claim 1, **CHARACTERIZED by** a cylindrical tie inserted into the borehole and has ending side polyhedrical boreholes where a pin is inserted.

14. Mutual tie block locking according to claim 1, **CHARACTERIZED by** a polyhedrical tie inserted in the borehole and has ending side cylindrical boreholes where a pin is inserted

FIGURE Nº1

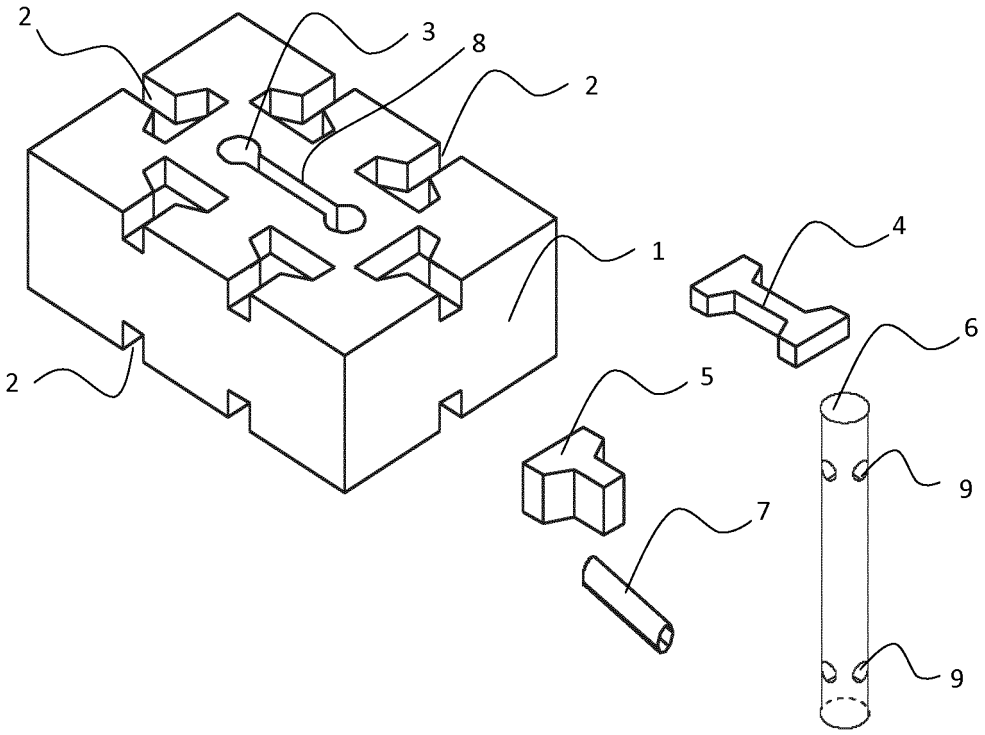


FIGURE Nº2

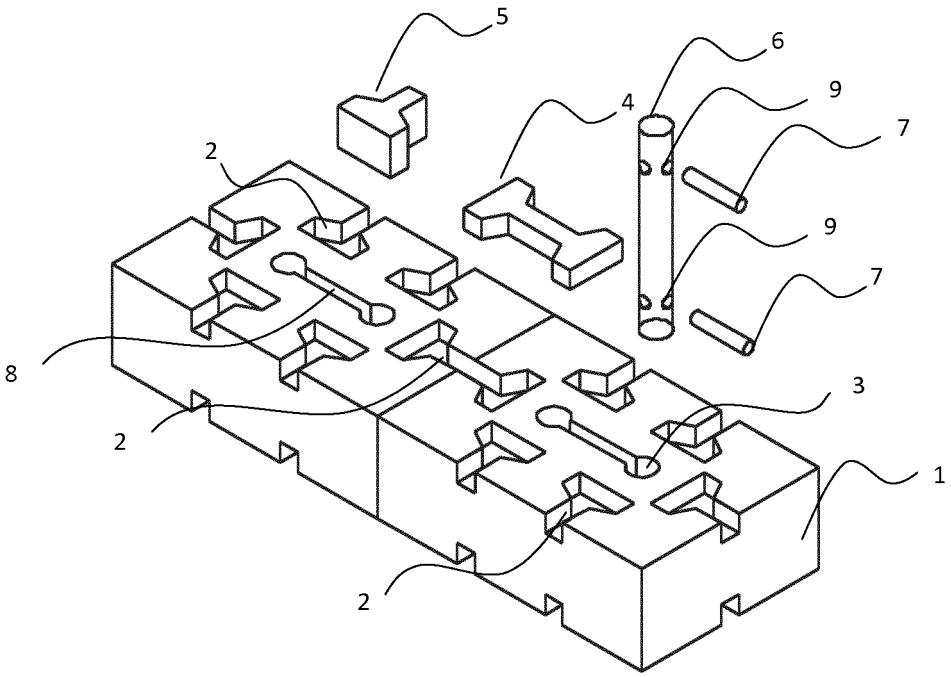


FIGURE Nº3

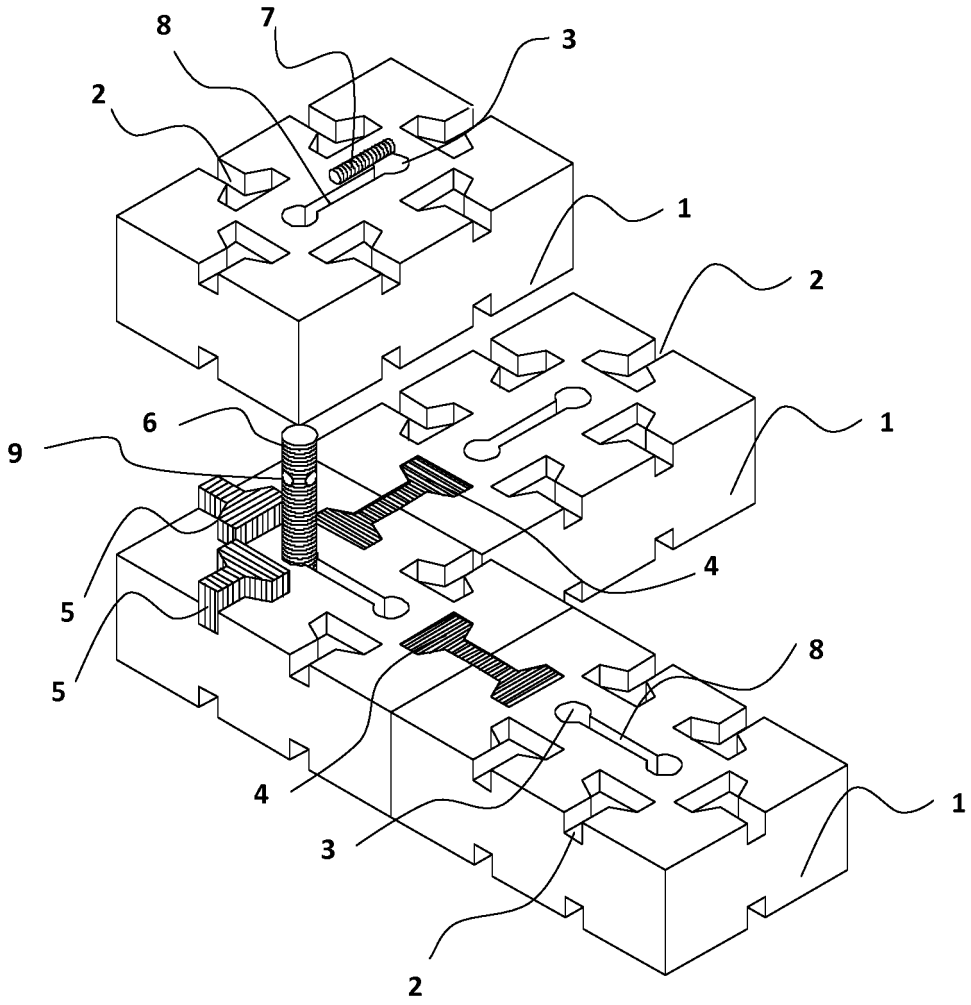


FIGURE Nº4

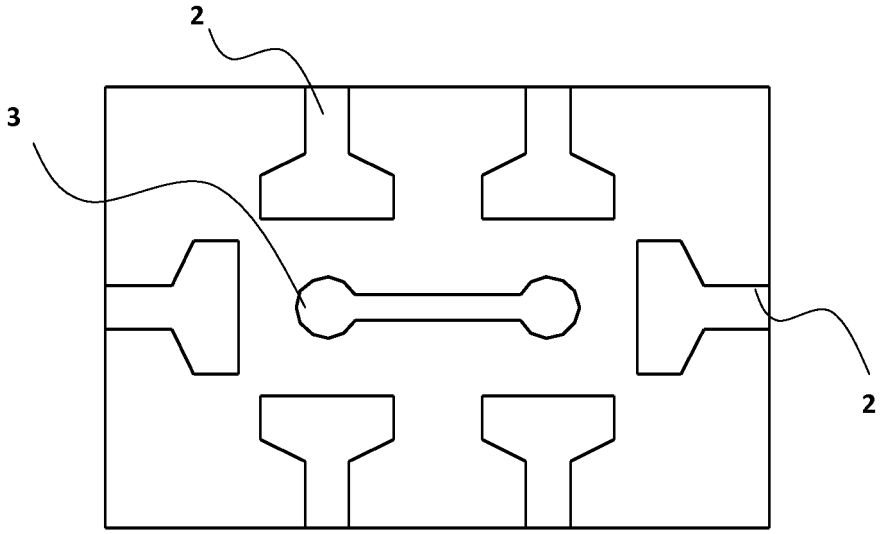


FIGURA Nº5

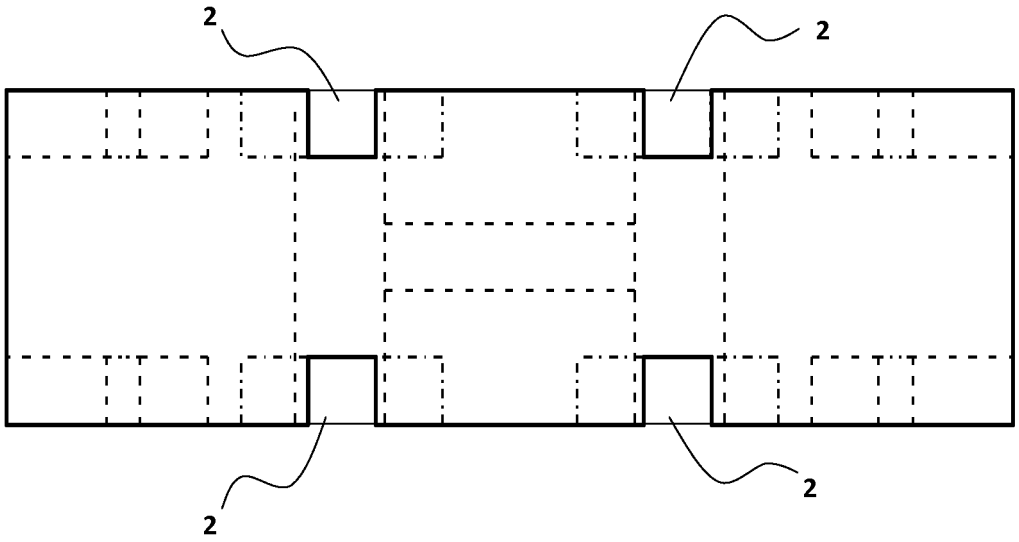
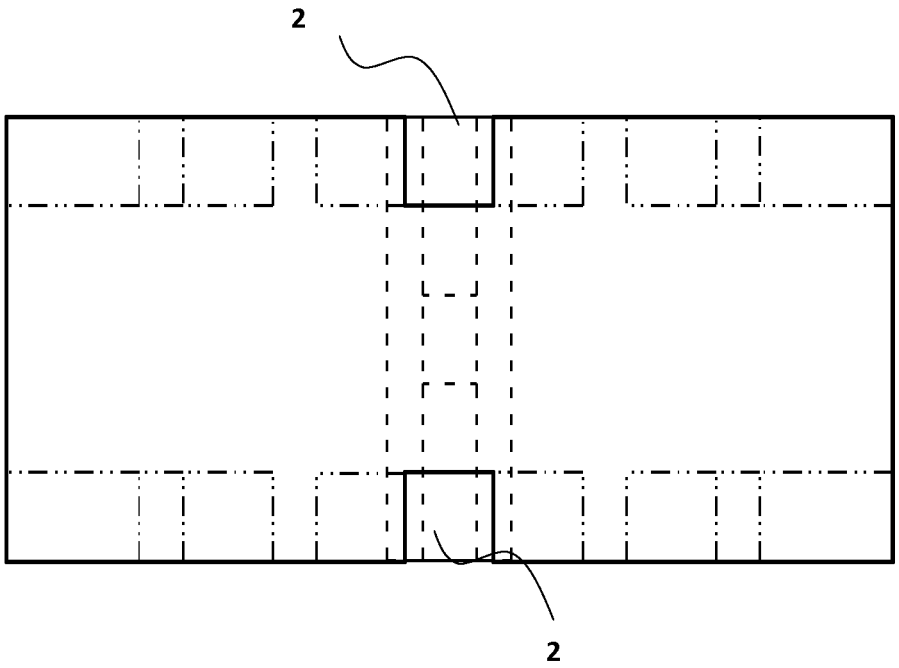


FIGURE Nº6



INTERNATIONAL SEARCH REPORT

International application No.
PCT/CL2013/000089

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)
E04B, A63H, E02D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y		4-5,7-8
Y	BE 1002733 A6 (NOEL RAYMOND) 21/05/1991, page 4, lines 6 - 34; page 5, line 4 - page 6, line 19; figures.	4-5,7-8
X	EP 1882788 A2 (POLYSTONE GMBH) 30/01/2008, paragraph [0037]; paragraphs[0063 - 0064]; paragraph [0069]; Abstract from DataBase EPODOC. Retrieved from EPOQUE; figures.	1-3,6,9,10

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer E. Balsera Porris Telephone No. 91 3493260

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CL2013/000089

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	FR 940270 A (GLUCKERT) 30/11/0002, page 1, lines 15 - 26; page 2, lines 11 - 26; figures.	1-3,6,9
A	US 7429144 B1 (LAI HUO-MU) 30/09/2008, abstract; figures.	1, 4, 5
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
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		NONE	

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International application No.

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CLASSIFICATION OF SUBJECT MATTER

E04B2/08 (2006.01)
E04B2/18 (2006.01)
A63H33/10 (2006.01)

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 200301260 A **[0002]**