(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 May 2019 (23.05.2019)

WIPO | PCT

(10) International Publication Number
WO 2019/096632 A1

(51) International Patent Classification:
F24C 15/32 (2006.01)

(21) International Application Number:
PCT/EP2018/080352

(22) International Filing Date:
06 November 2018 (06.11.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
17202380.6 17 November 2017 (17.11.2017) EP

(71) Applicant: **ELECTROLUX APPLIANCES AKTIEBOLAG** [SE/SE]; S:t Göransgatan 143, 105 45 Stockholm (SE).

(72) Inventors: **CARNEVALI, Marco**; Electrolux Italia S.p.A. - Forli factory Viale Bologna, 298, 47100 Forli (IT). **GUIDA, Nicola**; Electrolux Italia S.p.A. - Forli factory Viale Bologna, 298, 47122 Forli (IT). **FARALDI, Paolo**; Electrolux Italia S.p.A. - Forli factory Viale Bologna, 298, 47100 Forli (IT). **DELL'OLIO, Alberto**; Electrolux Italia S.p.A. - Forli factory Viale Bologna, 298, 47100 Forlì (IT).

(74) Agent: **RÖDER, Richard**; P. O. Box 1036, 90327 Nürnberg (DE).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,

(54) Title: HOUSEHOLD APPLIANCE COMPRISING A LIQUID TANK

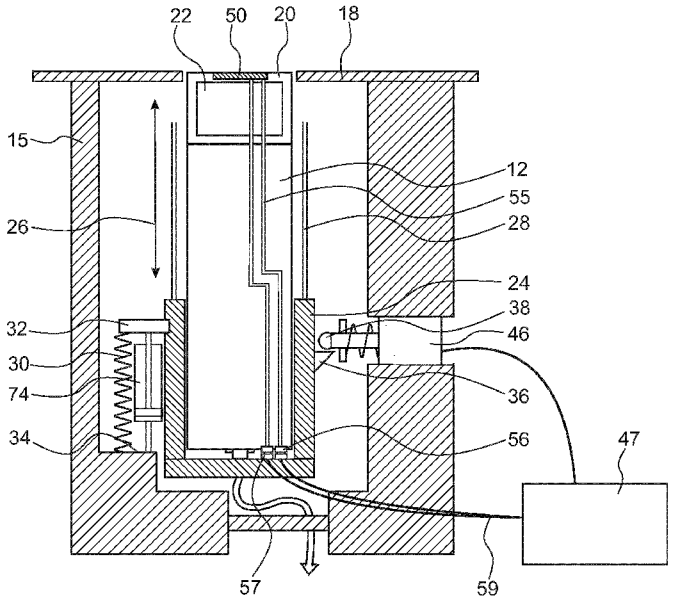

FIG. 3

(57) Abstract: A household appliance (10) is disclosed which comprises a liquid tank (12), wherein the tank is adapted for translational movement between a use position in which the tank is positioned within a5 housing (15) of the household appliance and a servicing positon in which the tank is at least partially extracted from the housing, the household appliance further comprises biasing means (30) for biasing the tank towards the servicing position, and releasable latch means (36; 38; 58) for selectively arresting10 the tank in the use position or releasing the tank for movement towards the servicing position. In accordance with the invention: the household appliance (10) further comprises a carriage (24) associated to the tank (12) and configured for translational15 movement along guide means (28) provided in the housing (15); the biasing means (30) comprises a spring element configured to be loaded when the tank (12) is moved from the servicing position towards the use position; and the latch means comprises:20 - a catch (36) provided at the carriage, - a locking

WO 2019/096632 A1

[Continued on next page]

OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

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

member (38; 58) located at the housing (15)which in the use position of the tank (12) engages the catch (36) to arrest the tank in the use position, and - release means (40; 62) for disengaging the locking member25 from the catch (36).

HOUSEHOLD APPLIANCE COMPRISING A LIQUID TANK

The present invention relates to a household appliance comprising a liquid tank, wherein the tank is adapted for translational movement between a use position in which the tank is positioned within a housing of the household appliance and a servicing positon in which the tank is at least partially extracted from the housing, the household appliance further comprising biasing means for biasing the tank towards the servicing position, and releasable latch means for selectively arresting the tank in the use position or releasing the tank for movement towards the servicing position.

The present invention is of particular advantage for household appliances that are equipped with liquid tanks that require frequent servicing, such as condensation dryers that collect water in a water tank, or food preparation ovens that provide a steaming function by which water or steam is fed into the cooking cavity during a cooking process. Whereas in a condensation dryer the tank is to be emptied preferably after each drying cycle, but at the latest when the tank is filled, in an oven having a steam generator, such as a boiler arrangement that is located outside the cooking cavity, or a pan that is located inside the cooking cavity in which water is heated and thus evaporated, the tank which feeds the steam generator always should be freshly filled when starting a cooking cycle, and further remaining water should be emptied from the tank after conclusion of a cooking cycle.

While in such household appliances the tank needs to be serviced frequently, so as to be filled, emptied or cleaned, the tank should be easily accessible, which however is

difficult to implement given the design constraints in modern household appliances. Thus there are household appliances on the market, in which the tank is hidden behind the front panel, which solution necessitates that the front panel needs to be removed or displaced so as to allow access to the tank, which not only requires a complicated and thus costly mechanics, but which also is disadvantageous in terms of handling.

In order to overcome these disadvantages, it was suggested in EP 2 522 915 A1 to provide for a household appliance in which the tank is located such that in the use position of the tank a front panel thereof is arranged flush with the front panel of the household appliance, which thus allows providing for a tank that is directly accessible, but nevertheless can be integrated into the front panel. Since in such a flush design the provision of handles or the like for manipulating the tank are to be avoided, in the household appliance suggested in EP 2 522 915 A1 the tank is provided with a retractable pulling element which carries a front panel that in the use position of the tank is located flush with the front panel of the household appliance, but which, similarly as a retractable ballpoint pen, can be brought into a position in which the front panel of the pulling element is located offset to the front panel of the household appliance and thus allows gripping of the tank, so that the tank can be pulled out for a distance to expose a filling opening of the tank.

Also in EP 2 550 902 A1 there is disclosed a household appliance in which the tank is located such that in the use position of the tank a front panel of the tank is arranged flush with the front panel of the household appliance. In order to move the tank into an extracted position so as to

expose a filling opening, the user has to push onto a front section of the tank which is exposed within the front panel of the household appliance. By pushing the tank for a certain distance inwards, a mechanism is released which holds the tank inside the household appliance, so that the tank can be exerted by a spring mechanism.

Common to the household appliances disclosed in EP 2 522 915 A1 and EP 2 550 902 A1 is that both require complicate mechanics for displacing the tank into a servicing position in which fresh water can be filled into the tank.

It is an object of the present invention to provide for a household appliance with a liquid tank, in which the tank is adapted for translational movement between a use position in which the tank is positioned within a housing of the household appliance and a servicing positon in which the tank is at least partially extracted from the housing, wherein complicate mechanics as they are required in the above prior art documents are not required to provide for a translational movement of the tank from a use position to a servicing positon.

In a household appliance comprising a liquid tank, wherein the tank is adapted for translational movement between a use position in which the tank is positioned within a housing of the household appliance and a servicing positon in which the tank is at least partially extracted from the housing, the household appliance further comprising biasing means for biasing the tank towards the servicing position, and releasable latch means for selectively arresting the tank in the use position or releasing the tank for movement towards the servicing position, the above object is solved in that the

household appliance further comprises a carriage associated to the tank and configured for translational movement along guide means provided in the housing, wherein the biasing means comprises a spring element configured to be loaded when the tank is moved from the servicing position towards the use position, and wherein the latch means comprises a catch provided at the carriage, a locking member located at the housing which in the use position of the tank engages the catch to arrest the tank in the use position, and release means for disengaging the locking member from the catch.

The household appliance of the present invention, which particularly may be a cooking oven, a steamer or a condensation dryer, comprises a carriage which provides for translational movement of the tank, such as a linear movement in a direction generally perpendicular to the front of the household appliance. The carriage is configured to load a spring when the tank is moved from the servicing position towards the use position in which the carriage and hence the tank is locked, wherein the spring acts as biasing means for the carriage, i.e. acts as an expulsion means for the tank which pushes the carriage and hence the tank outwards towards the servicing position when the lock is released by activating a release means for disengaging the locking member from the catch.

The present invention thus provides a household appliance in which the tank can be designed flush with the front panel of the household appliance and without means for manipulating the tank, such as a handle or a gripping orifice, so that the tank can be easily integrated into the design of the front panel, wherein there is provided in a simple and thus cost effective manner for means for ejecting the tank on request of the user.

The locking member may comprise a retractable piston or a rotatable hook which in the use position of the tank engages a catch provided at the carriage. Preferably, the locking member is biased towards engagement with the catch, so that the locking member snaps into engagement with the catch upon the tank reaching its use position.

In preferred embodiments, the catch comprises a ramp surface configured to displace the locking member when the tank is moved towards the use position and to release the locking member to engage the catch upon the tank reaching the use position. In such embodiments, the combination of catch and locking member provides for mutual locking, and releasing, respectively, wherein when shifting the tank inwardly into its use position, the locking member moves along the ramp surface of the catch, during which ramping movement the locking member is increasingly biased, wherein upon reaching the end of the ramp surface the locking member snaps back and thus locks the catch, in which position the tank is held against a biasing force in its use position. When the user wishes to displace the tank into its servicing position, the release means is activated so as to disengage the locking member from the catch in which manner the tank is released against its biasing force and thus is ejected for a certain distance, such as to expose a fill opening of the tank.

Preferably the household appliance comprises an electric drive for retracting the locking member out of its engagement with the catch, which allows releasing the tank to move towards its servicing position by activating a respective switching element. Alternatively or additionally, the electric drive also could be activated by the control of the household

appliance, so as to automatically eject the tank in the course of an operating program, such as in a dryer at the end of a drying operation.

In order to provide for ejection of the tank on request of the user, the household appliance further may comprise an actuation element for activating the electric drive, wherein the actuation element is positioned at a front panel of the household appliance or at a front panel of the liquid tank. The actuation element can be a switch, such as a touch sensitive element, that can be positioned at the tank or in proximity thereto.

In order to allow filling the tank by only a partial ejection of the tank, the tank advantageously comprises a fill opening in the upper side of the tank at the front end of the tank. In such embodiments, the servicing position, or a first servicing position, can be a position in which the tank is extracted to an extent such that the fill opening is exposed. A further servicing position can be a position, in which the tank is fully extracted from the household appliance, such that the tank can be carried to a tap for filling, or to a sink for emptying the tank.

The carriage can be fixedly connected to the tank or can be formed integrally with the tank, so that the tank and the carriage form a unitary component.

In the alternative, the tank can be removably connected to the carriage, such as in embodiments which shall allow a full extraction of the tank from the household appliance, so as to allow taking the tank to a tap or to a sink.

Whereas in such latter embodiments the releasable connection between the tank and the carriage can be implemented in any feasible manner, such as by providing for recesses or hooks at the tank (or the carriage) for accommodating corresponding pins that are provided at the carriage (or the tank, respectively), wherein for releasing the tank from the carriage the tank is to be lifted to disengage the pins from the grooves or hooks, in preferred embodiments the sliding means for accommodating the tank are oriented generally parallel to the guide means. For example, when the guide means for the carriage is configured for providing for a linear movement of the carriage relative to the housing, wherein for example a ball bearing slide may be provided as the guide means, the sliding means for accommodating the tank advantageously may comprise straight guide rails for guiding sliders of the tank. While when displacing the tank to its use position, the tank is withdrawn from the household appliance like a drawer, the tank can be removed from the household appliance, such as to fill the tank at a tap, by simply continuing such opening movement, i.e. by pulling at the tank in the direction of the opening movement by which the tank is released from the carriage.

In preferred embodiments, the household appliance further comprises a fluid coupling that provides for connection of the tank to a fluid line of the household appliance, such as in embodiments in which the household appliance is a steam oven, a fluid line that connects to a steam generator, or in embodiments in which the household appliance is a condensation dryer, a fluid line that connects to a condenser.

In order to provide for a quick-connection of the tank during insertion into or removal from the household appliance, the

household appliance can be provided with a fluid coupling that comprises a first member which is provided at the tank and a second member that is provided either at the carriage or at the housing and which is connected to a fluid line of the household appliance. That is, the fluid coupling can be designed to provide for a fluid connection to the tank when the tank is inserted into the carriage, in which case the second coupling member is provided at the carriage and is connected via a flexible hose to the fluid line of the household appliance. In the alternative, the second coupling member can be provided at the housing, i.e. is fixedly arranged in the housing of the household appliance, wherein the coupling to the tank is effected by setting the tank into the carriage and then moving the carriage and hence the tank towards the use position of the tank, in the course of which movement the fluid coupling is effected.

The household appliance further may comprise dampening means for slowing the movement of the carriage before the tank reaches the servicing position, so as to provide for a smooth stop of the tank when it reaches its servicing position.

Preferred embodiments of the present invention are described below by reference to the drawings in which:

Fig. 1 is a perspective view of a household appliance in accordance with the present invention.

Fig. 2 is a view similar to Fig. 1 with the tank fully extracted;

Fig. 3 is a sectional view of the household appliance shown in Figs. 1 and 2 with the tank in the use position;

Fig. 4 is a sectional view similar to Fig. 3 with the tank in a servicing position for filling the tank;

Fig. 5 is a sectional view similar to Figs. 3 and 4 during full extraction of the tank; and

Fig. 6 is a sectional view similar to Fig. 3 which illustrates an alternative embodiment.

In the exemplary embodiment illustrated in Fig. 1, the household appliance is an electric cooking oven that provides for a steaming function. Oven 10 comprises a cooking chamber into which steam can be applied from the steam generator which is fed with water from a water tank 12. In the embodiment shown in Fig. 1, water tank 12 is a generally box shaped container which in its use position is arranged in an upper section of the oven above the cooking chamber. Water tank 12 can be a molded plastic component which is designed for insertion into a respective receptacle 14 by an aperture 16 which is provided in the front panel 18 of the oven. At its front face, tank 12 is provided with a cover element 20, the shape of which corresponds to the shape of aperture 16. While in the embodiment illustrated in Fig. 1 the water tank 12 has the shape of a generally rectangular block having at least for a portion of its length a square cross-section, which water tank has a volume of about 1 liter, the tank of course can have any other size or cross-sectional shape, such as a circular or rectangular cross-sectional shape. Furthermore, the cover element 20 may have a shape that is different from the cross-sectional shape of the tank 12, so as to adapt the design of cover element 20 to the design of front panel 18. Thus, the tank 12 for example may have a circular

cross-sectional shape, but the cover element 20 may have a square shape.

Whereas in many cases it will be preferred that cover element 20 has a similar surface design as front panel 18, such as by producing cover element 20 and front panel 18 from the same material or by providing both these components with a same coating, cover element 20 also may have a design that differs from that of front panel 18 so as to provide for a signaling function of cover element 20.

Towards its front end tank 12 comprises a fill opening 22 via which water can be filled into the tank. While Fig. 1 shows tank 12 in an intermediate position as it will be attained during removal of the tank, it is to be understood that in order to enable filling of the tank, it is sufficient to eject the tank from the receptacle 14 only by a short distance which corresponds to the dimension of the fill opening 22 measured in the longitudinal direction of the tank, as will be explained in more detail by reference to Fig. 4.

Figs. 3 to 5 depict horizontal sectional views of the tank section of the household appliance shown in Figs. 1 and 2. In particular, Fig. 3 shows the tank 12 when in its use position, i.e. when fully inserted into a corresponding receptacle 14 provided within a housing 15 of oven 10. In the use position the front face of the tank which as shown in Fig. 1 may be formed by a cover element 20 is positioned flush with the front panel 18, so that the tank can be fully integrated into the front panel 18 so as to provide for a continuous and consistent design of the front panel. At its rearward portion, tank 12 is accommodated by a carriage 24. Carriage 24 is configured to be movable parallel to the longitudinal

direction of tank 12 as shown in Fig. 3 by arrow 26. To this end, there are provided guide rails 28 which support carriage 24 for movement between a first end position corresponding to the use position of the tank shown in Fig. 3, and a second end position shown in Fig. 4 in which the carriage 24 has been displaced outwardly so as to eject the tank by a length such that the fill opening 22 is fully accessible to allow filling of the tank. Whereas in the somewhat schematic views of Figs. 3 to 6 the carriage 24 is shown to extend so as to accommodate the rear portion of tank 12 it should be understood that in the preferred embodiments the carriage 24 is longer and thus, when in the position shown in Fig. 4, may extend to close to the rear side of front panel 18, which not only provides for a more stable support of the tank but which also facilitates inserting the tank into the carriage after the tank having been completely removed.

Carriage 24 is biased towards the second end position of Fig. 4 by means of a compression spring 30, which is positioned to extend between an attachment 32 at carriage 24 and a seat 34 of housing 15. In the use position of tank 12 in which spring 30 is in a compressed state, the carriage is held by means of a catch 36 provided at the carriage, which is engaged by a locking member 38, which in the embodiment depicted in Figs. 3 to 5 is biased towards the locking position by means of a spring biased piston 40. In particular, as illustrated in Figs. 3 to 5, catch 36 comprises a ramp surface 42, which when pushing the tank 12 and hence the carriage 24 inwardly so as to move the tank into its use position, displaces the locking member 38 against the biasing force of a biasing spring 44. When catch 36 passes the locking member 38 upon the tank reaching its use position, the locking member 38 is released and thus snaps back into the locking position shown in Fig. 3.

When tank 12 is to be ejected from receptacle 14, such as to fill or empty the tank, the engagement between catch 36 and locking member 38 is released by activating a release means, which in preferred embodiments is an electrically driven actuator. In the embodiment shown in Figs. 3 to 5 the release means comprises a solenoid actuator 46 which is configured to retract piston 40 and hence locking member 38 against the biasing force of biasing spring 44, so that the carriage 24 is pushed outwards by the force of compression 30 and thus the tank 12 is ejected into the servicing position illustrated in Fig. 4. Solenoid actuator 46 may be activated by applying an electrical signal, either user activated such as by pushing a respective switch, or automatically under the control of a controller 47 of the household appliance in the course of executing a control program. The switch for activating actuator 46 may be a switch 48 provided at the front panel 18 (see Fig. 1), a switch 50 that is provided in the cover element 20 of tank 12 (see Fig. 3), or may be a switch 52 which is provided at the front face of tank 12 and which can be activated by depressing a button element 54 which in the embodiment illustrated in Fig. 2 replaces cover element 20. In such latter embodiment the tank preferably comprises a wire harness 55 that is embedded in a wall of the tank 12 and which connects the switch 52 with contacts 56 provided at the rear wall of the tank. As illustrated in Fig. 3, in the use position of the tank, contacts 56 electrically engage contacts 57 provided at the rear wall of the carriage 24, which are connected by wires 59 to controller 47.

Whereas in such embodiment the contacts 56 and 57 serve for connecting activation switch 50 to controller 47, contacts 56 and 57 also can be used as means for detecting whether the

tank 12 is properly inserted into carriage 24. That is, contacts 56 and 57 also may be provided in embodiments in which an activation switch is located not at the tank but at the front panel, such as switch 48 shown in Fig. 1, in which case the contacts 56 that are provided at the tank can be connected to each other and a determination can be made whether the tank is properly inserted by checking whether a signal applied to one of contacts 56 and 57 also is present at the respective other one of the two contacts.

Instead of a release means that can be activated electrically, there also can be provided a manually releasable locking member. For example, as is illustrated in Fig. 6, there can be provided a rotatable latch 58 having a first leg 61, which is biased into engagement with the catch 36 by a biasing spring 60 and which can be released from its engagement with the catch 36 by means of a push rod 62. To this end push rod 62 is arranged to extend between a push button 64 and a second leg 66 of the rotatable latch 58. By pressing push button 64 which in the locking position of the first leg 61 projects from front panel 18 (see also Fig. 1), the rotatable latch 58 is rotated against the biasing force of spring 60, so as to release catch 36 and hence eject carriage 24 with tank 12.

In order to establish a connection to a fluid line when the tank is inserted into the carriage, there is provided for a fluid coupling which comprises a first member 68 provided at the rear end of the tank 12 which cooperates with a second fluid coupling member 70 which in the embodiment illustrated in Figs. 3 to 6 is provided at the carriage 24. Whereas is such embodiments the second fluid coupling member 70 is connected preferably via a flexible hose 72 to a fluid line of the household appliance, the second fluid coupling member also

could be fixedly provided at the housing 15 to engage the first fluid coupling member 68 via an aperture provided in the carriage, wherein a fluid coupling thus is established when the tank is moved into the use position, rather than when inserting the tank into the carriage. In any event, the fluid coupling preferably is configured to seal the respective coupling members, and in particular the first fluid coupling member 68 so as to prevent liquid from leaving the tank 12 when the tank is removed from the carriage 24.

As illustrated in Figs. 3 to 6, the household appliance preferably is equipped with a damper 74 for slowing the movement of the carriage 24 before the tank 12 reaches the servicing position. Damper 74 which provides for a smooth stop of tank 12 when it reaches its servicing position may comprise for example a hydraulic damper, a linear friction damper, a rotary damper or the like.

While in Figs. 3 to 6, the damper 74 is shown to be connected to the carriage 24 via attachment 32 and hence provides for dampening over the entire range of movement of the carriage 24, the damper 74 also can be designed to come into action only towards the end of travel of carriage 24.

Referring again to Fig. 2, tank 12 preferably is provided with a handle, such as a recessed grip 76, which facilitates manipulating the tank during removal of the tank from the household appliance, and when inserting the tank back into the receptacle 14 and further into the carriage 24.

The household appliance described above and claimed herein provides for an easy to use removable tank system for a household appliance, wherein a removable tank can be ejected

from the household appliance simply by pressing an activation button. While releasing the tank form its use position causes a displacement of the tank into a servicing position in which the tank is ejected so as to expose a fill opening, the tank can be easily removed from the household appliance simply by manually gripping the tank and pulling the tank further in the direction of ejection of the tank. After having filled or emptied the tank, the tank can be easily pushed back into the household appliance, so that the tank first is brought into engagement with the carriage, and by pushing further in the same direction, is fully inserted into its use position against the biasing force of a spring, which when again activating the release means provides for ejection of the tank.

The system suggested herein can be easily implemented and hence provides for a cost effective and reliable solution that is easy to use.

Reference signs

10	oven
12	water tank
14	receptacle
15	housing
16	aperture
18	front panel
20	cover element
22	fill opening
24	carriage
26	direction of movement
28	guide rails
30	compression spring
32	attachment of 30 at 24
34	seat
36	catch
38	locking member
40	piston
42	ramp surface
44	biasing spring
46	solenoid actuator
47	controller
48	switch
50	switch
52	switch
54	button element
55	wire harness
56, 57	contacts
58	rotatable latch
59	wires
60	biasing spring
61	first leg of 58
62	push rod

64 push button
66 leg
68 first fluid coupling member
70 second fluid coupling member
72 flexible hose
74 damper

Claims

1. A household appliance (10) comprising a liquid tank (12), wherein the tank is adapted for translational movement between a use position in which the tank is positioned within a housing (15) of the household appliance and a servicing positon in which the tank is at least partially extracted from the housing, the household appliance further comprising biasing means (30) for biasing the tank towards the servicing position, and releasable latch means (36; 38; 58) for selectively arresting the tank in the use position or releasing the tank for movement towards the servicing position,

characterized in that

the household appliance (10) further comprises a carriage (24)associated to the tank (12) and configured for translational movement along guide means (28) provided in the housing (15);

the biasing means (30)comprises a spring element configured to be loaded when the tank (12) is moved from the servicing position towards the use position; and

the latch means comprises:

a catch (36) provided at the carriage,

a locking member (38; 58) located at the housing (15)which in the use position of the tank (12) engages the catch (36) to arrest the tank in the use position, and

release means (40; 62) for disengaging the locking member from the catch (36).

2. The household appliance of claim 1, wherein the locking member (38; 58) is biased towards engagement with the catch (36).

3. The household appliance of claim 2, wherein the catch (36) comprises a ramp surface (42) configured to displace the locking member (38; 58) when the tank (12) is moved towards the use position and to release the locking member to engage the catch upon the tank reaching the use position.

4. The household appliance of any one of the preceding claims, comprising an electric drive (46) for retracting the locking member (38; 58) out of its engagement with the catch (36).

5. The household appliance of claim 4, further comprising an actuation element for activating the electric drive (46), the actuation element positioned at a front panel (18) of the household appliance (10) or at a front panel (20) of the liquid tank (12).

6. The household appliance of any one of the preceding claims, wherein the tank (12) comprises a fill opening (22)in the upper side of the tank at the front end of the tank.

7. The household appliance of claim 6, wherein in the servicing position the tank (12) is extracted to an extent such that the fill opening (22) is exposed.

8. The household appliance of any one of the preceding claims, wherein the carriage (24) is fixedly connected to the tank (12) or is formed integrally with the tank.

9. The household appliance of any one of claims 1 to 7, wherein the tank (12) is removably connected to the carriage (24).

10. The household appliance of claim 9, wherein the carriage (24) comprises sliding means for accommodating the tank (12), the sliding means oriented generally parallel to the guide means.

11. The household appliance of claim 10, comprising a fluid coupling (68, 70) that provides for connection of the tank (12) to a fluid line of the household appliance.

12. The household appliance of claim 11, wherein the fluid coupling comprises a first member (68) that is provided at the tank (12) and a second member (70) that is provided at the carriage (24) and is connected to the fluid line by a flexible hose (72).

13. The household appliance of claim 11, wherein the fluid coupling comprises a first member (68) that is provided at the tank and a second member that is provided at the housing (15).

14. The household appliance of any one of the preceding claims, further comprising dampening means (74) for slowing the movement of the carriage (24) before the tank (12) reaches the servicing position.

15. The household appliance of any one of the preceding claims, wherein the household appliance (10) is a steam oven.

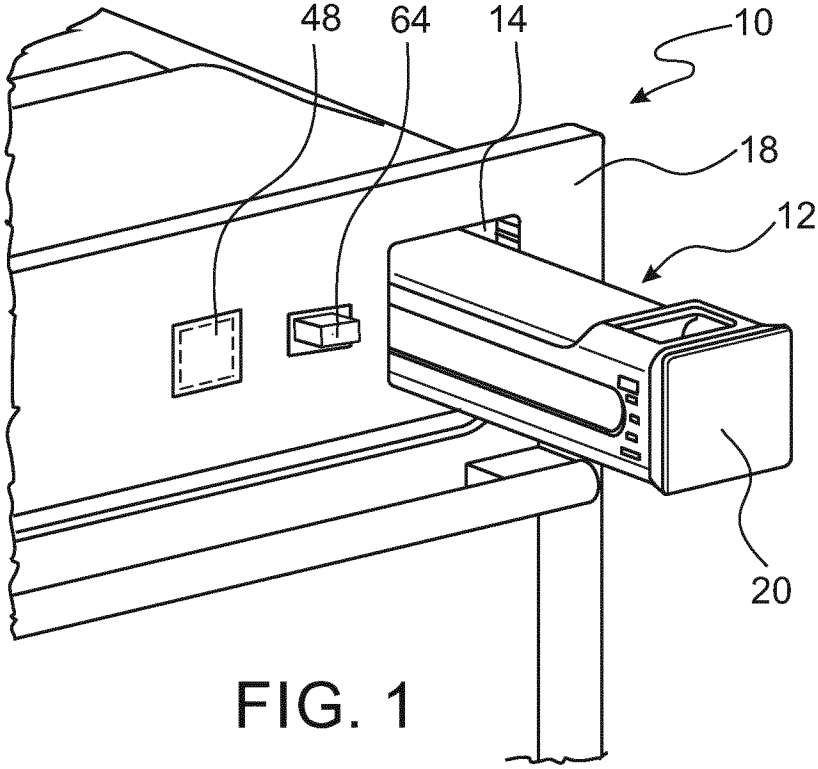

FIG. 1

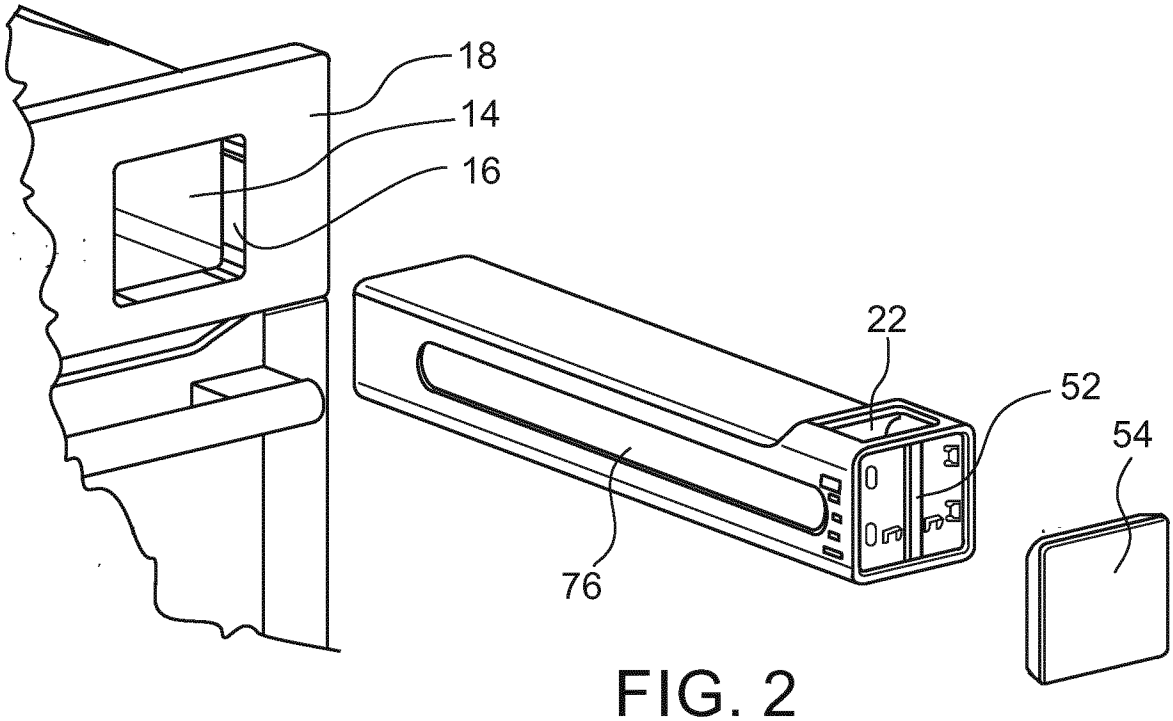

FIG. 2

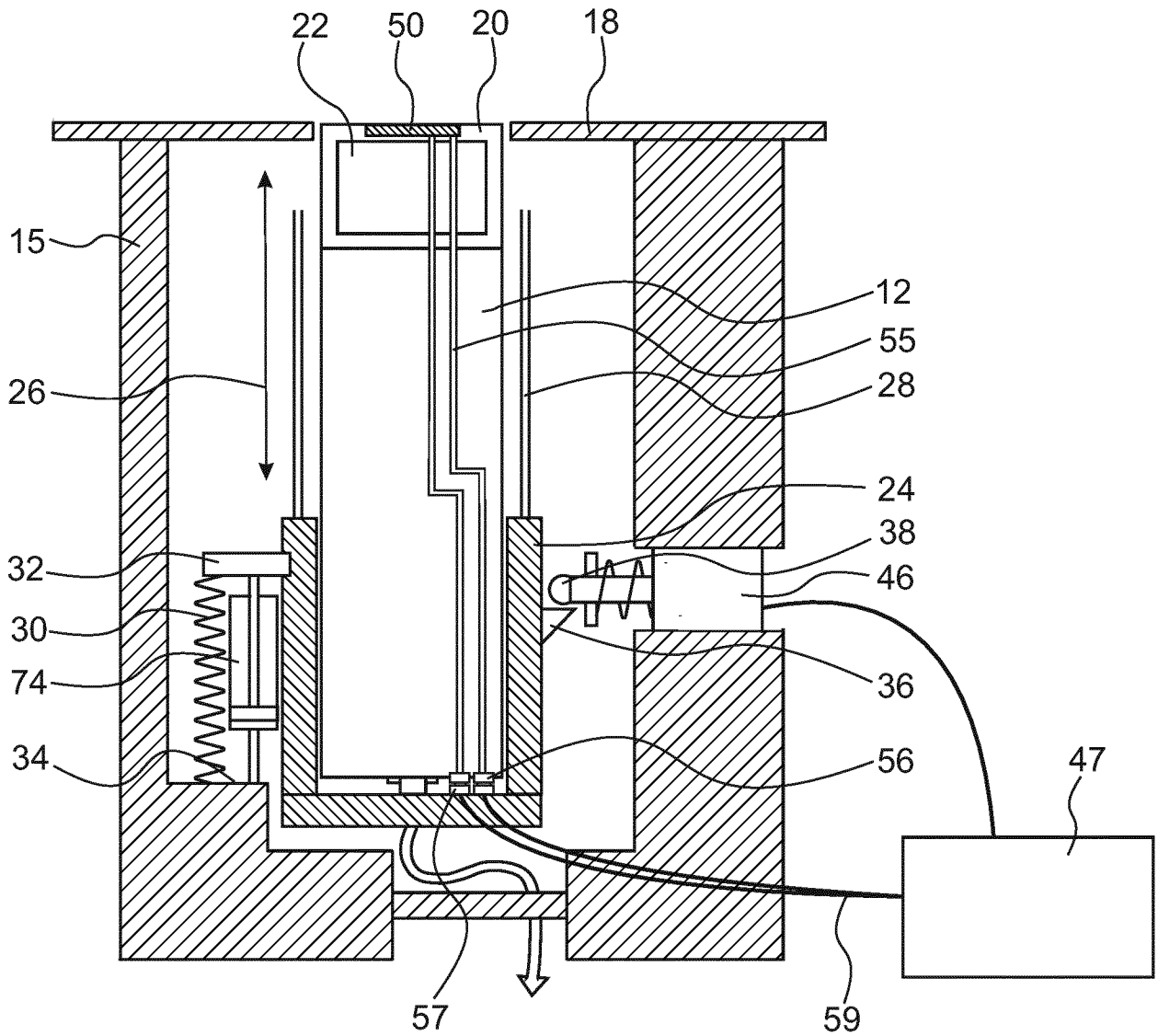

FIG. 3

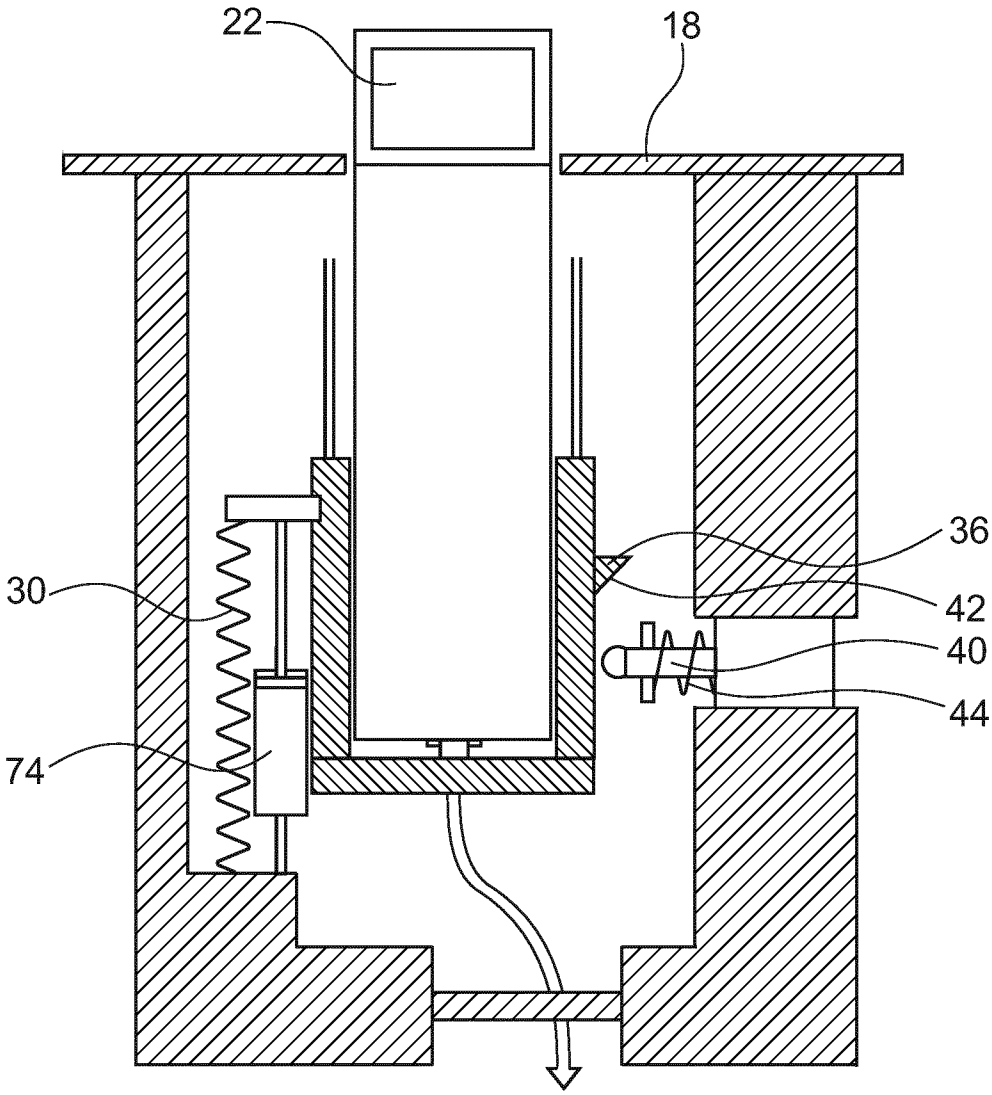

FIG. 4

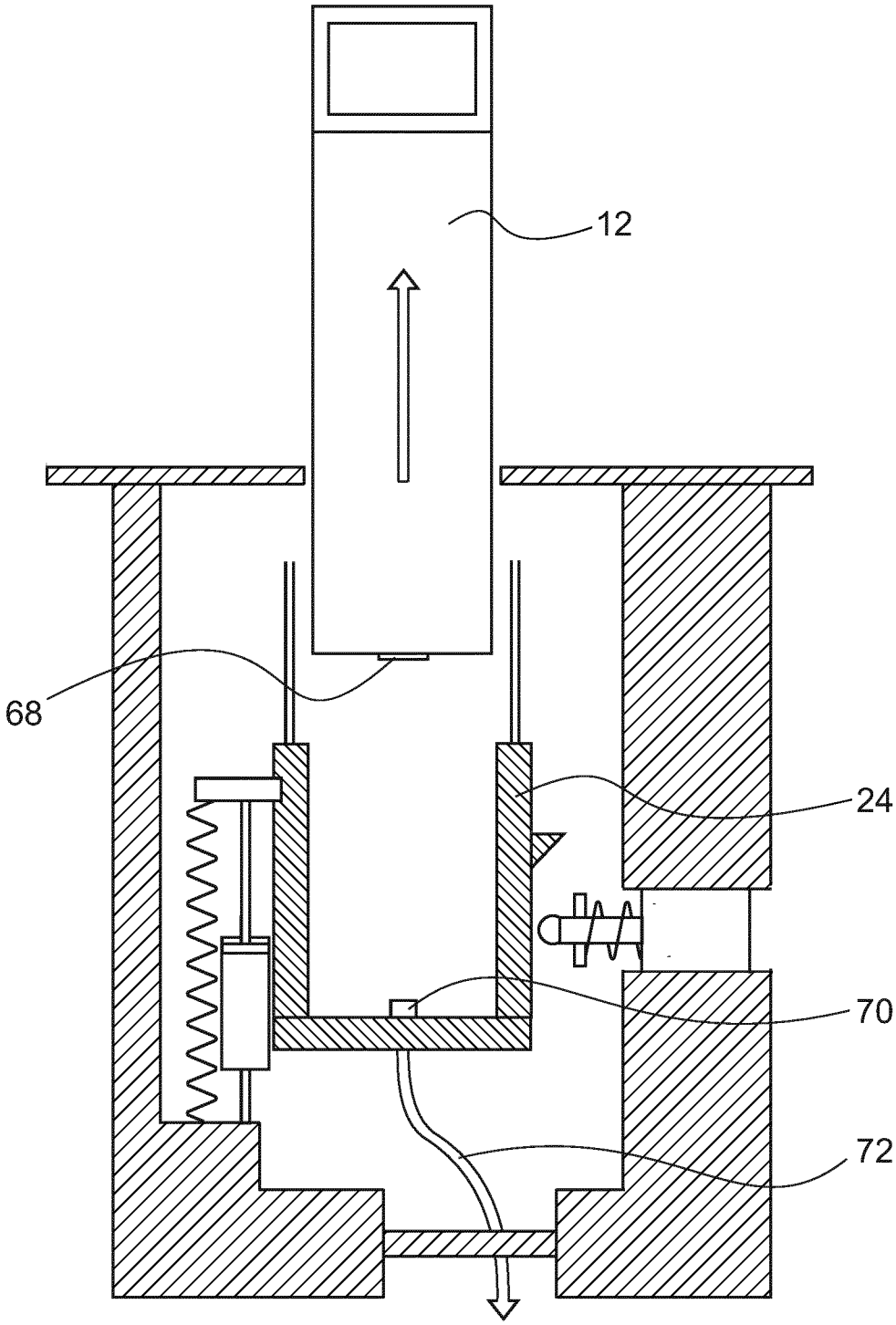

FIG. 5

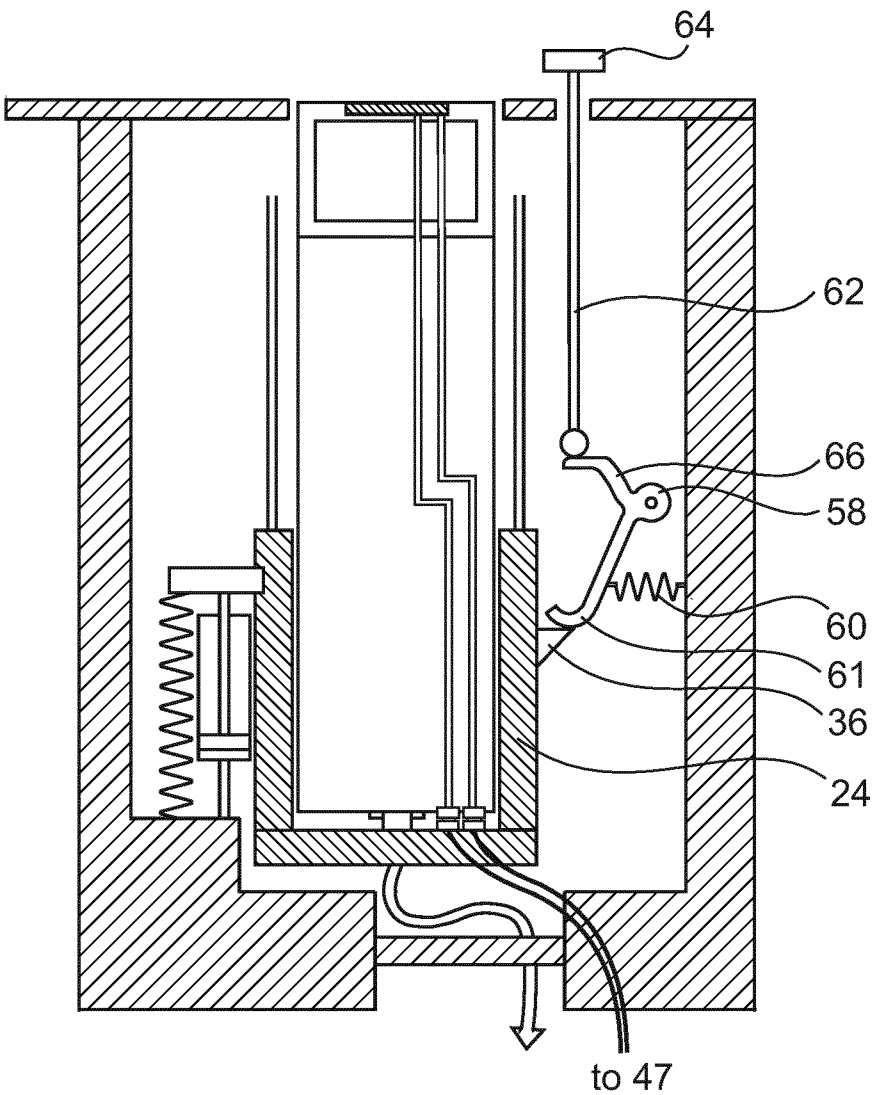

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/080352

A. CLASSIFICATION OF SUBJECT MATTER
INV. F24C15/32
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 F24C A21B

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/261697 A1 (HILL CHRIS H [US] ET AL) 22 October 2009 (2009-10-22) figures 2-7	1-3,6-15
X	WO 2014/206481 A1 (ELECTROLUX APPLIANCES AB [SE]) 31 December 2014 (2014-12-31) figures 4-5	1
X	WO 2016/145717 A1 (WUXI LITTLE SWAN CO LTD [CN]) 22 September 2016 (2016-09-22) Paragraphs 52-53 of the family member EP3269870	1
A	EP 2 550 902 A1 (ELECTROLUX HOME PROD CORP [BE]) 30 January 2013 (2013-01-30) cited in the application figures 1-7	1-15

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 December 2018	04/01/2019

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Adant, Vincent

1

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/080352

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009/322195 A1 (JOERGER STEVE [US] ET AL) 31 December 2009 (2009-12-31) paragraph [0025]	1-15

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2018/080352

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009261697 A1	22-10-2009	NONE	
WO 2014206481 A1	31-12-2014	EP 3014009 A1	04-05-2016
		US 2016153133 A1	02-06-2016
		WO 2014206481 A1	31-12-2014
WO 2016145717 A1	22-09-2016	EP 3269870 A1	17-01-2018
		WO 2016145717 A1	22-09-2016
EP 2550902 A1	30-01-2013	AU 2012289004 A1	21-11-2013
		AU 2016228176 A1	29-09-2016
		CN 103607931 A	26-02-2014
		EP 2550902 A1	30-01-2013
		EP 2706892 A1	19-03-2014
		US 2014251304 A1	11-09-2014
		WO 2013014014 A1	31-01-2013
US 2009322195 A1	31-12-2009	NONE	