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(54) Refrigeration appliance, in particular for household use, comprising a beverage dispensing device, and method of assembly thereof

(57) The present invention relates to a refrigeration appliance (1), in particular for household use, of the type comprising:
- a structure (2) within which at least one compartment (3, 4) is obtained for preserving foodstuffs, which is adapted to be closed by at least one door (3P, 4P);
- a beverage dispensing device (10), said device (10) comprising a tank (11) associated with an inner wall (5) of the structure (2), in particular of said at least one door (3P, 4P).

The invention is characterized in that said refrigeration appliance (1) comprises a hooking system (20) for hanging the tank (11) on the inner wall (5) of the structure (2), in particular of said at least one door (3P, 4P).

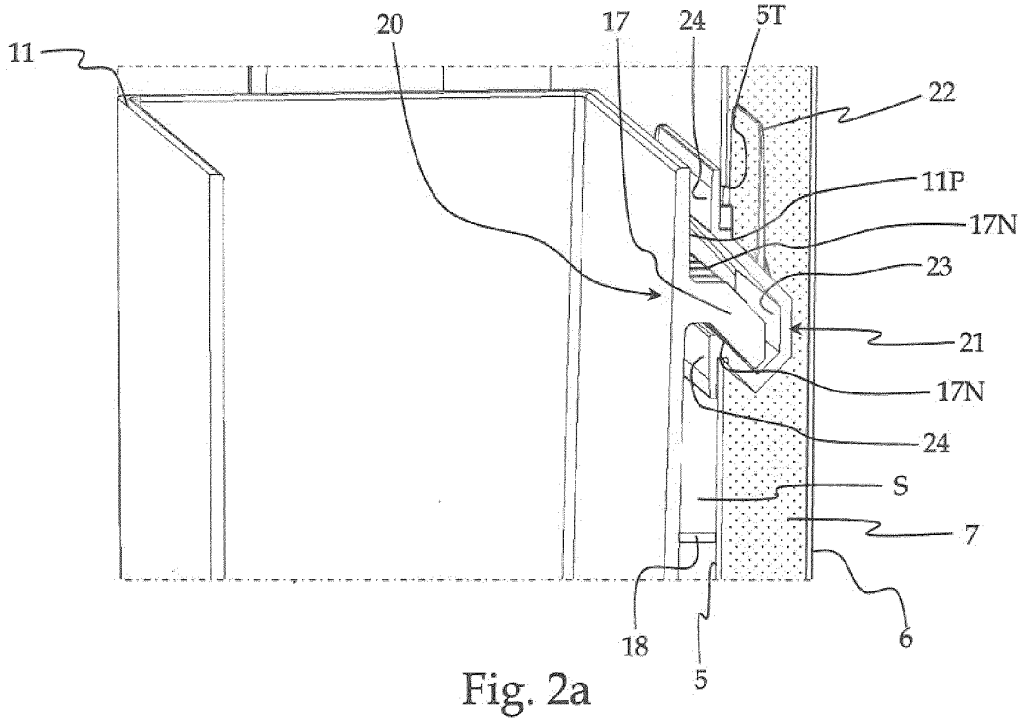


Fig. 2a

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Description

[0001] The present invention relates to a refrigeration appliance, in particular for household use, comprising a beverage dispensing device.

[0002] Reference will be prevalently made in the following description to a refrigeration appliance for household use, even though the present invention is not strictly limited to such an appliance.

[0003] It is known in the art a refrigeration appliance, in particular for household use, of the type comprising a structure with at least one compartment formed therein for food preservation.

[0004] Refrigeration appliances known in the art typically comprise two compartments which are kept at different temperatures, thus providing at least two different food preservation states, in particular a refrigerator compartment suitable for preserving fresh food at a temperature between 0°C and 10°C and a freezer compartment suitable for preserving frozen food at a temperature between -15°C and -30°C; such refrigeration appliances are commonly referred to by those skilled in the art of household refrigeration as "double-door" or "combined" refrigerators, depending on the relative position of the two compartments. In a "double-door" refrigeration appliance, the freezer compartment is above the refrigerator compartment, whereas in a "combined" refrigeration appliance the freezer compartment is located at the bottom.

[0005] It is also known in the art that a refrigeration appliance, in particular for household use, can comprise a device for dispensing a beverage outside said refrigeration appliance, said device comprising a tank positioned inside a compartment of the refrigeration appliance, in particular said tank being usually located in a refrigerator compartment.

[0006] A valve is normally associated with said tank, said valve being operated by an actuator element associated therewith and positioned externally to the refrigeration appliance, said actuator element being in turn operated by a user wanting the beverage to exit the valve.

[0007] Refrigeration appliances with such features have been common for decades in the USA; actually, the refrigeration appliances widespread on the American market are equipped with dispensers capable of dispensing not only refrigerated water, but also ice and, in some cases, refrigerated soft drinks.

[0008] These refrigeration appliances are usually fitted with two doors arranged side by side, and are therefore very bulky; the dispenser and the valve are associated with one door, the valve typically extending through the door, so that it protrudes both inside and outside the refrigeration appliance; furthermore, a recess is normally present on said door, outside the refrigeration appliance, where the valve or the associated ducts come out for dispensing the beverage; in said recess, the user can lay, for example, a glass or another container suitable for receiving the dispensed beverage.

[0009] In Europe, refrigeration appliances equipped with a dispenser have begun to catch on in quite recent times. It must be pointed out that the European market demands rather different products from those sold in the United States, i.e. products being much less bulky (60 or 70 cm wide) and usually dispensing refrigerated water only; moreover, such products must not be too expensive and therefore must use simple but effective technical solutions.

[0010] The recently greatly increased demand from the public and the resulting spread of refrigeration appliances comprising a beverage dispensing device have given rise to a need for converting the production lines of known refrigeration appliances in a simple and economical manner without requiring new moulds, so that a refrigeration appliance not equipped with a beverage dispensing device can be transformed into a refrigeration appliance equipped with such a device.

[0011] As a consequence, a significant drawback of known refrigeration appliances is their poor versatility, i.e. their insufficient propensity to being modified to include also a beverage dispensing device.

[0012] It has also been observed that the refrigeration appliances known in the art pose a number of problems, which are substantially due to the positioning of the tank inside a compartment of the refrigeration appliance.

[0013] In fact, the refrigeration appliances known in the art are so designed as to comprise a beverage dispensing tank, which tank is associated with one door of the refrigeration appliance itself; however, in known refrigeration appliances it is often the case that the tank is not firmly secured to said door.

[0014] This inevitably leads to stability problems suffered by the tank and by the whole refrigeration appliance, in particular when opening and/or closing said door. Of course, said stability problems may lead to further adverse consequences, e.g. overturning of foodstuffs contained in the refrigeration appliance and/or spilling of the beverage contained in the tank, which may soil both the refrigeration appliance and the surrounding area.

[0015] In this frame, it is the main object of the present invention to provide a refrigeration appliance, in particular for household use, which is adapted to overcome the above-described drawbacks, thus being particularly efficient and economical.

[0016] It is another object of the present invention to provide a refrigeration appliance, in particular for household use, which is so designed as to be highly versatile, such that it can be easily adapted to accommodate a beverage dispensing device without necessarily requiring any modifications to the entire production line of known refrigeration appliances.

[0017] It is a further main object of the present invention to provide a refrigeration appliance, in particular for household use, which is so designed as to firmly and safely accommodate inside of it a beverage dispensing tank, in particular in order to prevent both the tank and

the whole refrigeration appliance from suffering any stability problems, especially when opening and/or closing a door of said refrigeration appliance.

[0018] Said objects are achieved by the present invention through a refrigeration appliance, in particular for household use, incorporating the features set out in the appended claims, which are intended to be an integral part of the present description.

[0019] Further objects, features and advantages of the present invention will become apparent from the following detailed description and from the annexed drawings, which are supplied by way of non-limiting example, wherein:

- Fig. 1 is a schematic sectional side view of a refrigeration appliance according to the present invention;
- Figs. 2a and 2b are, respectively, a perspective view and a sectional view of a component of the refrigeration appliance according to the present invention;
- Fig. 3 is a perspective view of the component of Figs. 2a and 2b associated with the refrigeration appliance according to the present invention.

[0020] Said description and said drawings are to be considered as non-limiting examples.

[0021] Referring now to the annexed drawings, Fig. 1 shows a schematic sectional view of a refrigeration appliance, in particular for household use, in accordance with the present invention, designated as a whole by reference numeral 1.

[0022] Said refrigeration appliance 1 comprises a structure 2 within which at least one compartment 3, 4 is obtained for preserving foodstuffs, which is adapted to be closed by at least one door 3P, 4P.

[0023] Preferably, said at least one compartment 3, 4 comprises:

- a refrigerator compartment 3, in particular suitable for preserving fresh food at a temperature between 0°C and 10°C, and adapted to be closed by a first door 3P,
- a freezer compartment 4, in particular suitable for preserving frozen food at a temperature between -15°C and -30°C, and adapted to be closed by a second door 4P.

[0024] It should be noted that the refrigeration appliance 1 shown in Fig. 1 is a "combined" one, in that the freezer compartment 4 is located under the refrigerator compartment 3; it is however clear that the refrigeration appliance 1 according to the present invention may be of a different type as well.

[0025] The refrigeration appliance 1 comprises a beverage dispensing device, designated as a whole by reference numeral 10, said device 10 comprising a tank 11 associated with an inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P, of the refrigeration appliance 1.

[0026] Said dispensing device 10 comprises a valve 12 associated with the tank 11. In the example of embodiment shown in Fig. 1, also the valve 12 is associated with the first door 3P; in this embodiment, the valve 12 according to the present invention preferably also acts as a duct for dispensing the beverage outside the refrigeration appliance 1, conducting the beverage to a recess 3N obtained on an outer wall 6 of said structure 2, in particular of said first door 3P. It is however clear that said valve 12 and said recess 3N may be associated with other parts of the structure 2.

[0027] Furthermore, the valve 12 is associated with an actuator element 12A positioned outside the refrigeration appliance 1, said actuator element 12A being preferably of the type that can be operated via a thrust exerted by a user wanting the beverage to exit the valve 12 (e.g. said thrust being exerted by means of a container, designated by reference C in Fig. 1) .

[0028] In accordance with the present invention, as can be seen in Figures 2a and 2b, the refrigeration appliance 1 comprises a hooking system (designated as a whole by reference numeral 20) for hanging the tank 11 on the inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P.

[0029] In particular, said hooking system 20 comprises at least one coupling and supporting element 21 adapted to be placed into a cut-out 5T of the inner wall 5.

[0030] Said coupling and supporting element 21 comprises at least one wing 22 adapted to be positioned into an interspace 7 obtained between the inner wall 5 and an outer wall 6 of the structure 2 and then buried into an insulating material, in particular a plastic foam material (e.g. polyurethane), so that the coupling and supporting element 21 is firmly positioned and secured in said cut-out 5T of the inner wall 5.

[0031] It must be pointed out that the thickness of the interspace 7 and of the insulating material depends on the type of cell (i.e. on the cell's operating temperatures) and, of course, on the type of insulating material in use.

[0032] In a preferred embodiment, said coupling and supporting element 21 comprises a cavity 23 adapted to receive at least one appendix 17 of said tank 11; in particular, said appendix 17 is located on a back surface 11P of the tank 11, i.e. a surface of the tank 11 which, in an operating condition (i.e. a condition occurring when the tank has been hung on the inner wall 5), faces the inner wall 5.

[0033] In addition, said appendix 17 comprises at least one rib 17N on its top surface and/or on its bottom surface, said at least one rib 17N making the appendix 17 stronger and/or allowing the appendix 17 to be properly centered in the cavity 23.

[0034] Preferably, said cavity 23 and said appendix 17 are so designed as to have a downward inclined profile when viewed from the tank 11 in the direction of the inner wall 5, in particular when observing the tank 11 laterally, so that the tank 11 can stay firmly hung on the inner wall 5.

[0035] It is apparent that such a design requires the

coupling between the tank 11 and the inner wall 5 to occur through a substantially diagonal translational movement of the tank 11 relative to said inner wall 5. Said substantially diagonal translational movement is also required by the presence of the valve 12 associated with the tank 11, which has to move diagonally to be able to go through an inclined hole F (schematically shown by a dashed line in Fig. 1) of said structure 2, in particular of said at least one door 3P, 4P.

[0036] As a consequence, it is clear that said hole F is made in the structure 2, in particular in said at least one door 3P, 4P, in order to allow the passage of the valve 12 or of any element (e.g. an extension) associated with said valve 12.

[0037] The coupling and supporting element 21 further comprises an edge 24 adapted to be associated with said cut-out 5T, said edge 24 preventing the insulating material from undesirably coming out of the interspace 7 and improving the finishing of the inner wall 5 of the refrigeration appliance 1.

[0038] Preferably, said coupling and supporting element 21 and/or said inner wall 5 comprise abutments (not shown in the drawings), which allow the coupling and supporting element 21 to be properly positioned into the cut- out 5T.

[0039] Preferably, the tank 11 is coupled to the inner wall 5 in such a way as to leave a space S (visible in Figures 2a and 2b) between the back surface 11P of the tank 11 and said inner wall 5, so as to allow for air circulation in said space S and to improve the thermal exchange with the tank 11 for adequately cooling the content of said tank 11.

[0040] To this end, the tank 11 and/or the inner wall 5 may comprise at least one spacer element 18 (visible in Figures 2a and 2b) adapted to maintain said space S between the back surface 11 P of the tank 11 and the inner wall 5.

[0041] According to a possible alternative embodiment (not shown in the drawings), the hooking system 20 of the present invention may be so designed as to comprise a coupling and supporting element 21 which includes an appendix adapted to be placed into a cavity located on a back surface 11P of the tank 11.

[0042] Also in this non-illustrated embodiment, the cavity and the appendix must be so designed as to have a downward inclined profile when viewed from the tank 11 in the direction of the inner wall 5, in particular when viewed laterally (i.e. when observing the tank 11 laterally), so that the tank 11 can stay firmly hung on the inner wall 5; it is clear that also such an embodiment requires the coupling between the tank 11 and the inner wall 5 to occur through a substantially diagonal translational movement of the tank 11.

[0043] According to a further possible embodiment (also not shown in the drawings), the hooking system 20 of the present invention may be designed in a manner such that the coupling and supporting element 21 comprises a cavity with a substantially horizontal profile, adapted to be associated with a second appendix with a substantially horizontal profile, located on a back surface 11P of the tank 11. In this non-illustrated embodiment, the second cavity and the second appendix must be so designed as to have a substantially horizontal extension, so that, while coupling the tank 11 to the coupling and supporting element 21 through a substantially diagonal translational movement of the tank 11, said second horizontal appendix will snap by interference into said cavity with a horizontal profile.

[0044] The special provisions of the hooking system 20 make the refrigeration appliance of the present invention more versatile, in that they allow to easily transform a refrigeration appliance 1 in order to make it suitable for comprising a beverage dispensing tank 11 without requiring new moulds or a full conversion of the production lines.

[0045] Furthermore, the provisions of the present invention allow to provide a refrigeration appliance 1 which is so designed that the beverage dispensing tank 11 can be firmly secured to the inner wall 5 of the structure 2 of the refrigeration appliance 1, in particular of said at least one door 3P, 4P, since the hooking system 20 allows hanging the tank 11 on said inner wall 5.

[0046] It is clear that this allows to make both the tank 11 and the whole refrigeration appliance 1 more stable, particularly when opening and/or closing said at least one door 3P, 4P; as a result, the presence of the hooking system 20 allows to eliminate any possible adverse consequence, such as, for example, overturning of foodstuffs contained in the refrigeration appliance 1 and/or spilling of the beverage contained in the tank 1.

[0047] In accordance with the present invention, the tank 11 comprises at least one first block 15 that allows coupling at least one container or door storage compartment 16 to said tank 11 (the first block 15 and the shelf or door storage compartment 16 being visible in Fig. 3), so that said tank 11 can act as a support for said at least one container or door storage compartment 16. Said at least one first block 15 preferably cooperates with a corresponding block 5A (also visible in Fig. 3) associated with the inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P, for supporting said at least one container or door storage compartment 16.

[0048] Preferably, said at least one first block 15 is associated with at least one side surface 11L of the tank 11.

[0049] It must be pointed out that such a provision turns out to be very innovative when compared to the solutions currently known in the art, in that in said known solutions it is the tank which is supported by the containers or door storage compartments coupled to the inner wall of the structure of the refrigeration appliance.

[0050] On the contrary, the provisions of the present invention allow to firmly secure the beverage dispensing tank 11 to the inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P, and then to secure at least one container or door storage compartment 16 to said tank 11.

[0051] The special provision of a first block 15 on the tank 11 allows to couple at least one container or door storage compartment 16 to said tank 11, said tank 11 having already been firmly secured to the inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P; this further improves the versatility of the refrigeration appliance 1, in particular without requiring a conversion of the production lines of said refrigeration appliance 1.

[0052] The following will describe a method for assembling a beverage dispensing device 10 in a refrigeration appliance 1, in particular for household use, in accordance with the present invention.

[0053] In particular, said method comprises the following steps:

a) making a cut-out 5T in an inner wall 5 of the structure 2, in particular of at least one door 3P, 4P;
b) placing at least one coupling and supporting element 21 into said cut-out 5T, in particular in a manner such that at least one wing 22 of the coupling and supporting element 21 is positioned into said interspace 7 obtained between the inner wall 5 and an outer wall 6 of the structure 2 and is then buried into an insulating material, in particular a plastic foam material, so that the coupling and supporting element 21 is firmly positioned and secured in said cut-out 5T of the inner wall 5;
c) hanging the tank 11 on said coupling and supporting element 21, in particular by inserting an appendix 17 located on a back surface 11P of the tank 11 into a cavity 23 of said coupling and supporting element 21.

[0054] In addition, said step c) may also comprise or be replaced by a step c1) of hanging the tank 11 on said coupling and supporting element 21 by inserting an appendix (not shown in the drawings) located on said inner wall 5 into a cavity (also not shown in the drawings) of a back surface 11P of the tank 11.

[0055] Furthermore, said step c) may also comprise or be replaced by a step c2) of snapping by interference a second horizontal appendix located on the back surface 11P of the tank 11 into a horizontal cavity of the coupling and supporting element 21.

[0056] Preferably, said step c) and/or said step c1) and/or said step c2) are carried out through a substantially diagonal translational movement of the tank 11, so as to allow for an easy insertion of the appendix 17 into the cavity 23.

[0057] Also, the method according to the present invention may comprise a step d) of coupling at least one container or door storage compartment 16 to at least one first block 15 of said tank 11, in particular said at least one first block 15 being associated with at least one side surface 11L of the tank 11.

[0058] The features and advantages of a refrigeration appliance, in particular for household use, according to the present invention are apparent from the above description.

[0059] In fact, the special features of the refrigeration appliance 1 according to the present invention allow to make the refrigeration appliance 1 according to the present invention more versatile, in that they make said refrigeration appliance 1 suited to including a beverage dispensing tank 11 without requiring a conversion of the production lines of said refrigeration appliance 1 and without requiring new moulds.

[0060] In addition, the provisions of the present invention allow to provide a refrigeration appliance 1 which is so designed that the beverage dispensing tank can be firmly secured to the inner wall 5 of the structure 2 of the refrigeration appliance 1, in particular of said at least one door 3P, 4P. This prevents both the tank 11 and the whole refrigeration appliance 1 from suffering any instability problems, particularly when opening and/or closing said at least one door 3P, 4P, also eliminating any possible adverse consequences, such as, for example, overturning of foodstuffs contained in the refrigeration appliance 1 and/ or spilling of the beverage contained in the tank 1.

[0061] A further advantage of the present invention is that the special provision of a first block 15 on the tank 11 allows to couple at least one container or door storage compartment 16 to said tank 11, said tank 11 having already been firmly secured to the inner wall 5 of the structure 2, in particular of said at least one door 3P, 4P; this further improves the versatility of the refrigeration appliance 1, in particular without requiring a conversion of the production lines of said refrigeration appliance 1.

[0062] It is however clear that many changes may be made to the refrigeration appliance, in particular for household use, according to the present invention, and that in its practical implementation the various components may have different shapes and arrangements or be replaced with other technically equivalent elements without departing from the novelty spirit of the inventive idea.

It can therefore be easily understood that the present invention is not limited to the above-described refrigeration appliance, in particular for household use, but may be subject to many modifications, improvements or replacements of equivalent parts and elements without departing from the inventive idea, as clearly specified in the following claims.

Claims

1. A refrigeration appliance (1), in particular for household use, comprising:

- a structure (2) within which at least one compartment (3, 4) is obtained for preserving foodstuffs, which is adapted to be closed by at least one door (3P, 4P);
- a beverage dispensing device (10), said device (10) comprising a tank (11) associated with an

inner wall (5) of the structure (2), in particular of said at least one door (3P, 4P),

characterized in that

said refrigeration appliance (1) comprises a hooking system (20) for hanging the tank (11) on the inner wall (5) of the structure (2), in particular of said at least one door (3P, 4P).

2. A refrigeration appliance (1) according to claim 1, **characterized in that** said hooking system (20) comprises at least one coupling and supporting element (21) adapted to be placed into a cut-out (5T) of the inner wall (5), in particular said coupling and supporting element (21) comprising at least one wing (22) adapted to be positioned into an interspace (7) obtained between the inner wall (5) and an outer wall (6) of the structure (2) and then buried into an insulating material, in particular a plastic foam material, so that the coupling and supporting element (21) is firmly positioned and secured in said cut-out (5T) of the inner wall (5).

3. A refrigeration appliance (1) according to claim 2, **characterized in that** said coupling and supporting element (21) comprises a cavity (23) adapted to receive at least one appendix (17) of said tank (11), in particular said appendix (17) being located on a back surface (11P) of the tank (11).

4. A refrigeration appliance (1) according to claim 3, **characterized in that** said appendix (17) comprises at least one rib (17N) on its top surface and/or on its bottom surface, said at least one rib (17N) making the appendix (17) stronger and/or allowing the appendix (17) to be appropriately centered in the cavity (43).

5. A refrigeration appliance (1) according to one or more of the claims 2 to 4, **characterized in that** said cavity (23) and said appendix (17) are so designed as to have a downward inclined profile when viewed from the tank 11 in the direction of the inner wall 5.

6. A refrigeration appliance (1) according to one or more of the preceding claims, **characterized in that** said coupling and supporting element (21) comprises an edge (24) adapted to be associated with said cut-out (5T), said edge (24) preventing the insulating material from undesirably coming out of the interspace (7) and improving the finishing of the inner wall (5).

7. A refrigeration appliance (1) according to claim 2, **characterized in that** said coupling and supporting element (21) comprises an appendix adapted to be placed into a cavity present on a back surface (11P) of the tank (11), said appendix and said cavity having in particular a downward inclined profile when viewed from the tank (11) in the direction of the inner wall (5).

8. A refrigeration appliance (1) according to one or more of the preceding claims, **characterized in that** the coupling and supporting element (21) comprises a cavity having a substantially horizontal profile, which is adapted to be associated with a second appendix having a substantially horizontal profile, which is located on a back surface (11P) of the tank (11).

9. A refrigeration appliance (1) according to one or more of the preceding claims, **characterized in that** said interspace (7) is filled with insulating material, in particular a plastic foam material, said insulating material allowing to secure said coupling and supporting element (21).

10. A refrigeration appliance (1) according to one or more of the preceding claims, **characterized in that** the tank (11) comprises at least one first block (15) that allows coupling at least one container or door storage compartment (16) to said tank (11), so that said tank (11) can act as a support for said at least one container or door storage compartment (16).

11. A method for assembling a beverage dispensing device (10) in a refrigeration appliance (1), in particular for household use, said method being **characterized in that** it comprises the following steps:

a) making a cut-out (5T) in an inner wall (5) of a structure (2), in particular of at least one door (3P, 4P), of the refrigeration appliance (1);
b) placing at least one coupling and supporting element (21) into said cut-out (5T), in particular in a manner such that at least one wing (22) of the coupling and supporting element (21) is positioned into an interspace (7) obtained between the inner wall (5) and an outer wall (6) of the structure (2) and is then buried into an insulating material, in particular a plastic foam material, so that the coupling and supporting element (21) is firmly positioned and secured in said cut-out (5T) of the inner wall (5);
c) hanging the tank (11) on said coupling and supporting element (21), in particular by inserting an appendix (17) located on a back surface (11P) of the tank (11) into a cavity (23) of said coupling and supporting element (21).

12. A method according to claim 11, **characterized in that** said step c) may comprise or be replaced by a step c1) of hanging the tank (11) on said coupling and supporting element (21) by inserting an appendix located on said inner wall (5) into a cavity of a

back surface (11P) of the tank (11).

13. A method according to one or more of the claims 11 and 12, **characterized in that** said step c) may comprise or be replaced by a step c2) of snapping by interference a second horizontal appendix located on the back surface (11P) of the tank (11) into a horizontal cavity of the coupling and supporting element (21).

14. A method according to one or more of the claims 11 to 13, **characterized in that** said step c) and/or said step c1) and/or said step c2) are carried out through a substantially diagonal translational movement of the tank (11).

15. A method according to one or more of the claims 11 to 14, **characterized in that** it comprises a step d) of coupling at least one container or door storage compartment (16) to at least one first block (15) of said tank (11), in particular said at least one first block (15) being associated with at least one side surface (11L) of the tank (11).

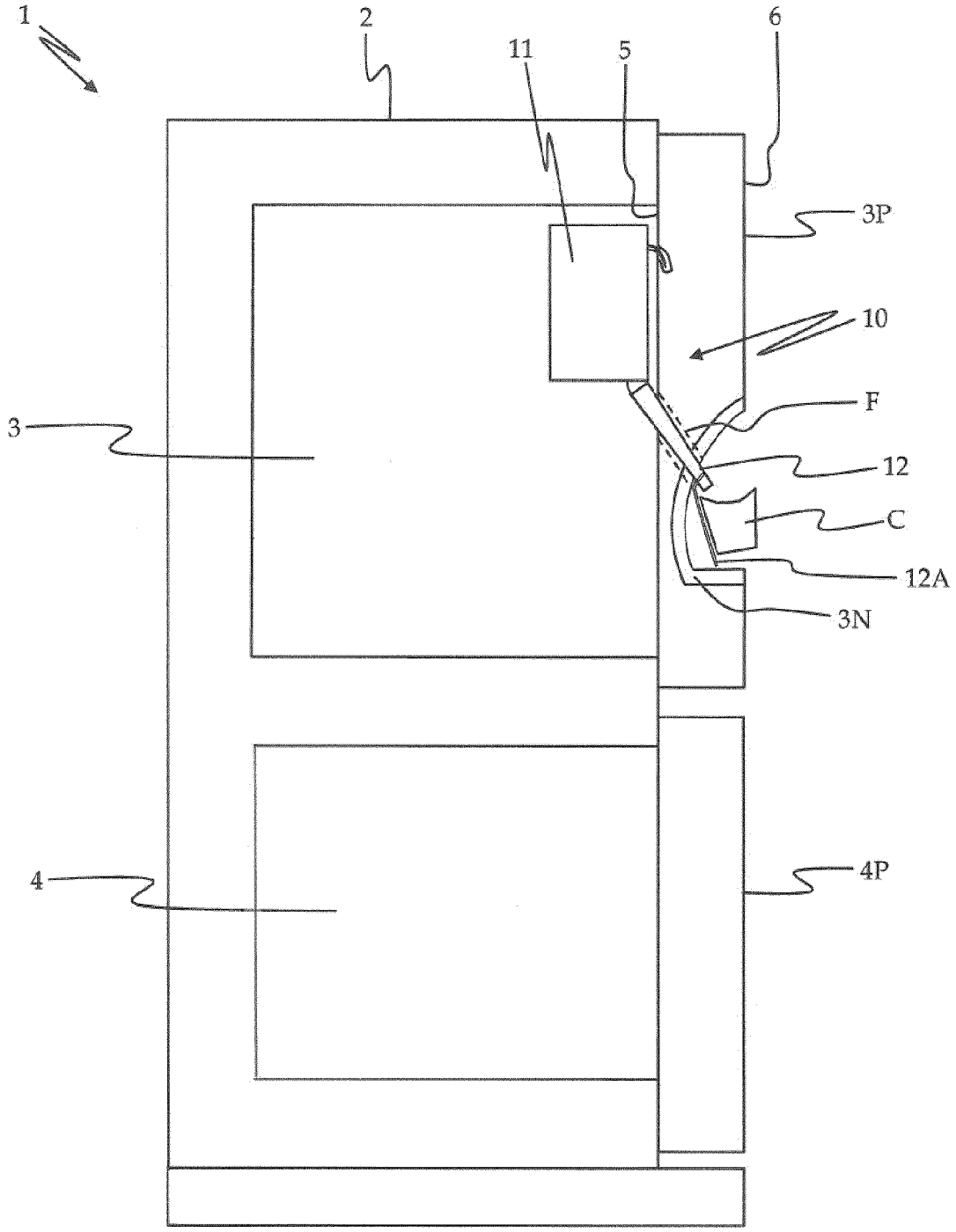


Fig. 1

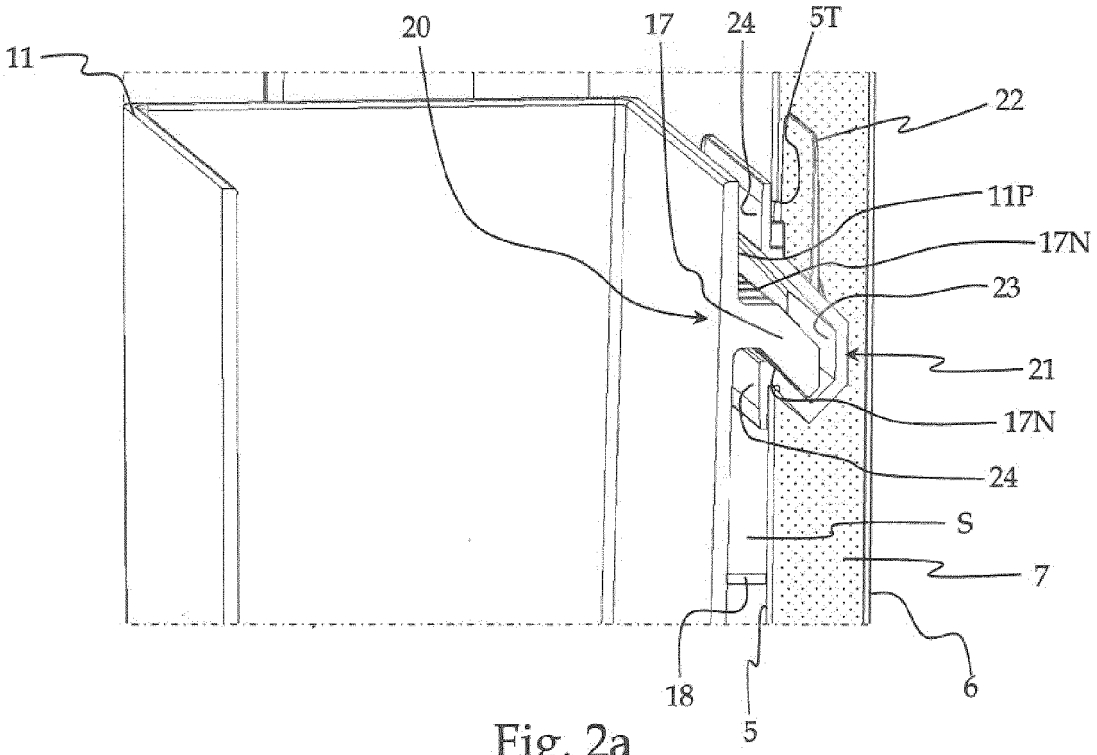

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5T
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Fig. 2a

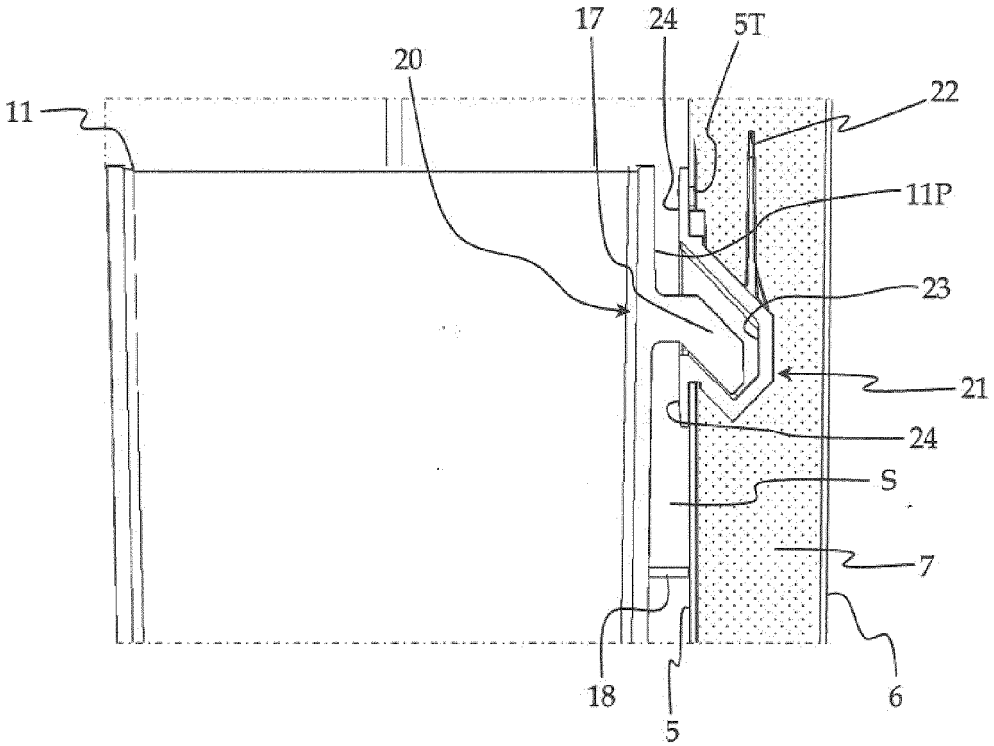

17
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Fig. 2b

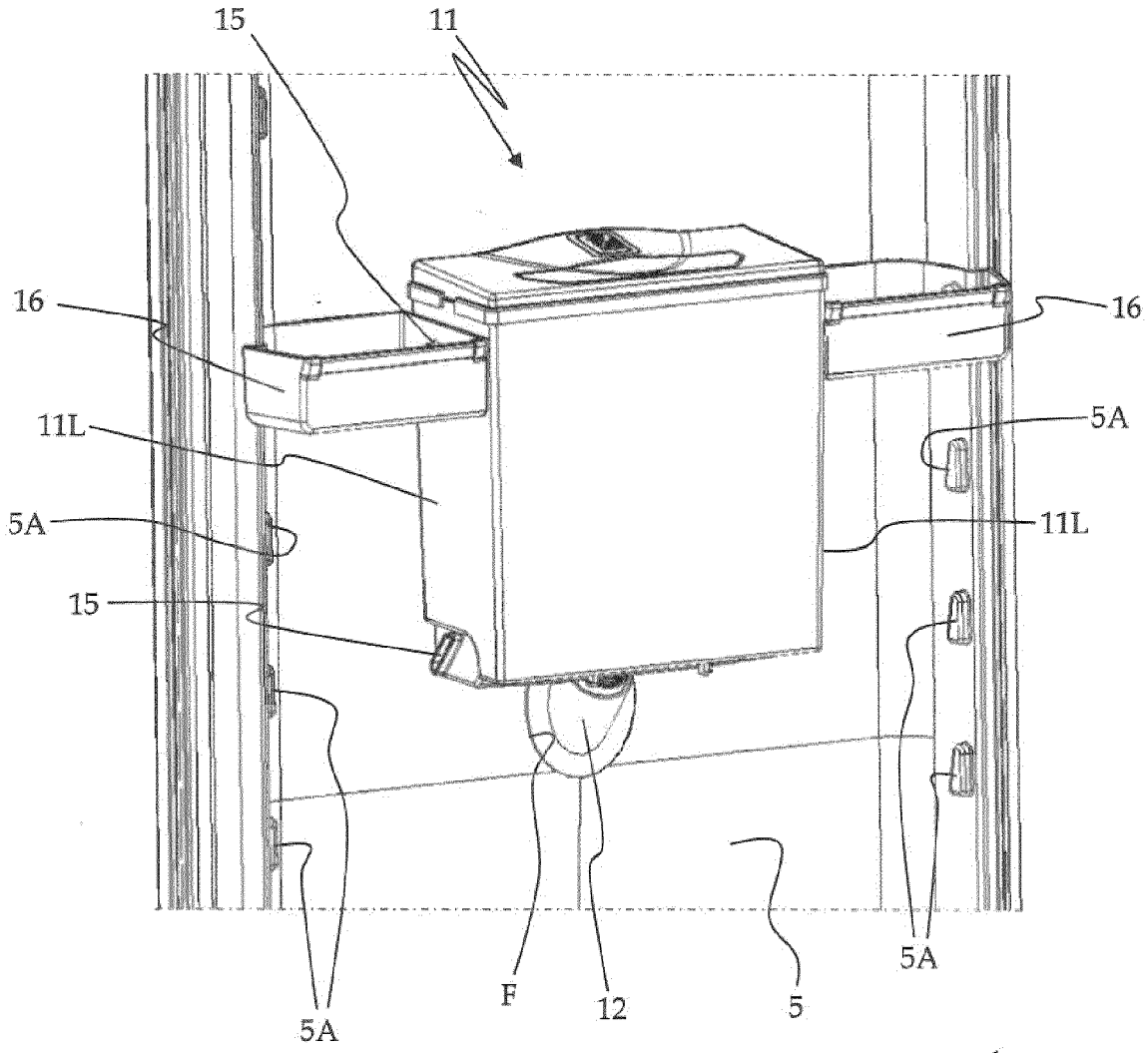


Fig. 3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 13 15 9688

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 3 178 061 A (GIACALONE JOSEPH J ET AL) 13 April 1965 (1965-04-13) * column 2, line 41 - column 4, line 24; figures 1,2,3,4,6,7 *	1-3,5-7, 9-14	INV. F25D23/12
X	DE 10 2009 047245 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 1 June 2011 (2011-06-01) * claims 1,4; figure 3 *	1-3,5-7, 9,11,14	
X	US 2 777 304 A (NAVE ALFRED E) 15 January 1957 (1957-01-15) * column 3, line 11 - column 4, line 73; figure 9 *	1	
X	EP 2 428 755 A2 (SAMSUNG ELECTRONICS CO LTD [KR]) 14 March 2012 (2012-03-14) * figure 4 *	1	
X	JP 49 137158 U (.) 26 November 1974 (1974-11-26) * figures 1-3 *	1,9	
			TECHNICAL FIELDS SEARCHED (IPC) F25D B67D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	3 July 2013	Jessen, Flemming

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons

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