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(11) **EP 3 967 621 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
16.03.2022 Bulletin 2022/11

(21) Application number: **21203188.4**

(22) Date of filing: **10.09.2018**

(51) International Patent Classification (IPC):
B65D 41/04 *(2006.01)* ***B65D 81/36*** *(2006.01)*
B65D 75/58 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B65D 81/36; B65D 75/5883

(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

(30) Priority: **27.09.2017 IT 201700108088**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
18780234.3 / 3 687 915

(71) Applicant: **Guala Pack S.p.A.**
15073 Castellazzo Bormida (AL) (IT)

(72) Inventor: **BUZZI, Alberto**
15073 Castellazzo Bormida (ALESSANDRIA) (IT)

(74) Representative: **Pulieri, Gianluca Antonio**
Jacobacci & Partners S.p.A.
Piazza della Vittoria, 11
25122 Brescia (IT)

Remarks:
This application was filed on 18-10-2021 as a divisional application to the application mentioned under INID code 62.

(54) **TOY CAP**

(57) A toy cap (1) for a pouch comprises a closing body (4) and a rotation structure (50) projecting axially and terminating with a support (56) to stand the cap (1) up and impart thereto, manually, a rotation around the main axis (X), so as to use the cap for a spinning top.

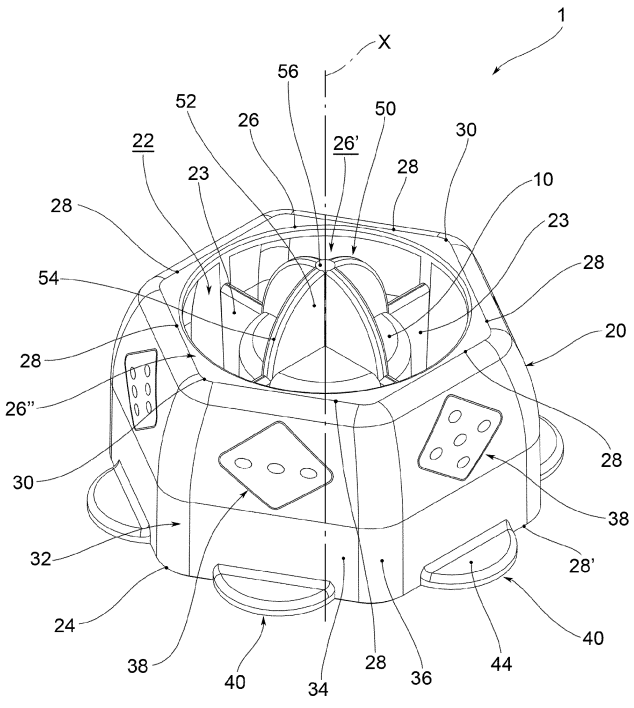

FIG.1a

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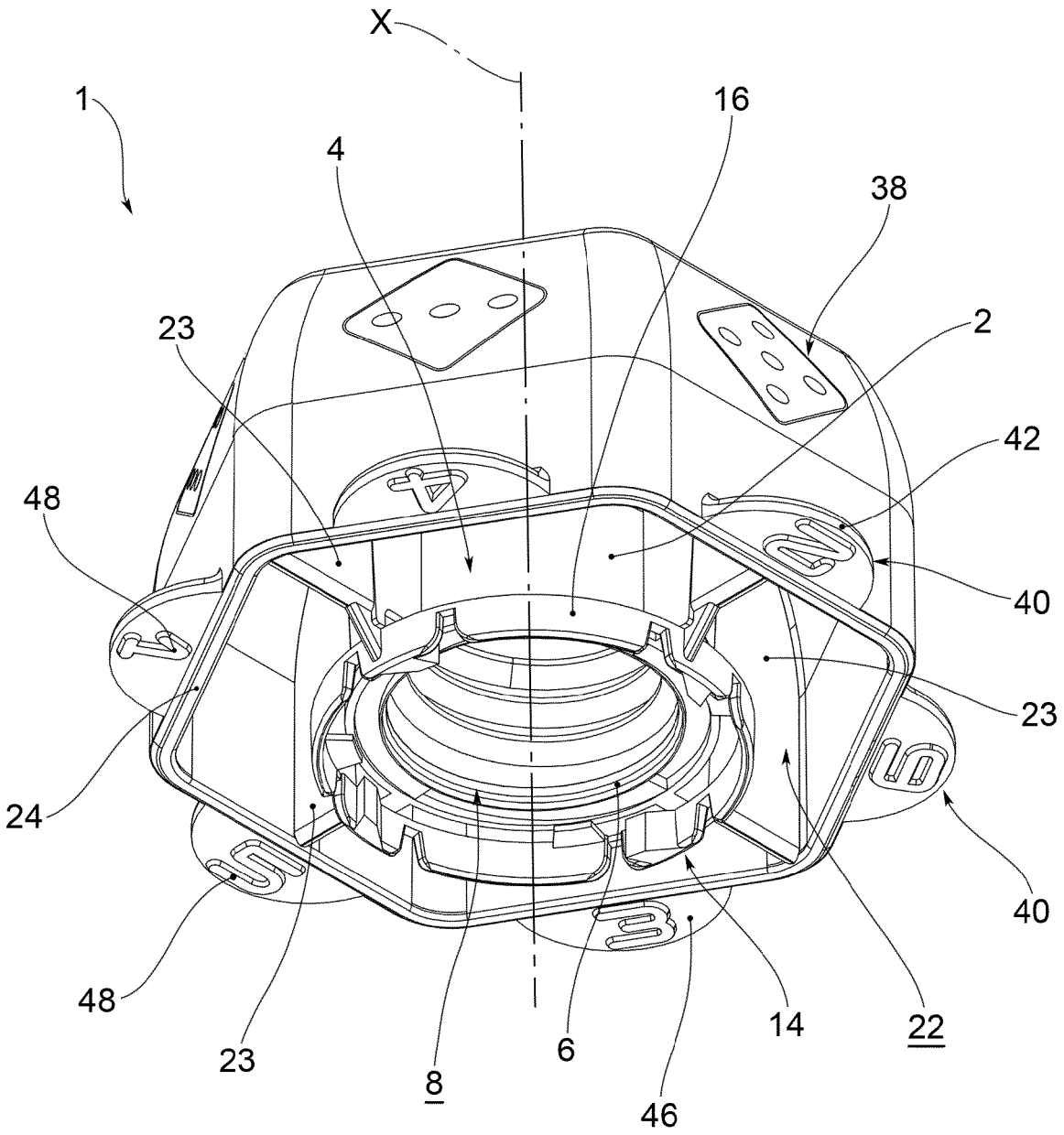

FIG.1b

Description

[0001] The object of the present invention is a cap, for example made of plastic, for a small bottle or a container, in particular for containing drinks intended for children, such as fruit juices and purees, yoghurts, soft drinks, etc. In particular, the object of the present invention is a cap for a flexible packaging, usually called a "pouch", equipped with a spout.

[0002] The present invention is particularly suitable for containers for drinks intended for children, as it is provided with a guarantee seal which ensures the integrity of the package and at the same time encourages the purchase of a package, as the cap, once separated from the bottle or container, may be used as a toy (for this reason it is called a "toy cap").

[0003] The present invention therefore falls within the field of toy caps, that is, caps which, once unscrewed from the pouch, may be used for playing; further examples of toy caps, which may be used differently from the one according to the present invention, are illustrated in documents WO-A1-2014/083478 and EP-A1-2489605 in the name of the Applicant.

[0004] The object of the present invention is achieved by a cap made according to claim 1. The dependent claims define further advantageous variant embodiments.

[0005] The features and advantages of the cap according to the present invention will be apparent from the description given below, provided by way of nonlimiting example, in accordance with the accompanying figures, wherein:

- figure 1a shows a cap according to an embodiment of the present invention, according to an observation point from above;
- figure 1b represents the cap of figure 1a, according to an observation point from below;
- figures 2a and 2b show the cap of the preceding figures, respectively in a plan view from above and in a plan view from below;
- figures 3a and 3b show the cap of the preceding figures, according to two side views; and
- figure 4 illustrates the cap of the previous figures in an inverted configuration suitable for the toy.
- figure 5 represents a cap according to a further embodiment of the present invention; and
- figure 6 shows a functional diagram of a cap according to an embodiment of the present invention.

[0006] With reference to the accompanying figures, a cap, preferably in one piece and made of plastic, for containers for children's beverages, for example fruit juices and purees, yoghurts, soft drinks and the like, is collectively indicated at 1. In particular, the cap 1 is intended for closing flexible packages (pouches), for example of the type illustrated in the document EP-A1-1538105 in the name of the Applicant, provided with a spout.

[0007] Preferably, the flexible package comprises a container comprising two front walls, made of a sheet of flexible material, and possibly sides, for example made as bellows, and a spout assembly comprising a spout, welded sealingly between the front walls of the container.

[0008] The cap 1 comprises a closure body 4, comprising a tubular closure wall 2 which extends along a main axis X; the closure wall 2 is internally provided with a thread 6, for screwing to the container, and in particular for screwing to the spout thereof.

[0009] The closure wall 2 extends between a lower end, where a mouth opening 8 is found, which allows the insertion of the spout, and an upper end, where a base 10 is found, which closes the closure wall 2.

[0010] Preferably, the base 10 comprises, internally, a seal assembly suitable to form the seal between said base and the spout.

[0011] At the lower end, at the mouth opening 8, the cap 1 comprises a guarantee seal 14, suitable to tear in at least one portion by unscrewing the cap 1 from the container.

[0012] For example, the guarantee seal 14 comprises an annular band 16, connected to the closure wall 2 and arranged radially outwardly therefrom; said band 16 is connected to the closure wall 2 at a plurality of connection points comprising weakened portions suitable to break by unscrewing the cap 1 from the container.

[0013] In particular, the guarantee seal 14 is suitable to engage with resistant elements of the container, for example protruding ridges of the spout assembly, and said weakened portions are suitable to break by the relevant rotation between the cap and said resistant elements.

[0014] An embodiment of the guarantee seal is described in the International Application WO-A1-2008/050361, in the name of the Applicant.

[0015] Furthermore, according to one embodiment (figures 1a to 4), the cap 1 comprises an annular outer wall 20, which extends around the main axis X and is continuous or made up of separate sections; the outer wall 20 therefore surrounds the closure wall 2.

[0016] Preferably, the outer wall 20 is radially spaced from the closure wall 2, forming a compartment 22 inside the cap. The band 16 of the guarantee seal 14 is arranged radially inside the outer wall 20.

[0017] The outer wall 20 is connected to the closure wall 2, for example by means of at least one rib 23, preferably three or four ribs evenly spaced angularly, arranged in the inner compartment 22.

[0018] According to a preferred embodiment, the outer wall 20 extends axially from a lower edge 24, for example at the height of the lower end of the closure wall 2, to an upper edge 26, near the height of the base portion 10, defining an upper opening 26', which is, for example, circular.

[0019] In particular, preferably, the outer wall 20 extends axially above the base 10 of the closure wall 2. In other words, the upper edge 26 is arranged axially above

the base 10 of the closure wall 2.

[0020] On the other hand, inferiorly, the outer wall 20 extends preferably axially up to the height of the lower end of the closure wall 2, so that the guarantee seal 14 projects axially therebelow.

[0021] Preferably, moreover, the upper edge 26 is encircled, for example at the same height, by an outer edge 26'', with a polygonal shape, preferably with rounded corners.

[0022] In other words, said outer edge 26'' comprises a plurality of rectilinear sections 28 in annular succession, which form a polygonal shape, for example hexagonal. Said rectilinear sections 28 are preferably connected by arched sections 30 in such a way that the polygonal shape does not have sharp corners.

[0023] Preferably, the lower edge 24 resembles the shape of the outer edge 26'', with corresponding lower sections 28', which are preferably rectilinear, and arched sections 30'.

[0024] The outer wall 20, therefore, has an outer face 32 comprising surface portions 34, 36, and in particular central portions 34, which join the rectilinear sections 28 of the outer edge 26'' with the lower sections 28' of the lower edge 24, and fitting portions 36, which join the arched sections 30 of the outer edge 26'' with the arched sections 30' of the lower edge 24.

[0025] Preferably, the cap 1 comprises secondary graphic symbols 38, arranged on the outer face 32 of the outer wall, for example, one for each central portion 34.

[0026] For example, said secondary graphic symbols 38 represent stylized playing cards or the faces of a game die or fantasy symbols.

[0027] Preferably, moreover, the cap 1 comprises at least one tab 40 projecting radially outwardly from the closure body 4, and in particular from the outer wall 20, and in particular, from the outer face 32 thereof.

[0028] Preferably, the cap 1 provides a tab 40 for each central portion 34 of the outer face 32, preferably arranged near the lower edge 24.

[0029] For example, said tabs 40 have a flat shape, substantially contained on an imaginary plane orthogonal to the main axis X.

[0030] For example, said tabs 40 are delimited by an arched perimetric edge 42, which is, for example, semicircular.

[0031] Each tab 40 has an upper face 44, facing the upper edge 26 of the outer wall 20, and an opposite lower face 46, facing the lower edge 24 of the outer wall 20.

[0032] Preferably, the cap 1 comprises primary graphic symbols 48, arranged on each tab 40, for example on the lower face 46 thereof.

[0033] For example, said primary graphic symbols 48 represent numbers, stylized playing cards, faces of a game die, or fantasy symbols.

[0034] According to a further embodiment (figure 5), the cap 1 has no outer wall and provides for a plurality of lugs 40' protruding from the outer surface of the closure wall 2.

[0035] Preferably, each lug 40' is substantially contained on an imaginary plane that contains the main axis X and has a flat shape that preferably extends axially from the top to the bottom end of the closure wall 2.

[0036] Preferably, three lugs 40' are provided, equally spaced angularly.

[0037] According to the invention, the cap 1 further comprises a rotation structure 50 suitable to provide a support for imparting manually to the cap a rotation around the main axis X, as is usually the case for a spinning top.

[0038] Preferably, said rotation structure 50 is symmetrically shaped around the main axis X.

[0039] Preferably, the rotation structure 50 protrudes axially above the upper edge 26, that is, externally to the upper opening 26', of the outer wall 20 or above the lugs 40'.

[0040] Preferably, said rotation structure 50 is supported by the base 10 and protrudes therefrom.

[0041] The rotation structure 50 has a tapered shape, for example pointed, that is suitable to provide an unstable support, so that at the end of the rotation, the cap rests on a side on the ground plane T.

[0042] For example, said rotation structure 50 comprises a plurality of segments 52 having a converging shape towards the main axis X, for example with an arched or rectilinear lateral edge 54.

[0043] Said segments converge towards a support 56, for example a flat base, as in the accompanying figures, or recessed, or a circular border.

[0044] Preferably, said segments 52 are at least three, arranged on imaginary planes containing the main axis X.

[0045] Preferably, in the embodiment with the outer wall 20, said imaginary planes also contain the median planes of said ribs 23.

[0046] In normal use, after unscrewing the cap from the spout, the cap may be used as a spinning top, for example turned over, i.e. so that the rotation structure 50 rests on a ground plane T.

[0047] For example, a user, often a child, may grasp the overturned cap 1 between the tabs 40 or the lugs 40', rest the rotation structure 50 on the ground plane T and impart the desired rotation.

[0048] Once the rotation is complete, the overturned cap 1 rests on a side (figure 4), since the rotation structure 50 provides an unstable support, i.e. it does not keep the cap in equilibrium.

[0049] In the embodiments that provide for it, according to the rectilinear section 28, which remains resting on the ground plane T, a central portion 34 of the outer face 32 or a tab 40, and therefore a particular graphic symbol, is selected among the secondary graphic symbols 38 or among the primary graphic symbols 48.

[0050] Advantageously, the primary graphic symbols 48 are arranged on the lower face of the tabs 40, so as to be visible when the overturned cap is used as a spinning top.

[0051] According to a further use, the cap 1 is rotated

by the user by resting the guarantee seal 14 on the ground plane, gripping the tabs 40 or the lugs 40' or the rotation structure 50 between the fingers and imparting the rotation.

[0052] In particular (figure 6), once the barycenter G of the cap 1 is defined and the rotation structure 50 is placed on a ground plane T in such a way that the main axis X is orthogonal to the ground plane T, a vertical distance A is defined between the barycenter G and the ground plane T.

[0053] Moreover, once an imaginary plane I passing through the barycenter G and orthogonal to the central axis X is defined, a radial distance B is defined on the imaginary plane I between the barycenter G and the radial end of the cap 1, for example defined by the periphery of the outer wall 20 or by the end of one of said lugs 40'.

[0054] Preferably, the radial distance B is greater than the vertical distance A.

[0055] The Applicant has recognized how this relationship between the vertical distance A and the radial distance R allows a cap particularly suitable to act as a spinning top to be obtained, in that it is possible to impart an adequate torque for the rotation of the cap, and the same cap remains in rotation for an acceptable time before losing balance and tipping over on its side.

[0056] Innovatively, the cap described above meets the needs of the sector, as it can be used by children as a toy, and in particular as a spinning top.

[0057] It is clear that one skilled in the art, in order to meet contingent needs, may make changes to the cap described above, all contained within the scope of protection defined by the following claims.

Claims

1. A toy cap (1) for a container, for example, for the containment of beverages for children, such as juices and fruit purees, yogurts, soft drinks, comprising:

- a closure body (4) comprising a tubular closure wall (2) and a base (10), wherein said closure wall (2) extends along a main axis (X), between a lower end, where there is a mouth opening (8) for engagement with a spout of the container, and an upper end, closed by said base (10);
- a rotation structure (50) projecting axially with respect to the base (10), ending with a support (56) to stand the cap (1) up and impart to the same, manually, a rotation around the main axis (X);
- an annular outer wall (20) around the main axis (X), continuous or constituted of separate sections, spaced radially externally from the closure wall (2) so as to form a compartment (22) inside the cap, open at the top and bottom, integral with said closure wall.

2. A cap according to claim 1, wherein the rotation structure is tapered, suitable to stand the cap (1) up in an unstable manner.

3. A cap according to claim 1 or 2, wherein said rotation structure (50) is symmetrically formed around the main axis (X).

4. A cap according to claim 1 or 2 or 3, wherein said rotation structure (50) is pointed.

5. A cap according to any of the preceding claims, wherein said rotation structure (50) comprises a plurality of circumferentially arranged segments (52) having a shape converging towards the main axis (X).

6. A cap according to any of the preceding claims, comprising an annular outer wall (20) around the main axis (X), continuous or composed of separate sections, spaced radially externally from the closure wall (2) so as to form a compartment (22) inside the cap, open at the top and bottom, integral with said closure wall.

7. A cap according to claim 6, comprising secondary graphic symbols (38) arranged on an outer face (32) of the outer wall (20) circumferentially spaced to determine the points of a game.

8. A cap according to claim 6 or 7, comprising

- at least one tab (40) protruding radially externally from the outer wall (20), substantially contained on an imaginary plane orthogonal to the central axis (X)
- primary graphic symbols (48) for identifying the points of a game, a primary graphic symbol (48) being arranged on the lower face (46) of each tab (40).

9. A cap according to any of the claims from 1 to 5, comprising a plurality of lugs (40'), each lug (40') protruding radially from the wall closure (2) and substantially contained on an imaginary plane that contains the central axis (X).

10. A cap according to any of the preceding claims, comprising a guarantee seal (14) suitable to be torn off at least in one portion by unscrewing the cap from the container.

11. An assembly comprising:

- a flexible pouch with a spout;
- a cap (1) according to any one of the preceding claims, applied to said spout.

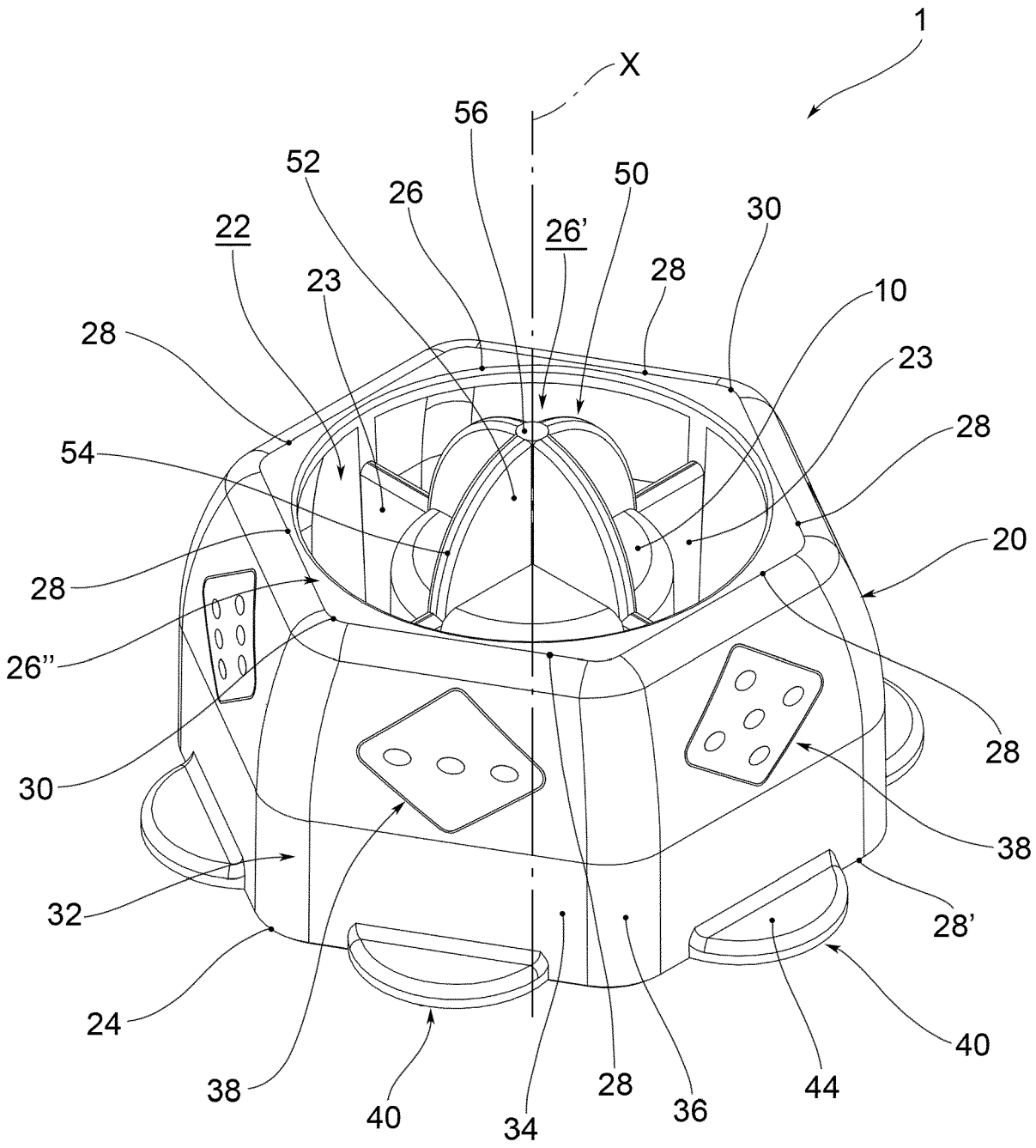
1
X
56
52
26
50
30
22
26'
23
28
10
28
23
28
54
20
28
26''
28
30
38
32
28'
24
40
38
40
34
28
36
44

FIG.1a

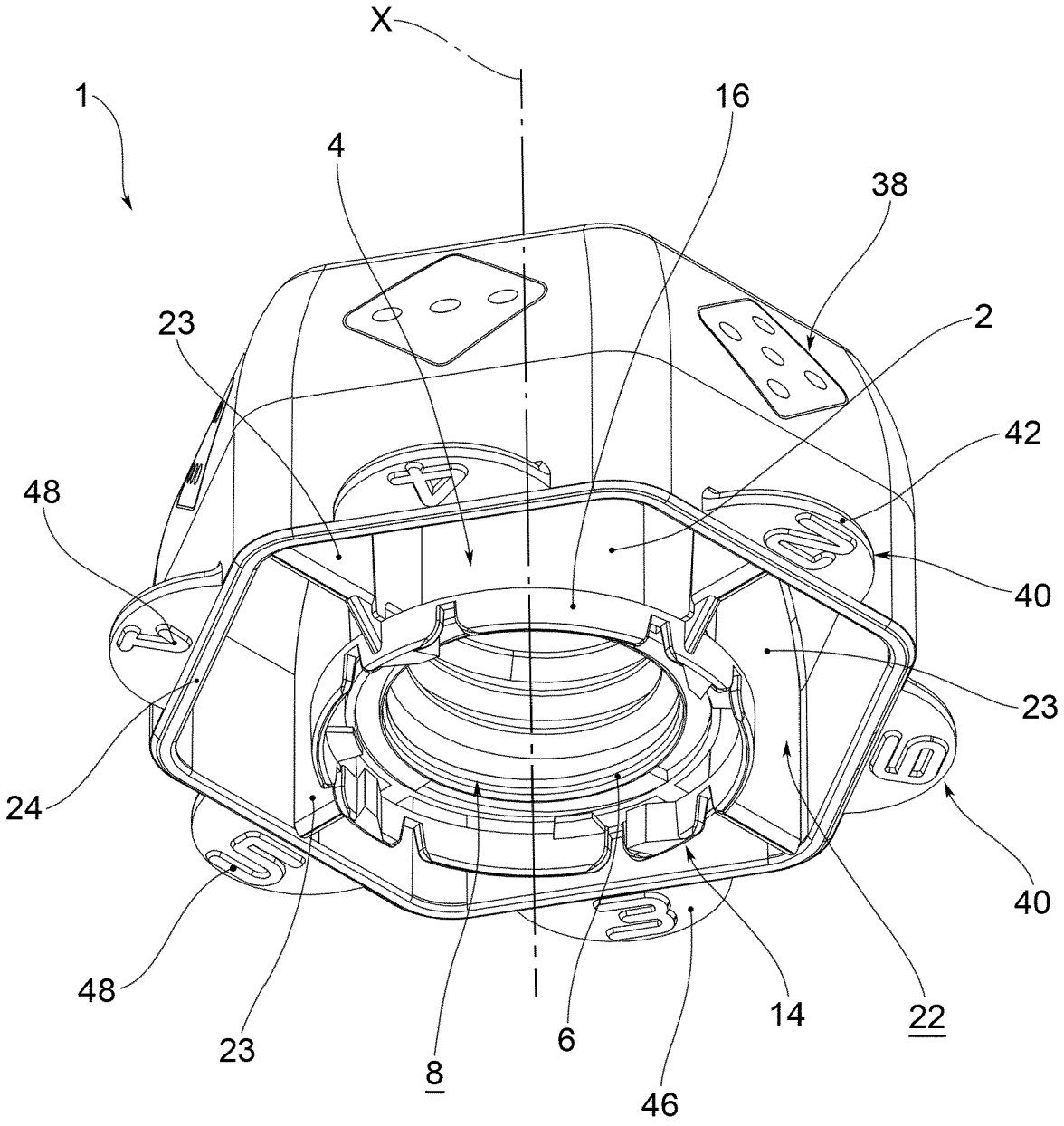

FIG.1b

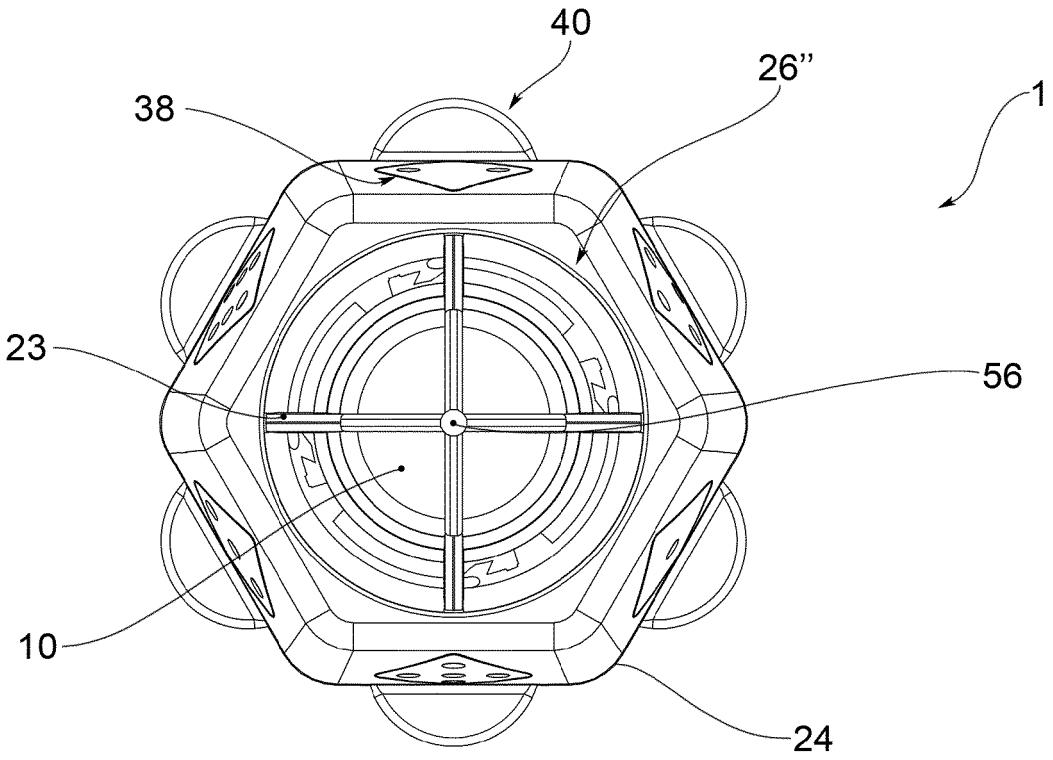

FIG.2a

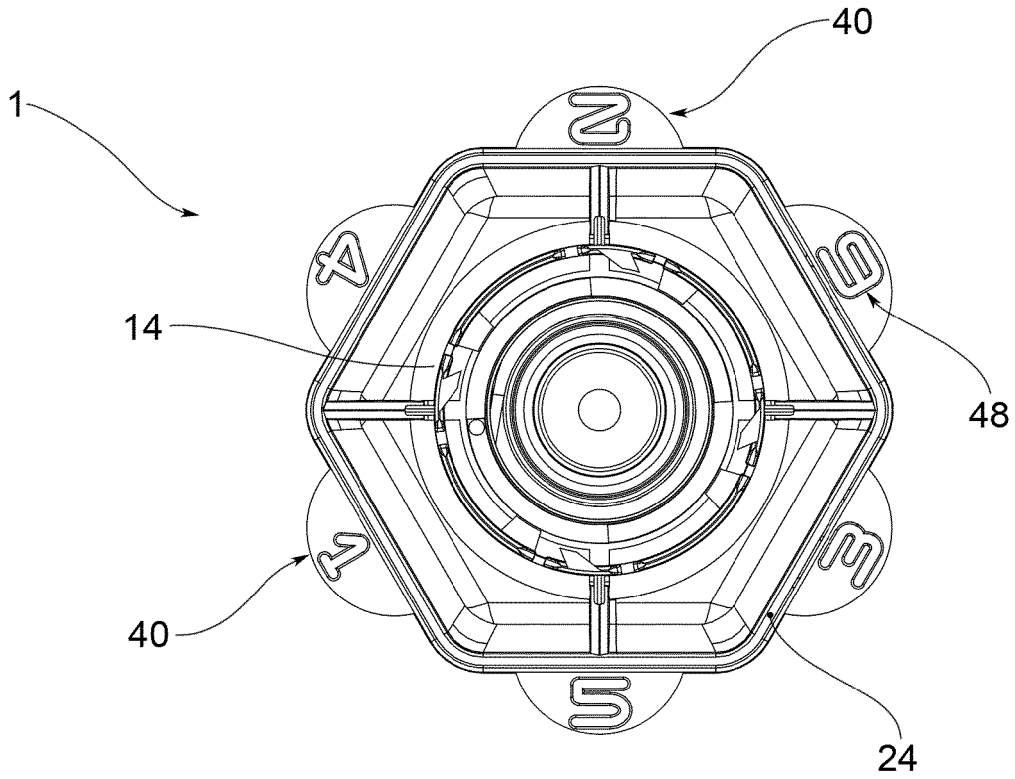

FIG.2b

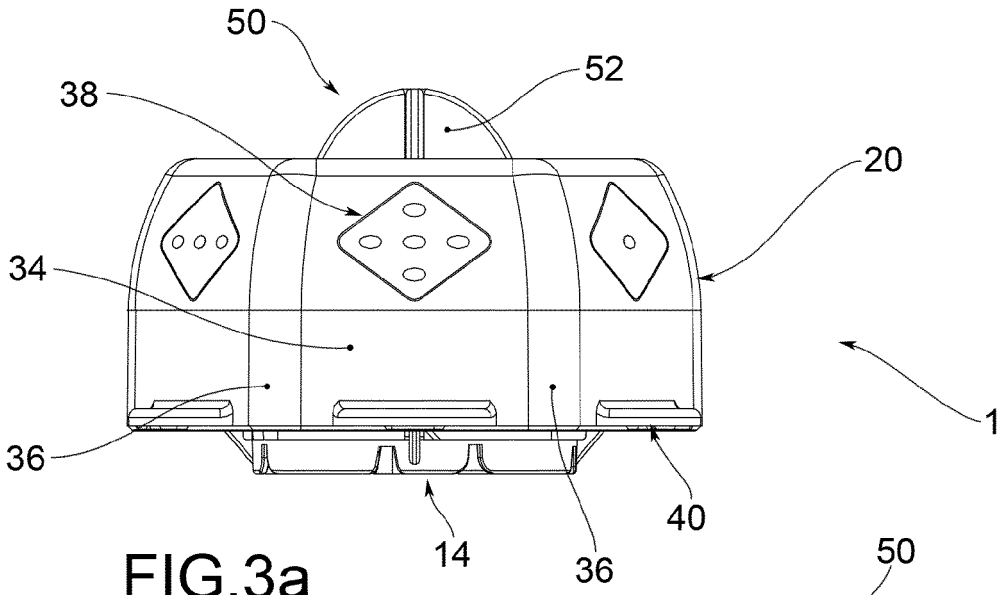

FIG.3a

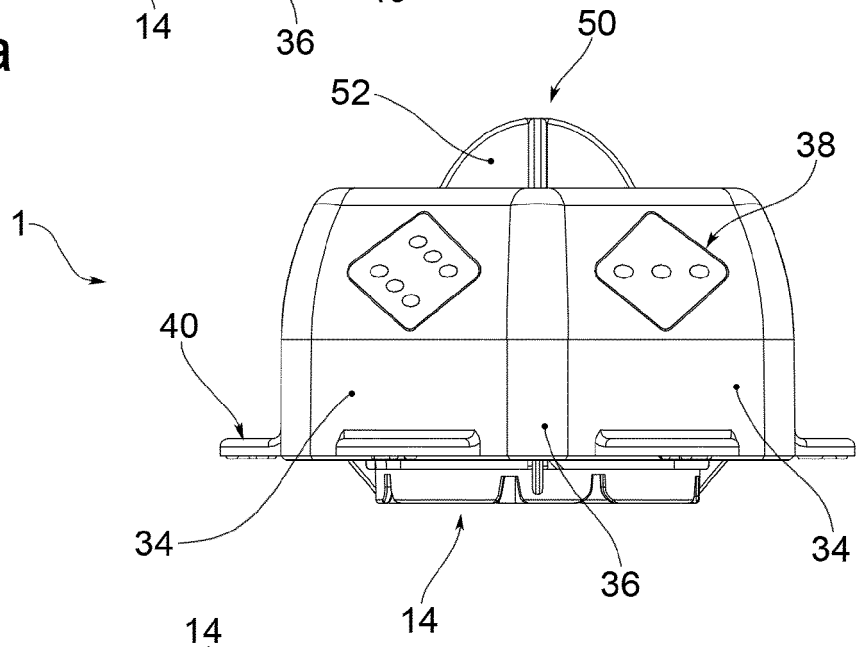

FIG.3b

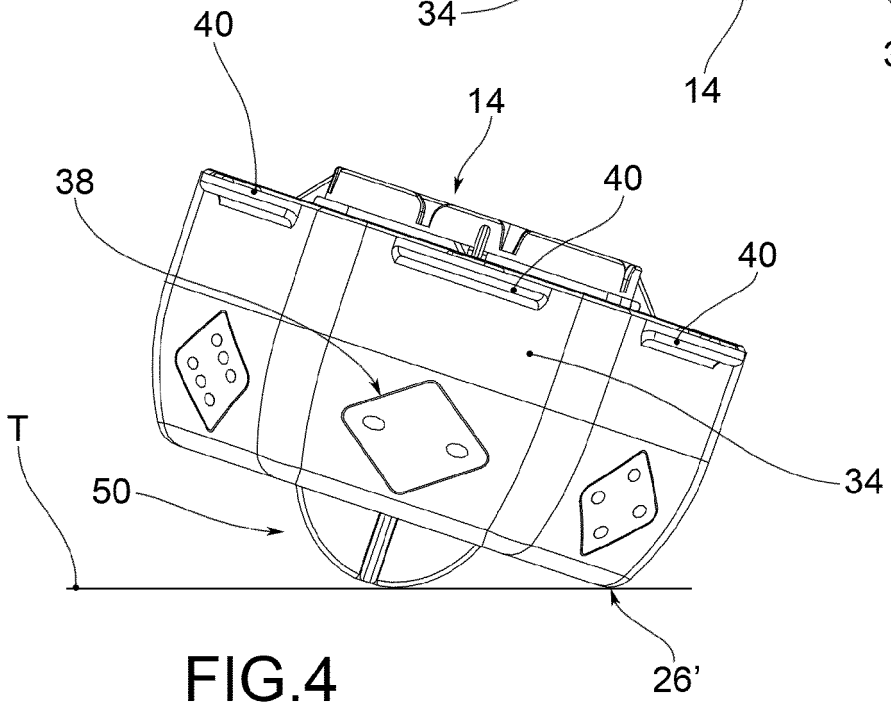

FIG.4

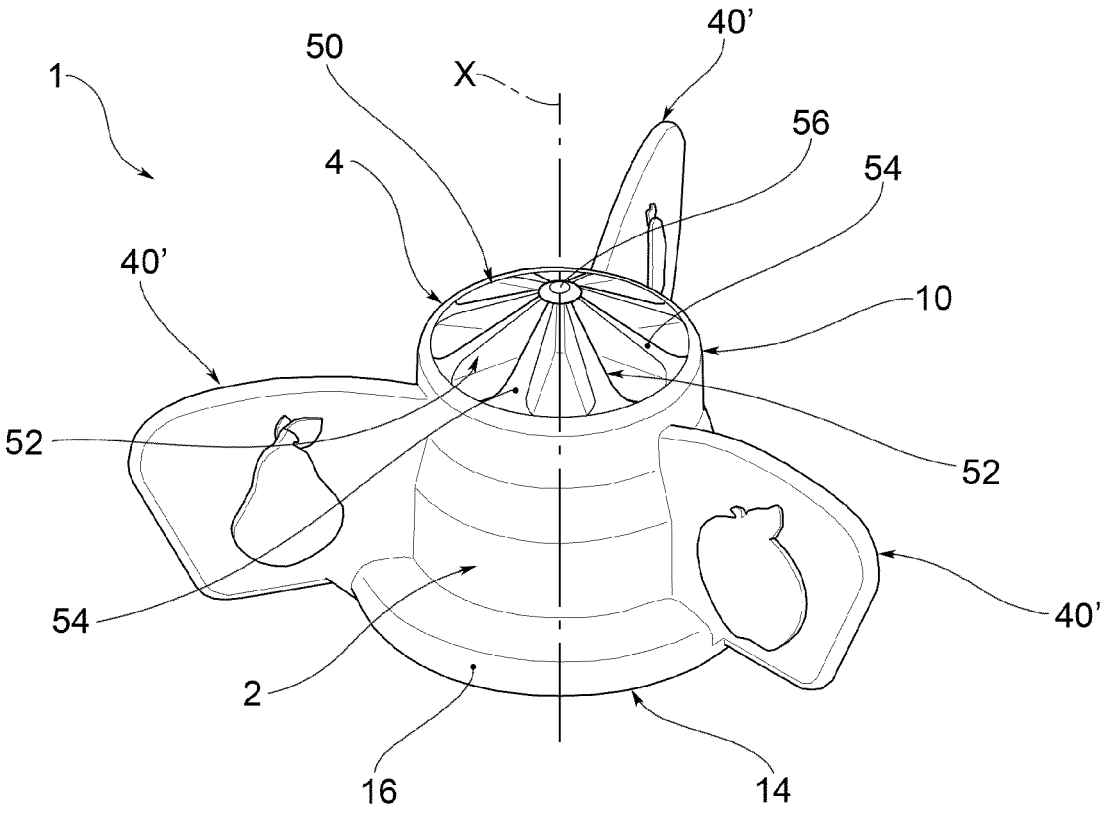

FIG.5

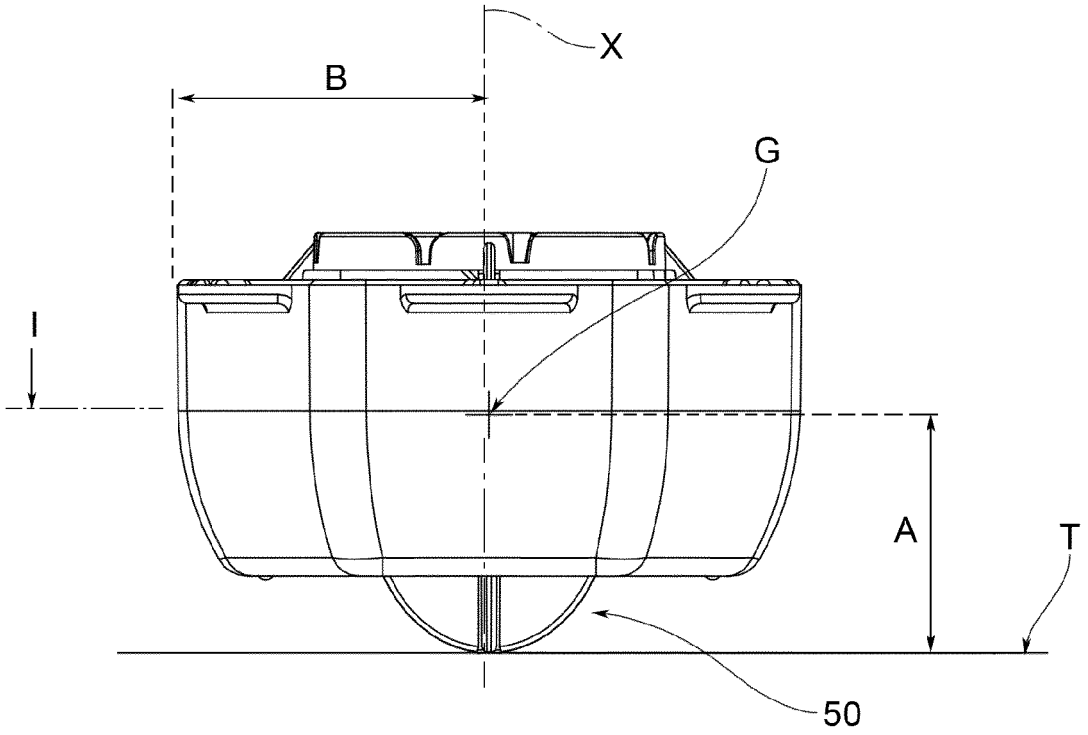

FIG.6

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EUROPEAN SEARCH REPORT

Application Number
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Place of search	Date of completion of the search	Examiner
Munich	1 February 2022	Balz, Oliver

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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