



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
24.10.2018 Bulletin 2018/43

(51) Int Cl.:
A63H 33/04 (2006.01) **A63H 18/02** (2006.01)
A63H 18/08 (2006.01)

(21) Application number: **18165003.7**

(22) Date of filing: **29.03.2018**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(72) Inventors:
• **TSAI, Peng-Yuan**
Kaohsiung City (TW)
• **LIN, Tz-Ying**
Kaohsiung City (TW)
• **CHEN, Shao-Wei**
Taoyuan City (TW)
• **CHENG, Wang-Dong**
New Taipei City (TW)

(30) Priority: **19.04.2017 TW 106113141**

(71) Applicant: **QBI Globe Inc.**
New Taipei City (TW)

(74) Representative: **Melchior, Robin**
Octrooibureau Vriesendorp & Gaade B.V.
Koninginnegracht 19
2514 AB Den Haag (NL)

(54) **TOY BLOCK WITH SLOT TRACKS FORMED THEREON AND TOY BLOCK SET FORMED BY THE SAME**

(57) A toy block with slot tracks formed thereon takes the form of a hexahedron with six track surfaces (11). A slot (12) is formed on each of at least one of the track surfaces (11) and has multiple connection ends (13) extending and connecting to different edges of the track surface (11). Each toy block can at most include six different slots (12) to attain high degree of diversity and variety for playing the toy block. When multiple ones of the toy blocks are assembled, users just need to get the multiple toy blocks to approach each other and the multiple toy blocks can be quickly assembled into a toy block set with high degree of variation and entertaining effect.

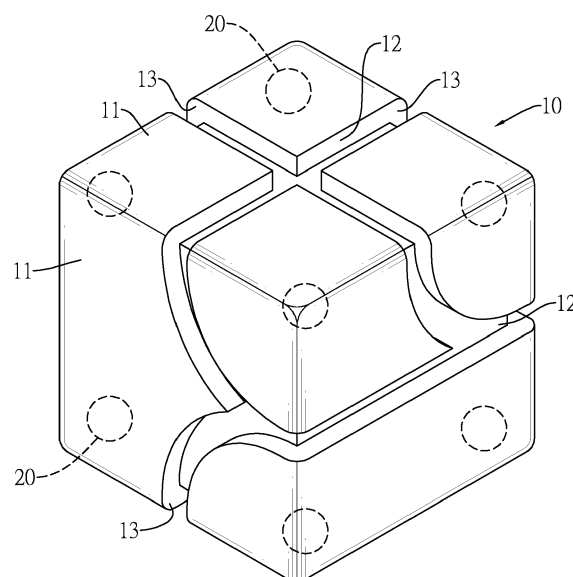


FIG.1

Description

BACKGROUND

1. Field of the Invention

[0001] The present invention relates to a slot car racing track and, more particularly, to a toy block with slot tracks formed thereon for toy vehicles to be driven thereon through the slot tracks.

2. Description of the Related Art

[0002] A slot car racing track set is a toy designed for children to play with and usually has a rectangular or round plastic slot track for toy cars to be placed and racing thereon, thereby simulating actual racing conditions.

[0003] Earlier slot car racing tracks are integrally formed and the integrally formed tracks in turn provide an immutable racing track condition. Under the circumstance, children easily feel bored with the same racing condition over and over again, and the slot car racing tracks end up being thrown aside when children run out of their interest and patience. To address the foregoing monotonous issue, detachable racing tracks have been evolved from the earlier slot car racing tracks to divide the integrally formed track into many small segments of detachable tracks with diversified forms, such as straight-line, curved and bifurcated segments and the like, significantly making the slot car racing more entertaining.

[0004] However, the detachable tracks have the following two drawbacks.

[0005] Firstly, as the detachable tracks are connected by connection portions formed at two adjacent end portions of two detachable tracks to be connected and those connection portions engage each other in a way resembling the pieces assembled in a jigsaw puzzle, the unsmooth engagement of the connection portions oftentimes occurs during assembly and disassembly as a result of not fully matching shapes for engagement.

[0006] Secondly, each detachable track has its own unique shape corresponding to only one type of track condition. Should no additional track be further added, degree of diversification in track setup turns out to be monotonous and limited accordingly.

[0007] An objective of the present invention is to provide a toy block with slot tracks formed thereon and a toy block set formed by the toy blocks, which provide speedy and convenient assembly or disassembly.

SUMMARY OF THE INVENTION

[0008] To achieve the foregoing objective, the toy block takes the form of a hexahedron and includes a body, six track surfaces, at least one slot, and at least one coupling member.

[0009] The body has six surfaces.

[0010] The six track surfaces are formed on the six

surfaces of the body and each track surface has multiple edges.

[0011] The at least one slot are respectively formed on at least one of the six track surfaces, and each slot has multiple connection ends respectively extending and connecting to different edges of the track surface with the slot thereon.

[0012] The at least one coupling member is mounted inside the body, and each of the at least one coupling member is a magnet.

[0013] To achieve the foregoing objective, a toy block set includes multiple toy blocks and is formed by the multiple toy blocks.

[0014] The present invention is advantageous in the multiple different slots formed on the multiple track surfaces of the toy block. In contrast to conventional technique, diversification of the slot track arrangement can be significantly increased upon assembly of the toy blocks. Besides, as the toy blocks just need to approach each other to complete assembly of the toy blocks, high degree of operational convenience can be also attained.

[0015] Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

Fig. 1 is a perspective view of a toy block in accordance with the present invention;

Fig. 2 is a cross-sectional view of a first embodiment of the toy block in Fig. 1;

Fig. 3 is a cross-sectional view of a second embodiment of the toy block in Fig. 1;

Fig. 4 is a top view of a first embodiment of a toy block set in accordance with the present invention;

Fig. 5 is a perspective view of a second embodiment of a toy block set in accordance with the present invention;

Fig. 6 is a perspective view of a toy car in accordance with the present invention; and

Fig. 7 is a front view of the toy car in Fig. 6 pairing up with the toy block in Fig. 1.

DETAILED DESCRIPTION OF THE INVENTION

[0017] With reference to Figs. 1 and 5, a toy block takes the form of a hexahedron, and as illustrated, the toy block specifically takes the form of a cube or a trapezoidal body. However, shapes of the toy block may include but are not limited to the foregoing shapes.

[0018] With reference to Figs. 1 and 2, the toy block has a body 10 and six track surfaces 11 formed on six surfaces of the body 10, and each of at least one of the track surfaces 11 has a slot 12 formed on the track surface 11. In the present embodiment, each of the six track

surfaces 11 has the slot formed thereon. However, it is not imperative that each track surface 11 has a slot 12 formed thereon.

[0019] With reference to Figs. 1 and 2, each slot 12 includes multiple connection ends 13 extending to different edges of the track surface 11 on which the slot 12 is located. The different edges include but are not limited to opposite edges of the track surface 11. The slot 12 may be straight, curved, and bifurcated with at least two prongs. For example, the slot 12 may take an arced or a cross-shaped form. Since the connection ends 13 on the same track surface 11 are respectively connected with different edges of the track surface 11, it is the slot 12 on the track surface 11 that connects and communicates with the connection ends 13.

[0020] With reference to Fig. 1, each connection end 13 of the slot 12 on a corresponding track surface 11 extends to and is connected with a center of a corresponding edge of the corresponding track surface 11. However, connecting each connection end 13 with a center of the corresponding edge of the corresponding track surface 11 is not a necessity.

[0021] With reference to Figs. 1, 2 and 3, the toy block further includes at least one coupling member 20 mounted inside the body 10. In the present embodiment, each of the at least one coupling member 20 is a magnet. However, each of the at least one coupling member 20 may be formed of other materials.

[0022] As far as the internal structure of the toy block to which the at least one coupling member 20 is coupled is concerned, the body 10 may be divided into the following two types.

[0023] With further reference to Figs. 1 and 2, in the first type the body 10 is hollow internally and the at least one coupling member 20 includes eight coupling members 20. The body 10 has eight voids 14 formed inside an inner wall of the body 10 and being respectively located at eight inner corners of the body 10. The eight coupling members 20 are securely mounted inside the respective voids 14.

[0024] With reference to Figs. 1 and 3, in the second type the body 10 is solid and the at least one coupling member 20 includes one coupling member 20. The single one coupling member 20 is centrally mounted inside the body 10. The body 10 is fully solid except an empty portion therein for receiving the coupling member 20.

[0025] With reference to Figs. 4, 5 and 6, a toy block set in accordance with the present invention includes multiple toy blocks 10A as mentioned earlier. When approaching each other, the multiple toy blocks 10A can be mutually connected and coupled to each other through the at least one coupling member 20 inside the body 10, 10A of each toy block. After the multiple toy blocks are connected with each other, the slots 12, 12A on the upward track surfaces 11 of the toy blocks can be interconnected to communicate with each other so as to form a longer and/or more complicated slot track.

[0026] With reference to Figs. 4 to 7, during operation

of the toy block set, a toy car 91 can be further paired up with the toy block set for a joint operation. The toy car 91 has a roller 92 rotatably mounted on a bottom of the toy car 91. The roller 92 of the toy car 91 can be placed and is slidably movable in the slots 12 on the upward track surfaces 11 of the toy block set, such that the toy car 91 can be moved along paths formed by the interconnected slots 12 on the upward track surfaces 11 of the toy block set.

[0027] With reference to Figs. 1 and 5, in sum, as having six track surfaces 11, the body 10 of each toy block can have at most six slots 12 with different shapes on the six track surfaces 11. By virtue of the shape variations of the slots 12, high degree of diversity and variety of the slot track formed by slots 12 of the toy blocks assembled by users can be realized. Moreover, when toy blocks with different shapes, for example, cubic and trapezoidal toy blocks 10, are assembled together, not only can the formed slot track be flexible in shape arrangement, but also an effect of uneven ground condition can be created. Accordingly, the present invention has high degree of diversification attributable to variations in slot track arrangement and ground condition.

[0028] Additionally, because the connection ends 13 of the toy blocks are not necessarily connected to the centers of the edges of the corresponding track surfaces 11, as long as the connection ends 13 of the multiple toy blocks to be assembled can be connected to communicate with each other, the multiple toy blocks can be assembled together in a correct manner.

[0029] With reference to Figs. 2, 3 and 4, the toy blocks can be assembled together by using the at least one coupling member 20 thereof. Because each of the at least one coupling member 20 is a magnet, when approaching each other, the toy blocks can be attracted to each other by way of magnetic attraction. Therefore, assembly and disassembly of the toy blocks can be very speedy and convenient.

[0030] 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. 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.

Claims

1. A toy block taking the form of a hexahedron and comprising:

a body (10) having six surfaces; and
six track surfaces (11) formed on the six surfaces of the body (10), each track surface (11) having multiple edges;

characterized in that the toy block further comprises:

at least one slot (12) respectively formed on at least one of the six track surfaces (11), each slot (12) having multiple connection ends (13) respectively extending and connecting to different edges of the track surface (11) with the slot (12) thereon; and at least one coupling member (20) mounted inside the body (10), each of the at least one coupling member (20) being a magnet.

2. The toy block as claimed in claim 1, wherein each connection end (13) of each of the at least one slot (12) on a corresponding track surface (11) extends to and is connected with a center of a corresponding edge of the corresponding track surface (11).
3. The toy block as claimed in claim 1 or 2, wherein the body (10) is hollow internally, and the at least one coupling member (20) comprises eight coupling members (20) mounted inside the body (10) and respectively located at eight inner corners of the body (10).
4. The toy block as claimed in claim 1 or 2, wherein the body (10) is solid, and the at least one coupling member (20) comprises one coupling member (20) centrally mounted inside the body (10).
5. The toy block as claimed in claim 1 or 2, wherein the body (10) is trapezoidal.
6. The toy block as claimed in claim 1 or 2, wherein the body (10) is a cube.
7. A toy block set comprising multiple toy blocks and formed by the multiple toy blocks, wherein each toy block takes the form of a hexahedron and comprises:

a body (10, 10A) having six surfaces; and six track surfaces (11) formed on the six surfaces of the body (10, 10A), each track surface (11) having multiple edges;
characterized in that each toy block further comprises:

at least one slot (12, 12A) formed on each of at least one of the six track surfaces (11), each slot (12, 12A) having multiple connection ends (13) respectively extending and connecting to different edges of the track surface (11) with the slot (12, 12A) thereon; and
at least one coupling member (20) mounted inside the body (10, 10A), each of the at least one coupling member (20) being a

magnet;

wherein the multiple toy blocks are mutually connected and coupled to each other, and the slots (12, 12A) on the upward track surfaces (11) of the multiple toy blocks are interconnected to communicate with each other.

8. The toy block set as claimed in claim 7, wherein each connection end (13) of each of the at least one slot (12, 12A) on a corresponding track surface (11) extends to and is connected with a center of a corresponding edge of the corresponding track surface (11).
9. The toy block set as claimed in claim 7 or 8, wherein the body (10, 10A) is hollow internally, and the at least one coupling member (20) comprises eight coupling members (20) mounted inside the body (10, 10A) and respectively located at eight inner corners of the body (10, 10A).
10. The toy block set as claimed in claim 7 or 8, wherein the body (10, 10A) is solid, and the at least one coupling member (20) comprises one coupling member (20) centrally mounted inside the body (10, 10A).
11. The toy block set as claimed in claim 7 or 8, wherein the body (10, 10A) is trapezoidal.
12. The toy block set as claimed in claim 7 or 8, wherein the body (10, 10A) is a cube.

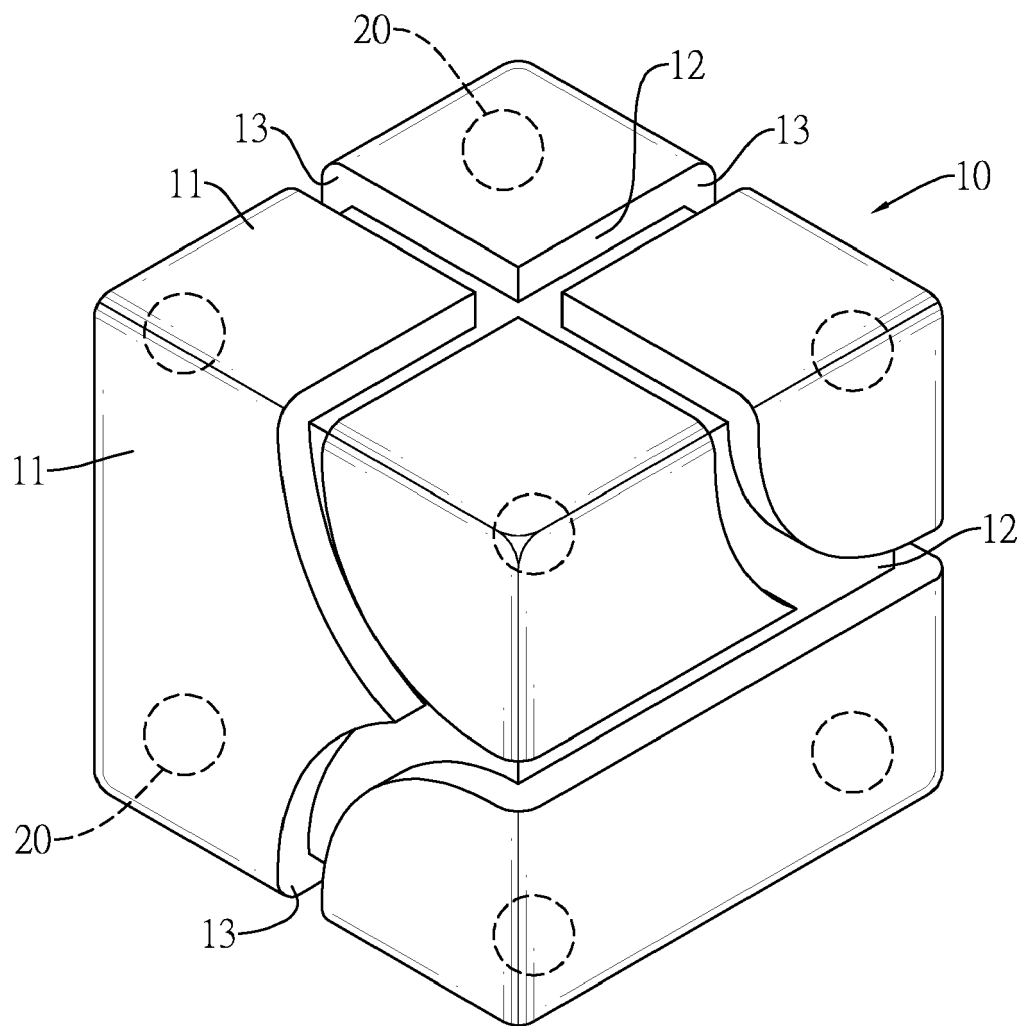


FIG.1

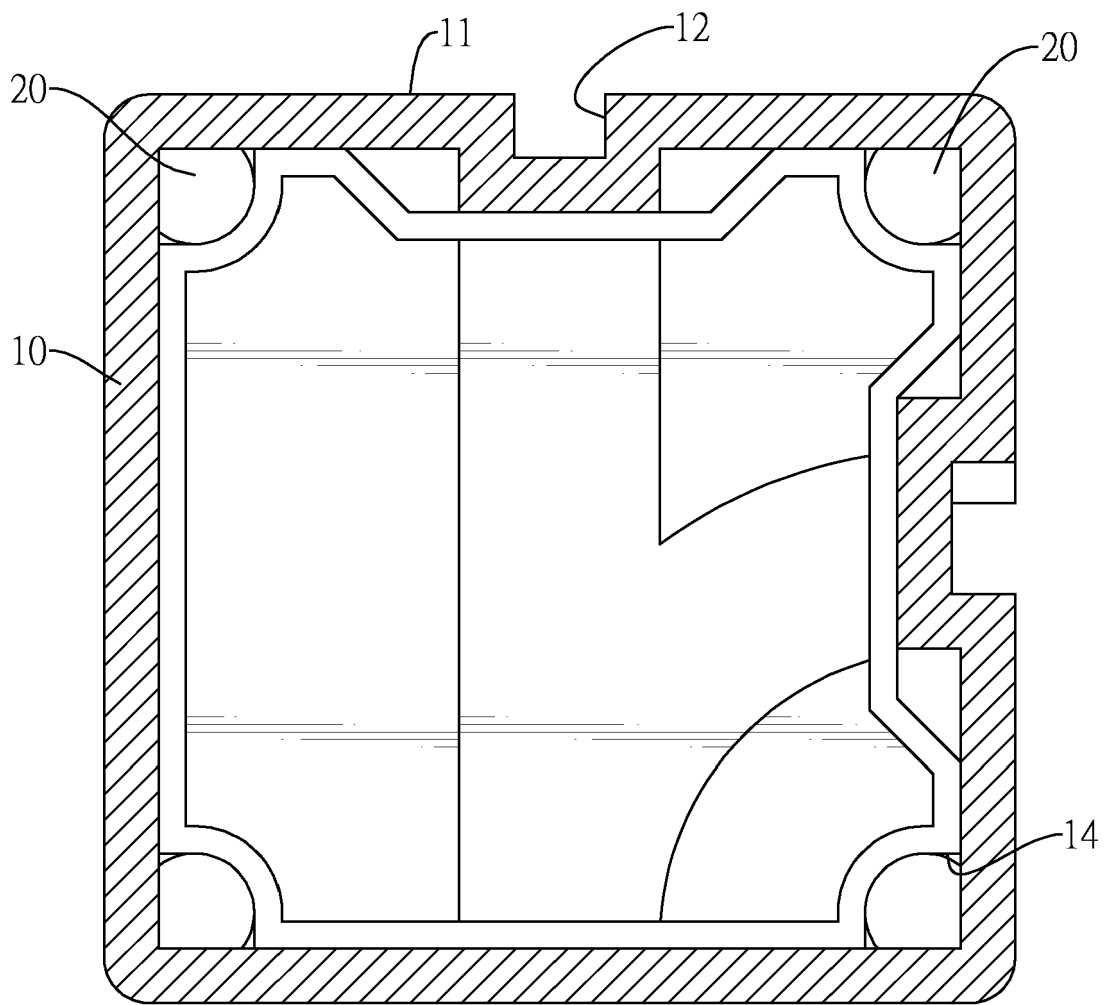


FIG.2

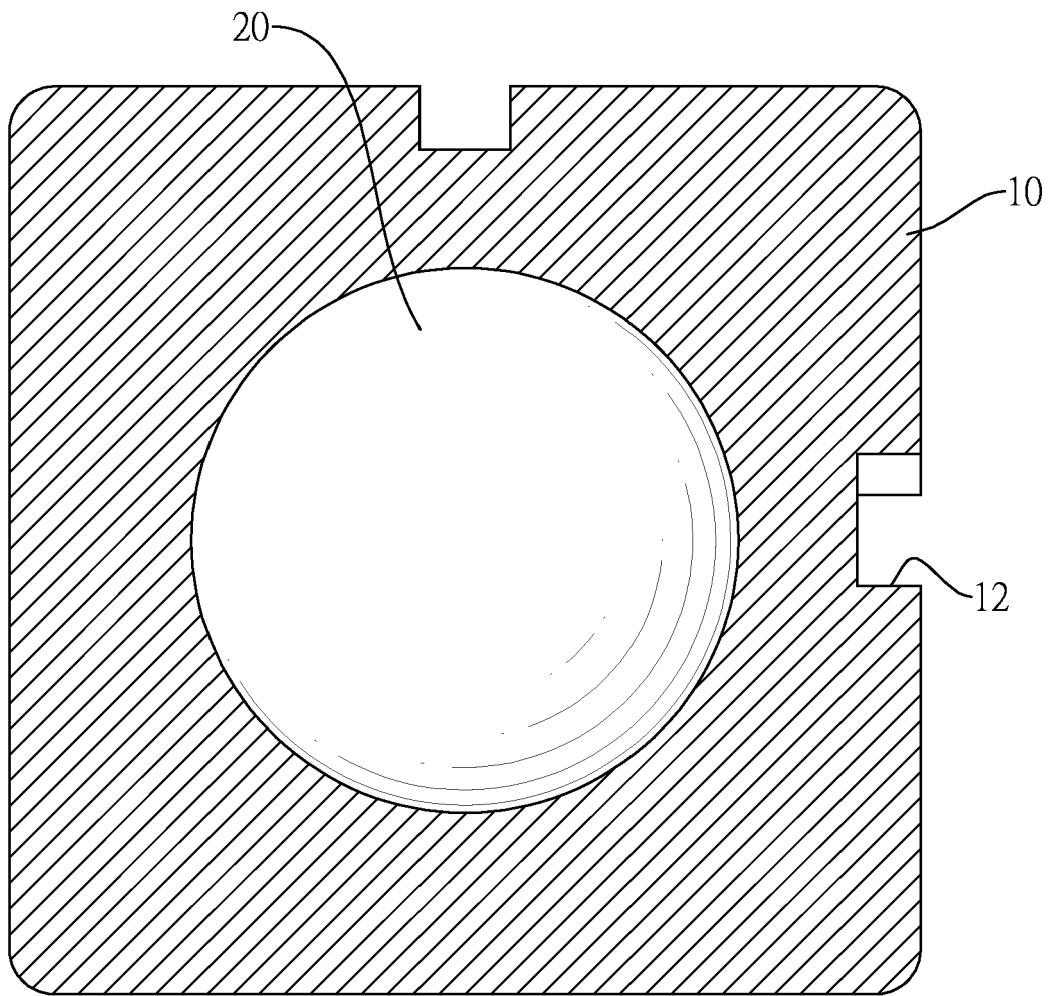


FIG.3

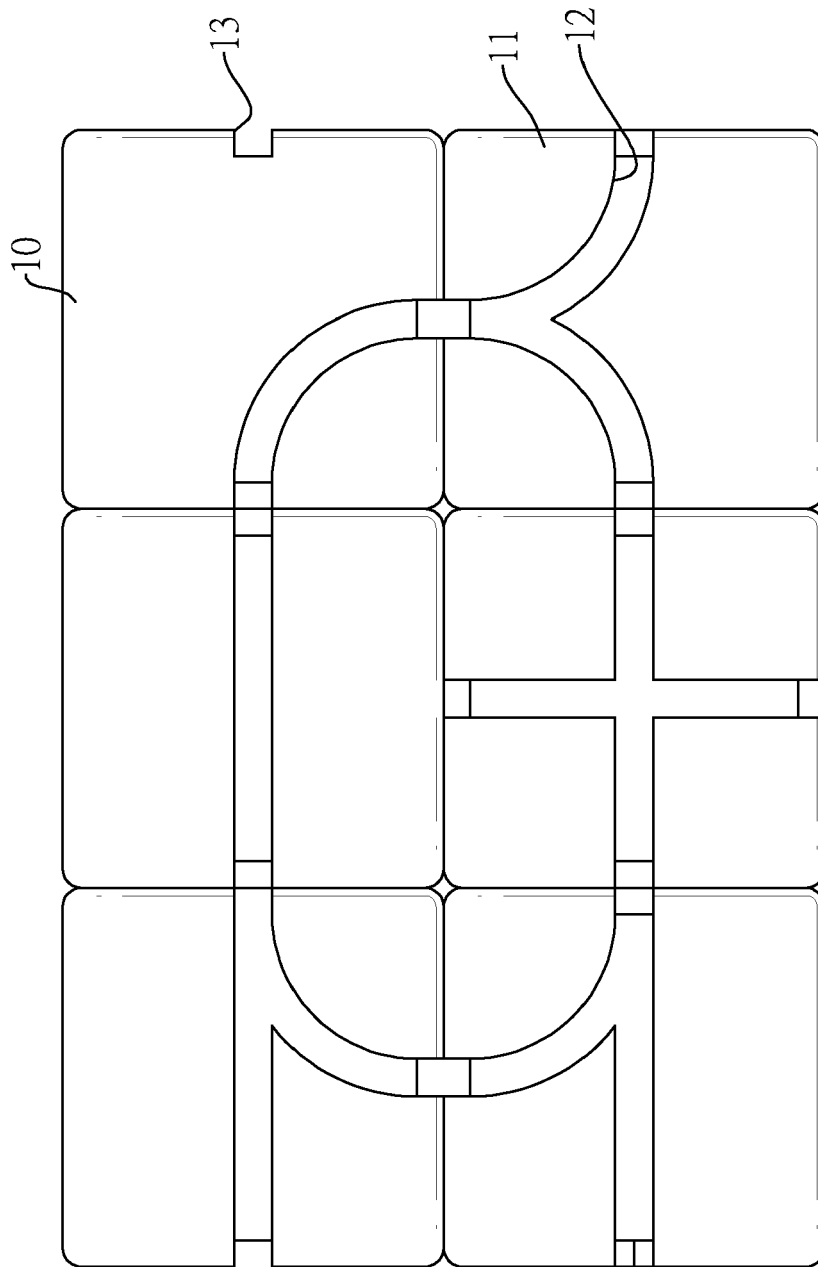


FIG. 4

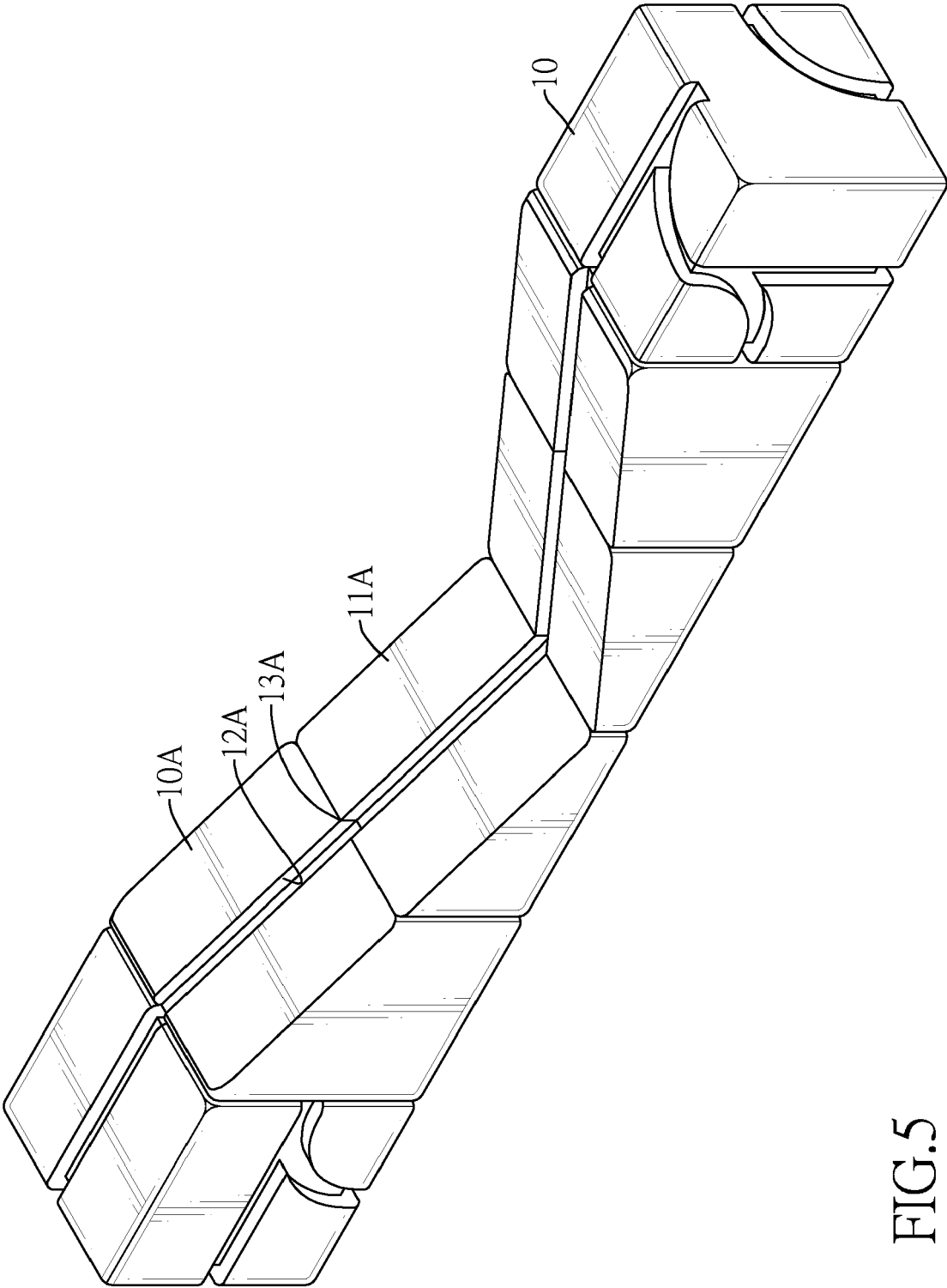


FIG. 5

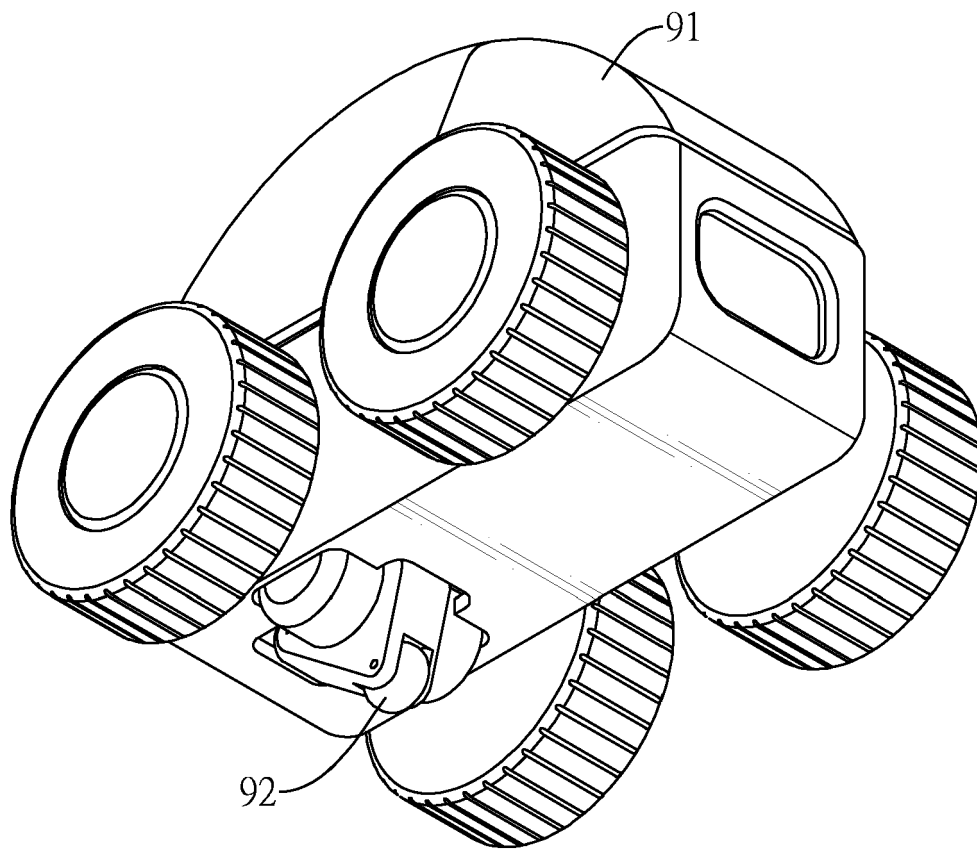


FIG.6

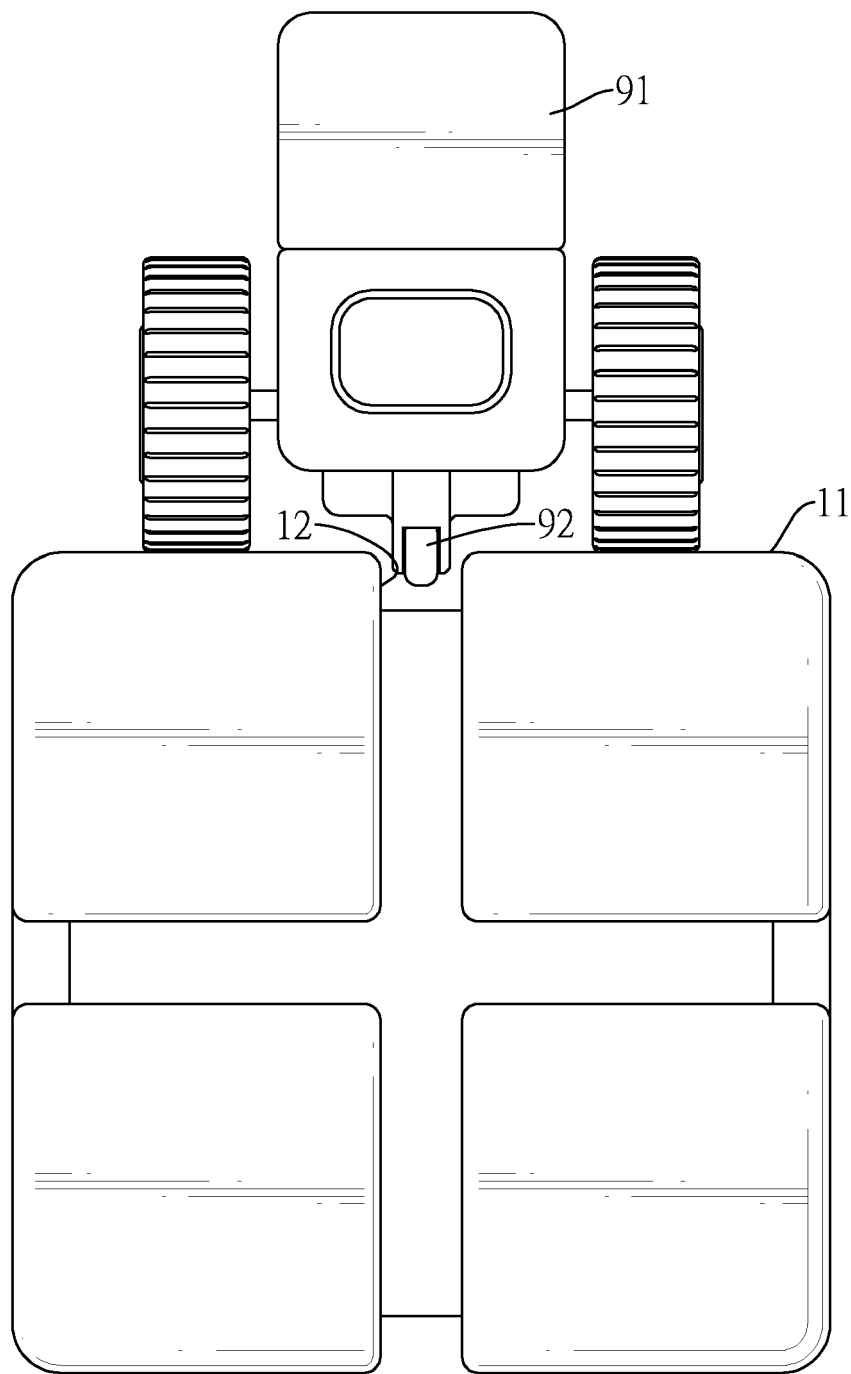


FIG.7



EUROPEAN SEARCH REPORT

Application Number
EP 18 16 5003

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	GB 1 287 727 A (TOMY KOGYO CO [JP]) 6 September 1972 (1972-09-06) * page 1, lines 27-35; page 2, lines 9-38; page 2, lines 51-74; claim 1; figures 5-10 *	1-12	INV. A63H33/04 A63H18/02 A63H18/08
Y	----- US 5 347 253 A (OGIKUBO KONOMU [JP]) 13 September 1994 (1994-09-13) * column 1, line 67 - column 3, line 2; figures 1-5 *	1-12	
A	----- WO 2015/038581 A1 (BOX TILES LLC [US]; ORNSTEIN NOAH J [US]; KELLEY JOSEPH M [US]) 19 March 2015 (2015-03-19) * the whole document *	1-12	
A	----- KR 2007 0067978 A (ORDA KOREA CO LTD [KR]) 29 June 2007 (2007-06-29) * the whole document *	1-12	
A	----- US 2008/118896 A1 (CHA PABLO [US]) 22 May 2008 (2008-05-22) * the whole document *	1-12	TECHNICAL FIELDS SEARCHED (IPC) A63H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 4 July 2018	Examiner Turmo, Robert
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			

EPO FORM 1503 03.82 (P04C01)

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

EP 18 16 5003

5

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-07-2018

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1287727 A	06-09-1972	NONE	
US 5347253 A	13-09-1994	JP H06302425 A JP H07101647 B2 US 5347253 A	28-10-1994 01-11-1995 13-09-1994
WO 2015038581 A1	19-03-2015	CA 2923882 A1 CN 105813704 A EP 3043878 A1 JP 2016529083 A WO 2015038581 A1	19-03-2015 27-07-2016 20-07-2016 23-09-2016 19-03-2015
KR 20070067978 A	29-06-2007	NONE	
US 2008118896 A1	22-05-2008	NONE	