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(54) **ASSEMBLY TOY**

(57) An assembly toy includes first, second and third units (1, 2, 3). Each of the first and second units (1, 2) is substantially flat and elongated when the assembly toy is at a pre-assembled state. The third unit (3) has a main portion (30) and two spaced-apart connecting portions (33) extending from an edge of said main portion (30). The third unit (3) is substantially flat and elongated when the assembly toy is at the pre-assembled state. Each of the first, second and third units (1, 2, 3) is folded into a rectangular hollow prism when the assembly toy is at an assembled state. The second unit (2) has two opposite decorating parts (21) and is sleeved in the first unit (1) in such manner that the decorating parts (21) are exposed from the first unit (1) when the assembly toy is at the assembled state. The connecting portions (33) of the third unit (3) are coupled to the first unit (1) when the assembly toy is at the assembled state.

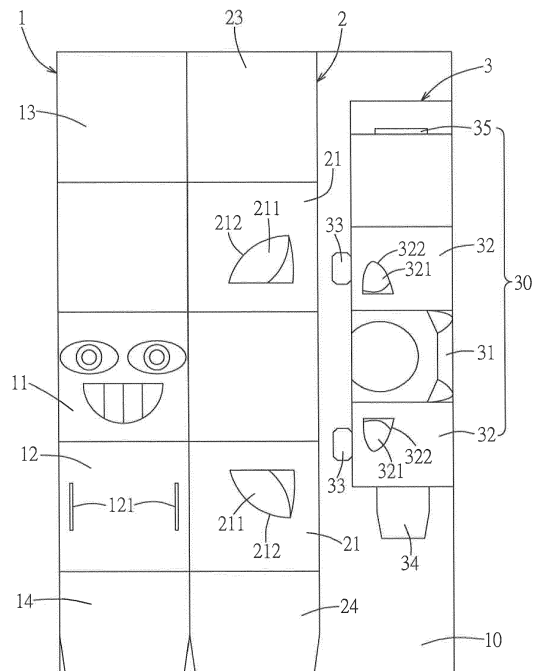


FIG. 2

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## Description

**[0001]** The disclosure relates to an assembly toy, more particularly to an assembly toy that is assembled by a plurality of foldable portions.

**[0002]** Referring to Figure 1, a conventional assembly toy includes a head 91 and a body 92. The head 91 has a main portion 911, two side portions 912 connected respectively at opposite lateral sides of the main portion 911, a plurality of connecting portions 913, a plurality of first fold lines 914 formed at the main portion 911, and two second fold lines 915. Each of the second fold lines 915 is formed between the main portion 911 and a respective one of the side portions 912. When assembling the assembly toy, the head 91 and the body 92 need to be assembled separately, and then connected with each other. When assembling the head 91, the main portion 911 is folded along the first fold lines 914 into a rectangular hollow prism, and the side portions 912 are folded relative to the main portion 911 along the two second fold lines 915 to cover two openings of the hollow prism. Afterward, the side portions 912 and the main portion 911 are adhered with each other to form a closed cuboid according to the following steps: (A) Connect four of the connecting portions 913 extending from two long edges of the main portion 911 with the side portions 912; (B) Connect two of the connecting portions 913 extending from the side portions 912 with the two long edges of the main portion 911; and (C) Connect one of the connecting portions 913 extending from a short edge of the main portion 911 with the other short edge of the main portion 911. In summary, the conventional assembly toy has at least seven connecting portions 913, and each of the connecting portions 913 needs to be aligned appropriately and with care when being adhered with the corresponding one of the main portion 911 or the side portions 912 to avoid dislocation, so that the conventional assembly toy has a relatively time-consuming assembling process which may not be suitable for children. Moreover, before assembly, the head 91 and the body 92 of the conventional assembly toy are on the same paperboard for sale and delivery in a manner that far from utilizes the entire board, resulting in waste of the relatively large area of material around the main portion 911 and the side portion 912 and needless delivery costs.

**[0003]** Therefore, the object of the disclosure is to provide an assembly toy which is not only easy to be assembled but also able to reduce the abovementioned drawbacks of material waste and needless delivery costs.

**[0004]** Accordingly, an assembly toy of the present invention is transformable between a pre-assembled state and an assembled state. The assembly toy includes a first unit, a second unit and a third unit.

**[0005]** Each of the first and second units is substantially flat and elongated when the assembly toy is at the pre-assembled state. The third unit has a main portion and two spaced-apart connecting portions that extend

from an edge of said main portion. The third unit is substantially flat and elongated when the assembly toy is at the pre-assembled state.

**[0006]** Each of the first, second and third units is folded into a rectangular hollow prism when the assembly toy is at the assembled state. The second unit has two opposite decorating parts and is sleeved in the first unit in such manner that the decorating parts are exposed from the first unit when the assembly toy is at the assembled state. The connecting portions of the third unit are coupled to the first unit when the assembly toy is at the assembled state.

**[0007]** Other features and advantages of the disclosure will become apparent in the following detailed description of the embodiment with reference to the accompanying drawings, of which:

Fig. 1 is a top view illustrating a pre-assembled state of a conventional assembly toy;

Fig. 2 is a top view illustrating the pre-assembled state of an embodiment of an assembly toy according to the disclosure;

Fig. 3 is a perspective view illustrating a first unit of the embodiment that is folded into a rectangular hollow prism when the assembly toy is at the assembled state;

Fig. 4 is a perspective view illustrating a second unit of the embodiment that is folded into a rectangular hollow prism when the assembly toy is at the assembled state;

Fig. 5 is a perspective view illustrating a third unit of the embodiment that is folded into a rectangular hollow prism when the assembly toy is at the assembled state and forms a body of the assembly toy;

Fig. 6 is a perspective view illustrating the second unit of the embodiment that is partly sleeved in the first unit;

Fig. 7 is a perspective view illustrating the first and second units of the embodiment that cooperatively form a head of the assembly toy when the assembly toy is at the assembled state;

Fig. 8 is an exploded perspective view illustrating the connecting manner between the head and the body of the assembly toy when the assembly toy is at the assembled state; and

Fig. 9 is a front view illustrating the embodiment being assembled to be a doll.

**[0008]** As shown in Figure 2 and Figure 9, the embodiment of an assembly toy according to the present disclosure is transformable between a pre-assembled state (see Figure 2) and an assembled state (see Figure 9).

**[0009]** As shown in Figure 2, the assembly toy includes a first unit 1, a second unit 2 and a third unit 3. The first, second and third units 1, 2, 3 are formed on a paperboard 10 during sale and delivery, and can be detached from the paperboard 10 to be transformed to the assembled state. The third unit 3 has a main portion 30 and two

spaced-apart connecting portions 33 that extend from an edge of the main portion 30. When the assembly toy is at the pre-assembled state, each of the first, second and third units 1, 2, 3 is substantially flat and elongated.

**[0010]** Before being detached from the paperboard 10, two long edges of the first, second and third units 1, 2, 3 are arranged to overlap or be parallel with two long edges of the paperboard 10, and two short edges of the first, second and third units 1, 2, 3 are arranged to overlap or be parallel with the two short edges of the paperboard 10. The lengths of the first and second units 1, 2 are equal, and the first and second units 1, 2 are connected to each other in such manner that one of the long edges of the first unit 1 is coupled to one of the long edges of the second unit 2 and that one of the short edges of the first unit 1 is aligned with one of the short edges of the second unit 2. The third unit 3 is spaced-apart from the first and second unit 1, 2, and the length of the third unit 3 is slightly shorter than the length of the first and the second unit 1, 2. In this manner of arrangement, use of the area of the paperboard 10 can be maximized and waste of any material after the first, second and third units 1, 2, 3 are detached can be avoided, thereby decreasing production and delivery costs for the assembly toy.

**[0011]** In the embodiment, the first unit 1 includes a front segment 11 formed with a face pattern, a coupling segment 12 adjacent to the front segment 11, a fixing segment 13, and a linking segment 14 adjacent to the coupling segment 12. The coupling segment 12 is interposed between the front segment 11 and the linking segment 14. The coupling segment 12 has two through holes 121.

**[0012]** The second unit 2 includes two spaced-apart decorating parts 21, a fixing part 23 and a linking part 24. The fixing part 23 is connected to an end of one of the decorating parts 21 opposite to the other one of the decorating parts 21, and the linking part 24 is connected to an end of the other one of the decorating parts 21 opposite to the one of the decorating parts 21. Each of the decorating parts 21 is formed with an ear pattern 211, and a cutting line 212 extending along a contour of the ear pattern 211 and adapted for being cut so that the ear pattern 211 can be flipped away from a corresponding one of the decorating parts 21.

**[0013]** The main portion 30 of the third unit 3 includes a first subportion 31, two second subportions 32 connected respectively to opposite ends of the first subportion 31, a third connecting portion 34 connected to an end of one of the second subportions 32 that is opposite to the first subportion 31, and an engaging hole 35. The first and second subportions 31, 32 are formed with decorating patterns. Specifically, the first subportion 31 is formed with an abdominal pattern, and each of the second subportions 32 has a hand pattern 321 and a cutting line 322 that extends along a contour of the hand pattern 321 and that is adapted for being cut so that the hand pattern 321 can be flipped away from the corresponding one of the second subportions 32.

**[0014]** Referring Figure 2 to Figure 5, when assembling the assembly toy, the first, second and third units 1, 2, 3 are first detached from the paperboard 10. Then, each of the first, second and third units 1, 2, 3 is folded into a rectangular hollow prism as shown in Figures 3 to 5 with the linking segment 14 of the first unit 1 being adhered to the fixing segment 13 and with the linking part 24 of the second unit 2 being adhered to the fixing part 23. An internal space 15 (see Figure 3) is defined within the first unit 1, and an internal space 25 (see Figure 4) is defined within the second unit 2. At this time, the decorating segments 21 of the second unit 2 are opposite to each other. As shown in Figure 5, the main portion 30 of the third unit 3 is folded into a rectangular hollow prism with the third connecting portion 34 engaging the engaging hole 35, so that the third unit 3 forms the body of a doll.

**[0015]** As shown in Figure 6 and Figure 7, the folded second unit 2 is then sleeved in the internal space 15 of the first unit 1 with the internal space 15 of the first unit 1 being covered by the second unit 2 and the internal space 25 of the second unit 2 being covered by the first unit 1, so that the first unit 1 and the second unit 2 collectively form a closed cuboid as shown in Figure 7. Specifically, two decorating parts 21 of the second unit 2 are exposed from the first unit 1 and are respectively adjacent to opposite sides of the front segment 11, and the coupling segment 12 has an inner surface facing the internal space 25 of the second unit 2. Therefore, the first unit 1 and the second unit 2 cooperatively form a head 4 of the doll having the face pattern on the front segment 11 and the ear patterns on the decorating parts 21.

**[0016]** As shown in Figure 8 and Figure 9, after the head 4 has been assembled, the head 4 and the body formed by the third unit 3 are assembled together in such manner that one of the long edges of the main portion 30 of the third unit 3 abuts against the coupling segment 12 of the first unit 1, that the connecting portions 33 of the third unit 3 engage respectively the through holes 121 of the coupling segment 12, that the first subportion 31 of the main portion 30 of the third unit 3 corresponds in position to the front segment 11 of the first unit 1, and that the second subportions 32 of the main portion 30 of the third unit 3 correspond respectively in position to the decorating parts 21 of the second unit 2, thereby completing the transformation of the assembly toy from the pre-assembled state to the assembled state.

**[0017]** In the abovementioned assembling process of the assembly toy, the head 4 of the doll can easily be made by the insertion of second unit 2 into the first unit 1, and adhesive only applied between the fixing segment 13 and the linking segment 14 of the first unit 1 and between the fixing part 23 and the linking part 24 of the second unit 2. Therefore, time required for assembling the assembly toy decreases and the assembly toy is suitable for children to assemble by themselves because of the moderate difficulty.

**[0018]** It should be noted that, the way the fixing segment 13 and the linking segment 14 of the first unit 1 are

locked together and the way the fixing part 23 and the linking part 24 of the second unit 2 are locked together may vary in other embodiments, and the way the main portion 30 of the third unit 3 is maintained at the rectangular hollow prism may vary as well. For example, one of the fixing segment 13 and the linking segment 14 may be formed with a hole for engagement with the other one of the fixing segment 13 and the linking segment 14, and the linking subportion 34 of the main portion 30 may be adhered to a corresponding portion of the main portion 30 with the engaging hole 35 being omitted.

## Claims

1. An assembly toy transformable between a pre-assembled state and an assembled state, said assembly toy being **characterized by** a first unit (1), a second unit (2) and a third unit (3), each of said first and second units (1, 2) being substantially flat and elongated when said assembly toy is at the pre-assembled state, said third unit (3) having a main portion (30) and two spaced-apart connecting portions (33) that extend from an edge of said main portion (30), said third unit (3) being substantially flat and elongated when said assembly toy is at the pre-assembled state, each of said first, second and third units (1, 2, 3) being folded into a rectangular hollow prism when said assembly toy is at the assembled state, said second unit (2) having two opposite decorating parts (21) and being sleeved in said first unit (1) in such manner that said decorating parts (21) are exposed from said first unit (1) when said assembly toy is at the assembled state, said connecting portions (33) of said third unit (3) being coupled to said first unit (1) when said assembly toy is at the assembled state.
2. The assembly toy as claimed in Claim 1, **characterized in that**, when said assembly toy is at the pre-assembled state, said first, second and third units (1, 2, 3) are formed on a paperboard.
3. The assembly toy as claimed in any one of Claims 1 and 2, **characterized in that**:

said first unit (1) has a coupling segment (12) and a front segment (11) adjacent to said coupling segment (12);

said main portion (30) of said third unit (3) has three subportions (31, 32) formed with decorating patterns; and

when said assembly toy is at the assembled state, said third unit (3) is coupled to said coupled segment (12) of said first unit (1) with said three subportions (31, 32) corresponding respectively in position to said front segment (11) of said first unit (1) and said decorating parts

(21) of said second unit (2), said decorating parts (21) of said second unit (2) are respectively adjacent to opposite sides of said front segment (11) of said first unit (1), said first and second units (1, 2) cooperatively form a head (4) of said assembly toy, and said third unit (3) forms a body of said assembly toy.

4. The assembly toy as claimed in Claim 3, further **characterized in that** each of said decorating parts (21) is formed with an ear pattern (211), and a cutting line (212) extending along a contour of said ear pattern (211), and adapted for being cut so that said ear pattern (211) can be flipped away from a corresponding one of said decorating parts (21).
5. The assembly toy as claimed in Claim 4, further **characterized in that** the decorating pattern on each of the two of said three subportions (31, 32) of said main portion (30) of said third unit (3) that correspond respectively in position to said decorating parts (21) of said second unit (2) is a hand pattern (321), each of the two of said three subportions (31, 32) of said main portion (30) of said third unit (3) that correspond respectively in position to said decorating parts (21) of said second unit (2) being formed with a cutting line (212) that extends along a contour of said hand pattern (321) and that is adapted for being cut so that said hand pattern (321) can be flipped away from a corresponding one of said two of said subportions (32).
6. The assembly toy as claimed in any one of Claims 3 to 5, further **characterized in that**:

said coupling segment (12) of said first unit (1) is formed with two through holes (121), said connecting portions (33) of said third unit (3) engaging respectively said through holes (121) when said assembly toy is at the assembled state; and said coupling segment (12) of said first unit (12) has an inner surface facing an internal space of said second unit (2) when said assembly toy is at the assembled state.

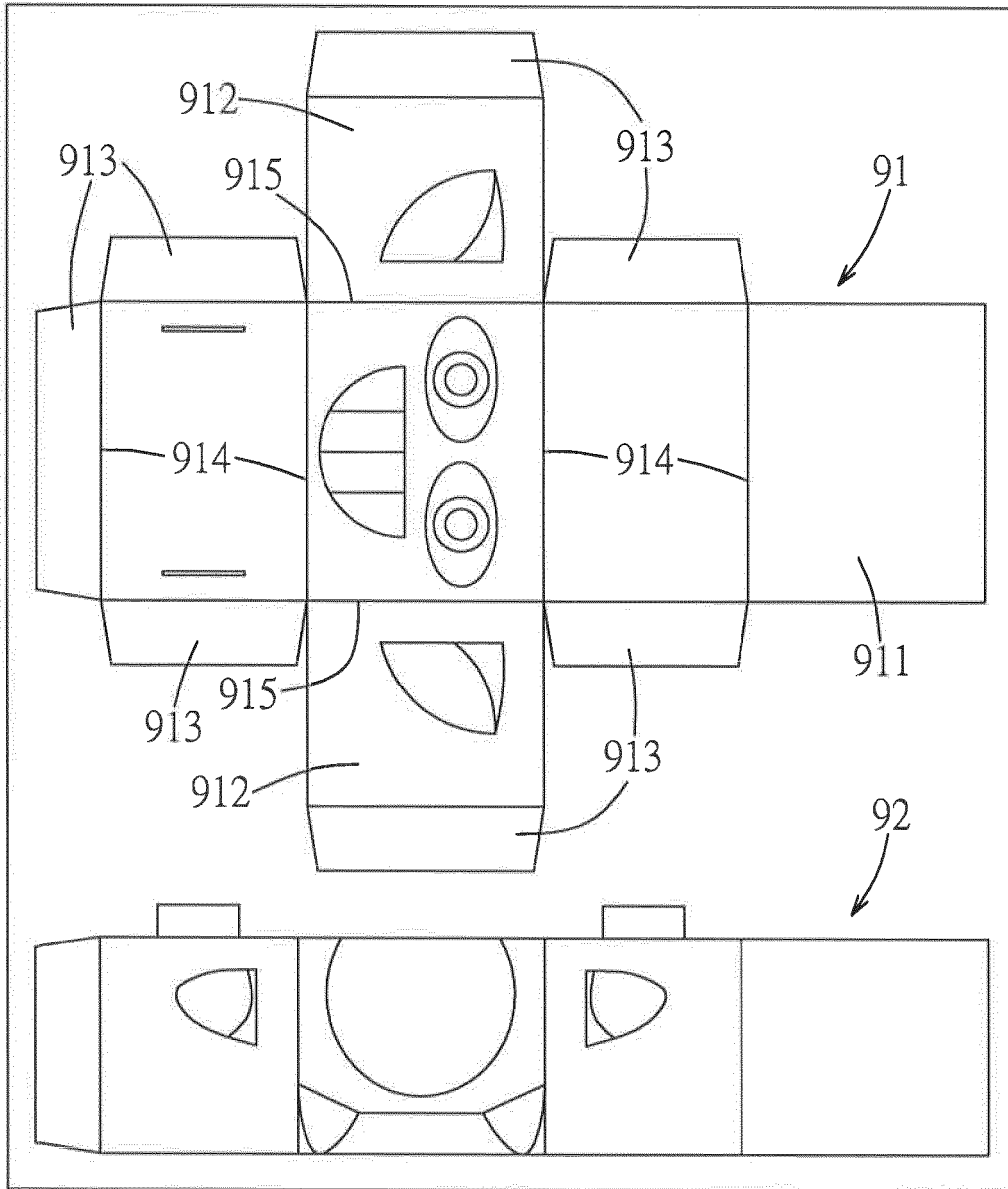


FIG. 1  
PRIOR ART

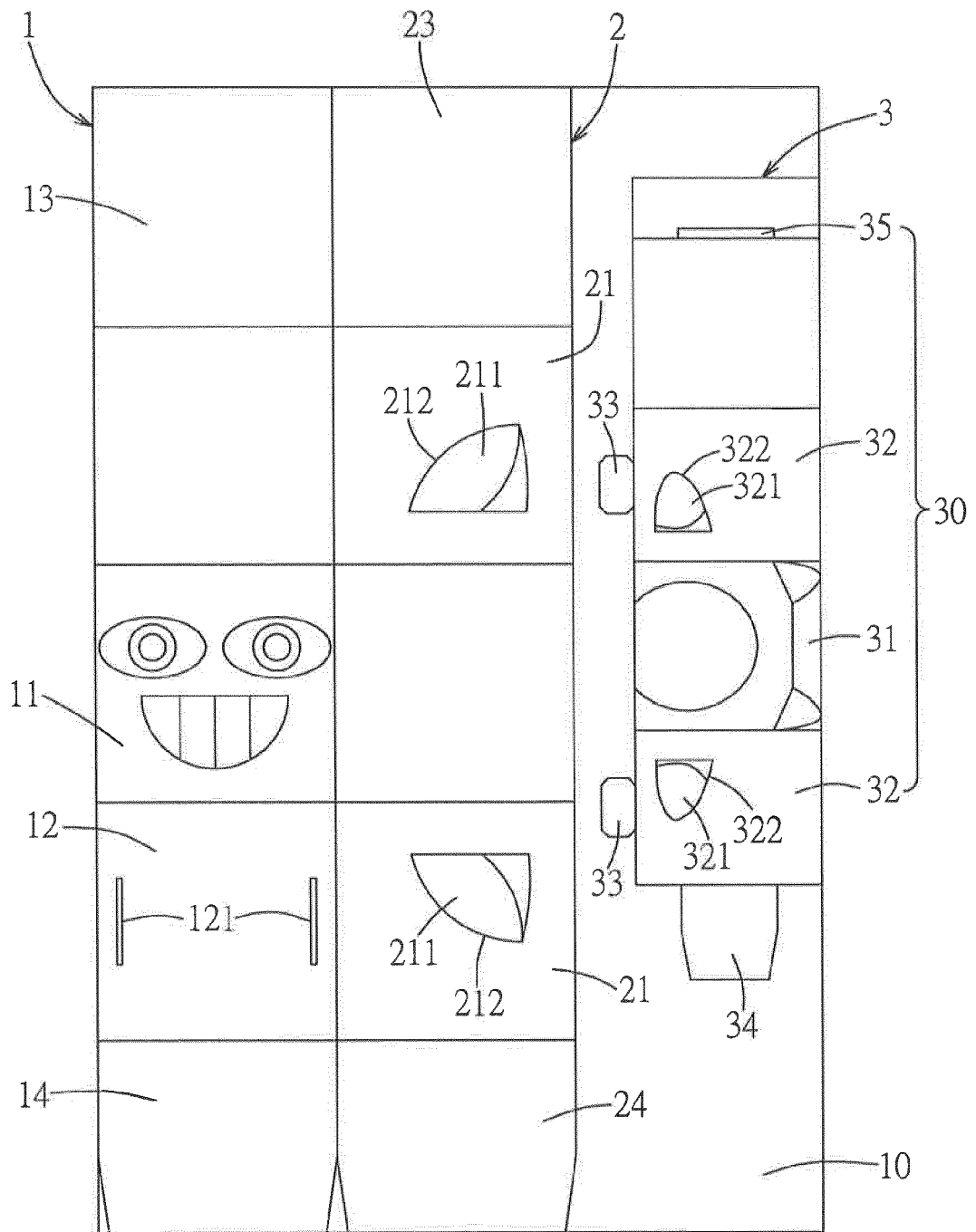


FIG. 2

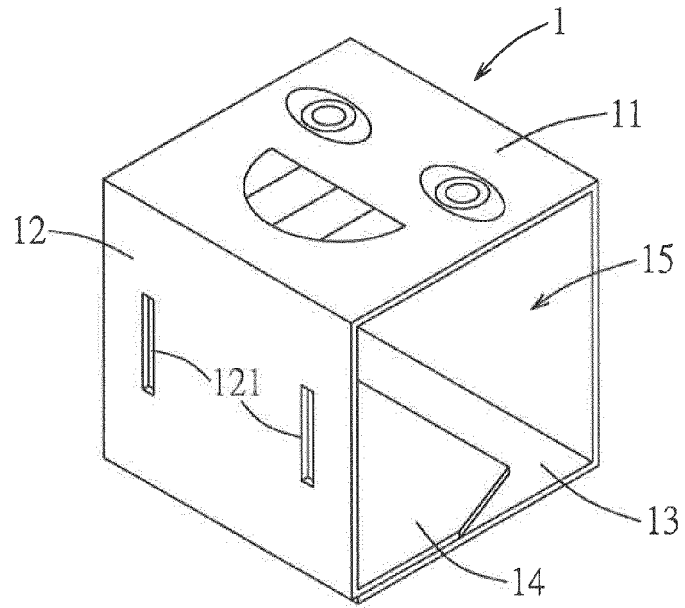


FIG. 3

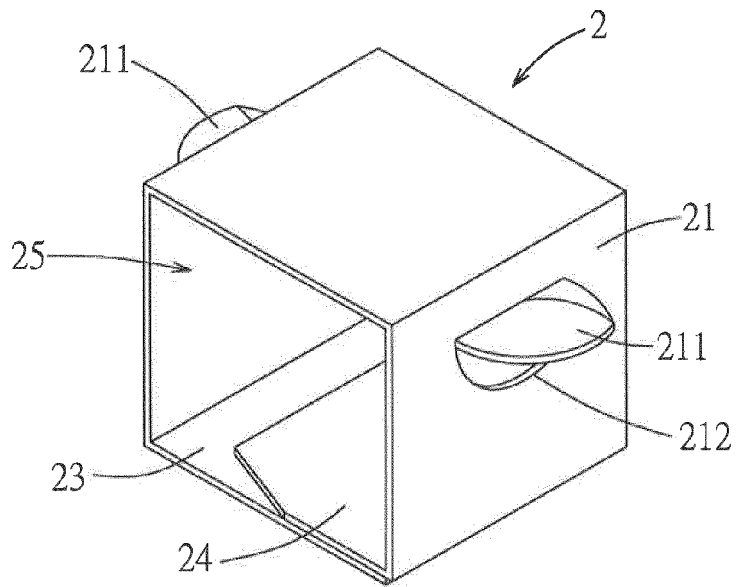


FIG. 4

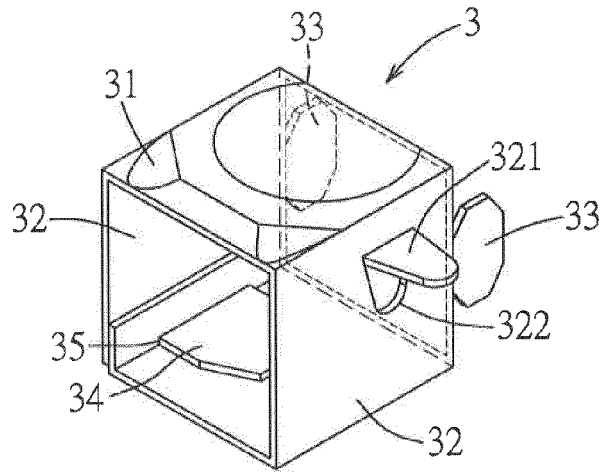


FIG. 5

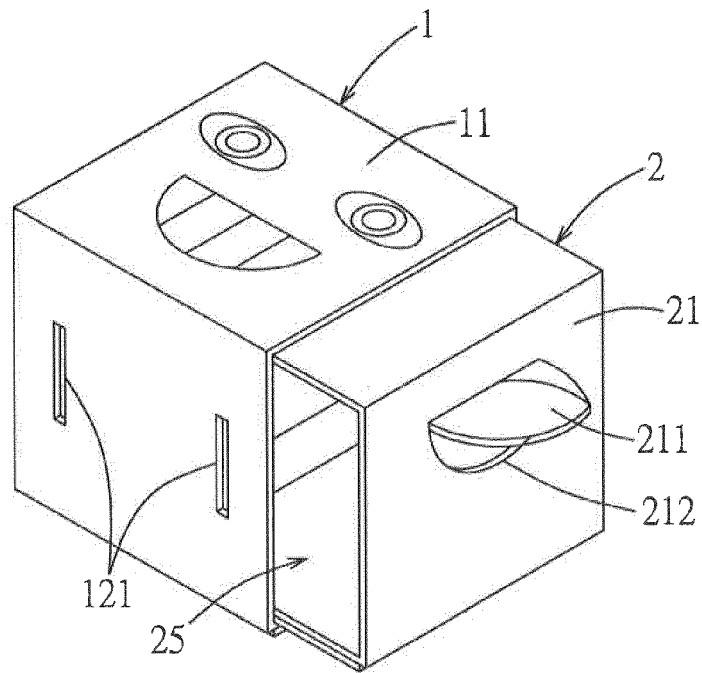


FIG. 6

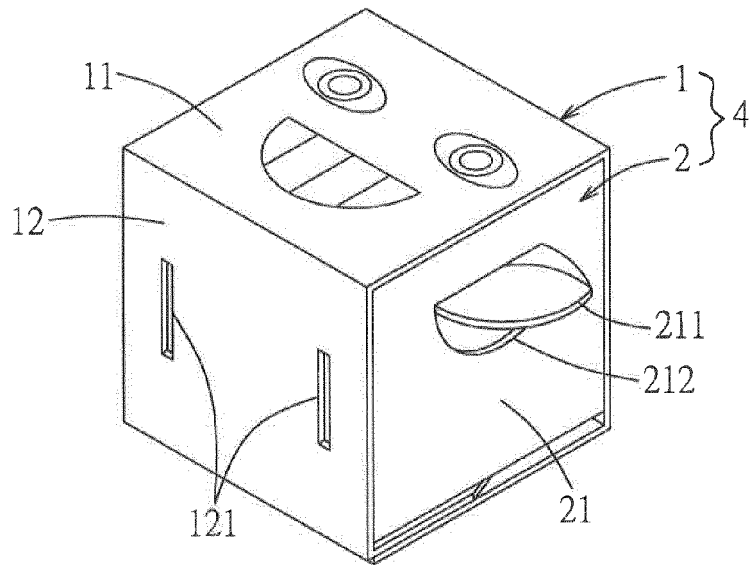


FIG. 7

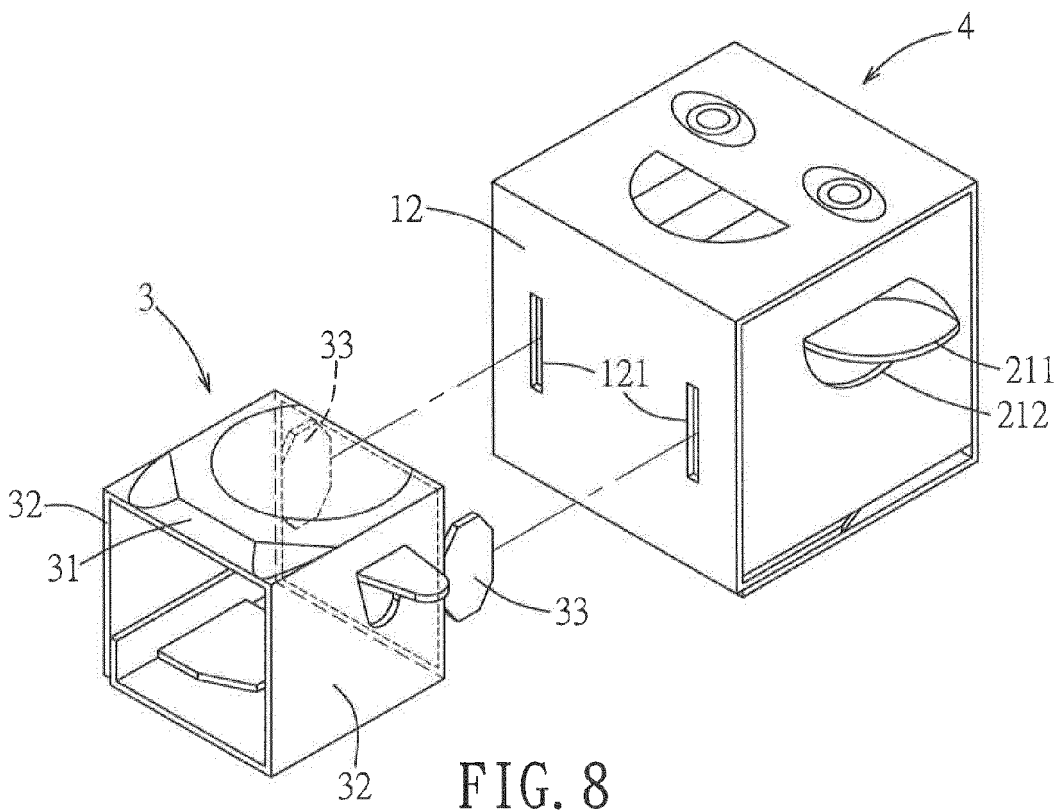


FIG. 8

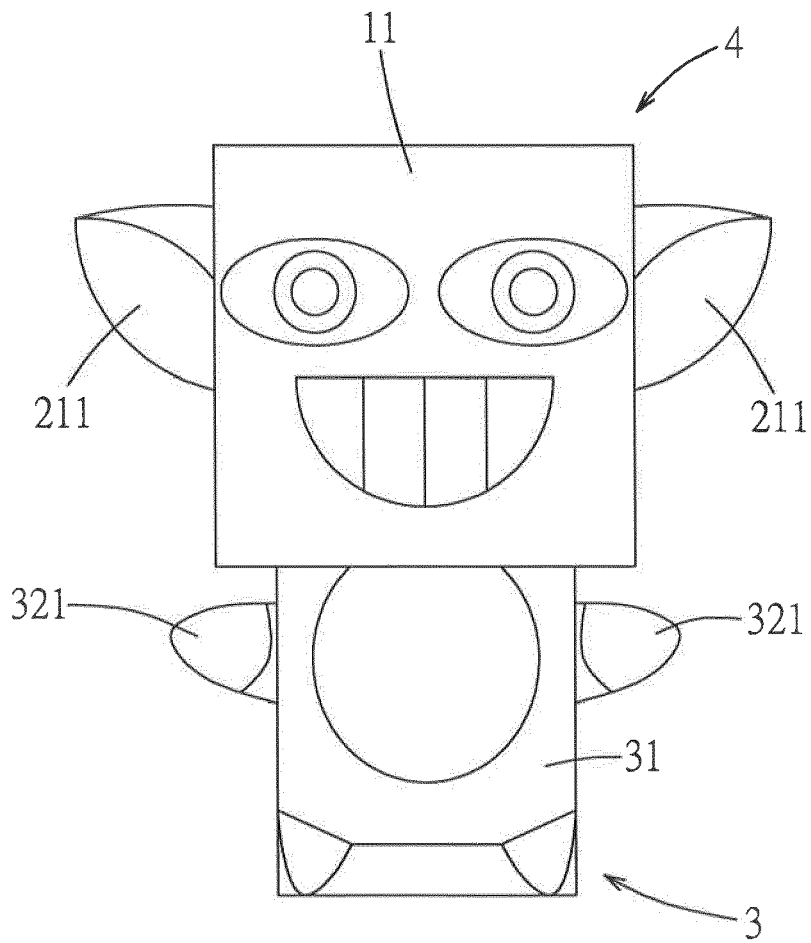


FIG. 9



EUROPEAN SEARCH REPORT

Application Number  
EP 15 18 4253

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2006/043067 A2 (AZORBO ANDREW [GB]) 27 April 2006 (2006-04-27) * page 5, line 6 - page 9, line 9; figures *	1-6	INV. A63H33/16
A	----- US 3 861 279 A (MALING JOHN E) 21 January 1975 (1975-01-21) * column 2, line 16 - column 6, line 37; figures *	1-6	
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A	----- KR 101 254 458 B1 (JANG HYUNG SUN [KR]) 12 April 2013 (2013-04-12) * the whole document *	1-6	
			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 April 2016	Examiner Lucas, Peter
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