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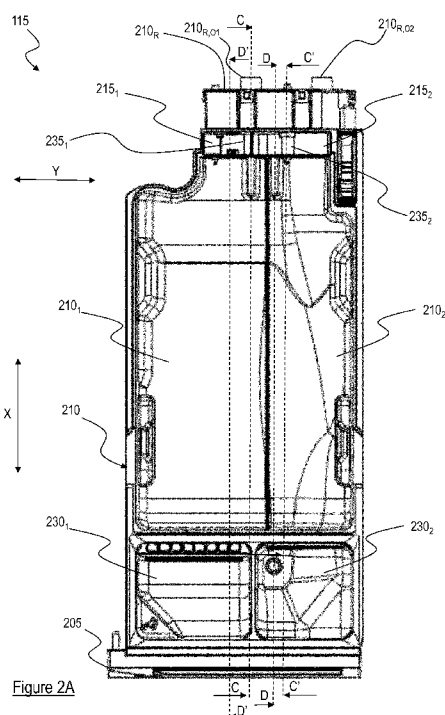


Figure 2A

(57) **Abstract:** A laundry treatment appliance (100) is proposed. The laundry treatment appliance (100) comprises a drawer (115) adapted to slide within a drawer seat (120) along a sliding direction (X). The drawer comprising, along the sliding direction (X) from a drawer front: - a handle (205) forming the drawer front; - behind the handle (205), at least one compartment (210₁, 210₂) adapted to contain multiple doses of at least one treatment agent; - behind the at least one compartment (210₁, 210₂), at least one channel (215₁, 215₂) associated with the at least one compartment (210₁, 210₂) for channelling water and at least one treatment agent dose of the at least one laundry treatment agent towards a mixing region (220_{BW}) of the drawer seat (120) allowing a mixture between the water and the at least one treatment agent dose; - behind the at least one channel (215₁, 215₂), at least one pump actuation part (225₁, 225₂) having a suction side in fluid communication with the at least one compartment (210₁, 210₂) for drawing up the at least one treatment agent dose therefrom, and a delivery side in fluid communication with the at least one channel (225₁, 225₂) for delivering the at least one treatment agent dose thereto.

LAUNDRY TREATMENT APPLIANCE COMPRISING AN IMPROVED
DRAWER
DESCRIPTION

Field of the invention

5 The present invention generally relates to the field of laundry treatment appliances (hereinafter, concisely, “laundry appliances”), and particularly to laundry appliances for treating, *e.g.* washing, items (such as linen, clothes, garments, shoes, and the like), such as laundry washing appliances and laundry washing appliances also implementing laundry drying functions (also referred to as washers/dryers). More
10 particularly, the present invention relates to a laundry appliance having an improved drawer.

Background of the invention

 A laundry appliance typically comprises a drawer having drawer compartments
15 for containing one or more treatment agents (such as liquid and powder treatment agents), and a drawer seat for slidably housing the drawer within it between retracted and extracted positions.

 In an increasingly common type of laundry appliance, the drawer comprises one or more compartments each one adapted to contain multiple doses of a respective
20 treatment agent for performing multiple washing cycles (hereinafter referred to as multi-dose compartments): just as an example, in case of two multi-dose compartments, a multi-dose compartment may be arranged to contain multiple doses of a liquid washing detergent, whereas the other multi-dose compartment may be arranged to contain multiple doses of a liquid softener. In this class of laundry
25 appliance, the laundry appliance may implement an auto-dosing functionality in which, at each washing cycle (and when the auto-dosing functionality is enabled), a predetermined amount of treatment agent is automatically taken (*e.g.*, by means of a pumping apparatus) from the multi-dose compartment(s) and dispensed to a washing tub.

The pumping apparatus is generally controlled by an electronic control unit, which is arranged in the laundry appliance and is configured to be electrically connected to the pumping apparatus so as to cause the treatment agent(s) to be dispensed according to predetermined operating modes.

5 The pumping apparatus is typically mounted on the drawer associated with the multi-dose compartments, and is electrically connected to the electronic control unit by means of a mechanical connection (which is interrupted every time the drawer is moved from the retracted position to the extracted position): this mechanical connection typically comprises one or more connection members mounted on the
10 drawer and one more connection members mounted on the drawer seat, the connection member(s) mounted on the drawer and the connection member(s) mounted on the drawer seat being configured to engage and disengage with each other every time the drawer is moved to the retracted position and removed from the retracted position, respectively.

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Summary of invention

The Applicant has realized that the typical laundry appliances implementing the auto-dosing functionality are not satisfactory.

20 The Applicant has understood that having the pumping apparatus on the drawer causes a remarkable reduction of the treatment agent loading capacity of the multi-dose compartments: in fact, for reasons due to electric safety, DC and low-power electric motors should be used in association with the pumping apparatus, which necessarily require power supply units (*e.g.*, AC-to-DC power supply units); this involves complex and bulky implementations.

25 The Applicant has also understood that having the pumping apparatus on the drawer (and in some cases operatively immersed in the respective treatment agents) makes electric wirings expensive: in fact, also the electric wirings need complex and expensive solutions required in order to make these electric wirings reliable for a wet environment for a relatively long periods of use.

The Applicant has further understood that frequent moving of the drawer between the extracted and retracted positions involves a considerable risk that, in time, the mechanical connection (*i.e.*, the connection member(s) mounted on the drawer and the connection member(s) mounted on the drawer seat) is affected by wear, which
5 causes the electric connection between the pumping apparatus and the electronic control unit to be unreliable. This may cause serious faults and failures of the laundry appliance.

In view of the above, it is an object of the present invention to provide a laundry appliance able to overcome these, as well as other, drawbacks, and particularly it is an
10 object of the present invention to provide a laundry appliance featuring an improved drawer and an efficient and reliable cooperation between the drawer and the drawer seat.

One or more aspects of the present invention are set out in the independent claims, with advantageous features of the same invention that are indicated in the
15 dependent claims.

An aspect of the present invention relates to a laundry treatment appliance comprising a drawer adapted to slide within a drawer seat along a sliding direction. The drawer comprises, along the sliding direction from a drawer front:

- a handle forming the drawer front;
- 20 - behind the handle, at least one compartment adapted to contain multiple doses of at least one treatment agent;
- behind the at least one compartment, at least one channel associated with the at least one compartment for channelling water and at least one treatment agent dose of the at least one laundry treatment agent towards a mixing region of the drawer seat
25 allowing a mixture between the water and the at least one treatment agent dose;
- behind the at least one channel, at least one pump actuation part having a suction side in fluid communication with the at least one compartment for drawing up the at least one treatment agent dose therefrom, and a delivery side in fluid communication with the at least one channel for delivering the at least one treatment

agent dose thereto.

According to an embodiment of the present invention, the drawer is adapted to slide within the drawer seat between an extracted position and a retracted position. The drawer seat preferably comprises at least one electrically-operated pump driving part
5 that, in the retracted position of the drawer, is adapted to mechanically couple with the at least one pump actuation part for allowing driving the pump actuation part.

According to an embodiment of the present invention, the at least one channel allows the water and the at least one treatment agent dose to fall towards the mixing region of the drawer seat by gravity.

10 According to an embodiment of the present invention, the sliding direction is parallel to a rest surface on which the laundry treatment appliance rests in operation. The at least one channel preferably extends vertically or (substantially vertically) with respect to said rest surface.

According to an embodiment of the present invention, the at least one channel
15 comprises a top channel input for receiving the water and a bottom channel output. In operation the bottom channel output of the at least one channel preferably faces said mixing region of the drawer seat for delivering the water and at least one treatment agent dose thereto.

According to an embodiment of the present invention, said mixing region of
20 the drawer seat comprises a bottom wall of the drawer seat.

According to an embodiment of the present invention, the bottom wall of the drawer seat is slanted or inclined in order to promote a flow of said mixture between the water and the at least one treatment agent dose towards a laundry treatment chamber of the laundry treatment appliance.

25 According to an embodiment of the present invention, the laundry treatment appliance further comprises at least one suction pipe coupling the suction side of the at least one pump actuation part to an interior of the at least one compartment for drawing up the at least one treatment agent dose therefrom, and at least one delivery pipe coupling the delivery side of the at least one pump actuation part to an interior of

the at least one channel for delivering the at least one treatment agent dose thereto.

According to an embodiment of the present invention, the at least one suction pipe is arranged, in said interior of the at least one compartment, proximate to a bottom wall of the at least one compartment.

5 According to an embodiment of the present invention, the at least one delivery pipe opens to said interior of the at least one channel.

According to an embodiment of the present invention, the laundry treatment appliance further comprises a water distribution system having at least one water feeding duct adapted to feed water to the at least one channel; the at least one water
10 feeding duct is preferably part of a top of the drawer seat thereby allowing the water to be fed to the at least one channel from above.

According to an embodiment of the present invention, the at least one water feeding duct comprises a single water feeding duct associated with the at least one channel or a plurality of water feeding ducts each one associated with a respective one
15 of the at least one channel.

According to an embodiment of the present invention, the water distribution system comprises first and second input water ducts each one selectable for water passage therethrough. The water distribution system preferably comprises first, second and third output water ducts each one selectable for water passage therethrough
20 according to the first and/or second input water ducts being selected. The at least one water feeding duct preferably comprises one or more among the first, second and third output water ducts.

According to an embodiment of the present invention, said at least one compartment comprises two compartments arranged side by side; each one of said two
25 compartments is preferably adapted to contain multiple doses of a respective laundry treatment agent.

According to an embodiment of the present invention, said at least one channel comprises two channels each one associated with a respective one of said two compartments.

According to an embodiment of the present invention, the at least one water feeding duct comprises a single water feeding duct associated with both said two channels.

According to an embodiment of the present invention, the laundry treatment
5 appliance further comprises at least one further compartment each one adapted to contain a single dose of said at least one treatment agent. At least one among the first, second and third output water ducts is preferably adapted to feed water to the at least one further compartment.

According to an embodiment of the present invention, said at least one further
10 compartment is, along the sliding direction, between the handle and the at least one compartment.

Another aspect of the present invention relates to a drawer for a laundry treatment appliance. The drawer is adapted to slide, along a sliding direction, within a drawer seat of the laundry treatment appliance. The drawer preferably comprises,
15 along the sliding direction from a drawer front:

- a handle forming the drawer front;
- behind the handle, at least one compartment adapted to contain multiple doses of at least one treatment agent;
- behind the at least one compartment, at least one channel associated with the
20 at least one compartment for channelling water and at least one treatment agent dose of the at least one laundry treatment agent towards a mixing region of the drawer seat allowing a mixture between the water and the at least one treatment agent dose;
- behind the at least one channel, at least one pump actuation part having a suction side in fluid communication with the at least one compartment for drawing up
25 the at least one treatment agent dose therefrom, and a delivery side in fluid communication with the at least one channel for delivering the at least one treatment agent dose thereto.

According to an embodiment of the present invention, the drawer is adapted to slide within the drawer seat between an extracted position and a retracted position. In

the retracted position of the drawer the at least one pump actuation part of the drawer is preferably adapted to mechanically couple with at least one electrically-operated pump driving part provided on the drawer seat for allowing driving of the pump actuation part.

5 According to an embodiment of the present invention, the at least one channel allows the water and the at least one treatment agent dose to fall towards the mixing region of the drawer seat by gravity.

 According to an embodiment of the present invention, the sliding direction is parallel to a rest surface on which the laundry treatment appliance rests in operation.
10 The at least one channel preferably extends vertically or (substantially vertically) with respect to said rest surface.

 According to an embodiment of the present invention, the at least one channel comprises a top channel input for receiving the water and a bottom channel output. In operation the bottom channel output of the at least one channel preferably faces said
15 mixing region of the drawer seat for delivering the water and at least one treatment agent dose thereto.

 According to an embodiment of the present invention, the drawer further comprises at least one suction pipe coupling the suction side of the at least one pump actuation part to an interior of the at least one compartment for drawing up the at least
20 one treatment agent dose therefrom, and at least one delivery pipe coupling the delivery side of the at least one pump actuation part to an interior of the at least one channel for delivering the at least one treatment agent dose thereto.

 According to an embodiment of the present invention, the at least one suction pipe is arranged, in said interior of the at least one compartment, proximate to a bottom
25 wall of the at least one compartment.

 According to an embodiment of the present invention, the at least one delivery pipe opens to said interior of the at least one channel.

 According to an embodiment of the present invention, said at least one compartment comprises two compartments arranged side by side; each one of said two

compartments is preferably adapted to contain multiple doses of a respective laundry treatment agent.

According to an embodiment of the present invention, said at least one channel comprises two channels each one associated with a respective one of said two
5 compartments.

According to an embodiment of the present invention, the drawer further comprises at least one further compartment each one adapted to contain a single dose of said at least one treatment agent.

According to an embodiment of the present invention, said at least one further
10 compartment is, along the sliding direction, between the handle and the at least one compartment.

Brief description of the annexed drawings

These and other features and advantages of the present invention will be made
15 apparent by the following description of some exemplary and non-limitative embodiments thereof; for its better intelligibility, the following description should be read making reference to the attached drawings, wherein:

Figures 1A and 1B show perspective views of a laundry appliance according to an embodiment of the present invention;

20 **Figure 2A** shows a top view of a drawer of the laundry appliance according to an embodiment of the present invention;

Figure 2B shows a perspective view of the drawer of **Figure 2A** in a partially extracted position within a drawer seat, according to an embodiment of the present invention;

25 **Figure 2C** shows sectional views of the drawer along the C-C and C'-C' axis of **Figure 2A**;

Figure 2D shows sectional views of the drawer along the D-D and D'-D' axis of **Figure 2A**;

Figure 2E shows a sectional view of the drawer in the partially extracted

position within the drawer seat along the E-E axis of **Figure 2B**;

Figure 2F shows a perspective and partially exploded view from behind of the drawer of **Figures 2A** and **2B** and of the drawer seat of **Figure 2B**, according to an embodiment of the present invention;

5 **Figure 2G** shows a top view of the drawer seat of **Figures 2B** and **2F**, in which a water distribution system is visible, and of the drawer of **Figures 2A-2F** in a retracted position within the drawer seat, according to an embodiment of the present invention, and

10 **Figure 2H** shows an enlarged view of a portion of the water distribution system of **Figure 2G**, according to an embodiment of the present invention.

Detailed description of preferred embodiments of the invention

With reference to the drawings, **Figures 1A** and **1B** show perspective views of a laundry appliance **100** according to an embodiment of the present invention.
15 According to the exemplary, not limiting, embodiment herein considered, the laundry appliance **100** is a washing machine. In any case, although in the following description explicit reference will be made to a washing machine, this should not be construed as a limitation; indeed, the present invention applies to other types of laundry appliances (for example combined washers/dryers, *i.e.* washing machines also having
20 laundry drying functions).

The laundry appliance **100** comprises a (*e.g.*, parallelepiped-shaped) cabinet **105**, which preferably accommodates a treatment chamber (*i.e.*, a laundry washing chamber in the example herein considered of a washing machine) for performing a laundry treatment cycle on items housed therein (*i.e.*, a washing cycle on a laundry load in the
25 example herein considered of a washing machine).

The treatment chamber preferably comprises a washing tub (not shown) and, within it, a (*e.g.*, rotatable) washing basket or drum (not shown) adapted to contain the laundry load to be washed. A cabinet front has a loading opening providing an access to the drum for loading/unloading the laundry load, a door **110** (shown in a closed

position in **Figures 1A** and **1B**) being provided for sealably closing the loading opening during the operation of the laundry appliance **100**.

Although not shown, the laundry appliance **100** also comprises, enclosed in the cabinet **105**, electrical/electronic/mechanical/hydraulic components for the operation
5 of the laundry appliance **100** (such as for example motor, electromechanical valves, pumps and impellers of the hydraulic apparatus, one or more heating elements for heating water/treatment agents/air).

The laundry appliance **100** further comprises a drawer **115** for containing one or more laundry treatment agents (or, concisely, treatment agents), such as liquid and
10 powder treatment agents including, but not limited to, washing detergents, rinsing detergents, bleaches and softeners. The laundry appliance **100** also comprises a drawer seat **120** (preferably provided on a top part of a cabinet front) for housing the drawer **115**, the drawer being advantageously adapted to slide within the drawer seat **120**, along a longitudinal or sliding direction **X**, between an extracted position (shown in
15 **Figure 1A**) and a retracted position (shown in **Figure 1B**). The sliding direction **X** is for example parallel to a rest surface, such as the floor, on which the laundry appliance **100** preferably rests in operation (*i.e.*, when it is installed in the user premises). In operation, the laundry appliance **100** rests on the rest surface, such as the floor, and uprightly extends from it along a vertical direction **Z** orthogonal to the sliding direction
20 **X**.

Preferably, the laundry appliance **100** further comprises a user interface **125**, the user interface **125** being preferably provided on the top part of the cabinet front, more preferably next to the drawer seat **120** along a transversal direction **Y** orthogonal to the longitudinal direction **X**.

25 Preferably, although not necessarily, the user interface **125** comprises a display unit, not shown, for visually displaying one or more pieces of information; the display unit may for example be a light emitting polymer display (LPD), a liquid crystal display, a thin film transistor-liquid crystal display, or an organic light-emitting diode display.

The user interface **125** preferably comprises one or more control elements (*e.g.*, selection buttons and/or knobs) for allowing the user to select a washing cycle and to control one or more operating parameters of the selected washing cycle (including, but not limited to, temperature, laundry load dirt level, spin speed, start time delay, drawer compartment selection, treatment agent selection). Additionally, as herein exemplary assumed, or alternatively, the user interface **125** preferably comprises one or more status indicators for indicating to the user a status of the laundry appliance **100**; the status indicators may be configured to indicate a status of one or more components of the laundry appliances **100** and/or a status of the washing cycle (including, but not limited to, information about a residual time to the end of the ongoing washing cycle, and/or information about a current phase of the ongoing washing cycle, and/or selected parameters for the ongoing washing cycle, and/or selected drawer compartment, and/or selected treatment agent).

With reference now also to **Figure 2A**, it shows top views of the drawer **115** according to an embodiment of the present invention. For ease of description, **Figure 2A** will be discussed together with **Figure 2B**, which shows a perspective view of the drawer **115** in a partially extracted position within the drawer seat **120**, with **Figure 2C**, which shows sectional views of the drawer along the C-C axis (right drawing) and C'-C' axis (left drawing) of **Figure 2A**, with **Figure 2D**, which shows sectional views of the drawer along the D-D axis (right drawing) and D'-D' axis (left drawing) of **Figure 2A**, with **Figure 2E**, which shows a sectional view of the drawer in the partially extracted position within the drawer seat along the E-E axis of **Figure 2B**, and with **Figure 2F**, which shows a perspective and partially exploded view from behind of the drawer **115** and of the drawer seat **120**.

The drawer **115** preferably comprises a drawer handle **205** allowing the user to slidably move the drawer **115** between the extracted position and the retracted position when it is fitted in the drawer seat **120**, and a drawer body **210** to which the drawer handle **205** is adapted to be mounted or coupled or connected (advantageously, in a removable or reversible way, as better discussed in the following). When the laundry

appliance **100** is installed and the drawer **115** is fitted in the drawer seat **120**, the drawer handle **205** identifies, along the sliding direction **X**, a drawer front (which advantageously forms part of the cabinet front when the drawer **115** is in the retracted position).

5 The drawer **115** preferably comprises, along the sliding direction **X** (from the drawer front backwards):

- behind the handle **205**, and hence in the drawer body **210**, one or more (two, in the example at issue) drawer compartments **210₁,210₂** each one adapted to contain multiple doses of a respective treatment agent for performing multiple washing cycles,
10 hereinafter referred to as multi-dose compartments **210₁,210₂**. Therefore, the exemplary considered laundry appliance **100** is configured to implement an auto-dosing functionality in which, at each washing cycle (and when the auto-dosing functionality is enabled), a predetermined amount of treatment agent is automatically taken (*e.g.* by means of a pumping system, discussed in the following) from one or
15 both of the multi-dose compartments **210₁,210₂**. Just as an example, the multi-dose compartment **210₁** may be arranged to contain multiple doses of a liquid washing detergent, whereas the multi-dose compartment **210₂** may be arranged to contain multiple doses of a liquid softener;

- behind the multi-dose compartments **210₁,210₂**, and hence in the drawer body
20 **210**, one or more (two, in the example at issue) channels **215₁,215₂** associated with the multi-dose compartments **210₁,210₂** (in the example herein considered, each channel **215₁,215₂** is associated with a respective one of the multi-dose compartments **210₁,210₂**, the channel **215₁** being for example associated with the multi-dose compartment **210₁** and the channel **215₂** being for example associated with the multi-
25 dose compartment **210₂**). Each channel **215₁,215₂** is preferably adapted to channel water and/or one or more treatment agent doses towards a region of the drawer seat **120** that allows a mixture between the water and the treatment agent dose(s) (hereinafter referred to as mixing region): the mixing region may for example be or comprise a bottom wall **220_{BW}** of the drawer seat **120** (visible in **Figure 2B**), the

bottom wall **220_{BW}** of the drawer seat **120** being advantageously slanted in order to promote a flow of the mixture between the water and the treatment agent dose(s) towards the treatment chamber of the laundry appliance **100**.

Advantageously, the channels **215₁,215₂** (or at least one thereof) extend
5 vertically with respect to the rest surface (such as the floor) on which the laundry appliance **100** rests in operation (the channels **215₁,215₂** thus extending substantially along the vertical direction **Z**). In alternative embodiments of the present invention, the channels **215₁,215₂** (or at least one thereof) are inclined with respect to the rest surface (such as the floor) on which the laundry appliance **100** rests in operation.
10 Regardless of the specific (vertical or inclined) orientation of the channels **215₁,215₂**, which is not limiting for the present invention, each channel **215₁,215₂** is advantageously structured and shaped such as to allow the water and/or the treatment agent dose(s) to fall towards the mixing region of the drawer seat **120** by gravity; in order to achieve it, each channel **215₁,215₂** advantageously comprises a top channel
15 input for receiving the water from a water distribution system above it (as detailed in the following) and a bottom channel output facing the bottom wall **220_{BW}** of the drawer seat **120**; as will be better detailed in the following, in operation the bottom channel outputs of the channels **215₁,215₂** are arranged for delivering the water and the treatment agent dose(s) to the bottom wall **220_{BW}** of the drawer seat **120**, and hence to
20 the treatment chamber of the laundry appliance **100**. Having two separate channels **215₁,215₂** each one associated with a respective multi-dose compartment **210₁,210₂** is particularly advantageous in the preferred embodiment herein considered in which the multi-dose compartments **210₁,210₂** store different types of treatment agents (*e.g.*, liquid washing detergent and liquid softener); in fact, in this way, a mixing between
25 the two different types of treatment agents due to the presence of treatment agent residues from channel walls is avoided;

- behind the channels **215₁,215₂**, and hence in the drawer body **210**, one or more (two, in the example at issue) pump actuation parts **225₁,225₂** of the pumping system. The pump actuation parts **225₁,225₂** preferably have suction sides in fluid

communication with the multi-dose compartments **210₁,210₂** for drawing up the treatment agent dose(s) therefrom, and delivery sides in fluid communication with the channels **215₁,215₂** for delivering the treatment agent dose(s) thereto. Preferably, as herein assumed, the pump actuation part **225₁** is associated with the multi-dose compartment **210₁** and with the channel **215₁** (it meaning that the suction and delivery sides of the pump actuation part **225₁** are in fluid communication with the multi-dose compartment **210₁** and with the channel **215₁**, respectively), and the pump actuation part **225₂** is associated with the multi-dose compartment **210₂** and with the channel **215₂** (it meaning that the suction and delivery sides of the pump actuation part **225₂** are in fluid communication with the multi-dose compartment **210₂** and with the channel **215₂**, respectively). As better discussed in the following, in the retracted position of the drawer **115**, the pump actuation parts **225₁,225₂** are adapted to mechanically couple with one or more electrically-operated pump driving parts (preferably provided in the drawer seat **120**) of the pumping system, upon said mechanical coupling the electrically-operated pump driving parts allowing driving of the pump actuation parts **225₁,225₂**.

According to the preferred embodiment of the present invention herein considered and illustrated, the drawer **115** also comprises one or more (two, in the example at issue) drawer compartments **230₁,230₂** each one adapted to contain a single dose of a respective treatment agent for performing a single washing cycle, hereinafter referred to as mono-dose compartments **230₁,230₂**; just as an example, the mono-dose compartment **230₁** may be arranged to contain a single dose of a powder or liquid washing detergent, whereas the mono-dose compartment **230₂** may be arranged to contain a single dose of a powder or liquid or pearl softener.

Preferably, the mono-dose compartments **230₁,230₂** are, along the sliding direction **X**, between the handle **205** and the multi-dose compartments **210₁,210₂**. More preferably, the mono-dose compartments **230₁,230₂**, which are for example arranged side by side along the transversal direction **Y**, are formed in a region of the drawer body **210** that, when the drawer handle **205** is mounted on the drawer body **210**, is

proximal to the drawer handle **205** (hereinafter referred to as front region of the drawer body **210**), whereas the multi-dose compartments **220₁,220₂** are formed in a region of the drawer body **210** (hereinafter referred to as rear region of the drawer body **210**) that, along the sliding direction **X**, is rearward with respect to the front region of the drawer body **210**.

As visible in the figures, the front and rear regions of the drawer body **210** are properly different in size, and particularly the rear region of the drawer body **210** has a larger area than the front region of the drawer body **210** (as can be best appreciated in **Figure 2A**); by way of example only, the area of the rear region of the drawer body **210** is from 2 to 4 times larger than the area of the front region of the drawer body **210**. When, as herein exemplary considered, same or substantially same extensions along the vertical direction **Z** and similar extensions along the transversal direction **Y** are assumed for the front and rear regions, having the area of the rear region of the drawer body **210** larger than the area of the front region of the drawer body **210** translates into correspondingly different capacities of the mono-dose **230₁,230₂** and multi-dose **210₁,210₂** compartments (with the multi-dose compartments **210₁,210₂** that are sized to store larger amounts of treatment agent as compared to the mono-dose compartments **230₁,230₂**).

Forming the multi-dose compartments **210₁,210₂** behind the mono-dose compartments **230₁,230₂** is advantageous in that a low or relatively low extraction of the drawer **115** is required for allowing the user to load the treatment agents in the mono-dose compartments **230₁,230₂** (on the contrary, forming the mono-dose compartments **230₁,230₂** behind the multi-dose compartments **210₁,210₂** would dramatically impair the mechanical stability of the drawer **115**, for example when extracting the drawer **115** to load the treatment agents in the mono-dose compartments **230₁,230₂** and a certain amount of treatment agent is still stored in one or more of the multi-dose compartments **210₁,210₂**): this is especially true in the exemplary considered embodiment in which the mono-dose compartments **230₁,230₂** are formed side by side along the transversal direction **Y**, in that a same low extraction of the

drawer **115** is required for allowing the user to load treatment agent in any one of the mono-dose compartments **230₁,230₂**.

As mentioned above, each pump actuation part **225₁,225₂** has a suction side in fluid communication with the respective multi-dose compartment **210₁,210₂** for drawing up the treatment agent dose therefrom, and a delivery side in fluid communication with the respective channel **215₁,215₂** for delivering the treatment agent dose thereto.

Preferably, the drawer **115** comprises a suction pipe **235₁,235₂** (visible in **Figures 2A** and **2C**) coupling the suction side of the pump actuation part **225₁,225₂** to an interior of the multi-dose compartment **210₁,210₂** for drawing up the treatment agent dose therefrom, and a delivery pipe **240₁,240₂** (visible in **Figure 2D**) coupling the delivery side of the pump actuation part **225₁,225₂** to an interior of the channel **215₁,215₂** for delivering the treatment agent dose thereto.

The suction pipe **235₁,235₂** is preferably arranged, in the interior of the respective multi-dose compartment **210₁,210₂**, proximate to a bottom wall of the multi-dose compartment **210₁,210₂**, so as to allow drawing up of treatment agent doses even when the multi-dose compartment **210₁,210₂** is almost empty. In order to make drawing up of treatment agent doses even more effective, the bottom wall of each multi-dose compartment **210₁,210₂** may advantageously be slanted (or at least slightly slanted), in such a way that the treatment agent contained in the multi-dose compartment **210₁,210₂** is allowed to be gathered as much as possible towards the respective suction pipe **235₁,235₂**.

The delivery pipe **240₁,240₂** preferably opens to the interior of the respective channel **215₁,215₂**, preferably between (for example, in the middle or substantially in the middle of) the top channel input and the bottom channel output thereof.

Each pump actuation part **225₁,225₂** comprises a respective pumping member adapted to push a quantity of the washing agent contained in a respective multi-dose compartment **210₁,210₂** through the respective suction **235₁,235₂** and delivery **240₁,240₂** pipes and, therefore, towards the mixing region of the drawer seat **120**.

As mentioned above, the pump actuation part **225₁,225₂** of the pumping system is adapted to mechanically couple, in the retracted position of the drawer **115**, with respective one or more electrically-operated pump driving parts (for example , with a respective electrically-operated pump driving part) of the pumping system provided in the drawer seat **120** for allowing driving of the pump actuation part **225₁,225₂**.

Each electrically-operated pump driving part may for example comprise an electric motor **245₁,245₂** (the electric motor **245₁** being visible in **Figure 2E**) selectively actuatable (*e.g.*, by means of an electronic control unit and of an electric power supply unit, not shown) for operating the respective pumping member **225_{1,P},225_{2,P}** (in alternative embodiments of the present invention, a single electric motor may be provided in order to selectively operate both the pumping members **225_{1,P},225_{2,P}**), and an output shaft **245_{1,S},245_{2,S}** (the output shaft **245_{1,S}** being visible in **Figure 2E**) adapted to be fitted into a corresponding seat of the respective pumping member **225_{1,P},225_{2,P}**. Advantageously, the output shaft **245_{1,S},245_{2,S}** and the respective seat of the pumping member **225_{1,P},225_{2,P}** have mutually complementary shapes (the output shaft **245_{1,S},245_{2,S}** having for example a multi-lobed shape or a star shape), so as to couple or engage with each other when the drawer **115** is moved to the retracted position. More advantageously, each seat is torsionally supported by the respective pumping member **225_{1,P},225_{2,P}**, whereby the coupling between each output shaft **245_{1,S},245_{2,S}** and the respective seat takes place in a dampened manner and even if their complementary shapes are not perfectly aligned when drawer **115** is pushed to the retracted position.

Preferably, the suction **235₁,235₂** and delivery **240₁,240₂** pipes are in the form of deformable tubes, each pumping member **225_{1,P},225_{2,P}** preferably comprising a peristaltic rotor (not shown) torsionally supporting, *e.g.* in a substantially central position thereof, the respective seat, and being adapted to hydraulically cooperate with the respective deformable tube. More preferably, each peristaltic rotor comprises one or more projecting portions (*e.g.* in the form of rollers, not visible) adapted to be arranged in contact with the walls of the respective deformable tube and capable of

locally compressing it, thus generating a consequent narrowing that allows the fluid (*i.e.*, the treatment agent dose(s)) to move during the rotation of the peristaltic rotor.

As visible in the figures, the pumping members **225_{1,P}**, **225_{2,P}** and the suction **235₁**, **235₂** and delivery **240₁**, **240₂** pipes associated therewith are advantageously enclosed, on a rear side of the drawer **115** (rear with respect to the drawer front along the sliding direction **X**), by a rear wall **210_R** of the drawer body **210**. More preferably, the rear wall **210_R** comprises openings (two openings **210_{R,O1}**, **210_{R,O2}** in the example at issue), through which the output shafts **245_{1,S}**, **245_{2,S}** of the electric motors **245₁**, **245₁** are able to pass for being coupled with the pumping members **225_{1,P}**, **225_{2,P}** (particularly, with the seats thereof). Even more preferably, as illustrated, the openings **210_{R,O1}**, **210_{R,O2}** are delimited by walls (*e.g.*, tubular walls) projecting along the sliding direction **X** from the rear wall **210_R** of the drawer body **210**; these projecting walls advantageously have centering, aligning and guiding functions for the output shafts **245_{1,S}**, **245_{2,S}** to be passed into the openings **210_{R,O1}**, **210_{R,O2}**.

As visible in **Figures 2B** and **2F**, the electric motors **245₁**, **245₁** are advantageously enclosed in a motor shell **250**, preferably fixed on the drawer seat **120** (and, hence, separate from drawer body **210**) and facing the rear wall **210_R** of the drawer **115** along the sliding direction **X**. The motor shell **250** is preferably provided with openings, not shown, through which the output shafts **245_{1,S}**, **245_{2,S}** of the electric motors **245₁**, **245₁** project: in this way, when the drawer **115** is moved to the retracted position (*i.e.*, towards the motor shell **250**), the output shafts **245_{1,S}**, **245_{2,S}** of the electric motors **245₁**, **245₁** engage the pumping members **225_{1,P}**, **225_{2,P}**, thus allowing electrical connection therebetween.

The drawer **115** allows ensuring safe and reliable electrical connections among the electric motors **245₁**, **245₁**, the electronic control unit and the electric power supply unit, in that such electrical connections are substantially unaffected by movement of the drawer **115** from the retracted position to the extracted position; on the contrary, the movement of the drawer **115** between the retracted position and the extracted position only implies a mechanical coupling and decoupling between the pump

actuation parts **225₁,225₂**, particularly the pumping members **225_{1,P},225_{2,P}** thereof, and the electrically-operated pump driving parts, particularly the electric motors **245₁,245₂** and the output shafts **245_{1,S},245_{2,S}** thereof.

Moreover, an electric insulation between the drawer **115** and the electric motors **245₁,245₂** is obtained, since the electric motors **245₁,245₂** (and the respective electrical connections with the electronic control unit and the electric power supply unit) are physically separate from drawer portions (such as the multi-dose compartments **210₁,210₂** and the channels **215₁,215₂**) experiencing treatment agent and/or water passage.

Furthermore, the presence of a single, mechanical removable constraint between the electric motors **245₁,245₁** and the pumping members **225_{1,P},225_{2,P}** allows a simplified and ergonomic operating mode for a user of the laundry appliance **100**, in that no periodic control of possible electric disconnections of the electric motors **245₁,245₁** from the electronic control unit and/or the electric power supply unit (*e.g.*, due to drawer **115** movement) is required.

In addition, the drawer **115** may be completely extracted from the drawer seat **120** in a simple manner, for example for cleaning or washing operations to be performed on the drawer **115**, without having to worry about preserving the integrity of the electrical connections. **Figure 2F** shows the drawer **115** completely extracted from the drawer seat **120**: this is advantageously achieved by means of an extraction component (visible in **Figure 2F** and globally denoted by the number reference **210_E**) allowing a releasable attachment or connection or coupling or fitting of the drawer **115** to the drawer seat **120**. A detailed description of the extraction component **210_E** (and of embodiments thereof) can be found in EP2876197, which is herein incorporated by reference.

As visible in **Figure 2F**, the drawer **115** preferably comprises a drawer body cover **210_C** for covering the drawer body **210**. More preferably, the drawer body cover **210_C** is configured to cover the rear region of the drawer body **110** in correspondence of the multi-dose compartments **210₁,210₂**, thus leaving uncovered both the channels

215₁,215₂, and particularly the top channel inputs thereof (which can therefore be accessed by water fed by a water distribution system, discussed in the following) and the front region of the drawer body **210** (and hence the and mono-dose compartments **230₁,230₂**, which can therefore be directly accessed from above for loading the treatment agents therein).

Even more preferably, the drawer body cover **210_C** comprises one or more access openings, not shown, each one for accessing a respective multi-dose compartment **210₁,210₂** for loading the treatment agent therein; in the example at issue in which the drawer body **210** comprises two multi-dose compartments **210₁,210₂**, two access openings are provided in the drawer body cover **210_C**.

The access openings may advantageously be formed in the drawer body cover **210_C** side by side along the transversal direction **Y**. More advantageously, the access openings may be formed in proximity of the front region of the drawer body **210** (and, hence, in proximity of the mono-dose compartments **230₁,230₂**): therefore, a low or relatively low extraction of the drawer **115** is required for allowing the user to load the treatment agents in the multi-dose-compartments **210₁,210₂** (an excessive extraction of the drawer **115** would instead impair the mechanical stability of the drawer **115**, essentially due to its elongated shape and/or to its relatively heavy weight, especially when treatment agents are contained therein). Even more advantageously, as visible in **Figure 2F**, the access openings are formed at such a distance (along the longitudinal direction **X**) from the mono-dose compartments **230₁,230₂** (or from the drawer handle **205**, when no mono-dose compartments **230₁,230₂** are provided) that a free region **210_{C,F}** is defined in the drawer body cover **210_C**: the free region **210_{C,F}** of the drawer body cover **210_C** may for example be adapted to contain one or more pieces of information for the user (such as information about correct dosages of the treatment agents according to treatments agents and/or water chemical parameters, and/or general indications or instructions about a correct operation or setting of the auto-dosing functionality).

Preferably, one or more access components may be provided for selectively

covering and uncovering the access openings thereby respectively preventing and allowing access to the respective multi-dose compartments **210₁**, **210₂** (in the exemplary considered embodiment, no access components are provided for selectively covering and uncovering the mono-dose compartments **230₁**, **230₂**, however this should not be construed as a limitation). As visible in **Figure 2F**, the access components comprises a single door **210_d**, for example a flap door pivotally coupled to the drawer body cover **210_c** so as to be actuatable by the user between an open position and a closed position for jointly uncovering and covering, respectively, both the access openings - in any case, in alternative embodiments of the present invention, not shown, two doors may be provided, each door being for example associated with a respective access opening, and hence with a respective multi-dose compartment **210₁**, **210₂**.

As mentioned above, the laundry appliance **100** preferably comprises a water distribution system, visible in **Figures 2G** and **2H** and denoted as a whole by the number reference **255**. Particularly, **Figure 2G** shows a top view of the drawer seat **120** (without an upper plate thereof) and of the drawer **115** in the retracted position within it, and **Figure 2H** shows an enlarged view of a portion of the water distribution system **255**.

The water distribution system **255** preferably comprises a water duct system **260**. The water duct system **260** advantageously forms a top of the drawer seat **120**, thus allowing the water to be fed to the channels **215₁**, **215₂** (and/or to the mono-dose compartments **230₁**, **230₂**, when provided) from above. Particularly, in the preferred embodiment herein considered, the water distribution system **255** comprises a (*e.g.*, plastic) lower plate **255_L** (visible in **Figures 2G** and **2H**) including the water duct system **260** (the water duct system **260** being for example formed in a single piece with the lower plate **255_L**, *e.g.* by injection moulding techniques), and a (*e.g.*, plastic) upper plate **255_U** (visible in **Figure 2F**) coupled to the lower plate **255_L** (*e.g.*, by welding and/or gluing and/or joint) and covering it. Therefore, in use, water flows in the water duct system **260** between the lower **255_L** and upper **255_U** plates of the water distribution system **255**.

As visible in **Figures 2G and 2H**, the water duct system **260** preferably comprises two or more input water ducts each one selectable for water passage therethrough, and one or more output water ducts each one selectable for water passage therethrough according to the input water duct(s) being selected.

5 As will be better understood from the following discussion, in order to achieve a reduced number of components (and, hence, an architectural simplicity of the laundry appliance **100**), the number of input water ducts is conveniently lower than the number of output water ducts: in the example at issue, two input water ducts **260_{IN,A}**, **260_{IN,B}** and three output water ducts **260_{OUT,A}**, **260_{OUT,B}**, **260_{OUT,AB}** are advantageously
 10 provided. More advantageously, the two input water ducts **260_{IN,A}**, **260_{IN,B}** open to an intersection area **260_x** of the water duct system **260**, from which the three output water ducts **260_{OUT,A}**, **260_{OUT,B}**, **260_{OUT,AB}** branch in respective directions (namely, two substantially side direction and one substantially central direction).

Preferably, each output water duct **260_{OUT,A}**, **260_{OUT,B}**, **260_{OUT,AB}** has a
 15 respective end **A,B,AB** placed above a respective region of the drawer **115** when the latter is in the retracted position within the drawer seat **120**, and fluidly communicating with a respective underlying region of the drawer **115**. More preferably, the lower plate **255_L** comprises, in correspondence of the ends **A,B,AB** of the output water ducts **260_{OUT,A}**, **260_{OUT,B}**, **260_{OUT,AB}**, one or more holes (*i.e.*, through holes)
 20 **255_{LH,A}**, **255_{LH,B}**, **255_{LH,AB}** allowing the passage of water from the output water ducts **260_{OUT,A}**, **260_{OUT,B}**, **260_{OUT,AB}** to the underlying regions of the drawer **115**.

In the exemplary considered embodiment, the ends **A,B,AB** of the output water ducts **260_{OUT,A}**, **260_{OUT,AB}**, **260_{OUT,B}** are located above the mono-dose compartment **230₁**, the mono-dose compartment **230₂** and the channels **215₁**, **215₂**, respectively.
 25 Therefore, the output water duct **260_{OUT,A}** is adapted to feed water to the mono-dose compartment **230₁**, the output water duct **260_{OUT,AB}** is adapted to feed water to the mono-dose compartment **230₂**, and the output water duct **260_{OUT,B}** is adapted to feed water to the channels **215₁**, **215₂**. In this embodiment, the water duct system **260** comprises a single output water duct (namely, the output water duct **260_{OUT,B}**) adapted

to feed water to the channels **215₁**, **215₂** concurrently (*i.e.*, substantially regardless of the specific multi-dose compartment **210₁**, **210₂** from which the treatment agent dose(s) is/are actually drawn up). This is a particularly advantageous embodiment of the present invention that allows keeping clean the channels **215₁**, **215₂** even when not
5 used: considering for example that a treatment agent dose is taken from the multi-dose compartment **210₁**, and hence passed to the channel **215₁** to be directed towards the mixing region of the drawer seat **120**, feeding water also the channel **215₂** (in addition to the channel **215₁**) may contribute to remove residues of treatment agents on the channel walls (and due, for example, to previous washing cycles). However, although
10 a single water feeding duct associated with both channels **215₁**, **215₂** is herein assumed by way of example, embodiments of the present invention may also provide a plurality of (*i.e.*, two or more) water feeding ducts each one associated with a respective channel (for example, a respective one of a plurality of channels).

Advantageously, the water distribution system **255** comprises two inlet
15 connectors **265_A**, **265_B** connectable to a water source (for example, a cold water source), not shown, the water source for example comprising the plumbing of the building in which the laundry appliance **100** is installed. Each inlet connector **265_A**, **265_B** is for example associated with a respective input water duct **260_{IN,A}**, **260_{IN,B}**, *i.e.* each inlet connector **265_A**, **265_B** is connected to the respective input water duct
20 **260_{IN,A}**, **260_{IN,B}** for feeding it with water from the water source. In alternative embodiments of the present invention, not shown, a different number of inlet connectors may be provided, *e.g.* depending on the number of output water ducts and/or on the number and type of water sources: just as an example, additionally to the inlet connectors **265_A**, **265_B**, one or more further inlet connectors, for example
25 connectable to a warm or hot water source (not shown), may be provided.

The inlet connectors **265_A**, **265_B** are advantageously connected to the water source through respective water valves (for example, electromagnetic water valves) **270_A**, **270_B** of the water distribution system **255** (visible in **Figures 2F** and **2H**).

The water valves **270_A**, **270_B** are for example controlled by the control unit of the laundry appliance **100**, such that when the water valve **270_A**, **270_B** is activated, a water flow is passed through the inlet connector **265_A**, **265_B** into the respective input water duct **260_{IN,A}**, **260_{IN,B}**, then into the respective output water duct **260_{OUT,A}**, **260_{OUT,B}**, and hence into the underlying drawer region fluidly communicating with it (in the example at issue, the mono-dose compartment **230₁** and the channels **215₁**, **215₂**, respectively); when instead both water valves **270_A**, **270_B** are concurrently activated, the crossing of the water flows at the intersection area **260_X** causes a resultant water flow in the central direction, which is fed into the central output water duct **260_{OUT,AB}**, and hence into the underlying chamber communicating with it (in the example at issue, the mono-dose compartment **230₂**).

Naturally, in order to satisfy local and specific requirements, a person skilled in the art may apply to the invention described above many logical and/or physical modifications and alterations. More specifically, although the invention has been described with a certain degree of particularity with reference to preferred embodiments thereof, it should be understood that various omissions, substitutions and changes in the form and details as well as other embodiments are possible. In particular, different embodiments of the invention may even be practiced without the specific details (such as the numeric examples) set forth in the preceding description for providing a more thorough understanding thereof; on the contrary, well known features may have been omitted or simplified in order not to obscure the description with unnecessary particulars.

CLAIMS

1. Laundry treatment appliance (100) comprising a drawer (115) adapted to slide within a drawer seat (120) along a sliding direction (X), the drawer comprising, along the sliding direction (X) from a drawer front:

- 5 - a handle (205) forming the drawer front;
- behind the handle (205), at least one compartment (210₁,210₂) adapted to contain multiple doses of at least one treatment agent;
- behind the at least one compartment (210₁,210₂), at least one channel (215₁,215₂) associated with the at least one compartment (210₁,210₂) for channelling
- 10 water and at least one treatment agent dose of the at least one laundry treatment agent towards a mixing region (220_{BW}) of the drawer seat (120) allowing a mixture between the water and the at least one treatment agent dose;
- behind the at least one channel (215₁,215₂), at least one pump actuation part (225₁,225₂) having a suction side in fluid communication with the at least one
- 15 compartment (210₁,210₂) for drawing up the at least one treatment agent dose therefrom, and a delivery side in fluid communication with the at least one channel (225₁,225₂) for delivering the at least one treatment agent dose thereto.

2. The laundry treatment appliance (100) according to claim 1, wherein the

20 drawer (115) is adapted to slide within the drawer seat (120) between an extracted position and a retracted position, and wherein the drawer seat (120) comprises at least one electrically-operated pump driving part (245₁,245₂,245_{1,s},245_{2,s}) that, in the retracted position of the drawer (115), is adapted to mechanically couple with the at least one pump actuation part (225₁,225₂) for allowing driving the pump actuation part

25 (225₁,225₂).

3. The laundry treatment appliance (100) according to claim 1 or 2, wherein the at least one channel (215₁,215₂) allows the water and the at least one treatment agent dose to fall towards the mixing region (220_{BW}) of the drawer seat (120) by

gravity.

4. The laundry treatment appliance (100) according to claim 3, wherein the at least one channel (215₁,215₂) comprises a top channel input for receiving the water and a bottom channel output, in operation the bottom channel output of the at least one channel (215₁,215₂) facing said mixing region (220_{BW}) of the drawer seat (120) for delivering the water and at least one treatment agent dose thereto.

5. The laundry treatment appliance (100) according to any of the preceding claims, further comprising at least one suction pipe (235₁,235₂) coupling the suction side of the at least one pump actuation part (225₁,225₂) to an interior of the at least one compartment (210₁,210₂) for drawing up the at least one treatment agent dose therefrom, and at least one delivery pipe (240₁,240₂) coupling the delivery side of the at least one pump actuation part (225₁,225₂) to an interior of the at least one channel (215₁,215₂) for delivering the at least one treatment agent dose thereto.

6. The laundry treatment appliance (100) according to any of the preceding claims, further comprising a water distribution system (255) having at least one water feeding duct (260_{OUT,B}) adapted to feed water to the at least one channel (215₁,215₂), the at least one water feeding duct (260_{OUT,B}) being part of a top of the drawer seat (120) thereby allowing the water to be fed to the at least one channel (215₁,215₂) from above.

7. The laundry treatment appliance (100) according to claim 6, wherein the at least one water feeding duct (260_{OUT,B}) comprises a single water feeding duct associated with the at least one channel (215₁,215₂) or a plurality of water feeding ducts each one associated with a respective one of the at least one channel (215₁,215₂).

8. The laundry treatment appliance (100) according to claim 6 or 7, wherein

the water distribution system (255) comprises first (260_{IN,A}) and second (260_{IN,B}) input water ducts each one selectable for water passage therethrough, and first (260_{OUT,A}), second (260_{OUT,B}) and third (260_{OUT,AB}) output water ducts each one selectable for water passage therethrough according to the first (260_{IN,A}) and/or second (260_{IN,B}) input water ducts being selected, the at least one water feeding duct comprising one or more among the first (260_{OUT,A}), second (260_{OUT,B}) and third (260_{OUT,AB}) output water ducts.

9. The laundry treatment appliance (100) according to any of the preceding claims, wherein said at least one compartment (210₁,210₂) comprises two compartments (210₁,210₂) arranged side by side, each one of said two compartments (210₁,210₂) being adapted to contain multiple doses of a respective laundry treatment agent.

10. The laundry treatment appliance (100) according to claim 9, wherein said at least one channel (215₁,215₂) comprises two channels (215₁,215₂) each one associated with a respective one of said two compartments (210₁,210₂).

11. The laundry treatment appliance (100) according to claim 10 when depending on claim 6, 7 or 8, wherein the at least one water feeding duct (260_{OUT,B}) comprises a single water feeding duct (260_{OUT,B}) associated with both said two channels (215₁,215₂).

12. A drawer (115) for a laundry treatment appliance (100), the drawer (115) being adapted to slide, along a sliding direction (X), within a drawer seat (120) of the laundry treatment appliance (100), the drawer (115) comprising, along the sliding direction (X) from a drawer front:

- a handle (205) forming the drawer front;
- behind the handle (205), at least one compartment (210₁,210₂) adapted to

contain multiple doses of at least one treatment agent;

- behind the at least one compartment (**210₁**,**210₂**), at least one channel (**215₁**,**215₂**) associated with the at least one compartment (**210₁**,**210₂**) for channelling water and at least one treatment agent dose of the at least one laundry treatment agent towards a mixing region (**220_{BW}**) of the drawer seat (**120**) allowing a mixture between the water and the at least one treatment agent dose;

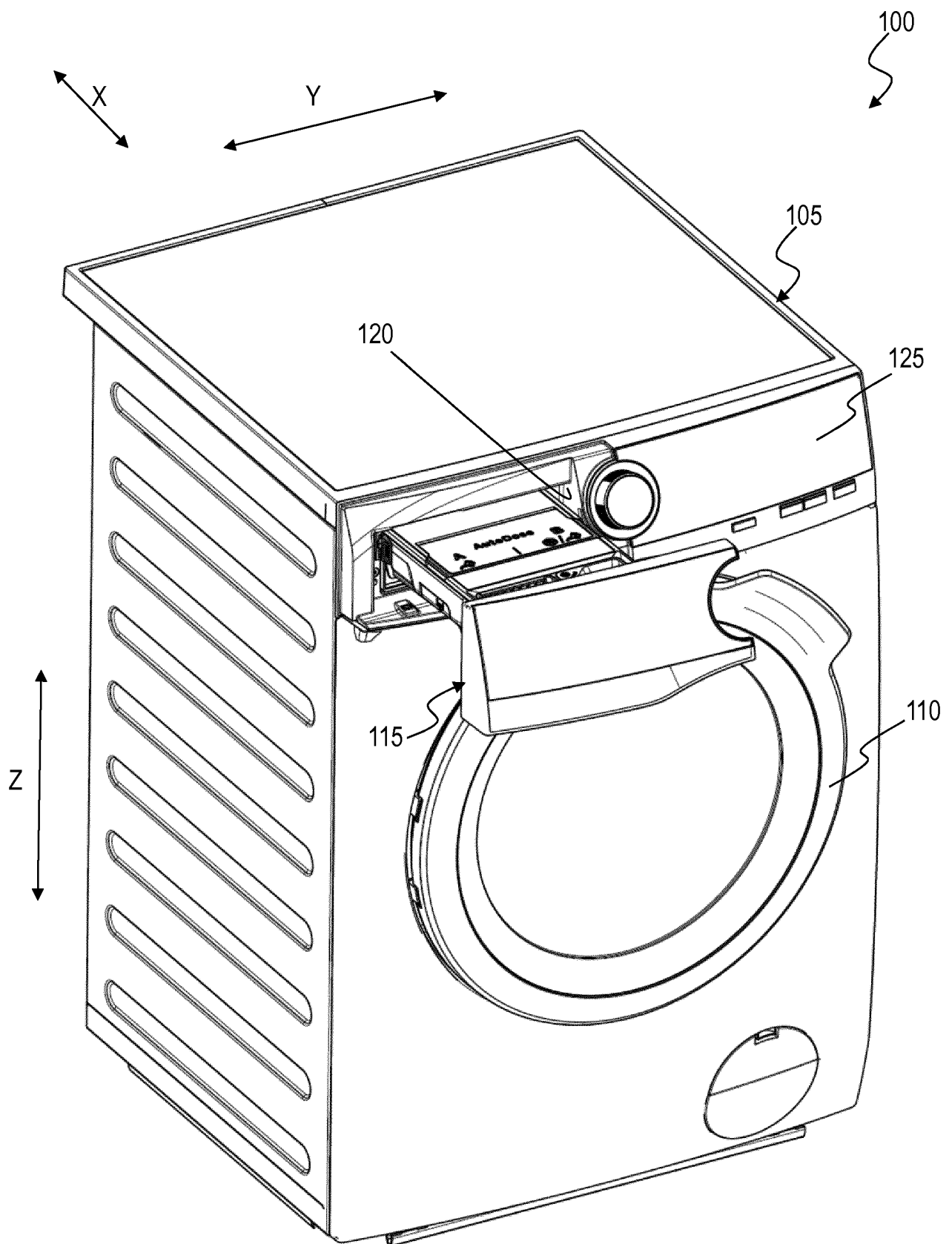
- behind the at least one channel (**215₁**,**215₂**), at least one pump actuation part (**225₁**,**225₂**) having a suction side in fluid communication with the at least one compartment (**210₁**,**210₂**) for drawing up the at least one treatment agent dose therefrom, and a delivery side in fluid communication with the at least one channel (**215₁**,**215₂**) for delivering the at least one treatment agent dose thereto.

13. The drawer (**115**) according to claim 12, wherein the drawer (**115**) is adapted to slide within the drawer seat (**120**) between an extracted position and a retracted position, in the retracted position of the drawer (**115**) the at least one pump actuation part (**225₁**,**225₂**) of the drawer (**115**) being adapted to mechanically couple with at least one electrically-operated pump driving part (**245₁**,**245₂**,**245_{1,s}**,**245_{2,s}**) provided on the drawer seat (**120**) for allowing driving of the pump actuation part (**225₁**,**225₂**).

14. The drawer (**115**) according to claim 12 or 13, further comprising at least one suction pipe (**235₁**,**235₂**) coupling the suction side of the at least one pump actuation part (**225₁**,**225₂**) to an interior of the at least one compartment (**210₁**,**210₂**) for drawing up the at least one treatment agent dose therefrom, and at least one delivery pipe (**240₁**,**240₂**) coupling the delivery side of the at least one pump actuation part (**225₁**,**225₂**) to an interior of the at least one channel (**215₁**,**215₂**) for delivering the at least one treatment agent dose thereto.

15. The drawer (**115**) according to claim 14 wherein the at least one suction

pipe (235₁,235₂) is arranged, in said interior of the at least one compartment (210₁,210₂), proximate to a bottom wall of the at least one compartment (210₁,210₂).

Figure 1A

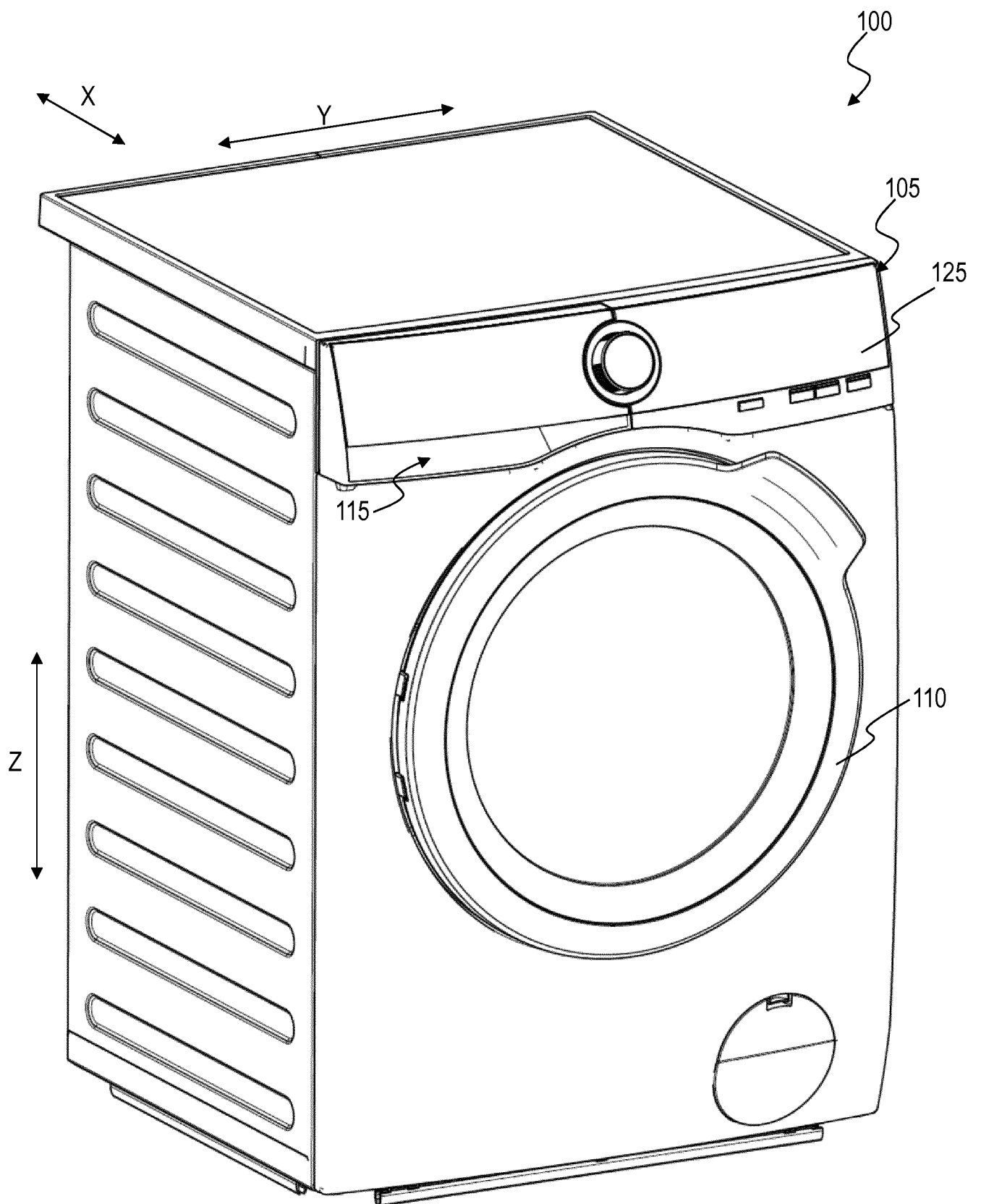
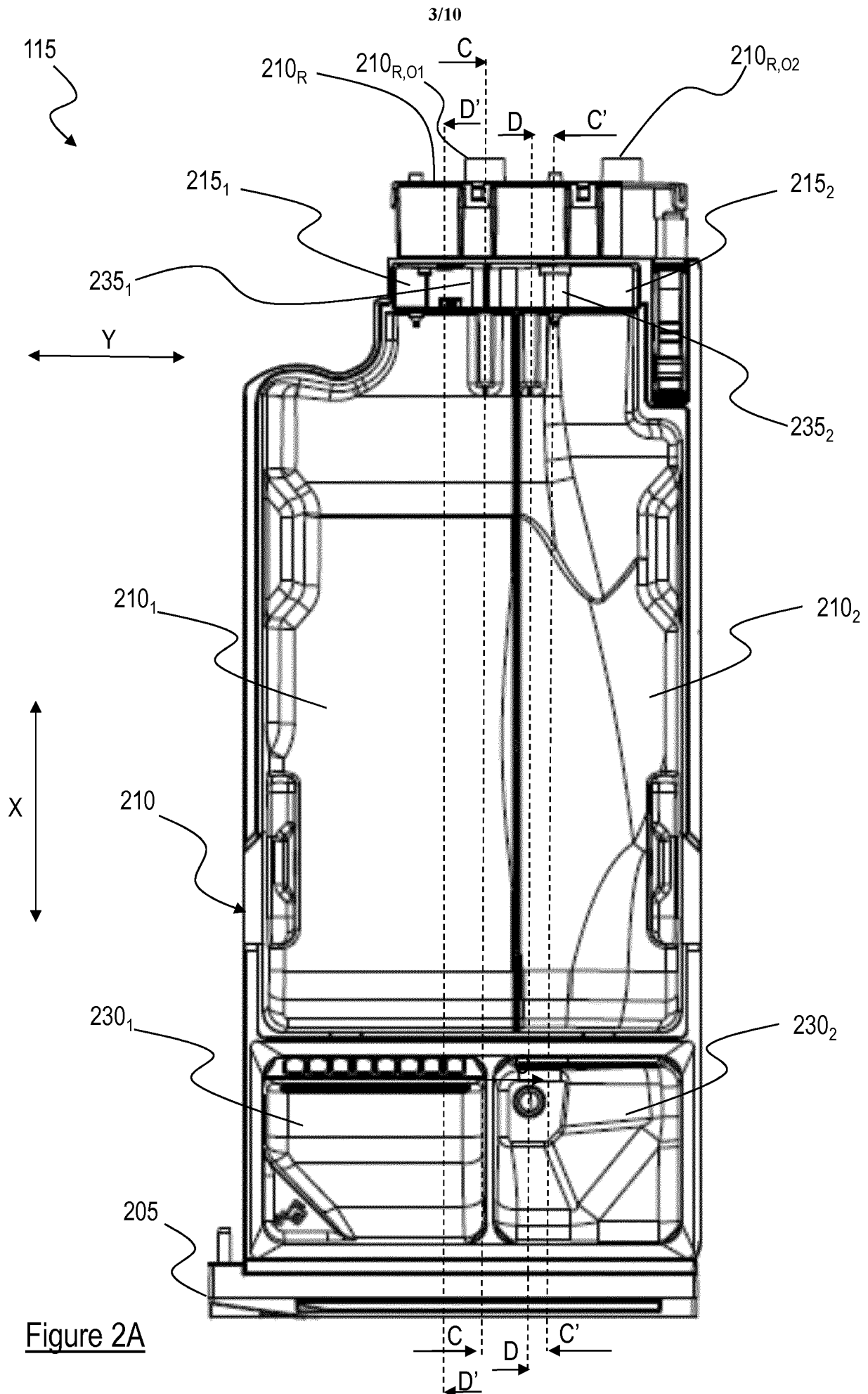


Figure 1B



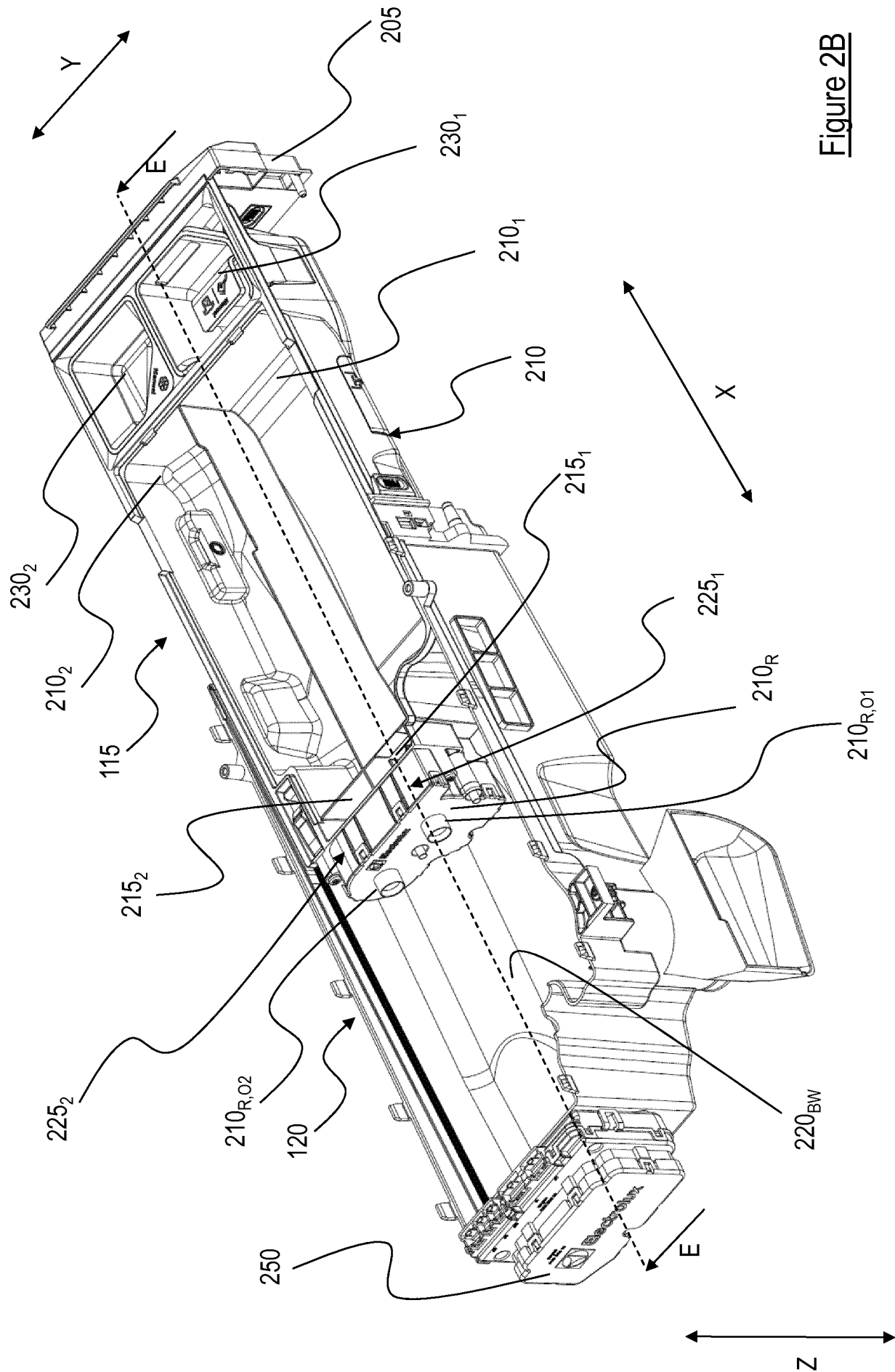


Figure 2B

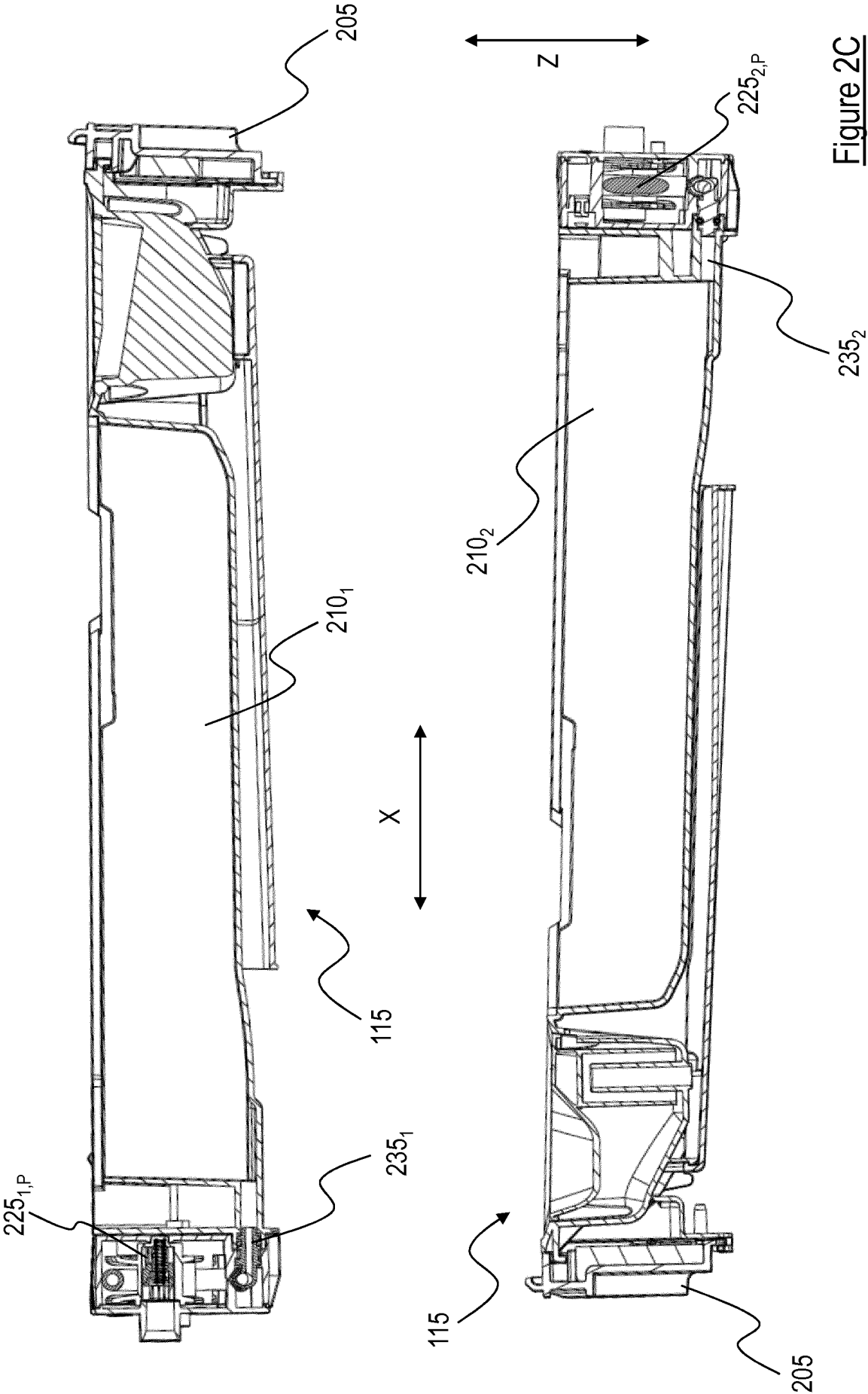
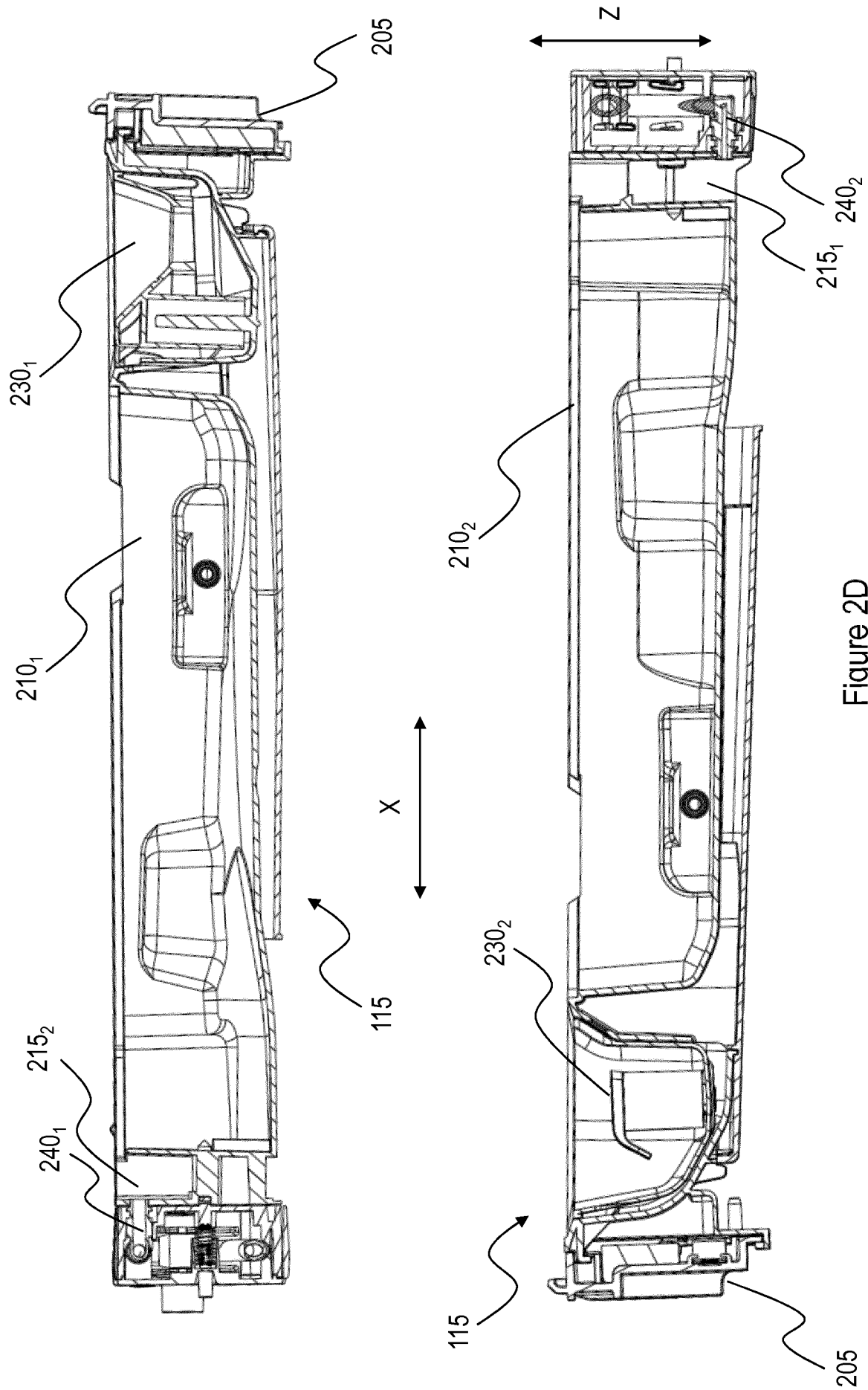


Figure 2C



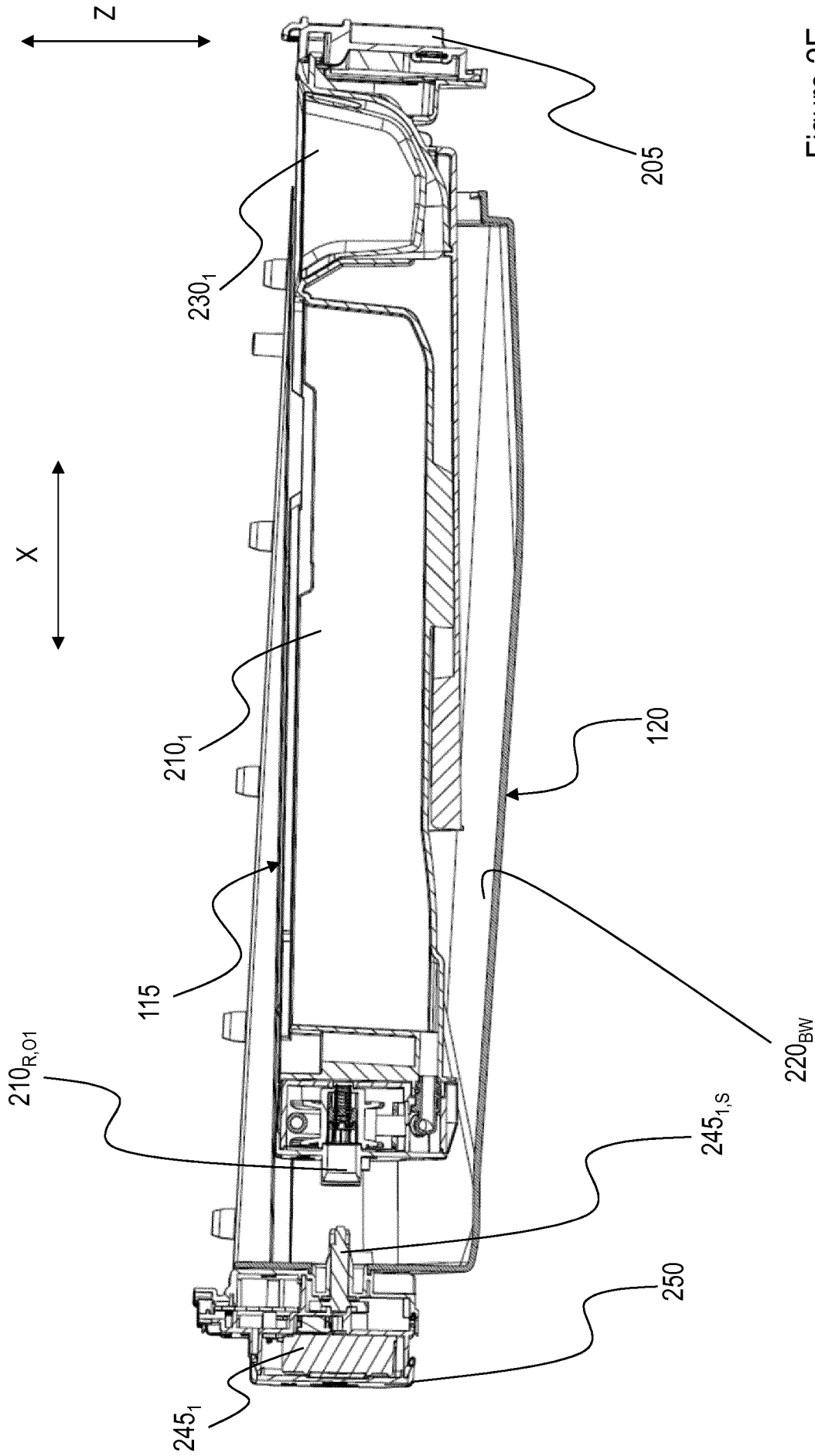


Figure 2E

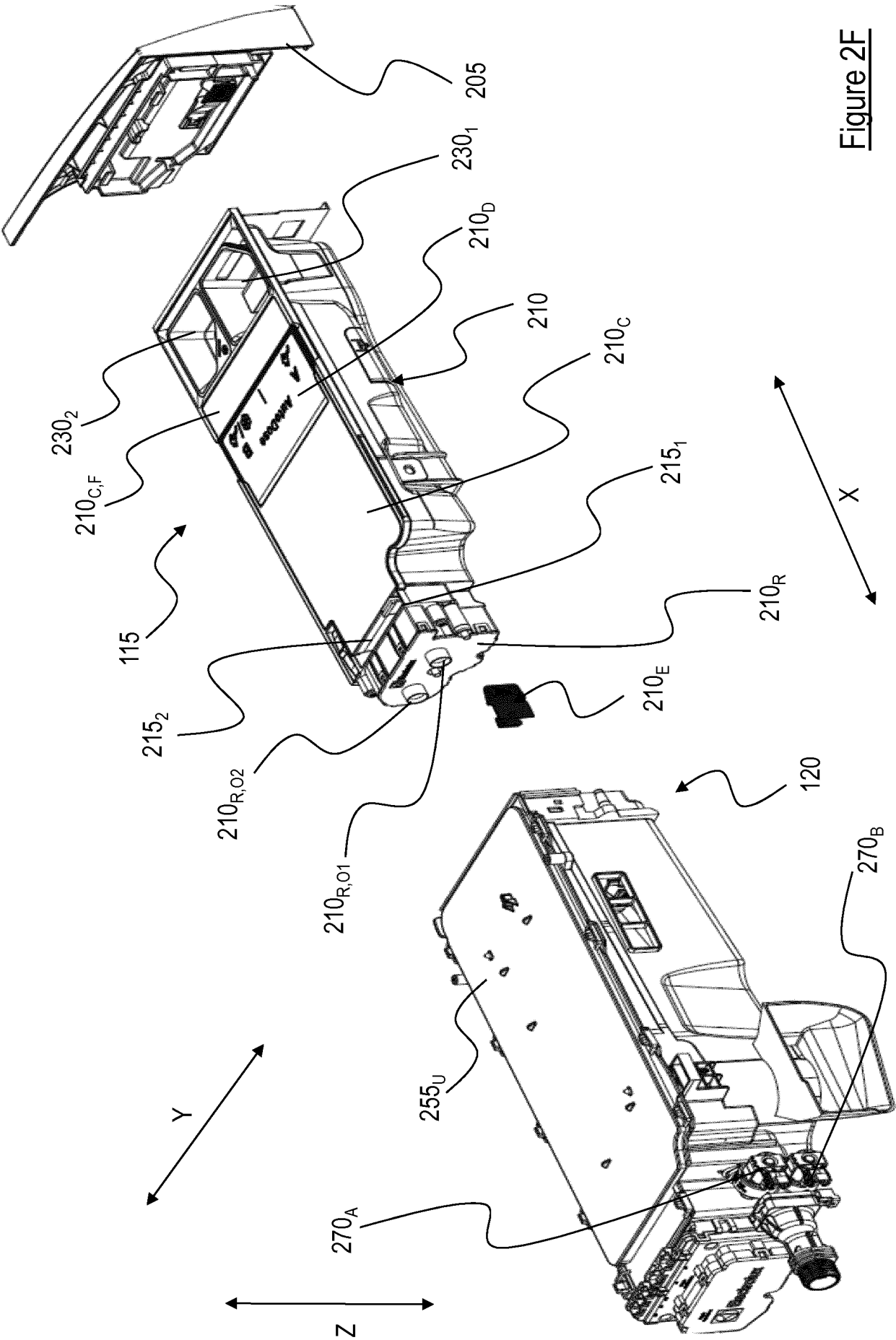


Figure 2F

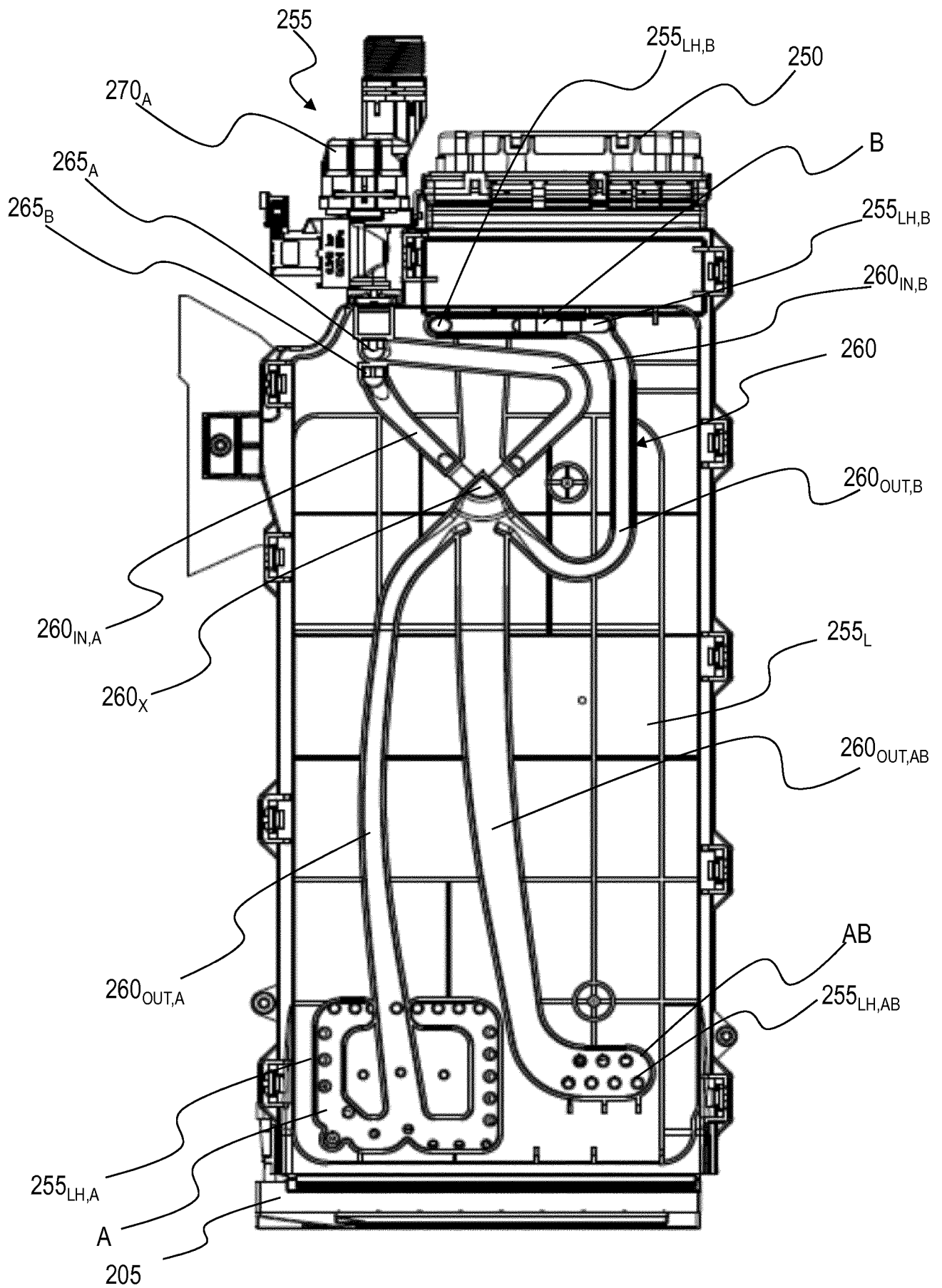


Figure 2G

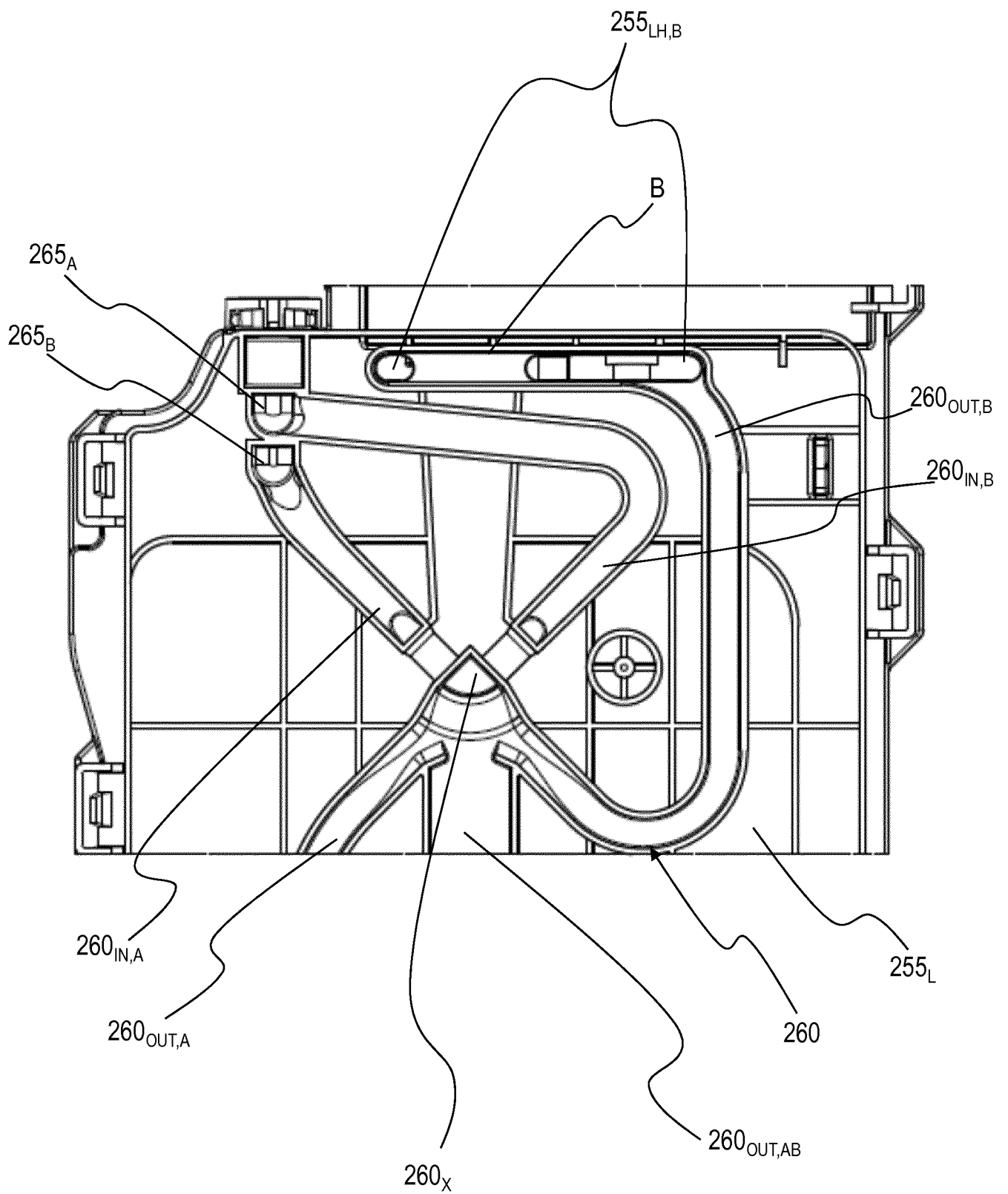


Figure 2H

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2019/072627

A. CLASSIFICATION OF SUBJECT MATTER
 INV. D06F39/02
 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)
 D06F

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 A	EP 2 251 481 A1 (ELECTROLUX HOME PROD CORP [BE]) 17 November 2010 (2010-11-17) paragraphs [0046] - [0054]; figures	1,2,5,9, 13,14 3,4,6-8, 10-12,15
A	----- WO 2015/074688 A1 (ELECTROLUX APPLIANCES AB [SE]) 28 May 2015 (2015-05-28) pages 19-21; figure 5	1-15
A	----- WO 2008/010671 A2 (LG ELECTRONICS INC [KR]; BAE SANG HUN [KR]; MOON JUNG WOOK [KR]; CHOI) 24 January 2008 (2008-01-24) paragraphs [0021] - [0024]; figure 2	1-15
A	----- KR 101 637 464 B1 (SAMSUNG ELECTRIC SERVICE CO LTD [KR]) 7 July 2016 (2016-07-07) figures	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

24 October 2019

Date of mailing of the international search report

04/11/2019

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2019/072627

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2251481	A1	17-11-2010	BR PI1014270 A2 05-04-2016
		CN 102421958 A 18-04-2012	
		EP 2251481 A1 17-11-2010	
		EP 3460120 A1 27-03-2019	
		PL 2251481 T3 30-08-2019	
		RU 2011150208 A 20-06-2013	
		US 2012096901 A1 26-04-2012	
		WO 2010130586 A1 18-11-2010	
WO 2015074688	A1	28-05-2015	AU 2013405844 A1 14-04-2016
			EP 3071742 A1 28-09-2016
			US 2016273150 A1 22-09-2016
			WO 2015074688 A1 28-05-2015
WO 2008010671	A2	24-01-2008	EP 2041358 A2 01-04-2009
			US 2009320313 A1 31-12-2009
			WO 2008010671 A2 24-01-2008
KR 101637464	B1	07-07-2016	NONE