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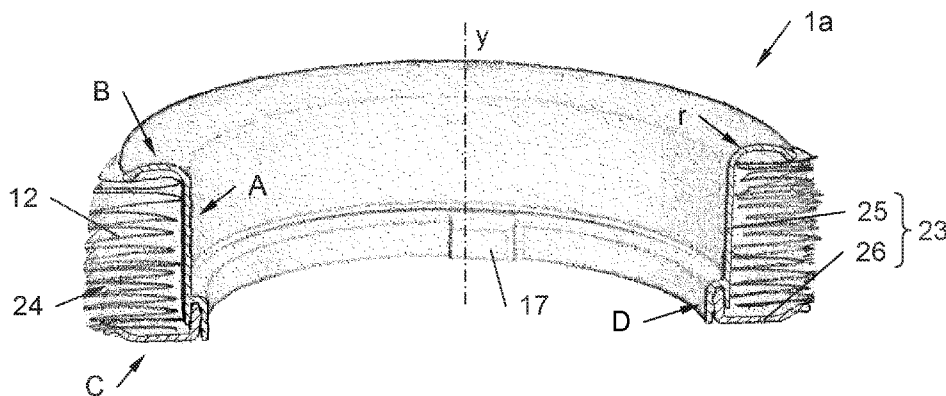


Fig. 3

(57) Abstract: A cassette (1a, 1b) for a waste storage system (2a, 2b) is disclosed, wherein the cassette (1a, 1b) comprises an annular base body (23) for holding an interfolded hose (12). The annular base body (23) comprises a first base body part (25) and a second base body part (26) being connected at an inner ring section of the annular base body (23) at a longitudinal/axial end of the annular base body (23) respectively at an inner corner of the profile of the annular base body (23) at said longitudinal/axial end of the annular base body (23). Furthermore, a waste storage system (2a, 2b) having a cassette (1a, 1b) of the above kind in a receiving compartment (18) is disclosed.



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Improved cassette for a waste storage system

The invention relates to a cassette for a waste storage system, wherein the cassette comprises an annular base body with an annular hose compartment for holding an interfolded hose. Furthermore, the invention relates to waste storage system, comprising a receiving compartment for receiving a cassette of the above kind with an interfolded hose, wherein the receiving compartment is arranged a) above a waste storage container for storing waste or b) on a post thereby providing space for storing waste below said receiving compartment, and comprising a cassette of the above kind arranged in said receiving compartment.

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For instance, EP 2 295 345 A1 discloses a cassette and a waste storage system of the kind above. The cassette is held in the waste storage system by means of pawls arranged at the outer circumference of the cassette. As the cassette is a disposable, manufactures tend to make the walls of the cassette as thin as possible. Particularly when the hose is pulled out of the cassette, the cassette may wobble because of the thin materials giving the user the impression of a cheap article.

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Accordingly, a problem of the invention is to provide an improved cassette and an improved waste storage system. In particular, the stability of the waste storage system shall be improved without the need to make the walls of the cassette thicker.

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The problem of the invention is solved by a cassette for a waste storage system as defined in the opening paragraph, wherein the annular base body of the cassette comprises a first base body part and a second base body part being connected at an inner ring section of the annular base body at a longitudinal/axial end of the annular base body respectively at an inner corner of the profile of the annular base body at said longitudinal/axial end of the annular base body.

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Particularly, the annular base body comprises a center portion substantially in the shape of a cylinder barrel, a first holed disk portion arranged at a first longitudinal/axial end of the center portion and a second holed disk portion arranged at the second longitudinal/axial end of said center portion. The center portion and the first holed disk portion are comprised of the first base body part and the second holed disk portion is comprised of the second base body part. The first base body part and the second base body part are connected at an inner ring section

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of the annular base body at the second longitudinal/axial end of the annular base body respectively at the inner corner of the profile of the annular base body at said second longitudinal/axial end of the annular base body. In other words, the first base body part and the second base body part are connected at the second longitudinal/axial end of said center portion respectively at the inner ring section of said second holed disk portion.

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The annular base body longitudinally/axially extends along a center axis of the annular base body, wherein the center axis is oriented perpendicular to a plane spanned by a ring formed by the annular base body.

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Furthermore, the invention relates to waste storage system, comprising a receiving compartment for receiving a cassette of the above kind with an interfolded hose, wherein the receiving compartment is arranged a) above a waste storage container for storing waste or b) on a post thereby providing space for storing waste below said receiving compartment, and comprising a cassette of the above kind arranged in said receiving compartment.

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As the first base body part and a second base body part are connected at the lower inner ring section, this region is comparably rigid. Accordingly, holding the cassette within the waste storage system in this region does not cause wobbling of the cassette when the hose is pulled out of the cassette. Thus, the user is given the impression of a valuable article.

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Furthermore, the proposed measures offer the possibility to easily manufacture the cassette. Moreover, protrusions of a holder for the cassette can reach into recesses formed by the first base body part and a second base body part so as to hinder rotation of the cassette in the receiving compartment of the waste storage system. The cassette and the holder may also be connected by means of a snap fit connection so that the cassette is (temporarily) fixed to the holder. Generally, the cassette may have the shape of a circular ring, an oval ring or a polygon ring.

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It is also of advantage, if a mounting direction of a connection between the first base body part and the second base body part is oriented in parallel with the center axis of the annular base body, wherein the center axis is oriented perpendicular to a plane spanned by a ring

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formed by the annular base body. In this way, the annular base body may easily be produced by moving together the first base body and the second base body in their axial directions.

5 The first base body part and the second base body part can be connected by means of a first snap fit connection, by means a friction based connection, by means of glue or by means of welding.

10 The cassette may comprise an interfolded hose arranged in the annular hose compartment, which in particular is clamped between the first base body and the second base body. In this way, folding the hose may be eased. Furthermore, unintentionally pulling off the hose from the cassette is avoided.

15 It should be noted that the center portion is not necessarily in the strict shape of a cylinder barrel. In contrast, the center portion may be shaped as a cone or may have a curved profile. As well, the first holed disk portion and the second holed disk portion are not necessarily strict flat disks. In contrast, the profile of these portions and may deviate from a flat shape. In particular, the second holed disk portion may comprise a cylindrical inner protrusion for forming the connection between the first base body part and the second base body part. Furthermore, the first holed disk portion beneficially comprises a curved portion, wherein a concave side of the curved portion faces the annular compartment for the interfolded hose. In this way, the hose may easily be pulled through the ring of the annular base body. The curved portion may particularly have a radius of at least 5 mm. Further preferred values are 15 mm and 30 mm. The curved portion may particularly have a circular, parabolic or hyperbola-shaped profile defining a round chute. Especially parabolic or hyperbola-shaped profiles provide a very good function in terms of pulling the hose through the annular base body.

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Further advantageous embodiments are disclosed in the claims and in the description as well as in the Figures.

30 Beneficially, the cassette is displaced from the holder of the waste storage system by a distance, except where the protrusion of said holder reaching into the recess of said cassette. In other words, the holder touches the cassette just in the region of the protrusions of the holder. In this way, friction between the cassette and the holder can be reduced.

In a very advantageous embodiment, the cassette comprises hinged flaps arranged at the outer circumference of the annular base body. Beneficially, the outwardly projecting flaps touch the outer border of the receiving compartment of the waste storage system. Accordingly, the cassette can be centered in the receiving compartment without further means.

In yet another beneficial embodiment, a modular system is disclosed, comprising at least two different waste storage systems, wherein a radial extension of the receiving compartment of a first waste storage system is larger than a radial extension of the receiving compartment of a second waste storage system. So, one and the same cassette may be used in different waste storage systems.

It should be noted that a cassette, comprising hinged flaps and said modular system may be useful without the features of claim 1 and may form the base for an independent invention. Such an invention may be defined as follows:

Cassette for a waste storage system, the cassette comprising an annular base body with an annular hose compartment for holding an interfolded hose, wherein hinged flaps are arranged at the outer circumference of the base body.

Waste storage system, comprising a receiving compartment for receiving a cassette with an interfolded hose, the receiving compartment being arranged a) above a waste storage container for storing waste or b) on a post thereby providing space for storing waste below said receiving compartment, wherein a cassette of said kind is arranged in said receiving compartment and wherein the outwardly projecting flaps touch the outer border of said receiving compartment.

Modular system, comprising at least two different waste storage systems, wherein a radial extension of the receiving compartment of a first waste storage system is larger than a radial extension of the receiving compartment of a second waste storage system.

Generally, it is of advantage if the pivotal axes of the flaps are oriented transverse, in particular perpendicular, to the center axis of the annular base body, wherein the center axis is ori-

5 ented perpendicular to a plane spanned by a ring formed by the annular base body. In this way, the flaps may be designed to swivel between a first position extending substantially in parallel with said center axis of the annular base body approximating a cylinder barrel and a second position radially protruding outwards in a direction perpendicular to the center axis of the annular base body approximating a star shape.

10 However, in an alternative embodiment, the pivotal axes of the flaps are oriented in parallel to a center axis of the annular base body, wherein the center axis is oriented perpendicular to a plane spanned by a ring formed by the annular base body. Again, the cassette can be centered in the receiving compartment without further means.

Beneficially, the flaps are arranged at the outer circumference of the second holed disk portion. In this way, pulling out the hose of the cassette is not hindered.

15 In yet another advantageous embodiment, the flaps and the second holed disk portion are one-piece. In this embodiment, the hinges can be made by depressions in the second holed disk portion / the second base body part so as to form flexible hinges or living hinges. Accordingly, the hinges can be produced efficiently.

20 However, in an alternative embodiment the flaps and the second holed disk portion / the second base body part may also be separate parts being connected with pins or bolts.

For better understanding the invention, Figures showing embodiments of the invention are presented hereinafter. The Figures schematically show:

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Fig. 1 a cut oblique view of a first embodiment of a waste storage system;

Fig. 2 a more detailed view of the cassette in the waste storage system;

30 Fig. 3 a cut oblique view of the cassette used in the waste storage system of Figures 1 and 2;

Fig. 4 a cross sectional view of a second embodiment of a waste storage system;

- Fig. 5 an oblique view of the cassette used in the waste storage system of Fig. 4, wherein flaps of the cassette extend substantially in parallel with a center axis of the cassette approximating a cylinder barrel;
- 5
- Fig. 6 an oblique view of the cassette used in the waste storage system of Fig. 4, wherein flaps of the cassette radially protrude outwards in a direction perpendicular to the center axis of the cassette approximating a star shape and
- 10 Fig. 7 a detailed view of a protrusion of a holder reaching into a recess of the cassette.

Generally, same parts or similar parts are denoted with the same/similar names and reference signs. The features disclosed in the description apply to parts with the same/similar names respectively reference signs. Indicating the orientation and relative position (up, down, side-

15 ward, etc.) is related to the associated Figure, and indication of the orientation and/or relative position has to be amended in different Figures accordingly as the case may be.

Figures 1 to 3 show a first example of a cassette 1a for a waste storage system 2a respectively the waste storage system 2a itself. Fig. 1 shows a cut oblique view of the waste storage system 2a, Fig. 2 shows a more detailed view of the cassette 1a in the waste storage system 2a,

20 and Fig. 3 shows a cut oblique view of the cassette 1a. The waste storage system 2a without the storage cassette 1a may be seen or denoted as a waste storage device.

The waste storage system 2a comprises a container 3 with an upper container part 4 and a

25 lower container part 5, both preferably made of plastic. Both parts 4 and 5 are linked together by means of a first hinge 6 so that the upper container part 4 can be swiveled in relation to the lower container part 5 making the interior space of the container 3 accessible. A handle (not shown) may ease opening of the container 3. In normal operation, the upper container part 4 may be fixed to the lower container part 5 by means of a button, which latches into a re-

30 cess (not shown). By pressing the button, said locking may be released.

On top of the container 3 there is a container opening 7, which is closed by a container lid 8. The container lid 8 is mounted to the upper container part 4 by means of a second hinge 9 so

that the container lid 8 can be swiveled in relation to the upper container part 4 making the container opening 7 accessible. There may also be an optional spring 10 for automatic opening of the container lid 8.

5 The waste storage system 2a furthermore comprises a driver ring 11, which is rotatably mounted to the container 3 in the region of the container opening 7 and which is designed to catch a waste storage bag or waste storage hose/tube 12 guided through a center opening of the driver ring 11. In this example, the driver ring 11 is mounted on top a support 13 and comprises an optional funnel with elastic flaps/lids 14. Preferably, the waste storage bag or
10 waste storage hose/tube 12 is made of a plastic film, and preferable the flaps/lids 14 are made of an elastomer. The waste storage hose/tube 12 is closed by a knot 15 here to avoid waste falling out of the hose/tube 12 into the container 3.

Moreover, the waste storage system 2a comprises a holder 16 for receiving the ring-shaped
15 storage cassette 1a containing the waste storage bag or waste storage hose 12. The storage cassette 1a is fixed to the holder 16 to avoid rotation by means of protrusions of the holder 16 reaching into recesses 17 of the cassette 1a (see especially Fig. 7 in this context). However, in principle other holding means are imaginable as well and the storage cassette 1a may also simply be placed onto the holder 16 and may freely turn. The holder 16 may also be mounted
20 to the driver ring 11 or comprised thereof for co-rotation. The side walls of the upper container part 4 in the region of the opening 7 and the holder 16 together form a receiving compartment 18 for receiving the storage cassette 1a.

The driver ring 11 is coupled to a gear rod 19 within a gear box 20 in this example. For in-
25 stance, the driver ring 11 may comprise a gear ring 21 cooperating with a first gear wheel rotatably mounted to the container 3 by means of a horizontal axle. A second gear wheel mounted to said axle can cooperate with the gear rod 19. So, the driver ring 11 is turned upon a vertical movement of the gear rod 19. To activate the driver ring 11, the gear rod 19 has a push button 22 on its upper end. The gear box 20 may also comprise a freewheel unit so that
30 the driver ring 11 and thus the elastic flaps 14 just turn into one direction and so that a backward movement is avoided. In this way, the waste storage hose/tube 12 is successively twisted, even if the push button 22 is depressed repeatedly. The gear rod 19 may also be spring loaded so that it moves to its idle position after actuation.

It should be noted that the waste storage system 2a is not limited to the concrete embodiment of the driving mechanism. Alternatively, the gear rod 19 may also directly cooperate with the driver ring 11 if it is oriented horizontally. However, it can also be oriented vertically if the container opening 7 is oriented vertically. In a further alternative, a crank handle may be coupled to the driver ring 11.

The container 3 may also comprise an optional fastener, which mounted to the gear box 20 here and which is designed to fix the waste storage bag or waste storage hose 12. An optional blade (not shown) may be mounted in the region of the fastener to cut the waste storage hose/tube 12.

The function of the waste storage system 2a is as follows:

In a first step, the storage cassette 1a is attached to the holder 16 respectively put into the receiving compartment 18, and the waste storage hose 12 is pulled upwards and then fed through the driver ring 11 respectively through the elastic flaps/lids 14. The knot 15 closes the end of the waste storage hose 12 so that the waste storage system 2a is ready for use.

In a next step, waste such as baby or adult diaper or other personal waste material can be put into the storage hose 12 and disposed therein. For this reason, the pop-up container lid 8 is automatically opened by the optional spring 10 when a corresponding button (not shown) at the front side of the container 3 is pressed. In turn, also the gear rod 19 and its push button 22 moves upwards caused by a spring.

When waste is thrown through the rotating funnel, the elastic flaps/lids 14 rebound back to their idle position and close the waste storage hose 12. When the container lid 8 is closed now, it pushes down the gear rod 19 causing a rotation of the driver ring 11 thereby twisting and closing the waste storage hose 12.

In the above example, the driver ring 11 is driven manually, e.g. by closing the container lid 8 or by pushing the push button 22 by hand. However, motorized operation is imaginable as well. For example, a switch, which is actuated when the container lid 8 is closed respectively

when the gear rod 19 is pushed, can start a timer and a motor coupled to the driver ring 11. In this way, the driver ring 11 automatically turns for some (defined) time.

5 In the above example, the receiving compartment 18 for the cassette 1a is arranged above the waste storage container 3. However, the receiving compartment 18 for the cassette 1a may also be arranged on a post thereby providing space for storing waste below said receiving compartment 18 without a particular container 3.

10 It should also be noted that the use of the waste storage system 2a is not limited to the use of a waste storage hose 12. Alternatively, also waste storage bags (particularly concatenated to each other) may be used. Simply speaking, the knot 15 may be omitted then. The functions disclosed hereinbefore apply to a waste storage bag in an equivalent way, anyway.

15 As shown in detail in Fig. 3, the cassette 1a for the waste storage system 2a, comprises an annular base body 23 with an annular hose compartment 24 for holding the interfolded hose 12. The annular base body 23 of the cassette 1a comprises a first base body part 25 and a second base body part 26 being connected at an inner ring section of the annular base body 23 at a longitudinal/axial end (in the Figures at the lower end) of the annular base body 23 respectively at an inner (lower) corner of the profile of the annular base body 23 at said longitudinal/axial end of the annular base body 23. The annular base body 23 longitudinally/axially extends along a center axis y of the annular base body 23, wherein the center axis y is oriented perpendicular to a plane spanned by a ring formed by the annular base body 23.

25 In particular, the annular base body 23 comprises a center portion A in the shape of a cylinder barrel, a first holed disk portion B arranged at a first longitudinal/axial end of the center portion A and a second holed disk portion C arranged at the second longitudinal/axial end of said center portion A. The center portion A and the first holed disk portion B are comprised of a first base body part 25, and the second holed disk portion C is comprised of a second base body part 26. Both the first base body part 25 and the second base body part 26 are connected
30 at an inner ring section of the annular base body 23 at said second longitudinal/axial end (in the Figures at the lower end) of the annular base body 23 respectively at the inner (lower) corner of the profile of the annular base body 23 at said second longitudinal/axial end of the annular base body 23. In other words, the first base body part 25 and the second base body

part 26 are connected at the second longitudinal/axial end of said center portion A respectively at the inner ring section of said second holed disk portion C. The profile of the annular base body 23 is visible in Fig. 3 as the hatched area at the left or the right side.

5 On the one hand, this offers the possibility to easily manufacture the cassette 1a. On the other hand, this offers the additional possibility that protrusions of the holder 16 reach into recesses 17 of the annular base body 23 so as to hinder rotation of the cassette 1a in the receiving compartment 18 of the waste storage system 2a (see also Fig. 7). In this context, it is of advantage if a mounting direction of the connection between the first base body part 25 and the
10 second base body part 26 is oriented in parallel with the center axis y of the annular base body 23. In yet another beneficial embodiment, the interfolded hose 12 arranged in the annular hose compartment 24 may be clamped between the first base body part 25 and the second base body part 26.

15 The first base body part 25 and the second base body part 26 are connected by means of a first snap fit connection D here. However, the first base body part 25 and the second base body part 26 may also be connected by means of a friction based connection or by gluing or welding.

20 It should be noted that the center portion A is not necessarily in the strict shape of a cylinder barrel. In contrast, the center portion A may be shaped as a cone or may have a curved profile. As well, the first holed disk portion B and the second holed disk portion C are not necessarily strict flat disks. In contrast, the profile of these portions B and C may deviate from a flat shape. In this example, the second holed disk portion C comprises a cylindrical inner protrusion for forming the connection between the first base body part 25 and the second base body
25 part 26. Furthermore, the first holed disk portion B comprises a curved portion, wherein a concave side of the curved portion faces the annular hose compartment 24 for the interfolded hose 12. The curved portion may particularly have a radius r of at least 5 mm. Further preferred values are 15 mm and 30 mm. The curved portion may particularly have a circular,
30 parabolic or hyperbola-shaped profile defining a round chute. Especially parabolic or hyperbola-shaped profiles provide a very good function in terms of pulling the hose through the annular base body.

Figure 4 shows a second embodiment of a waste storage system 2b, which is similar to the waste storage system 2a shown in Figures 1 to 3. Figures 5 and 6 show the second embodiment of the storage cassette 1b of waste storage system 2b in two different states. Concretely, Fig. 4 shows a cross sectional view of the waste storage system 2b, and Figures 5 and 6 show oblique views of the storage cassette 1b.

In contrast to the storage cassette 1a of the waste storage systems 2a shown in Figures 1 to 3, the storage cassette 1b comprises hinged flaps 27 arranged at the outer circumference of the annular base body 23.

In this example, the pivotal axes of the flaps 27 are oriented transverse, here concretely perpendicular, to a center axis y of the annular base body 23, wherein the center axis y is oriented perpendicular to a plane spanned by a ring formed by the annular base body 23.

The flaps 27 are arranged at the outer circumference of the second holed disk portion C respectively at the outer circumference of the second base body part 26. In this particular example, the flaps 27 and the second holed disk portion C / the second base body part 26 are one-piece, meaning that the hinges 28 are made by depressions in the second holed disk portion C / the second base body part 26. In this way, flexible hinges or living hinges 28 are formed.

However, the flaps 27 and the second holed disk portion C / the second base body part 26 may also be separate parts being connected with pins or bolts (not shown).

The flaps 27 are designed to swivel between a first position extending substantially in parallel with said center axis y of the annular base body 23 approximating a cylinder barrel (shown in Fig. 5) and a second position radially protruding outwards in a direction perpendicular to the center axis y of the annular base body 23 approximating a star shape (shown in Fig. 6).

In particular, the outwardly projecting flaps 27 touch the outer border of the receiving compartment 18 of the waste storage system 2b. By means of the flaps 27, the cassette 1b can be used in differently sized receiving compartments 18. In particular, a modular system is disclosed, comprising at least two different waste storage systems 2b, wherein a radial extension of the receiving compartment 18 of a first waste storage system 2b is larger than a radial extension of the receiving compartment 18 of a second waste storage system 2b.

By means of the flaps 27 the cassette 1b can be centered in the receiving compartment 18 without further means. Particularly, protrusions of the holder 16 reaching into the recesses 17 of the cassette 1b are generally not needed for this reason. Thus, by means of the flaps 27, the cassette 1b can be use in waste storage systems 2b of different size and in waste storage systems 2b with or without said holder protrusions.

In the above example, the pivotal axes of the flaps 27 are oriented perpendicular to the center axis y of the annular base body 23. However, this is not the only possibility. The pivotal axes of the flaps 27 can also be oriented in parallel to the center axis y of the annular base body 23.

Fig. 7 finally shows a detailed view of a protrusion of the holder 16 reaching into the recess 17 of the annular base body 23 so as to avoid an unwanted rotation of the cassette 1b and, by means of second snap fit connections E, holding the cassette 1b in the waste storage system 2b. In this example, the annular base body 23 comprises three recesses 17 spaced 120° from one another. However, these are exemplary numbers, and the annular base body 23 may also have a different number of recesses 17 spaced at different angles. Fig. 7 furthermore shows that that there is a distance a between the second base body part 26 and the holder 16 so as to reduce friction.

In the above examples, the cassette 1a, 1b has the shape of a circular ring. However, this is not the only possibility, but the cassette 1a, 1b alternatively may be oval or even may have the shape of a polygon.

It should also be noted that although the examples just show embodiments disclosing protrusions of the holder 16 reaching into the recesses 17 of the cassette 1a, 1b, a rotational movement of the cassette 1a, 1b may also be blocked by protrusions of the cassette 1a, 1b reaching into the recesses 17 of the holder 16.

Moreover, it should also be noted that although the examples just show embodiments where the second base body part 26 protrudes into an annular slit of the first base body part 25, it is also possible that the first base body part 25 protrudes into an annular slit of the second base body part 26.

It should also be noted that the cassette 1b respectively the waste storage system 2b shown in Figs. 4 to 7 may be useful without the features of claim 1 and may form the base for independent inventions.

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Finally, it is noted that the invention is not limited to the embodiments disclosed hereinbefore, but combinations of the different variants are possible. In reality, the waste storage system 2a, 2b respectively the cassette 1a, 1b may have more or less parts than shown in the Figures. The waste storage system 2a, 2b respectively cassette 1a, 1b and parts thereof may also be shown in different scales and may be bigger or smaller than depicted. Finally, the description may comprise subject matter of further independent inventions.

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List of reference numerals

	1a, 1b	cassette
	2a, 2b	waste storage system
5	3	container
	4	upper container part
	5	lower container part
	6	first hinge
10	7	container opening
	8	container lid
	9	second hinge
	10	spring
15	11	driver ring
	12	waste storage hose/tube
	13	support
	14	elastic lid/flap
	15	knot
20	16	holder
	17	recess
	18	receiving compartment for cassette
	19	gear rod
25	20	gear box
	21	gear ring / toothing
	22	push button
	23	annular base body
30	24	annular hose compartment
	25	first base body part
	26	second base body part
	27	hinged flaps
35	28	hinge
	A	center portion
	B	first holed disk portion
	C	second holed disk portion
40	D	first snap fit connection
	E	second snap fit connection
	r	radius of first holed disk portion
45	y	center axis of the annular base body

Claims

1. Cassette (1a, 1b) for a waste storage system (2a, 2b), the cassette (1a, 1b) comprising
5 an annular base body (23) with an annular hose compartment (24) for holding an interfolded
hose (12),
characterized in that
the annular base body (23) of the cassette (1a, 1b) comprises a first base body part (25) and a
second base body part (26) being connected at an inner ring section of the annular base
body (23) at a longitudinal/axial end of the annular base body (23) respectively at an inner
10 corner of a profile of the annular base body (23) at said longitudinal/axial end of the annular
base body (23).
2. Cassette (1a, 1b) as claimed in claim 1, characterized in that
- the annular base body (23) comprises a center portion (A) substantially in the shape of
15 a cylinder barrel,
 - a first holed disk portion (B) arranged at a first longitudinal/axial end of the center
portion (A) and
 - a second holed disk portion (C) arranged at the second longitudinal/axial end of said
center portion (A),
 - 20 - wherein the center portion (A) and the first holed disk portion (B) are comprised of the
first base body part (25) and the second holed disk portion (C) is comprised of the second
base body part (26) being connected at an inner ring section of the annular base body (23) at
the second longitudinal/axial end of the annular base body (23) respectively at the inner cor-
ner of the profile of the annular base body (23) at the second longitudinal/axial end of the an-
25 nular base body (23).
3. Cassette (1a, 1b) as claimed in claim 1 or 2, characterized in that a mounting direction
of a connection between the first base body part (25) and the second base body part (26) is
oriented in parallel with a center axis (y) of the annular base body (23).
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4. Cassette (1a, 1b) as claimed in any one of claims 1 to 3, characterized in that the first
base body part (25) and the second base body part (26) are connected by means of a first snap

fit connection (D), by means of a friction based connection, by means of glue or by means of welding.

- 5 5. Cassette (1a, 1b) as claimed in any one of the claims 1 to 4, characterized in an interfolded hose (12) arranged in the annular hose compartment (24).
6. Cassette (1a, 1b) as claimed in claim 5, characterized in that the hose (12) is clamped between the first base body part (25) and the second base body part (26).
- 10 7. Cassette (1a, 1b) as claimed in any one of the claims 1 to 6, characterized in that the first holed disk portion (B) comprises a curved portion, wherein a concave side of the curved portion faces the annular hose compartment (24) for the interfolded hose (12).
- 15 8. Cassette (1a, 1b) as claimed in claim 7, characterized in that the curved portion has a radius (r) of at least 5 mm.
9. Cassette (1a, 1b) as claimed in claim 7, characterized in that the curved portion has a circular, parabolic or hyperbola-shaped profile defining a rounded chute.
- 20 10. Cassette (1a, 1b) as claimed in any one of the claims 1 to 9, characterized in a recess (17) formed by the first base body part (25) and the second base body part (26), wherein the recess (17) is designed to receive a protrusion of a holder (16).
- 25 11. Cassette (1a, 1b) as claimed in any one of the claims 1 to 10, characterized in hinged flaps (27) arranged at the outer circumference of the annular base body (23).
12. Cassette (1a, 1b) as claimed in claim 11, characterized in that the pivotal axes of the flaps (27) are oriented transverse to a center axis (y) of the annular base body (23).
- 30 13. Cassette (1a, 1b) as claimed in claim 11, characterized in that the pivotal axes of the flaps (27) are oriented in parallel to a center axis (y) of the annular base body (23).

14. Cassette (1a, 1b) as claimed in any one of the claims 11 to 13, characterized in that the flaps (27) are arranged at the outer circumference of the second holed disk portion (C).

5 15. Cassette (1a, 1b) as claimed in claim 14, characterized in that the flaps (27) and the second holed disk portion (C) are one-piece.

16. Cassette (1a, 1b) as claimed in claim 14, characterized in that the flaps (27) and the second holed disk portion (C) are separate parts.

10 17. Cassette (1a, 1b) as claimed in any one of claims 11 to 16, characterized in that the flaps (27) are designed to swivel between a first position extending substantially in parallel with said center axis (y) of the annular base body (23) approximating a cylinder barrel and a second position radially protruding outwards in a direction perpendicular to the center axis (y) of the annular base body (23) approximating a star shape.

15 18. Cassette (1a, 1b) as claimed in any one of the claims 1 to 17, characterized in that the cassette (1a, 1b) has the shape of a circular ring, an oval ring or a polygon ring.

20 19. Waste storage system (2a, 2b) comprising a receiving compartment (18) for receiving a cassette (1a, 1b) with an interfolded hose (12), the receiving compartment (18) being arranged a) above a waste storage container (3) for storing waste or b) on a post thereby providing space for storing waste below said receiving compartment (18), characterized in a cassette (1a, 1b) according to any one of claims 5 to 18 arranged in said receiving compartment (18).

25 20. Waste storage system (2a, 2b) as claimed in claim 19 with a cassette (1a, 1b) as claimed in any one of the claims 10 to 18, characterized in that a protrusion of a holder (16) bordering said receiving compartment (18) reaches into the recess (17) formed by the first base body part (25) and the second base body part (26) or vice versa.

30 21. Waste storage system (2a, 2b) as claimed in claim 20, characterized in that the cassette (1a, 1b) and the holder (16) are connected by means of a second snap fit connection (E).

22. Waste storage system (2a, 2b) as claimed in claim 20 or 21, characterized in that the cassette (1a, 1b) is displaced from said holder (16) by a distance (a), except where the protrusion of said holder (16) reach into the recess (17) of said cassette (1a, 1b).

5 23. Waste storage system (2a, 2b) as claimed in any one of the claims 19 to 22 with a cassette (1a, 1b) according to any one of claims 10 to 18, characterized in that the outwardly projecting flaps (27) touch the outer border of said receiving compartment (18).

10 24. Modular system, characterized in at least two different waste storage systems (2a, 2b) as claimed in any one of the claims 19 to 23, wherein a radial extension of the receiving compartment (18) of a first waste storage system (2a, 2b) is larger than a radial extension of the receiving compartment (18) of a second waste storage system (2a, 2b).

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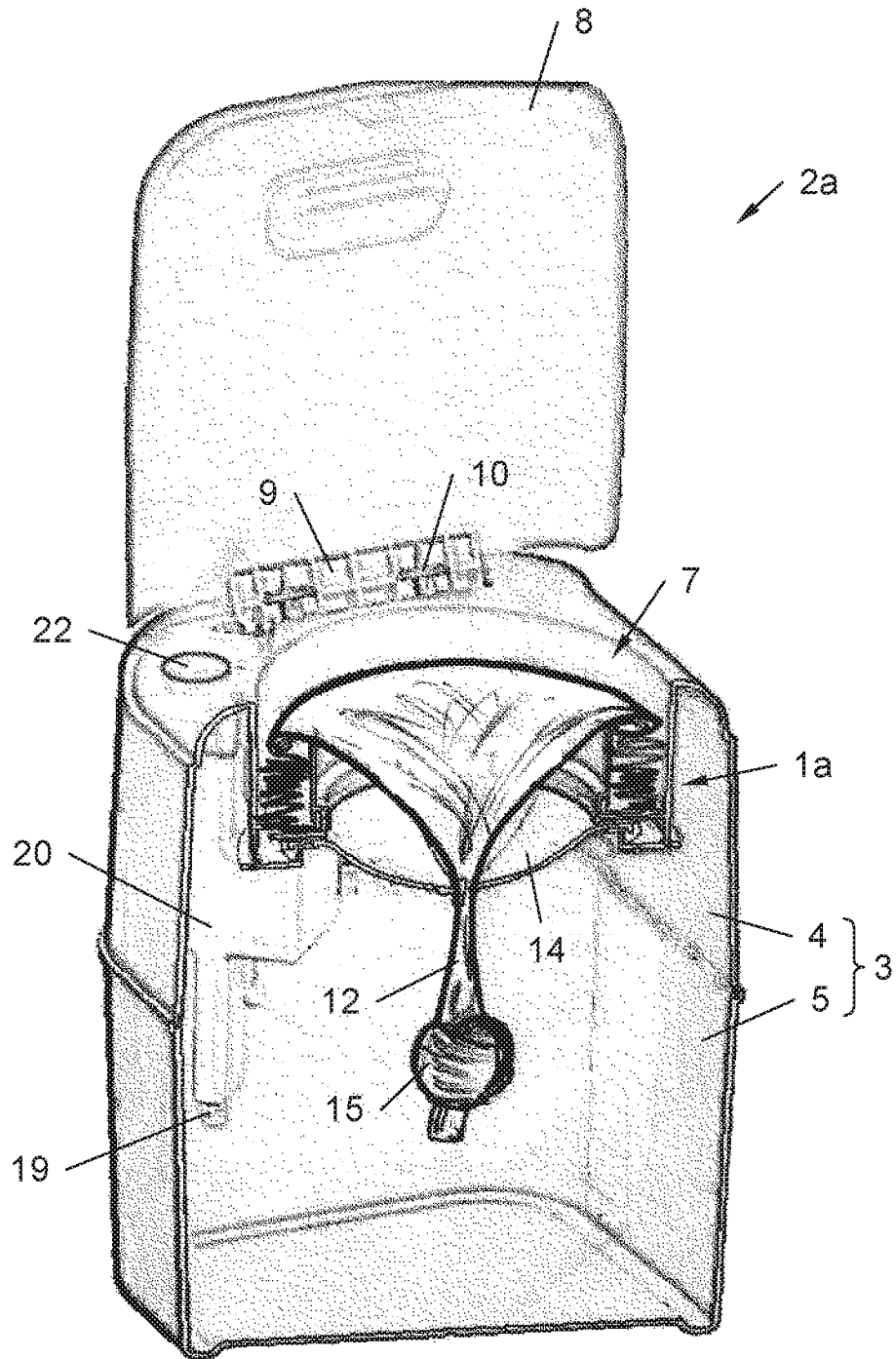


Fig. 1

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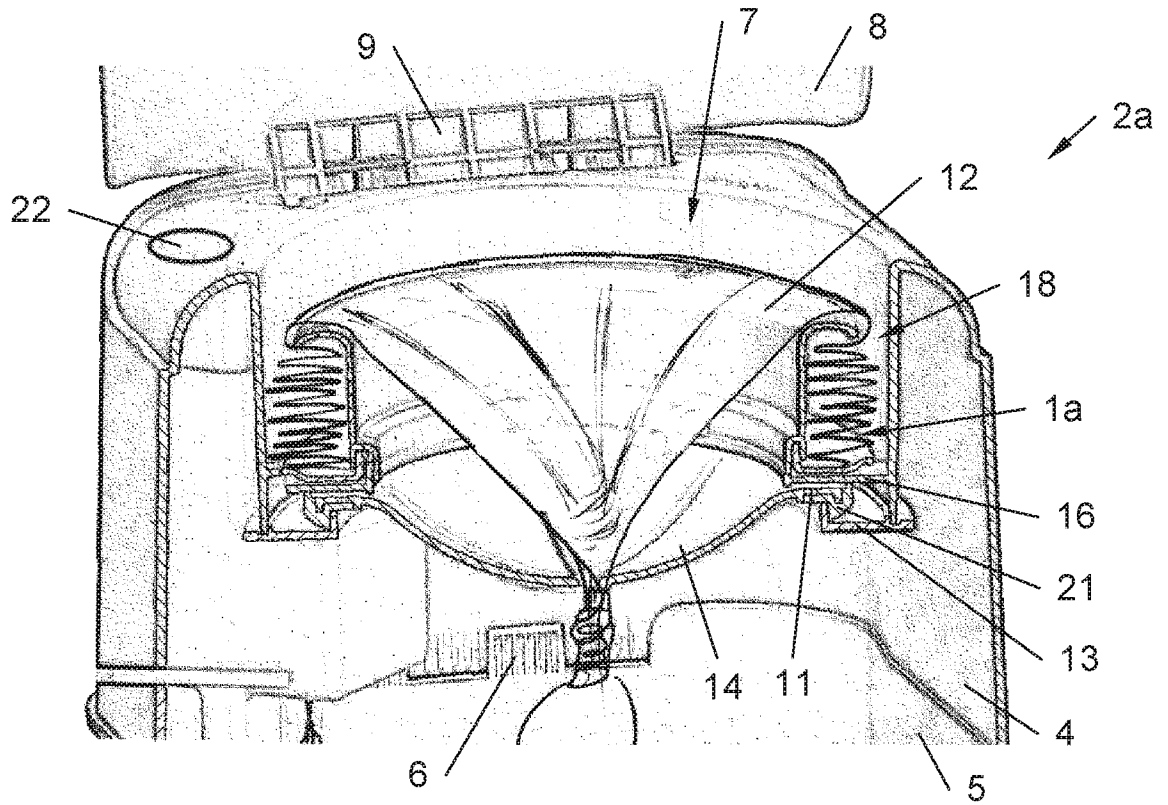


Fig. 2

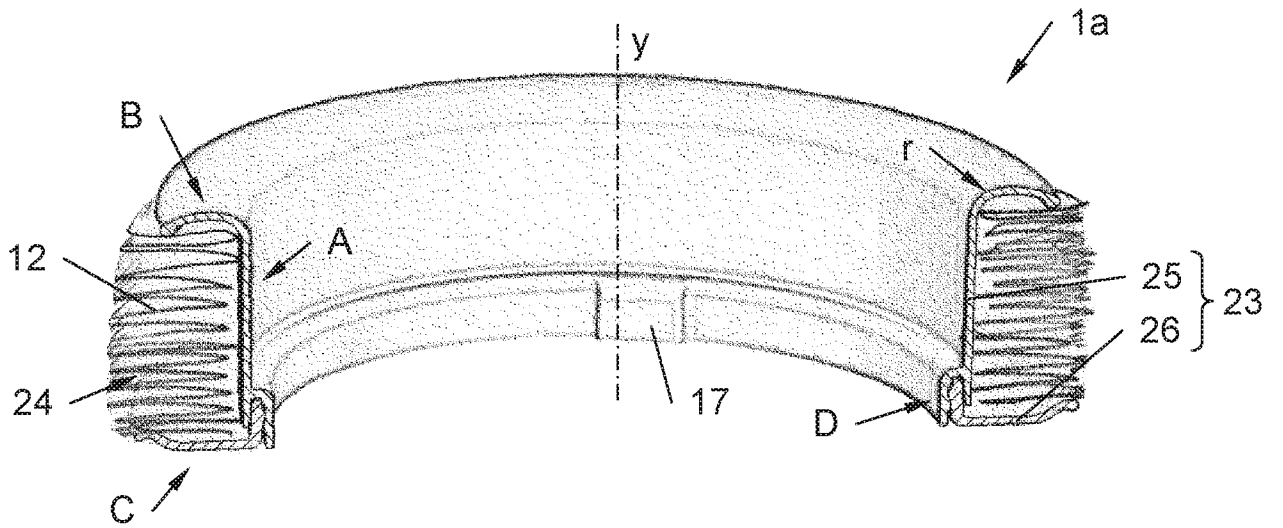


Fig. 3

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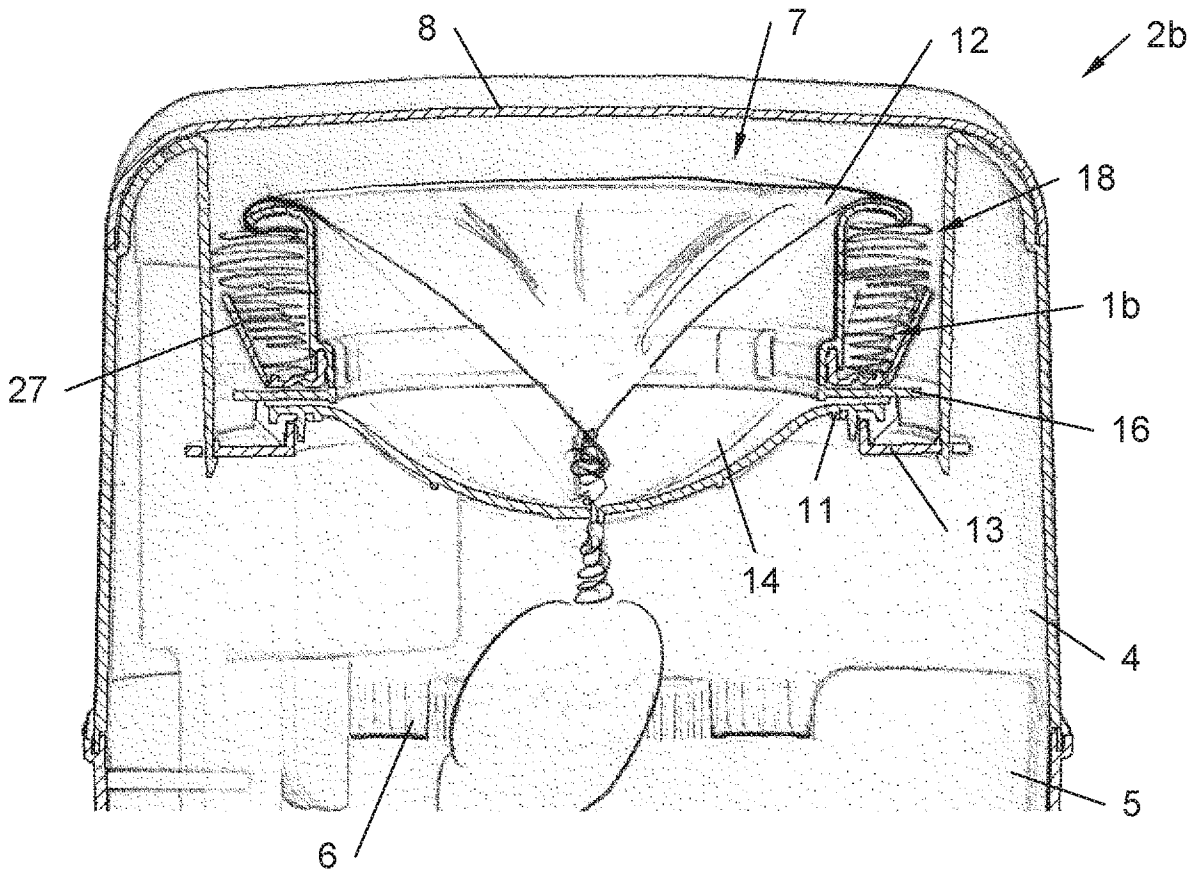


Fig. 4

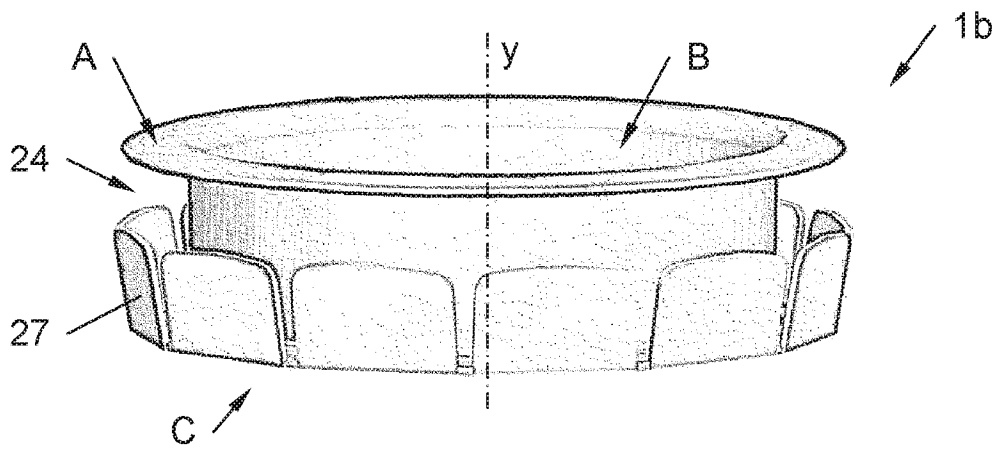


Fig. 5

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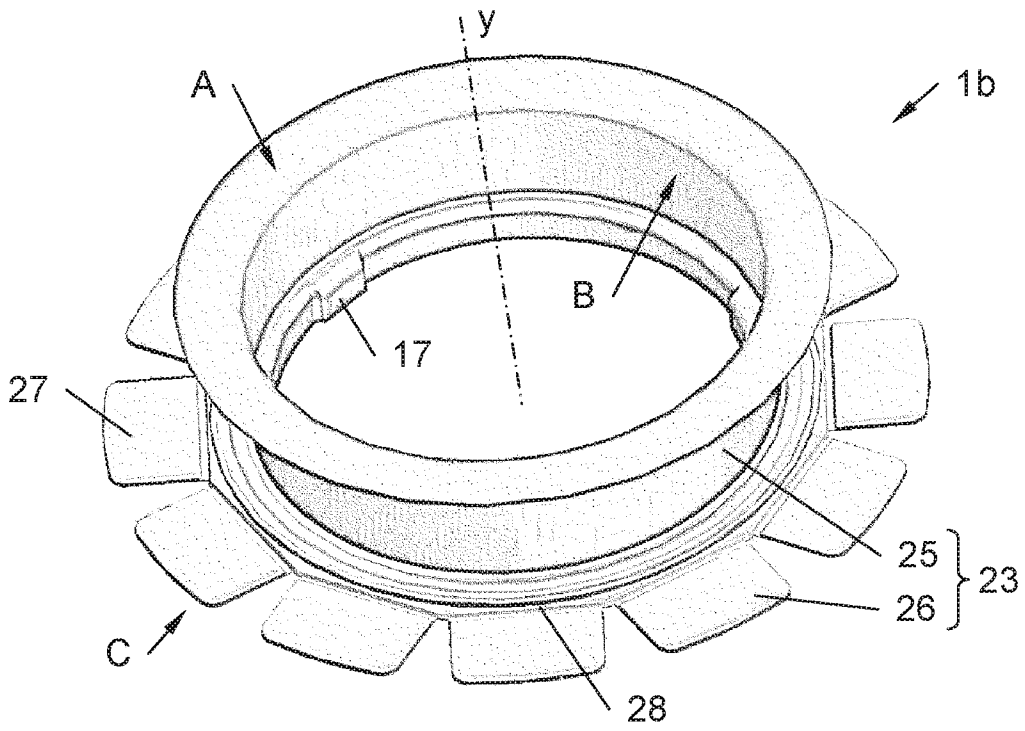


Fig. 6

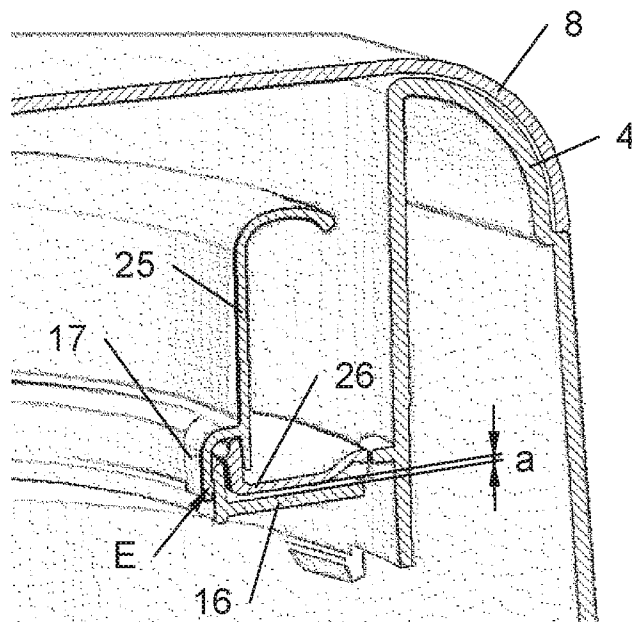


Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2017/113002

A. CLASSIFICATION OF SUBJECT MATTER		
B65F 1/06(2006.01)i; B65F 1/14(2006.01)i; B65B 9/15(2006.01)i		
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) B65F; B65B		
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) CNABS;DWPI;SIPOABS;CNKI:waste,storage,innerfold,compartment,cassette,ring, annular,base,gear,flexible		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 2295344 A1 (APRICA CHILDRENS PRODUCTS INC) 16 March 2011 (2011-03-16) see description, paragraph 26-35, and figures 1-11	1-24
A	US 2005044819 A1 (RICHARD S.CHOMIK) 03 March 2005 (2005-03-03) see the whole document	1-24
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A	CN 106927168 A (SHANGHAI TOWNEW IND CO LTD) 07 July 2017 (2017-07-07) see the whole document	1-24
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 21 June 2018		Date of mailing of the international search report 06 July 2018
Name and mailing address of the ISA/CN STATE INTELLECTUAL PROPERTY OFFICE OF THE P.R.CHINA 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 China		Authorized officer GAO,Lili
Facsimile No. (86-10)62019451		Telephone No. 62085270

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CN 106927168 A	07 July 2017	None	