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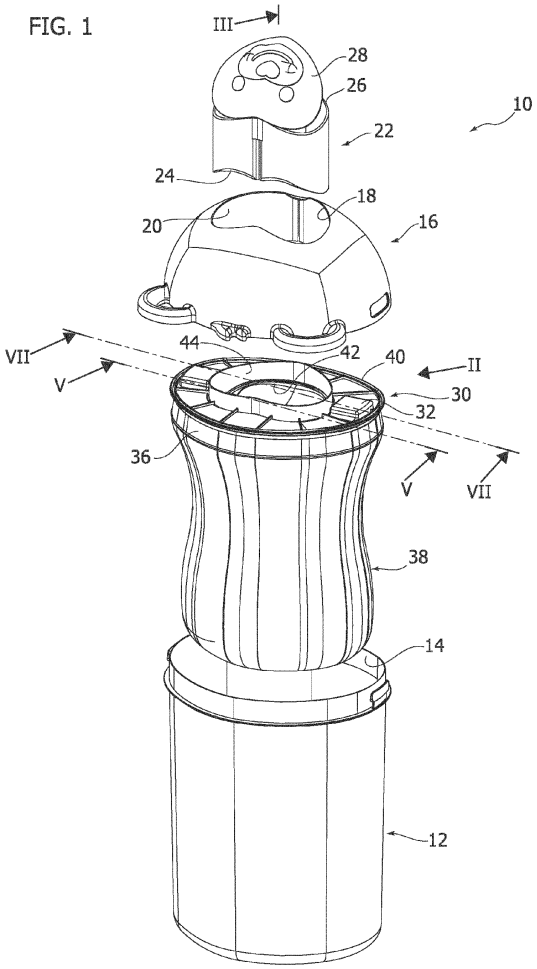
(54) A DOMESTIC WASTE BIN, IN PARTICULAR, FOR USED ABSORBENT SANITARY PRODUCTS

(57) A domestic waste bin, in particular, for used absorbent sanitary products, comprising:
- a container (12) having an open upper edge (14),
- a cover body (16) removably applied to the upper edge (14) of the container (12) and in which a guide (20) open at the bottom is formed,
- a hollow element (22) movable in a vertical direction in the chamber (20) of the cover body (16) between a raised position and a lowered position, and
- an odor barrier device (30) removably applied to the upper edge (14) of the container (12) and comprising a base (32) having a through opening (42) aligned with the guide (20) of the cover body (16) and a pair of vanes (46) articulated to the base (32) and movable between a raised position and a lowered position, wherein the vanes (46) are associated with elastic elements (52) that keep the vanes in the raised position, and wherein the hollow element (22) moves the vanes (46) from the raised position to the lowered position during its movement from the raised position towards the lowered position.

FIG. 1



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Description

TEXT OF THE DESCRIPTION

Field of the invention

[0001] The present invention relates to a domestic waste bin, intended, in particular, to be used for the recycling collection of used absorbent sanitary products.

Description of the prior art

[0002] Domestic waste bins specifically intended for the collection of used diapers are well known in the state of the art. In known solutions, one of the most common requirements is that of providing bins for used diapers with an odor barrier that eliminates or reduces the diffusion of odors into the environment.

[0003] Examples of used diaper bins are described, for example, in: WO2012/118626, WO2018/009810, WO2018/009757, EP-B1-32317381, WO2017/132478, and WO2017/ 042591.

[0004] Many of the known solutions are complex and bulky and have complex anti-odor mechanisms. Other known solutions that have a simpler structure are less effective for sealing against odors.

Object and summary of the invention

[0005] The present invention aims to provide a bin for domestic waste, in particular, for used absorbent sanitary products, which has a simple and compact structure and which has an effective odor barrier.

[0006] According to the present invention, this object is achieved by a domestic waste bin having the characteristics forming the subject of claim 1.

[0007] Preferred embodiments of the invention form the subject of the dependent claims.

[0008] The claims form an integral part of the disclosure provided here in relation to the invention.

Brief description of the drawings

[0009] The present invention will now be described in detail with reference to the attached drawings, given purely by way of non-limiting example, wherein:

- Figure 1 is an exploded perspective view of a domestic waste bin according to the present invention,
- Figure 2 is an exploded perspective view of the part indicated by the arrow II in Figure 1,
- Figures 3 and 4 are cross-sections according to the arrows III-III of Figure 1 in two different operating positions,
- Figures 5 and 6 are cross-sections on a larger scale according to the arrows V-V of Figure 1 illustrating the odor barrier device in the closed position and in the open position, respectively, and
- Figure 7 is a cross-section along the line VII-VII of Figure 1 illustrating the arrangement of the seals of the odor barrier device.

Detailed description

[0010] With reference to Figure 1, numeral 10 indicates a domestic waste bin, intended in particular for the collection of used absorbent sanitary products, such as, for example, diapers, sanitary towels, etc.

[0011] The waste bin 10 comprises a container 12 having an open upper edge 14. The container 12 may have the shape of a cylindrical bucket open at its upper edge and closed along the side wall and the bottom wall.

[0012] The waste bin 10 comprises a cover body 16 removably applied to the upper edge 14 of the container 12. The cover body 16 may be generally dome-shaped. A through opening 18 with a vertical axis is formed on the upper surface of the cover body 16. The cover body 16 has a guide 20 extending downwardly from the upper surface of the cover body 16 coaxially to the opening 18 and having an open lower edge.

[0013] The waste bin 10 comprises a hollow element 22, which is movable in a vertical direction inside the guide 20 of the cover body 16 between a raised position and a lowered position, and vice versa. The hollow element 22 slidingly engages the guide 20 of the cover body 16. The hollow element 22 has a lower edge 24 and an upper edge 26. The lower edge 24 is open and the upper edge 26 is closed by a cover 28 hinged to the tubular member 22.

[0014] With reference to Figures 1 and 2, the waste bin 10 comprises an odor barrier device 30 removably applied to the upper edge 14 of the container 12. In the assembled condition, the odor barrier device 30 is arranged between the upper edge 14 of the container 12 and the cover body 16. As illustrated in greater detail in Figure 2, the odor barrier device 30 comprises a base 32 having an edge 34, which is arranged in contact with the inner surface of the upper edge 14 of the container 12. The upper edge 36 of a waste bag 38 can be applied on the edge 34 of the base 32. The base 32 has an annular rim 40 that rests on the upper edge 14 of the container 12. The base 32 has a through opening 42 aligned with the guide 20 of the cover body 16. The base 32 may also have a guide wall 44 that protrudes upwards from the through opening 42 and is aligned with the guide 20 of the cover body 16.

[0015] With reference to Figure 2, the odor barrier device 30 comprises two vanes 46 articulated to the base 32 and arranged below the opening 42. The two vanes 46 are articulated to the base 32 around respective axes A parallel to each other, by means of respective pins 48 located on opposite sides with respect to the opening 42. The two vanes 46 pivot around their respective axes A between a raised position (Figure 3) in which the vanes 46 close the opening 42 of the base 32 and a lowered position (Figure 4) in which the vanes 46 extend down-

wards starting from the respective articulation axes A, and open the opening 42 of the base 32.

[0016] With reference, in particular, to Figures 3 and 5, the vanes 46 have respective distal edges 50 which are in contact with each other in the raised position of the two vanes 46.

[0017] With reference to Figures 2, 5 and 6, the odor barrier device 30 comprises elastic elements 52 that hold the vanes 46 in the raised position. In the embodiment illustrated in the Figures, the elastic elements 52 are formed by two strips of highly elastic closed-loop elastomeric material.

[0018] With reference to Figures 5 and 6, each of the two elastic elements 52 is folded in the shape of an inverted U around a support 54 forming part of the base 32, and has opposite ends anchored to two pins 56 which protrude from the side edges of the vanes 46. The elastic elements 52 apply upwardly directed elastic forces to the anchoring pins 56 of the vanes 46, which tend to keep the vanes 46 in the raised position illustrated in Figure 5. When a downward force is applied to the vanes 46, the vanes 46 pivot around their respective articulation axes A, and move to the lowered position illustrated in Figure 6. During the movement from the raised position illustrated in Figure 5 to the lowered position illustrated in Figure 6, the vanes 46 produce an elastic elongation of the elastic elements 52.

[0019] The opening movement of the vanes 46 is controlled by the hollow element 22, which is movable in a drawer manner with respect to the cover body 16. With reference to Figures 3 and 4, the open lower edge 24 of the hollow element 22 extends through the through opening 42 of the base 32 and rests on the upper surfaces of the vanes 46. The elastic force produced by the elastic elements 52 holds the vanes 46 in the raised position in which they close the opening 42. The elastic force produced by the elastic elements 52 also holds the tubular member 22 in the raised position.

[0020] With reference to Figure 3, in order to throw a product inside the waste bin 10, the user raises the cover 28 and places the product P in the chamber formed inside the hollow element 22. The product P rests on the upper surfaces of the vanes 46, which are in the raised position. Then, the user closes the cover 28 and applies a top-down pressure on the cover 28. This pressure moves the hollow element 22 from the top downwards, as illustrated in Figure 4. The lower edge 24 of the hollow element 22 rests on the upper surfaces of the vanes 46. Therefore, the movement from the top downwards of the hollow element 22 moves the vanes 46 from the top downwards, and opens the opening 42. In this way, the product P falls inside the bag 38. When the user releases the pressure on the cover 28, the elastic elements 52 return the vanes 46 to the raised position and the vanes 46 push the tubular element 22 upwards.

[0021] With reference to Figure 7, the vanes 46 can be provided with seals to improve the sealing against odors in the closed position of the vanes 46. The vanes 46 may be provided with first seals 58, located along the distal edges 50 of the vanes 46, and which are compressed against each other in the raised position of the vanes 46. The vanes 46 may have second seals 60, located on the upper surfaces of the vanes 46, and arranged in the contact area between the vanes 46 and the lower edge of the through opening 42 of the base 32. The seals 60 are pressed into contact with the lower edge 62 of the through opening 42 of the base 32. The seals 58, 60 can be made of elastomeric material co-molded with the vanes 46.

[0022] In a possible embodiment, the bag 38 used to line the inner surface of the container 12 can be of resilient material. The bag 38 could, for example, have elasticity characteristics similar to those of tights, with a great capacity for elastic elongation with respect to the rest condition. The elastic nature of the bag 38 may further improve the barrier to odors since the bag 38 closes elastically around the products P contained therein.

[0023] An advantageous characteristic of the bin according to the present invention is that the various components can be quickly disassembled to facilitate cleaning. In particular, the cover body 16 and the odor barrier device 30 can be quickly removed from the upper part of the container 12 to remove the bag 38, and the hollow element 22 with the relative cover 28 can be quickly removed from the cover body 16 to facilitate cleaning. All the components that come into contact with the used diapers can, therefore, be removed to allow thorough cleaning.

[0024] Of course, without prejudice to the principle of the invention, the details of construction and the embodiments can be widely varied with respect to those described and illustrated, without thereby departing from the scope of the invention as defined by the claims that follow.

Claims

1. A domestic waste bin, in particular, for used absorbent sanitary products, comprising:

- a container (12) having an open upper edge (14),
- a cover body (16) removably applied to the upper edge (14) of the container (12) and in which a guide (20) open at the bottom is formed,
- a hollow element (22) movable in a vertical direction in the guide (20) of the cover body (16) between a raised position and a lowered position, wherein the hollow element (22) has an open lower edge (24), and
- an odor barrier device (30) removably applied to the upper edge (14) of the container (12) and comprising a base (32) having a through opening (42) aligned with the guide (20) of the cover body (16) and a pair of vanes (46) articulated to the base (32) and movable between a raised

position and a lowered position in which they close and open the through opening (42) of the base (32), wherein the vanes (46) are associated with elastic elements (52) that keep the vanes in the raised position and wherein said hollow element (22) moves the vanes (46) from the raised position to the lowered position during its movement from the raised position towards the lowered position.

2. A bin according to claim 1, wherein said vanes (46) are articulated to the base (32) around respective horizontal axes (A) located on opposite sides of said through opening (42) of the base (32).

3. A bin according to claim 1 or claim 2, wherein each of said elastic elements (52) is formed by a closed-loop strip of elastomeric material arranged in an upside-down U-shape on a support (54) of said base (32) and having opposite ends anchored to respective pins (56) protruding from side edges of said vanes (46) .

4. A bin according to any one of the preceding claims, wherein said base (32) has a side edge (34) on which an open upper edge (36) of a bag (38) is applicable and which engages the inner surface of the upper edge (14) of said container (12).

5. A bin according to any one of the preceding claims, wherein said vanes (46) have respective distal edges (50) provided with respective seals (58), which are in contact with one another in the closed position of the vanes (46).

6. A bin according to any one of the preceding claims, wherein the vanes (46) have upper surfaces on which seals (60) are applied that, in the closed position of the vanes (46), are in contact against a lower edge (62) of the through opening (42) of said base (32).

7. A bin according to any one of the preceding claims, comprising a resilient bag (38) applied inside the container (12), and having an upper edge (36) arranged between an annular rim (34) of the base (32) and the open upper edge (14) of the container (12).

8. A bin according to any one of the preceding claims, wherein said hollow element (22) has an upper edge (26) closed by a hinged cover (28).

FIG. 1

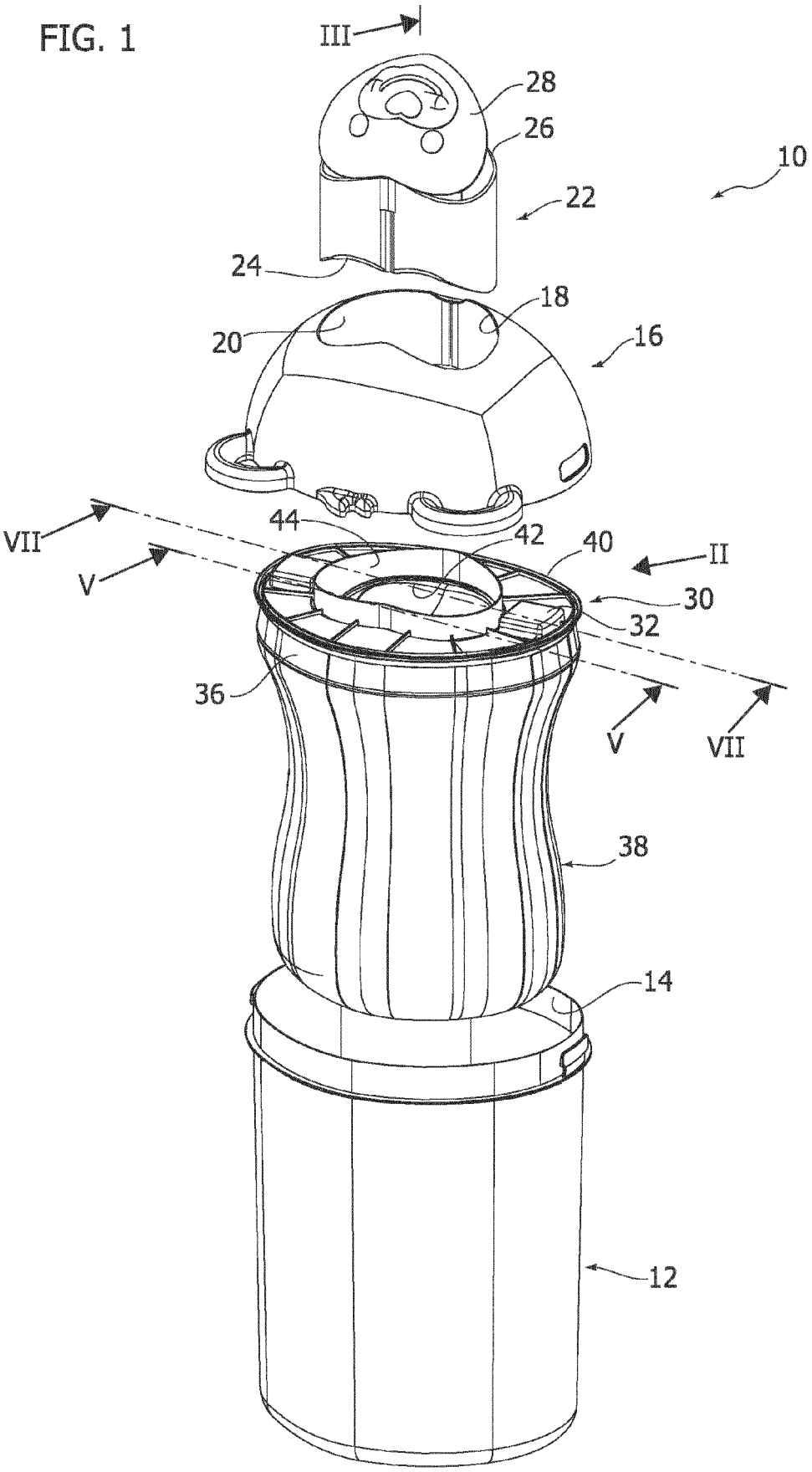


FIG. 2

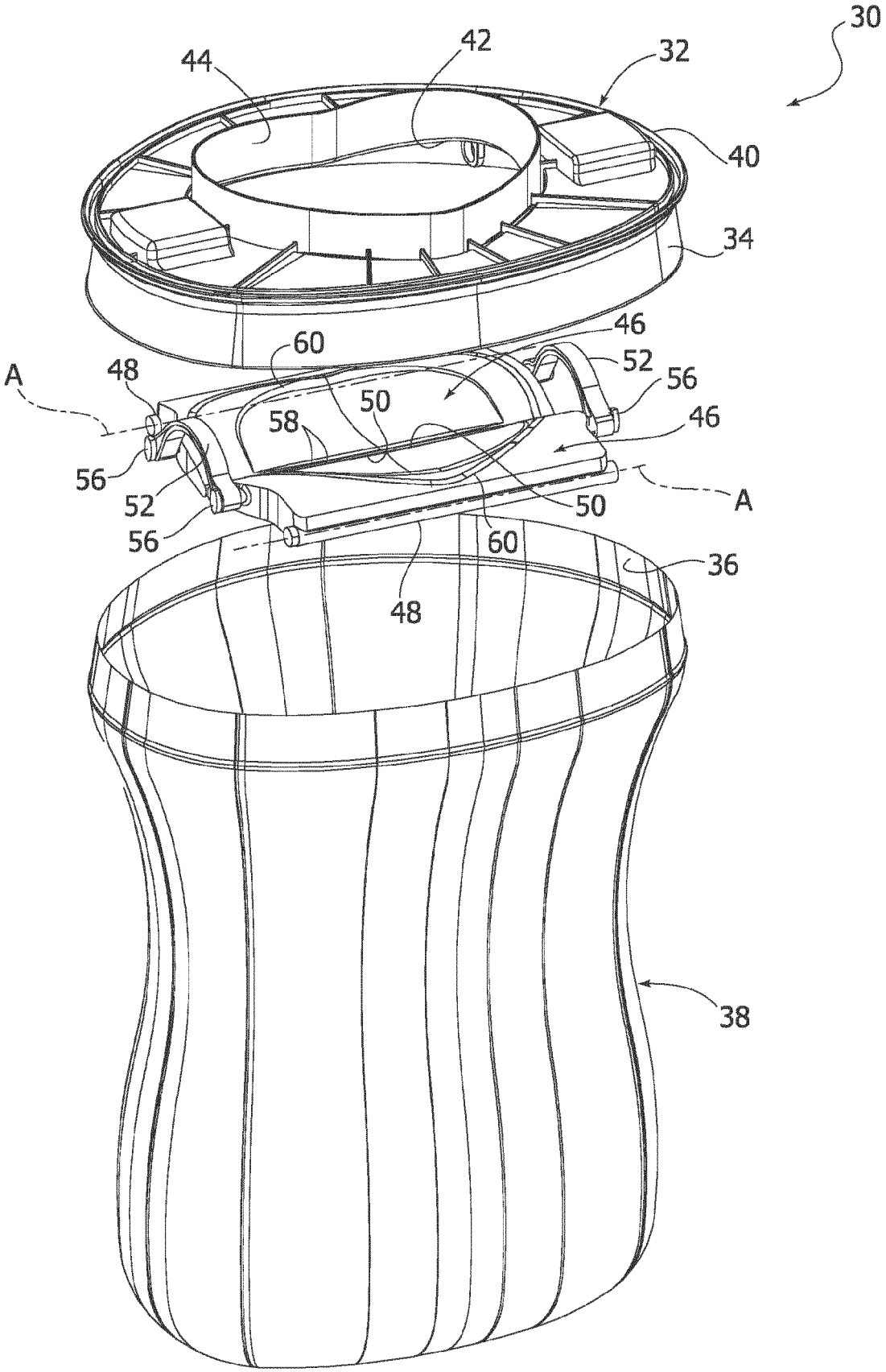


FIG. 3

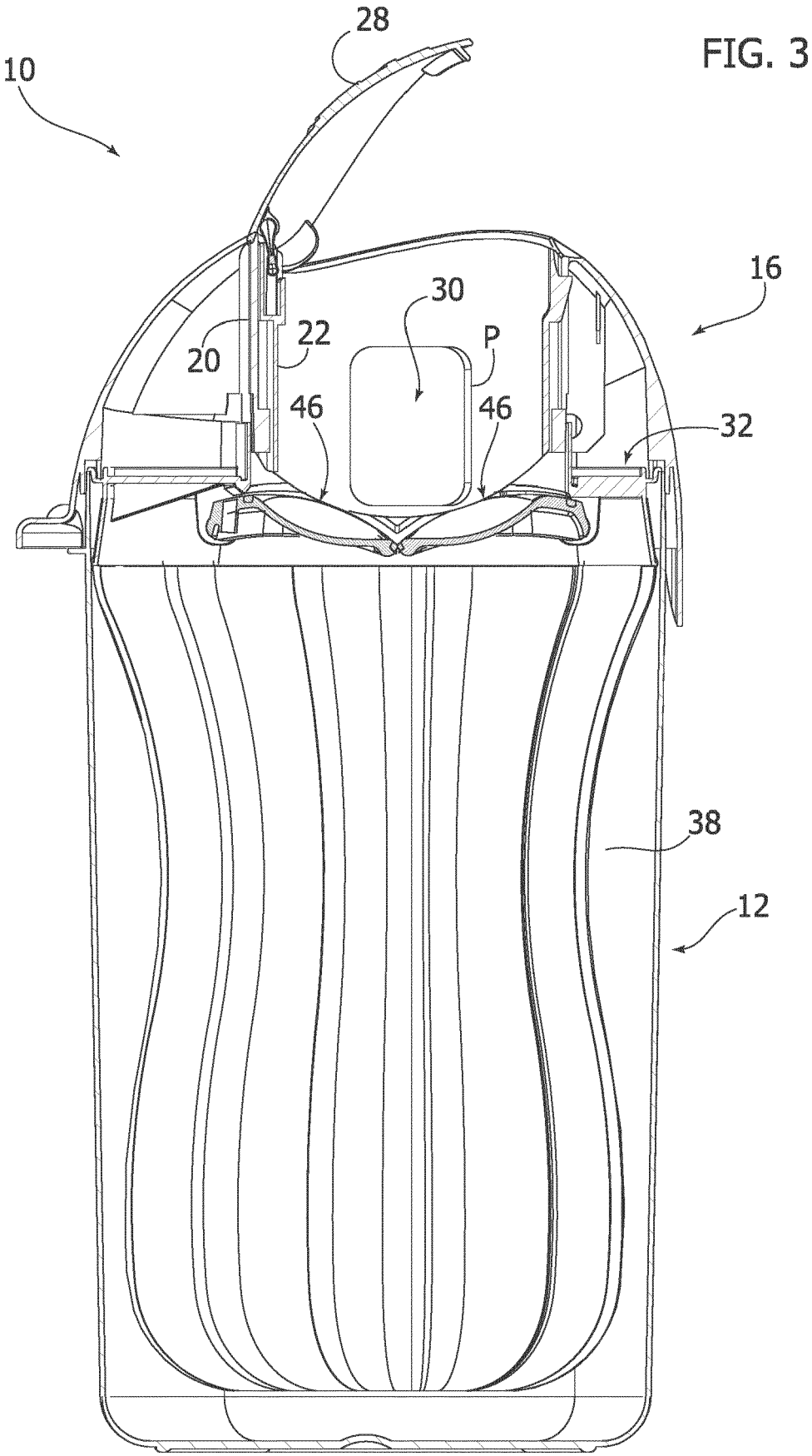


FIG. 4

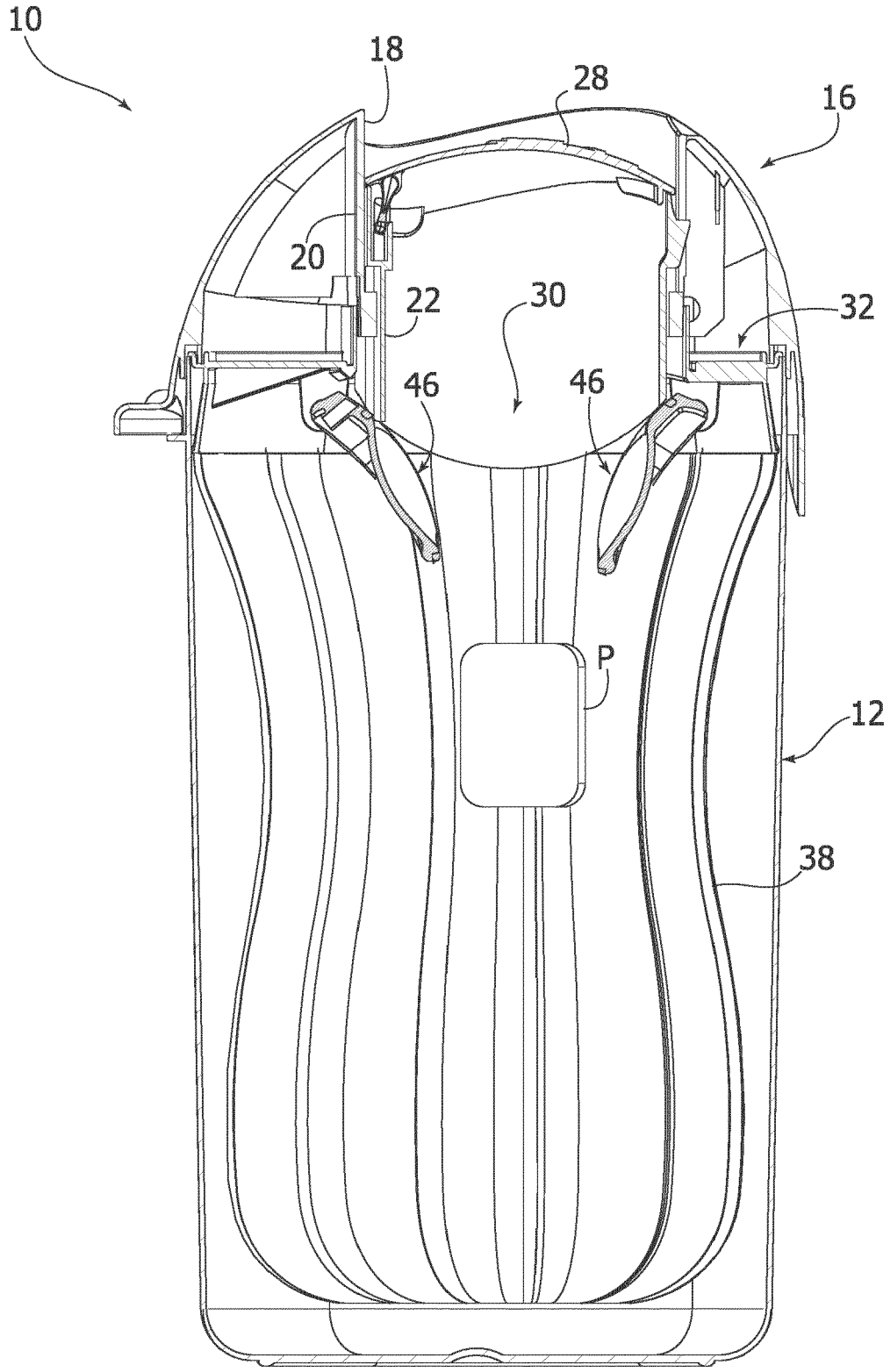


FIG. 5

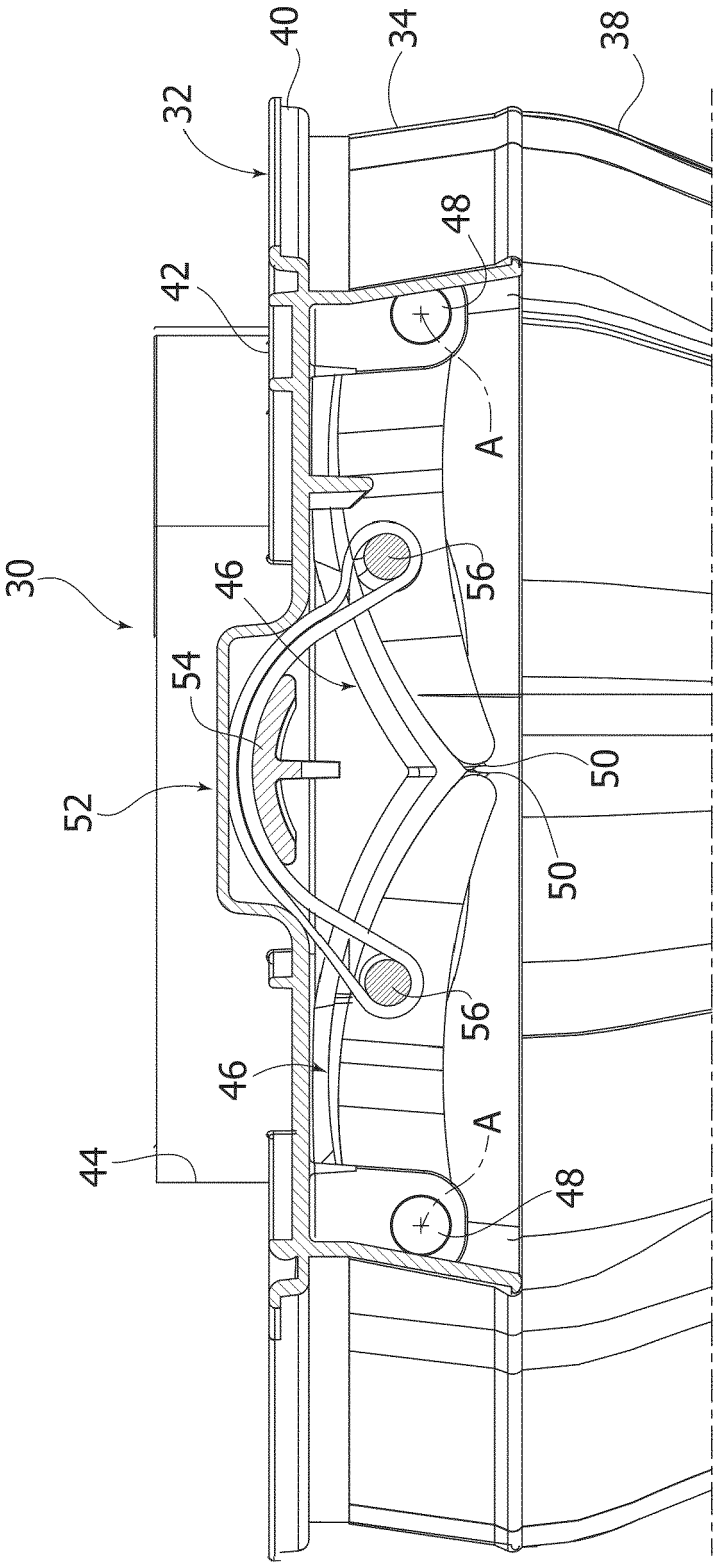


FIG. 6

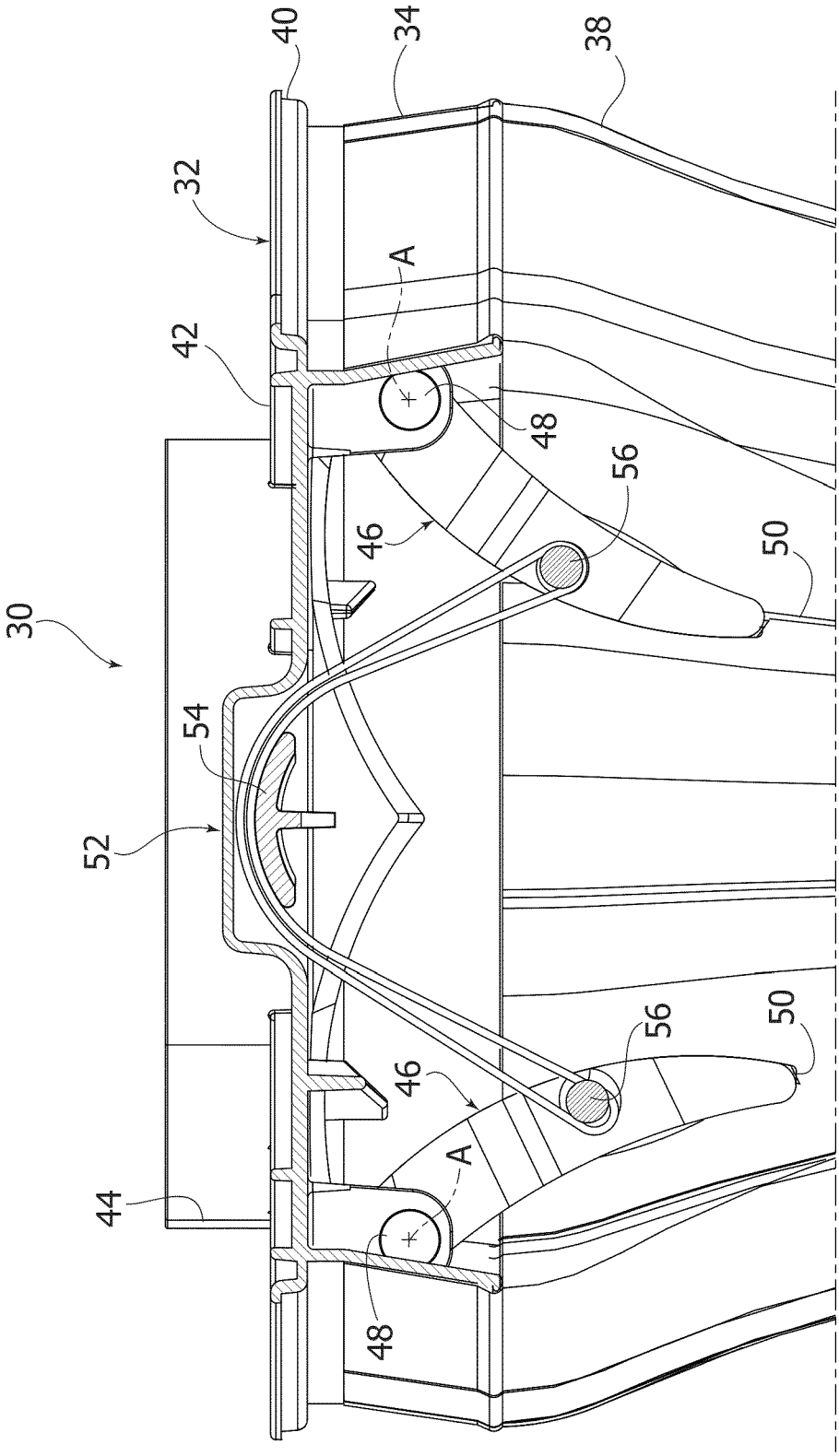
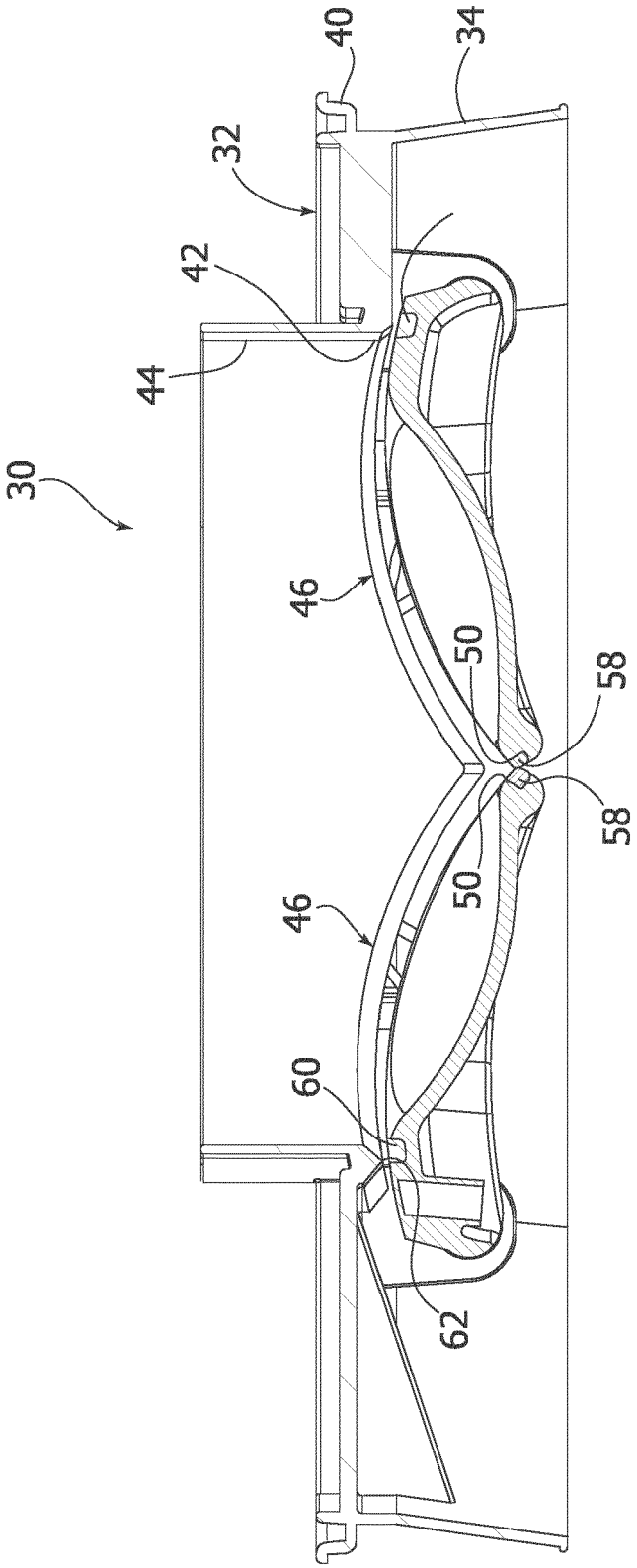


FIG. 7



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EUROPEAN SEARCH REPORT

Application Number
EP 20 20 2616

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 2004/045954 A1 (DEV ANGELCARE INC [CA]) 3 June 2004 (2004-06-03) * figures 1-4 * * page 6, line 3 - page 9, line 15 * -----	1-8	INV. B65F1/06 B65F1/10 ADD. B65F1/16
A	US 5 765 339 A (GARLAND THOMAS A [US]) 16 June 1998 (1998-06-16) * figures 1-23 * -----	1-8	

TECHNICAL FIELDS SEARCHED (IPC)

B65F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 February 2021	Pardo Torre, Ignacio

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

REFERENCES CITED IN THE DESCRIPTION

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