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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 November 2014 (20.11.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/185842 A1

(51) International Patent Classification:
A47K 10/42 (2006.01)

(21) International Application Number:
PCT/SE2013/050558

(22) International Filing Date:
17 May 2013 (17.05.2013)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: **SCA HYGIENE PRODUCTS AB** [SE/SE]; S-405 03 Göteborg (SE).

(72) Inventors: **LARSSON, Björn**; Örsviksvägen 1, S-427 50 Billdal (SE). **NORSHAMMAR, Jesper**; Fägatan 37, S-433 51 Öjersjö (SE). **GRAHM, Anders**; Södra Forsåkersgatan 83, S-431 63 Mölndal (SE).

(74) Agent: **VALEA AB**; Lindholmspiren 5, S-417 56 Göteborg (SE).

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

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

Published:

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

(54) Title: DISPENSER AND METHOD OF REFILLING DISPENSER

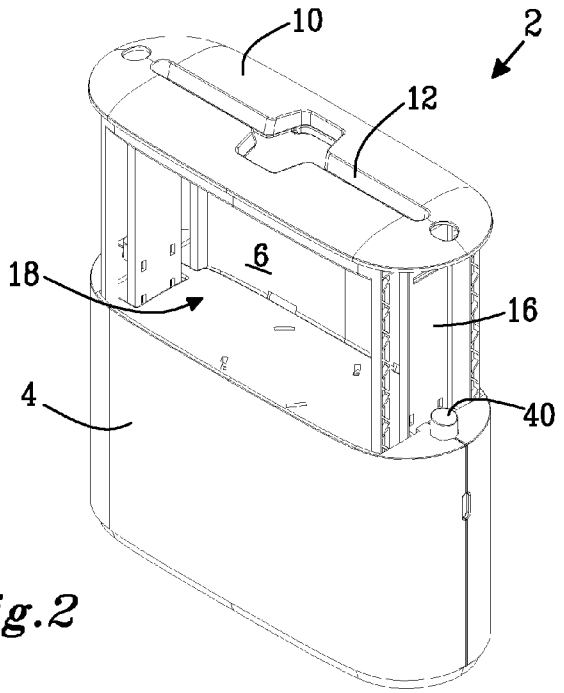


Fig.2

(57) Abstract: A dispenser (2) provided with a reservoir (6) for a stack of sheets of web material and comprising a housing (4). The dispenser (2) comprises a lid (10) being adapted to face upwardly during use of the dispenser (2). The dispenser (2) comprises a first biasing arrangement for biasing the stack of sheets of web material towards the lid (10) and a dispensing opening (12) therein. A cassette (16) comprises the reservoir (6) and is arranged to be moved to a position at least partially outside the housing (4). The cassette (16) is provided with a refill opening (18) for sheets of web material, the refill opening (18) being accessible when the cassette (16) is in the position at least partially outside the housing (4). Further, a method of refilling a dispenser (2) with a stack of sheets of web material is provided.

WO 2014/185842 A1

DISPENSER AND METHOD OF REFILLING DISPENSER

TECHNICAL FIELD

The present invention relates to a dispenser for sheets of web material and to a method of refilling a dispenser.

BACKGROUND

US 2006/273102 discloses a dispenser including a body having four side walls, a base and an opening in a top of the body. A lid is hingedly connected near the top of the body and covers the opening. The lid has a slot therein for sheet material to be dispensed there through. The sheet material is forced by a compression element towards the lid. The lid is opened to refill the dispenser with a stack of sheet material. The forces of the compression element acting on the sheet material may affect the lid when the lid is to be closed after adding the stack of web material to the dispenser.

SUMMARY

An object of the present invention is to provide a dispenser which is adapted for dispensing sheets of web material upwardly, wherein a refilling of the dispenser is uncomplicated.

According to an aspect of the invention, the object is achieved by a dispenser provided with a reservoir for a stack of sheets of web material and comprising a housing The dispenser comprises a lid being provided with a dispensing opening for sheets of web material. The lid is adapted to face upwardly during use of the dispenser. The dispenser comprises a first biasing arrangement for biasing the stack of sheets of web material towards the lid and the dispensing opening. The dispenser comprises a cassette, which cassette comprises the reservoir and is arranged to be moved to a position at least partially outside the housing, wherein the cassette is provided with a refill opening for sheets of web material, the refill opening being accessible when the cassette is in the position at least partially outside the housing.

Since the dispenser comprises the cassette comprising the reservoir, which cassette is provided with a refill opening for sheets of web material and the refill opening is accessible when the cassette is in the position at least partially outside the housing, a user may easily refill the dispenser with sheets of web material via the refill opening when the cassette is in the position at least partially outside the housing. As a result, the above mentioned object is achieved in the dispenser comprising a lid adapted to face upwardly during use of the dispenser.

The dispenser may be a stand-alone unit adapted to be placed on a surface, such as a table, a worktop, or a dressing table. The dispenser may be adapted to be arranged with the stack of sheets of web material extending substantially vertically in the reservoir of the dispenser. That is, the sheets of web material may extend in substantially horizontal planes in the stack. A user may dispense sheets of web material substantially upwardly from the dispenser.

The sheets of web material in the stack of sheets of web material may comprise a cellulose material. The web material may be a soft and absorbent sheet of web material, e.g. the sheets of web material may be sheets of web material for general wiping purposes. The sheets of web material may be towels or napkins. Accordingly, the dispenser may be arranged for dispensing sheets of web material for general wiping purposes, or the dispenser may be arranged for dispensing towels or for dispensing napkins. In a stack of sheets of web material adapted for placing in the reservoir of the dispenser, the sheets of web material may be folded sheets of web material which are interleaved. Thus, as each sheet of web material is dispensed from the dispenser, a portion of a following sheet of web material may be exposed for subsequent dispensing at the dispensing opening. Suitably the portion of the following sheet extends through the dispensing opening for grasping by a user.

According to embodiments, the lid may be attached to, or may form part of, the cassette, and the dispensing opening and the refill opening may face in substantially perpendicular directions. In this manner the lid is movable together with the cassette and the refill opening is accessible for refilling the reservoir with sheets of web material from a lateral side of the dispenser.

According to embodiments the refill opening may extend over substantially an entire length of the cassette and over substantially an entire width of the cassette. In this manner substantially an entire side of the cassette may form the refill opening. Thus, the reservoir may easily be accessed and the stack of sheets of web material in the reservoir may easily be refilled.

According to embodiments, the dispenser may comprise a second biasing arrangement adapted to bias the cassette in a vertical direction towards the position at least partially outside the housing. In this manner an ejection of the cassette may be facilitated. At least a first movement of the cassette in relation to the housing thus, may be initiated by the second biasing arrangement.

According to embodiments, the dispenser may comprise a securing arrangement for holding the cassette in place in the housing against a biasing force of the second biasing arrangement. In this manner the cassette may be held in the housing during use of the dispenser.

According to embodiments, the securing arrangement may be releasable to permit movement of the cassette to the position at least partially outside the housing.

According to embodiments, the securing arrangement may comprise a protruding element in the housing, and the protruding element may be arranged to project into a recess provided in the cassette. In this manner the protruding element may engage with the cassette in the recess to hold the cassette in place in the housing.

According to embodiments, the protruding element may be biased in a direction towards the cassette. In this manner it may be ensured that the protruding element engages with the cassette when the cassette is positioned with the recess at the protruding element.

According to embodiments, the securing arrangement may be further arranged to hold the cassette in the position at least partially outside the housing. In this manner the cassette may be held in the position at least partially outside the housing to facilitate access to the refill opening, e.g. for refilling the reservoir with sheets of web material.

According to embodiments, the protruding element may comprise a slanted edge arranged to abut against an outer surface of the cassette. In this manner the protruding element may be moved away from the cassette to release the cassette, e.g. after refilling the reservoir, by applying a downward pressure to the lid. The cassette may then be returned to a position in the housing, for dispensing sheets of web material from the dispenser.

According to embodiments, the securing arrangement may comprise a push button connected with the protruding element such that an engagement of the push button releases the protruding element from the recess. In this manner the securing arrangement, and accordingly the cassette, may be easily released by engaging the push button to permit movement of cassette to the position at least partially outside the housing. The push button may be directly or indirectly connected with the protruding element.

According to embodiments, the push button may be accessible through the lid. In this manner the push button may be easily accessible for engagement at an upper side of the dispenser. The lid may be provided with a through hole, through which the push button is accessible.

According to embodiments, the securing arrangement may comprise a third biasing arrangement for biasing the protruding element in the direction towards the cassette and for biasing the push button in a direction outwardly from the dispenser. In this manner it may be ensured that the protruding element engages with the recess while the push button is always returned to an outer position, from which outer position it may be engaged by a user desiring to access the reservoir, e.g. to refill the dispenser.

According to embodiments, the cassette may comprise a projection on an outside of the cassette and the housing may be provided with a groove, wherein the projection may be arranged to slide in the groove and along the groove, when the cassette is moved along the housing. In this manner the cassette may be guided by the projection sliding in and along the groove to ensure that the cassette is not displaced from an intended travel path in the housing.

According to embodiments, the projection may be elastic and may frictionally engage with the housing in the groove. In this manner movement of the cassette in the housing may be controlled, e.g. to restrict the effect the second biasing arrangement may have on the cassette. Put differently, the cassette may be less likely to abruptly pop out of the housing when the securing arrangement is released, but will instead slide in a controlled manner in the housing.

According to embodiments, the housing may comprise a protuberance arranged in the groove such that the projection may be releasably engaged with the protuberance when the projection is slid past the protuberance in the groove. In this manner the cassette may be held in a specific position in the housing by the engagement between the protuberance and the projection.

According to embodiments, the first biasing arrangement may be arranged in the cassette and may comprise a movable platform for supporting the stack of sheets of web material and a first resilient member abutting against the movable platform from a side opposite to the stack of sheets of web material. In this manner the stack may be biased towards the lid and the dispensing opening by the movable platform and the first resilient member.

According to embodiments, the dispenser may comprise a level indicator for indicating a level of sheets of web material in the reservoir. In this manner service personnel may see whether the dispenser requires refilling without having to open the dispenser.

According to embodiments, the movable platform may engage with the level indicator when the movable platform reaches an end portion of the housing near the lid, to displace the level indicator from a first position to at least a second position. In this manner the movable platform may affect the level indicator while it moves upwardly in the dispenser as sheets of web material are dispensed.

According to embodiments, the second biasing arrangement may comprise a second resilient member arranged between the housing and the cassette at an end portion of the housing opposite to the lid.

A further object of the present invention is to provide a method of refilling a dispenser with a stack of sheets of web material, wherein a refilling of the dispenser is uncomplicated and dispensing of sheets from the dispenser after refilling is easy.

According to an aspect of the invention, the object is achieved by a method of refilling a dispenser with a stack of sheets of web material. The dispenser is provided with a reservoir for the stack of sheets of web material and comprises a housing. The dispenser comprises a lid being provided with a dispensing opening for sheets of web material, wherein the lid is adapted to face upwardly during use of the dispenser. The dispenser comprises a first biasing arrangement for biasing the stack of sheets of web material towards the lid and the dispensing opening. The dispenser further comprises a cassette, which cassette comprises the reservoir and is arranged to be moved to a position at least partially outside the housing, wherein the cassette is provided with a refill opening for sheets of web material, the refill opening being accessible when the cassette is in the position at least partially outside the housing. The lid, or a portion at an upper end of the cassette, forms an upper constraint of the reservoir. The method comprises:

- moving the cassette upwardly into the position at least partially outside the housing, and
- refilling the reservoir with sheets of web material by placing a stack of sheets of web material through the refill opening into the reservoir within the formed upper constraint.

Since the reservoir and the refill opening are easily accessible when the cassette is in the position at least partially outside the housing and the refilling is done within the upper constraint of the reservoir, the dispenser is prevented from being overfilled with sheets of web material. Thus, reliable dispensing of sheets of web material from a newly refilled dispenser may be ensured. As a result, the above mentioned object is achieved in the dispenser comprising a lid adapted to face upwardly during use of the dispenser.

Further features of, and advantages with, the present invention will become apparent when studying the appended claims and the following detailed description. Those skilled in the art will realize that different features of the present invention may be combined to create embodiments other than those described in the following, without departing from the scope of the present invention, as defined by the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The various aspects of the invention, including its particular features and advantages, will be readily understood from the following detailed description and the accompanying drawings, in which:

Figs. 1 and 2 illustrate a dispenser according to embodiments,
Figs. 3 – 5 illustrate cross sections through the dispenser illustrated in Figs. 1 and 2,
Fig. 6 illustrates embodiments of a securing arrangement of a dispenser,
Figs. 7a and 7b illustrate insides of the dispenser illustrated in Figs. 1 – 6, and
Fig. 8 illustrates a partial cross section through a dispenser according to embodiments.

DETAILED DESCRIPTION

The present invention will now be described more fully with reference to the accompanying drawings, in which example embodiments are shown. However, this invention should not be construed as limited to the embodiments set forth herein. Disclosed features of example embodiments may be combined as readily understood by one of ordinary skill in the art to which this invention belongs. Like numbers refer to like elements throughout. Well-known functions or constructions will not necessarily be described in detail for brevity and/or clarity.

Figs. 1 and 2 illustrate a dispenser 2 according to embodiments. The dispenser 2 is provided with a reservoir 6 for a stack of sheets of web material. The dispenser 2 comprises a housing 4. The dispenser 2 comprises a lid 10 being provided with a dispensing opening 12 for sheets of web material. The lid 10 faces upwardly during use of the dispenser 2. Accordingly, a side of the dispenser 2 opposite to the lid 10 is adapted to form a supporting side of the dispenser 2, which supporting side is arranged to face a supporting surface upon which the dispenser 2 is placed. The supporting side of the dispenser 2 may be provided with one or more friction elements, such as rubber feet or pads of other types. A friction element may comprise a tacky elastomeric composition arranged for releasable and reusable securing of the dispenser 2 to a supporting surface. Accordingly, the dispenser 2 forms a stand-alone unit. The dispenser 2 comprises a cassette 16. The cassette 16 comprises the reservoir 6 for the stack of

sheets of web material. The cassette 16 is movable in the housing 4. The cassette 16 is arranged to be moved to a position at least partially outside the housing 4.

In Fig. 1 the dispenser 2 is illustrated with the cassette 16 positioned inside the housing 4. In Fig. 2 the dispenser 2 is illustrated with the cassette 16 in and upper end position, in which upper end position the cassette 16 is partially outside the housing 4. The cassette 16 may be arranged in the housing 4 in such a manner that the cassette 16 cannot be removed from the housing 4 without disassembling the housing 4. In the upper end position, the cassette 16 may be refilled with sheets of web material.

The cassette 16 is provided with a refill opening 18 for sheets of web material. The refill opening 18 is accessible when the cassette 16 is in the position at least partially outside the housing 4. A user may thus, easily refill the dispenser 2 with sheets of web material via the refill opening 18 when the cassette is in the position at least partially outside the housing.

The lid 10 is attached to, or forms part of, the cassette 16. The dispensing opening 12 and the refill opening 18 face in substantially perpendicular directions. That is, the dispensing opening 12 faces upwardly and the refill opening 18 faces laterally when the dispenser 2 is placed upon a supporting surface. When the cassette 16 is positioned in the position at least partially outside the housing 4, the refill opening 18 is accessible for refilling the reservoir 6 with sheets of web material. A stack of sheets of web material is easily placed in the reservoir 6. The refill opening 18 extends over substantially an entire length of the cassette 16 and over substantially an entire width of the cassette 16.

The lid 10, or a portion at an upper end of the cassette 16, forms an upper constraint of the reservoir 6. Thus, when the dispenser 2 is refilled with sheets of web material, the dispenser 2 is prevented from being overfilled by this constraint. Reliable dispensing of sheets of web material from a newly filled dispenser 2 thus, may be ensured. Conversely, a prior art dispenser, which is refilled through an upper opening beneath a lid provided with a dispensing opening, may risk overfilling. This requires the lid to be forced back onto the housing. Dispensing of the first sheets from an overfilled dispenser of this prior art kind may be difficult.

Figs. 3 – 5 illustrate cross sections through the dispenser 2 illustrated in Figs. 1 and 2. In **Fig. 3** the dispenser 2 is illustrated with the cassette 16 in a lower end position in the housing 4. The cassette 16 is secured in the housing in this lower end position. In the reservoir 6 of the dispenser 2, a stack 8 of sheets of web material is arranged. Sheets of web material may be dispensed through the dispensing opening 12 in the lid 10.

In **Fig. 4** the dispenser 2 is illustrated with a portion of the cassette 16 outside the housing 4. The reservoir 6 of the dispenser 2 is empty and thus, in need of refilling.

The dispenser 2 comprises a first biasing arrangement 14 for biasing a stack of sheets of web material in the reservoir 6 towards the lid 10 and the dispensing opening 12. The first biasing arrangement 14 is arranged in the cassette 16 and comprises a movable platform 60 for supporting a stack of sheets of web material and a first resilient member 62 abutting against the movable platform 60 from a side opposite to the stack of sheets of web material. In these embodiments the first resilient member 62 comprises a spring arranged between a bottom element 63 of the cassette 16 and the movable platform 60. Since the reservoir 6 is empty, the platform 60 is biased into a position at an upper end of the housing 4.

Provided purely as an example; the reservoir 6 may house a stack of sheets of web material having a height of 10 – 20 cm, or approximately 15 cm. The sheets of web material may have a width of 10 – 30 cm, or approximately 24 cm and a breadth of 6 – 15 cm, or approximately 9 cm, in a folded state as provided in the dispenser 2. The first biasing arrangement 14 may provide a biasing force of 10 – 12 N when the first biasing arrangement 14 is fully compressed, i.e. when the platform 60 is in a bottom position in the cassette 16.

The dispenser 2 comprises a second biasing arrangement 20 adapted to bias the cassette 16 in a vertical direction towards the position at least partially outside the housing 4. As illustrated in Fig. 4, the second biasing arrangement 20 has moved a portion of the cassette 16 outside the housing 4. The cassette 16 may be manually moved further outside the housing 4 from the position illustrated in Fig. 4, to an upper end position. Due to the second biasing arrangement 20, the cassette 16 is partially ejected from the housing 4 upon release of a securing arrangement 22, which will be

elaborated on further below. The second biasing arrangement 20 comprises a second resilient member 73 arranged between the housing 4 and the cassette 16 at an end portion 74 of the housing 4 opposite to the lid 10. More specifically, the second resilient member 73 may comprise a spring. In these embodiments the second biasing arrangement 20 comprises two springs. Provided purely as an example; the second biasing arrangement 20 may provide a biasing force of approximately 15 N when the second biasing arrangement 20 is fully compressed, i.e. when the cassette 16 is in the lower position in the housing 4, as illustrated in Fig. 3.

In **Fig. 5** the dispenser 2 is illustrated with the cassette 16 in an upper end position. In the upper end position the reservoir 6 may be refilled with sheets of web material. The cassette 16 may be held in the position at least partially outside the housing 4 by a securing arrangement 22, which will be elaborated on further below.

The platform 60 is in the position at the upper end of the housing 4. In the upper end position of the cassette 16, the movable platform 60 and the bottom element 63 of the cassette 16 are close to each other. The first resilient member 62 is compressed. Thus, the entire refill opening 18 in the cassette 16 is accessible to a user who is about to refill the dispenser 2.

Fig. 6 illustrates embodiments of a securing arrangement 22 of the dispenser 2 illustrated in Figs. 1 - 5. The securing arrangement 22 is arranged for holding the cassette 16 in place in the housing 4 against the biasing force of the second biasing arrangement 20. A corresponding securing arrangement is provided at an opposite side of the dispenser 2.

The securing arrangement 22 is releasable to permit movement of the cassette 16 to the position at least partially outside the housing 4. When the securing arrangement is released, the cassette 16 is partially ejected from the housing 4 by the second biasing arrangement 20 to a position as illustrated in Fig. 4. From this position a user may move the cassette 16 to the upper end position of the cassette 16, as illustrated in Fig. 5.

The securing arrangement 22 is mainly arranged in the housing 4 and comprises a protruding element 30, a link member 46, a third biasing arrangement 44, and a push

button 40. The lid 10 is provided with a through hole. The push button 40 is accessible through the lid 10. More specifically, the push button 40 is accessible through the through hole of the lid 10. The lid 10 is connected with the cassette 16 and thus, movable together with the cassette 16. The link member 46 is rotatable about an axis 47 and comprises a first projection 48 and a second projection 49. The first projection 48 engages with the protruding element 30. More specifically, the first projection 48 extends into an aperture 50 of the protruding element 30. The push button 40 abuts against the second projection 49. The third biasing arrangement 44 comprises a torsional spring wound about the axis 47. The torsional spring abuts at one end against the link member 46 and at an opposite end against the push button 40. Thus, the third biasing arrangement 44 biases the push button 40 against a seat 52 in the housing 4 and the protruding element 30, via the first projection 48, towards the cassette 16. Thus, the push button 40 is biased in a direction outwardly from the dispenser 2 to an outer position. From the outer position the push button 40 may be engaged by a user desiring to access the reservoir 6.

The protruding element 30 is arranged to project into a recess 32 provided in the cassette 16. Thus, the protruding element 30 engages with the cassette 16 in the recess 32 and holds the cassette 16 in place in the housing 4, against the biasing force of the second biasing arrangement 20. Since the protruding element 30 is biased in a direction towards the cassette 16 it is ensured that the protruding element 30 will engage with the cassette 16 and the recess 32 therein.

Moreover, the securing arrangement 22 is arranged to hold the cassette 16 in the position at least partially outside the housing 4. This is achieved by the protruding element 30 extending underneath the cassette 16 when the cassette 16 is in its upper end position, as illustrated in Fig. 5. Again, the biasing of the protruding element 30 towards the cassette 16 ensures that the protruding element 30 will be positioned underneath the cassette 16. The protruding element 30 comprises a slanted edge 34 arranged to abut against an outer surface of the cassette 16. Thus, a bottom of the cassette 16 resting against the slanted edge 34 of the protruding element 30 may force the protruding element 30, against the third biasing arrangement 44, away from the cassette 16 when a downward pressure is applied to the lid 10 of the dispenser 2. When, upon repositioning the cassette 16 in the housing 4, the cassette 16 reaches the position

illustrated in Fig. 4, a user may push on the lid 10 to return the cassette 16 to the lower end position in the housing 4, in which lower end position the third biasing arrangement 44 will bias the protruding element 30 into the recess 32 in the cassette 16.

When the cassette 16 is in its lower end position, as illustrated in Fig. 3, and since the push button 40 is connected to the protruding element 30 via the link member 46 and its first and second projections 48, 49, an engagement of the push button 40 releases the protruding element 30 from the recess 32, and the cassette 16 is ejected by the second biasing arrangement 20 to the position illustrated in Fig. 4.The engagement of the push button 40 in these embodiments comprises pushing the push button 40 downwardly.

When the cassette 16 is in its upper end position, as illustrated in Fig. 4, engagement of the push button 40 results in release of the securing arrangement 22, such that cassette 16 may be moved downwardly to the position illustrated in Fig. 4. From this position, a user may push on the lid 10 to return the cassette 16 to the lower end position, as illustrated in Fig. 3.

Alternatively, when the cassette 16 is in its upper end position, as illustrated in Fig. 4, a user may push on the lid 10 whereby the securing arrangement 22 is released, and the cassette 16 may be moved downwardly to the position illustrated in Fig. 4. From this position, a user may continue pushing on the lid 10 so as to return the cassette 16 to the lower end position, as illustrated in Fig. 3.

Figs. 7a and 7b illustrate insides of the dispenser 2 illustrated in Figs. 1 – 6. In Figs. 7a and 7b a level indicator 70 for indicating a level of sheets of web material in the reservoir 6 is shown. The level indicator 70 is movable in a vertical direction, seen when the dispenser 2 is placed on a surface with its lid 10 facing upwardly. The level indicator 70 is visible from an outside of the dispenser 2 through a peep hole 72. A surface 74 of the level indicator 70 facing the peep hole 72 is differently coloured at its upper and lower portions. For instance, the upper portion of the surface 74 may be coloured green and the lower portion of the surface 74 may be coloured red. Thus, the green colour is visible through the peep hole 72 when the level indicator 70 is in a lower position, as illustrated in Fig. 7a, and the red colour is visible through the peep hole 72 when the level indicator 70 is in an upper position, as illustrated in Fig. 7b.

The movable platform 60 in the cassette 16 engages with the level indicator 70 when the movable platform 60 reaches an end portion of the housing 4 near the lid 10, and displaces the level indicator 70 from a first position to at least a second position, e.g. from the lower position to a position closer to the upper position.

In its lower position, the level indicator 70 is supported by a ledge 76 arranged on an inside of the housing 4. The movable platform 60 is provided with a protuberance 78. The protuberance 78 engages with the level indicator 70 when the movable platform 60 has been moved towards the lid 10 by the first biasing arrangement 14, as the stack of sheets of web material in the reservoir 6 decreases.

Fig. 8 illustrates a partial cross section through a dispenser 2 according to embodiments. The dispenser 2 may comprise features as discussed in connection with the embodiments of Figs. 1 – 7b. A cassette 16 of the dispenser 2 comprises a projection 80 on an outside of the cassette 16 and a housing 4 of the dispenser 2 is provided with a groove 82. The projection 80 is arranged to slide in the groove 82 and along the groove 82 when the cassette 16 is moved along the housing 4. Thus, the cassette 16 is guided by the projection 80 sliding along the groove 82. The projection 80 is elastic and engages frictionally with the housing 4 in the groove 82.

The housing 4 comprises a protuberance 84 arranged in the groove 82 such that the projection 80 may releasably engaged with the protuberance 84 when the projection 80 is slid past the protuberance 84 in the groove 82. Thus, the cassette 16 may be held in a specific position in the housing 4 by the engagement between the protuberance 84 and the projection 80. For instance, the engagement between the protuberance 84 and the projection 80 may hold the cassette 16 in a position at least partially outside the housing 4 for refilling a reservoir 6 in the cassette 16 with sheets of web material, as illustrated in Fig. 8. The dispenser 2 may additionally comprise a securing arrangement 22 as discussed in connection with Fig. 6.

Fig. 9 illustrates embodiments of a method of refilling a dispenser with a stack of sheets of web material. The dispenser may be a dispenser 2 as disclosed herein. Accordingly, the method is further illustrated e.g. in Figs. 3 – 5 wherein different positions of a

cassette 16 in a housing 4 of the dispenser 2 are disclosed. The dispenser is provided with a reservoir for the stack of sheets of web material and comprises the housing. The dispenser comprises a lid being provided with a dispensing opening for sheets of web material, wherein the lid is adapted to face upwardly during use of the dispenser. The dispenser comprises a first biasing arrangement for biasing the stack of sheets of web material towards the lid and the dispensing opening. The cassette comprises the reservoir and is arranged to be moved to a position at least partially outside the housing, wherein the cassette is provided with a refill opening for sheets of web material, the refill opening being accessible when the cassette is in the position at least partially outside the housing. The lid, or a portion at an upper end of the cassette, forms an upper constraint of the reservoir. The method comprises:

- moving 100 the cassette upwardly into the position at least partially outside the housing, and
- refilling 102 the reservoir with sheets of web material by placing a stack of sheets of web material through the refill opening into the reservoir within the formed upper constraint.

According to embodiments, the dispenser may comprise a second biasing arrangement adapted to bias the cassette in a vertical direction towards the position at least partially outside the housing. The moving 100 may comprise:

- ejecting 104 the cassette from the housing by the second biasing arrangement towards the position at least partially outside the housing. In this manner a partial movement towards the position at least partially outside the housing may be achieved by the second biasing arrangement. A full movement to the position at least partially outside the housing, in which the dispenser may be refilled, may be achieved by a user moving the cassette form the ejected position to the position at least partially outside the housing.

According to embodiments, the dispenser may comprise a securing arrangement for holding the cassette in place in the housing against a biasing force of the second biasing arrangement. The moving 100 may comprise:

- releasing 106 the securing arrangement to permit movement of the cassette to the position at least partially outside the housing. In this manner the cassette may not be ejected from the housing by the second biasing arrangement towards the position at least partially outside the housing until the releasing 106 the securing arrangement.

According to embodiments, the securing arrangement 22 may comprise a push button 40, and the moving 100 may comprise engagement of the push button 40 to release the securing arrangement 22.

According to embodiments, the method may comprise:
- repositioning 108 the cassette in the housing. In this manner the cassette may be returned into the housing after refilling the reservoir with a stack of sheets of web material and sheets of web material may be dispensed from the dispenser through its dispensing opening.

According to embodiments, the dispenser may comprise a securing arrangement 22 for holding the cassette in place in a position at least partially outside the housing, and the repositioning 108 may comprise releasing the securing arrangement 22 to permit movement of the cassette towards the position in the housing.

According to embodiments, the securing arrangement 22 may comprise a push button, and the repositioning may comprise engagement of the push button 40 to release the securing arrangement 22.

According to alternative embodiments, the repositioning 108 may comprise pushing the cassette towards the housing to release the securing arrangement 22 to permit movement of the cassette towards the position in the housing.

According to embodiments, the refilling 102 may comprise:
- placing 110 a stack having a height of 10 – 20 cm in the reservoir.

Example embodiments described above may be combined as understood by a person skilled in the art. The housing 4 may comprise two side elements, which are secured to each other, and a bottom portion attached to the side elements, e.g. by screws. The housing 4 may comprise a sheet metal cladding. The sheet metal cladding may extend around outer sides of the two side elements. The sheet metal cladding may be attached to the side elements e.g. by means of glue or double-stick tape. At the peep hole 72, the sheet metal cladding may be provided with a slot to expose the peep hole 72. Although the invention has been described with reference to example embodiments, many

different alterations, modifications and the like will become apparent for those skilled in the art. Therefore, it is to be understood that the foregoing is illustrative of various example embodiments and that the invention is defined only the appended claims.

As used herein, the term "comprising" or "comprises" is open-ended, and includes one or more stated features, elements, steps, components or functions but does not preclude the presence or addition of one or more other features, elements, steps, components, functions or groups thereof.

CLAIMS

1. A dispenser (2) provided with a reservoir (6) for a stack (8) of sheets of web material and comprising a housing (4), wherein the dispenser (2) comprises a lid (10) being provided with a dispensing opening (12) for sheets of web material, wherein the lid (10) is adapted to face upwardly during use of the dispenser (2), and wherein the dispenser (2) comprises a first biasing arrangement (14) for biasing the stack (8) of sheets of web material towards the lid (10) and the dispensing opening (12), characterized in that the dispenser (2) comprises a cassette (16), which cassette (16) comprises the reservoir (6) and is arranged to be moved to a position at least partially outside the housing (4), wherein the cassette (16) is provided with a refill opening (18) for sheets of web material, the refill opening (18) being accessible when the cassette (16) is in the position at least partially outside the housing (4).

2. The dispenser (2) according to claim 1, wherein the lid (10) is attached to, or forms part of, the cassette (16), and wherein the dispensing opening (12) and the refill opening (18) face in substantially perpendicular directions.

3. The dispenser (2) according to claim 1 or 2, wherein the refill opening (18) extends over substantially an entire length of the cassette (16) and over substantially an entire width of the cassette (16).

4. The dispenser (2) according to any one of the preceding claims, wherein the dispenser (2) comprises a second biasing arrangement (20) adapted to bias the cassette (16) in a vertical direction towards the position at least partially outside the housing (4).

5. The dispenser (2) according to claim 4, wherein the dispenser (2) comprises a securing arrangement (22) for holding the cassette (16) in place in the housing (4) against a biasing force of the second biasing arrangement (20).

6. The dispenser (2) according to claim 5, wherein the securing arrangement (22) is releasable to permit movement of the cassette (16) to the position at least partially outside the housing (4).

7. The dispenser (2) according to claim 5 or 6, wherein the securing arrangement (22) comprises a protruding element (30) in the housing (4), the protruding element (30) being arranged to project into a recess (32) provided in the cassette (16).

8. The dispenser (2) according to claim 7, wherein the protruding element (30) is biased in a direction towards the cassette (16).

9. The dispenser (2) according to any one of claims 5 - 8, wherein the securing arrangement (22) is further arranged to hold the cassette (16) in the position at least partially outside the housing (4).

10. The dispenser (2) according to any one of claims 7 - 9, wherein the protruding element (30) comprises a slanted edge (34) arranged to abut against an outer surface of the cassette (16).

11. The dispenser (2) according to claim 7 or 8, or according to claim 9 or 10 when dependent on claim 7 or 8, wherein the securing arrangement (22) comprises a push button (40) connected with the protruding element (30) such that an engagement of the push button (40) releases the protruding element (30) from the recess.

12. The dispenser (2) according to claim 11, wherein the push button (40) is accessible through the lid (10).

13. The dispenser (2) according to claim 11 or 12, wherein the securing arrangement (22) comprises a third biasing arrangement (44) for biasing the protruding element (30) in the direction towards the cassette (16) and for biasing the push button (40) in a direction outwardly from the dispenser (2).

14. The dispenser (2) according to any one of the preceding claims, wherein the cassette (16) comprises a projection (80) on an outside of the cassette (16) and the housing (4) is provided with a groove (82), and wherein the projection (80) is arranged to slide in the groove (82) and along the groove (82), when the cassette (16) is moved along the housing (4).

15. The dispenser (2) according to claim 14, wherein the projection (80) is elastic and frictionally engages with the housing (4) in the groove (82).

16. The dispenser (2) according to claim 15, wherein the housing (4) comprises a protuberance (84) arranged in the groove (82) such that the projection (80) is releasably engaged with the protuberance (84) when the projection (80) is slid past the protuberance (84) in the groove (82).

17. The dispenser (2) according to any one of the preceding claims, wherein the first biasing arrangement (14) is arranged in the cassette (16) and comprises a movable platform (60) for supporting the stack (8) of sheets of web material and a first resilient member (62) abutting against the movable platform (60) from a side opposite to the stack (8) of sheets of web material.

18. The dispenser (2) according to any one of the preceding claims, wherein the dispenser (2) comprises a level indicator (70) for indicating a level of sheets of web material in the reservoir (6).

19. The dispenser (2) according to claims 17 and 18, wherein the movable platform (60) engages with the level indicator (70) when the movable platform (60) reaches an end portion of the housing (4) near the lid (10), to displace the level indicator (70) from a first position to at least a second position.

20. The dispenser (2) according to claim 4, or according to any one of claims 5 - 19 when dependent on claim 4, wherein the second biasing arrangement (20) comprises a second resilient member (73) arranged between the housing (4) and the cassette (16) at an end portion of the housing (4) opposite to the lid (10).

21. A method of refilling a dispenser (2) with a stack (8) of sheets of web material, the dispenser (2) being provided with a reservoir (6) for the stack of sheets of web material and comprising a housing (4), wherein the dispenser (2) comprises a lid (10) being provided with a dispensing opening (12) for sheets of web material, wherein the lid (10) is adapted to face upwardly during use of the dispenser (2), and wherein the dispenser (2) comprises a first biasing arrangement (14) for biasing the stack (8) of sheets of web material towards the lid (10) and the dispensing opening (12), the dispenser (2) further comprising a cassette (16), which cassette (16) comprises the reservoir (6) and is arranged to be moved to a position at least partially outside the housing (4), wherein the cassette (16) is provided with a refill opening (18) for sheets

of web material, the refill opening (18) being accessible when the cassette (16) is in the position at least partially outside the housing (4), and wherein the lid (10), or a portion at an upper end of the cassette (16), forms an upper constraint of the reservoir (6), the method comprising:

- moving (100) the cassette (16) upwardly into the position at least partially outside the housing (4), and
- refilling (102) the reservoir (6) with sheets of web material by placing a stack (8) of sheets of web material through the refill opening (18) into the reservoir (6) within the formed upper constraint.

22. The method according to claim 21, wherein the dispenser (2) comprises a second biasing arrangement (20) adapted to bias the cassette (16) in a vertical direction towards the position at least partially outside the housing (4), and wherein the moving (100) comprises:
- ejecting (104) the cassette (16) from the housing (4) by the second biasing arrangement (20) towards the position at least partially outside the housing (4).

23. . The method according to claim 22, wherein the dispenser (2) comprises a securing arrangement (22) for holding the cassette (16) in place in the housing (4) against a biasing force of the second biasing arrangement (20), and wherein the moving (100) comprises:
- releasing (106) the securing arrangement (22) to permit movement of the cassette (16) to the position at least partially outside the housing (4).

24. The method according to claim 23, wherein the securing arrangement (22) comprises a push button (40), and the releasing (106) of the securing arrangement (22) comprises engagement of the push button (40).

25. The method according to any one of claims 21 – 24, comprising:
- repositioning (108) the cassette (16) in the housing (4).

26. The method according to claim 25 in combination with claim 24 or claim 23, wherein the securing arrangement (22) is arranged to hold the cassette (16) in the position at least partially outside the housing (4), and wherein the repositioning (108) comprises:

– releasing the securing arrangement (22) to permit movement of the cassette (16) towards the position in the housing (4).

27. The method according to claim 26, wherein the securing arrangement (22) comprises a push button (40), and the releasing of the securing arrangement (22) comprises:

- engagement of the push button (40).

28. The method according to any one of claims 21 – 27, wherein the refilling (102) comprises:

- placing (110) a stack (8) having a height of 10 – 20 cm in the reservoir (6).

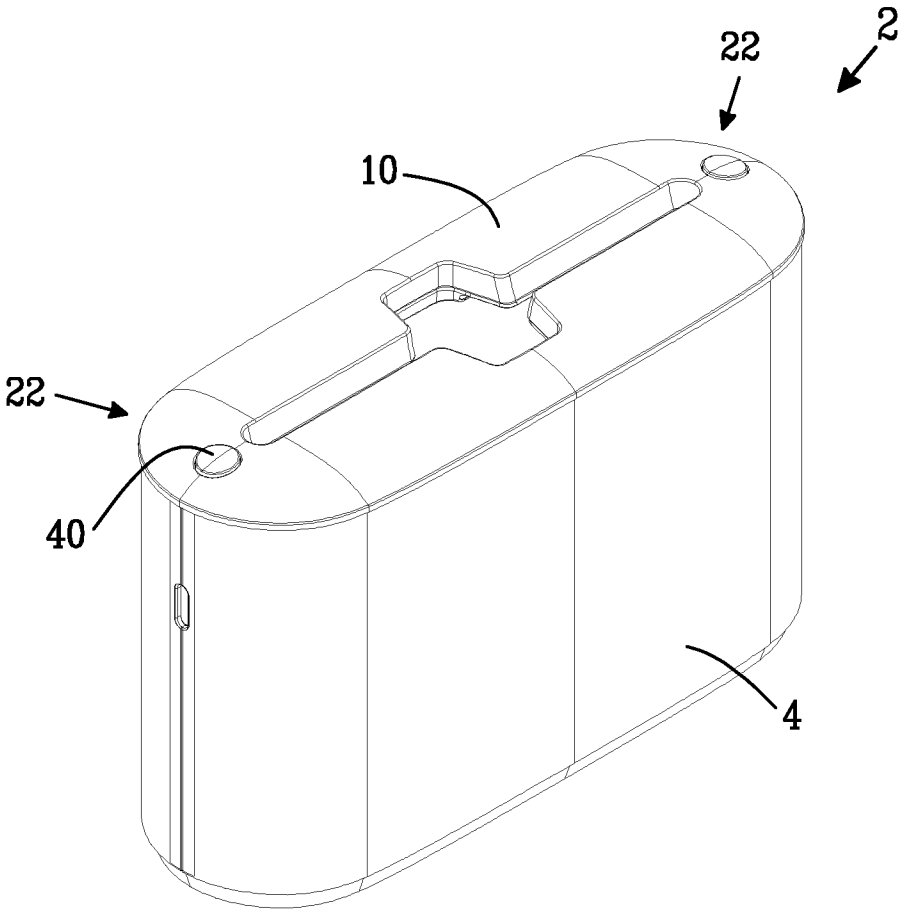


Fig.1

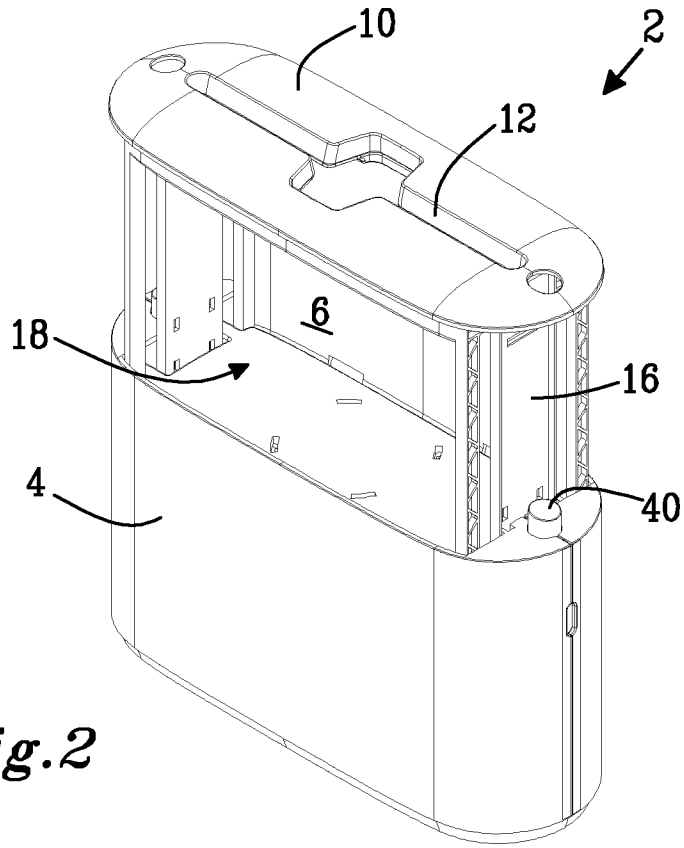


Fig.2

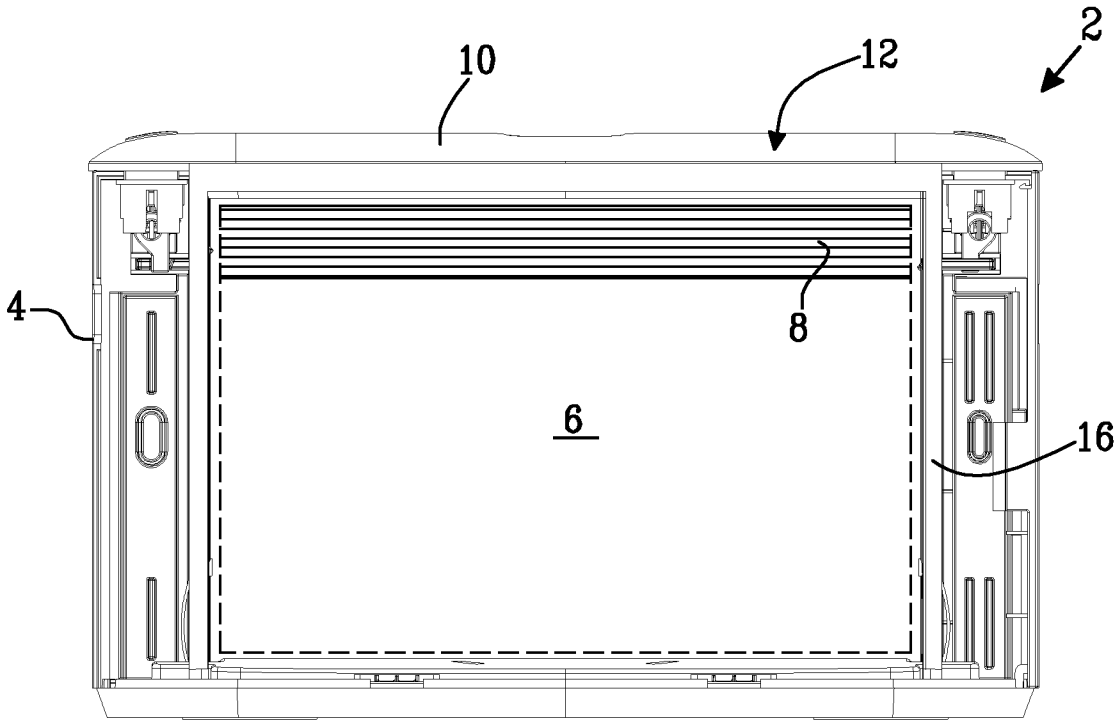


Fig.3

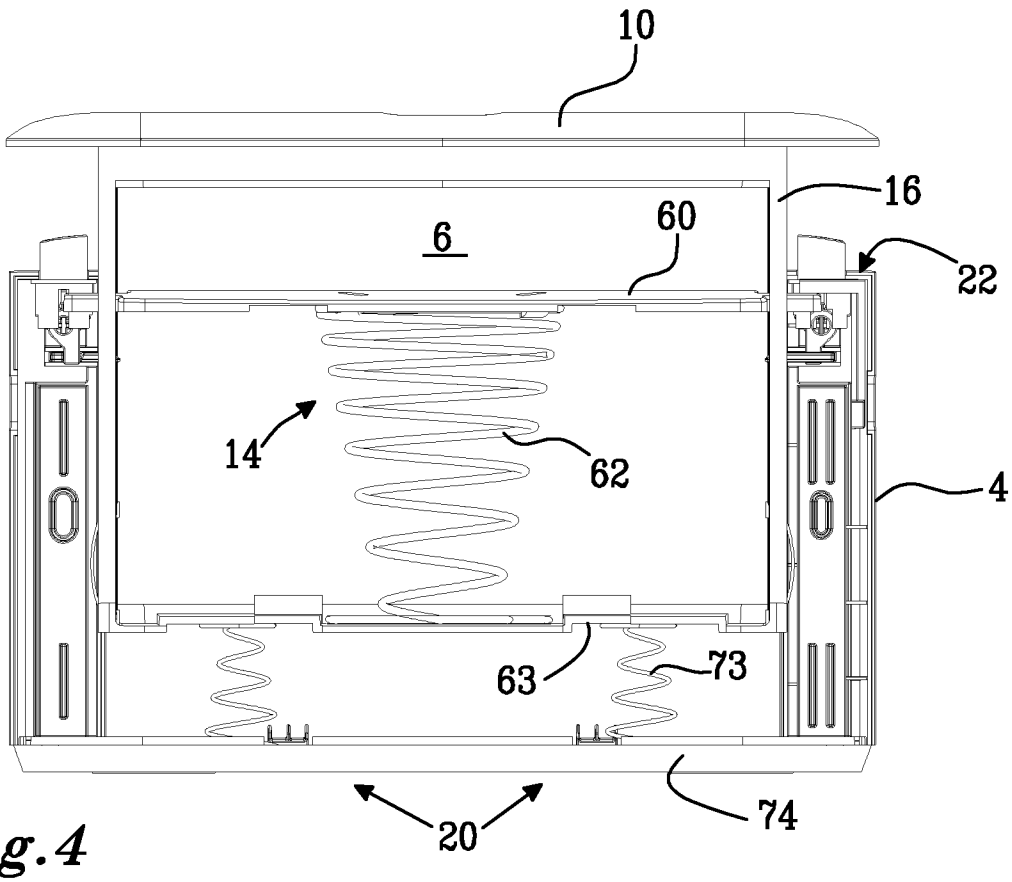


Fig.4

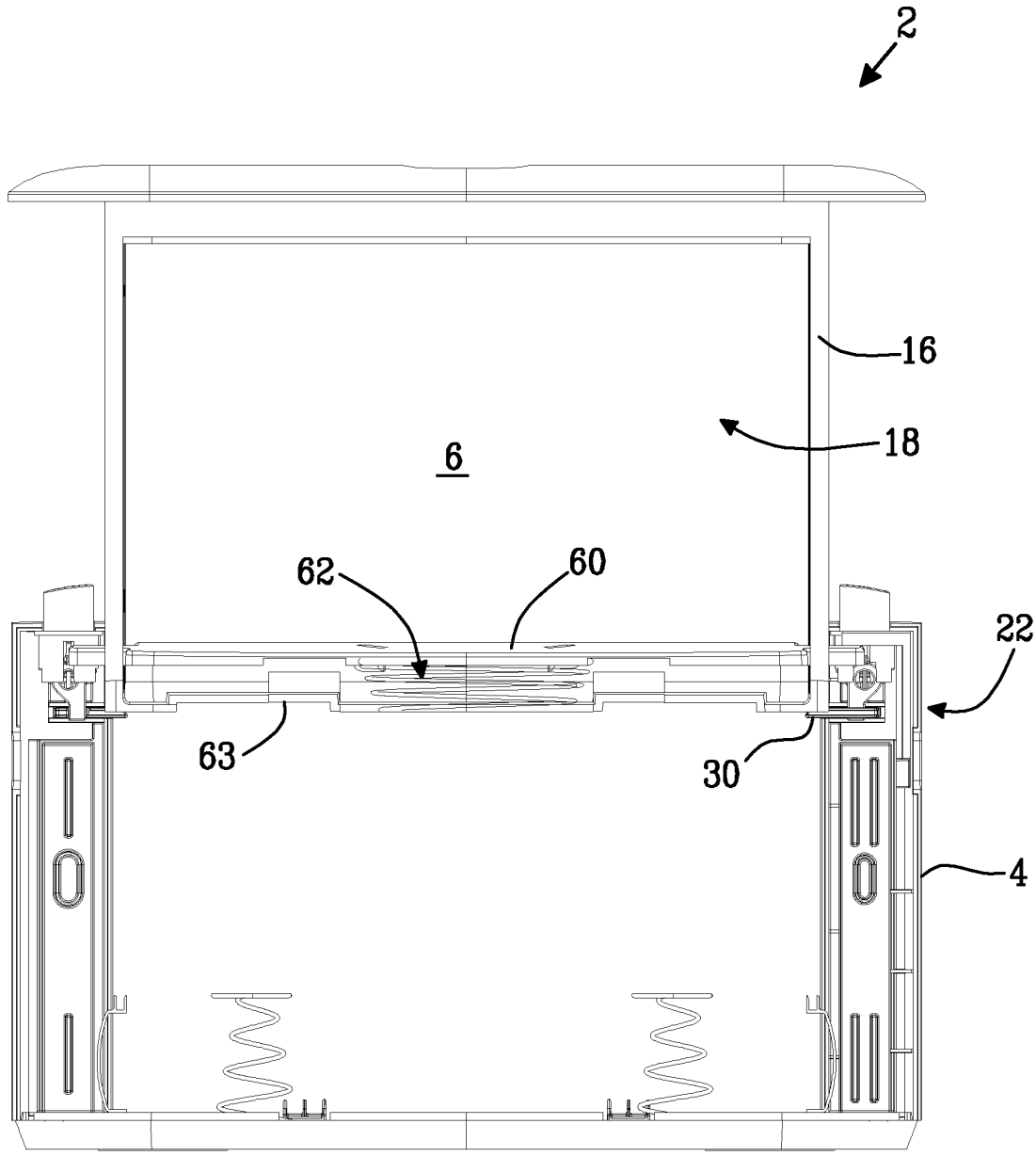


Fig.5

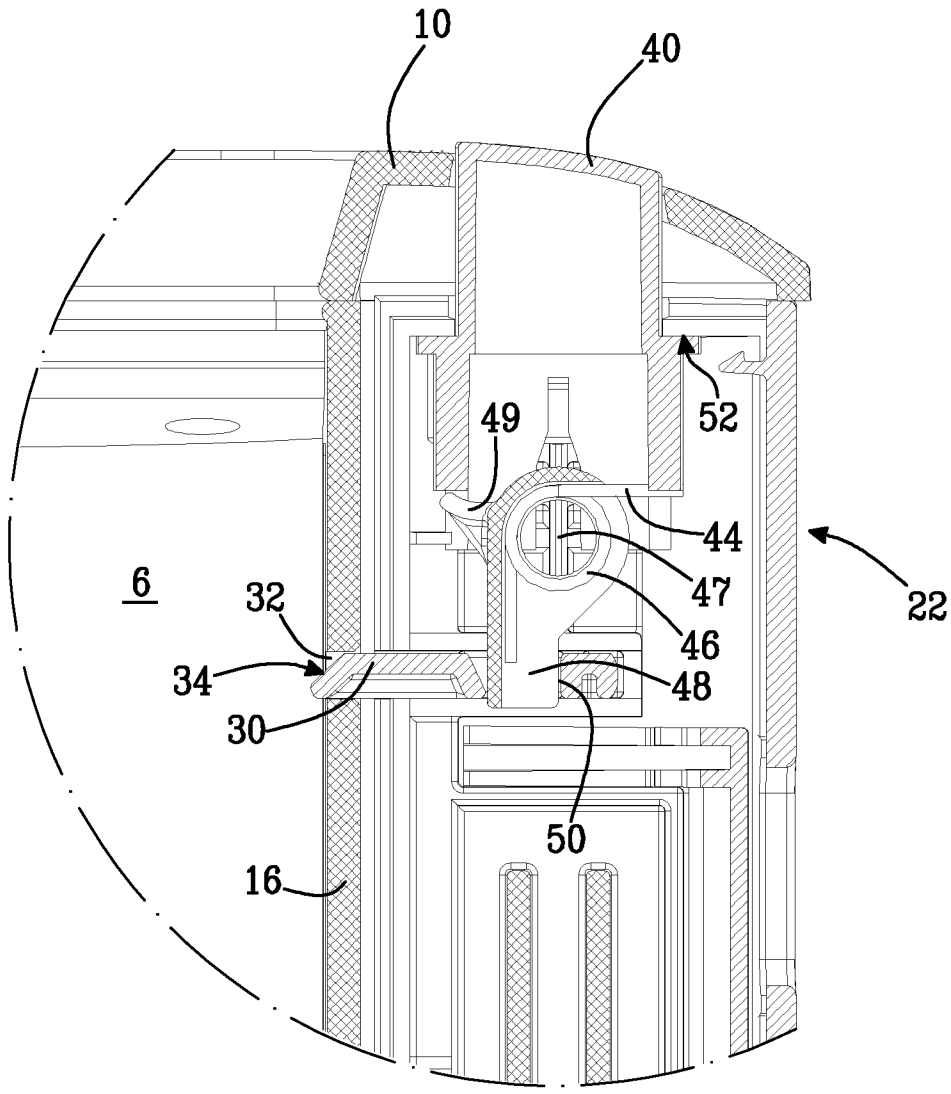


Fig.6

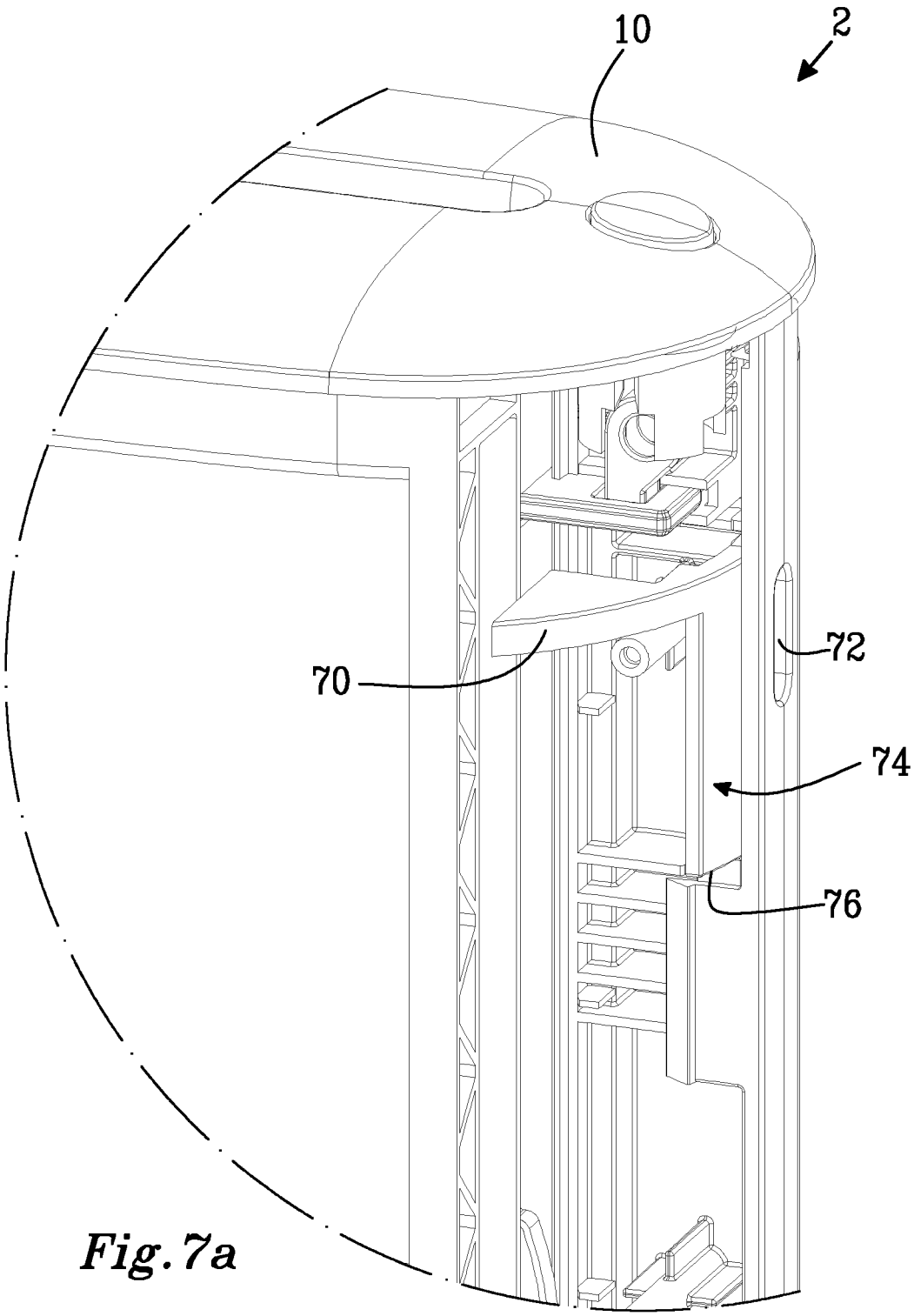


Fig. 7a

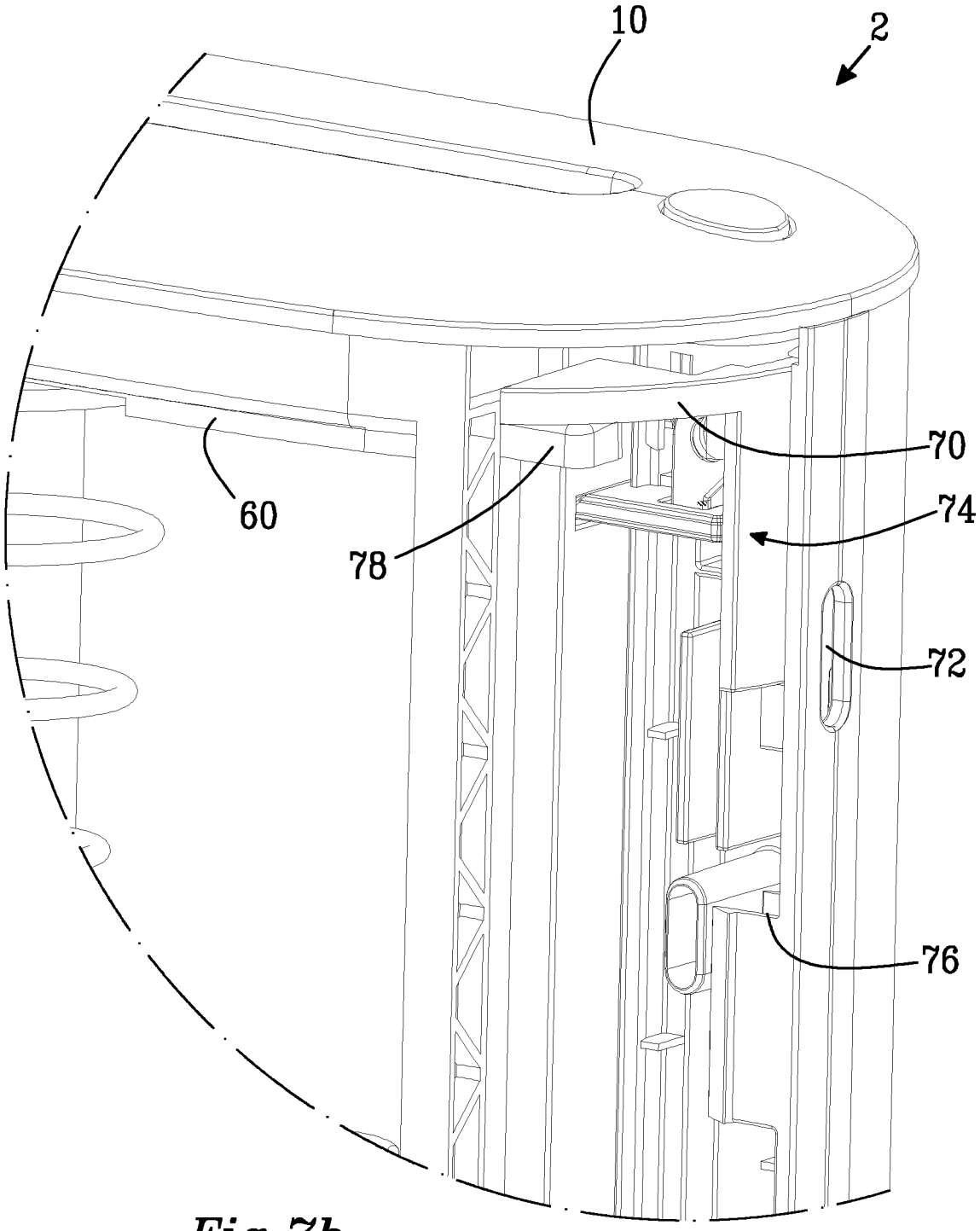


Fig. 7b

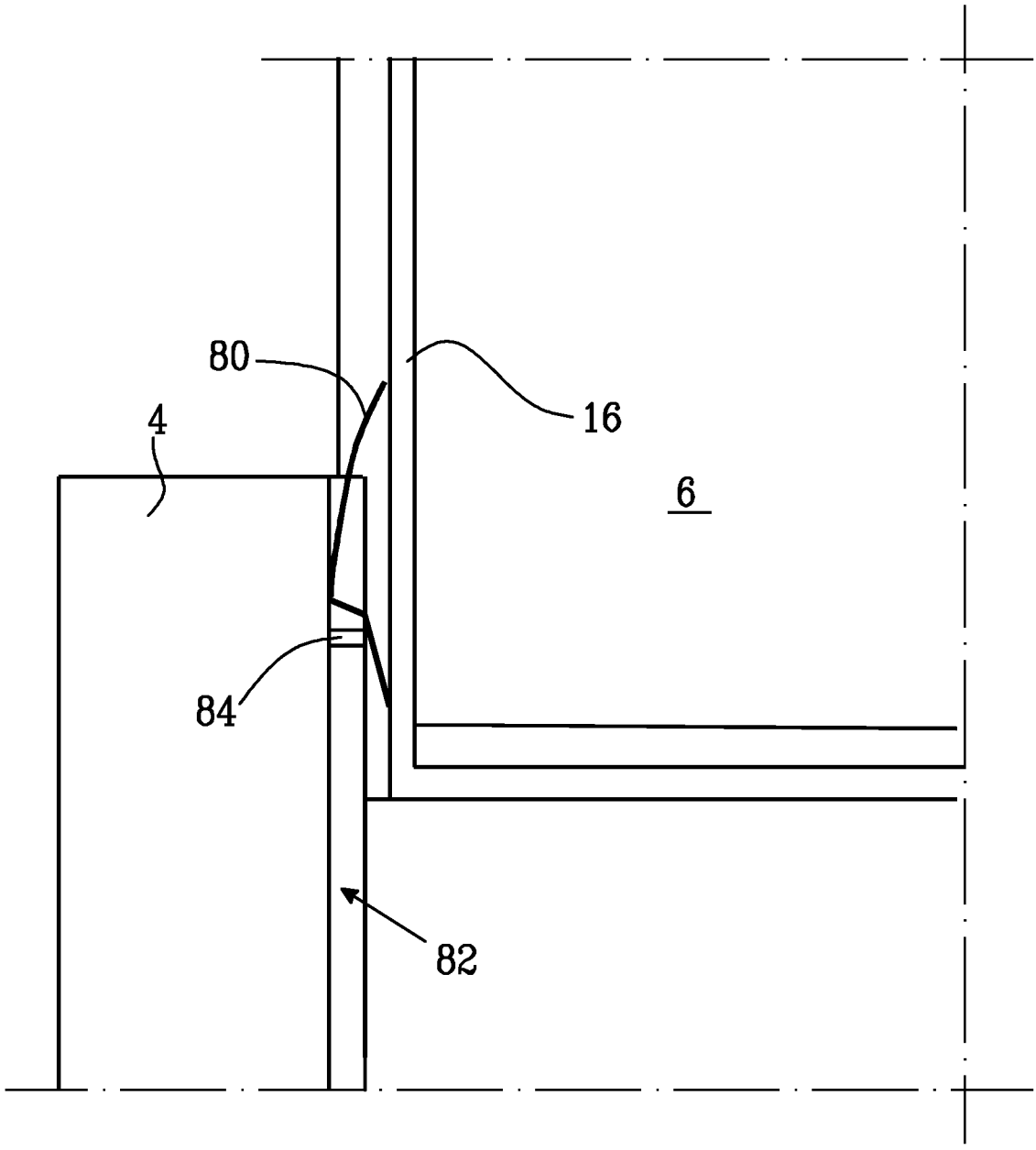


Fig.8

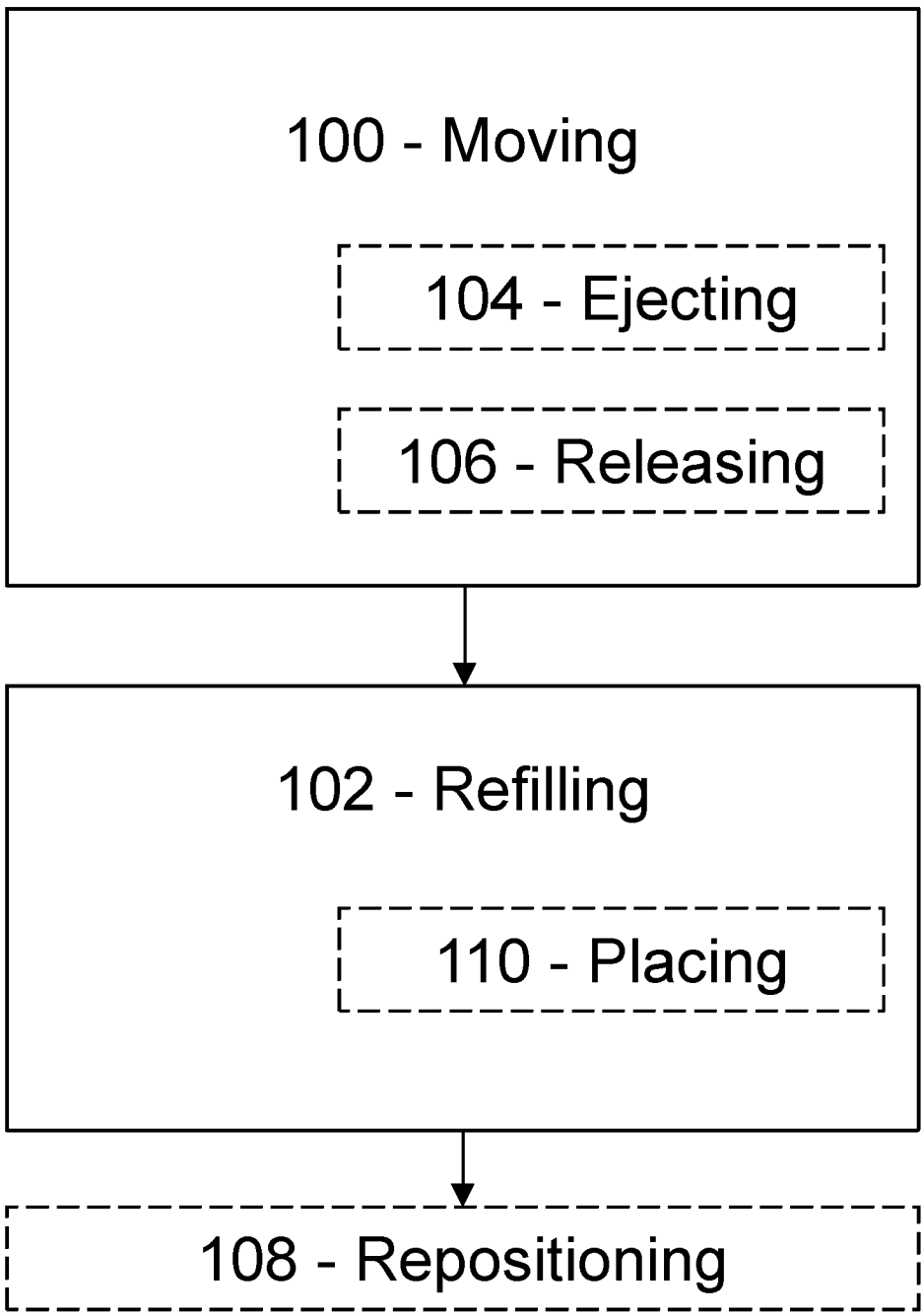

100 - Moving
104 - Ejecting
106 - Releasing
102 - Refilling
110 - Placing
108 - Repositioning

Fig. 9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2013/050558

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

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)

IPC: A47K

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

SE, DK, FI, NO classes as above

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

EPO-Internal, PAJ, WPI data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 20070034638 A1 (ZEIRON KENT), 15 February 2007 (2007-02-15); abstract; figures	1-3, 14-19, 21, 25, 28
A	--	4-13, 20, 23, 24, 26, 27
A	US 20060273102 A1 (WIESER RUSSELL ET AL), 7 December 2006 (2006-12-07); abstract; figures --	1-28
A	US 20020030045 A1 (NAKAMURA KEIICHI ET AL), 14 March 2002 (2002-03-14); abstract; figures --	1-28

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12-02-2014	13-02-2014
Name and mailing address of the ISA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. + 46 8 666 02 86	Authorized officer Björn Lindkvist Telephone No. + 46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2013/050558

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 2435104 A (SOLOMON JOSEPH H), 27 January 1948 (1948-01-27); whole document --	1-28
A	US 2620061 A (OSKAR UXA), 2 December 1952 (1952-12-02); whole document -- --------	1-28

International application No.
PCT/SE2013/050558

Continuation of: second sheet

International Patent Classification (IPC)

A47K 10/42 (2006.01)

US	20070034638	A1	15/02/2007	AU	2004319268	A1 17/11/2005
				CA	2562865	A1 17/11/2005
				EP	1742556	A1 17/01/2007
				MX	PA06012651	A 14/02/2007
				US	7661553	B2 16/02/2010
				WO	2005107546	A1 17/11/2005
US	20060273102	A1	07/12/2006	US	7178689	B2 20/02/2007
US	20020030045	A1	14/03/2002	CN	1293940	A 09/05/2001
				CN	1201697	C 18/05/2005
				CN	1593318	A 16/03/2005
				CN	1300537	C 14/02/2007
				DE	60023811	T2 20/07/2006
				EP	1084670	B1 09/11/2005
				HK	1036918	A1 14/10/2005
				TW	510786	B 21/11/2002
				US	6331696	B1 18/12/2001
				US	6392200	B1 21/05/2002
US	2435104	A	27/01/1948	NONE		
US	2620061	A	02/12/1952	CH	278812	A 31/10/1951
				DE	818829	C 29/10/1951
				FR	996286	A 17/12/1951
				GB	678296	A 03/09/1952
				NL	73002	C -