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(54) **Sanitary dressing waste bin**

(57) A waste bin (1) for sanitary dressings such as tampons, sanitary napkins and pantliners, comprising a waste container (2) with lid (4) and an operating mechanism (16,17,20) for opening the lid (4), wherein a suspension bracket (5) is provided from which the waste container (2) with lid (4) is detachably suspended, and wherein in and/or on the suspension bracket (5), the operating mechanism (16,17,20) is provided, which operating mechanism (16,17,20) comprises a pedal (20) for operation thereof.

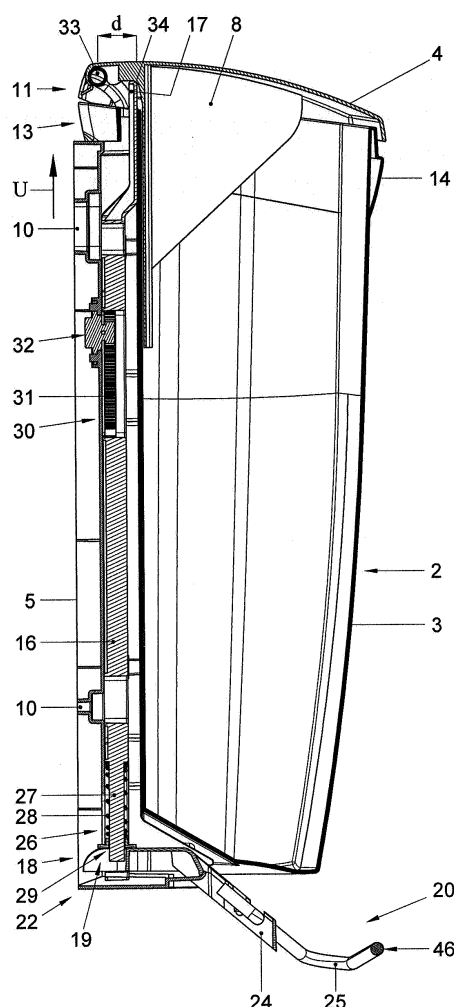


Fig. 6

Description

[0001] The invention relates to a waste bin for sanitary dressings, such as sanitary napkins, tampons or pantliners.

[0002] Waste bins especially for sanitary dressing, such as tampons, sanitary napkins and pantliners, are known and are offered by, for instance, Hokatex, the Netherlands. These waste bins are disposed on the floor or suspended from a wall, in a toilet room, close to the toilet bowl so that a user can throw the sanitary dressing simply into the waste bin. To that end, a lid of the waste bin is to be lifted by hand. This is experienced as unpleasant and is often unhygienic. It has already been proposed to provide a waste bin disposed on the floor with a pedal, so that the lid can be opened by foot. As a result, a user needs no longer touch the lid with her hand, which is experienced as much more agreeable. However, a drawback is that these waste bins are disposed loosely on the floor so that cleaning of the floor is complicated. Furthermore, there is the risk that the waste bin slides. These bins further have a short and a long side, the pedal being provided on the short side so that the bin can be arranged against a rear wall next to the toilet bowl. An advantage thereof is that sliding is prevented. A drawback is, however, that operation from a seated position should then be carried out with the heel, in an ergonomically awkward manner, or from a standing position, which is also disadvantageous. For waste bins for sanitary dressing attached to the wall, it has been proposed to provide an approach switch so that the lid is electrically opened when a user approaches the waste bin with, for instance, a hand. This also renders contact with the lid no longer necessary, but a drawback of such a solution is that an electric contact point for the waste bin is required, which may meet with obstacles regarding installation, or it has to be equipped with batteries or an accumulator, which can be considered expensive and undesired from an environmental viewpoint.

[0003] Waste bins for sanitary napkins are typically periodically collected and taken along to be emptied and cleaned. The removed waste bin is then replaced by another waste bin. For this reason, it is important that such a waste bin can be taken up and carried along in a simple manner. As a rule, the department performing this service will take along a plurality of different waste bins for replacing each waste bin with a same type of waste bin. This is logistically complicated as it has to be determined, each time, prior to a round, which type of waste bin is to be replaced, or an excess number of each type of waste bin is to be brought along.

[0004] The object of the invention is to provide a waste bin for sanitary napkins.

[0005] A first further object of the invention is to present such a waste bin which is easy to operate both for a user wanting to put sanitary napkins therein and for a service department wanting to periodically empty and clean, or otherwise service the waste bin.

[0006] A second further object of the invention is to present such a waste bin which is logistically simple for a service department wanting to periodically empty and clean, or otherwise service the waste bin.

5 **[0007]** A third further object of the invention is to present such a waste bin which simplifies servicing and, especially, cleaning of a space in which the waste bin is placed during use.

[0008] According to the invention, these and other objects can be achieved jointly and separately.

10 **[0009]** In a first aspect, the invention is characterized in that a suspension bracket is provided for attachment to a wall or a similar, substantially vertical surface, to which suspension bracket a waste container with lid is detachably attached. In and/or on the suspension bracket, a pedal with an operating mechanism is provided, with which the lid of the waste bin can be pressed open. When detaching the waste container from the suspension bracket, it is preferred that the operating mechanism with the suspension bracket remains behind and only the waste bin needs to be taken along for emptying and cleaning. An already emptied, cleaned waste container can be placed back.

25 **[0010]** During use, the waste bin is preferably suspended in a manner such that, with the lid closed, the pedal is located at a small distance from the floor at the bottom of the wall, such that the pedal can be operated by foot, preferably by a seated person as well as by a person standing up. It is particularly advantageous when the pedal can be moved down to the floor maximally, so that the floor forms a stop for the movement. Thus, damage to the pedal and/or the operating mechanism can be prevented. By suspending the waste bin somewhat above the floor, the floor therebeneath can be cleaned in a simple manner.

35 **[0011]** In a second aspect, the invention is characterized in that the operating mechanism comprises a damper, whereby opening and, in particular, closing the lid is carried out in a damped manner. Thus, the lid is prevented from falling shut with a bang, while it can still close very well. Furthermore, in this manner, the quality of the apparatus is enhanced.

45 **[0012]** In a third aspect, the invention is characterized in that the waste container as waste bin can be disposed directly on the floor and can be used as such, while it can also be suspended from a suspension bracket, for operation by means of an operating mechanism such as the operating mechanism described hereinabove with (foot) pedal and/or a comparable suspension bracket with an electric mechanism therein for operation of the lid, in particular with an approach switch so that the lid needs not be touched for it to be opened and closed.

55 **[0013]** It is preferred that the same waste container can be used both independently and with both types of suspension brackets described. Optionally, the suspension bracket, in particular the electric version thereof, can also be designed such that with it, the waste bin can also be disposed on the floor. As such a waste container can

be used in two or even three or more manners, as described hereinabove, the advantage is achieved that with each of the embodiments, the same waste container can be utilized and that therefore a service department needs only have in stock and bring along one type of waste container, which is logistically particularly advantageous and limits investments. Preferably, the suspension brackets are also the same, with the exception of the operating mechanism, in particular the drive thereof.

[0014] The invention further contemplates providing a residing space, in particular a toilet room in which, in a simple and practical manner, a waste bin for sanitary dressing is suspended. To that end, a space according to the invention is characterized in that in the space, a toilet is provided with a front side, while at a relatively small distance from the toilet, a waste container is suspended with the aid of a suspension bracket, in which suspension bracket an operating mechanism is provided with a pedal, which pedal is at a small distance above a floor of the toilet room and at a distance from the front side of the toilet such that an adult person seated on the toilet can tread, with a foot, on the pedal for opening a lid of the waste container.

[0015] It still a further aspect, the invention is characterized by a method in which a first series of toilet rooms is provided with a first type of suspension bracket, a second series of toilet rooms is provided with a second type of suspension bracket, and a third series of toilet rooms is provided neither with the first nor with the second type of suspension bracket, while a pool of waste containers is formed which are similar to each other and whose number is greater than the sum of the first, second and third series of toilet rooms and which can, at wish, be suspended from the first type of suspension bracket for operation by pedal, can be suspended from the second type of the suspension bracket for electric operation, or can be disposed on the floor of the toilet room for manual operation, operation by foot and/or electric operation.

[0016] In clarification of the invention, exemplary embodiments of waste containers, waste bins, suspension brackets, assemblies of two or more of the previous and toilet rooms according to the invention will be shown and described on the basis of the drawing. These exemplary embodiments should not be construed to be limitative in any manner, and serve only as illustration of the invention in its different aspects. In the drawing:

Figure 1 shows, in perspective front view, a waste bin according to the invention;

Figure 2 shows, in perspective rear view, a waste bin according to the invention;

Figure 3 shows, in perspective view, cross-sectioned along a central longitudinal plane, a waste bin according to the invention;

Figure 4 shows, in perspective view, a suspension bracket with pedal for a waste bin according to the invention;

Figure 5 shows, in front view, a waste container ac-

cording to the invention;

Figure 6 shows, in cross-sectional side view along the line A-A in Figure 5, a waste bin according to invention;

Figure 7 shows, in side view, a waste container for use in a waste bin according to the invention;

Figure 8 schematically shows, in cross-sectional side view along the line A-A in Figure 5, a waste bin with waste container and suspension bracket, the suspension bracket being provided with an electric drive; and

Figure 9 shows, in top plan view and front view, a toilet room with a waste bin according to the invention suspended therein.

[0017] The embodiments shown are shown only by way of illustration and can also be combined in their entirety or parts thereof. In this description, reference will be made to a waste bin, which is at least understood to include a waste bin for sanitary dressing such as sanitary napkins, tampons and pantliners. However, for the sake of simplification, each time only waste bin will be mentioned. As the location where, herein, reference is made to a waste container, this is at least understood to mean the part of a waste bin in which the sanitary waste is actually deposited. This may be the entire waste bin, if no suspension bracket is used, or the exchangeable holder if, conversely, a suspension bracket is used, as will be explained in further detail.

[0018] Figs. 1- 3 show, in perspective view, a waste bin 1 according to the invention, which comprises a waste container 2 with a holder-shaped lower part 3 and a lid 4 hingedly connected thereto, and a suspension bracket 5. The suspension bracket 5 can be attached to a wall 6, as shown in Figure 8, with, for instance, screws, tape or other known suspension means. Then, the waste container 2 can be suspended from the suspension bracket 5 in manner to be further described, so that it can be removed in a simple manner and be placed back or be replaced with a different waste container 2. In closed condition, the lid 4 closes off an insertion opening 7 and has a part 8 which reaches downward into the insertion opening 7, which hinges along with the lid when this is opened, so that it closes off the insertion opening 7, at least blocks a view to the content of the waste container 2. Waste can be deposited on this part 8, whereupon it falls into the waste bin when the lid 4 is closed again. Such lids are known per se.

[0019] As clearly appears from Figures 2 and 4, the suspension bracket 5 is somewhat channel-shaped and provided in the back 9 with fastening holes 10 for suspension from the wall 6. At the top end 11, i.e. the end pointing upward in suspended condition, pins 12 are provided on which the waste container 2, with the aid of a receiving space 13 near the upper edge 14 around the insertion opening 7, can be suspended. In the channel-shaped part 15 of the suspension bracket, a slide 16 is provided that can move in the longitudinal direction L of

the suspension bracket 5. The free upper end 17 of the slide 16 projects above the top end 11 of the suspension bracket. Against the opposite, lower end 18 of the slide abuts a rear end 19 of a pedal 20. The pedal 20 pivots about an axis 21 in a front side of the suspension bracket 5, near a lower end 22 thereof, and projects forward, i.e. away from the wall 6 in suspended condition, and slightly downward, i.e. in a direction remote from the top end 11 and proximal to a floor 23 (Fig. 9).

[0020] In this embodiment, the pedal 20 is built up from a preferably plastic arm 24 comprising the axis 21 and the rear end 19 mentioned, and a bracket 25 fixedly connected thereto, which, in the embodiment shown, is somewhat trapezoid with the short side proximal to the arm 24. This bracket forms an element on which, for instance, a foot can be placed for operating the pedal 20. Naturally, also, other forms can be used and the pedal can be designed in one piece or, conversely, in more pieces. All suitable materials and combinations thereof can be used, preferably plastic and/or metal, more particularly preferably materials that can be cleaned well and can, preferably, be sterilized.

[0021] Adjacent the lower end 18, the slide 16 is provided with a recess 26 with a pin 27 therein, around which a spring 28 is provided that rest on the rear end 19 of the arm 24. The pin 27 projects through an opening 29 in the arm 24. Therefore, forces can be transmitted from the pedal 20 onto the slide 16 only by means of the spring 28, in particular at the start of the movement of the pedal. Optionally, the arm 24 could be designed such that it does touch the pin 27 after a preselected movement of the arm 24, for a more direct contact between arm 24 and slide 16. Further, in the slide, a second opening 30 is provided, with a longitudinal edge or longitudinal edges 31, roughened and/or provided with toothings. Against the back of the suspension bracket 5, a damper 32 is provided, extending into the second opening 30 and engaging a longitudinal edge 31. In the exemplary embodiment shown, the damper 32 is a rotating damper 32, filled with, for instance, gel or a highly viscous liquid, as sufficiently known from practice, and allows for limitation and damping of the possible rate of movement and, in particular, accelerations of the slide, so that the slide will move in a relatively calm and controlled manner. The spring 28 will ensure that, when the pedal is tread on at a speed the damper cannot follow, at least not directly, the pedal 20 or the suspension bracket 5 will not become damaged. The fact is that then, the spring 28 will be compressed and will thereupon release the stored energy again in a controlled manner, while moving the pedal 16 at a speed admissible to the damper. Upon downward movement of the slide 16, this will be restrained by the damper 32 too. As a result, both the opening and the closing of the lid 4 are controlled, as will be described in the following. The slide 16 and the pedal 20 with damper 32 and spring 29 together form, at least largely, an operating mechanism for the lid.

[0022] As clearly appears from Fig. 6, the lid 4 is con-

nected via a pivot 33 to the upper edge 14 of the part 3, above the suspension bracket 5. Here, the upper end 17 of the slide 16 abuts against the lower side 34 of the lid 4, with a distance d for the pivot 33. This implies that when the slide 16 is moved upwards, in the direction U, the upper end 17 pushes the lid 4 upwards, which will thus pivot about the pivot 33, to an opened position. This can be effected through operation of the pedal 20 as described hereinabove. For as long as the pedal 20 remains pressed down, the lid remains open. When, thereupon, the pedal is released, the lid slowly drops back to a closed position, while being restrained by the slide 16 restrained by the slide 32. Thus, a calm movement pattern of the lid is obtained.

[0023] Use of a pedal has as an advantage that the use of the operating means is directly clear and well visible to everyone while with, for instance, an approach switch, this is not always the case.

[0024] Fig. 7 shows a loose waste container 2 that can be suspended from the suspension bracket 5 but can also be disposed loosely, with the bottom 35 on the floor for use as a waste bin 1. The lid 4 can then be opened and closed by hand.

[0025] In Fig. 8, a waste bin 1 according to the invention is shown, with a waste container 2 and suspension bracket 5 as shown in and described on the basis of Figs. 1-7, with the exception of the pedal 20 which, in this embodiment, has been omitted. In this embodiment, instead thereof, an electric motor 36 is provided at the location of the damper 32, which engages the longitudinal edge 31 with a sprocket 37. Switch means 38 for controlling the motor 36 are provided, which can comprise, for instance, an approach switch with sensor 39, and a control circuit 40, such that when a hand or foot is brought and/or is held near the waste container for a predetermined period of time, the motor 36 is driven so that the slide 16 moves upward and opens the lid 4, in an earlier described manner, and keeps it open for a particular period of time, whereupon the direction of rotation of the motor is reversed and the lid is closed again. Preferably, the switch is accommodated in its entirety in the suspension bracket 5, so that no electric connections between the suspension bracket and the waste container are necessary. The sensor 39 can, for instance, be placed near the upper end of the suspension bracket, for manual operation, or conversely, approximately at the location of the pedal 20, adjacent the lower end, for operation by foot. Power supply for the motor can be realized in a known manner via the power network, battery or accumulator. Variations thereon and exemplary embodiment of sensors and circuits will be directly clear to the skilled person.

[0026] Fig. 9 shows, in top plan view and front view, a toilet room 47 according to the invention, with suspended therein a waste bin 1 according to the invention. The toilet room 47 has a rear wall 41 against which a toilet 42 has been provided, and at least one, and in the exemplary embodiment shown two, side walls 6. The toilet has a front side 44. The waste bin 1 is suspended by the sus-

pension bracket 5 from a side wall 6, approximately at the location of this front side 44, within reach of an adult woman seated on the toilet 42. The height h of the suspension bracket above the floor 23 is selected such that the pedal 20 can make a maximum stroke that ends against the floor 23, so that the pedal is prevented from being pressed in further than allowed by the slide 14 and the lid 4 without bending, breaking or other damage. In practice, the height h will be between 10 and 20 cm, so that the front edge 46 of the pedal 20 will be between, for instance, 3 and 8 cm from the floor. However, naturally, other dimensions can be selected, depending on, for instance, the maximum stroke the slide 16 can make, the movement possibilities of the lid and the like. Herein, within the range of a seated woman should be understood to mean that a seated woman can easily reach the insertion opening 7 with her hands for disposing waste, and can easily reach the pedal with her foot for operating it. In practice, this means that for comfortable use, the distance R from the front edge 44 of the toilet to the waste bin will be, for instance, 40 to 60 cm. Preferably, the waste bin 1 is mirror-symmetrical relative to a central plane, so that it can be suspended both to the left and to the right of the toilet. Here, it is preferred that the pedal has a shape such that it can be operated both from the front and from the two sides of the waste bin 1.

[0027] A waste bin 1, at least a waste container 2 with suspension brackets 5 according to Figs. 1-6 and/or Fig. 8, can advantageously be used in a return system with which containers are periodically collected, emptied and cleaned. The fact is that a first series of toilet rooms can be provided with, for instance, a suspension bracket according to Figs. 1 - 6 (pedal-operated), a second series of toilet rooms with a suspension bracket according to Fig. 8 (electrically operated) and/or a third series of toilet rooms without suspension bracket. In each of these toilet rooms, the same waste container 2 can be placed. The fact is that it can be placed on the floor as well as be suspended from one of the two types of suspension brackets. Therefore, a department controlling the return system needs only have one type of waste containers in store, which is, of course, particularly advantageous from a logistic point of view, while still, different types of waste bins can be offered.

[0028] In the exemplary embodiments shown, the waste container is substantially manufactured from plastic, with rounded-off sides and corners that have a smooth finish all over, so that they can be easily cleaned. Here, the rim of the insertion opening is preferably injection molded using the gas injection technique, so that a closed, hollow rim is obtained which is rigid and light and yet does not comprise open cavities susceptible to contamination. This improves a pleasant appearance of the waste bin even further.

[0029] It is preferred that during use, the suspension bracket is included completely behind the waste container, so that a yet more pleasant appearance is obtained and, moreover, the hygiene is further improved. Further-

more, the suspension bracket can offer optimal support, both behind and under the waste container.

[0030] The invention is not limited in any manner to the exemplary embodiments represented in the drawing and the description. Many variations thereon are possible within the framework of the invention as outlined by the claims.

[0031] For instance, the waste container and the suspension bracket can have a different form, while the lid could also be designed without the part 8. The electric drive and the pedal transmission can be designed in a different manner, while the slide can for instance be operated directly and/or can be damped. Also, other types of damper means can be used. Waste containers with different measures of volume can be designed such that they can be suspended from the same suspension brackets and can be operated therewith. These and many comparable variants are understood to fall within the invention.

Claims

1. A waste bin for sanitary dressing such as tampons, sanitary napkins and pantliners, comprising a waste container with lid and an operating mechanism for opening the lid, wherein a suspension bracket is provided from which the waste container with lid is detachably suspended, while in and/or on the suspension bracket the operating mechanism is provided, which operating mechanism comprises a pedal for operation thereof.
2. A waste bin according to claim 1, wherein the pedal is located near and preferably under an underside of the waste container, when the waste bin is suspended for use.
3. A waste bin according to claim 1 or 2, wherein the pedal is a foot pedal.
4. A waste bin according to any one of the preceding claims, wherein the waste container is detachable from the suspension bracket, without the operating mechanism.
5. A waste bin according to any one of the preceding claims, wherein the operating mechanism is provided with a damper mechanism for closing, in a controlled manner, the lid after opening thereof.
6. A waste bin according to claim 5, wherein the damper mechanism comprises a liquid or gel-filled damper.
7. A waste bin according to claim 5 or 6, wherein the operating mechanism comprises a spring mechanism between the pedal and the lid such that the lid can be opened only with a preselected maximum

speed and acceleration.

8. A waste bin according to any one of the preceding claims, wherein the waste container is provided with an underside on which the waste container can be disposed loosely and be used for receiving dressing. 5
9. A set of a waste bin according to any one of the preceding claims and a second suspension bracket, from which the waste container of said waste bin can be detachably suspended, which second suspension bracket is provided with an electrically driven operating mechanism. 10
10. A set of a first series of suspension brackets with pedal-operated operating mechanism and a second series of suspension brackets with electrically operated operating mechanism, wherein a series of waste containers is provided whose number is considerably greater than the sum of the numbers of suspension brackets in the first and the second series, which waste containers can be detachably suspended from, at will, a suspension bracket in the first series or a suspension bracket in the second series, or can be disposed on a floor. 15
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11. A set according to claim 10, wherein the suspension brackets in the first and second series are equal to each other, with the exception of drives for the operating mechanism, which differ for the first series and the second series. 30
12. A toilet room provided with a waste bin according to any one of claims 1- 8, wherein a toilet is provided with a front side, while at a relatively small distance from the toilet, the waste container is suspended with the aid of the suspension bracket, in which suspension bracket an operating device is provided with a pedal, which pedal is at a small distance above the floor of the toilet room and at a distance from the front side of the toilet such that an adult person seated on the toilet can tread on the pedal with a foot, for opening a lid of the waste container. 35
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13. A toilet room according to claim 12, wherein the toilet room has at least one side wall next to the toilet, against which the suspension bracket is provided approximately at the height of the front side of the toilet. 45
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14. A series of toilet rooms, of which a first series is provided with a first type of suspension bracket, a second series of toilet rooms with a second type of suspension bracket and a third series of toilet rooms with neither the first nor the second type of suspension bracket, wherein a pool of waste containers is formed which are similar to each other and whose number is greater than the sum of the first, second 55

and third series of toilet rooms and which can be suspended from, at will, the first type of suspension bracket for operation by a pedal, can be suspended from the second type of suspension bracket for electric operation or be disposed on the floor of a toilet room for manual operation, operation by foot and/or electric operation.

15. A method for managing waste containers for sanitary dressing in toilet rooms, wherein a first series of toilet rooms is provided with a first type of suspension bracket, a second series of toilet rooms is provided with a second type of suspension bracket and a third series of toilet rooms is provided neither with the first nor with the second type of suspension bracket, while a pool is formed of waste containers which are similar to each other and whose number is greater than the sum of the first, second and third series of toilet rooms, and which can be suspended from, at wish, the first type of suspension bracket for operation by a pedal, can be suspended from the second type of suspension bracket for electric operation or be disposed on the floor of a toilet room for manual operation, operation by foot and/or electric operation. 10
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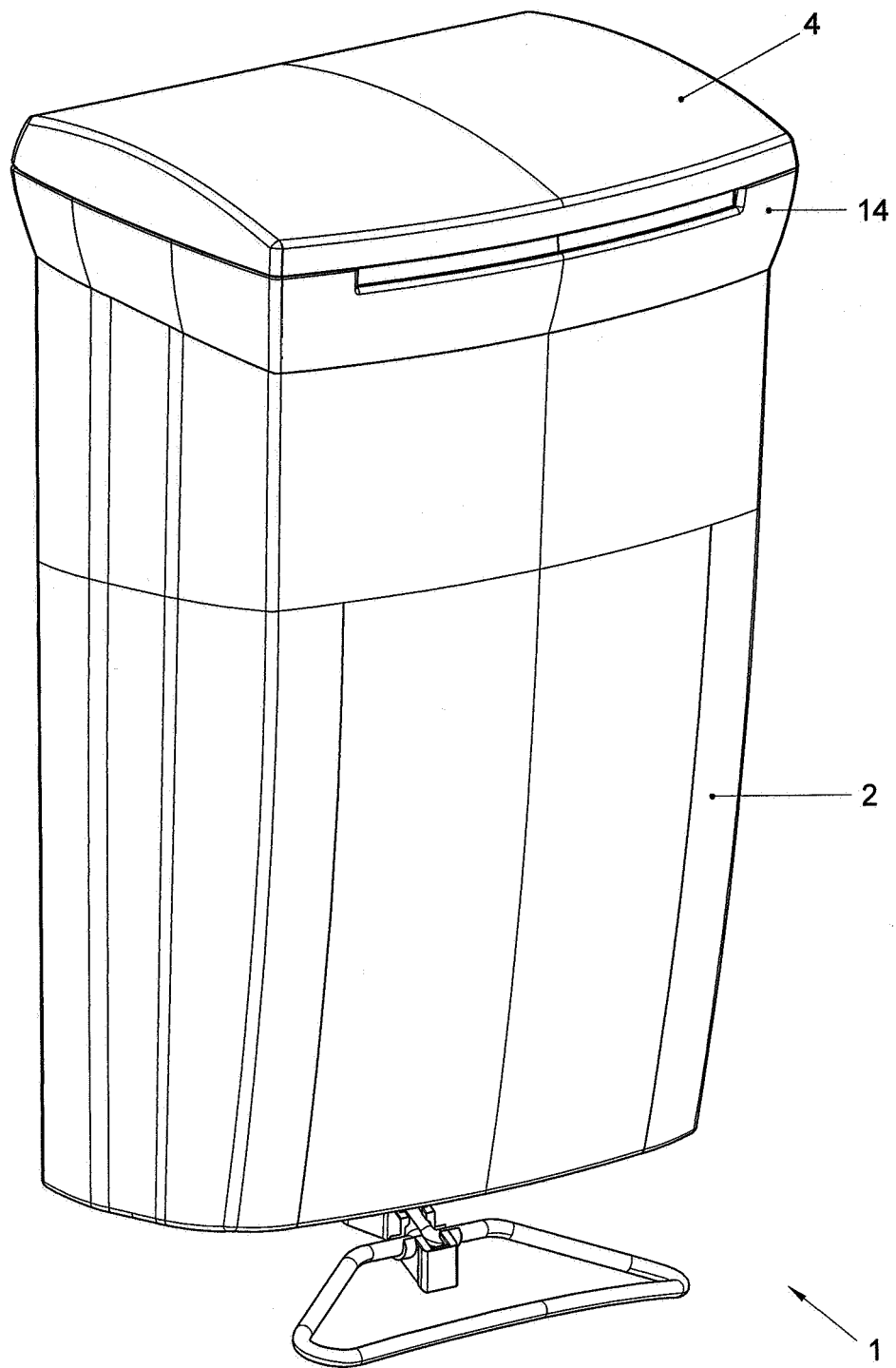


Fig. 1

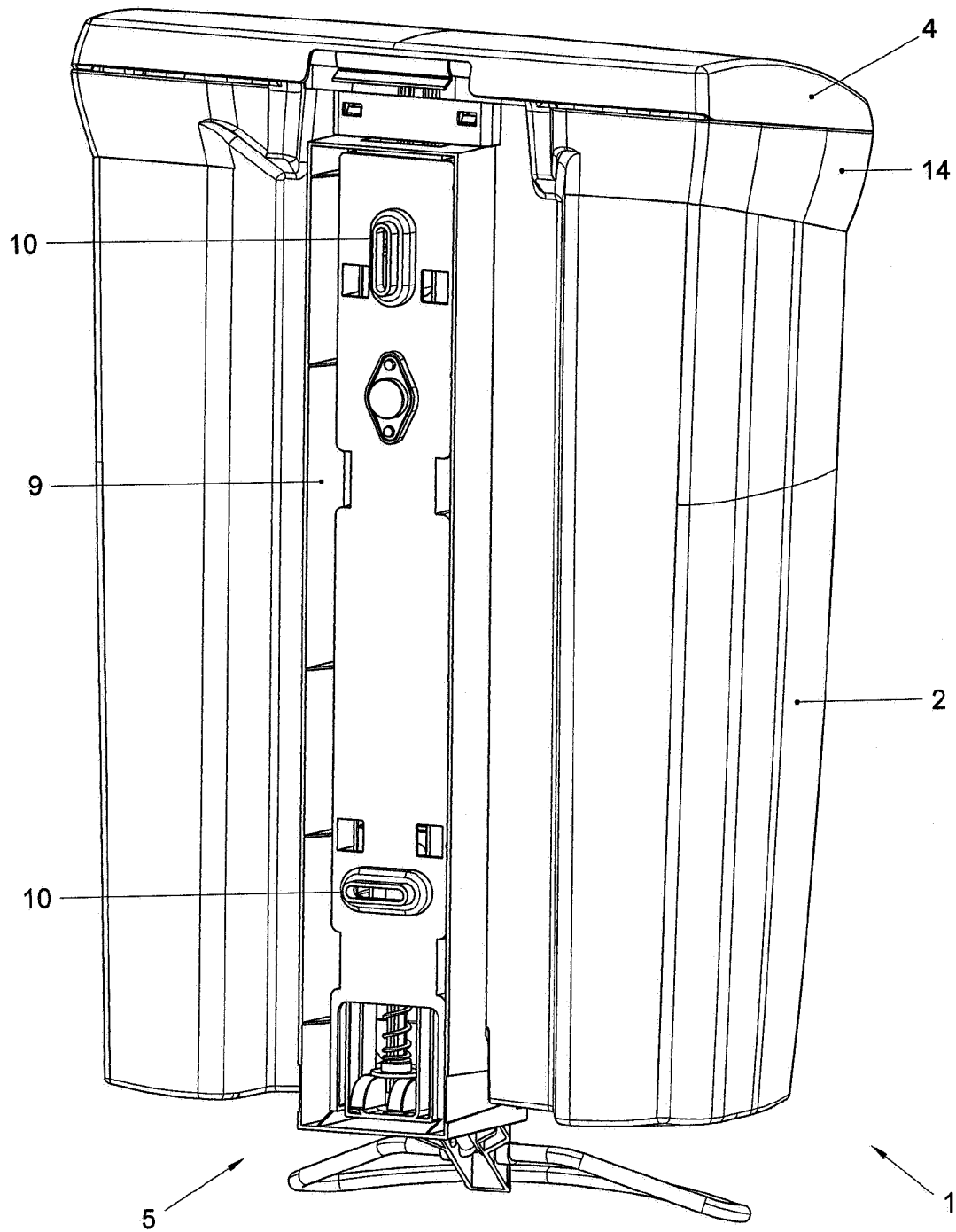


Fig. 2

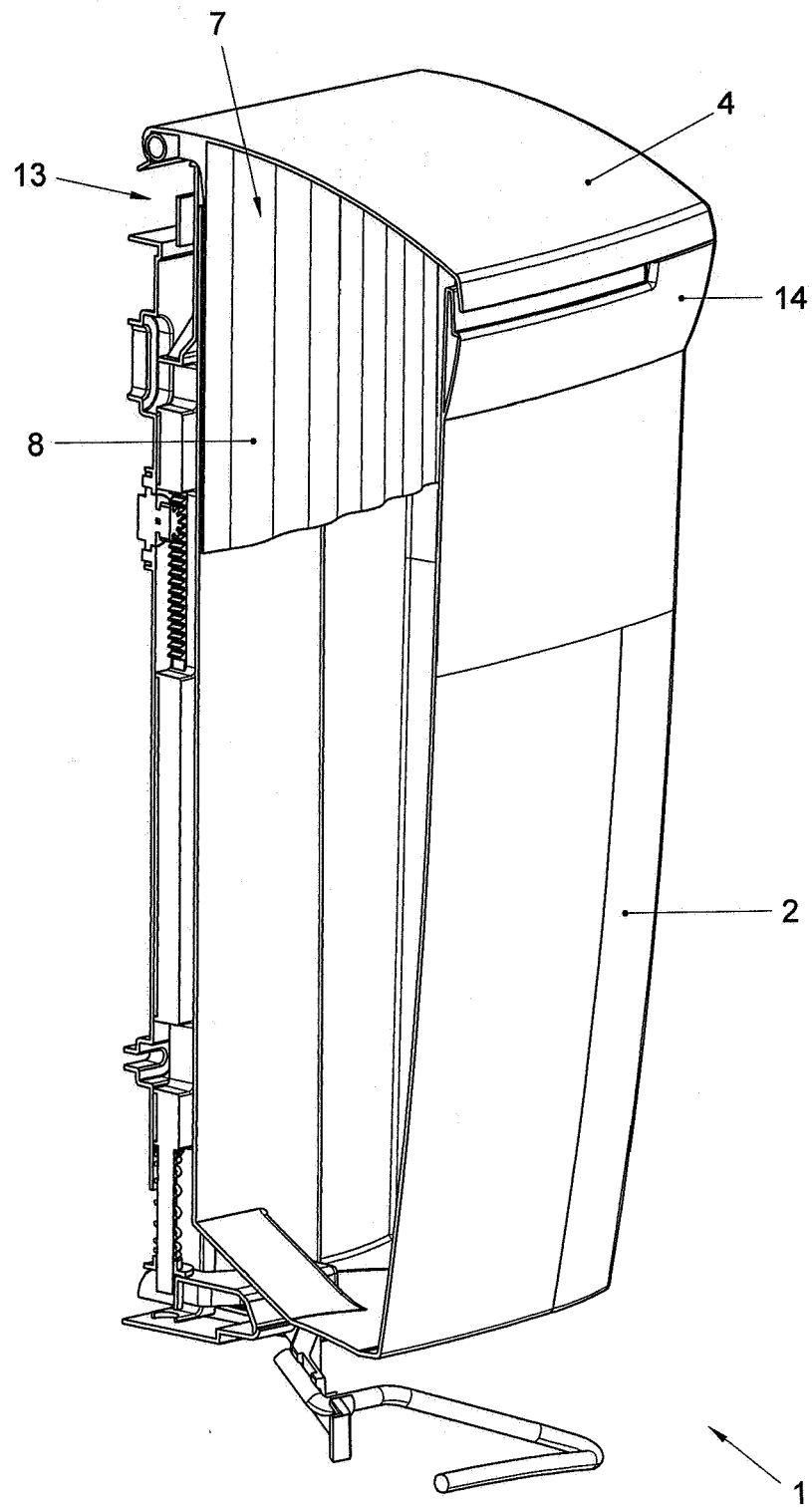


Fig. 3

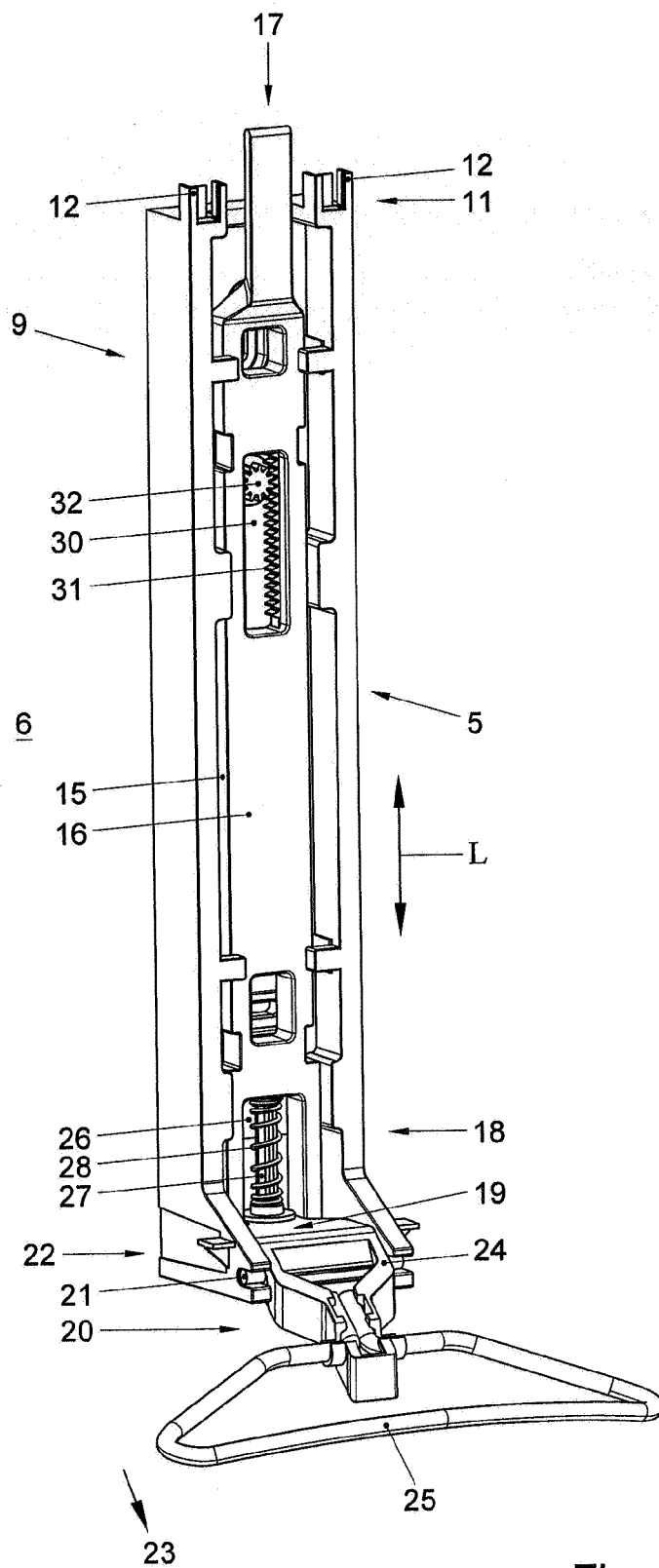


Fig. 4

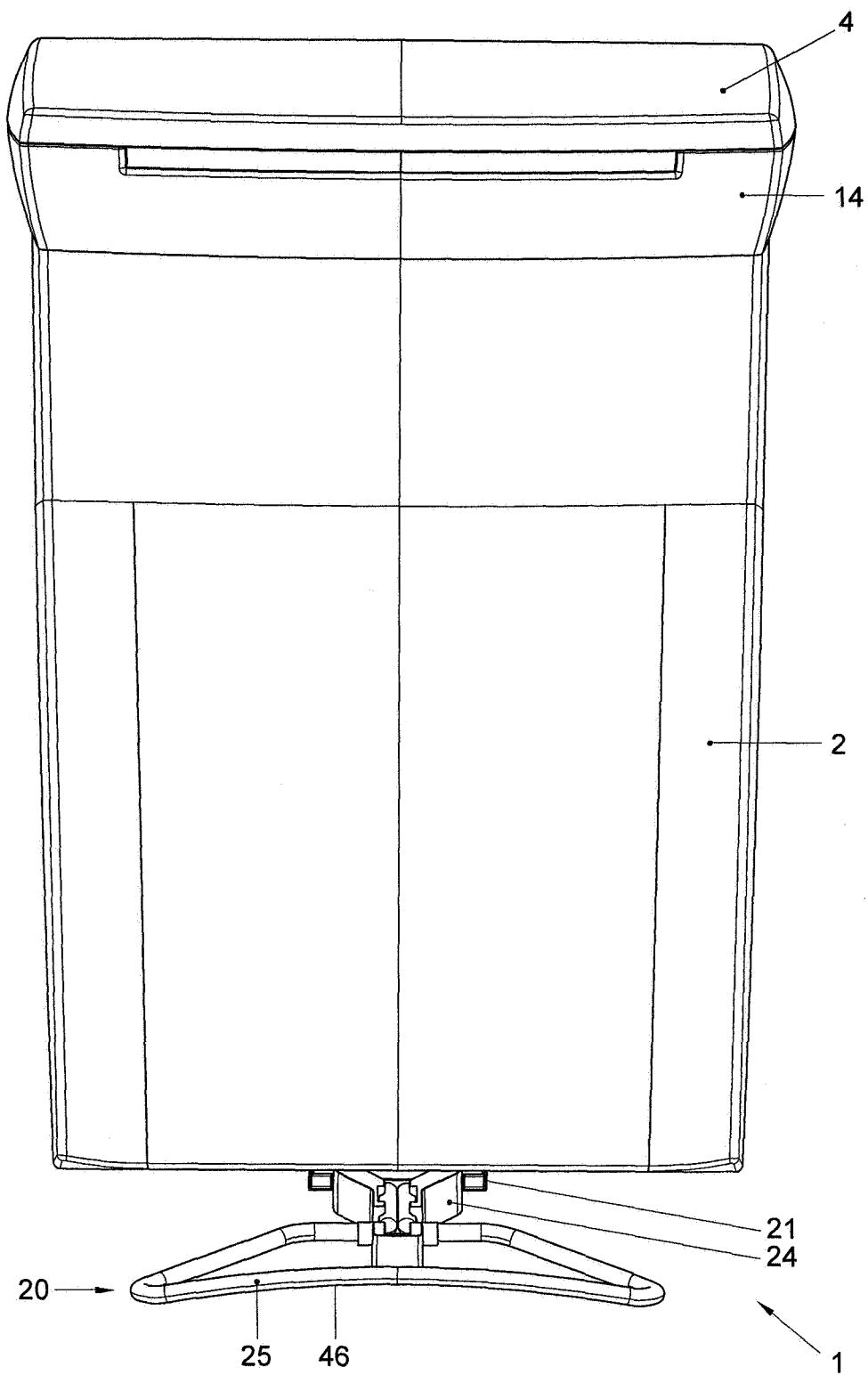


Fig. 5

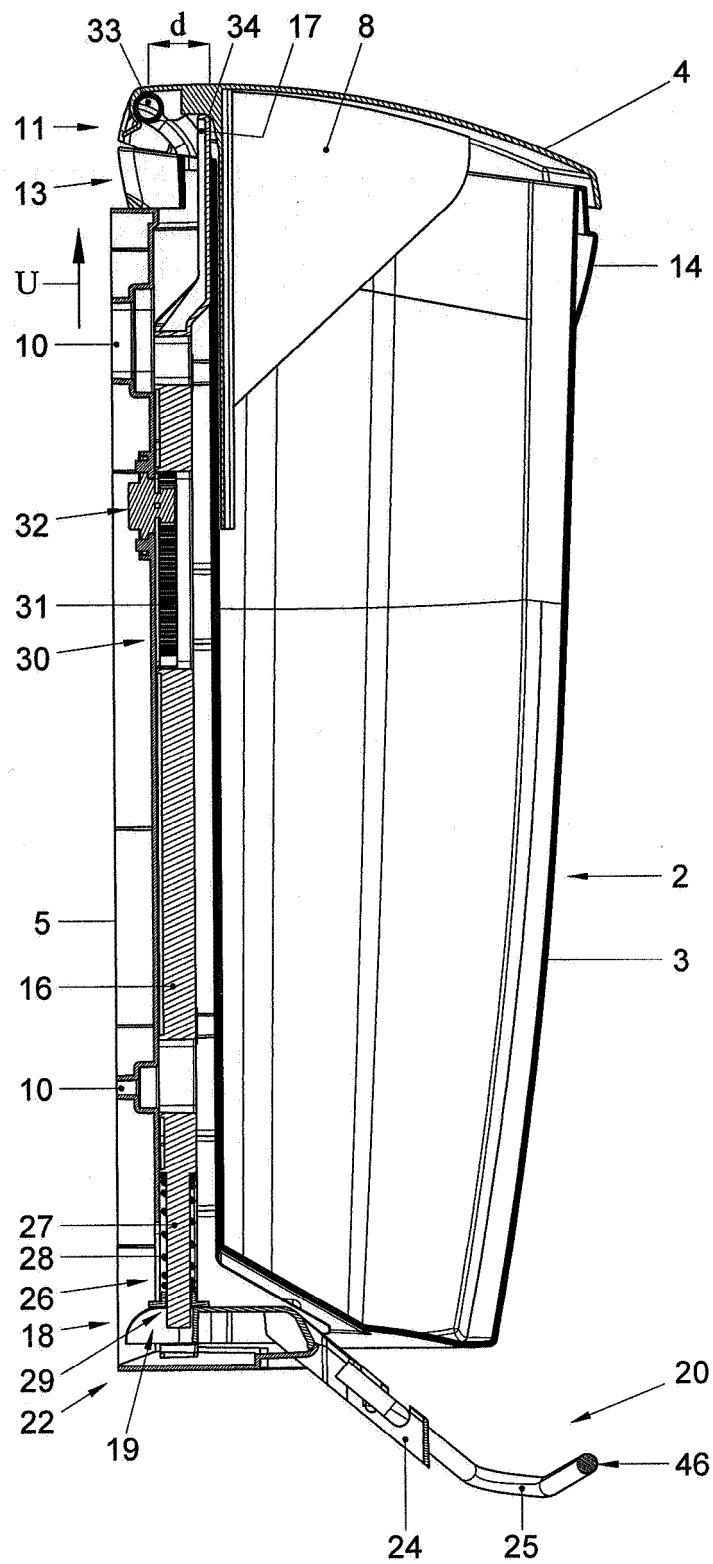


Fig. 6

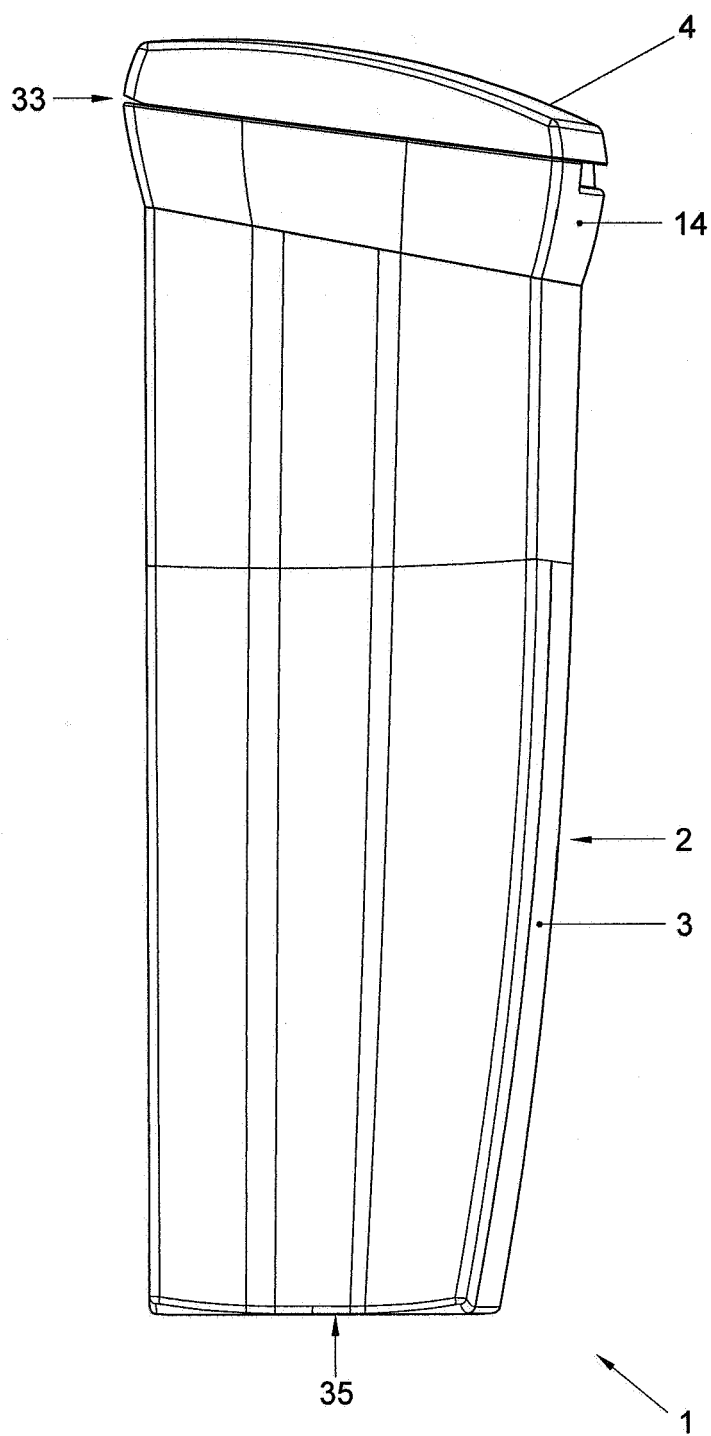


Fig. 7

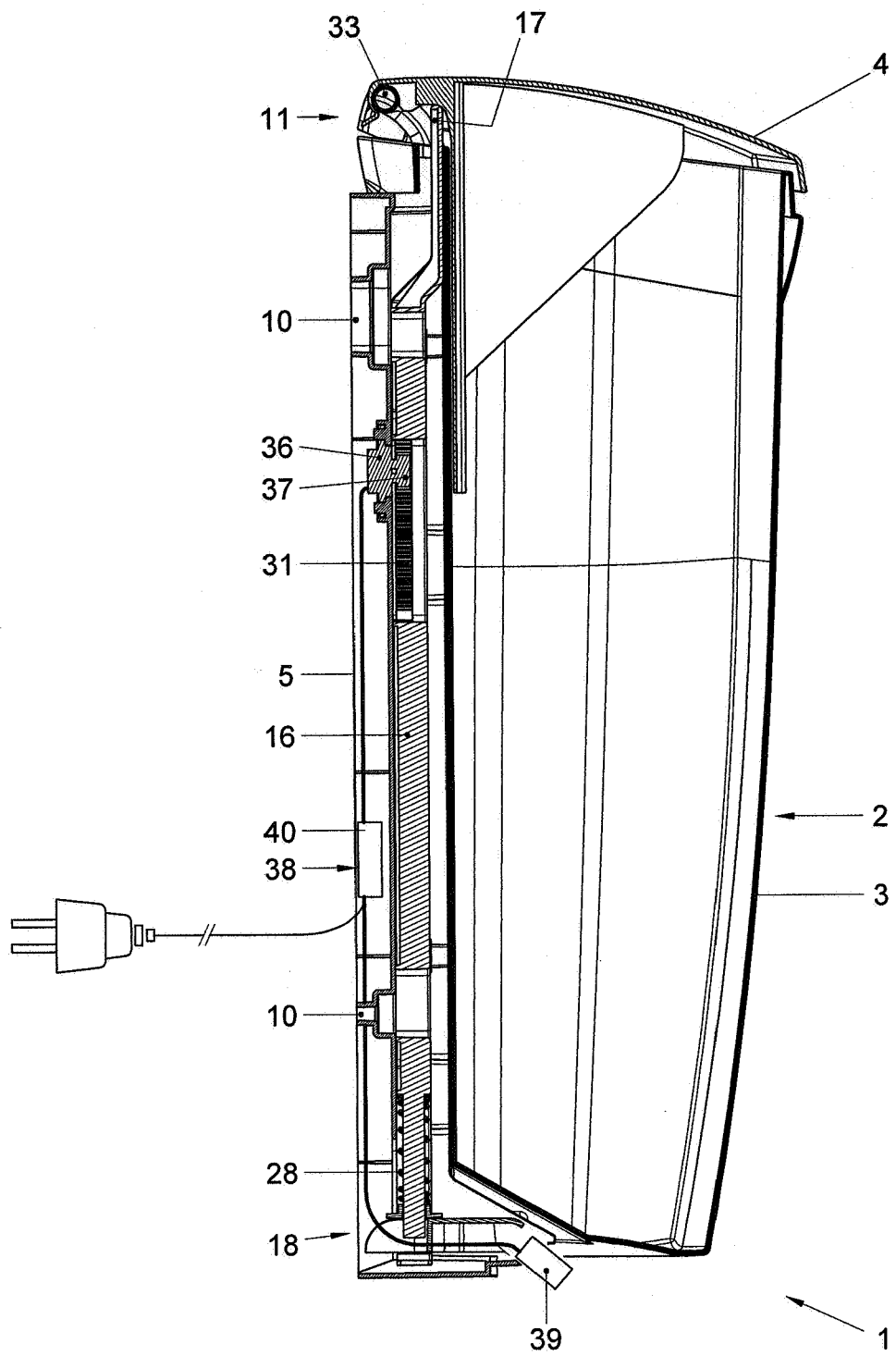


Fig. 8

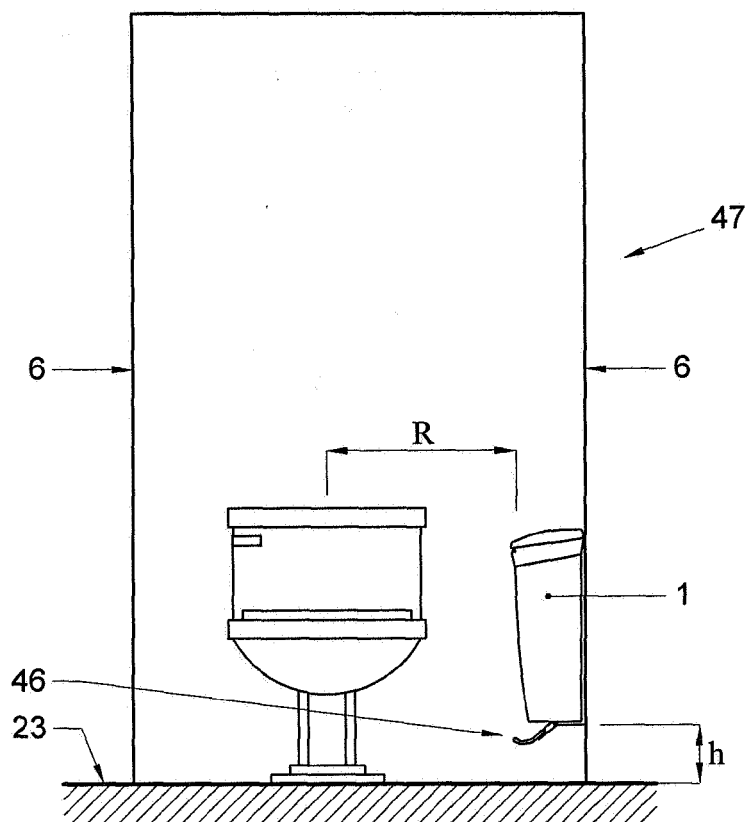
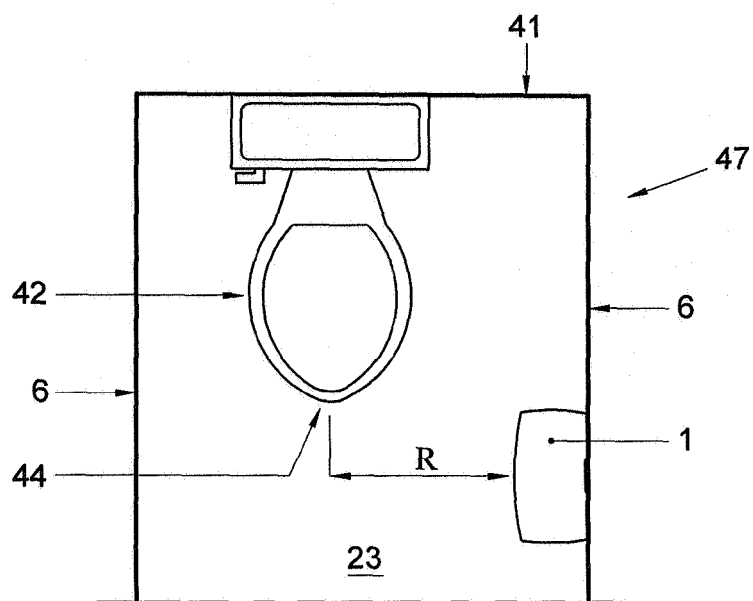


Fig. 9



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 10 7841

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 10 7841

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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