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(54) **LID FOR A WASTE RECEPTACLE**

(57) A lid for a waste receptacle (2) having a compartment (6) which, in use, is configured to house waste; wherein the lid has a distribution system (18) for the distribution of a material, in particular a liquid, suited for the

treatment of waste, in particular organic waste; wherein the distribution system (18) is configured to distribute the treatment material inside said compartment (6) from above.

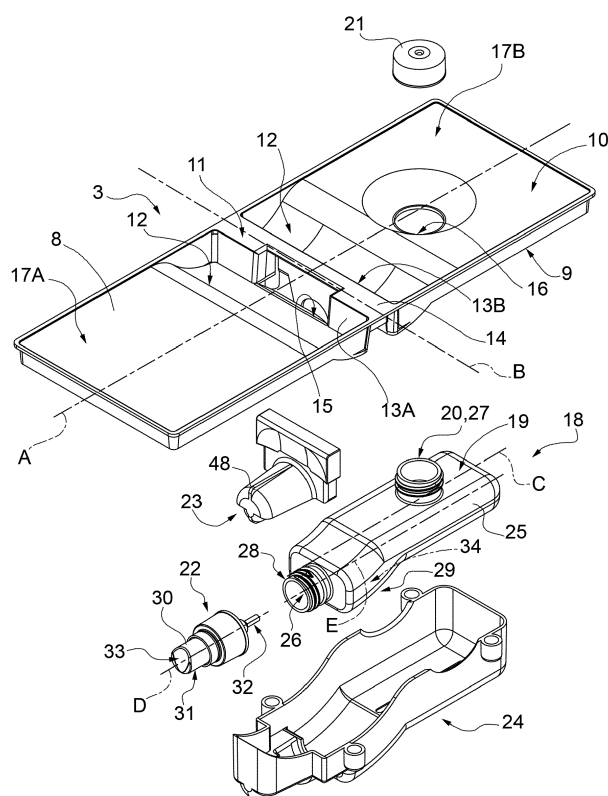


FIG.2

Description

[0001] This patent application relates to a lid for a waste receptacle, in particular for a receptacle used to collect organic waste.

[0002] In order to reduce pollution and support waste recycling, waste sorting more and more frequently occurs at the household. Furthermore, in some cities, compulsory waste sorting systems have been introduced. This means that, sometimes, organic waste is collected only periodically and, therefore, said waste must be kept in the house for different days. However, organic waste tends to ferment and generate moulds, bacteria and bad smells.

[0003] Known containers generally comprise a lid, which is configured to close, at the top, a receptacle having an inner compartment, which is suited to house the waste. Known organic waste containers tends to develop, after some time, a bad smell due to the fermentation, ripening, deterioration of the waste held on the inside.

[0004] In order to solve this problem, known receptacles usually house dispensers that are suited to spray treatment liquids, for example to stop the fermentation and/or sanitize and/or deodorize. Known dispensers are arranged on the inside of the receptacle and are configured to be automatically activated upon opening of the lid, thus producing a jet of liquid without a person's direct intervention. Known dispensers are applied to a side wall of the receptacle on the inside of the compartment. Preferably, dispensers are applied in the area of an upper edge of the compartment, just underneath the lid.

[0005] Known solutions described above have the drawback of providing dispensers that, as they are located on the inside of the compartment of the receptacle, take up space that should be used for the collection of waste. Furthermore, since dispensers are applied to a side wall, the liquid, which is generally atomized in the form of a conical spray, is not distributed uniformly on the inside of the receptacle, but, on the contrary, some areas are covered by more liquid compared to others and there are even areas that are not reached by the liquid at all. Moreover, the fact the liquid is dispensed in an automatic manner causes the product to be sprayed even when this is not actually needed, for example when someone opens the container to check the filling level or to replace the bag that is normally fitted on the inside of the compartment for the collection of waste. This, besides generating an unnecessary spray, increases the consumption of treatment liquid and causes the liquid dispenser to be emptied more quickly, which forces users to fill it more frequently, with a consequent waste of time.

[0006] The object of the invention is to provide a lid for a waste receptacle, which overcomes the drawbacks described above.

[0007] The object of the invention is to provide a lid according to the appended claims.

[0008] The invention will now be described with reference to the accompanying drawings, which show a non-

limiting embodiment thereof, wherein:

- figure 1 is a partially exploded, perspective view of the lid according to the invention applied to a waste receptacle;
- figure 2 is an exploded view of the lid according to the invention;
- figure 3 shows a detail of figure 2;
- figure 4 is a view from the bottom of a further detail of figure 2; and
- figure 5 is a side view of the detail of figure 4.

[0009] In figure 1, number 1 indicates, as a whole, a waste container 1, in particular for organic waste, comprising a receptacle 2 and a lid 3. The receptacle 2 comprises a support base 4 and one or more side walls 5, which are suited to delimit, together with the support base 4, an inner compartment 6. The receptacle 2 has an upper opening 7, which establishes a communication between the compartment 6 and the outside. Preferably, the upper opening 7 is opposite the support base 4. Hereinafter, the terms upper/lower, top/bottom are used with reference to the support base 4. According to figure 1, the receptacle 2 substantially has the shape of a parallelepiped. According to variants that are not shown herein, the receptacle 2 can have different shapes, for example a cylindrical shape.

[0010] According to figure 2, the lid 3 comprises a plate 8, which has a side perimeter that is complementary to the side perimeter of the receptacle 2. The plate 8 has an inner wall 9, which is configured to face the inside of the compartment 6, and an outer wall 10, which is configured to face the outside of the container 1 when the lid 3 is applied to the receptacle 2. According to figure 1, the lid 3 has a shape that is substantially rectangular in its plan view.

[0011] According to figure 2, the lid 3 has a longitudinal axis A and has, in the area of a middle position, a handle 11, which is substantially perpendicular to the longitudinal axis A. Advantageously, the handle 11 is manufactured as one single piece together with the plate 8 of the lid 3 and is defined by a pair of recesses 12, which extend perpendicularly to the longitudinal axis A and are arranged in a mirror-like manner relative an axis B, which is perpendicular to said longitudinal axis A and coplanar to the side profile of the lid 3. In other words, the handle 11 is defined on the outer wall 10 by the portion of the lid 3 extending along the axis A between the two recesses 12. The handle 11, on the side of the outer wall 10, has a pair of vertical walls 13A and 13B and a horizontal wall 14, which connects the vertical walls 13A and 13B on the upper side. Advantageously, the lid 3 has a window 15, which establishes a communication between the outer wall 10 and the inner wall 9 of the lid 3. In particular, the window 15 is made on a vertical wall 13 of the handle 11. Advantageously, the lid 3 has an opening 16, which establishes a communication between the outer wall 10 of the lid 3 and the inner wall 9. In particular, the handle

11 divides the lid 3 into two halves 17A and 17B and the opening 16 is obtained through the half 17B that is opposite the window 15 of the handle 11 relative to a vertical wall 13.

[0012] The lid 3 comprises, furthermore, a distribution system 18, which is suited to distribute a waste treatment material inside the compartment 6. In particular, the waste treatment material is a liquid and the distribution system 18 comprises a tank 19, which is suited to house the liquid. Advantageously, the tank 19 has an inlet mouth 20, which is at least partially arranged through the opening 16 of the lid 3 and projects from the outer wall 10 of the lid 3. The tank 19 comprises, furthermore, a plug 21 for closing said mouth 20. Advantageously, the tank 19 is configured to be filled by means of the mouth 20 from the outside of the container 1.

[0013] The distribution system 18 comprises, furthermore, a dispenser 22, which is in fluid communication with the tank 19 and is suited to atomize the liquid to the outside of the tank 19 when it is activated. Advantageously, the dispenser 22 is connected to the inner wall 9 of the lid 3. The dispenser 22 is configured to be arranged close to the window 15 of the handle 11.

[0014] Advantageously, the distribution system 18 comprises a lever 23, which is mounted in a known manner and so as to slide inside the window 15 and is interposed between the window 15 of the lid 3 and the dispenser 22. The dispenser 22 is configured to be operated by applying pressure on the lever 23 from outside the lid 3.

[0015] Advantageously, the distribution system 18 comprises a casing 24, which is configured to house the tank 19 and the dispenser 22 and to be connected to the inner wall 9 of the lid 3.

[0016] Advantageously, the tank 19 is a bottle 19. Advantageously, the bottle 19 is made of a plastic material. Advantageously, the bottle 19 has an elongate body with a longitudinal axis C and a side wall 25. In particular, the bottle 19 has an inner cavity 26, which is suited to house a liquid. Advantageously, the bottle 19 comprises two necks 27 and 28; a vertical neck 27 arranged on the side wall 25 and substantially perpendicular to the axis C; and a horizontal neck 28. Advantageously, according to figure 2, the bottle 19 has an end portion 29 that is inclined relative to the axis C and the horizontal neck 28 is applied to the end of the end portion 29 itself; therefore, the horizontal neck 28 is coaxial to an axis E, which is substantially parallel to the axis C.

[0017] Advantageously, the vertical neck 27 defines the mouth 20 of the tank 19 and is configured to be at least partially inserted through the opening 16. The plug 21 is suited to be screwed, in a known manner, around the vertical neck 27.

[0018] Advantageously, the dispenser 22 is a known spray nozzle, which is shown in a schematic manner. In particular, the dispenser 22 has an axis D, which is coaxial to the axis E, and comprises a dispensing cap 30 having a dispensing hole 31 and a suction tube 32. The dispenser 22 is known. In particular, the dispensing cap

30 is arranged in such a way that the dispenser 22 is suited to atomize the liquid above and towards the inside of the compartment 6 when the lid 3 is arranged so as to close the receptacle 2. In other words, the dispensing cap 30 is arranged in such a way that the dispensing hole 31 is suited to atomize the liquid towards the inside of the compartment 6, preferably in a central area and as uniformly as possible. According to figure 2, the dispensing cap 30 can be found in stores and has a groove 33, i.e. a raiser, which is configured to be normally engaged, in use, by a person's finger and to be obtained in the area of the free end of the dispensing cap 30. The groove 33 of the dispensing cap 30 is substantially transverse to the axis D of the dispenser 22.

[0019] The dispensing cap 30 is screwed, in a known manner, around the horizontal neck 28 and the suction tube 32 is arranged inside the cavity 26 of the bottle 19. Advantageously, the inclined end portion 29 of the bottle 19 is configured so as to create a suction - and confluence - area 34 for the liquid. In other words, the inclination of the end portion 29 is such that it causes the liquid contained in bottle 19 to flow, due to gravity, towards the suction area 34. In this way, the emptying of the bottle 19 is optimized.

[0020] According to figure 3, the casing 24 is substantially made by means of a shaped wall and is configured to house and connect the to the inner wall 9 of the lid 3 the dispenser 22 and the tank 19, which are assembled together. Advantageously, the casing 24 has a shape that is substantially complementary to the shape of the bottle 19 and of the dispenser 22 assembled together. The casing 24 advantageously has a level indicator 35, which is suited to signal the filling level of the bottle 19. Advantageously, the casing 24 has a window 36, which is configured to longitudinally extend along the bottle 19. The window 36 has one or more marks 37, which are suited to indicate the filling level of the tank 19. The assembly consisting of the window 36 and the marks 37 defines the level indicator 35 of the casing 24. Advantageously, the bottle 19 is made of a translucent material. Advantageously, the casing 24 is made of a plastic material.

[0021] Advantageously, the casing 24 has a portion 44, which is suited to house the end portion 29 of the bottle 19, in particular in correspondence to the suction area 34. The casing 24 has, furthermore, a portion 45, which is suited to house the dispenser 22. Advantageously, the casing 24 has a hole 46, which is suited to be aligned with the dispensing hole 31 of the dispenser 22 and to be flown through by a jet of atomized liquid. The casing 24 is configured to be fixed to the inner wall 9 of the lid 3 by means of known fixing means. For example, the casing 24 is suited to be fixed to the inner wall 9 by means of screws. According to figure 3, the casing 24 has slots 47 for the application of screws or equivalent fixing elements, such as, for example, locking elements, bayonet elements, rivets or nails.

[0022] According to figures 4 and 5, the lever 23 com-

prises a shaped body open on the lower side. In particular, the lever 23 comprises a case 38 having a housing 40, which is configured to at least partially hold the dispensing cap 30. In particular, the case 38 has a partially tubular body, which is fitted around the periphery of the dispensing cap 30, and a stopping wall 39, which is substantially transverse to the tubular body and is in contact with the free end of the dispensing cap 30. The stopping wall 39 has a face 49 that is configured to be at least partially housed inside the groove 33 of the dispensing cap 30.

[0023] The stopping wall 39 is configured to press against the free end of the dispensing cap 30. Advantageously, the case 38 comprises an inner striker element 41, which is suited engage the groove 33 of the dispensing cap 30. The inner striker element 41 is configured to constrain the rotation of the dispensing cap 30 around the axis D of the dispenser 22. Therefore, the dispensing cap 30 is mounted inside the distribution system 18 and, more in detail, inside the lever 23 so as to axially slide and be constrained in its rotation.

[0024] Advantageously, the stopping wall 39 has a guide element 48, which is configured to engage, in an axially sliding manner, the inside of a respective longitudinal groove (not shown and known) made inside the casing 24. Alternatively or in addition thereto, the guide element 48 is a longitudinal fin, which is configured to engage, in an axially sliding manner, the inside of a respective longitudinal groove (not shown and known) made inside the lid 3 and to constrain the rotation.

[0025] Alternatively or in addition thereto, the case 38 has a guide element 48, which is suited to at least partially engage a respective portion of the lid 3 and is configured to guide the lever 23 during the translation and to avoid possible rotations.

[0026] The lever 23 comprises, furthermore, a button 42, which radially projects outwards from the case 38. The button 42 is engaged inside the window 15 of the handle 11 so that it can be pressed by a person through the window 16 of the handle 11 itself. Advantageously, the lever 23 has a shape and a size that are such as to close the window 15 of the lid 3. The distribution system 18 can comprise gaskets, known and not shown, between the window 15 of the lid 3 and the lever 23 of the distribution system 18.

[0027] According to a variant that is not shown herein, the distribution system 18 comprises elastic return means, which are suited to cause the case 38 of the lever 23 to go back to a rest position when the lever 23 is not pressed by a user. For example, the lever 23 comprises one or more elastic elements, for example one or more springs, which are interposed between the dispensing cap 30 and the stopping wall 39 of the case 38 and are suited to cause the case 38 to go back to a rest position when the lever 23 is not pressed from the outside by a user. In the example shown in the accompanying drawings, the return of the lever 23 to the rest position is ensured by the spring that is normally located inside the

dispensing cap 30 of the spray nozzle.

[0028] According to a variant that is not shown herein, the tank substantially is a compartment obtained inside a body configured to be connected to the inner wall of the lid and comprising adequate gaskets or sealing system to prevent liquid from accidentally flowing out in the area of joints.

[0029] In use, when a user wants to atomize a waste treatment liquid, for example a liquid aimed at stopping fermentation and/or sanitizing and/or deodorizing, presses the lever 23 when the lid 3 is arranged so as to close the receptacle 2. In this way, the dispenser 22 atomizes the treatment liquid from above into the receptacle 2.

[0030] Therefore, the lid 3 described above allows the treatment liquid to be applied only when necessary.

[0031] Furthermore, the distribution system 18 described above occupies, inside the compartment, a delimited area in correspondence to the lid 3, at a level where waste is not usually housed. Therefore, the lid 3 described above allows the containing space of the receptacle 2 to be increased and, in particular, it does not engage areas close to the side wall of the receptacle 2.

[0032] Furthermore, the distribution system 18 allows the liquid to be atomized into the compartment 6 from above and from a substantially central position; therefore, the lid 3 described above allows the treatment liquid to uniformly and completely settle inside the compartment 6, regardless of the waste filling level of the receptacle 2.

[0033] Furthermore, the lid 3 described above can be used as a replacement for known lids already in use, with no need to also replace the receptacle. Therefore, the lid 3 described above can easily be adopted also for receptacles already in use and not provided with a distribution system 18 waste treatment material.

[0034] To check the filling level of the tank 19, the user lifts the lid 3 and places it with the axis A perpendicular to a resting surface and the horizontal neck 28 upwards. In this way, the liquid contained inside the tank 19 flows, due to gravity, towards the bottom of the bottle 19 and the filling level of the bottle 19 can be detected through the level indicator 35, i.e. the window 36, on the casing 24.

[0035] Finally, the presence of the mouth 20 to fill the tank 19 from above makes it especially easy and quick for the tank 19 to be filled.

Claims

1. A lid for a waste receptacle (2) having a compartment (6) which, in use, is configured to house waste; wherein the lid comprises a distribution system (18) for the distribution of a material, in particular a liquid, suited for the treatment of waste, in particular organic waste; wherein the distribution system (18) is configured to distribute the treatment material inside said compartment (6) from above.
2. A lid according to claim 1 and having an inner wall

- (9), which is configured to face, in use, the inside of said compartment (6) of said receptacle (2), and an outer wall (10), which is configured to face, in use, the outside of said receptacle (2); wherein the distribution system (18) is connected to the inner wall (9) of the lid (3) and is suited to be activated by means of an operating means (23) which can be operated directly by a user, in particular the operating means being at least partially exposed on the outer wall (10).
3. A lid according to any of the previous claims, wherein the treatment material is a liquid and the distribution system (18) comprises a tank (19) and a spray dispenser (22) which is in fluid connection with said tank (19) and is suited to atomize said liquid inside the compartment (6).
4. A lid according to claim 3, wherein the spray dispenser (22) comprises a dispensing cap (30) having a dispensing hole (31) and a suction tube (32); wherein the dispensing cap (30) is mounted so as to slide along its own longitudinal axis (D); the lid comprising means (41, 49) which are configured to keep, in use, the dispensing hole (31) always facing the compartment (6) of the receptacle (2).
5. A lid according to any of the previous claims, wherein the lid (3) has a window (15) and the distribution system (18) comprises a lever (23), which is mounted in correspondence to said window (15) and is connected to the dispensing cap (22); wherein said lever (23) can be activated, in use, by a user through said window (15).
6. A lid according to claim 5, wherein the lever (23) has a housing (40), inside which the dispensing cap (30) is at least partially inserted, and comprises a striker element (41) which engages a portion of said dispensing cap (30) and constrains the rotation of the dispensing cap (30) around its own longitudinal axis (D).
7. A lid according to any of the previous claims, wherein the tank (19) has an opening (20) which is accessible from the outer wall (10) of the lid (3) itself; wherein the tank (19) is a bottle having a vertical neck (27), which defines the opening (20), and a horizontal neck (28), around which the dispensing cap (30) is fitted.
8. A lid according to claim 7, wherein said bottle (19) has, in correspondence to its horizontal neck (28), a liquid suction area (34); wherein the suction tube (32) is configured to suck the liquid inside said suction area (34); wherein the suction area is disposed close to said horizontal neck (28) and, in use, it is vertically underneath said horizontal neck (28).
9. A lid according to any of the previous claims and comprising a casing (24) which is configured to house the dispenser (22) and the tank (19) assembled together; wherein the casing (24) is connected to the inner wall (9) of the lid (3).
10. A lid according to claim 9, wherein the casing (24) comprises a level indicator which is configured to show the filling level of said tank (19); wherein the level indicator (35) has a window (36) which longitudinally extends along at least part of said tank (19); wherein said tank is translucent at least in correspondence to said window (36).

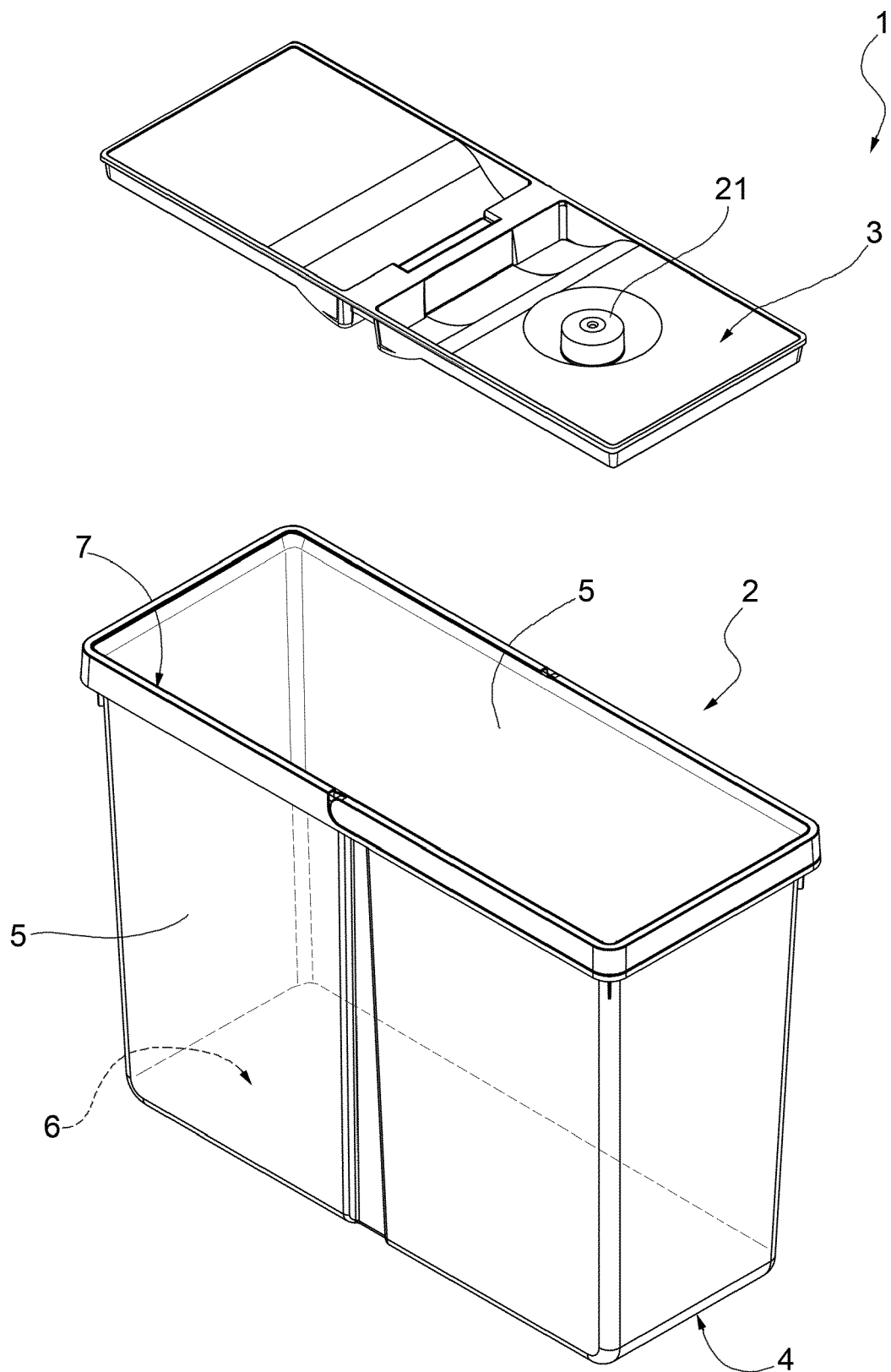


FIG.1

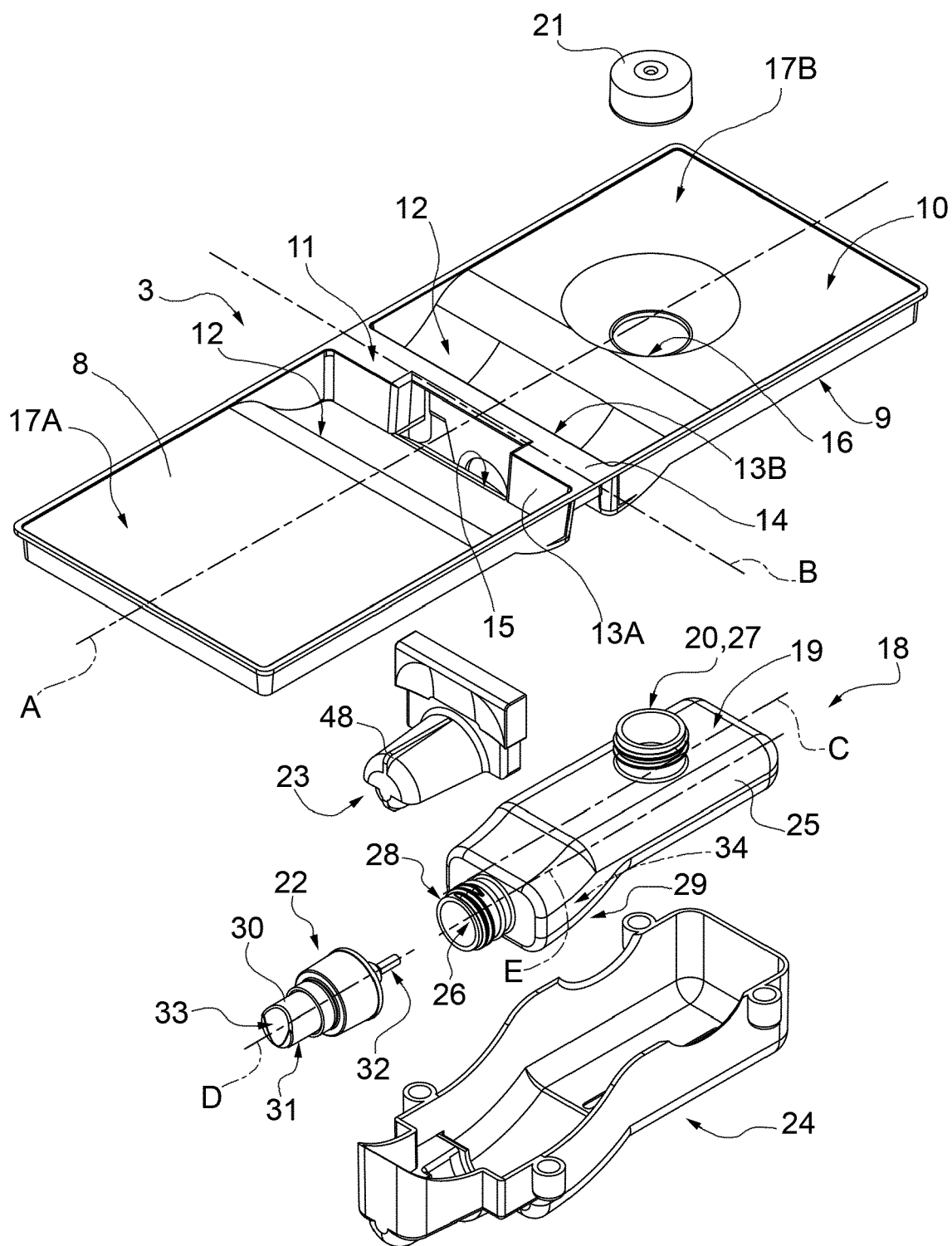


FIG.2

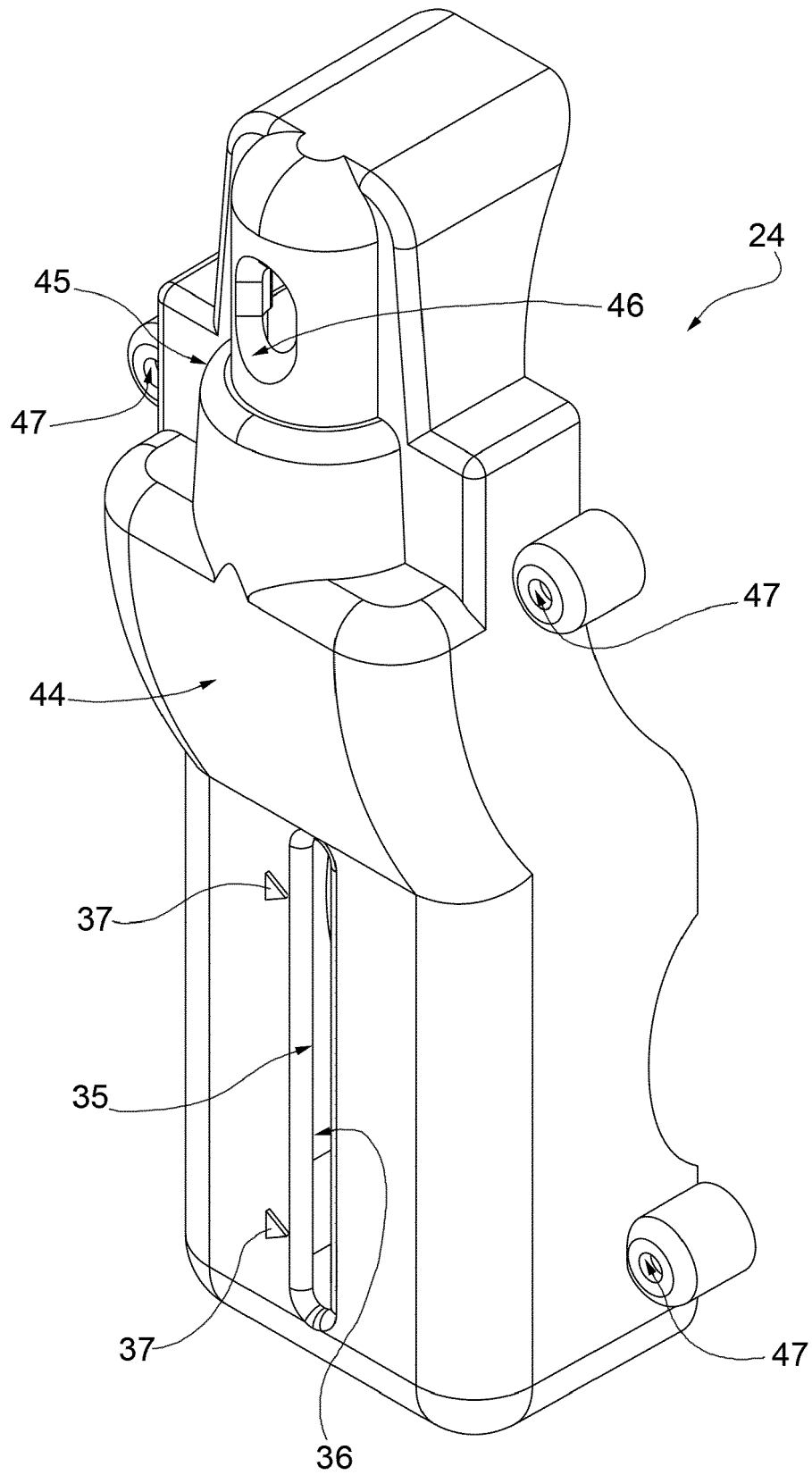


FIG.3

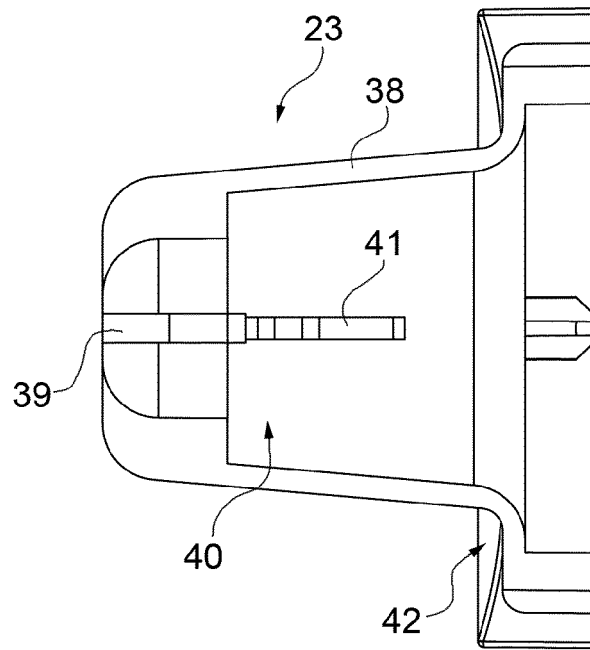


FIG.4

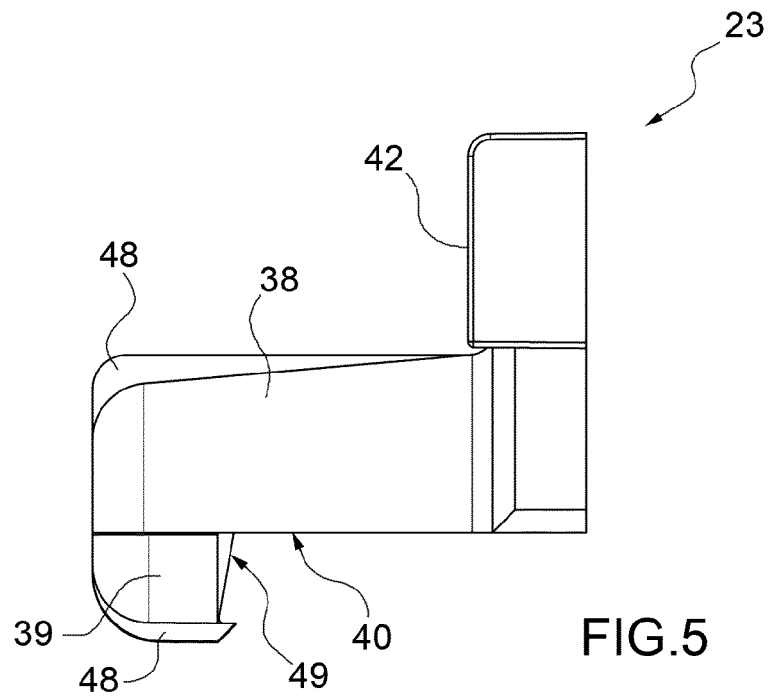


FIG.5



EUROPEAN SEARCH REPORT

Application Number
EP 16 19 2278

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 January 2017	Examiner Pardo Torre, Ignacio
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	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82