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(54) **Container particularly for sorted waste collection**

(57) A container (1) particularly for sorted waste collection, comprising a container body (2), which forms internally at least one collection receptacle (3) provided with at least one access opening (4) located in the upper part of the container body (2). The container has means (5) for closing the access opening, which can move with respect to the container body in order to pass from a closed condition to an open condition of the access opening

and vice versa, the closure means (5) comprising at least one first closure element (5a) and at least one second closure element (5b), which are supported by the container body (2) and are designed to close respective portions of the access opening (4). The first closure element (5a) is pivoted to the container body (2) and the second closure element (5b) is pivoted to the first closure element (5a).

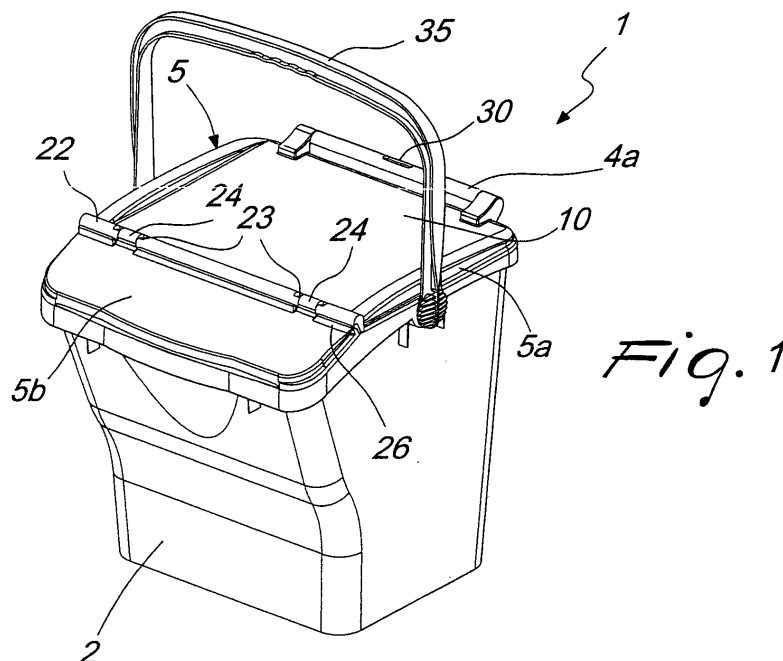


Fig. 1

Description

[0001] The present invention relates to a container particularly for sorted waste collection.

[0002] Containers designed specifically for sorted waste collection are currently in use and are supplied to private users by public authorities in order to achieve direct involvement of citizens in the waste recycling system.

[0003] However, a problem that occurs for citizens who are called to perform sorted waste collection is the need to place, within the limited spaces of their own dwelling, a number of containers for collecting waste.

[0004] In order to try to solve this problem at least partially, containers have been devised which can be arranged not only side by side but also stacked one on top of the other, thereby allowing to utilize vertically the available domestic space.

[0005] In particular, such containers are constituted by a containment body, which forms internally a collection compartment which can be accessed through a first opening, located in the upper part of the container and which can be closed by an upper closure lid, and through a second opening, which is located in a front portion of the side wall of the containment body and provided with a front closure flap, which is pivoted, along its upper edge, to the containment body, so that it can be opened by pushing directly toward the inside of the collection compartment in order to facilitate insertion of waste by the user.

[0006] With this kind of containers, when the first opening is closed by the corresponding lid, it is possible to stack a number of containers on top of each other, resting each one on the lid of the lower one, although in any case their internal collection compartment remains accessible by way of their second opening.

[0007] However, this solution suffers the drawback in that a considerable portion of the useful volume of the collection compartment must remain empty in order to prevent the material introduced in the compartment from being able to interfere with the free opening or closing movement of the front flap.

[0008] Another drawback that can be ascribed to the conventional type of container described above is its limited practicality during the unloading step of the waste contained therein, since the front flap, by being free to rotate, can hinder the complete exit of the waste from the collection compartment of the container when the container is tipped in order to empty it, with evident drawbacks for the workers and with the clearly related problems of cleanliness and hygiene.

[0009] The aim of the present invention is to solve the problems described above by providing a container particularly for sorted waste collection that allows efficient utilization of the volumes available for waste collection in a domestic environment.

[0010] Within this aim, an object of the invention is to provide a container that allows to utilize completely the

useful volume of its internal collection compartment, without the need to leave empty space, and can be stacked with others of the same kind.

[0011] Another object of the invention is to provide a container that has an ergonomic shape, in order to allow its easy carrying, and can be emptied simply and rapidly by the workers of the waste collection service.

[0012] Another object of the invention is to provide a container that can offer great assurances of cleanliness and hygiene.

[0013] Another object of the present invention is to provide a container particularly for sorted waste collection that is aesthetically pleasant, so that it harmonizes perfectly with the requirements of urban tidiness when it is placed outdoor.

[0014] Still another object of the invention is to provide a container with a structure that is extremely simple and has a low production cost.

[0015] This aim and these and other objects, which will become better apparent hereinafter, are achieved by a container particularly for sorted waste collection, according to the invention, comprising a container body, which forms internally at least one collection receptacle provided with at least one access opening located in the upper part of said container body, and means for closing said at least one access opening, which can move with respect to said container body in order to pass from a closed condition to an open condition of said at least one access opening and vice versa, characterized in that said closure means comprise at least one first closure element and at least one second closure element, which are supported by said container body and are designed to close respective portions of said at least one access opening, said at least one first closure element being pivoted to said container body, said at least one second closure element being pivoted to said at least one first closure element.

[0016] Further characteristics and advantages of the invention will become better apparent from the detailed description of a preferred but not exclusive embodiment of a container particularly for sorted waste collection, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the container according to the invention in the closed condition;

Figure 2 is a perspective view of the container according to the invention, taken from a different angle with respect to Figure 1;

Figure 3 is a schematic view of a possible method of use of the container according to the invention;

Figure 4 is a side view of a stack of mutually superimposed containers;

Figure 5 is a perspective view of the container according to the invention, with the second closure element in the open condition;

Figure 6 is a side elevation view of the container according to the invention, illustrating the second clo-

sure element in the open condition;

Figures 7 and 8 are schematic views of a detail of the closure means of the container according to the invention;

Figure 9 is a bottom plan view of the container according to the invention.

[0017] In the exemplary of embodiments that follow, individual characteristics, given in relation to specific examples, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

[0018] Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

[0019] With reference to the figures, the container particularly for sorted waste collection, according to the invention, generally designated by the reference numeral 1, comprises a container body 2, which forms internally at least one collection receptacle 3, which is provided with at least one access opening 4 located in the upper part of the container body 2.

[0020] The access opening 4 can be closed by way of closure means 5, which can move, with respect to the container body 2, in order to be able to pass from a closed condition to an open condition of the access opening 4 and vice versa.

[0021] According to the invention, the closure means 5 are formed by at least one first closure element 5a and by at least one second closure element 5b, which are supported by the container body 2 and are designed to close respective portions of the access opening 4.

[0022] In particular, the first closure element 5a can move with respect to the container body 2, while the second closure element 5b can move with respect to the first closure element 5a, so that the second closure element 5b can be moved from its closed position to the position for opening the respective portion of the access opening 4 and vice versa even when the first closure element is in the position for closing the corresponding portion of the access opening 4.

[0023] With this structure it is therefore possible to access the receptacle 3 through the portion of the access opening 4 that is controlled by the second closure element 5b, regardless of the position of the first closure element 5a.

[0024] An important aspect of the invention resides in that the first closure element 5a is pivoted to the container body 2, preferably at an edge region 4a of the access opening 4, while the second closure element 5b is pivoted to the first closure element 5a, advantageously at the end of said element that lies opposite the end connected by means of a hinge to the container body 2.

[0025] It should be noted that the position of the closure means 5 in the upper part of the body of the container 2 and the possibility to move by pivoting the first and second closure elements 5a and 5b toward the outside of

the receptacle 3, in order to open the access opening 4, allow to facilitate the operations for filling and emptying the receptacle 3 and to have the entire volume of the receptacle 3 available for waste collection, without having to leave some space unused in order to avoid hindering the movement of the first and second closure elements 5a, 5b.

[0026] Conveniently, the first closure element 5a forms in an upward region, on its side designed to remain outside the collection receptacle 3, a resting region 10 for another superimposed container, so as to offer the possibility to stack a plurality of containers and allow efficient utilization of the volumes available for the placement of the containers meant to collect waste.

[0027] As can be seen clearly in Figure 4, even with a number of containers stacked one on top of the other, the collection receptacle 3 of each of said container can in any case be accessed in order to introduce waste by way of the portion of the access opening 4 that can be closed by the second closure element 5b.

[0028] Again in order to facilitate the use of the container according to the invention in the usual places where it is located, the container body 2 has conveniently a first end with an outer face 11, which can be arranged adjacent to the wall of a building, and a second end, which is arranged opposite the first one and proximate to which the second closure element 5b is located.

[0029] Conveniently, substantially at its end that can be arranged adjacent to a wall, the container body 2 is provided with a slotted seat 30 for engagement with an engagement element 31, which protrudes from the structure of a building 32 and is designed to allow the container body 2 to be anchored to the wall when, in particular, the container according to the invention is positioned by users outdoor in order to allow waste collection.

[0030] Advantageously, as a completion of the closure means 5 of the access opening 4, there are also removable locking means, which allow to keep the second closure element 5b locked in at least one open position.

[0031] In detail, the removable locking means comprise conveniently at least one locking element 20, which is elastically flexible and is associated with the second closure element 5b. In particular, the locking element 20 can engage in at least one locking seat 21 formed on the lateral surface of an enlarged edge 22, which is provided on the first closure element 5a and is provided with rotation seats 23, which rotatably accommodate respective rotation pivots 24, which are rigidly connected to the second closure element 5b and provide the hinge for connection between the first closure element 5a and the second closure element 5b.

[0032] In the illustrated example of embodiment, the locking element 20 is constituted by a tooth 25, which is supported by a raised border 26, which is provided on the second closure element 5b and faces a rounded portion of the outer lateral surface of the enlarged edge 22, from which one or more complementary engagement teeth 27 protrude, such teeth providing the locking seats

21 and being mutually spaced around the pivoting axis 24a formed by the rotation pivots 24. More particularly, the raised border 26 is flexible in order to keep the tooth 25 in contact with the outer lateral surface of the enlarged edge 22 and in order to allow the tooth 25 to engage detachably the complementary engagement teeth 27 following the rotation of the second closure element 5b with respect to the first closure element 5a, so as to provide the removable locking of the second closure element 5b with respect to the first closure element 5a in different open positions.

[0033] Conveniently, a grip handle 35 is fitted to the container body 2 so that it can oscillate. In a per se known manner, removable retention means (not shown) are associated with the handle 35 and allow to keep the first closure element 5a locked in the position in which it closes the corresponding portion of the access opening 4. The removable retention means- can be activated by rotation of the handle 35 and are constituted advantageously by at least one toothed protrusion, which is rigidly coupled to the handle 35 and can be engaged detachably with a wing that is supported by the first closure element 5a.

[0034] The removable retention means described above are particularly useful when the container according to the invention is arranged in the street for waste collection, since they prevent the opening of the first closure element 5a in case of accidental tipping of the container body 2 or if stray animals try to enter the receptacle 3, and this helps to maintain urban decor.

[0035] For the sake of completeness, it should also be noted that the container body 2 has a bottom with a contour which forms, on the outer side, a grip recess 40, which facilitates manual grip of the container body 2 by the operators during the emptying of its contents.

[0036] From what has been described above, it can be understood that the container according to the invention is particularly adapted to be used for sorted waste collection, since it can be conveniently placed in dwellings, together with others of the same kind, without entailing excessive space occupation, and can be placed in the street without compromising urban decor.

[0037] In practice it has been found that the container according to the invention fully achieves the intended aim, since it is capable of meeting the needs of users, of sorted waste collection workers and of government bodies.

[0038] All the characteristics of the invention described above as advantageous, convenient or the like may also be omitted or be replaced with equivalents.

[0039] The individual characteristics described with reference to general teachings or to particular embodiments may all be present in other embodiments or may replace characteristics in these embodiments.

[0040] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0041] All the details may further be replaced with other

technically equivalent elements.

[0042] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements.

5 [0043] The disclosures in Italian Utility Model Application No. VR2005U000021 from which this application claims priority are incorporated herein by reference.

10 [0044] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A container particularly for sorted waste collection, comprising a container body, which forms internally at least one collection receptacle provided with at least one access opening located in the upper part of said container body, and means for closing said at least one access opening, which can move with respect to said container body in order to pass from a closed condition to an open condition of said at least one access opening and vice versa, **characterized in that** said closure means comprise at least one first closure element and at least one second closure element, which are supported by said container body and are designed to close respective portions of said at least one access opening, said at least one first closure element being pivoted to said container body, said at least one second closure element being pivoted to said at least one first closure element.
2. The container according to claim 1, **characterized in that** said at least one first closure element is connected to said at least one second closure element on the opposite side with respect to its region for connection to said container body.
3. The container according to one or more of the preceding claims, **characterized in that** said at least one first closure element is pivoted to said container body substantially at an edge region of said at least one access opening.
4. The container according to one or more of the preceding claims, **characterized in that** said at least one first closure element forms, on its outer side with respect to said at least one receptacle, a resting region for the coupling of a superimposed container.
5. The container according to one or more of the preceding claims, **characterized in that** said container body has, at a first end, an outer face which can be

arranged adjacent to the wall of a building, said at least one second closure element being arranged proximate to the end that lies opposite said first end of said container body.

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6. The container according to one or more of the preceding claims, **characterized in that** it comprises means for the removable locking of said at least one second closure element in at least one open position.

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7. The container according to one or more of the preceding claims, **characterized in that** said removable locking means comprise at least one elastically flexible locking element associated with said at least one second closure element, said at least one locking element being engageable in at least one respective locking seat formed on the lateral surface of an enlarged edge provided on said at least one first closure element, said enlarged edge forming at least one rotation seat which accommodates rotatably a respective rotation pivot, which is rigidly coupled to said at least one second closure element and is adapted to provide the hinge for connection between said at least one first closure element and said at least one second closure element.

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8. The container according to one or more of the preceding claims, **characterized in that** said at least one locking element comprises a tooth supported by a raised border, which is formed on said at least one second closure element and faces the outer lateral surface of said enlarged edge, said raised border being elastically flexible in order to keep said tooth in contact with the outer lateral surface of said enlarged edge, said at least one respective locking seat being formed by complementary teeth, which protrude from the outer lateral surface of said enlarged edge and are mutually spaced around the pivoting axis formed by said rotation pivot.

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9. The container according to one or more of the preceding claims, **characterized in that** it comprises a handle, which is connected so that it can oscillate to said container body, and means for the removable retention of said at least one first closure element in the locked position for closure, which can be activated by turning said handle.

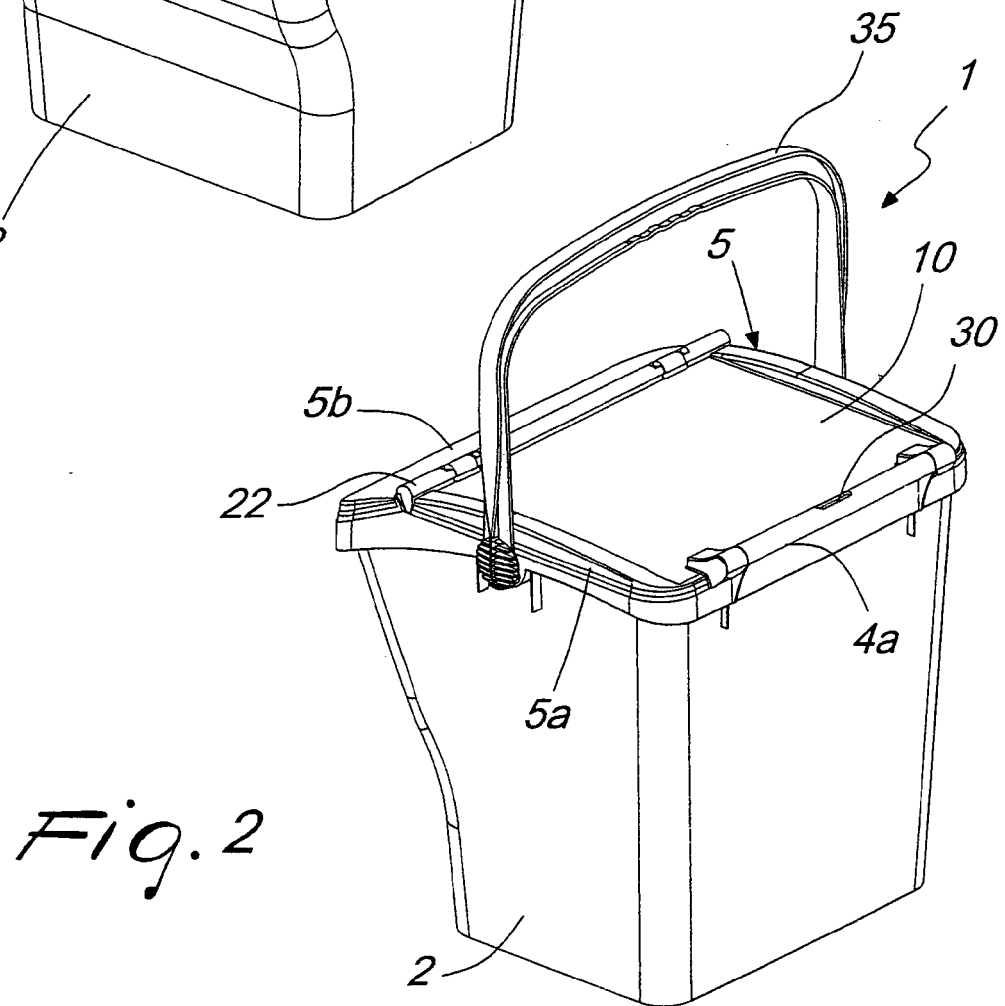
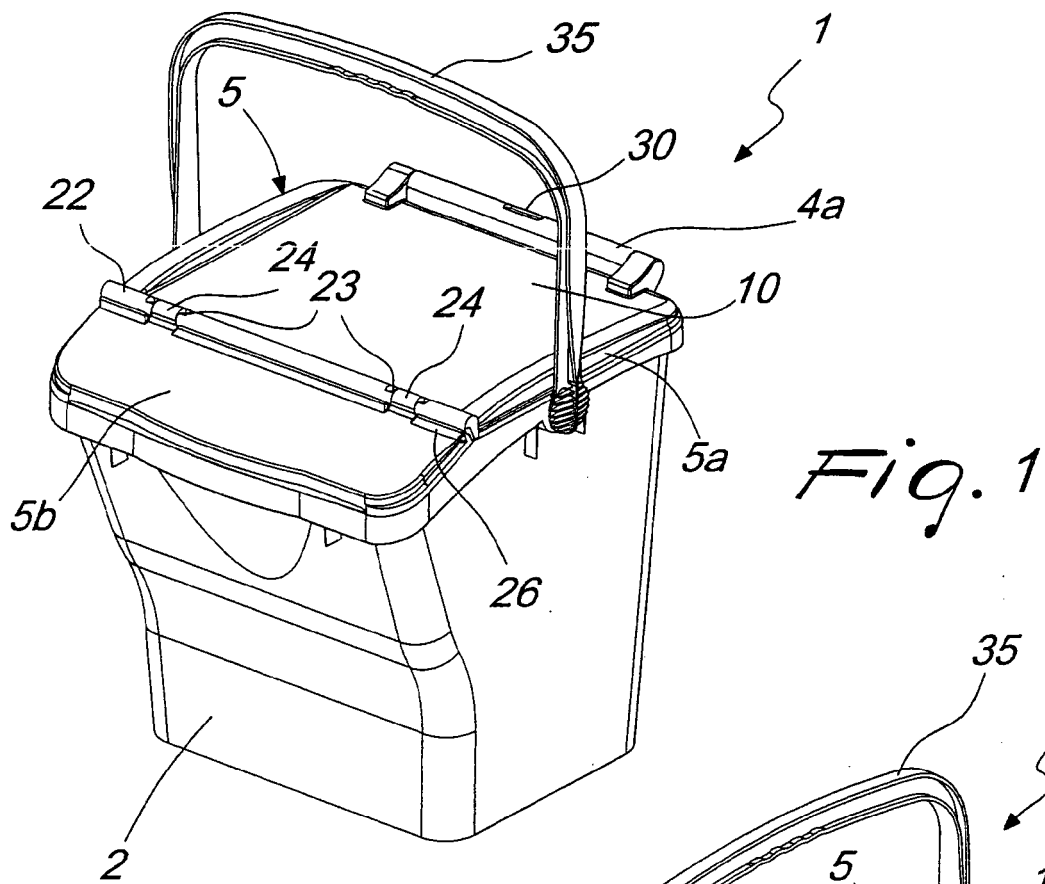
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10. The container according to one or more of the preceding claims, **characterized in that** it comprises, proximate to said first end of said container body, a slotted seat which can be engaged by an engagement element for fixing said container body to a wall.

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11. The container according to one or more of the preceding claims, **characterized in that** it comprises a grip recess on the outer side of the bottom of said container body.

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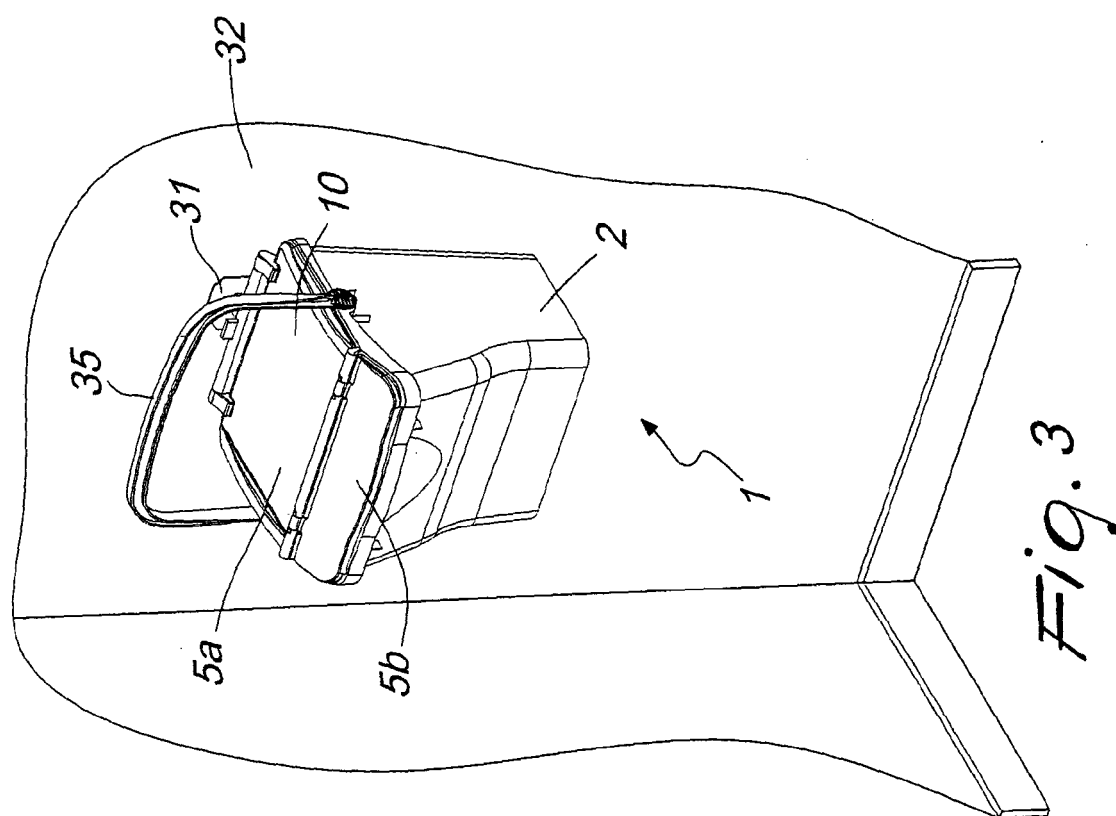
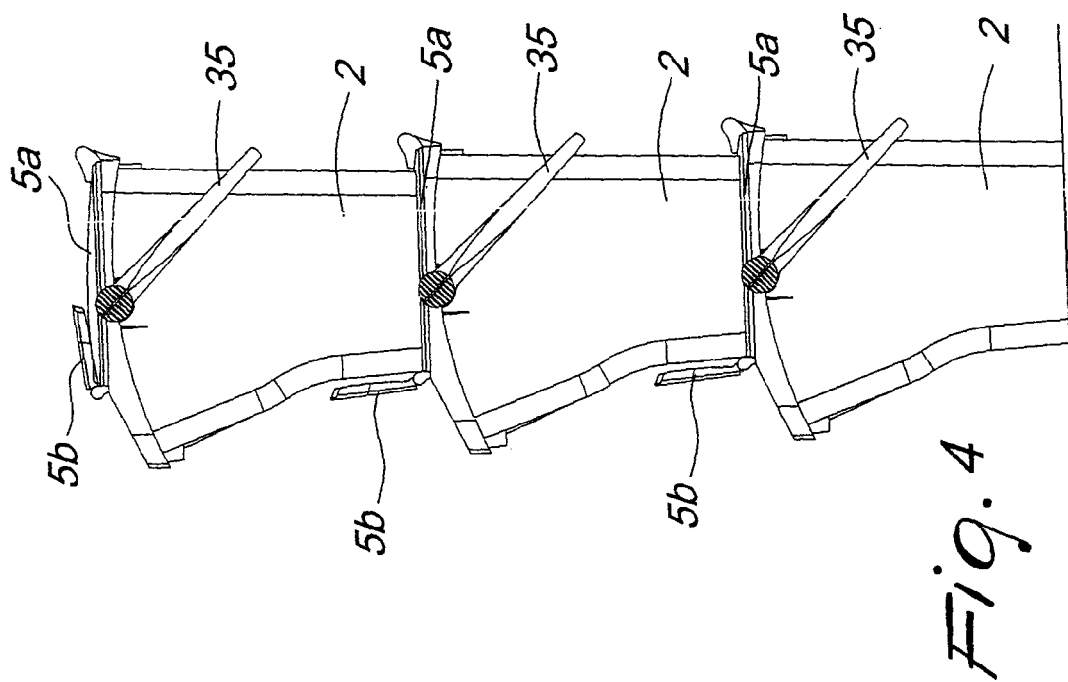


Fig. 5

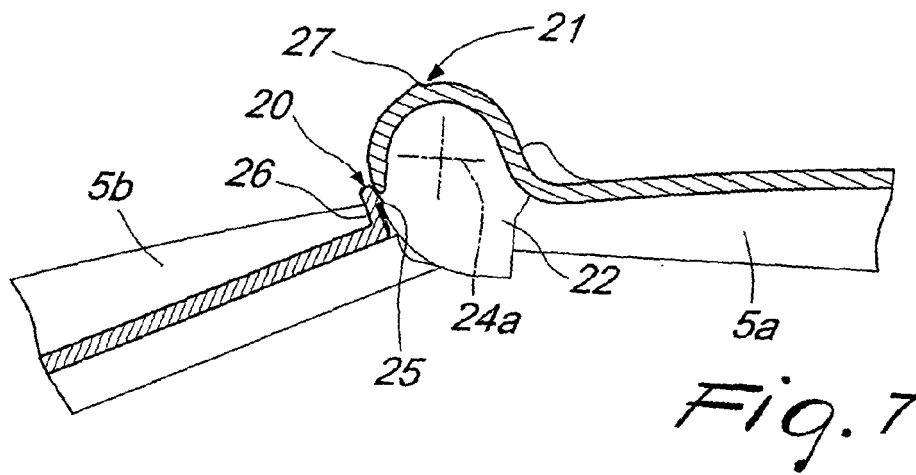
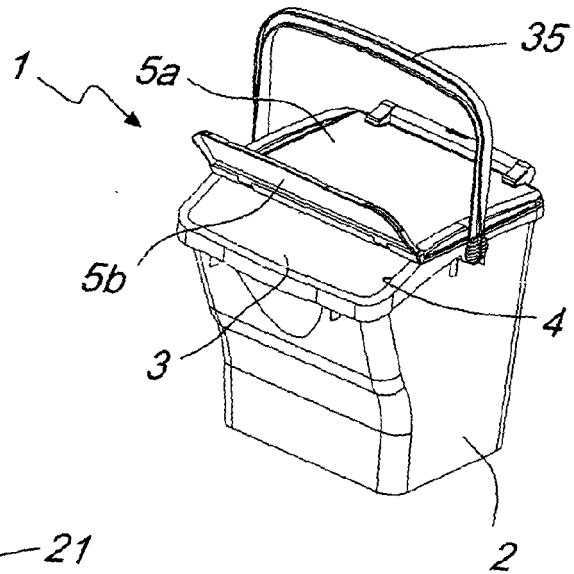
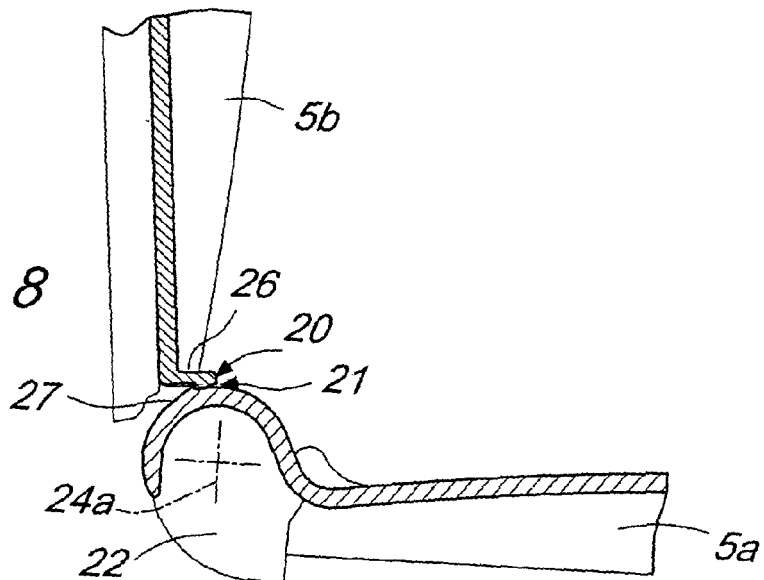
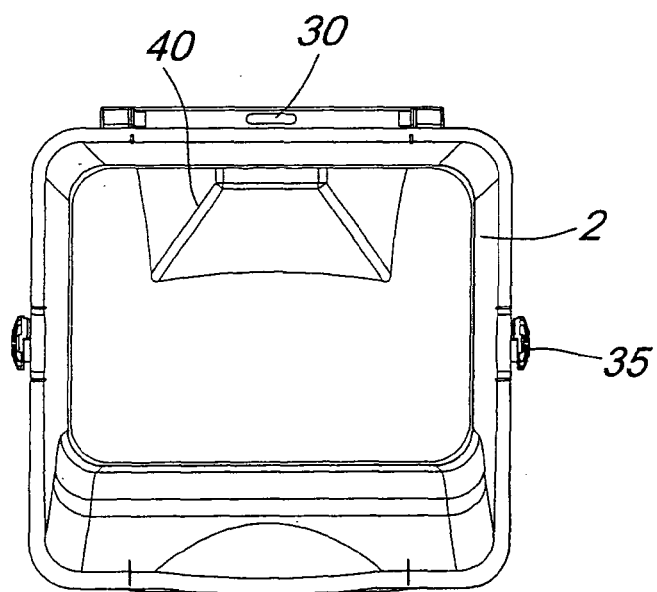
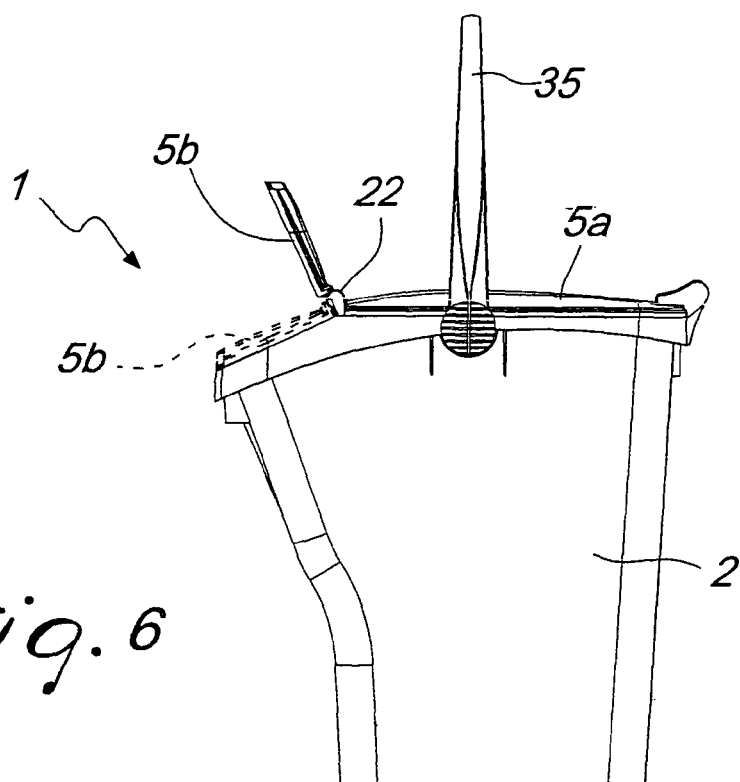


Fig. 8





REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT VR20050021 U [0043]