



- (51) **International Patent Classification:**
B67D 3/00 (2006.01) *B67D 1/08* (2006.01)
- (21) **International Application Number:**
PCT/IB2013/060130
- (22) **International Filing Date:**
14 November 2013 (14.11.2013)
- (25) **Filing Language:** Italian
- (26) **Publication Language:** English
- (30) **Priority Data:**
VI2013A000093 5 April 2013 (05.04.2013) IT
- (71) **Applicant:** BRUT & ZERO SRL UNIPERSONALE
[IT/IT]; Via Marosticana 8/A, I-36050 Bressanvido (VI)
(IT).
- (72) **Inventor; and**
- (71) **Applicant :** CATTIN, Massimiliano [IT/IT]; Via SS.
Faustino e Giovita, 13, I-35010 Gazzo (PD) (IT).
- (74) **Agent:** MARINO, Ranieri; Contrà Paolo Lioy, 24, I-
36100 Vicenza (IT).
- (81) **Designated States** (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM,
ZW.

- (84) **Designated States** (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) **Title:** LIQUID DISPENSER

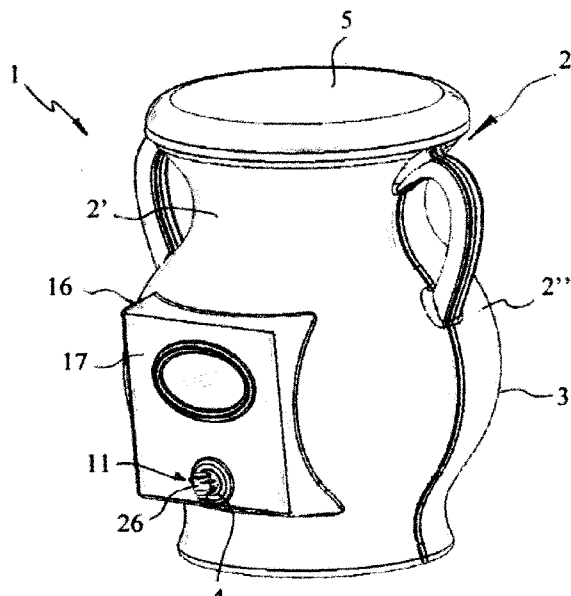


FIG. 1

(57) **Abstract:** A dispenser for bulked liquid food comprises a containment structure (2) having an outer peripheral wall (3) adapted to be at least partially opened and provided with a passage (4) and an inner housing chamber (6) with an inner peripheral wall (7) and a lying plane (8), a reservoir (9) adapted to contain a predetermined amount of a liquid food and having a face (10) provided with a supplying valve (11) for the controlled supplying of the liquid. The reservoir (9) is adapted to be removably inserted into the housing chamber (6) to be placed on the lying plane (8) with the supplying valve (11) placed into communication with the outside through the passage (4). The inner peripheral wall (7) of the housing chamber (6) has at least one shaped portion (12) shaped to snugly fit a respective counter-shaped portion (13) of the reservoir (9) for firmly housing this latter into the chamber (6). Blocking means (14) are further provided and associated with the passage (4) and/or with the valve (11) and are adapted to engage this latter to limit its movements at least along one predetermined direction (X).

LIQUID DISPENSER

Technical Field

The present invention refers to the systems for containing and supplying liquids and has particularly as object a dispenser for supplying bulk liquids of food type or non-food type, such as oil, wine and the like or soaps, detergents and the like.

State of the art

Dispenser for food or non food liquids are known to be used in the field of small and middle distribution for supplying the same in bulk form and allowing each user to draw a predetermined amount of liquid contained inside a reservoir and his payment within a container of smaller capacity, for example a bottle, tank or carboy.

In general, the reservoirs are constituted by a casing of rigid material, possibly with food grade, and usually selected among metals or polymeric materials.

The reservoir is also provided with a supplying faucet or other valve means suitable for the controlled supplying of the liquid.

The liquid to be supplied is introduced into the casing in a direct manner or is contained within a further container, rigid or flexible, designed to be put inside the casing in order to be taken off once empty, or after a predetermined time, to be easily replaced with a new container.

In the first case, it is apparent that there are serious problems of hygiene that require constant cleaning of the inside of the casing.

If the liquid is contained in a removable container, such problems are limited. However, also these solutions are not free from drawbacks which limit the operation and do not allow for their use with all types of liquids, in particular liquid foods such as vegetable oils, especially olive oil, subjected to more restrictive rules compared to other liquids.

A particular type of container for liquids is that commonly defined as "bag -in-box ", i.e. containers, for example of the type disclosed in US6223981, constituted by an outer box-like casing in rigid or semirigid material, usually cardboard, inside which a flexible bag is housed and filled with the liquid to be supplied.

The supplying of the liquid occurs through a spout of the flexible bag, possibly fitted with a faucet or other valve device, and placed in communication with the outside through a suitable opening provided in the box-like casing.

However, this kind of containers does not always grant a complete supply of the product, as part of the liquid may accumulate on the bottom of the bag and stay within the same, so that it is often necessary to manually raise and tilt the whole container,

with obvious problems especially in the cases of containers of higher capacity, for example greater than 5 liters.

Moreover, the supplying spout, not being adequately supported, but acting directly on the flexible material of the bag, is not adapted to be easily manipulated and operated, as by acting on it produces the deformation of the bag and the return of the valve inside the casing.

This drawback exists also in the case where the supply of the liquid is obtained by acting on a faucet or similar valve fixed directly to the semi-rigid material of the cardboard casing and connected to the supplying spout of the bag, because of the relative softness of the material of the casing.

From US2831610 a liquid food dispenser is known which comprises a "bag-in-box" reservoir with an outer cardboard box casing provided with an openable upper lid for the introduction of a tank or bag of flexible material, in particular polyethylene, initially sealed and filled with the liquid to be supplied.

On the bottom of the inner tank a supplying valve or nozzle is provided to be placed in communication with a flexible conduit inserted in the casing through an appropriate opening formed at its bottom wall.

The casing is also provided with an inclined false bottom wall on which the base of the flexible container rests, so as to allow the substantially complete supplying of the liquid. The assembly thus formed is designed to be subsequently inserted inside a dispensing cab provided in turn with a clamp adapted to act on the flexible duct to pinch and keep it closed when the product needs not to be supplied.

Therefore, even this solution, while allowing a more complete supplying of the product, is rather complex and with different critical areas, especially hygienically, in correspondence of the opening for supplying the product.

In particular, it is still necessary to provide a connection of the supplying nozzle or valve to an outer flexible pipe, which must then be connected to the clamp, not ensuring the perfect stability of the valve, also due to the fact that the reservoir can however undergo displacements inside the cab.

Scope of the invention

An object of the present invention is to overcome the above drawbacks, providing a liquid dispenser that is particularly efficient and cost-effective.

A particular object is to provide a liquid dispenser using "bag-in-box" type containers that allow both the containment structure and the supplying means to be firmly

supported.

A further object is to realize a liquid dispenser allowing the liquid filled in turn thereinside to be supplied in an almost complete manner, avoiding drifting areas.

Not least, an object of the present invention is to provide a dispenser for liquids, in particular food liquids, having high hygiene standard during all its operative steps.

These objects, as well as other objects which become more apparent hereinafter, are fulfilled by a liquid dispenser that, according to claim 1, comprises a containment structure having an outer peripheral wall adapted to be at least partially opened and provided with a passage and an inner housing chamber with a peripheral wall and a lying plane, a reservoir adapted to contain a predetermined amount of a liquid and having a face provided with a supplying valve for the controlled supplying of the liquid, said reservoir being adapted to be removably inserted into said housing chamber through said openable wall to be placed on said lying plane with said supplying valve placed in correspondence of said passage.

The dispenser is characterized in that said peripheral wall of said housing chamber has a shaped portion shaped to snugly fit a respective counter-shaped portion of said reservoir for firmly housing this latter into said chamber, blocking means being further provided which are associated with said passage and/or with said valve and are adapted to engage this latter to limit its movements at least along one predetermined direction.

Thanks to this combination of features, the reservoir may be firmly inserted inside the containment structure, with a minimum or null possibility of moving thereinside.

Moreover, the valve will be also locked as it was integrated inside the same containment structure, avoiding that it could move and sliding thereinside, in particular but not exclusively when the reservoir is of the “*bag-in-box*” type.

Suitably, said reservoir may present at least one end portion substantially prism-shaped with a flat front face from which said valve projects and with said shaped portion of said housing chamber that could be substantially complementary shaped with respect of said end portion for snugly fitting the same.

By this way, the reservoir will be firmly hold in its position inside the containment structure to avoid its slipping during use even in a slight manner upon an action exerted by an user on the valve.

Advantageously, the lying plane of said housing chamber may be inclined to the horizontal with an inclination angle comprised between 1° and 45° and preferably between 5° and 30° to promote the almost complete supplying of the liquid for gravity

effect and the substantially complete emptying of the reservoir, avoiding waste.

Advantageously, said containment structure may house therein electronic means for controlling the liquid level inside said reservoir.

Thus, it may be possible to detect the real amount of the liquid supplied by each reservoir also in real time and also to verify if improper uses of the reservoir or uses of unauthorized reservoirs occur.

Advantageous embodiments of the invention are carried out according to the dependent claims.

Brief disclosure of the drawings

Further features and advantages of the invention will become more apparent in light of the detailed description of a preferred but not limiting embodiment of a dispenser of bulk liquids according to the invention, shown as a non limiting example with the aid of the annexed drawings, wherein:

FIG. 1 is a perspective view of the dispenser of the invention;

FIG. 2 is a front view of the dispenser of Fig. 1;

FIG. 3 is a side view of the dispenser of Fig. 1;

FIG. 4 is a side view of the dispenser sectioned according the plane IV-IV of Fig. 2;

FIG. 5 is an upper view of the dispenser sectioned according the plane V-V of Fig. 3;

FIG. 6 is a perspective view of the reservoir of the dispenser of Fig. 1, partially opened to allow the viewing at its inside;

FIG. 7 is an enlarged perspective view of a detail of the dispenser of Fig. 1;

FIG. 8 is an enlarged and sectioned side view showing the detail of Fig. 7.

Best mode of carrying out the invention

With reference to the figures there is shown a dispenser for liquids in bulk form designed to be installed inside rooms used for commercial use to supply variable amounts of the liquid contained therein.

The dispenser may also be installed outside as well, once suitably protected from atmospheric agents by means of external structures or protection integrated therein, not shown since not part of the present invention.

The dispenser will be particularly suitable for supplying liquid food of any type, such as, by way of a non limiting example, a vegetable oil, for example olive oil, wine, milk, water. However, the dispenser may also be effectively used to distribute non-food

liquids, such as soaps and liquid detergents.

As shown in Figs. 1 to 3, in its most essential embodiment the dispenser, globally referred with 1, include a containment structure 2 having an outer wall 3 at least partially openable and provided with a front passage 4, preferably circular or elliptical.

For example, the structure 2 may present an upper lid 5 and/or one front or side door at least partially removable to allow the access to an inner housing chamber 6 having an inner peripheral wall 7 and a lying plane 8 which can also define the bottom wall of the chamber 6.

The structure 2 may also be formed by two half-shells 2', 2'' mutually hinged or otherwise at least partially separable with each other to allow easy access to the housing chamber 6.

In the attached figures the containment structure 2 is shaped in the form of an amphora. However, as will be clear from the present description, the outer form of the structure 2 has purely aesthetic and not technical function and therefore is not limitative of the present invention.

Moreover, the materials adapted to be used for the structure 2 may be of any type and are not limiting; for example metals, polymers, such as fiberglass or the like, or other natural materials such as ceramic materials may be used.

The dispenser 1 will include a reservoir 9, shown in section in Figs. 4 and 5, adapted to contain a predetermined amount of liquid, preferably of food type, and having a front face 10 provided with a supplying valve 11 for the controlled supplying of the liquid.

The reservoir 9 will be designed to be removably inserted in the housing chamber 6 through the openable portion of the outer wall 3 or through the lid 5 to be positioned on the lying plane 8 with the supplying valve 11 positioned in correspondence of the passage 4.

The inner peripheral wall 7 of the housing chamber 6 will present a shaped portion 12 shaped to snugly fit a counter-shaped portion 13 with a complementary shape of the reservoir 9 for firmly housing this latter in the chamber 6.

Furthermore, blocking means 14 will be provided and associated with the passage 4 and/or to the valve 11, the means being adapted to engage the latter to limit its movements along at least one predetermined direction, which may be for example a direction substantially parallel to the central axis X of the passage 4.

Preferably, the counter-shaped portion 13 of the reservoir 9 will be defined by an end portion with a substantially prismatic shape of the same, which even more preferably

will be substantially box-shaped, with the front face 10 substantially flat and provided with the valve 11.

In turn the shaped portion 12 of the housing chamber 6 is substantially complementarily shaped with respect of the end portion 13 for snugly fitting the same.

As more clearly shown in the same Fig. 4, the inner peripheral wall 7 of the housing chamber 6 will have a recess 15 of prismatic shape into which the front end portion 13 of the reservoir 9 will be placed in a snugly fitted manner.

At the recess 15, the peripheral wall 3 of the containment structure 2 presents a projection 16 similarly shaped with respect of the recess 15 with a flat front wall 17 in which the passage 4 is realized, so that the peripheral wall 3 of the structure 2 has substantially constant thickness and may be manufactured by simple molding, such as injection molding, die casting, rotomolding, also in function of the materials used and of the overall size of the dispenser 1.

According to alternative embodiments of the dispenser according to the present invention, not shown, the reservoir 9 may have one or more projections associated with its front face 10 and/or with its side wall and adapted to be inserted in corresponding recesses complementarily shaped with respect of the respective projections of the reservoir 9 and made in the inner peripheral wall 7 of the housing chamber 6.

As more clearly shown from Fig. 6, according to a preferred but not exclusive embodiment of the dispenser 1, the reservoir 9 may be of the "bag-in-box" type, i.e. it may comprise a box-shaped outer casing 18 made of a first rigid or semi-rigid material, for example cardboard, housing therein a bag 19 in a second flexible material, possibly of food grade if necessary, and preferably of the polymeric type, at least partially filled with the predetermined amount of liquid food.

The capacity of the bag 19 may be selected in a very wide range and theoretically unlimited in both minimum and maximum values.

Also, the so shaped reservoir 9 may be manufactured starting from a casing 18 provided in the form of laminar element in the first material to be shaped in the final prismatic shape by folding the flaps at pre-folded areas.

Furthermore, the valve 11 is firmly associated with the bag 19, while the box-shaped casing 18 presents on its front face 10 an opening 20 for the passage of at least part of the valve 11.

The above opening 20 may be defined by a pre-cut hole or obtained upon the folding of one or more pre-shaped fins, not shown, according to methods known to the person

skilled in the art and therefore not limiting the scope of protection of the present invention.

Even in this case, therefore, the casing 18 will be provided with the above end portion 13 of substantially prismatic shape with a flat front face 10 provided with the opening 20 for the passage of the valve 11.

The shaped portion 12 of the housing chamber 6 in turn has a shape substantially complementary to said end portion 13 of the casing 18 for snugly fitting the same.

The shaped portion 12 of the housing chamber 6 has, in both the above solutions, an inner flat front surface 21 having shape and extension substantially close to those of the front face 10 of the reservoir 9, which may correspond to the front face of the casing 18, to come into contact therewith along its whole extension.

Whatever the chosen embodiment for the reservoir 9 and as most clearly visible from the detail shown in Fig. 7, the blocking means 14 include a flange 22 that firmly connects the valve 11 to the bag 19 and which is also provided with at least one peripheral circular groove 23 adapted to receive the inner circular edge 24 of the passage 4 with a substantially null radial clearance, which edge 24 also defines a portion of the blocking means 14.

In this way, once inserted the reservoir 9 inside the chamber 6, the valve 11 will be substantially blocked in its radial movements.

Furthermore, the flange 22 has a front abutment element 25 substantially disc-shaped and having a diameter greater than the maximum diameter or maximum dimension of the passage 4 to limit the movements of the valve 11 along a direction Y substantially orthogonal to the plane π defined by the passage 4.

The valve 11 will also include a valve body 26, which may be a faucet, a nozzle or similar supplying device, possibly provided with sealing means 27, adapted to be selectively opened and closed to supply the liquid food in a suitable container, not shown, which may be placed by the user close to the exit of the valve body 26.

Suitably, as most clearly shown in Fig. 8, the flat front surface 21 of the shaped portion 12 of the housing chamber 6 has a hollow area 28 adapted to allow the complete housing of the flange 22, so as to bring substantially in contact or at least to a very short distance the front face 10 of the reservoir 9 or casing 18 and the same flat front surface 21.

Therefore, when a user acts on the valve body 26, the latter will be substantially locked with respect to the passage 4 by the blocking means 14, not being able neither to rotate

nor to translate in a unitary manner.

Therefore, the action on the valve 11 will not produce nor the deformation of the bag 19 nor the return of the valve body 26 within the casing 18 or the chamber 6, thereby allowing its easy operation by the user.

As seen from Fig. 4, the support surface 8 of the housing chamber 6 may be inclined with respect to the horizontal with an angle of inclination α between 1° and 45° and preferably between 5° and 30° .

Moreover, the reservoir 9 may have maximum plan dimensions, corresponding in the shown embodiment to the width w and length l of the base rectangle, substantially equal to the dimensions x , z of the lying plane 8, measured in correspondence of the same sides of the above base rectangle along directions parallel thereto.

Thus, the edges of the prismatic reservoir 9 may be in contact relationship or very close to the inner peripheral wall 7 of the housing chamber 6 to allow the positioning of the reservoir 9 in the chamber 6 with a substantially null degree of freedom.

According to a further particularly advantageous embodiment of the invention, not shown in attached figures, the containment structure 2 may house thereinside electronic control means for controlling the level of liquid in the reservoir 9 in turn positioned thereinside.

According to a first variant, the electronic control means may be associated directly to the valve 11 to measure, through direct or indirect measures of volume or flow rate, the amount of supplied liquid and starting from this measure if necessary go back to the amount of liquid remaining in the reservoir 9.

In a further variant the electronic control means comprise a load cell associated with the lying plane 8 to detect the level of liquid in the reservoir 9 through a weight measure.

The load cell will be suitably associated with a microprocessor unit which will have the data concerning the liquid to be supplied stored inside, in order to automatically provide the calculation of the supplied amount as function of the amount of liquid still present in the reservoir 9.

The load cell may also comprise an antenna adapted to receive an identification signal to be sent to the microprocessor unit.

The latter will have also stored inside a first identification code which serve to recognize the reservoir 9 positioned in turn on the lying plane 8.

The reservoir 9 is in turn provided with a transponder or other communications device, preferably of the RFID type, adapted to send a presence signal containing a second

identification code intended to be read by the antenna and transmitted to the microprocessor unit for the comparison with the stored first code.

In this way the microprocessor unit may store information relating to the use of authorized reservoirs.

Possibly, contrrollable supply means may be provided at the valve 11 which may be connected to the microprocessor unit and designed to enable the supplying valve 11 only in the case where there is a correspondence between the transmitted code and the stored code or there is a transmitted code.

In particular, the microprocessor unit may detect through the load cell the presence of a reservoir 9 without a transponder and therefore not authorized.

Therefore, the microprocessor unit will include a memory portion adapted to store data relative to the reservoirs in turn positioned in the containment structure 2 and to the relative instantaneous levels of liquid.

Furthermore, the microprocessor unit will comprise interface means for taking and/or sending the data stored in the memory portion.

The interface means may include an input port, of the serial, USB, Wi-Fi or similar type, for the connection of electronic data storage devices and/or data communication devices, adapted to be connected to the Internet or to a telephone network for communicating via SMS, GPS, GPRS, Wi-Fi, or other communication systems both wired and wireless.

The electronic control means may be powered by connection to the electrical network present in the installation room, or may be powered through a battery, which may also be present in case the connection to the network is provided to operate as a backup battery.

It is clear that the electronic control means disclosed above may be advantageously implemented also in liquid dispensers different from that according to the present invention and in particular to any dispenser of known type, whether it involves the use of a reservoir of bag-in-box type, i.e. with a casing made of rigid or semirigid material containing the flexible bag, or instead it uses a normal reservoir.

The dispenser may be inserted within any containment structure which is provided essentially of a support surface, horizontal or slightly inclined, on which the load cell will be placed.

As matter of fact, it will not be necessary to provide a specific shaping of the housing chamber of the containment structure, that can have any shape.

Furthermore it will be sufficient that the containment structure will be provided with an opening for the passage of the valve of the reservoir.

Alternatively it will be sufficient to apply the above electronic control means also to a support structure of the open type having a base provided with a lying plane, horizontal or inclined, on which could arrange the load cell.

From the foregoing it is clear that the invention fulfills the intended objects and in particular makes available a dispenser for liquid food in bulk form that allows to firmly house both the reservoir and the supplying valve of the liquid, even in the case where the reservoir is of the "bag-in-box" type.

The dispenser according to the invention is susceptible of numerous modifications and variations, all falling within the inventive concept expressed in the appended claims. All the details may be replaced with other technically equivalent elements, and the materials may be different depending on requirements, without departing from the scope of protection of the present invention.

Even if the dispenser has been disclosed with particular reference to the accompanying figures, reference numbers in the description and in the claims are used to improve the intelligence of the invention and do not constitute any limitation to the claimed scope of protection.

Claims

1. A dispenser for bulked liquid food, comprising:
 - a containment structure (2) having an outer peripheral wall (3) adapted to be at least partially opened and provided with a passage (4) and an inner housing chamber (6) with an inner peripheral wall (7) and a lying plane (8)
 - a reservoir (9) adapted to contain a predetermined amount of a liquid food and having a face (10) provided with a supplying valve (11) for the controlled supplying of the liquid, said reservoir (9) being adapted to be removably inserted into said housing chamber (6) to be placed on said lying plane (8) with said supplying valve (11) placed into communication with the outside through said passage (4);**characterized in that** said inner peripheral wall (7) of said housing chamber (6) has at least one shaped portion (12) shaped to snugly fit a respective counter-shaped portion (13) of said reservoir (9) for firmly housing this latter into said chamber (6), blocking means (14) being further provided which are associated with said passage (4) and/or with said valve (11) and are adapted to engage this latter to limit its movements at least along one predetermined direction (X) during its use.
2. Dispenser as claimed in claim 1, characterized in that said reservoir (9) comprises an outer box-like casing (18) in a first rigid or semi-rigid material and a bag (19) in a food grade second flexible material housed into said casing (18) and containing said predetermined amount of liquid food.
3. Dispenser as claimed in claim 2, characterized in that said valve (11) is firmly associated with said bag (19), said box-like casing (18) having an opening (20) for the at least partial exit of said valve (11).
4. Dispenser as claimed in claim 2 or 3, characterized in that said blocking means (14) comprise a flange (22) that firmly connect said valve (11) to said bag (19) and which is provided with at least one circular peripheral groove (23) adapted to house an inner circular edge (24) of said passage (4) with a substantially null radial play.
5. Dispenser as claimed in claim 4, characterized in that said flange (22) has a substantially disc-shaped front abutment element (25) having a diameter greater than the maximum radial dimension of said passage (4) for limiting the movement of said valve (11) along a direction (Y) substantially orthogonal to the plane (π) defined by said passage (4).
6. Dispenser as claimed in any preceding claim, characterized in that said reservoir (9) has at least one end portion (13) substantially prism-shaped with a flat front face (10)

provided with an opening (20) for said valve (11), said shaped portion (12) of said housing chamber (6) being substantially complementary shaped with respect of said end portion (13) for snugly fitting the same.

7. Dispenser as claimed in claim 6, characterized in that said shaped portion (12) of said housing chamber (6) has a flat front surface (21) having shape and size substantially close to those of said front face (10) of said reservoir (9) to come into contact therewith along substantially its whole extension.

8. Dispenser as claimed in claim 7, characterized in that said flat front surface (21) has a hollow area (28) adapted to allow the housing of said flange (22).

9. Dispenser as claimed in any preceding claim, characterized in that said lying plane (8) of said housing chamber (6) is inclined with an inclination angle (α) comprised between 1° and 45° and preferably between 5° and 30° with respect to the horizontal.

10. Dispenser as claimed in any preceding claim, characterized in that said reservoir (9) has plane maximum dimensions (l, w) substantially equal to corresponding dimensions (x, z) of said lying plane (8) for positioning thereof into said housing chamber (6) with a substantially null degree of freedom.

11. Dispenser as claimed in any preceding claim, characterized in that said containment structure (2) house therein electronic means for controlling the level of liquid inside said reservoir (9).

12. Dispenser as claimed in claim 11, characterized in that said electronic control means comprise a load cell associated with said lying plane (8) for detecting the liquid level inside said reservoir (9) through a weight measure and connected to said microprocessor unit.

13. Dispenser as claimed in claim 12, characterized in that said load cell comprises an antenna adapted to receive an identification signal to be sent to said microprocessor unit wherein a first identification code is stored, said reservoir (9) being provided with a transponder adapted to send a presence signal containing a second identification code designed to be read by said antenna and transmitted to said microprocessor unit for its comparison with said stored first code.

14. Dispenser as claimed in claim 12 or 13, characterized in that said microprocessor unit comprises a memory portion adapted to store the data relative to the reservoirs placed in turn into said containment structure (2) and to the relative on-time liquid levels.

15. Dispenser as claimed in claim 14, characterized in that said microprocessor unit

comprises interface means for obtaining and/or sending the data stored into said memory portion also via internet or in a wireless way.

1/4

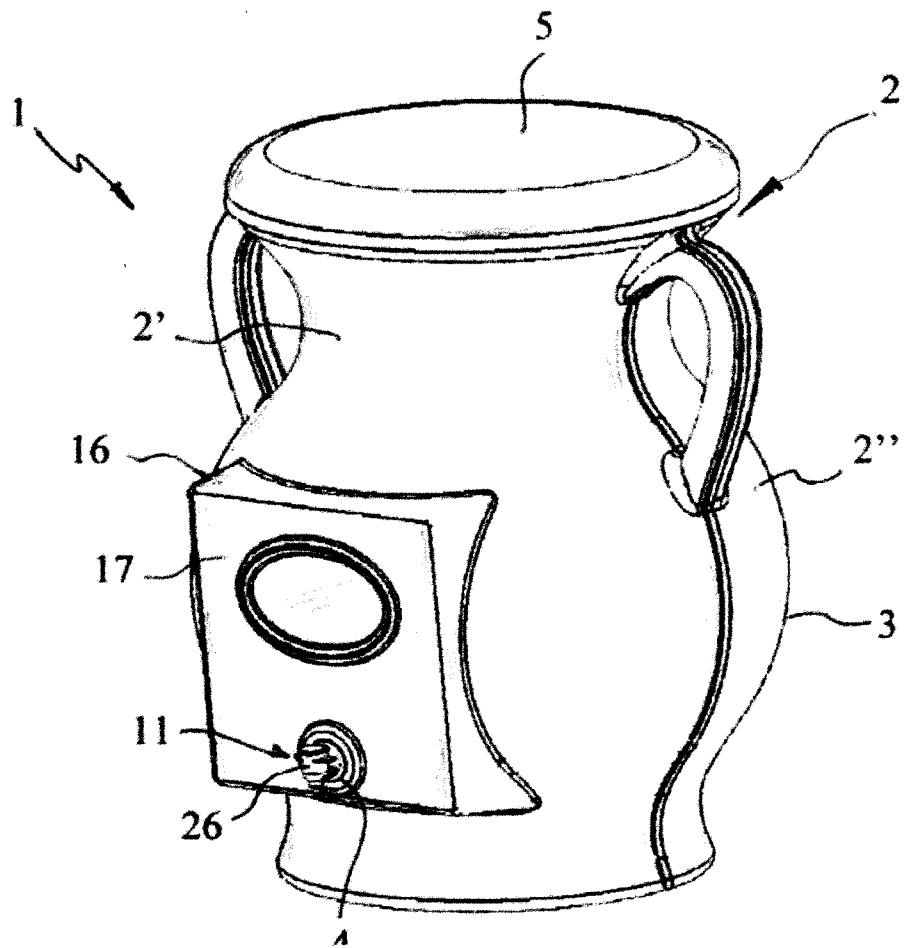


FIG. 1

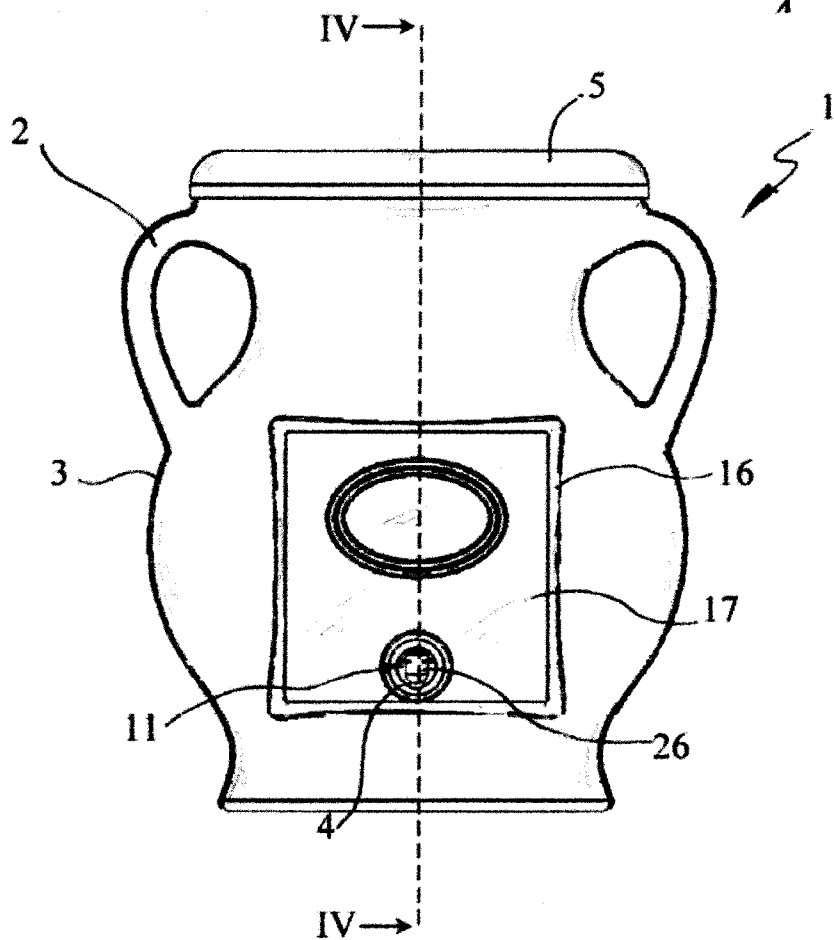
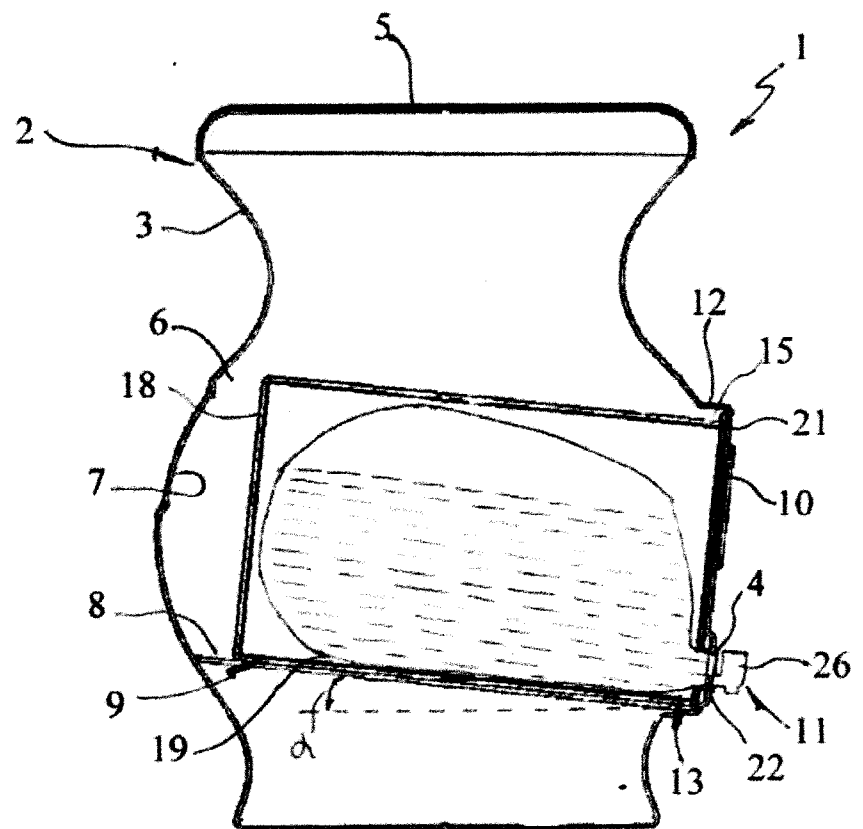
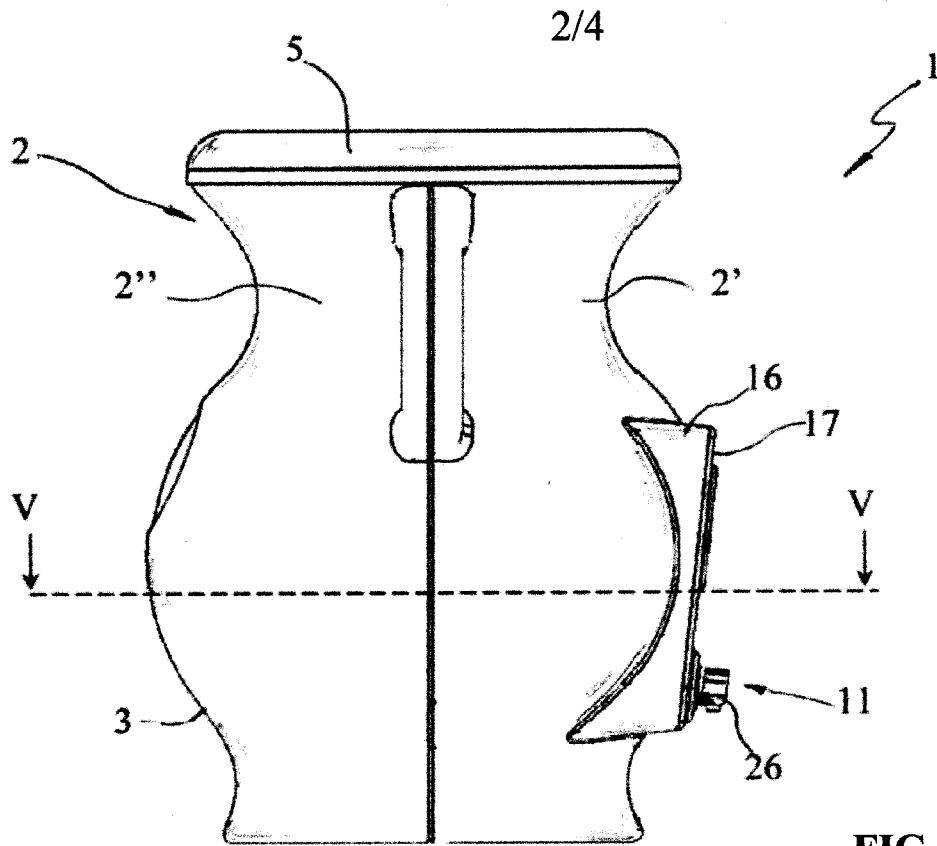
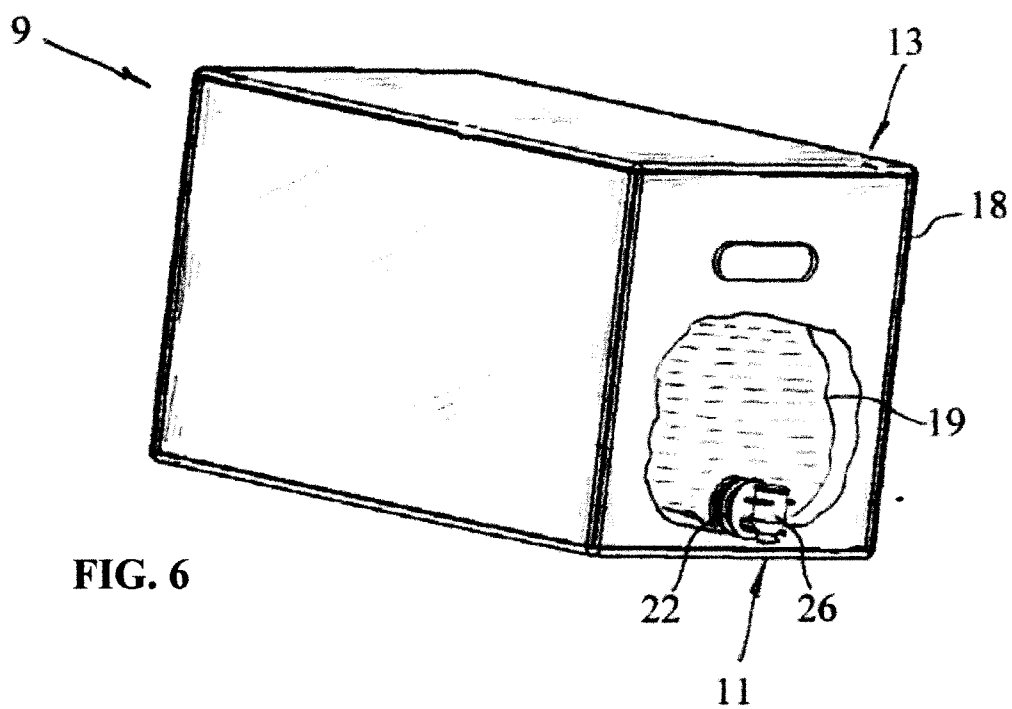
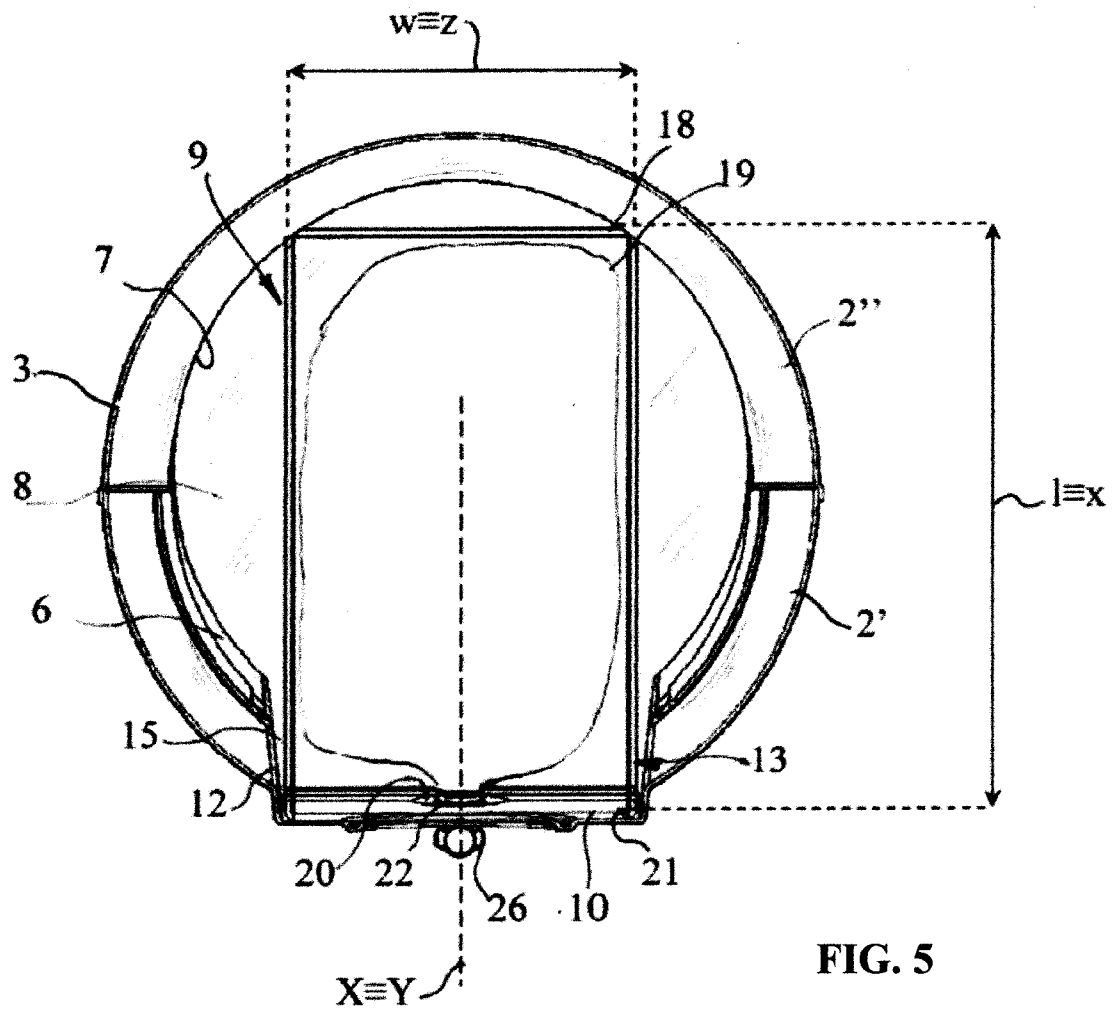


FIG. 2



3/4



4/4

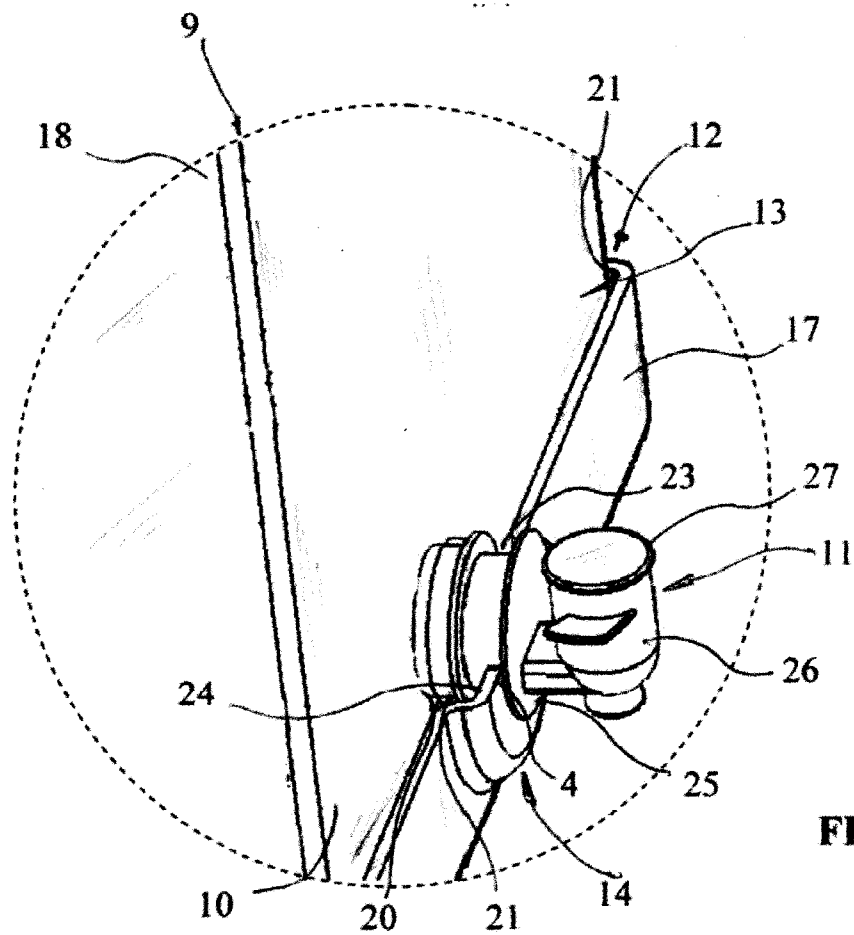


FIG. 7

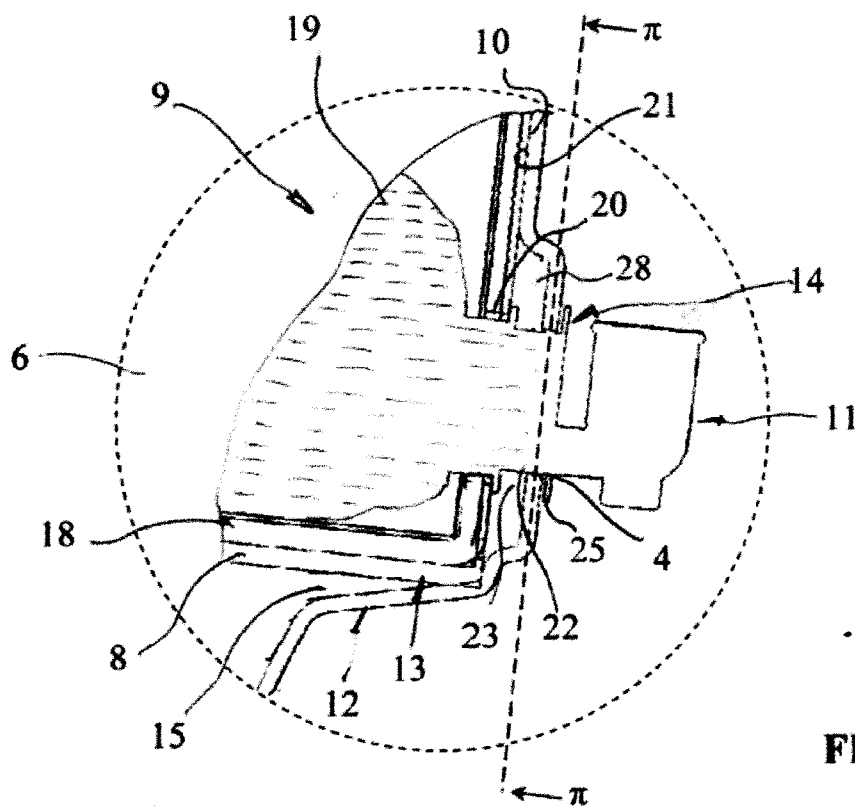


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/060130

A. CLASSIFICATION OF SUBJECT MATTER
INV. B67D3/00 B67D1/08
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B67D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/290001 A1 (BACHRACH JAMES DANIEL [US]) 20 December 2007 (2007-12-20)	1-10
Y	paragraphs [0017], [0047], [0054]; figures	11-15

X	WO 91/10616 A2 (BARBER PETER [GB]) 25 July 1991 (1991-07-25)	1-10
	page 2, paragraph 6 - page 3, paragraph 2; figures	

Y	US 2008/195252 A1 (INNOCENTI GIANNI [IT] ET AL) 14 August 2008 (2008-08-14)	11-15
	paragraphs [0023], [0024], [0029], [0030]; figures	

	-/--	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

26 March 2014

Date of mailing of the international search report

08/04/2014

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Müller, Claus

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/060130

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 969 130 A1 (INVV [FR]) 22 June 2012 (2012-06-22) page 11, line 23 - page 13, line 24; figures -----	1
A	GB 2 188 305 A (GATLEY DERRICK RAYMOND) 30 September 1987 (1987-09-30) page 1, line 86 - page 2, line 63; figures -----	1
A	EP 2 469 200 A2 (SAGREDO ECHAVE-SUSTAETA MIGUEL [ES]) 27 June 2012 (2012-06-27) paragraphs [0013] - [0017]; figures 1, 2, 7, 8 -----	1
A	JP 2002 230637 A (TOSHIBA ELECTRIC APPLIANCE) 16 August 2002 (2002-08-16) abstract; figures -----	11,12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2013/060130

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007290001	A1	20-12-2007	NONE
WO 9110616	A2	25-07-1991	AU 7173991 A 05-08-1991 WO 9110616 A2 25-07-1991
US 2008195252	A1	14-08-2008	NONE
FR 2969130	A1	22-06-2012	NONE
GB 2188305	A	30-09-1987	NONE
EP 2469200	A2	27-06-2012	EP 2469200 A2 27-06-2012 ES 1071260 U 10-02-2010 WO 2011020934 A2 24-02-2011
JP 2002230637	A	16-08-2002	NONE