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(54) **SYSTEM COMPRISING A COVER AND AT LEAST A RETENTION PART, COMBINATION OF A RIGID BOX AND SAID SYSTEM, METHOD ASSOCIATED**

SYSTEM MIT EINEM DECKEL UND MINDESTENS EINEM RÜCKHALTETEIL, KOMBINATION AUS EINEM STARREN KASTEN UND DIESEM SYSTEM, VERFAHREN DAZU

SYSTÈME COMPRENANT UN COUVERCLE ET AU MOINS UNE PIÈCE DE RÉTENTION, COMBINAISON D'UNE BOÎTE RIGIDE ET DUDIT SYSTÈME, PROCÉDÉ ASSOCIÉ

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Description

[0001] The present invention relates to a rigid box with a wall defining an inner chamber into which extends a flexible bag for a liquid or viscous food to be consumed in a suitable serving temperature range, whereby the flexible bag is associated with a part comprising a valve. The box is provided with at least one, preferably two or more than two passages suitable for the flow of an aqueous medium within the inner chamber outside the flexible bag so as to control the temperature of the food to be consumed.

[0002] Especially, the box of the invention is a rigid box containing a bag designed to contain a liquid or viscous food, this food being intended to be dispensed into a consumer's container, said food being advantageously kept free of oxygen and preferably of light, to avoid unwanted oxidation of the food and thus ensure better preservation of the food.

[0003] The present invention is an improvement of WO 2015/184513.

The Prior Art

[0004] An inner bag housed in an outer bag, the inner bag being filled with liquid while the outer bag is designed to receive air to pressurise the inner bag and allow the liquid to flow, is known from US patent US6247619.

[0005] US patent application US2012 / 0024896 also describes an inner bag housed in an outer bag, the inner bag containing the liquid for consumption while the outer bag contains the ice or refrigerant material.

[0006] US patent application US2009 / 0078721 describes a container designed to receive a bag filled with wine. The container may be placed in a refrigerator. The bag is associated with a means of dispensing, such as a valve with a pushbutton or tap.

[0007] US patent US7896199 describes an inner bag housed in an outer bag, for example for containing ice.

[0008] The "cubybox", which is a cardboard box containing a bag filled with wine associated with a valve, is also known.

[0009] All known devices do not allow circulation of a coolant to provide a temperature as appropriate as possible for the liquid food to be consumed.

[0010] In addition, all known devices collect the liquid food or beverage in the vicinity of one end of the bag designed to be oriented downwards. In the case of wine or other beverages, any solid particles present in the beverage are therefore likely to be deposited in the dispensing tap. Furthermore, when the tap is oriented downwards, the risk of loss is considerable in the event of malfunctioning of the tap.

[0011] The present invention relates to a box to solve these problems among other things.

[0012] With respect to the box disclosed in WO 2015/184513, the box comprises a bag associated to a valve system, the opening thereof being not dependent

from a movement of the whole cover. The cover in the box of the invention is adapted to maintain the position of the body of the valve device when a movable control device of the valve is moving. In the box of the invention, the valve device can be independently mounted on the bag, so as to close the bag, before associating the valve device to the cover. This is a great advantage for the manufacture of filled bag in boxes, as enabling the filling of the bag without the cover and prior its placement into the box, as well as enabling for example a control of the correct filling of the bag and correct sealing of the valve device, before placing the sealed filled bag within the box. The filling operation of the bags can thus be independent from the placement of the bags into rigid boxes.

Brief Description of the Invention

[0013] It is disclosed an apparatus which can be associated with such a box or boxes, allowing *inter alia* dispensing from the top without introducing air into the bag while ensuring an appropriate temperature for the food dispensed, with as little noise as possible. Preferably, the same liquid circulates in the box (outside the bag) to ensure an appropriate temperature of the liquid food present in the bag, and to ensure (slight) pressurization of the contents of the bag to allow dispensing of the liquid food without the use of a food dispensing pump. Such an apparatus allows control of the dispensing (without sudden variation in flow rate; dispensing controlled independently from the amount of liquid still present in the bag) according to the pressure of the liquid present in the box outside the bag.

[0014] The invention is defined by the system of claim 1 comprising a cover and at least a retention part, by the combination of claim 5 and by the method of claim 11. It is disclosed a rigid box having wall or walls defining an inner chamber into which extends a flexible bag or inner bag for containing a liquid or viscous food to be consumed (e.g. wine, a sauce, an alcoholic beverage, etc.) in a suitable serving temperature range (for example from 3 to 20 °C for wines, spirits, soft drinks, for example from 6 to 12 °C for white or rosé wines, 15 to 20 °C for red wine, 30 to 80 °C for a sauce, etc.). The flexible bag (4) is associated with a part (5) comprising a valve device or a part (5) comprising a membrane or associable with a protection means (6) designed to cooperate with a part (7) comprising a valve device. The box is advantageously provided or associated with a means for protecting the wall or walls (2) against the liquid aqueous medium for heating or cooling the food to be consumed, i.e. flowing within the inner chamber (3). For example, the wall or walls (2) have advantageously a side (2C) facing the inner chamber (3) resistant to an aqueous medium at a temperature at least close to the appropriate serving temperature range.

[0015] In the combination, the flow of medium in the container outside the bag is preferably operated between an bottom opening and an upper opening. However, in

some embodiments, it is possible to ensure a flow of liquid or medium within the container outside the bag through one or more openings only at the top of the container or only at the bottom of the container, possibly with use of a connecting tube with two distinct channels.

[0016] At least a portion of a side wall (2) of the boxes located between the lower part (11) and the upper part (1S) comprises preferably along its side facing the inner chamber (3) at least one means for forming one or more guide channels (12) for said aqueous medium and/or is associated with a means for forming one or more guide channels (12), said guide channel(s) (12) being designed so that even in the presence of the flexible or soft bag (4) in the chamber (3), one or more channels (12) are or remain(s) open for passage of the aqueous medium. The bag is preferably made of plastic with an aluminium layer. When the rigid box is opaque, it is possible for some foods to use non-opaque bags.

[0017] In the combination, the wall or walls of the box have advantageously an inner side or surface facing the inner chamber designed to withstand an aqueous medium (e.g. water, possibly with an additive, such as citric acid, a surfactant or a glycol, but preferably drinking water) at a temperature at least close to the appropriate serving temperature range (the temperature of the aqueous medium depends for example on the ambient temperature. When the ambient temperature is greater than the food serving temperature (it is therefore necessary to cool the food or to maintain the food at its serving temperature, avoiding warming due to the ambient temperature), the temperature of the aqueous medium will then advantageously be cooler than the optimum food serving temperature, for example between 1 and 10 °C, such as from 2 to 5 °C. Conversely, if the food serving temperature is higher than the ambient temperature (it is therefore necessary to heat the food or to maintain the food at its serving temperature, avoiding cooling due to the ambient temperature), the temperature of the aqueous medium will advantageously be greater than the appropriate serving temperature of the food, for example between 1 and 20 °C, in particular from 2 to 10 °C.

[0018] The term "valve device" also refers to a tap or any other system designed to control the flow of food out of the bag, said valve device comprising a body 602C with movable control device 601 for the valve 5V.

[0019] The open channel(s) are designed to provide an aqueous medium passage between the wall(s) of the box and the bag, and thus ensure a good flow of the aqueous medium in the box to provide optimum cooling or heating of the food contained in the bag or to maintain a substantially optimal temperature for the food to be consumed.

[0020] The aqueous medium introduced into the box also allows the food present in the bag to be pressurized, so as to allow a quantity of food to come out of the bag and the box to be consumed at a temperature close to the optimum temperature.

[0021] In addition, the more the bag empties, the great-

er the amount of aqueous medium present in the box, which will allow a more rapid temperature adjustment of the food in the bag. When the amount of food in the bag is still large, the amount of aqueous medium in the box is reduced. However, once the temperature of the food in the bag has been set, dispensing a quantity of food will have little influence on the temperature of the food present in the bag.

[0022] Advantageously, the bag is suspended in the box. This ensures that all solid particles remain in the bottom of the bag and are not served for consumption. This prevents deposits in a dispensing channel or in a valve device or tap.

[0023] According to the details of preferred embodiments, the combination has one or more of the following features:

- The bag (4) is suspended in the box (3), and/or
- The box (1) has, near its upper part (1S), at least one passage (14,610) designed to form a connection between the part of the inner chamber (3) located outside said bag (4) and an inlet and/or outlet pipe (611), and/or
- At least a portion of a side wall (2) of the box (1) between the lower part (11) and the upper part (1S) comprises along its side facing the inner chamber (3) at least one means (12) to form a series of guide channels for said aqueous medium and/or is associated with a means to form one or more guide channels (12), said guide channel(s) (12) being designed so that even in the presence of the flexible bag in the chamber, one or more channels are open to the passage of the aqueous medium, said channels (12) advantageously being distributed along said side wall. Said means to form one or more guide channels (12) is for example a flexible or soft or rigid net-like element capable of surrounding the bag and/or fitting the inner side face of the box, and/or
- The box comprises one or more side walls (2), a bottom wall (8) forming a bottom and a top wall (18) opposite the bottom wall (8), the bottom wall (8) having at least one passage (10) designed to form a connection between the part of the inner chamber (3) located outside said bag (4) and an inlet and/or outlet pipe. Said passage (10) is advantageously provided with a sealing membrane adapted to seal back the said opening or passage (10) after removal of the inlet/outlet pipe. The top wall (18) has at least one passage (9) designed to cooperate with the part (5) associated with said bag (4) or comprises the part (5) associated with said bag (4).

[0024] The passage (10) of the bottom wall (8) forming the bottom can be designed to provide both the supply of a liquid in the part of the inner chamber (3) outside the bag (4), and removal or extraction of liquid from said portion of the chamber outside the bag. The passage may be unique or may be separate, for example to channel

the flow of incoming liquid at least partially in the portion of the chamber, for example by means of a pipe extending into the chamber and having one end in the vicinity of the upper end, and/or

- The upper wall (18) is designed to cooperate with a part, advantageously with the part (5) associated with said bag (3), to form a connection between the part of the inner chamber (3) located outside said bag (4) and an inlet and/or outlet pipe (15), and/or
- The wall or walls (2) of the box are at least partially provided with a coating or layer of thermal insulation (20), and/or
- The top wall (18) has only one passage (9) communicating with the inside of the bag (4), said passage (9) being associated with a part (5) comprising a valve (5V) movable between a closed position opposing the passage of liquid out of the bag and an open position against the action of a biasing means (5R), while the bottom (8) has only an opening or openings communicating with the part of the inner chamber (3) of the box located outside the bag (4), said opening(s) being possibly associated with one or more inlet and/or outlet pipe portions. The biasing or return means may be a spring or an elastically deformable material which when deformed tends to return to its initial undeformed shape, and/or
- The top wall (18) has or comprises a means for suspending the bag in the inner chamber (3), and means designed to ensure its position relative to the side wall or walls (2) of the box, and/or
- The box comprises a means, said means advantageously being a skirt surrounding an opening or the openings of the passage(s) (9,10) to the inner chamber (3), said skirt (21) being preferably carried by the top wall (18) to ensure the presence of at least one volume of air in the part of the inner chamber located outside the bag during filling of the inner chamber (3) with said aqueous medium.

[0025] The means can also be a portion of the tube 611 entering within the chamber 3, and/or

- The bottom part (8) and the top wall (18) each have a flange (10B for the bottom part) designed to bear on the inner face of the casing (2) defining the side wall or walls of the box (1), said flange (10B) advantageously being or being advantageously associated with an element (18R) defining an open circular or annular groove (18S) defined between two substantially cylindrical walls (18S1, 18S2) with preferably one or more protrusions forming teeth or fingers opposing a movement of withdrawal of the casing (2) relative to the bottom part (8) and the top wall (18) when the ends of the casing (2) are engaged in the groove (10G, 18S) of the base part (8) and the top wall (18) respectively, said circular or annular groove being advantageously associated with a resilient or

deformable layer (10T, 18T) designed to form a seal at least for the liquid between the casing (2) and the top wall (18) and the bottom part (8) respectively, and/or

- 5 - The bottom part (8) has an internal face designed to be turned towards the inner chamber (3) of the box (1), and in that, when the box with its bottom part facing downwards bears on a horizontal plane, the inner face of the bottom part (8) has at least one part (8A) having an inclination towards the passage (10) designed to form a connection between the part of the inner chamber (3) located outside said bag (4) and an inlet and/or outlet pipe (11), and/or
- 10 - The box comprises or is designed to be associated with a means (25) for determining the amount of aqueous medium introduced into the inner chamber and/or for determining the amount of liquid or viscous food present in the bag, and/or
- 15 - The box is associated with one or more means of protection (6A) to secure the closure of the passages prior to use of the box and possibly after use of the box, and/or
- 20 - The box is designed to withstand a pressure of the aqueous medium in the inner chamber of 1 to 5 bar (1×10^5 Pa to 5×10^5 Pa), and/or
- 25 - The box has at least one body with a bottom with an upper opening closable by a top wall, the box being associated with an inner bag designed to form a liquid-tight barrier for the body of the box and define an inner chamber for the box, said top wall having at least one passage (9) designed to cooperate with the part (5) of the flexible bag (4) and a passage or passages (10) designed to form a connection between the part of the inner chamber (3) located outside the bag (4) with one or more inlet/outlet pipes, and/or
- 30 - the cover (1C) presents a stop (604) in its chamber (600), said stop or abutment serving as a support or abutment for a wall (606) of the body (602C) with the movable control device (601) of the valve device to limit or prevent movement of said body (602C) of the valve device during relative movement of the movable control device (601) with respect to said body (602C) of the valve device, and/or the movable control device (601) comprises at least one and advantageously two lugs (608) extending outside said body (602C) and movable relative to said body (602C) against the action of a biasing means (5R) between a first position corresponding to the closed position of the valve (5V) and a second position corresponding to the open position of the valve (5V), said biasing means (5R) exerting a force opposing the movement of said lug or lugs (608) towards its/their second position(s), and/or
- 35 - the tabs (603) extending in the chamber (600) of the cover (1C) serve as a means of positioning of the lug or lugs (608) of the body (602C) with the movable control device (601) of the valve device in the cham-
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- 45
- 50
- 55

- ber (600) of the cover (1C), said lug or lugs (608) being advantageously positioned between the tabs 603 and the stop or abutment (604); and/or
- the lug or lugs (608) is/are mobile against a biasing means (5R) between an adjacent position of a tab or the tabs (603), and a remote position of a tab or the tabs (603), and/or
 - the container (1) has a central axis (A-A), and in which the movable control device (601) or the lug/lugs (608) move(s) in a direction (B-B) perpendicular or substantially perpendicular to said central axis (A-A) of the container (1), and/or
 - the plate or top wall (18) of the upper part (1S) has a limiting means (610) cooperating with a cooperating element (611) of the cover (1C) to limit and preferably prevent rotation of the cover (1C) relative to the container (1) or to the top plate or wall (18), and/or
 - the plate or top wall (18) has a passage or a recess (610) (towards the inner chamber (3) of the container (1)), while the cooperating element (611) of the cover (1C) is a protrusion (611) extending in said passage or recess (610) to limit or prevent rotation of the cover relative to the container or to the plate or wall (18), said protrusion being advantageously a pipe carried by the cover enabling passage of air or liquid into the inner chamber via the pipe 611 carried by the cover (1C), and/or
 - the plate (18) has a passage (610) towards the inner chamber (3) of the container (1), while the protrusion (611) is a pipe carried by the cover (1C), thus enabling passage of air or liquid into the inner chamber (3) via the pipe (611) carried by the cover (1C), a seal or ring (612) advantageously surrounding the pipe (611) to be compressed between a flat support (613) of the pipe (611) and the plate or top wall (18) of the upper part (1S) of the container (1), and/or
 - the container (1) has a central axis (A-A), in which the retention part (605) is movable in a direction (C-C) perpendicular to said central axis (A-A), said retention part (605) comprising a spout (BV), an open end (614) of which accommodates one end of an outlet channel (615) of the body (602C), and/or
 - the plate or top wall (18) has a first side (18A) facing the inner chamber (3) and a second side (18B) opposite the first side and facing the chamber (600) of the cover (1C), in which the soft or flexible bag (4) is associated with a hollow tip (617), while the valve device is associated with an element (618) presenting an inner open channel (619), a transverse section enabling the insertion of the element (618) in the hollow tip (617), and a clamp (620) bearing or abutting, possibly with an interposed seal, on the second side (18B) of said plate or top wall (18), and in which, advantageously, a seal (621) surrounding said element (618) of the valve device bears on the first side (18A) of the plate or top wall (18), and is preferably compressed between a far edge (617A), advantageously with a collar, of the hollow tip (617) and said

- first side (18A) of the plate (18), and/or
- the retention part (605) is held in position on the cover (1C) by a clip system or a system for insertion of a protrusion (622), possibly carried by a strip (624), in a recess or window (623) of the cover (1C), and/or
- the flexible/soft bag (4) comprises a first soft element (4B) and a second soft element (4A) bonded together to form a soft pouch, the first element (4B) being less supple or less soft than the second element (4A), this second element (4A) having an area facing the inside of the pouch at least 50% and preferably 75% to 300% greater than the area of the first element (4B) facing the inside of the pouch, and/or
- advantageously the tip (617) of the soft bag is attached to said second soft element (4A) near one of its edges bonded to the first soft element (4A), and/or
- the soft bag (4) is surrounded by a soft net (626), advantageously an elastic soft net, and/or
- the cover (1C) has a positioning means or hollow or recess (627), said means or hollow or recess extending along a side face (1CL) of the cover (1C), and/or
- the box is associated with one or more means of protection (6, 6A, 6B, 6C) to secure the closing of a passage or passages or windows before the box is used or after use of the box, and/or
- Any combinations of these details and features.

[0026] Special features and details of preferred embodiments of the invention will become apparent from the following detailed description in which reference is made to the accompanying drawings.

Brief Description of the Drawings

[0027] In these drawings,

- Figure 1 is a view of a box according to WO2015/184513 (figure 1 in the present application corresponding to figure 16 of said published application) with a cover 1C,
- Figure 2 is an exploded view of the box and the cover on Figure 1;
- Figure 3 is an exploded view of an improved combination box and system (cover and retention part) according to the invention;
- Figure 4 is a perspective view of the bag of the combination in Figure 3;
- Figure 5 is a partial view of the bonding of the two films forming the bag in Figure 4;
- Figures 6A to C are top, bottom and side views of the retention part;
- Figure 7 is an exploded sectional view of the cover, the bag and the container;
- Figure 8 is a front view of the valve device;
- Figure 9 is a sectional view of the valve device with the valve 5V in the closed position;
- Figure 10 is a sectional view of the body of the valve device of Figure 9 with the valve 5V in the open po-

- sition;
- Figure 11 is a top view of the cover without the retention part;
 - Figure 12 is a sectional view of the cover in Figure 11 along the line XII-XII;
 - Figure 13 is a sectional view of the cover in Figure 11 along the line XIII-XIII;
 - Figure 14 is a view of the bottom of the cover in Figure 11;
 - Figure 15 is a view of the bottom of the cover in Figure 11 with the body of the valve device attached between the two flexible tabs;
 - Figure 16 is a top view of the valve device shown in figures 8 to 10;
 - Figure 17 shows in partial section the bag associated with the valve device;
 - Figures 18 and 19 are views of an unit of an apparatus for a method of the invention;
 - Figure 20 is a partial view of the apparatus associated with a combination of the invention in the unlocked position;
 - Figure 21 is a view of the apparatus with the combination of the invention in the locked position, and with the claw not yet acting on the movable control device to bring the valve into the open position;
 - Figure 22 is a view of the apparatus with the combination of the invention in the locked position, and with the claw acting on the movable control device to bring the valve into the open position, and
 - Figures 23A and B are views of the means of control with the claw.

Description of Preferred embodiments

[0028] The preferred embodiments disclosed in the description of the figures are given as examples only.

[0029] Figure 1 shows a preferred box (1) according to WO 2015/184513 (Figure 2 being an exploded view thereof). This box (1) is associated with a cap (1C) attached to the body (1).

[0030] The walls (2) define an inner chamber (3) into which extends a flexible bag (4) for containing a liquid or viscous food for consumption in a suitable temperature range. Said bag (4) is associated with a valve (5).

[0031] At least a portion of a side wall (2) of the box (1) between the lower part (1I) and the upper part (1S) comprises along its side facing the inner chamber (3) at least one means (like a net 12) for forming one or more guide channels for said aqueous medium, said guide channel or channels (12) being designed so that even in the presence of the soft/flexible bag (4) in the chamber (3), one or more channels (12) are or remain open for passage of the aqueous medium.

[0032] The bag (4) is suspended in the box (1), and more precisely in the chamber (3). This allows the particles which may be present in the liquid, for example beverage, wine, etc., to remain in the bag during extraction of the liquid (beverage, wine, etc.) from the bag for dis-

pensing to consumers.

[0033] The box (1) has, near its upper part (1S), at least one passage designed to form a connection between the part of the inner chamber (3) located outside said bag (4) and an inlet and/or outlet pipe (15).

[0034] At least a portion of a side wall (2) of the box (1) between the lower part (1I) and the upper part (1S) comprises along its side facing the inner chamber (3) at least one means (12) to form a series of guide channels for said aqueous medium, said guide channel(s) being designed so that even in the presence of the flexible bag in the chamber, one or more channels are open to the passage of the aqueous medium, said channels advantageously being distributed along said side wall.

[0035] The top wall (18) has only one passage (9) communicating with the inside of the bag (4), said passage (9) being associated with a part (5) comprising a valve (5V) movable between a closed position opposing the passage of liquid out of the bag and an open position against the action of a biasing or return means (5R), while the bottom (8) has only a single central opening (10) communicating with the part of the inner chamber (3) of the box located outside the bag (4), said opening (10) being shut off by a seal or film (8F) which is for example tearable or able to be peeled off or torn or partially or totally pierced or pierceable, for example attached by one or more washers (8R). Said opening (10) is designed to be associated with a liquid inlet pipe and an outlet pipe (or with a pipe having an inlet channel and an outlet channel). The washers or rings (8R) are advantageously designed to provide sealing between the cover and the inlet and outlet pipe when the latter is mounted on the bottom (8).

[0036] The biasing or return means (5R) of the valve (5V) may be of the spring type or a resiliently deformable material (for example elastomeric) which once deformed tends to return to its initial or undeformed shape.

[0037] The part (5) is a pipe (5T) with a flange (5U) resting on or attached to the top wall (18).

[0038] The box is associated with a cover (1C) with a spout (BV), said cover (1C) being associated with a mechanism (M10, M11) designed at least to control the opening of the valve (5V). The box may be marketed with the cover (C) associated with the box or capable of being mounted on the box (removably or not).

[0039] The mechanism designed at least to control the opening of the valve (5V) comprises at least one means (M10) movable between a raised position in which the valve (5V) is in the closed position (to prevent the passage of liquid through the pipe (5T) and a lowered position in which the valve (5V) is in the open position against the action of the biasing means (5R), said means (M10) being adapted to or associated with a means (M11) designed to cooperate with the pipe (5T) in a relative position of said means with respect to said pipe (5T) to hold said valve (5V) in the open position. Further details of said box are disclosed in WO 2015/184513 published on December 10, 2015.

[0040] Figures 3 to 17 are views of an embodiment of a combination of a box and system (cover and retention part) of the invention or of parts of the combination of the invention.

[0041] The rigid box presenting a container (1) whose wall or walls (2) define an inner chamber (3) in which there extends a soft bag (4) for a liquid or viscous food to be consumed in an appropriate serving temperature range, said bag (4) being associated with a part (5) associated with a valve device with a body (602C) with a movable control device 601 to move the valve 5V between at least an open position and a closed position, said container (1) having a lower part (1I) with a bottom (8) presenting at least one opening (10) which can if necessary be closed by a means (6A - membrane, re-sealable membrane or tearable membrane) and which communicates with the inner chamber (3), an upper part (1S) with a plate element (18) with at least one passage (9) for the part (5) or a portion thereof.

[0042] The wall (2) has a side (2C) facing the inner chamber (3) resistant to an aqueous medium at a temperature at least close to the appropriate serving temperature range.

[0043] The upper part (1S) of the (cylindrical) container is associated with a cover (1C) having an opening or passage (625) for an element capable of acting on the movable control device (601) of the valve device, this cover (1C) being associated with a spout (BV).

[0044] The cover (1C) defines a chamber (600) to accommodate at least partially the body 602C with the movable control device (601) of the valve device, said cover (1C) comprising one or more means (603, 604) to attach said body (602C) of the valve device to the cover (1C) and maintain said body of the valve device in position during the movement of said movable control device (601) inside said chamber (600) of the cover (1C).

[0045] The cover (1C) is associated with at least one means of positioning (603, 604) of the body (602C) with the movable control device (601) in the chamber (600) of the cover (1C), and with at least one retention part (605) for said body (602C) with the movable control device (601) of the valve device, said retention part (605) being movable relative to said cover (1C) between a retention position in which said retention part (605) opposes withdrawal of the part, portion or body (602C) with the movable control device (601) of the valve device from the chamber (600) of the cover (1C), and a non-retention position in which said retention part (605) does not oppose withdrawal of the portion or body with the movable control device (601) of the valve device from the chamber (600) of the cover (1C).

[0046] The cover (1C) has, in its chamber (600), at least two tabs (603) which are spaced apart from each other and flexible, said tabs (603) serving as a means to cooperate with the portion (in this case the substantially cylindrical body) comprising the movable control device (601) of the valve device to ensure positioning of said portion in the chamber (600) of the cover (1C).

[0047] The cover (1C) also has a stop (604) in its chamber (600), said stop serving as a support for a wall (606) of the portion with the movable control device (601) of the valve device to limit or prevent movement of said body of the valve device during relative movement of the movable control device (601) with respect to said body of the valve device. This stabilizes the body during the movements of the movable control device and its lugs (608).

[0048] The body (602C) associated with the movable control device (601) of the valve device has a hollow body (607) with two windows (607F), while the movable control device (601) comprises two lugs (608) extending outside said hollow body (607) through said windows (607F). They are movable relative to said hollow body (607) against the action of a biasing means (5R) (such as a rubber hemispheric element, which could be replaced by a spring element) between a first position (see figure 9) corresponding to the closed position of the valve (5V) (closing the open end tip 615) and a second position (see figure 10) corresponding to the open position of the valve (5V), said biasing means (5R) exerting a force opposing the movement of said lug or lugs (608) towards its/their second position(s). This biasing means (5R) is for example a substantially hemispherical hollow rubber body carrying at its top the valve (5V) designed to close the opening (directed towards the inner chamber of the body 607) of the tube (615) extending the body (602C). This biasing means (5R) is located inside the hollow of the body (607), the latter having a support stop or an abutment (607B) for the circular base (5RB) of the biasing means (5R). A rod (608R) extends between a recess of the valve (5V) and a support for the lugs (608), passing through the hollow of the biasing means (5R). When the lugs are moved towards the stop (604), the biasing means (5R) is elastically deformed, its central part being retracted in the hollow of the body (607) in the direction of the stop or wall (604) of the cover (1C) (or towards the wall (606) of the body (602C)). When the lugs (608) are no longer used to apply a thrust, the biasing means (5R) returns to its initial position, in which the valve 5V closes the opening of the tube 615 forming an extension of the body (602C). The body (602C) is connected to the element (618) by a pipe or hollow connecting element (618C) whose internal passage (618CI) forms a communication between the chamber (607) (or its first part directed towards the tube (615)) and the internal passage (619) of the element (618). When the biasing means (5R) is moved (against the biasing force), the valve (5V) closing the inner opening of the pipe (615) is moved inside the chamber (607) away from said inner opening, with the result that a passage is formed between the inside of the bag (4) and the tube (615), via the passage (619), the pipe (618CI) and the inner chamber (607).

[0049] The valve (5V) and the biasing means (5R) are attached the one to the other by means of an intermediate portion (51). Advantageously, the valve, the biasing means and the intermediate portion form one single

piece, for example a single rubber piece. The biasing means 5R divides the inner chamber of the hollow body (607) into two distinct chambers, namely a first chamber directed towards the outlet tube (615), and a second chamber with the windows (607F).

[0050] The tabs (603) extending in the chamber (600) of the cover (1C) serve as a means of positioning of the lugs (608) of the body with the movable control device (601) of the valve device in the chamber (600) of the cover (1C). The lugs are thus located between the tabs (603) and the stop or abutment (604) of the cover (1C).

[0051] The lugs (608) are movable (in the direction of the axis B-B) against a biasing means (5R) between an adjacent position of the lugs (608) (closed position of the valve), and a remote position of the lugs (608) (open position of the valve). The axial movement of the lugs (608) is in any way limited by the windows (607F).

[0052] The container (1) has a central axis (A-A), while the movable control device (601) moves in a direction (B-B) perpendicular or substantially perpendicular to said central axis (A-A) of the container (1). This makes it possible to exert a force tending to separate the cover (1C) from the container (1) or to fix the cover (1C) on the container, without acting on the movable control device (601).

[0053] The plate element (18) of the upper part (1S) (the plate closes the upper opening of the container (1)) has a means (610) cooperating with the cover (1C) to limit and preferably prevent rotation of the cover (1C) relative to the container (1) or to the top plate (18). The plate (18) has for example a circular lower groove designed to accommodate the upper edge of the container (1) with an interposed layer of glue. The plate (18) also has a circular upper groove designed to accommodate a circular edge of the cover (1C).

[0054] This plate (18) has a passage or a recess (610), while the cover (1C) has a tube or hollow protrusion (611) extending in said passage or recess (610) to limit or prevent rotation of the cover relative to the container or to the plate (18).

[0055] The plate (18) has a passage or opening (610) towards the inner chamber (3) of the container (1), while the protrusion (611) is an open pipe carried by the cover (1C) and adapted to extend through the said opening (610), thus enabling passage of air or liquid into the inner chamber (3) via the pipe (611) carried by the cover (1C), a seal (612) advantageously surrounding the pipe (611) to be compressed between a flat support (613) of the pipe (611) and the plate (18) of the upper part (1S) of the container (1).

[0056] The container (1) has a central axis (A-A), in which the retention part (605) is movable in a direction (C-C, for example parallel to the direction B-B) perpendicular to said central axis (A-A), said retention part (605) comprising a spout (BV), an open end tube (614) adapted to accommodate one end of an outlet channel (615) of the valve device.

[0057] The plate (18) has a first side (18A) facing the

inner chamber (3) and a second side (18B) opposite the first side and facing the chamber (600) of the cover (1C). The soft or flexible bag (4) is associated with a hollow tip (617), while the valve device is associated with an element (618) presenting an inner open channel (619), a transverse section enabling the insertion of the element (618) in the hollow tip (617), and a clamp (620) bearing, possibly with an interposed seal, on the second side (18B) of said plate (18). Advantageously, a seal (621) surrounding said element (618) of the valve device bears on the first side (18A) of the plate (18), and is preferably compressed between a far edge (617A), advantageously with a collar, of the hollow tip (617) and said first side (18A) of the plate (18).

[0058] The lower plate 8 has a peripheral circular groove (10G) designed to accommodate the lower edge of the container (1), with an interposed layer of glue. The lower plate has a central opening (10) which can be closed by a peelable or tearable film or pierceable and resealable membrane when it is positioned on a support of an apparatus.

[0059] The retention part (605) is held in position on the cover (1C) by a clip system or a system for insertion of a protrusion (622), possibly carried by a strip (624), in a recess or window (623).

[0060] The retention part (605) has two windows (625) giving access to the movable control device (601) of the valve device located in the chamber (600) of the cover (1C), the window(s) (625) being positioned to enable the insertion in the chamber (600) of the cover of an end or ends (630) of a tool (631) to apply a force on the movable control device (601), said windows (625) being advantageously also positioned to enable the insertion of a tool to detach the retention part (605) from the cover (1C).

[0061] The bag (4) comprises a first soft element (4B) and a second soft element (4A) bonded together to form a soft pouch, the first element (4B) being less supple or less soft than the second element (4A), this second element (4A) having an area facing the inside of the pouch at least 50% and preferably 75% to 300% greater than the area of the first element (4B) facing the inside of the pouch, and in that advantageously the tip (617) of the soft bag is attached to said second soft element (4A) near one of its edges bonded to the first soft element (4A).

[0062] The soft bag (4) is surrounded by a soft net (626) serving as a means to ensure that channels exist between the inner face of the container and the soft bag to enable passage of liquid around the bag during the operations to extract liquid food from the bag.

[0063] The hollow tip (617) advantageously has a lower collar (617B) bonded to the film (4A). (figure 7)

[0064] The cover (1C) has a positioning hollow or recess (627), said hollow or recess extending along the side or lateral face (1CL) of the cover (1C) (figure 11). The box is associated with one or more protection means (6, 6A, 6B, 6C) to secure the closing of a passage or passages or windows before the box is used. For example, such means are tearable or detachable flexible films,

or tearable or deformable elements for the windows of the retention part of the cover (1C) or membrane elements which can be pierced and sealed back after being pierced.

[0065] Figures 18 and 19 are views of a unit of an apparatus for dispensing a quantity of a liquid or viscous food contained in a bag placed in a box of the combination according to the invention, in an appropriate temperature range, said apparatus comprising at least:

- a structure (100) with at least one support element for at least one combination according to the invention;
- a tank (102) for an aqueous medium;
- a means (103) to adjust the temperature of at least a portion of said aqueous medium;
- one or more connections (106A, 106B) to connect one or more passages of the box communicating with its inner chamber (3) to the outside of the bag (4); and
- a circuit with at least one pump (111A) to circulate aqueous medium by the means (103) to adjust the temperature of at least a portion thereof and to circulate aqueous medium in the inner chamber (3) of the box outside the soft bag (4) and pressurize the aqueous medium present in the chamber (3), and
- a means of controlling (105) the amount of food dispensed comprising a mobile tool (631) capable of acting on the movable control device (601) of the valve device.

[0066] The mobile tool has at least one claw-shaped element (631) capable of moving through a window (625) of the retention part (605) at least between a position acting on the movable control device (601) of the valve to bring it into the open position and a rest position in which the movable control device (601) of the valve is in a position corresponding to a closed position of the valve.

[0067] The mobile tool (631) has at least one claw-shaped element capable of moving (advantageously by at least one pivoting movement), between a position in which the claw is located outside the chamber of the cover of the box and a position in which the claw has an end located in the chamber of the cover and acts on the movable control device of the valve to bring it into the open position, with an intermediate position in which the claw is in a position in which the claw has an end located in the chamber of the cover, without acting on the movable control device of the valve to bring it into the open position.

[0068] The apparatus comprises a means to ensure correct positioning of the box with respect to the bottom of the apparatus. For this purpose, the unit comprises a support plate (PS) for the base of the container (1), said plate (PS) rotating (for example via a controlled motor (PSM)) around a substantially vertical or vertical axis (to be parallel to the central axis A-A of the container (1)), and a protrusion (150) on the rear face of the unit (100),

this protrusion being designed to fit into the recess (627) of the cover (1C). By a slight rotational movement of the plate (PS) carrying a box of a combination according to the invention, it is possible to ensure correct positioning of the box by inserting the protrusion (150) in the hollow (627) of the cover (1C).

[0069] Once correctly positioned, the claw-holder (105) is moved, for example by an actuator (105V) in a vertical direction (either the claw-holder (105) is moved downwards, towards the cover (1C), or the plate (PS) is moved upwards), so as to bring the claws (631) close to the windows (625) of the retention part (605), and position them to allow them by a rotational movement to enter the hollow of the cover through the windows (625), to oppose removal of the box and to act on the lugs (608) of the movable control device. For example, the rotational movement of the claws (631) can be carried out in a first step to bring the claws in a first position (631bis) opposing the withdrawal of the box, while not acting on the lugs 608, and in a second step to move the claws from the first position up to a second position (631ter) (opposing the withdrawal of the box and acting on the lugs for opening the valve 5V).

Claims

1. A system comprising a cover (1C) and at least a retention part (605),

wherein said system is suitable for a combination of a rigid box and said cover (1C), in which the rigid box has a container (1) having at least one wall (2) defining an inner chamber (3) in which a flexible bag (4) for a liquid or viscous food to be consumed in an appropriate serving temperature range extends by using an aqueous medium flowing within the inner chamber (3), said bag (4) being associated with a part (5) associated with a valve device with a body (602C) with a movable control device (601) to move a valve (5V) between at least an open position and a closed position, said container (1) having a lower part (1I) with a bottom (8), said lower part (1I) or bottom (8) presenting at least one opening (10) communicating with the inner chamber (3) of an element for forming such an opening (10), said container (1) having an upper part (1S) with an upper plate element (18) with at least one passage (9) for at least a portion of the part (5),

in which the upper part (1S) of the container can be associated with said cover (1C), the container having a central axis (A-A),

said cover (1C) defining a chamber (600) suitable to accommodate at least partially the body (602C) with the movable control device (601) of the valve device,

said cover (1C) comprising one or more means (603,604) to attach said body (602C) of the valve device to the cover (1C) and to maintain said body (602C) of the valve device in position during a movement of said movable control device (601) inside said chamber (600) of the cover (1C),

said cover (1C) having one or more passages for an element capable of acting, directly or with interposition of an intermediate piece, on the movable control device (601) of the valve (5C),

characterized in that

the cover (1C) has, in its chamber (600), at least two tabs (603) spaced apart from each other, at least one of which is flexible, said tabs (603) serving as a means to cooperate with the body (602C) with the control device (601) of the valve device to ensure positioning of said body (602C) in the chamber (600) of the cover (1C),

the cover (1C) being associated with said at least one retention part (605),

the retention part being configured to be movable in a direction (C-C) substantially perpendicular to said central axis (A-A), said retention part comprising a spout (BV), an open end of which being able to accommodate one end of an outlet channel of the valve body, said cover (1C) being associated with said spout (BV),

said retention part (605) being movable relative to said cover (1C) between a retention position in which said retention part (605) opposes withdrawal of the body (602C) with the control device (601) of the valve device from the chamber (600) of the cover (1C), and a non-retention position in which said retention part (605) does not oppose withdrawal of the body (602C) with the movable control device (601) of the valve device from the chamber (600) of the cover (1C), and whereby the retention part (605) has at least one window, advantageously two windows (625) giving access to the movable control device (601) of the valve device located in the chamber (600) of the cover (1C), the window(s) (625) being positioned to enable the insertion in the chamber (600) of the cover (1C) of an end or ends (630) of a tool (631) to apply a force on the movable control device (601) or on an intermediate element acting on the movable control device (601).

2. The system of claim 1, in which the cover (1C) presents a stop (604) in its chamber (600), said stop (604) serving as a support for a wall (606) of the body (602C) with the control device (601) of the valve device to limit or prevent movement of said body (602C) of the valve device during relative movement of the control device (601) with respect to said body (602C) of the valve device.

3. The system of claim 1 or 2, whereby the movable control device (601) comprises at least one and advantageously two lugs (608) extending outside said body (602C), whereby the tabs (603) extending in the chamber (600) of the cover (1C) are configured to serve as a means of positioning of the lug or lugs (608) of the body (602C) with the control device (601) of the valve device in the chamber (600) of the cover (1C), whereby the lug or lugs (608) of the body (602C) is/are movable relative to the body (602C) against the action of the biasing means (5R) between a first position corresponding to the closed position of the valve (5V) and a second position corresponding to the open position of the valve (5V), said biasing means (5R) exerting a force opposing the movement of said lug or lugs (608) towards the second position.
4. The system of claims 2 and 3, in which the stop (604) and the tabs (603) are adapted for positioning there between the lug or lugs (608) of the body (602C).
5. A combination of a rigid box (1) and a system according to any of claims 1-4, in which the rigid box has a container (1) having at least one wall (2) defining an inner chamber (3) in which a flexible bag (4) for a liquid or viscous food to be consumed in an appropriate serving temperature range extends by using an aqueous medium flowing within the inner chamber (3), said bag (4) being associated with a part (5) associated with a valve device with a body (602C) with a movable control device (601) to move a valve (5V) between at least an open position and a closed position, said container (1) having a lower part (1I) with a bottom (8), said lower part (1I) or bottom (8) presenting at least one opening (10) communicating with the inner chamber (3) or an element for forming such an opening (10), an upper part (1S) with a plate element (18) with at least one passage (9) for at least a portion of the part (5), wherein the upper part (1S) of the container (1) is associated with the cover (1C).
6. The combination of claim 5, in which the plate element (18) of the upper part (1S) has a limiting means (610) cooperating with an cooperating element (611) of the cover (1C) so as to at least limit rotation of the cover (1C) relative to the container (1) or to said plate element (18), in which the plate element (18) has advantageously a passage (610) towards the inner chamber (3) of the container (1), while the cooperating element (611) of the cover (1C) is a protrusion (611) being a pipe carried by the cover (1C), enabling passage of air or liquid into the inner chamber (3) via the pipe (611) carried by the cover (1C).
7. The combination of any one of the claims 5 and 6, in which the plate element (18) has a first side (18A) facing the inner chamber (3) and a second side (18B)

opposite the first side (18A) and facing the chamber (600) of the cover (1C), in which the flexible bag (4) is associated with a hollow tip (617), while the valve device is associated with an element (618) presenting an inner open channel (619), a transverse section enabling the insertion of the element (618) in the hollow tip (617), and a clamp (620) bearing on the second side (18B) of said plate element (18).

8. The combination of claim 5, in which the retention part (605) is a retention part held in position on the cover (1C) by a system for insertion of a protrusion (622) in a recess or window (623) of the cover (1C).
9. The combination of any one of the claims 5 to 8, in which the flexible bag (4) comprises a first soft element (4B) and a second soft element (4A) bonded together to form a soft pouch, the first element (4B) being less supple or less soft than the second element (4A), this second element (4A) having an area facing the inside of the pouch at least 50% greater than the area of the first element (4B) facing the inside of the pouch, in which the flexible bag (4) is advantageously surrounded by a soft net (626).
10. The combination of any one of the claims 5 to 9, in which the cover (1C) has a positioning means (627), said positioning means extending along a side face (1CL) of the cover (1C).
11. A method of dispensing a liquid or viscous food contained in a bag placed in a box,

said method comprising at least the steps of:

(a) placing at least a combination according to any one of the claims 5 to 10 on a support element of an apparatus comprising at least:

- A structure (100) with the support element for said combination,
- A tank (102) for an aqueous medium intended to flow within the inner chamber (3) of the said rigid box (1);
- A means (103) for adjusting the temperature of at least part of said aqueous medium intended to flow within the inner chamber (3) of the said rigid box (1);
- At least one connection (106A, 106B) for connecting one or more passages of the rigid box communicating with the inner chamber (3) of the box, outside the flexible bag (4); and
- A circuit with at least one pump (111A, 111B) to circulate said aqueous medium in the inner chamber (3) of the rigid box outside the flexible bag (4) and to

pressurise the aqueous medium present in the inner chamber (3), and
- A means of control (105) of the quantity of food to be dispensed,

whereby the apparatus comprises a mobile tool (631) having at least one claw-shaped element (631) capable of moving through the at least one window (625) of the retention part (605) at least between a position acting on the control device (601) of the valve device to bring the valve (5V) into the open position and a rest position in which the control device (601) of the valve device is in a position corresponding to a closed position of the valve (5V),

whereby the mobile tool (631) has advantageously at least one claw-shaped element (631) capable of moving between a position in which the claw-shaped element (631) is located outside the chamber (600) of the cover (1C) of the box (1) and a position in which the claw-shaped element (631) has an end located in the chamber (600) of the cover (1C) and acts on the control device (601) of the valve device to bring the valve (5V) into the open position, with an intermediate position in which the claw-shaped element (631) is in a position in which the claw has an end located in the chamber (600) of the cover (1C), without acting on the control device (601) of the valve device to bring the valve (5V) into the open position,
the said method comprising the step of:

- (b) controlling the temperature of an aqueous medium to flow within the inner chamber (3) of the rigid box (1);
- (c) controlling the operation of the pump (111A) to bring aqueous medium having a suitable temperature under pressure into the inner chamber (3) of the rigid box (1); and
- (d) controlling the opening of the valve (5V) for controlling the amount of liquid or viscous food from the flexible bag (4) flowing into a container.

Patentansprüche

1. Ein System, das einen Deckel (1C) und mindestens ein Rückhalteteil (605) aufweist,

wobei das System für eine Kombination eines starren Gehäuses und des Deckels (1C) geeignet ist, wobei das starre Gehäuse einen Behälter (1) mit mindestens einer Wand (2) aufweist, die eine innere Kammer (3) definiert, in der sich ein flexibler Beutel (4) für ein flüssiges oder visko-

ses Lebensmittel, das in einem geeigneten Serviertemperaturbereich zu verzehren ist, unter Verwendung eines in der inneren Kammer (3) fließenden wässrigen Mediums erstreckt, wobei der Beutel (4) mit einem Teil (5) verbunden ist, der mit einer Ventilverrichtung mit einem Körper (602C) mit einer beweglichen Steuervorrichtung (601) verbunden ist, um ein Ventil (5V) zwischen mindestens einer offenen Position und einer geschlossenen Position zu bewegen, wobei der Behälter (1) einen unteren Teil (11) mit einem Boden (8) aufweist, wobei der untere Teil (11) oder Boden (8) mindestens eine Öffnung (10) aufweist, die mit der inneren Kammer (3) eines Elements zur Bildung einer solchen Öffnung (10) in Verbindung steht, wobei der Behälter (1) einen oberen Teil (1S) mit einem oberen Platenelement (18) mit mindestens einem Durchlass (9) für mindestens einen Abschnitt des Teils (5) aufweist, bei dem der obere Teil (1S) des Behälters mit dem Deckel (1C) verbunden werden kann, wobei der Behälter eine Mittelachse (A-A) aufweist, der Deckel (1C) eine Kammer (600) definiert, die geeignet ist, zumindest teilweise den Körper (602C) mit der beweglichen Steuervorrichtung (601) der Ventilverrichtung aufzunehmen, der Deckel (1C) ein oder mehrere Mittel (603, 604) aufweist, um den Körper (602C) der Ventilverrichtung an dem Deckel (1C) zu befestigen und den Körper (602C) der Ventilverrichtung während einer Bewegung der beweglichen Steuervorrichtung (601) innerhalb der Kammer (600) des Deckels (1C) in Position zu halten, der Deckel (1C) einen oder mehrere Durchlässe für ein Element aufweist, das direkt oder unter Zwischenschaltung eines Zwischenstücks auf die bewegliche Steuervorrichtung (601) des Ventils (5C) einwirken kann, **dadurch gekennzeichnet, dass** der Deckel (1C) in seiner Kammer (600) mindestens zwei voneinander beabstandete Laschen (603) aufweist, von denen mindestens eine flexibel ist, wobei die Laschen (603) als Mittel zum Zusammenwirken mit dem Körper (602C) mit der Steuervorrichtung (601) der Ventilverrichtung dienen, um die Positionierung des Körpers (602C) in der Kammer (600) des Deckels (1C) sicherzustellen, der Deckel (1C) mit dem mindestens einen Rückhalteteil (605) verbunden ist, das Rückhalteteil so konfiguriert ist, dass es in einer Richtung (C-C) im Wesentlichen senkrecht zu der Mittelachse (A-A) beweglich ist, wobei das Rückhalteteil einen Ausguss (BV) aufweist, dessen offenes Ende ein Ende eines Auslasskanals des Ventilkörpers aufnehmen kann, wobei der Deckel (1C) mit dem Ausguss (BV) verbunden ist,

das Rückhalteteil (605) relativ zu dem Deckel (1C) zwischen einer Rückhalteposition, in der das Rückhalteteil (605) dem Herausziehen des Körpers (602C) mit der Steuervorrichtung (601) der Ventilverrichtung aus der Kammer (600) des Deckels (1C) entgegenwirkt, und einer Nicht-Rückhalteposition, in der das Rückhalteteil (605) dem Herausziehen des Körpers (602C) mit der beweglichen Steuervorrichtung (601) der Ventilverrichtung aus der Kammer (600) des Deckels (1C) nicht entgegenwirkt, bewegbar ist, und wobei das Rückhalteteil (605) mindestens ein Fenster, vorteilhafterweise zwei Fenster (625), aufweist, die den Zugang zu der in der Kammer (600) des Deckels (1C) angeordneten beweglichen Steuervorrichtung (601) der Ventilverrichtung ermöglichen, wobei das oder die Fenster (625) so angeordnet sind, dass sie das Einführen eines Endes oder von Enden (630) eines Werkzeugs (631) in die Kammer (600) des Deckels (1C) ermöglichen, um eine Kraft auf die bewegliche Steuervorrichtung (601) oder auf ein auf die bewegliche Steuervorrichtung (601) wirkendes Zwischenelement auszuüben.

2. System nach Anspruch 1, bei dem der Deckel (1C) in seiner Kammer (600) einen Anschlag (604) aufweist, wobei der Anschlag (604) als Stütze für eine Wand (606) des Körpers (602C) mit der Steuervorrichtung (601) der Ventilverrichtung dient, um die Bewegung des Körpers (602C) der Ventilverrichtung während der Relativbewegung der Steuervorrichtung (601) in Bezug auf den Körper (602C) der Ventilverrichtung zu begrenzen oder zu verhindern.
3. System nach Anspruch 1 oder 2, wobei die bewegliche Steuervorrichtung (601) mindestens einen und vorteilhafterweise zwei Ansätze (608) aufweist, die sich außerhalb des Körpers (602C) erstrecken, wobei die Laschen (603), die sich in der Kammer (600) des Deckels (1C) erstrecken, so konfiguriert sind, dass sie als Mittel zur Positionierung des Ansatzes oder der Ansätze (608) des Körpers (602C) mit der Steuervorrichtung (601) der Ventilverrichtung in der Kammer (600) des Deckels (1C) dienen, wobei der Ansatz oder die Ansätze (608) des Körpers (602C) relativ zum Körper (602C) gegen die Wirkung des Vorspannmittels (5R) zwischen einer ersten Position, die der geschlossenen Position des Ventils (5V) entspricht, und einer zweiten Position, die der offenen Position des Ventils (5V) entspricht, beweglich ist/sind, wobei das Vorspannmittel (5R) eine Kraft ausübt, die der Bewegung des Ansatzes oder der Ansätze (608) zur zweiten Position entgegenwirkt.
4. System nach den Ansprüchen 2 und 3, bei dem der Anschlag (604) und die Laschen (603) so beschaffen

sind, dass sie dort zwischen dem Ansatz oder den Ansätzen (608) des Körpers (602C) positioniert werden können.

5. Kombination aus einem starren Gehäuse (1) und einem System nach einem der Ansprüche 1 bis 4, wobei das starre Gehäuse einen Behälter (1) mit mindestens einer Wand (2) aufweist, die eine innere Kammer (3) definiert, in der sich ein flexibler Beutel (4) für ein flüssiges oder viskoses Lebensmittel, das in einem geeigneten Serviertemperaturbereich verzehrt werden soll, unter Verwendung eines in der inneren Kammer (3) fließenden wässrigen Mediums erstreckt, wobei der Beutel (4) mit einem Teil (5) verbunden ist, der mit einer Ventilvorrichtung mit einem Körper (602C) mit einer beweglichen Steuervorrichtung (601) verbunden ist, um ein Ventil (5V) zwischen mindestens einer offenen Position und einer geschlossenen Position zu bewegen, wobei der Behälter (1) einen unteren Teil (11) mit einem Boden (8) aufweist, wobei der untere Teil (11) oder der Boden (8) mindestens eine Öffnung (10), die mit der inneren Kammer (3) in Verbindung steht, oder ein Element zur Bildung einer solchen Öffnung (10) aufweist, und einen oberen Teil (1S) mit einem Plattenelement (18) mit mindestens einem Durchlass (9) für mindestens einen Abschnitt des Teils (5), wobei der obere Teil (1S) des Behälters (1) mit dem Deckel (1C) verbunden ist.
6. Die Kombination nach Anspruch 5, bei der das Plattenelement (18) des oberen Teils (1S) ein Begrenzungsmittel (610) aufweist, das mit einem zusammenwirkenden Element (611) des Deckels (1C) zusammenwirkt, um zumindest die Drehung des Deckels (1C) relativ zum Behälter (1) oder zum besagten Plattenelement (18) zu begrenzen, wobei das Plattenelement (18) vorteilhafterweise einen Durchlass (610) zur inneren Kammer (3) des Behälters (1) aufweist, während das zusammenwirkende Element (611) des Deckels (1C) ein Vorsprung (611) ist, der ein von dem Deckel (1C) getragenes Rohr ist, das den Durchlass von Luft oder Flüssigkeit in die innere Kammer (3) über das von dem Deckel (1C) getragene Rohr (611) ermöglicht.
7. Die Kombination nach einem der Ansprüche 5 und 6, bei der das Plattenelement (18) eine erste Seite (18A) aufweist, die der inneren Kammer (3) zugewandt ist, und eine zweite Seite (18B), die der ersten Seite (18A) gegenüberliegt und der Kammer (600) des Deckels (1C) zugewandt ist, bei der der flexible Beutel (4) mit einer hohlen Spitze (617) verbunden ist, während die Ventilvorrichtung mit einem Element (618) verbunden ist, das einen inneren offenen Kanal (619), einen Querschnitt, der das Einführen des Elements (618) in die hohle Spitze (617) ermöglicht, und eine Klammer (620) aufweist, die sich an der

zweiten Seite (18B) des Plattenelements (18) abstützt.

8. Die Kombination nach Anspruch 5, bei der das Rückhalteteil (605) ein Rückhalteteil ist, das auf dem Deckel (1C) durch ein System zum Einsetzen eines Vorsprungs (622) in eine Ausnehmung oder ein Fenster (623) des Deckels (1C) in Position gehalten wird.
9. Die Kombination nach einem der Ansprüche 5 bis 8, bei der der flexible Beutel (4) ein erstes weiches Element (4B) und ein zweites weiches Element (4A) aufweist, die miteinander verbunden sind, um einen weichen Beutel zu bilden, wobei das erste Element (4B) weniger geschmeidig oder weniger weich ist als das zweite Element (4A), dieses zweite Element (4A) eine dem Inneren des Beutels zugewandte Fläche aufweist, die um mindestens 50 % größer ist als die dem Inneren des Beutels zugewandte Fläche des ersten Elements (4B), wobei der flexible Beutel (4) vorteilhafterweise von einem weichen Netz (626) umgeben ist.
10. Kombination nach einem der Ansprüche 5 bis 9, bei der der Deckel (1C) ein Positionierungsmittel (627) aufweist, wobei sich das Positionierungsmittel entlang einer Seitenfläche (1CL) des Deckels (1C) erstreckt.
11. Ein Verfahren zur Ausgabe eines flüssigen oder viskosen Nahrungsmittels, das in einem Beutel enthalten ist, der sich in einem Gehäuse befindet,

wobei das Verfahren mindestens die folgenden Schritte aufweist:

(a) Anordnen mindestens einer Kombination nach einem der Ansprüche 5 bis 10 auf einem Trägerelement einer Vorrichtung, die mindestens aufweist:

- Eine Struktur (100) mit dem Trägerelement für diese Kombination;
- einen Behälter (102) für ein wässriges Medium, das dazu bestimmt ist, in der inneren Kammer (3) des starren Gehäuses (1) zu fließen;
- Mittel (103) zum Einstellen der Temperatur von mindestens einem Teil des wässrigen Mediums, das in der inneren Kammer (3) des starren Gehäuses (1) fließen soll;
- mindestens eine Verbindung (106A, 106B), um einen oder mehrere Durchlässe des starren Gehäuses, die mit der inneren Kammer (3) des Gehäuses in Verbindung stehen, außerhalb des fle-

xiblen Beutels (4) zu verbinden; und
 - einen Kreislauf mit mindestens einer Pumpe (111A, 111B), um das wässrige Medium in der inneren Kammer (3) des starren Gehäuses außerhalb des flexiblen Beutels (4) zirkulieren zu lassen und um das in der inneren Kammer (3) vorhandene wässrige Medium unter Druck zu setzen, und
 - ein Mittel zur Kontrolle (105) der abzugebenden Lebensmittelmenge, wobei die Vorrichtung ein bewegliches Werkzeug (631) mit mindestens einem klauenförmigen Element (631) aufweist, das in der Lage ist, sich durch das mindestens eine Fenster (625) des Rückhalteteils (605) mindestens zwischen einer Position, die auf die Steuervorrichtung (601) der Ventilverrichtung einwirkt, um das Ventil (5V) in die offene Position zu bringen, und einer Ruheposition zu bewegen, in der sich die Steuervorrichtung (601) der Ventilverrichtung in einer Position befindet, die einer geschlossenen Position des Ventils (5V) entspricht,

wobei das bewegliche Werkzeug (631) vorteilhafterweise mindestens ein klauenförmiges Element (631) aufweist, das in der Lage ist, sich zwischen einer Position, in der das klauenförmige Element (631) außerhalb der Kammer (600) des Deckels (1C) des Gehäuses (1) angeordnet ist, und einer Position zu bewegen, in der das klauenförmige Element (631) ein in der Kammer (600) des Deckels (1C) angeordnetes Ende aufweist und auf die Steuervorrichtung (601) der Ventilverrichtung einwirkt, um das Ventil (5V) in die offene Position zu bringen, mit einer Zwischenposition, in der sich das klauenförmige Element (631) in einer Position befindet, in der ein Ende der Klaue in der Kammer (600) des Deckels (1C) angeordnet ist, ohne auf die Steuervorrichtung (601) der Ventilverrichtung zu wirken, um das Ventil (5V) in die offene Position zu bringen, wobei das Verfahren den folgenden Schritt aufweist:

- (b) Steuern der Temperatur eines wässrigen Mediums, das in der inneren Kammer (3) des starren Gehäuses (1) fließt;
- (c) Steuern des Betriebs der Pumpe (111A), um ein wässriges Medium mit einer geeigneten Temperatur unter Druck in die innere Kammer (3) des starren Gehäuses (1) zu bringen; und
- (d) Steuern des Öffnens des Ventils (5V)

zum Steuern der Menge an flüssigem oder viskosem Nahrungsmittel, das aus dem flexiblen Beutel (4) in einen Behälter fließt.

Revendications

1. Système comprenant un couvercle (1C) et au moins une pièce de rétention (605),

dans lequel ledit système est adapté à une combinaison d'une boîte rigide et dudit couvercle (1C), dans laquelle la boîte rigide comporte un contenant (1) ayant au moins une paroi (2) définissant une chambre intérieure (3) dans laquelle s'étend une poche souple (4) pour un aliment liquide ou visqueux à consommer dans une plage de température de service appropriée à l'aide d'un milieu aqueux s'écoulant dans la chambre intérieure (3), ladite poche (4) étant associée à une partie (5) associée à un dispositif à valve avec un corps (602C) avec un dispositif de commande mobile (601) pour déplacer une valve (5V) entre au moins une position ouverte et une position fermée, ledit récipient (1) ayant une partie inférieure (11) avec un fond (8), ladite partie inférieure (11) ou le fond (8) présentant au moins une ouverture (10) communiquant avec la chambre intérieure (3) d'un élément pour former une telle ouverture (10), ledit récipient (1) ayant une partie supérieure (1S) avec un élément de plaque supérieure (18) avec au moins un passage (9) pour au moins une partie de la pièce (5), dans lequel la partie supérieure (1S) du conteneur peut être associée audit couvercle (1C), le conteneur ayant un axe central (A-A), ledit couvercle (1C) définissant une chambre (600) apte à recevoir au moins partiellement le corps (602C) avec le dispositif de commande mobile (601) du dispositif à valve, ledit couvercle (1C) comprenant un ou plusieurs moyens (603, 604) pour fixer ledit corps (602C) du dispositif à valve au couvercle (1C) et pour maintenir ledit corps (602C) du dispositif à valve en position pendant un mouvement dudit dispositif de commande mobile (601) à l'intérieur de ladite chambre (600) du couvercle (1C), ledit couvercle (1C) comporte un ou plusieurs passages pour un élément capable d'agir, directement ou avec interposition d'une pièce intermédiaire, sur le dispositif de commande mobile (601) de la valve (5C), **caractérisé en ce que** le couvercle (1C) comporte, dans sa chambre (600), au moins deux languettes (603) espacées l'une de l'autre, dont au moins une est flexible, lesdites languettes (603) servant de moyen pour coopérer avec le corps (602C) avec le dispositif de commande (601) du dispositif de vanne pour

- assurer le positionnement dudit corps (602C) dans la chambre (600) du couvercle (1C), le couvercle (1C) étant associé à ladite au moins une pièce de rétention (605), la pièce de rétention étant configurée pour être mobile dans une direction (C-C) sensiblement perpendiculaire audit axe central (A-A), ladite pièce de rétention comprenant un bec (BV) dont une extrémité ouverte est apte à accueillir une extrémité d'un canal de sortie du corps de valve, ledit couvercle (1C) étant associé audit bec (BV), ladite partie de rétention (605) étant mobile par rapport audit couvercle (1C) entre une position de rétention dans laquelle ladite partie de rétention (605) s'oppose au retrait du corps (602C) avec le dispositif de commande (601) du dispositif de vanne de la chambre (600) du couvercle (1C), et une position de non-rétention dans laquelle ladite partie de rétention (605) ne s'oppose pas au retrait du corps (602C) avec le dispositif de commande mobile (601) du dispositif de vanne de la chambre (600) du couvercle (1C), et
- la partie de rétention (605) comporte au moins une fenêtre, avantageusement deux fenêtres (625) donnant accès au dispositif de commande mobile (601) du dispositif à valve situé dans la chambre (600) du couvercle (1C), la ou les fenêtres (625) étant positionnées pour permettre l'insertion dans la chambre (600) du couvercle (1C) d'une ou des extrémités (630) d'un outil (631) pour appliquer une force sur le dispositif de commande mobile (601) ou sur un élément intermédiaire agissant sur le dispositif de commande mobile (601).
2. Le système de la revendication 1, dans lequel le couvercle (1C) présente une butée (604) dans sa chambre (600), ladite butée (604) servant de support à une paroi (606) du corps (602C) avec le dispositif de commande (601) du dispositif à valve pour limiter ou empêcher le mouvement dudit corps (602C) du dispositif à valve lors du mouvement relatif du dispositif de commande (601) par rapport audit corps (602C) du dispositif à valve.
 3. Le système de la revendication 1 ou 2, par lequel le dispositif de commande mobile (601) comprend au moins un et avantageusement deux ergots (608) s'étendant à l'extérieur dudit corps (602C), par lequel les languettes (603) s'étendant dans la chambre (600) du couvercle (1C) sont configurées pour servir de moyen de positionnement de l'ergot ou des ergots (608) du corps (602C) avec le dispositif de commande (601) du dispositif de vanne dans la chambre (600) du couvercle (1C), le ou les ergots (608) du corps (602C) étant mobiles par rapport au corps (602C) contre l'action du moyen de sollicitation (5R) entre une première position correspondant à la position fermée de la vanne (5V) et une deuxième position correspondant à la position ouverte de la vanne (5V), ledit moyen de sollicitation (5R) exerçant une force s'opposant au mouvement dudit ou desdits ergots (608) vers la deuxième position.
 4. Système des revendications 2 et 3, dans lequel la butée (604) et les languettes (603) sont adaptées pour être positionnées entre le ou les ergots (608) du corps (602C).
 5. Combinaison d'une boîte rigide (1) et d'un système selon l'une quelconque des revendications 1 à 4, dans laquelle la boîte rigide comporte un contenant (1) ayant au moins une paroi (2) définissant une chambre intérieure (3) dans laquelle s'étend une poche souple (4) pour un aliment liquide ou visqueux à consommer dans une plage de température de service appropriée à l'aide d'un milieu aqueux s'écoulant dans la chambre intérieure (3), ladite poche (4) est associée à une partie (5) associée à un dispositif à valve avec un corps (602C) avec un dispositif de commande mobile (601) pour déplacer une valve (5V) entre au moins une position ouverte et une position fermée, ledit récipient (1) ayant une partie inférieure (11) avec un fond (8), ladite partie inférieure (11) ou le fond (8) présentant au moins une ouverture (10) communiquant avec la chambre intérieure (3) ou un élément pour former une telle ouverture (10), une partie supérieure (1S) avec un élément de plaque (18) avec au moins un passage (9) pour au moins une partie de la pièce (5), dans laquelle la partie supérieure (1S) du récipient (1) est associée au couvercle (1C).
 6. La combinaison de la revendication 5, dans laquelle l'élément de plaque (18) de la partie supérieure (1S) présente un moyen de limitation (610) coopérant avec un élément de coopération (611) du couvercle (1C) de manière à au moins limiter la rotation du couvercle (1C) par rapport au récipient (1) ou audit élément de plaque (18), l'élément de plaque (18) présente avantageusement un passage (610) vers la chambre intérieure (3) du récipient (1), tandis que l'élément de coopération (611) du couvercle (1C) est une protubérance (611) constituant un tuyau porté par le couvercle (1C), permettant le passage de l'air ou du liquide dans la chambre intérieure (3) via le tuyau (611) porté par le couvercle (1C).
 7. Combinaison de l'une quelconque des revendications 5 et 6, dans laquelle l'élément de plaque (18) présente une première face (18A) tournée vers la chambre intérieure (3) et une seconde face (18B) opposée à la première face (18A) et tournée vers la chambre (600) du couvercle (1C), dans laquelle la

- poche souple (4) est associée à un embout creux (617), tandis que le dispositif de valve est associé à un élément (618) présentant un canal intérieur ouvert (619), une section transversale permettant l'insertion de l'élément (618) dans l'embout creux (617), et un collier (620) portant sur le second côté (18B) dudit élément de plaque (18). 5
8. Combinaison de la revendication 5, dans laquelle la pièce de rétention (605) est une pièce de rétention maintenue en position sur le couvercle (1C) par un système d'insertion d'une protubérance (622) dans un creux ou une fenêtre (623) du couvercle (1C). 10
9. Combinaison de l'une quelconque des revendications 5 à 8, dans laquelle la poche souple (4) comprend un premier élément souple (4B) et un second élément souple (4A) collés ensemble pour former une poche souple, le premier élément (4B) étant moins souple ou moins mou que le second élément (4A), ce second élément (4A) ayant une surface tournée vers l'intérieur de la poche au moins 50% supérieure à la surface du premier élément (4B) tournée vers l'intérieur de la poche, dans laquelle la poche souple (4) est avantageusement entourée d'un filet souple (626). 20 25
10. Combinaison de l'une quelconque des revendications 5 à 9, dans laquelle le couvercle (1C) comporte un moyen de positionnement (627), ledit moyen de positionnement s'étendant le long d'une face latérale (1CL) du couvercle (1C). 30
11. Procédé de distribution d'un aliment liquide ou visqueux contenu dans un sac placé dans une boîte, ce procédé comprend au moins les étapes suivantes : (a) placer au moins une combinaison selon l'une des revendications 5 à 10 sur un élément de support d'un appareil comprenant au moins : 35 40
- une structure (100) avec l'élément de support pour ladite combinaison ;
 - un réservoir (102) pour un milieu aqueux destiné à s'écouler dans la chambre intérieure (3) de ladite boîte rigide (1) ; 45
 - un moyen (103) de réglage de la température d'au moins une partie dudit milieu aqueux destiné à circuler dans la chambre intérieure (3) de ladite boîte rigide (1) ;
 - au moins un raccord (106A, 106B) pour relier un ou plusieurs passages de la boîte rigide communiquant avec la chambre intérieure (3) de la boîte, à l'extérieur de la poche souple (4) ; et
 - un circuit avec au moins une pompe (111A, 111B) pour faire circuler ledit milieu aqueux dans la chambre intérieure (3) de la boîte rigide à l'extérieur de la poche souple (4) et pour pressuriser le milieu aqueux présent dans la cham-

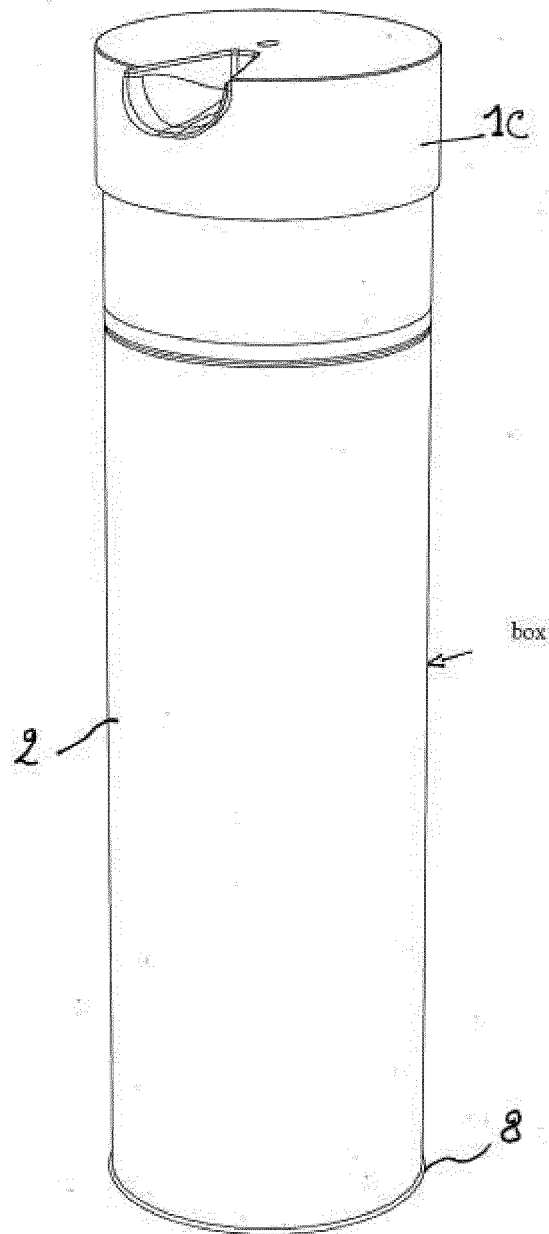
bre intérieure (3), et

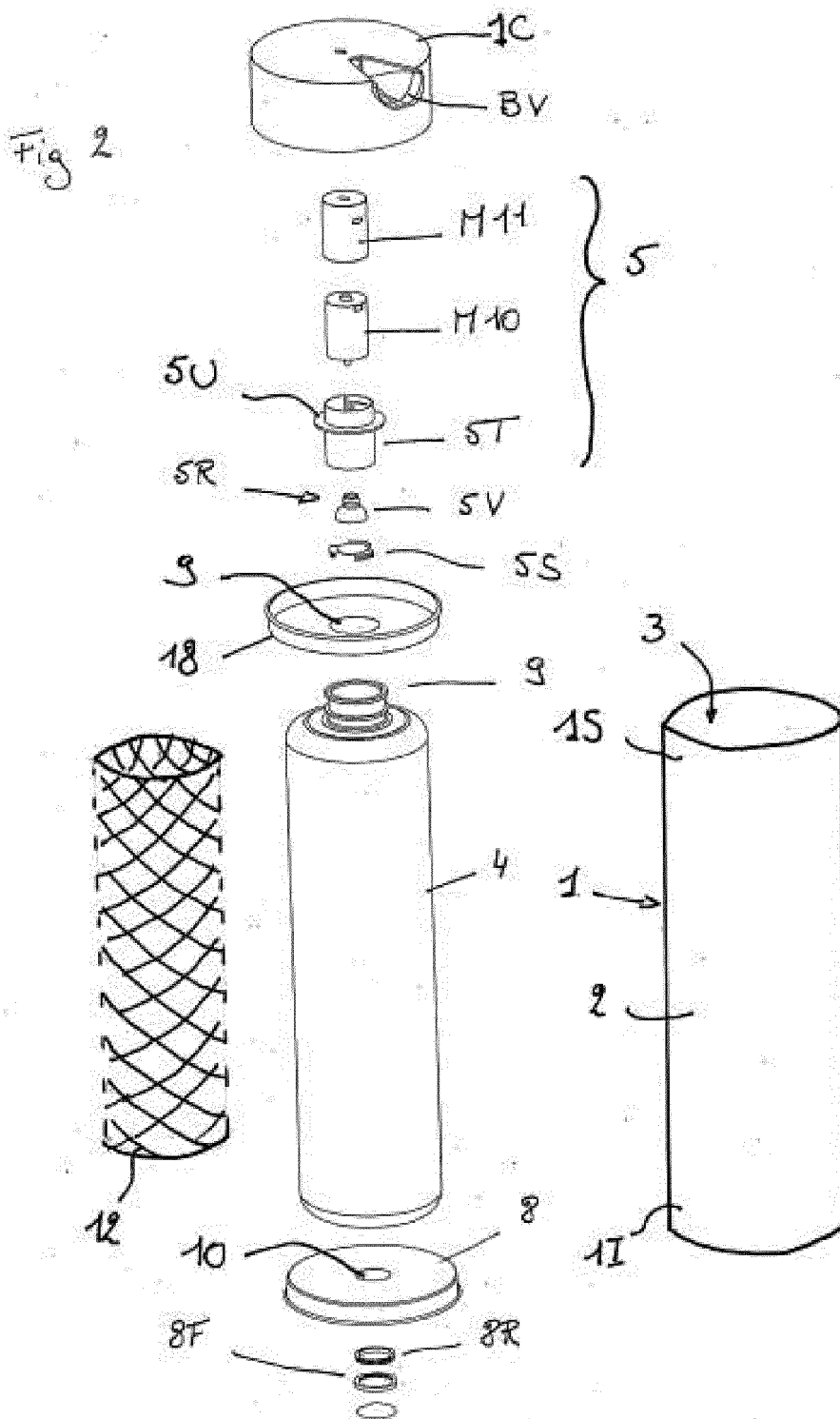
- un moyen de contrôle (105) de la quantité d'aliments à distribuer,

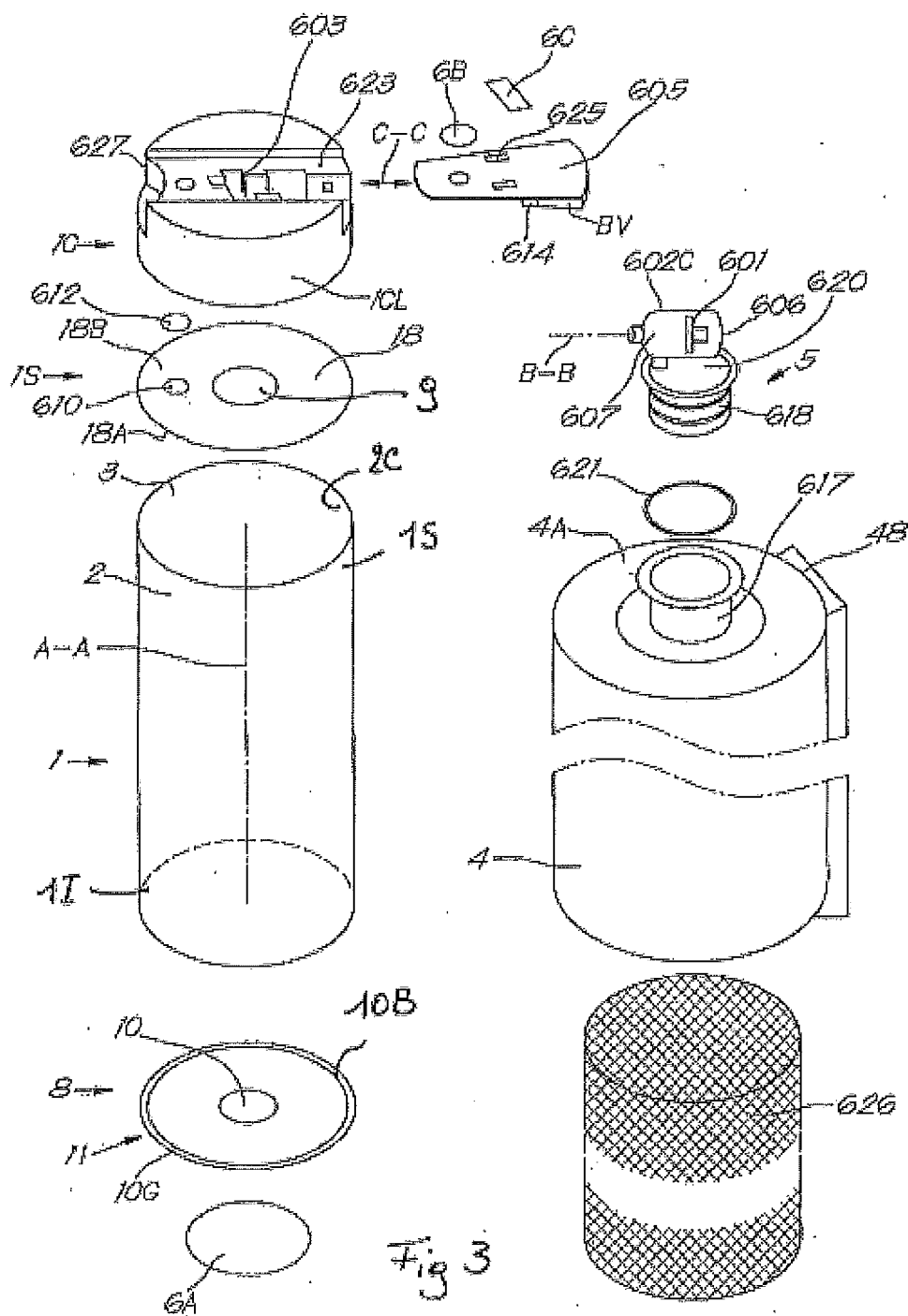
dans lequel l'appareil comprend un outil mobile (631) ayant au moins un élément en forme de griffe (631) capable de se déplacer à travers d'au moins une fenêtre (625) de la partie de rétention (605) au moins entre une position agissant sur le dispositif de commande (601) du dispositif à valve pour amener la valve (5V) en position ouverte et une position de repos dans laquelle le dispositif de commande (601) du dispositif à valve est dans une position correspondant à une position fermée de la valve (5V), dans lequel l'outil mobile (631) comporte avantageusement au moins un élément en forme de griffe (631) capable de se déplacer entre une position dans laquelle l'élément en forme de griffe (631) est situé à l'extérieur de la chambre (600) du couvercle (1C) de la boîte (1) et une position dans laquelle l'élément en forme de griffe (631) a une extrémité située dans la chambre (600) du couvercle (1C) et agit sur le dispositif de commande (601) du dispositif à valve pour amener la valve (5V) dans la position ouverte, avec une position intermédiaire dans laquelle l'élément en forme de griffe (631) est dans une position dans laquelle la griffe a une extrémité située dans la chambre (600) du couvercle (1C), sans agir sur le dispositif de commande (601) du dispositif de vanne pour amener la vanne (5V) en position ouverte, ledit procédé comprenant l'étape consistant à :

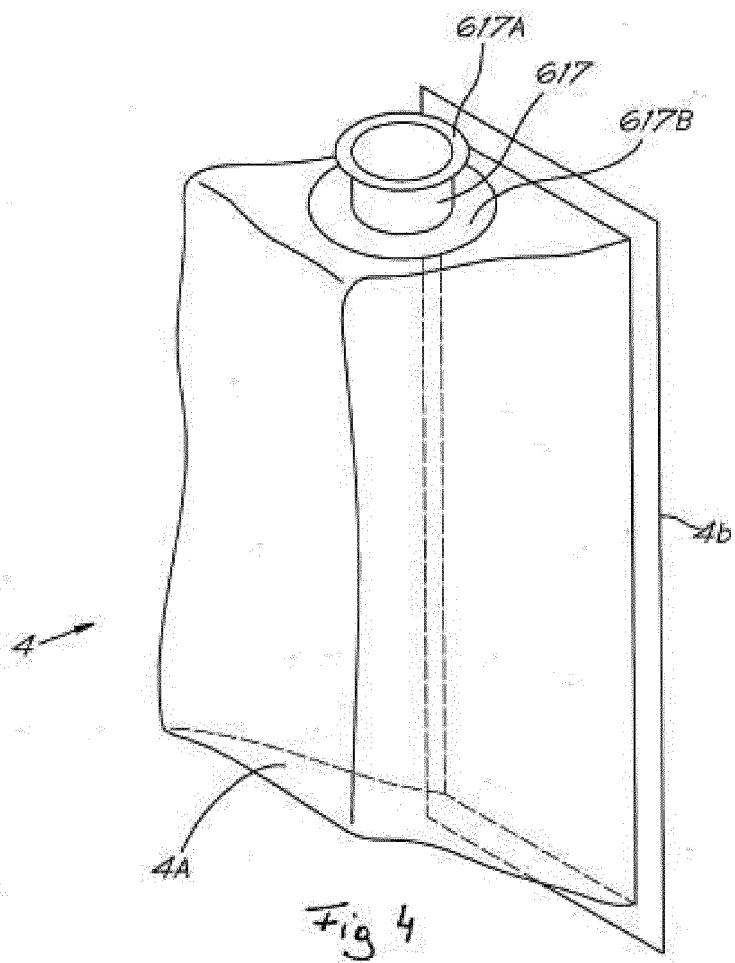
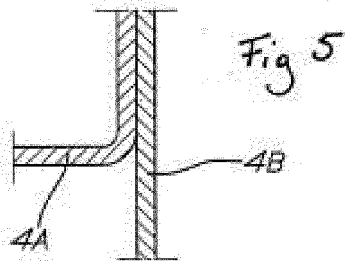
- (b) contrôler la température d'un milieu aqueux à circuler dans la chambre intérieure (3) de la boîte rigide (1) ;
- (c) contrôler le fonctionnement de la pompe (111A) pour amener un milieu aqueux à une température appropriée sous pression dans la chambre intérieure (3) de la boîte rigide (1) ; et
- (d) commander l'ouverture de la valve (5V) pour contrôler la quantité de liquide ou d'aliment visqueux provenant de la poche souple (4) et s'écoulant dans un récipient.

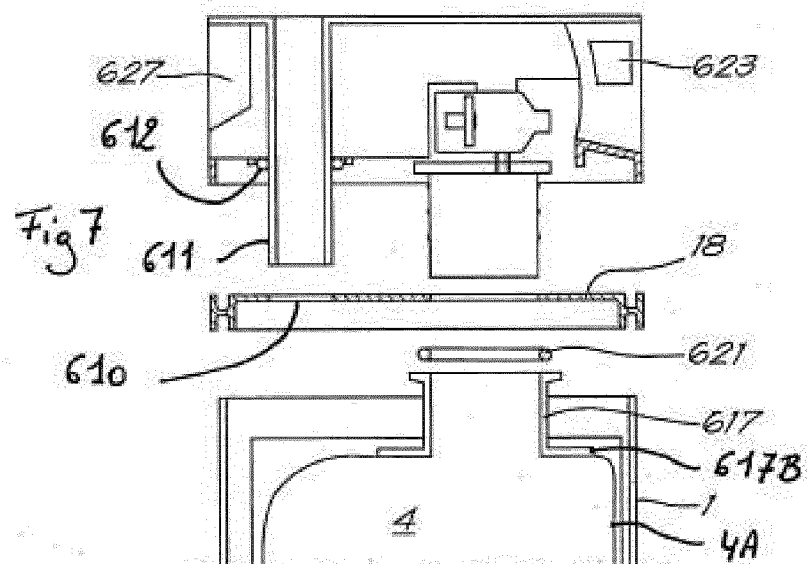
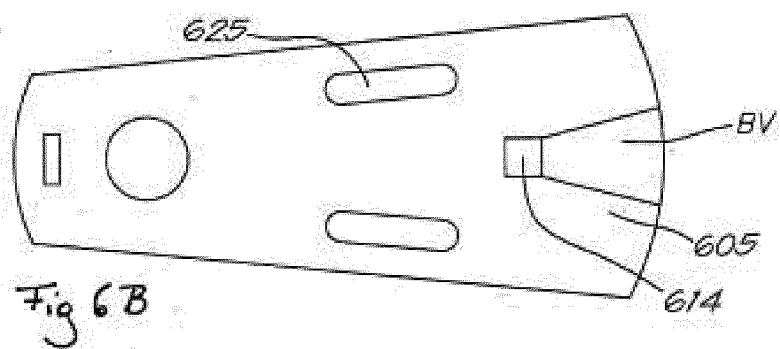
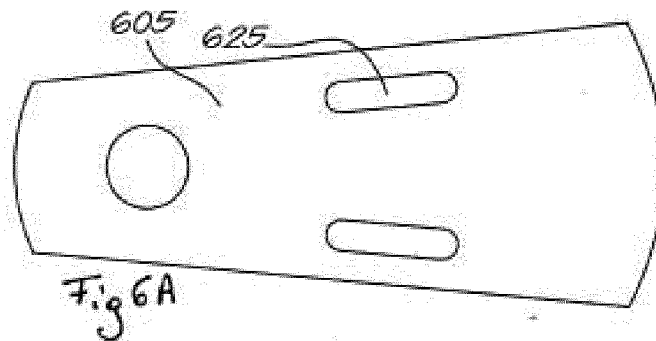
Fig 1

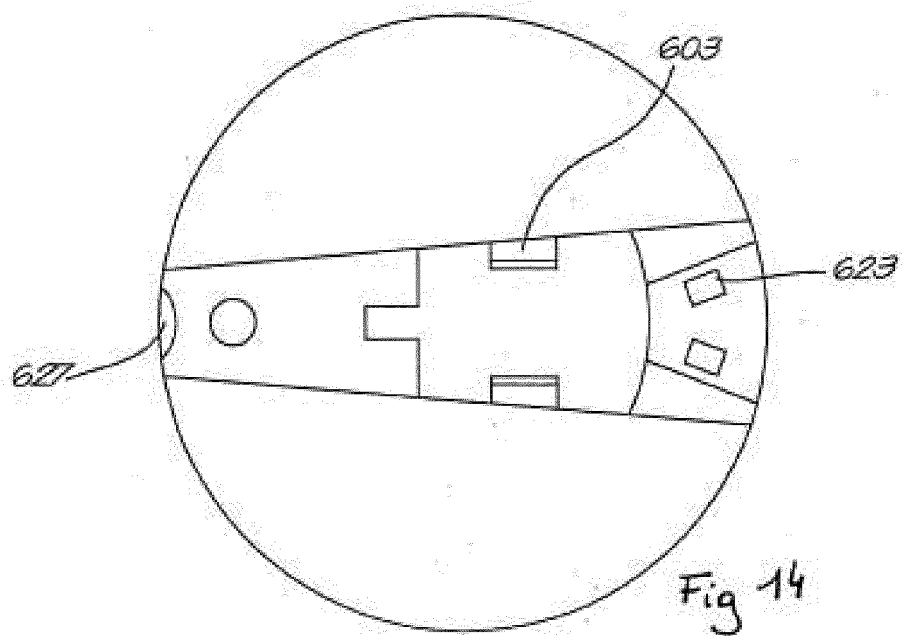
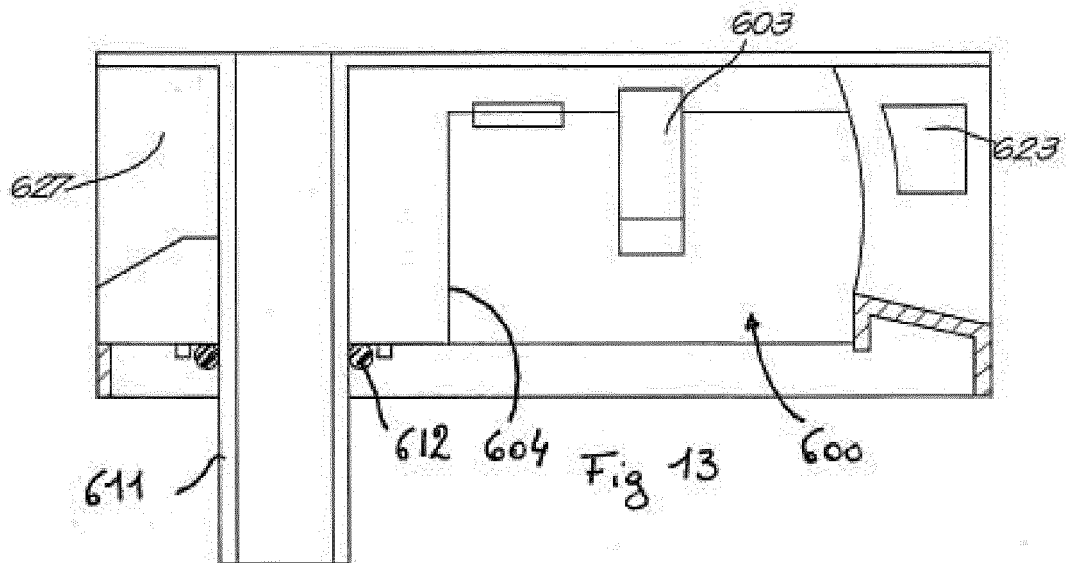
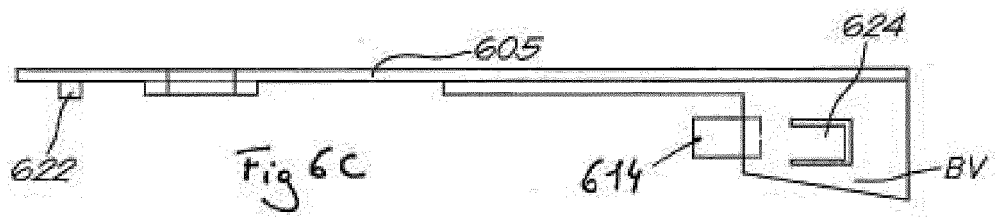


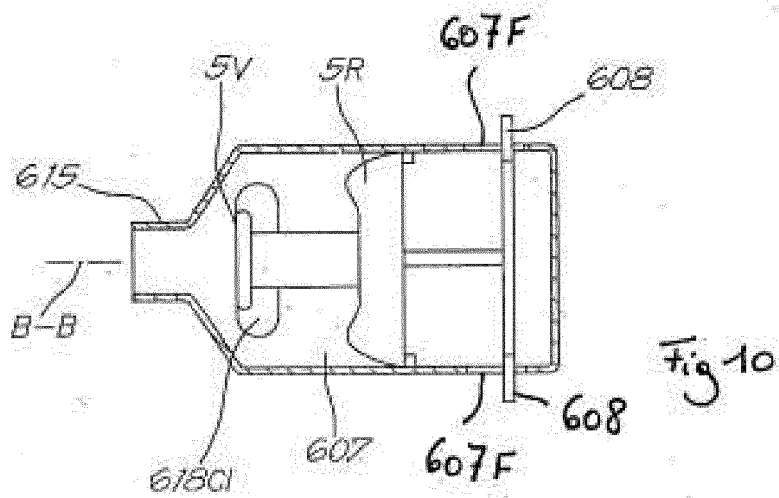
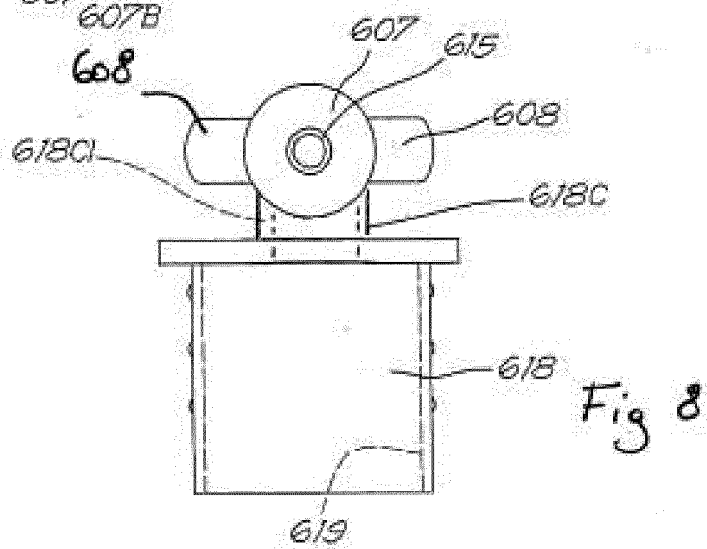
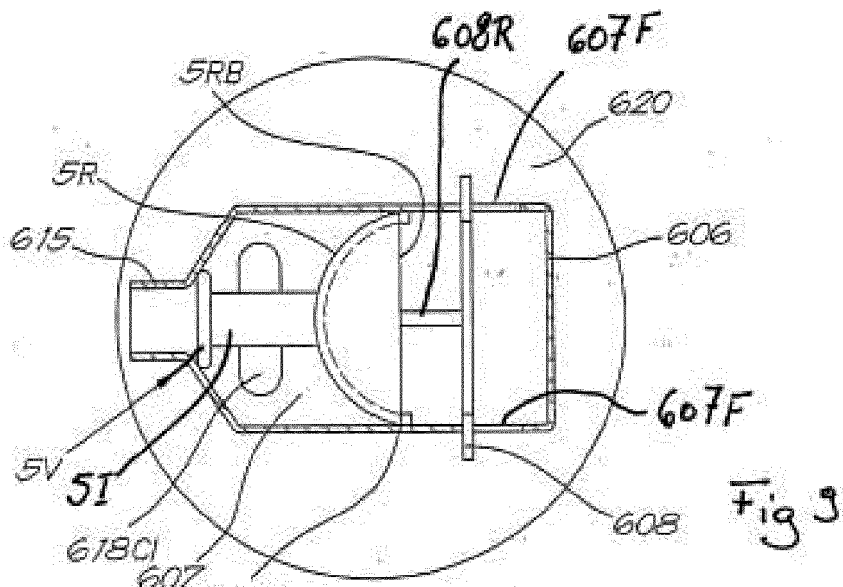


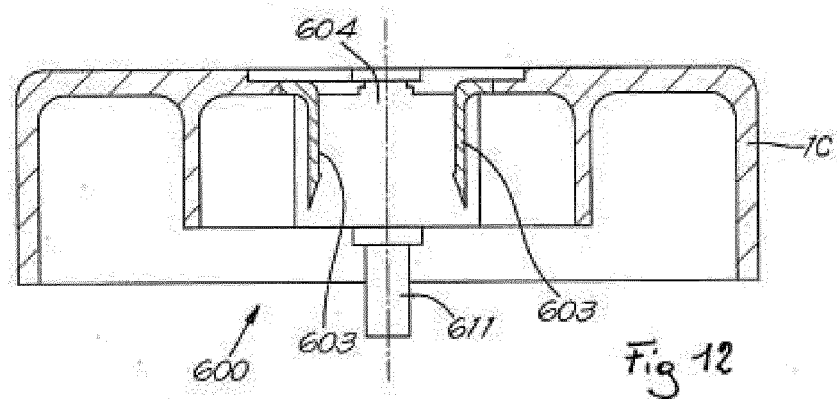
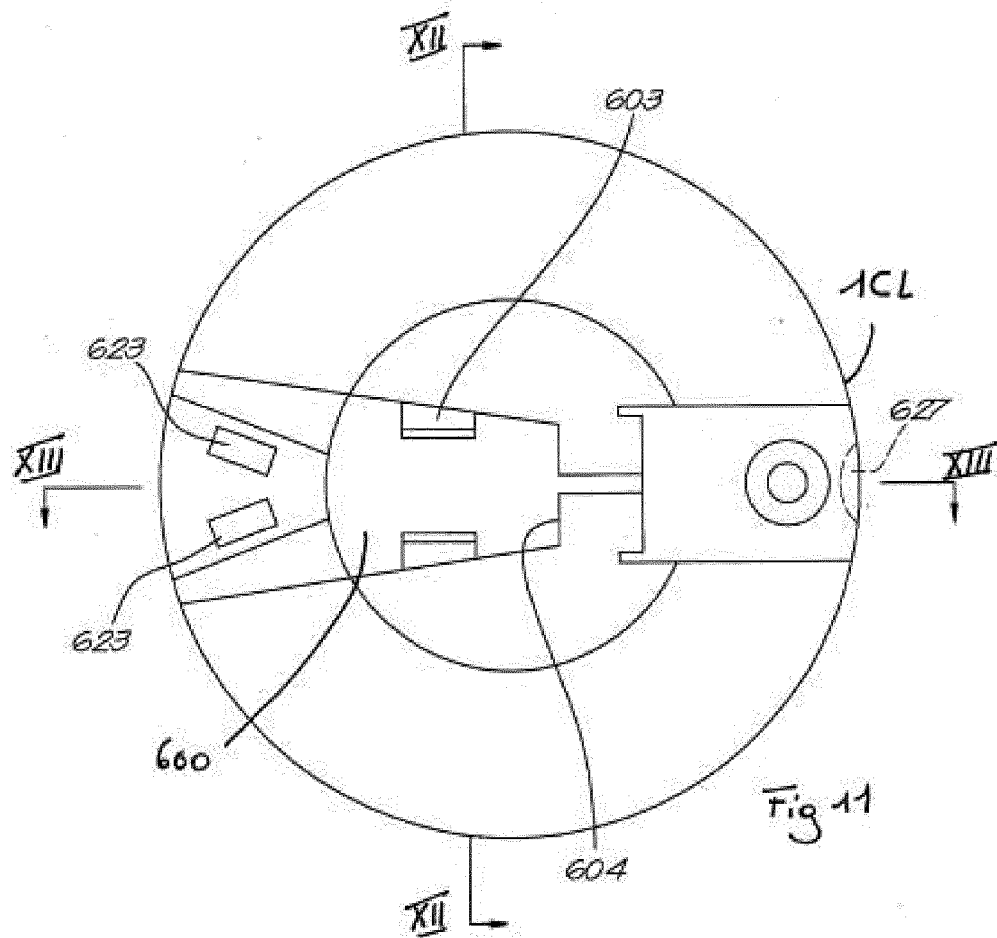


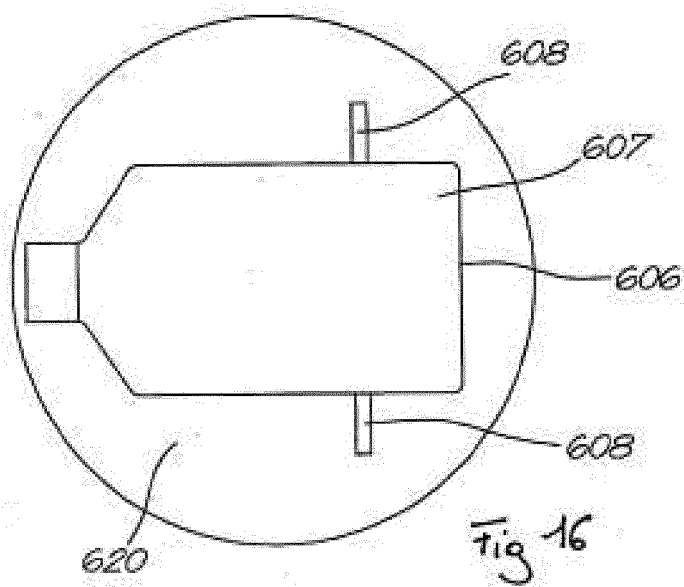
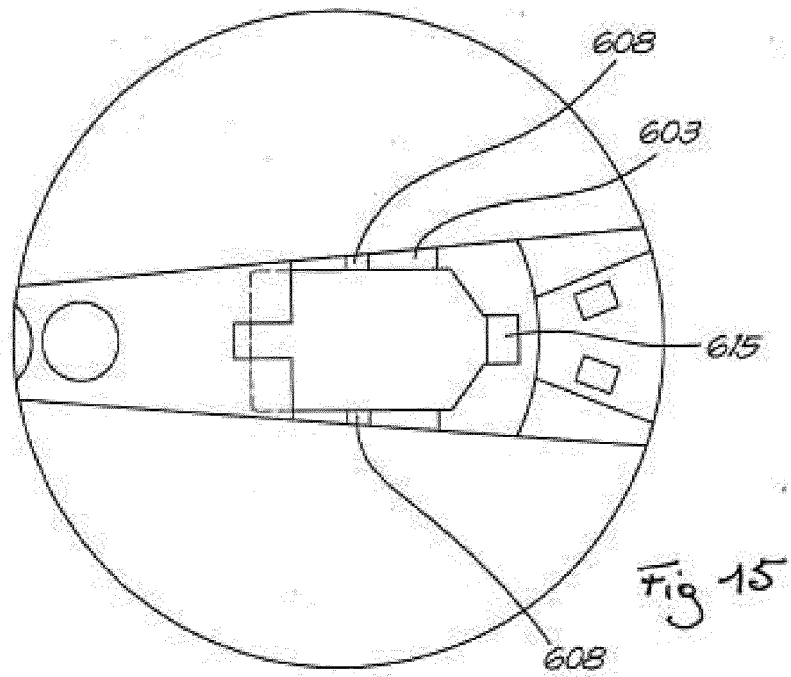


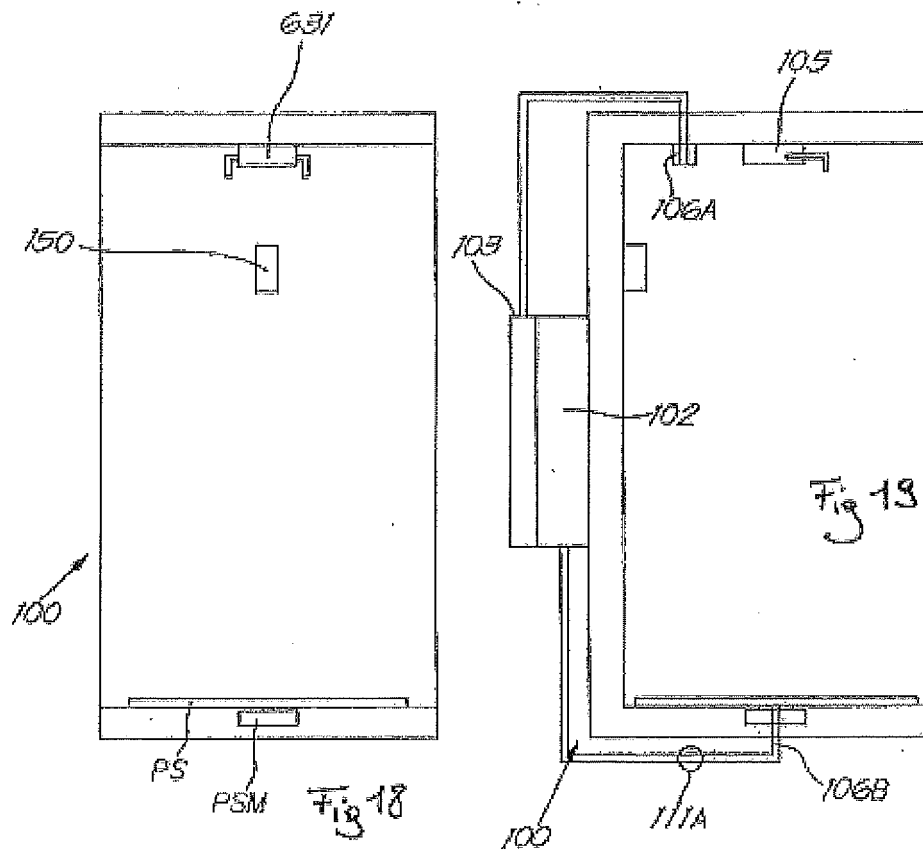
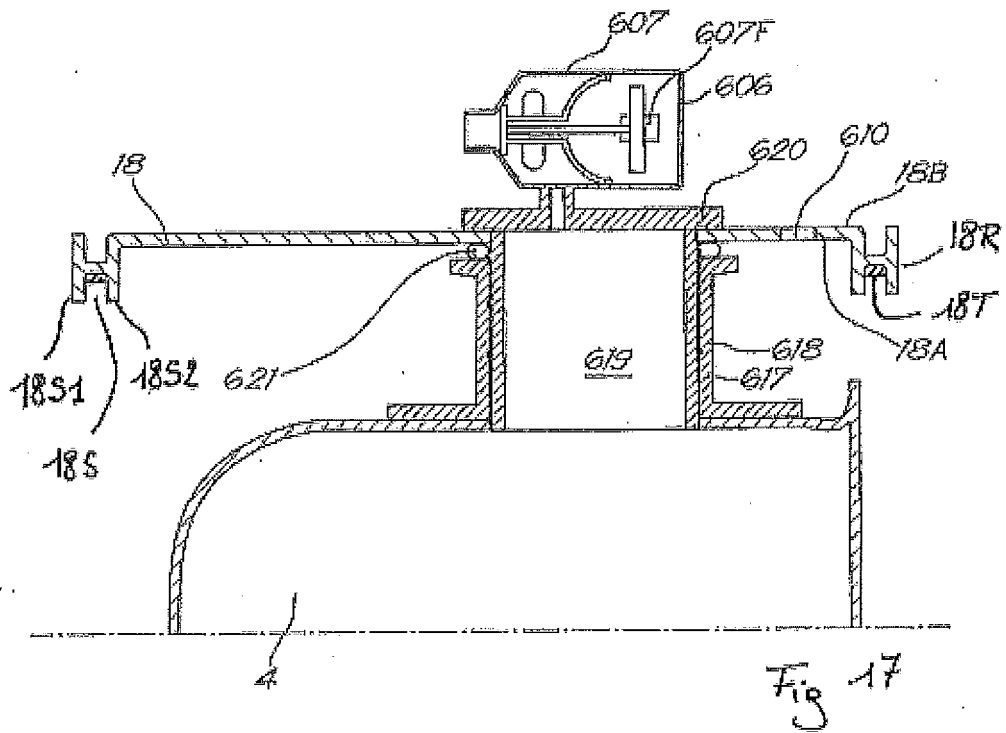


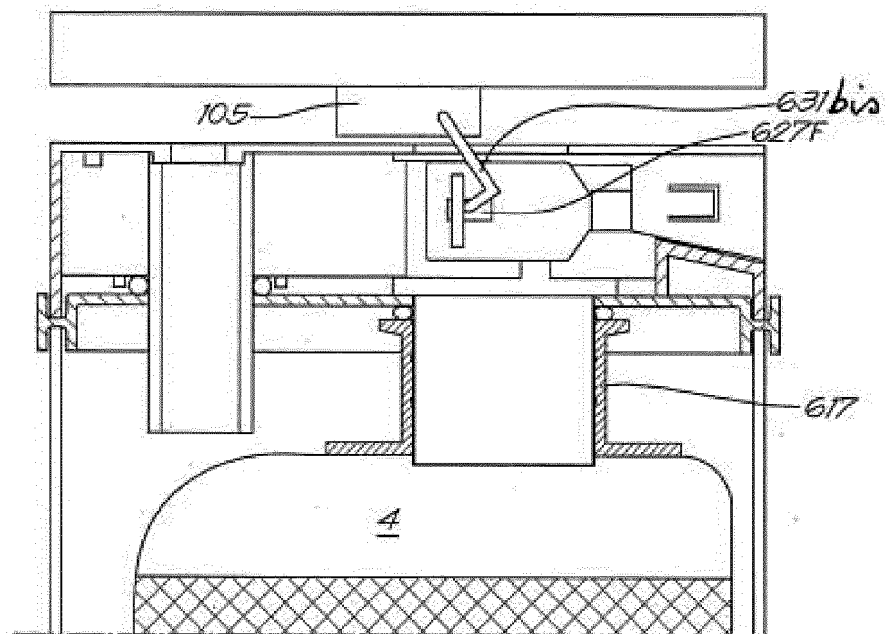
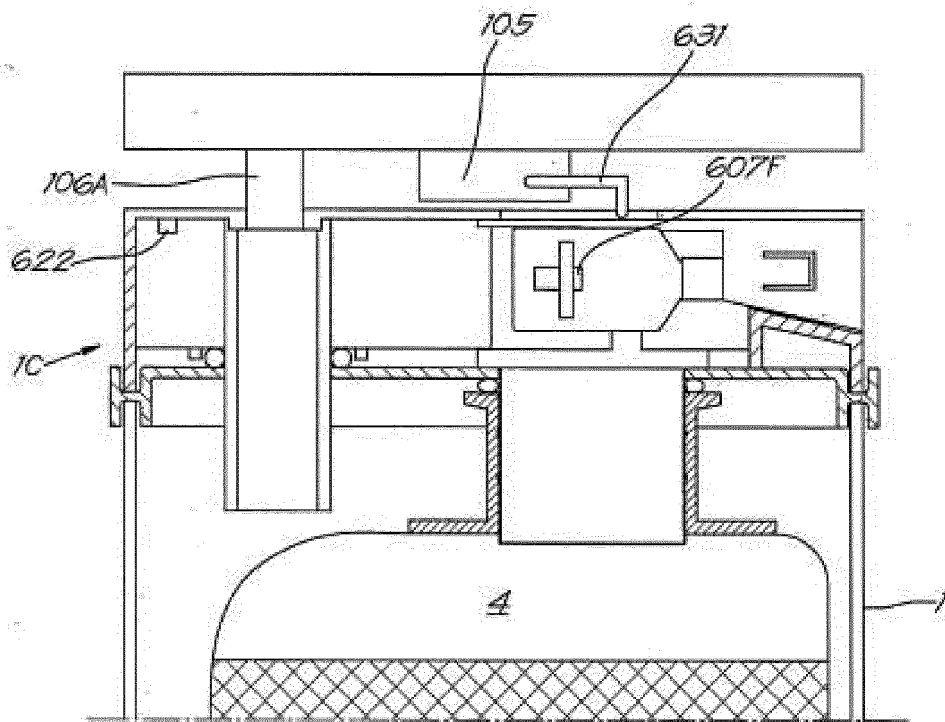












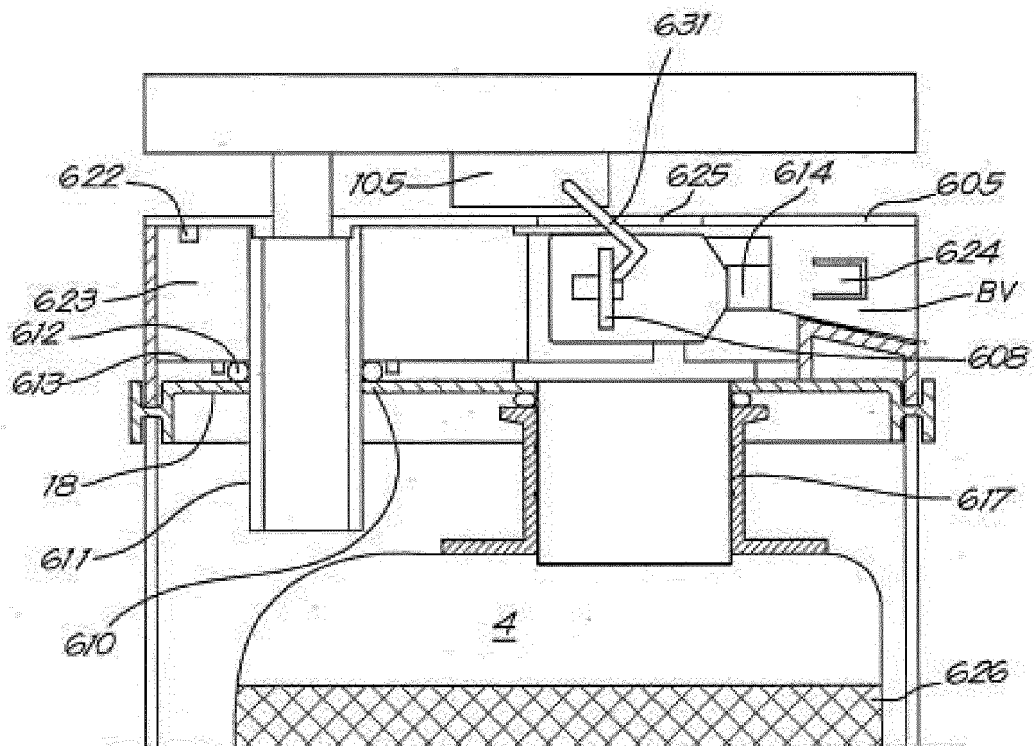


Fig 21

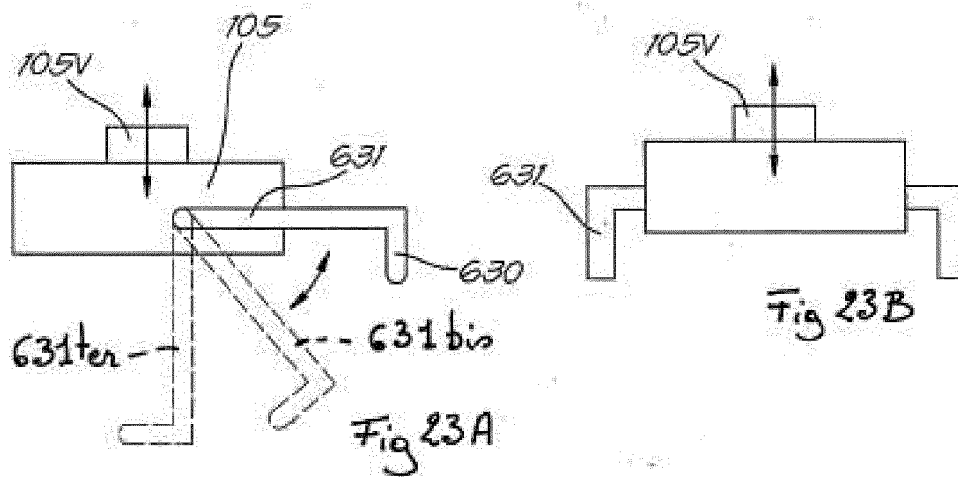


Fig 23A

Fig 23B

REFERENCES CITED IN THE DESCRIPTION

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