(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 354 042 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
19.10.2016 Bulletin 2016/42

(51) Int Cl.:
B65F 1/14 *(2006.01)*

(21) Application number: **11151837.9**

(22) Date of filing: **24.01.2011**

(54) **Holding device for an additional container, additional container device and waste container device**

Haltevorrichtung für einen zusätzlichen Behälter, zusätzliche Behältervorrichtung und Abfallbehältervorrichtung

Dispositif support pour récipient supplémentaire, dispositif à récipient supplémentaire et dispositif à récipient de déchets

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **28.01.2010 DE 102010006071**

(43) Date of publication of application:
10.08.2011 Bulletin 2011/32

(73) Proprietor: **ESE World B.V.**
6199 AC Maastricht-Airport (NL)

(72) Inventor: **Hakansson, Dan**
281 35 Hässleholm (SE)

(74) Representative: **Müller & Schubert Patentanwälte**
Innere Wiener Straße 13
81667 München (DE)

(56) References cited:
WO-A1-2004/087537
US-A- 3 383 732
US-A- 5 111 951

EP 2 354 042 B1

Description

[0001] The present invention relates to a holding device for arranging an additional container inside a waste container according to the preamble of claim 1. Furthermore, the present invention relates to an additional container device and to a waste container device.

[0002] In prior art it is already known to realise waste container devices, said waste container devices comprising a waste container, said waste container comprising a container body for picking up waste. In order to collect a number of different waste fractions it is further known to use additional containers, said additional containers being placed and positioned inside the waste container, particularly inside the container body.

[0003] Such a waste container device is disclosed in WO 2004/087537 A1 for example. This waste container device comprises a waste container, said waste container comprising a container body for picking up waste. For collecting different waste fractions, two additional containers can be placed and positioned inside the container body. This is realised by use of a frame which corresponds with the holding device according to the preamble of claim 1. The frame is detachably connected to the waste container. For example the frame can be placed on the upper edge of the container body. The additional containers are arranged at said frame. In order to remove waste from the waste container device the frame with the additional containers is picked up and lifted out of the container body such that the additional containers can be discharged into different areas of a waste collecting vehicle prior to discharging the waste container.

[0004] According to this known solution two additional containers are inserted into the waste container, particularly into the container body. However, it is often desired to use only one additional container.

[0005] In view of the prior art it is the object of the present invention to provide a holding device which is arranged for placing and positioning only one single additional container inside a waste container, particularly inside the container body of a waste container. A sufficient stability has to be ensured as well. Furthermore, it has to be ensured that the additional container can be discharged into a separated area of a waste collecting vehicle.

[0006] In accordance with the present invention, this object is solved by the holding device with the features according to independent claim 1, by the additional container device with the features according to independent claim 9and by the waste container device with the features according to independent claim 11. Additional features and details of the present invention become apparent from the dependent claims, from the description and from the drawings. Features and details which are described in connection with the holding device according to the first aspect of the invention are, of course, also valid in connection with the additional container device and the waste container device according to the second and third aspects of the invention, and vice versa. Thus, in respect of the disclosure of one of the aspects of the present invention, full reference is always made reciprocally to the disclosure of each other aspect of the present invention.

[0007] The present invention is based on the general finding that the holding device is arranged in particular manner. The holding device is provided to hold an - in particular a single - additional container. By use of the holding device the additional container can be arranged, particularly placed and positioned, inside a waste container, particularly inside the container body of a waste container. In order to discharge waste from the additional container, the holding device, which holds the additional container, is removed and lifted from the waste container. Thus the additional container can be lifted out of the waste container. Due to the specific embodiment of the holding device it can be ensured that the discharging procedure of the additional container and the waste container can be carried out during one single working cycle. The additional container can be discharged into its own area inside a waste collecting vehicle, said area particularly being separated from the area of the waste collecting vehicle into which the waste container is discharged. For example it can be realised that the additional container and the waste container are discharged into one single waste collecting vehicle, said waste collecting vehicle comprising a lifting device, said lifting device being adapted to discharge both containers during one single working cycle.

[0008] Pursuant to the present invention the object is solved by a holding device for arranging an - in particular one single - additional container inside a waste container. The holding device comprises a first profile element, said first profile element comprising an arrangement area for arranging the holding device at a waste container and a fastening area for fastening an additional container; that it comprises a second profile element, said second profile element comprising an arrangement area for arranging the holding device at a waste container and a fastening area for fastening an additional container; the first profile element and the second profile element are connected to one another; said first profile element is formed as a first leg of said holding device and said second profile element is formed as a second leg of said holding device.

[0009] According to the present invention, the holding device has an L-shape or T-shape or V-shape. This means in particular that both profile elements are connected to one another in such a way that the holding device is realised in form of a "V", "T "or "L".

[0010] The holding device comprises a first and a second profile element. Particularly, a profile element is an elongated element or member. For example the first profile element and/or the second profile element can be formed as a longitudinal profile element. Generally, a longitudinal profile element has a length which is, particularly significantly, larger than its width. Both profile elements can have the same or different shapes and/or contours

and/or cross sections and/or length and/or width.

[0011] The first profile element comprises an arrangement area for arranging the holding device at a waste container. In addition first profile element comprises a fastening area for fastening an additional container. The second profile element comprises an arrangement area for arranging the holding device at a waste container and a fastening area for fastening an additional container.

[0012] The first profile element and the second profile element are connected to one another. In particular, both profile elements are directly connected to another. In such case it is preferred that both profile elements are connected to one another without any intermediate elements or members between them. In such case it is preferred that both profile elements join together or intersect at or in one point or area. The connection of both profile elements can be realised in different ways. For example, both profile elements can be manufactured separately in a first step. In a second step, both profile elements can be connected to one another in a detachable or non-detachable manner. According to a different embodiment, both profile elements can be manufactured as one-piece.

[0013] The holding device comprises two legs, said first profile element is formed as the first leg of said holding device and said second profile element is formed as the second leg of said holding device. Thus, the holding device has sufficient stability and an additional container can be easily arranged at said holding device. Furthermore it is very easy to bring the holding device into contact or connection with a waste container.

[0014] Preferably, the first profile element and the second profile element are aligned or arranged in a defined angle between 60 and 120 degrees to one another. Preferably the first profile element corresponds to or is the first leg of said angle whereas the second profile element corresponds to or is the second leg of said angle.

[0015] Both profile elements may be perpendicularly aligned or arranged to one another, that is in an angle of 90 degrees or almost 90 degrees.

[0016] The holding device, and the profile elements in particular, may consist of a rigid plastic material, since the holding device is exposed to high forces during use, especially during a discharging process.

[0017] The first profile element and/or the second profile element may comprise a free end for example. At the free end of the first profile element and/or at the free end of the second profile element a fastening profile element for fastening an additional container may be arranged.

[0018] According to a preferred embodiment, the holding device is realised in form of an "L". According to this embodiment the first profile element is formed as a first leg of the L-shaped holding device and the second profile element is formed as second leg of the L-shaped holding device. Both legs can be equal or non-equal. "Equal" means that both legs have the same length. "Non-equal" means that both legs have different length in comparison to each other.

[0019] According to a different embodiment, the holding device is realised in form of a "T". A "T" comprises two legs, a first leg and a second leg being perpendicular thereto. According to this embodiment the first profile element is formed as a first leg of a T-shaped holding device and the second profile element is formed as a second leg of a T-shaped holding device. Both legs can be coupled to one another symmetrically or non-symmetrically. In case of a symmetric connection the second profile element which forms the second leg, projects or rises from the middle of the first profile element which forms the first leg. In case of a non-symmetric connection the second profile element projects or rises apart from the middle of said first profile element.

[0020] This means that the second profile element is displaced from the middle of first profile element.

[0021] For example, both profile elements and therefore both legs of the holding device can have different length. For example the length of second profile element can be at least 50%, preferred at least 80%, more preferred at least 90% of the length of first profile element. However, according to yet another embodiment, both profile elements can have the same length.

[0022] If the holding device is T-shaped and both profile elements which are the legs of this T-shaped holding device are coupled to one another non-symmetrically, the second profile element is not arranged in the middle of first profile element, where it rises or projects from said first profile element. For example, in such a case the length of a first portion of the first profile element which extends from a first free end of said first profile element to the location where the second profile element rises or projects from said first profile element, can be at least 40%, preferred at least 50%, more preferred at least 60% of the length of a second portion of said first profile element. The second portion extends from the location where the second profile element rises or projects from said first profile element to a second free end of said first profile element.

[0023] If the holding device is T-shaped and the holding device is arranged at the waste container, a portion of the first or second profile element can project over the wall of the container body of said waste container. This portion which is located exterior or outwardly of the container body can be used as a handle for example.

[0024] For example the free end of the first or second profile element, which projects over the wall of the container body, and which is therefore located exterior or outwardly of the container body, and the free end of the second or first profile element can be connected with one another via a connection profile element. By use of such a connection profile element the stability of sad holding device can be further increased. Additionally, said connection profile element can be used as a handle as well.

[0025] According to a preferred embodiment the first profile element and/or the second profile element can have an L-shaped or T-shaped cross-section. For example one leg can be or provide a contact surface, by use

of which the holding device can be brought into contact with a waste container. The other leg can be or provide some kind of a front edge. When the holding device has been brought into contact with the waste container, such a front edge can rest against the outer wall of the waste container. Thus the holding device and the additional container connected thereto can be better hold in position.

[0026] It is preferred that the arrangement area of the first profile element and/or the arrangement area of the second profile element is/are formed as a contact surface for resting on an upper edge of a waste container.

[0027] According to a preferred embodiment the first profile element and/or the second profile element comprises/comprise engaging means for engaging a gripping equipment of a waste collecting vehicle. Those engaging means can be arranged as an engaging profile element for example. Such an engaging profile element can be arranged at or can be part of the first and/or second profile element. It is preferred that the shape or contour of said engaging profile element is adapted to the shape or contour of the gripping equipment of the waste collecting vehicle. If the first or second profile element comprises a front edge as described above, the engaging profile element can project - as seen from the inside of a waste container, to which the holding device is brought or has been brought in contact - over the front edge outwardly. By use of engaging means of a gripping equipment of a waste collecting vehicle, the holding device and the additional container connected thereto can be removed from the waste container. Then, the additional container can be discharged into a separated discharging area of said waste collecting vehicle.

[0028] According to a preferred embodiment, the first profile element and/or the second profile element comprise/comprises a mesh structure. Thus, the material-needed for manufacturing the holding device can be reduced. At the same time it is ensured that the holding device has a sufficient stability, particularly during a discharging process.

[0029] According to a preferred embodiment, the fastening area of the first profile element and/or the fastening area of the second profile element for fastening an additional container comprise/comprises a clamping device or a catching device or a rail based device. According to yet another preferred embodiment the fastening area of the first profile element and/or the fastening area of the second profile element for fastening an additional container is/are arranged as a clamping device or a catching device or a rail based device. However the present invention is not delimited to the aforementioned embodiment. Once the additional container has been arranged to the holding device, the additional container can be fixed by use of additional fixing elements, for example screws, bolts and the like.

[0030] According to a second aspect of the present invention, an additional container device for arranging an additional container inside of a waste container is provided, said additional container device comprising a holding device according to the present invention as being described above. Therefore full reference is made to the aforementioned description of the holding device Furthermore the additional container device comprises an additional container, said additional container being, particularly detachably, arranged at said holding device.

[0031] For example the additional container can be detachably mounted to the holding device. The additional container and the holding device can be realised as separate elements, which are brought in contact with one another. For example the additional container can be arranged at the holding device by use of a clamping device or connection or a catching device or connection or a rail based device or connection. According to another embodiment the additional container and the holding device can be non-detachably connected. This can be realised by use of a glued connection or an adhesive bond, a weld joint, a soldered joint and the like. According to yet another embodiment the additional container and the holding device can be arranged or manufactured as one piece. The present invention is not limited to the aforementioned examples.

[0032] The additional container comprises a container body. The container body can be closed by use of a lid. The lid may be mounted to said container body.

[0033] According to a preferred embodiment the holding device and the additional container are made from different materials. For example they can be made from plastic materials.

[0034] According to a third aspect of the present invention, a waste container device comprising a waste container is provided, said waste container comprising a container body. The waste container device is characterised in that a holding device according to the present invention as described above is provided, said holding device being, particularly detachably, arranged at said waste container. Therefore full reference is made to the aforementioned description of the holding device. Or, the waste container device is characterised in that an additional container device according to the present invention as described above is provided, said additional container device being, particularly detachably, arranged at said waste container. Therefore full reference is made to the aforementioned description of the additional device.

[0035] It is preferred that the first profile element of the holding device is arranged, particularly rested, with its arrangement area on an upper edge of the waste container and that the second profile element of the holding device is arranged, particularly rested, with its arrangement area on an upper edge of the waste container.

[0036] According to a preferred embodiment the first profile element and/or the second profile element is/are adapted to the shape and/or the course of the upper edge of the waste container.

[0037] If the holding device is T-shaped, both profile elements are the legs of this T-shaped holding device. If the holding device is arranged at the waste container a

portion of the first or second profile element of the holding device can project over the wall of the container body of said waste container. This portion which is located exterior or outwardly of the container body can be used as a handle for example. For example the free end of the first or second profile element, which projects over the wall of the container body, and which is therefore located exterior or outwardly of the container body of the waste container, and the free end of the second or first profile element can be connected with one another via a connection profile element. By use of such a connection profile element the stability of sad holding device can be further increased. Additionally, said connection profile element can be used as a handle as well.

[0038] The waste container may comprise a container lid. This lid is the main lid of the waste container device. In the area where the additional container is placed or positioned the container lid can comprise an additional lid element for closing the additional container.

[0039] At least one of the aforementioned lids may comprise a marking, particularly a colour marking, said marking specifying a waste fraction.

[0040] It is the general purpose of such a marking to give notice to a user, what kind of waste fraction has to be charged via a respective charging opening into the container body of the waste container or the additional container. For example a marking can be provided as a symbol, a label, an inscription, a sticker, an instruction plate, a tag and the like. In such a case the marking is mounted on the respective lid member or within the vicinity of the respective lid member. For example, the marking can be a colour marking. In such a case, the marked lid member can be entirely or partly equipped with such a colour marking. The entire lid member can be held in a respective colour. In particular lid members for different waste fractions are held in different colours.

[0041] The waste container and the additional container can be used to pick up different waste fractions. In particular, a waste fraction is a specific sort of waste, and in particular the lowest separable unit of a waste sort.

[0042] The waste container may comprise a container body. The container body may comprise a container base. A container side wall projects from said container base to the upper edge of said container body. Based on the container configuration, the waste container can comprise one single container side wall, for example if the waste container body is round shaped, oval shaped or the like. In case that the container body has a polygonal shape, for example a quadrangular shape, the container side wall comprises different, for example four, faces, which form container side wall segments. In case of a quadrangular shaped container body, the container side wall can comprise a front face, a back face and two side faces. The container side wall and the container body border a container internal space, said internal space defining the space for picking up waste.

[0043] At the upper edge of the container side wall, which is opposite to the container base, the waste container may comprise a main container collecting opening for collecting waste. This container collecting opening may be bordered by the container side wall. In such a case, the container collecting opening extends over the entire cross-section of the waste container at the upper ending of the container body.

[0044] The container body, and in particular the container collecting opening can be closed via the container lid. For this reason the container lid is arranged to/at the container body in a suitable manner. For example, the container lid can be pivot mounted on said container body. The container lid can be swung open and shut by use of a joint.

[0045] The container body of the waste container may comprise or the waste container may provide at least two, preferably three or four compartments for picking up different waste fractions. For example the container body can be constructed as a multi compartment container body. In such a case at least two compartments can be formed by use of a separating plate within the container body for example. The separating plate can function or can be formed as a separating wall. In case that the container body provides two compartments, a separating plate or wall can be perpendicularly incorporated within said container body. In such a case the internal space of the container body is separated into two compartments. For a container body with four compartments, two separation plates or walls can be used said plates or wall being arranged in cross-shape.

[0046] One compartment may be provided as an insertion container, which is the aforementioned additional container, said insertion container being placed or placeable within said container body.

[0047] The container lid may be pivot mounted on the container body around a first axis; a swivelling axis, a rotational axis, a pivot axis or the like. For example, this can be realised via a pivot joint, a swivel joint, a rotational joint and the like. The container lid may be pivot mounted via a hinge, a knuckle joint and the like on the container body. The container lid can be swung up and shut closed. In its swung up state the container lid releases the entire charging opening of the container body. In this case the waste container can be emptied in a single work step, by use of an adequate equipped waste collecting vehicle for example.

[0048] The waste container may be a mobile waste container. Such a waste container may comprise a travelling gear, said travelling gear comprising a number of wheels. The mobile waste container may comprise two wheels, said wheels being mounted on a common first axis. Each wheel may be mounted separately from the other wheel on an individual axis. The mobile waste container may comprise at least one additional wheel, a third wheel for example, said additional wheel being mounted on a second axis, said second axis being spaced from said first axis. The additional wheel may be mounted in such a way that it can change its rolling or running direction.

[0049] By use of such a travelling gear the waste container device can be easily moved to a waste collection vehicle without any expenditure of energy. The waste container device can be moved without the necessity of tilting the waste container. In addition it is much easier to align the waste container. If the first wheels on the first axis are arranged in the area of the back face of the container body, the additional wheel on the second axis is preferably arranged in the area of the front face of the container body. The additional wheel can be described as a kind of "front wheel" for manoeuvring the waste container.

[0050] The waste container device may comprise an illumination device. At least one lid member as mentioned above may be coupled with an illumination device.

[0051] It is a general function of this illumination device that a user of the waste container device may recognize in the dark which waste fraction has to be charged into which container. Furthermore it may lead the user to the charging openings in order that no waste can fall alongside.

[0052] The illumination device may comprise one or more light sources, for example a number of miniature light sources, which are arranged in a specific pattern, as a light band or light bar for example. For example, such light sources can be LEDs, OLEDs and the like.

[0053] The illumination device may be mounted on at least one of the aforementioned lid members, on the outside and/or on the inside for example. Besides this, the illumination device may also be mounted on the container body, within one of the container compartments and the like. The illumination device may be provided anywhere inside and/or outside of the waste container device.

[0054] Each of the aforementioned lid members can be equipped with an illumination device.

[0055] The illumination device may be realised in a way that it may be activated and/or deactivated automatically. The illumination device may comprise a switching device, a contact spring for example. Said switching device may be activated if a lid member is moved. Thus, if a lid member is moved the switching device is activated. If a lid member is opened, the switching device is activated and the illumination device is activated as well. For example if a lid member is closed from its open state, the switching device is deactivated and the illumination device is deactivated as well, since the power supply is interrupted. The illumination device may be activated and/or deactivated manually, for example by use of a switching device, by use of a light barrier and the like.

[0056] Further, at least one reflection device may be provided at one outer face of the waste container and/or at the outer face of a waste container lid and/or at the outer face of a lid member for the additional container. In general such a reflection element may be provided anywhere at the outside of the waste container device.

[0057] The reflection element may be detachably or non-detachably mounted. For example, it may be provided as a reflection strip, as a reflection foil strip, as a "cat's eye" reflector and the like. In general, a reflection element is some kind of passive illumination. The reflection element reflects impinging light beams. By use of such a reflection element it can be achieved, that the waste container is visible in the dark, for example if it is placed nearby the street for emptying reasons.

[0058] The waste container device may comprise one or more elements for noise reduction. Those elements may be provided within the waste container, for example within the container body and/or at the inner side of a container lid and/or at the inner side of a lid member for the additional container. The waste container device may further comprise an additional container which is mounted on the container body or on a container lid. Such an additional container may be used for cigarettes, batteries and the like.

[0059] For a better understanding of the present invention, preferred embodiments of the present invention will now be described by way of an example with reference to the accompanying drawings, in which

Figures 1 to 4	depict a number of different views of a holding device according to the present invention;
Figures 5 and 6	depict a number of different views of an additional container device according to the present invention; and
Figures 7 to 11	depict a number of different views of a waste container device according to the present invention.

[0060] Figures 1 to 4 depict different views of a holding device10 according to the present invention, by use of which an additional container 31 can be arranged inside a waste container 41, which is shown in Figures 7 to 11.

[0061] Holding device 10 comprises a first profile element 11. First profile element 11 comprises an arrangement area 12 for arranging the holding device 10 at a waste container. Furthermore, first profile element 11 comprises a fastening area 13 for fastening an additional container. First profile element 11 forms the first leg of T-shaped holding device 10.

[0062] Holding device 10 further comprises a second profile element 14. Second profile element 14 comprises an arrangement area 15 for arranging the holding device 10 at a waste container. Furthermore, second profile element 12 comprises a fastening area 16 for fastening an additional container. Second profile element 14 forms the second leg of T-shaped holding device 10.

[0063] Both profile elements 11, 14 are provided as one piece and consist of rigid plastic materials. Some portions of first and second profile elements 11, 14 comprise a mesh structure as being particularly evident from Figures 1 and 2.

[0064] The arrangement areas 12, 15 of profile elements 11, 14 are provided as contact surfaces 19. Those contact surfaces 19 can be placed on the upper edge of a waste container as being depicted in Figures 7 to 11.

[0065] According to the embodiment according to Figures 1 to 4 the holding device 10 is T-shaped which means that holding device 10 is provided in form of a "T". Both profile elements 11, 14 which are provided as legs of T-shaped holding device 10, are coupled to one another non-symmetrically. This means that second profile element 14 projects or rises apart from the middle of first profile element 11. This means that second profile element 14 is displaced from the middle of first profile element 11. According to the present embodiment, the length of a first portion of the first profile element 11 which extends from a first free end 17 of said first profile element 11 to the location where second profile element 14 rises or projects from said first profile element 11, is shorter than the length of a second portion of said first profile element 11. The second portion extends from the location where second profile element 14 rises or projects from said first profile element 11 to a second free end 18 of first profile element 11.

[0066] As being evident from Figures 2 to 4, first profile element 11 and second profile element 14 have an L-shaped cross section. For example one leg can be a contact surface 19, by use of which the holding device 10 can be brought into contact with a waste container. The other leg can be some kind of a front edge 20. When the holding device 10 has been brought into contact with the waste container, such a front edge 20 can rest against the outer wall of the waste container. Thus the holding device 10 and the additional container connected thereto can be better hold in position.

[0067] As being particularly evident from Figure 4, first profile element 11 comprises engaging means 21 for engaging a gripping equipment of a waste collecting vehicle. Those engaging means 21 can be arranged as an engaging profile element for example. Those engaging means 21 project over the front edge 21 of holding device 10 outwardly. By use of engaging means 21 the gripping equipment of a waste collecting vehicle can remove the holding device 10 and the additional container connected thereto from the waste container.

[0068] Figures 5 and 6 depict an additional container device 30. Additional container device 30 comprises a holding device 10 as being depicted in Figures 1 to 4. Therefore, full reference is made to the aforementioned description relating to Figures 1 to 4. Furthermore, additional container device 30 comprises an additional container 31, said additional container 31 being detachably connected to holding device 10. The connection is realised by use of a clamping device or connection or a catching device or connection or a rail based device or connection. Additional container 31 and holding device 10 are made from different plastic materials. Once the additional container 31 has been arranged to holding device 10, the additional container 31 can be fixed by use of additional fixing elements 25, screws or bolts for example

[0069] According to Figures 7 to 11, different views of a waste container device 40 according to the present invention are depicted.

[0070] As being evident from those Figures, waste container device 40 comprises a waste container 41. Waste container 41 comprises a container body 42. Container body 42 provides a pick up space 43 for picking up waste. Said pick up space 43 is bordered by a container base 44 and a container wall 45. At the upper edge 47 of container wall 45, and therefore opposite to container base 44, waste container 41 comprises a charging opening 46.

[0071] On the upper edge 47 of container body 42 arrangement areas 12, 15 of profile elements 11, 14 are placed or arranged. Thus, holding device 10 can be arranged on the upper edge 47 of waste container 41. The additional container 30, which is connected to holding device 10, is arranged inside waste container 41 inside pick-up space 43.

[0072] If the holding device 10 is T-shaped, both profile elements 11, 14 are the legs of this T-shaped holding device. If the holding device 10 is arranged at the waste container 41, as being evident from Figures 7 to 11, a portion 23 of the first profile element 11 of the holding device 10 can project over the wall 45 of the container body 42 of said waste container 41. This portion 23 which is located exterior or outwardly of the container body 42 can be used as a handle for example. For example the first free end 17 of the first profile element 11, which projects over the wall 45 of the container body 42, and which is therefore located exterior or outwardly of the container body 42 of the waste container 41, and the free end 24 of the second profile element 14 can be connected with one another via a connection profile element. By use of such a connection profile element the stability of sad holding device can be further increased. Additionally, said connection profile element can be used as a handle as well.

[0073] As being evident from Figures 9 to 11 charging opening 46 can be closed via a container lid 48, said container lid 48 being pivot mounted to container body 42 by use of a hinge. Container lid 48 can be swung up and shut closed. In its swung up state container lid preferably releases the entire charging opening 46 of the container body 42. Waste container 41 further comprises two wheels 49.

[0074] As being evident from Figure 10, a holding device 10 of waste container device 40 is placed on the upper free edge 47 of waste container 41. Holding device 10 is arranged as being evident from Figures 1 to 4, Therefore, full reference is made to the aforementioned description of Figures 1 to 4. The additional container device 30, which comprises the holding device 10 and the additional container 31, is arranged as being evident from Figures 5 and 6. Therefore, full reference is made to the aforementioned description of Figures 5 and 6 as well. Figure 10 depicts a waste container device 40 with a container lid 48 in its swung up, opened state. Figure 11 depicts said waste container 40 according to Figure 10 with a container lid 48 in its swung down, shut closed state,

[0075] Additional features may be added to the em-

bodiments according to figures 1 to 11. Such features are disclosed in the general description of the present invention above. Therefore, full reference is made to those features as well.

List of Reference Numerals

[0076]

10	Holding device for an additional container
11	First profile element
12	Arrangement area
13	Fastening area
14	Second profile element
15	Arrangement area
16	Fastening area
17	First end of first profile element
18	Second end of first profile element
19	Contact surface
20	Front edge
21	Engaging means (engaging profile)
23	Portion of first profile element
24	Free end of second profile element
25	Fixing element
30	Additional container device
31	Additional container
40	Waste container device
41	Waste container
42	Container body
43	Pick-up space
44	Container base
45	Container wall
46	Charging opening
47	Edge
48	Container lid
49	Wheel

Claims

1. A holding device (10) for arranging an additional container (31) inside a waste container (41), said holding device (10) comprises a first profile element (11), said first profile element (11) comprising an arrangement area (12) for arranging the holding device (10) at the waste container (41) and a fastening area (13) for fastening the additional container (31), and a second profile element (14), said second profile element (14) comprising an arrangement area (15) for arranging the holding device (10) at the waste container (41) and a fastening area (16) for fastening the additional container (31); the first profile element (11) and the second profile element (14) are connected to one another; said first profile element (11) is formed as a first leg of said holding device (10) and said second profile element (14) is formed as a second leg of said holding device (10) **characterized in that** the holding device (10) has an L-shape, T-shape or V-shape.

2. The holding device (10) according to claim 1, **characterised in that** the first profile element (11) and the second profile element (14) are aligned in a defined angle between 60 degrees and 120 degrees to one another.

3. The holding device (10) according to claim 1, **characterised in that** the first profile element (11) is formed as a first leg of a L-shaped holding device (10), that the second profile element (14) is formed as second leg of a L-shaped holding device (10) and that both legs are equal or non-equal, or that the first profile element 11) is formed as a first leg of a T-shaped holding device (10), that the second profile element (14) is formed as a second leg of a T-shaped holding device (10) and that both legs are symmetrically or non-symmetrically coupled to one another.

4. The holding device (10) according to anyone of claims 1 to 3, **characterised in that** first profile element (11) and/or the second profile element (14) has/have an L-shaped or T-shaped cross-section.

5. The holding device (10) according to anyone of claims 1 to 4, **characterised in that** the arrangement area (12) of the first profile element (11) and/or the arrangement area (15) of the second profile element (14) is/are formed as a contact surface (19) for resting on an upper edge of the waste container (41).

6. The holding device (10) according to anyone of claims 1 to 5, **characterised in that** the first profile element (11) and/or the second profile element (14) comprises/comprise engaging means (21) for engaging a gripping equipment of a waste collecting vehicle.

7. The holding device (10) according to anyone of claims 1 to 6, **characterised in that** the first profile element (11) and/or the second profile element (14) comprise/comprises a mesh structure.

8. The holding device (10) according to anyone of claims 1 to 7, **characterised in that** the fastening area (13) of the first profile element (11) and/or the fastening area (16) of the second profile element (14) for fastening the additional container (31) comprise/comprises a clamping device or a catching device or a rail based device, or that the fastening area (13) of the first profile element (11) and/or the fastening area (16) of the second profile element (14) for fastening the additional container (31) is/are arranged as a clamping device or a catching device or a rail based device.

9. An additional container device (30) for arranging an

additional container (31) inside of a waste container (41), said additional container device (30) comprising a holding device (10) according to anyone of claims 1 to 8 and an additional container (31), said additional container (31) being, particularly detachably, arranged at said holding device (10).

10. The additional container device (30) according to claim 9, **characterised in that** the holding device (10) and the additional container (31) are made from different materials.

11. A waste container device (40) comprising a waste container (41), said waste container (41) comprising a container body (42), **characterised in that** a holding device (10) according to anyone of claims 1 to 8 is provided, said holding device (10) being, particularly detachably, arranged at said waste container (41), or that an additional container device (30) according to anyone of claims 9 to 10 is provided, said additional container device (30) being, particularly detachably, arranged at said waste container (41).

12. The waste container device (40) according to claim11, **characterised in that** the first profile element (11) of the holding device (10) is arranged, particularly rested, with its arrangement area (12) on an upper edge (47) of the waste container (41) and that the second profile element (14) of the holding device (10) is arranged, particularly rested, with its arrangement area (15) on an upper edge (47) of the waste container (41).

13. The waste container device (40) according to claim 11 or 12, **characterised in that** the first profile element (11) and/or the second profile element (14) is/are adapted to the shape and/or the course of the upper edge (47) of the waste container (41).

Patentansprüche

1. Halteeinrichtung (10) zum Anordnen eine zusätzlichen Behälters (31) innerhalb eines Abfallbehälters (41), wobei die Halteinrichtung (10) ein erstes Profilelement (11), welches einen Anordnungsbereich (12) zum Anordnen der Halteeinrichtung (10) an dem Abfallbehälter (41) und einen Befestigungsbereich (13) zum Befestigen des zusätzlichen Behälters (31) aufweist, und ein zweites Profilelement (14) aufweist, wobei das zweite Profileelement (14) einen Anordnungsbereich (15) zum Anordnen der Halteeinrichtung (10) am Abfallbehälter (41) und einen Befestigungsbereich (16) zum Befestigendes zusätzlichen Behälters (31) aufweist, wobei das erste Profilelement (11) und das zweite Profilelement (14) miteinander verbunden sind , wobei das erste Profilelement (11) als ein erster Schenkel der Halteinrichtung (10) ausgebildet ist, und wobei das zweite Profilelement (14) als ein zweiter Schenkel der Halteinrichtung (10) ausgebildet ist, **dadurch gekennzeichnet, dass** die Halteeinrichtung (10) eine L-Form, T-Form oder V-Form hat.

2. Halteeinrichtung (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** das erste Profilelement (11) und das zweite Profilelement (14) in einem definierten Winkel zwischen 60 Grad und 120 Grad zueinander ausgerichtet sind.

3. Halteeinrichtung (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** das erste Profilelement (11) als ein erster Schenkel einer L-förmigen Halteeinrichtung (10) ausgebildet ist, dass das zweite Profilelement (14) als zweiter Schenkel einer L-förmigen Halteeinrichtung (10) ausgebildet ist und dass beide Schenkel gleich oder nicht-gleich sind, oder dass das erste Profilelement (11) als ein erster Schenkel einer T-förmigen Halteeinrichtung (10) ausgebildet ist, dass das zweite Profilelement (14) als zweiter Schenkel einer T-förmigen Halteeinrichtung (10) ausgebildet ist und dass beide Schenkel symmetrisch oder nicht-symmetrisch miteinander verbunden sind.

4. Halteeinrichtung (10) nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** das erste Profilelement (11) und/oder das zweite Profilelement (14) einen L-förmigen oder T-förmigen Querschnitt hat/haben.

5. Halteeinrichtung (10) nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Anordnungsbereich (12) des ersten Profilelements (11) und/oder der Anordnungsbereich (15) des zweiten Profilelements (14) als eine Kontaktoberfläche (19) zum Lagern auf einer oberen Kante des Abfallbehälters (41) ausgebildet ist/sind.

6. Halteeinrichtung (10) nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** das erste Profilelement (11) und/oder das zweite Profilelement (14) Eingriffsmittel (21) für das Eingreifen einer Greifeinrichtung eines Abfallsammelfahrzeugs aufweist/aufweisen.

7. Halteeinrichtung (10) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** das erste Profilelement (11) und/oder das zweite Profilelement (14) eine Maschenstruktur aufweist/aufweisen.

8. Halteeinrichtung (10) nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** der Befestigungsbereich (13) des ersten Profilelements (11) und/oder der Befestigungsbereich (16) des zweiten Profilelements (14) zum Befestigen des zusätzlichen

Behälters (31) eine Klemmeinrichtung oder eine Rasteinrichtung oder eine schienenbasierte Einrichtung aufweist/aufweisen, oder dass der Befestigungsbereich (13) des ersten Profilelements (11) und/oder der Befestigungsbereich (16) des zweiten Profilelements (14) zur Befestigung des zusätzlichen Behälters (31) als eine Klemmeinrichtung oder als eine Rasteinrichtung oder als eine schienenbasierte Einrichtung ausgebildet ist/sind.

9. Zusätzliche Behältereinrichtung (30) zum Anordnen eines zusätzlichen Behälters (31) innerhalb eines Abfallbehälters (41), wobei die zusätzliche Behältereinrichtung (30) eine Halteinrichtung (10) nach einem der Ansprüche 1 bis 8 und einen zusätzlichen Behälter (31) aufweist, wobei der zusätzliche Behälter (31) insbesondere lösbar an der Halteeinrichtung (10) angeordnet ist.

10. Zusätzliche Behältereinrichtung (30) nach Anspruch 9, **dadurch gekennzeichnet, dass** die Halteeinrichtung (10) und der zusätzliche Behälter (31) aus unterschiedlichen Materialien bestehen.

11. Abfallbehältereinrichtung (40), aufweisend einen Abfallbehälter (41), wobei der Abfallbehälter (41) einen Behälterkörper (42) aufweist, **dadurch gekennzeichnet, dass** eine Halteeinrichtung (10) nach einem der Ansprüche 1 bis 8 bereitgestellt ist, wobei die Halteeinrichtung (10) insbesondere lösbar an dem Abfallbehälter (41) angeordnet ist, oder dass eine zusätzliche Behältereinrichtung (30) nach einem der Ansprüche 9 oder 10 bereitgestellt ist, wobei die zusätzliche Behältereinrichtung (30) insbesondere lösbar an dem Abfallbehälter (41) angeordnet ist.

12. Abfallbehältereinrichtung (40) nach Anspruch 11, **dadurch gekennzeichnet, dass** das erste Profilelement (11) der Halteeinrichtung (10) mit seinem Anordnungsbereich (12) an einer oberen Kante (47) des Abfallbehälters (41) angeordnet, insbesondere gelagert, ist, und dass das zweite Profilelement (14) der Halteeinrichtung (10) mit seinem Anordnungsbereich (15) auf einer oberen Kante (47) des Abfallbehälters angeordnet, insbesondere gelagert, ist.

13. Abfallbehältereinrichtung (40) nach Anspruch 11 oder 12, **dadurch gekennzeichnet, dass** das erste Profilelement (11) und/der das zweite Profilelement (14) an die Form und/oder den Verlauf der oberen Kante (47) des Abfallbehälters (419 angepasst ist/sind.

Revendications

1. Dispositif support (10) destiné à agencer un récipient additionnel (31) à l'intérieur d'un récipient de déchets (41), ledit dispositif support (10) comprend un premier élément profilé (11), ledit premier élément profilé (11) comprenant une zone d'agencement (12) destinée à agencer le dispositif support (10) au niveau du récipient de déchets (41) et une zone de fixation (13) destinée à fixer le récipient additionnel (31), et un second élément profilé (14), ledit second élément profilé (14) comprenant une zone d'agencement (15) destinée à agencer le dispositif support (10) au niveau du récipient de déchets (41) et une zone de fixation (16) destinée à fixer le récipient additionnel (31); le premier élément profilé (11) et le second élément profilé (14) sont reliés l'un à l'autre ; ledit premier élément profilé (11) est formé comme une première branche dudit dispositif support (10) et ledit second élément profilé (14) est formé comme une seconde branche dudit dispositif support (10), **caractérisé en ce que** le dispositif support (10) présente une forme en L, une forme en T ou une forme en V.

2. Dispositif support (10) selon la revendication 1, **caractérisé en ce que** le premier élément profilé (11) et le second élément profilé (14) sont alignés suivant un angle défini entre 60 degrés et 120 degrés l'un par rapport à l'autre.

3. Dispositif support (10) selon la revendication 1, **caractérisé en ce que** le premier élément profilé (11) est formé comme une première branche d'un dispositif support en forme de L (10), **en ce que** le second élément profilé (14) est formé comme une seconde branche d'un dispositif support en forme de L (10) et **en ce que** les deux branches sont de longueur égale ou inégale, ou **en ce que** le premier élément profilé (11) est formé comme une première branche d'un dispositif support en forme de T (10), **en ce que** le second élément profilé (14) est formé comme une seconde branche d'un dispositif support en forme de T (10) et **en ce que** les deux branches sont couplées de manière symétrique ou asymétrique l'une à l'autre.

4. Dispositif support (10) selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** le premier élément profilé (11) et/ou le second élément profilé (14) présentent une section transversale en forme de L ou en forme de T.

5. Dispositif support (10) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** la zone d'agencement (12) du premier élément profilé (11) et/ou la zone d'agencement (15) du second élément profilé (14) sont formées comme une surface de contact (19) afin de reposer sur un bord supérieur du récipient de déchets (41).

6. Dispositif support (10) selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** le premier élément profilé (11) et/ou le second élément profilé (14) comprennent des moyens de couplage (21) destinés à se coupler à un équipement de couplage d'un véhicule de collecte de déchets.

7. Dispositif support (10) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** le premier élément profilé (11) et/ou le second élément profilé (14) comprennent une structure en treillis.

8. Dispositif support (10) selon l'une quelconque des revendications 1 à 7, **caractérisé en ce que** la zone de fixation (13) du premier élément proflé (11) et/ou la zone de fixation (16) du second élément profilé (14) destinées à assurer la fixation du récipient additionnel (31) comprennent un dispositif de blocage ou un dispositif de saisie ou un dispositif à base de rails, ou **en ce que** la zone de fixation (13) du premier élément profilé (11) et/ou la zone de fixation (16) du second élément profilé (14) destinées à assurer la fixation du récipient additionnel (31) sont agencées comme un dispositif de blocage ou un dispositif de saisie ou un dispositif à base de rails.

9. Dispositif de récipient additionnel (30) destiné à agencer un récipient additionnel (31) à l'intérieur d'un récipient de déchets (41), ledit dispositif de récipient additionnel (30) comprenant un dispositif support (10) selon l'une quelconque des revendications 1 à 8 et un récipient additionnel (31), ledit récipient additionnel (31) étant agencé de manière particulièrement amovible au niveau dudit dispositif support (10).

10. Dispositif de récipient additionnel (30) selon la revendication 9, **caractérisé en ce que** le dispositif support (10) et le récipient additionnel (31) sont réalisés à base de différents matériaux.

11. Dispositif formant récipient de déchets xxx (40) comprenant un récipient de déchets (41), ledit récipient de déchets (41) comprenant un corps de récipient (42), **caractérisé en ce qu'**un dispositif support (10) selon l'une quelconque des revendications 1 à 8 est agencé, ledit dispositif support (10) étant agencé de manière particulièrement amovible au niveau dudit récipient de déchets (41), ou **en ce qu'**un dispositif de récipient additionnel (30) selon l'une quelconque des revendications 9 à 10 est agencé, ledit dispositif de récipient additionnel (30) étant agencé de manière particulièrement amovible au niveau dudit récipient de déchets (41).

12. Dispositif formant récipient de déchets (40) selon la revendication 11, **caractérisé en ce que** le premier élément profilé (11) du dispositif support (10) est agencé, plus particulièrement supporté, avec sa zone d'agencement (12) sur un bord supérieur (47) du récipient de déchets (41) et **en ce que** le second élément profilé (14) du dispositif support (10) est agencé, plus particulièrement supporté, avec sa zone d'agencement (15) sur un bord supérieur (47) du récipient de déchets (41).

13. Dispositif formant récipient de déchets (40) selon la revendication 11 ou 12, **caractérisé en ce que** le premier élément profilé (11) et/ou le second élément profilé (14) sont adaptés à la forme et/ou à la course du bord supérieur (47) du récipient de déchets (41).

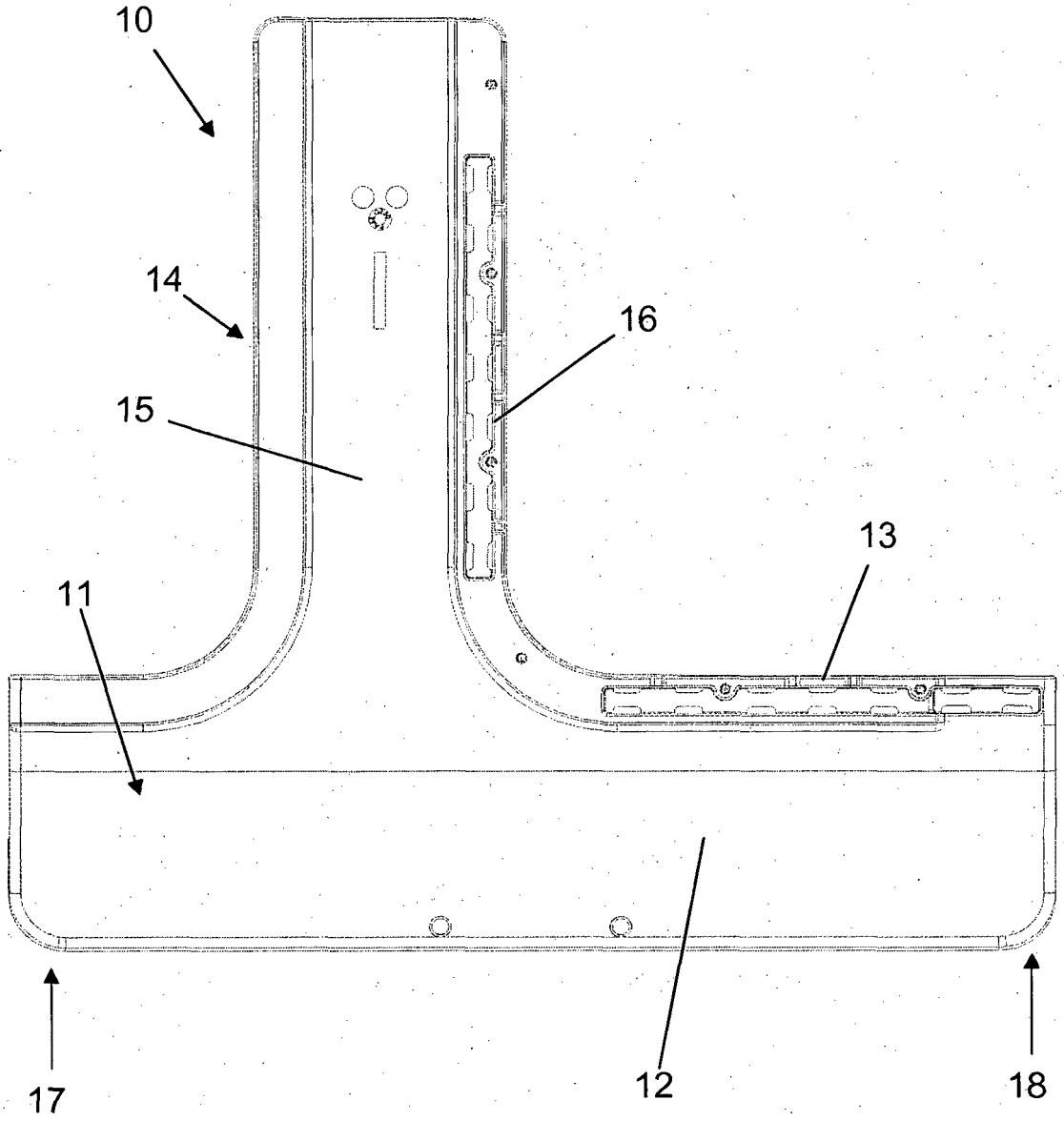

Fig. 1

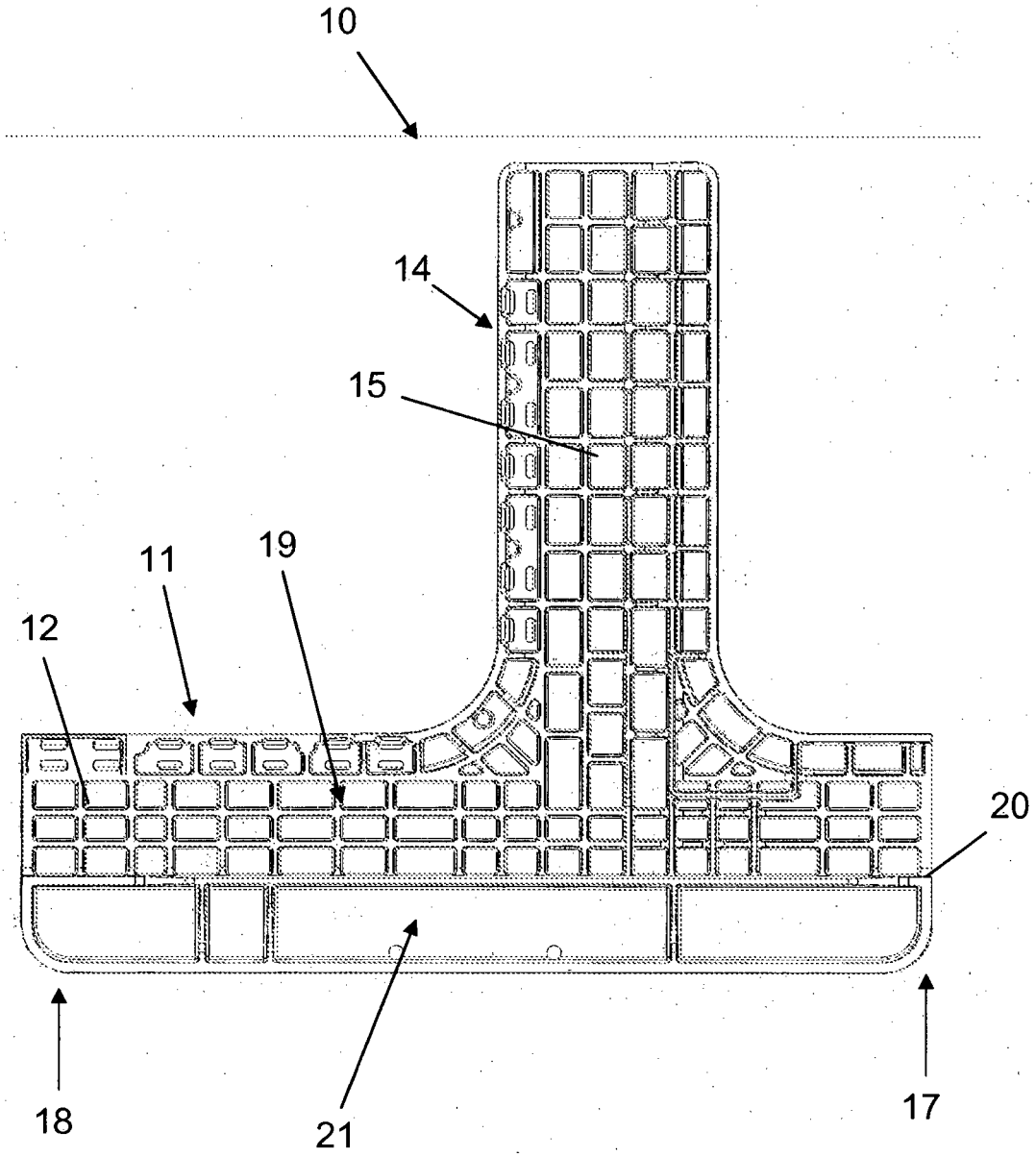

Fig. 2

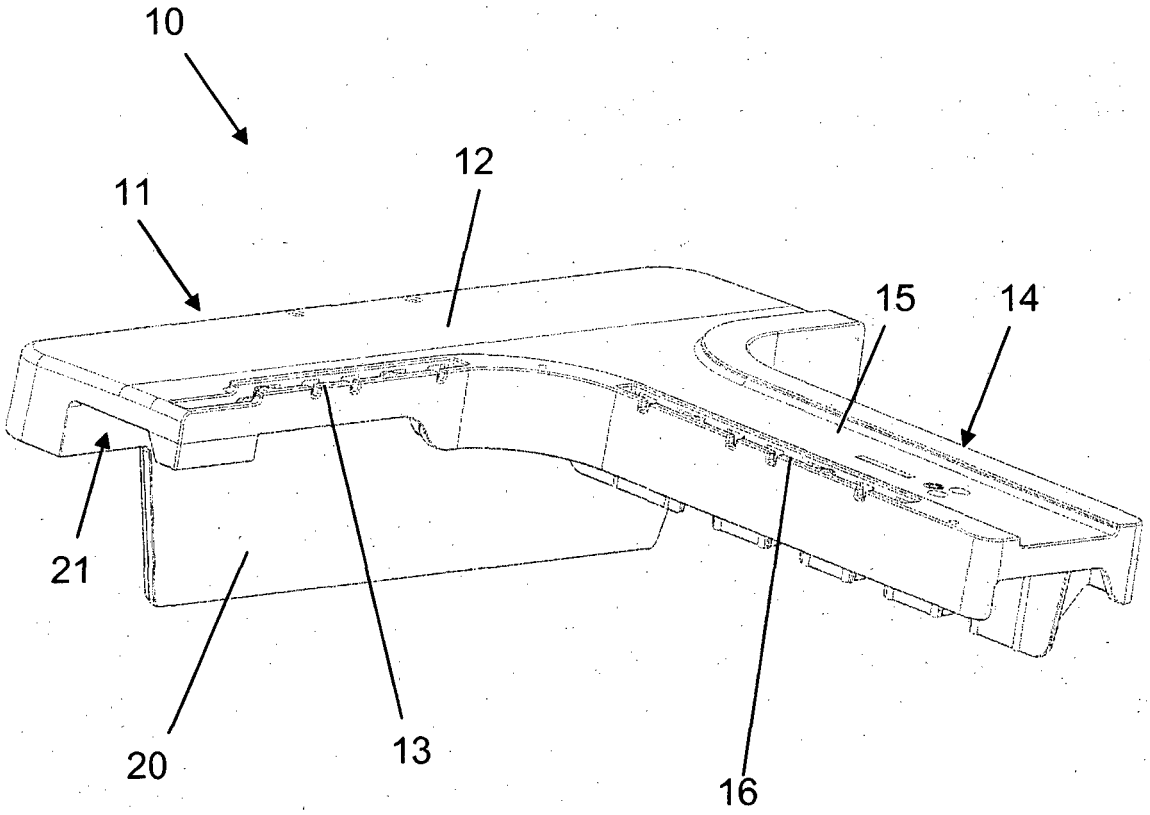

Fig. 3

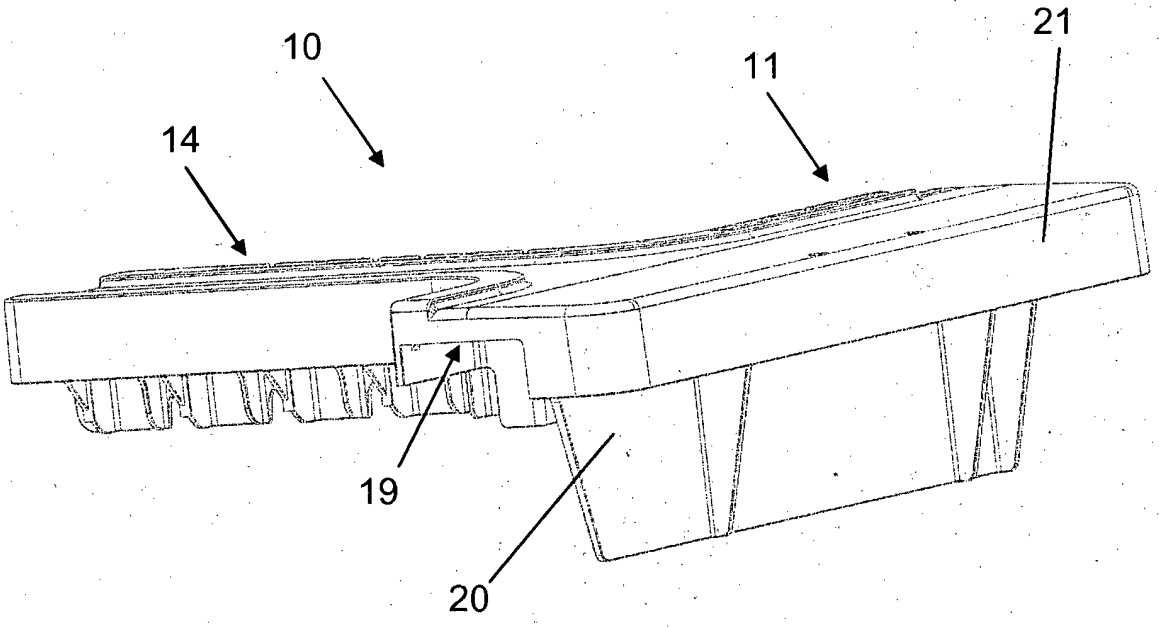

Fig. 4

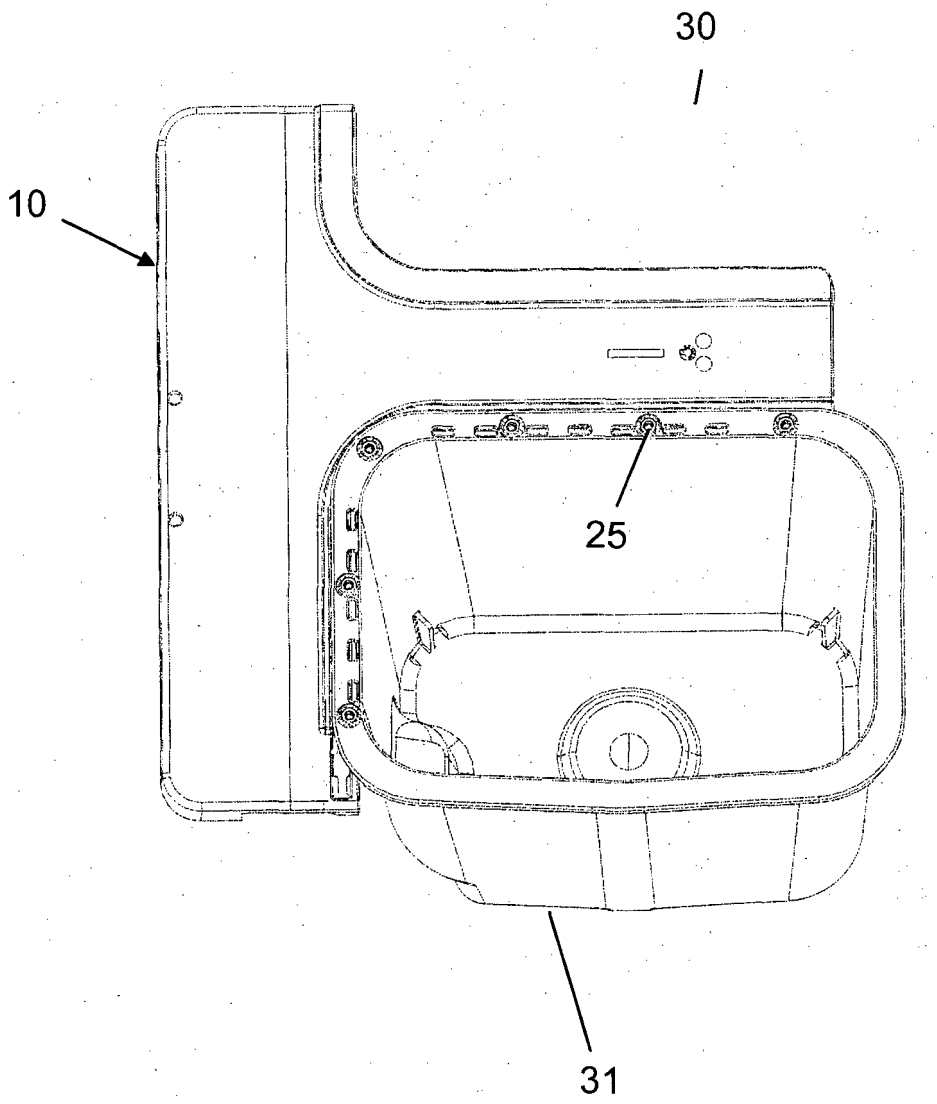

Fig. 5

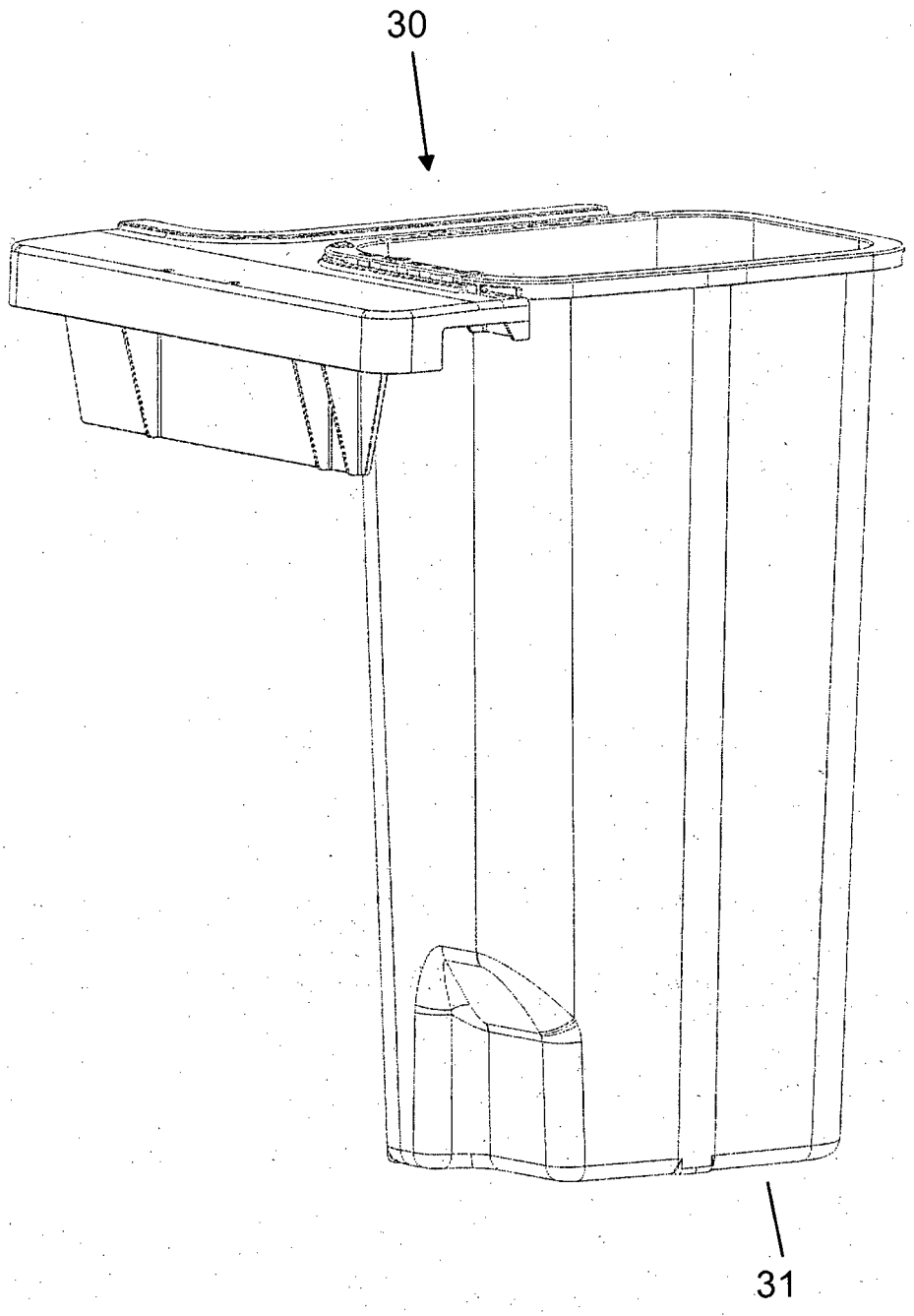

Fig. 6

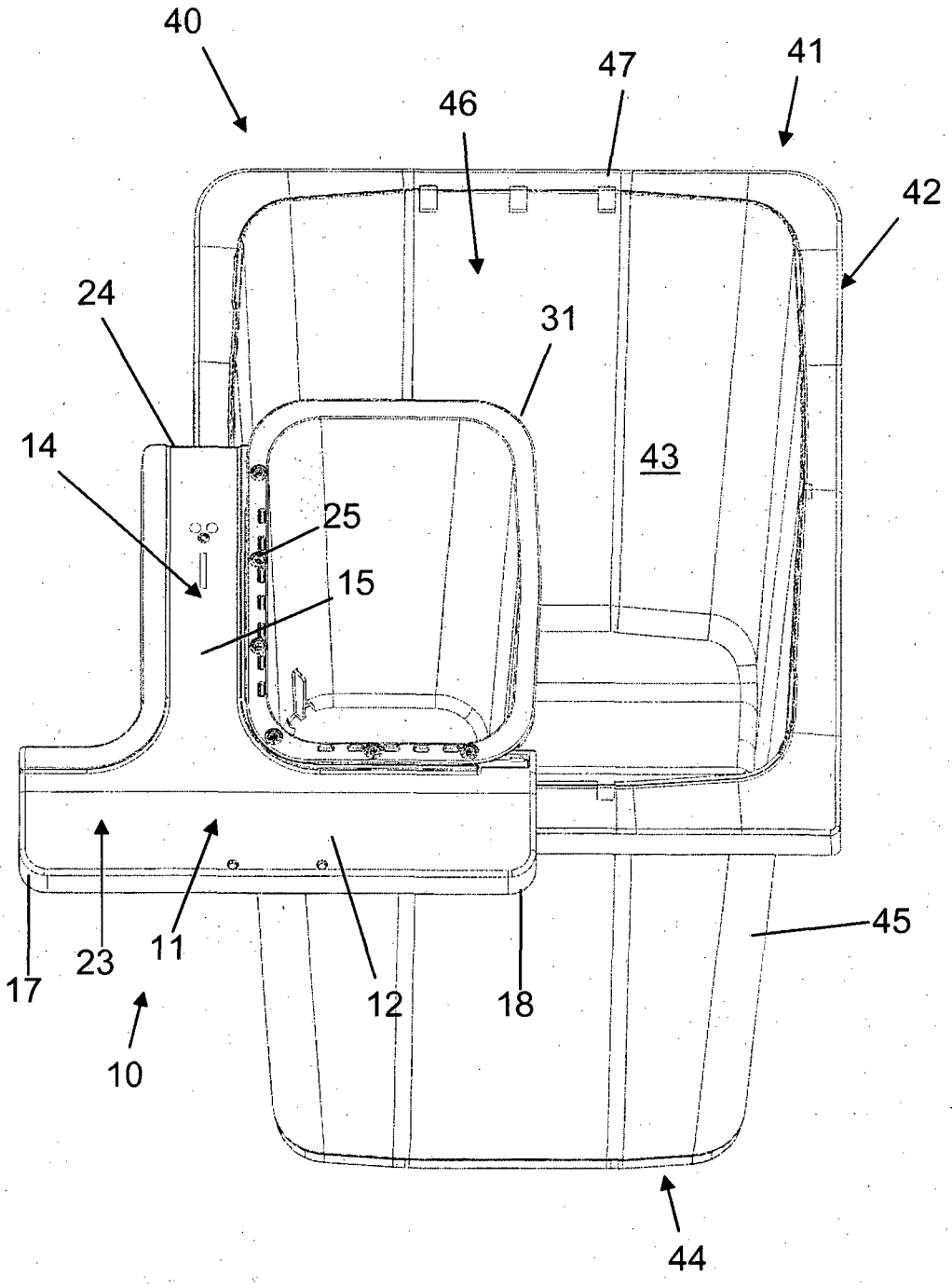

Fig. 7

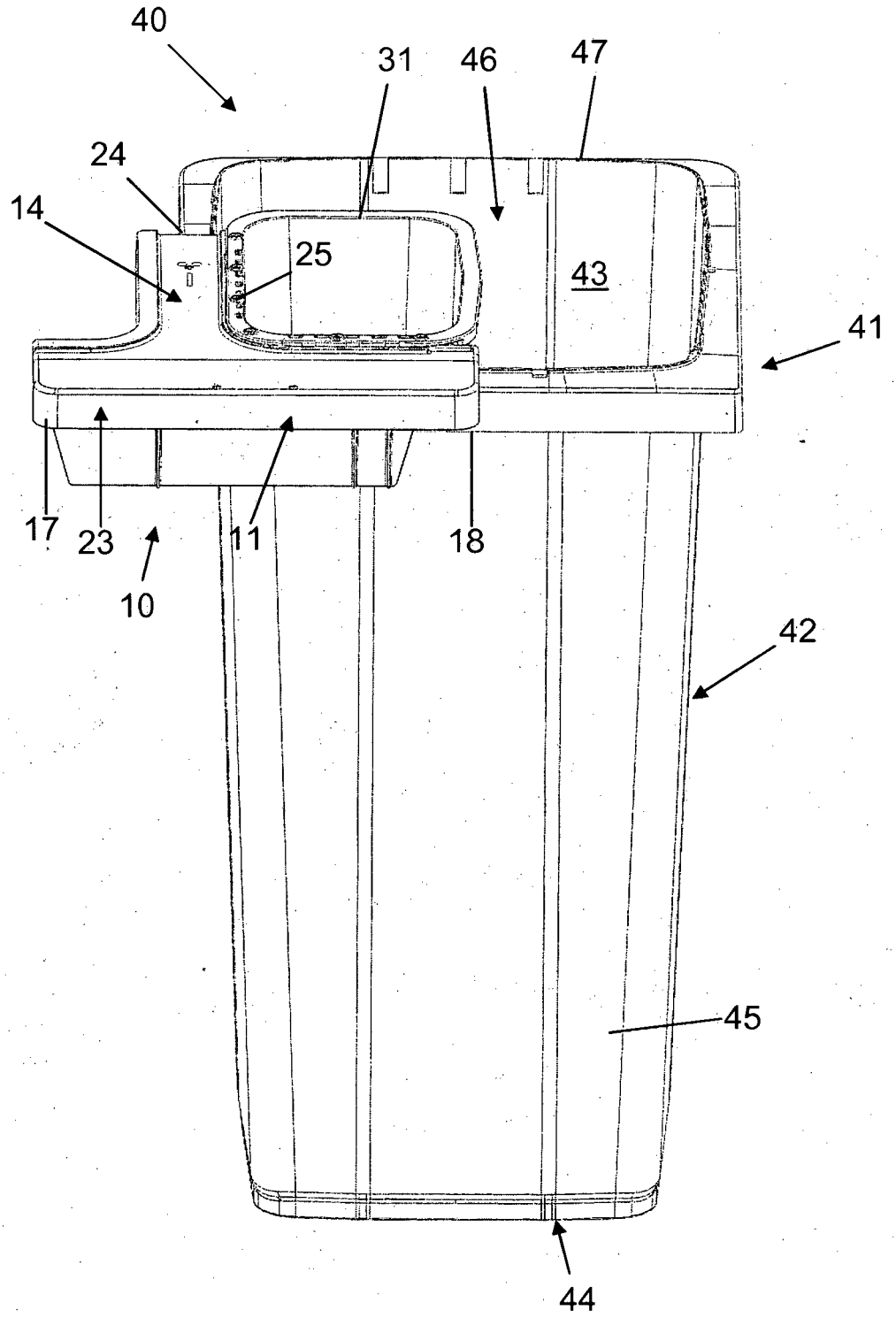

Fig. 8

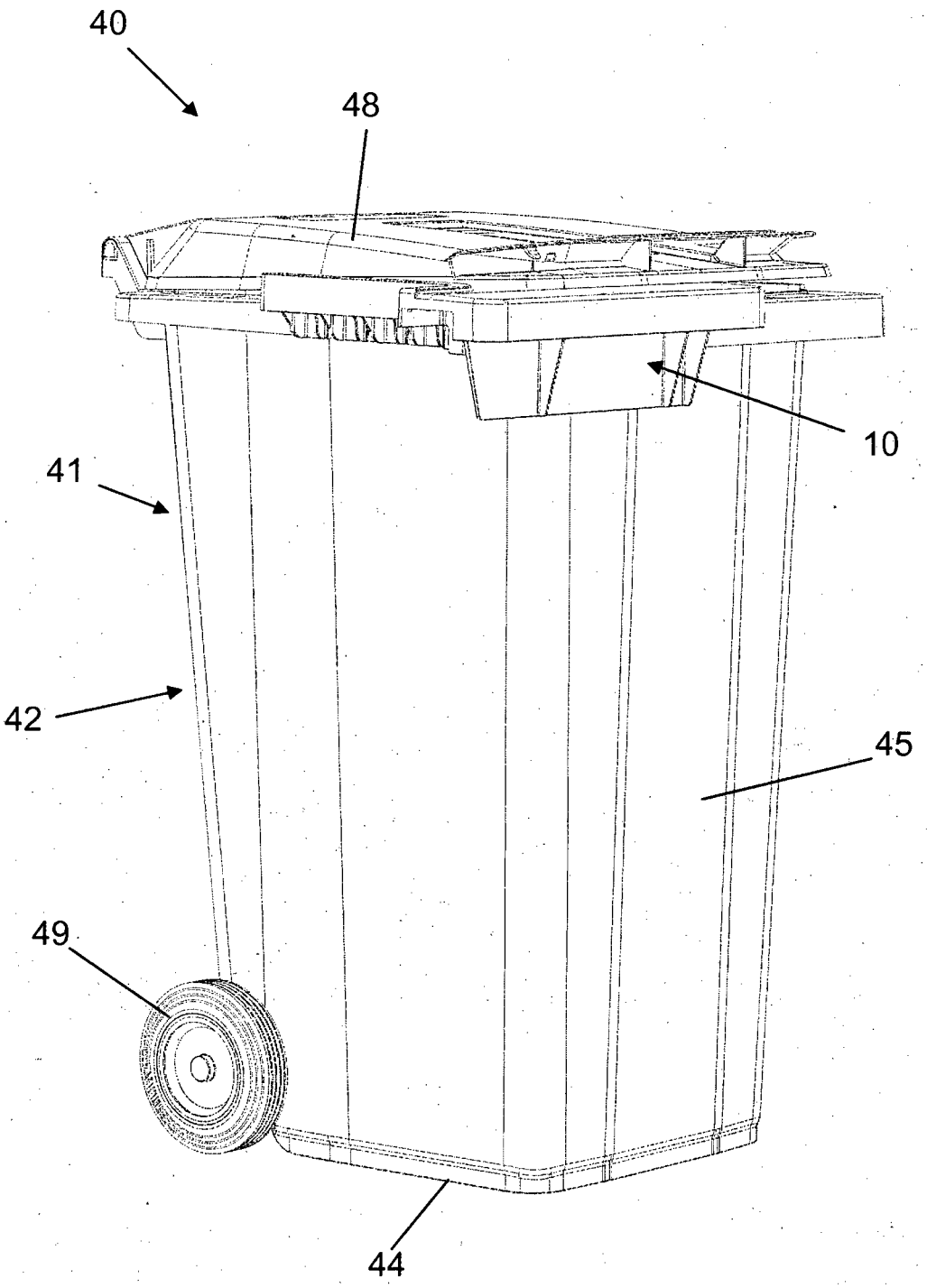

Fig. 9

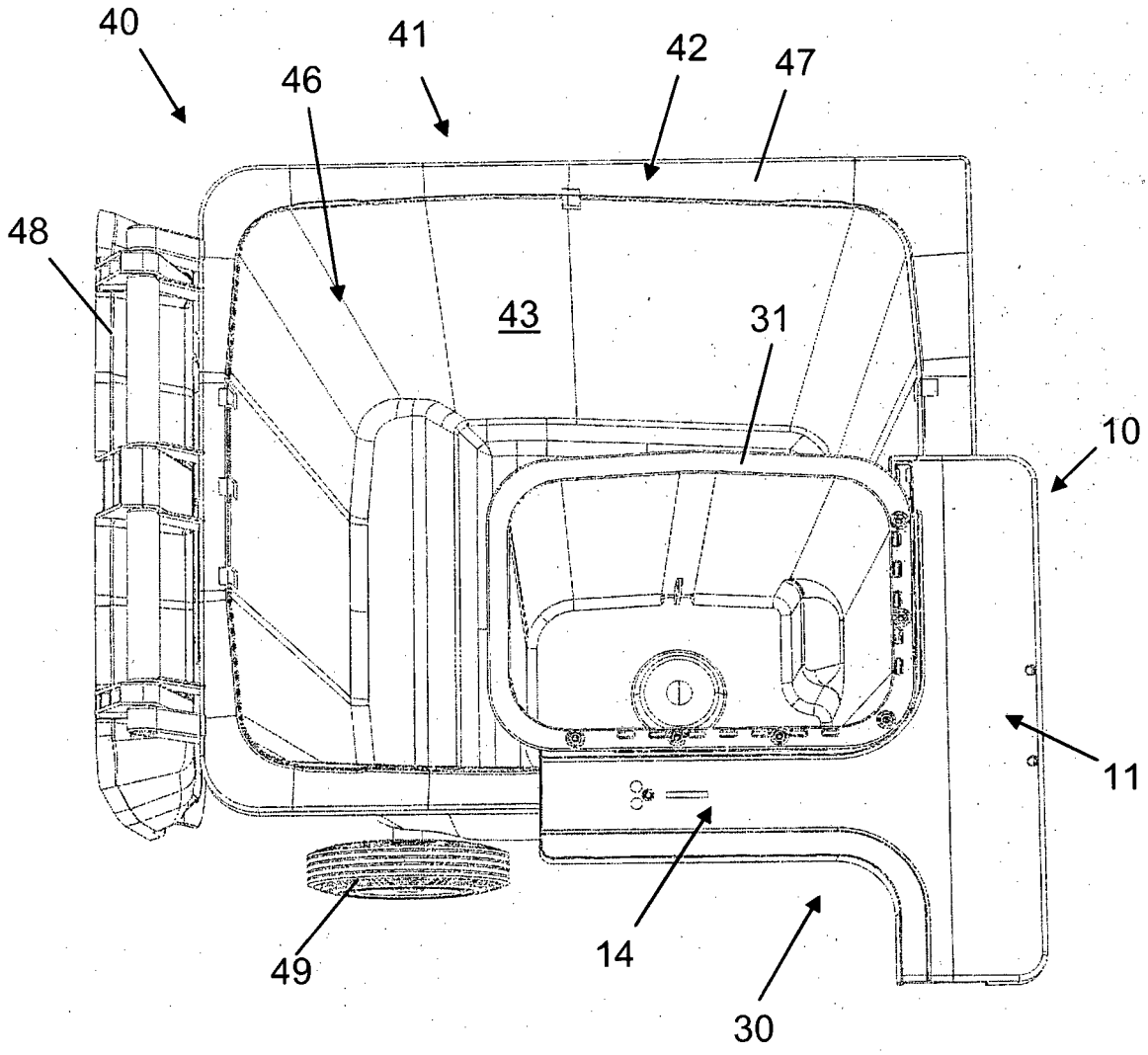

Fig. 10

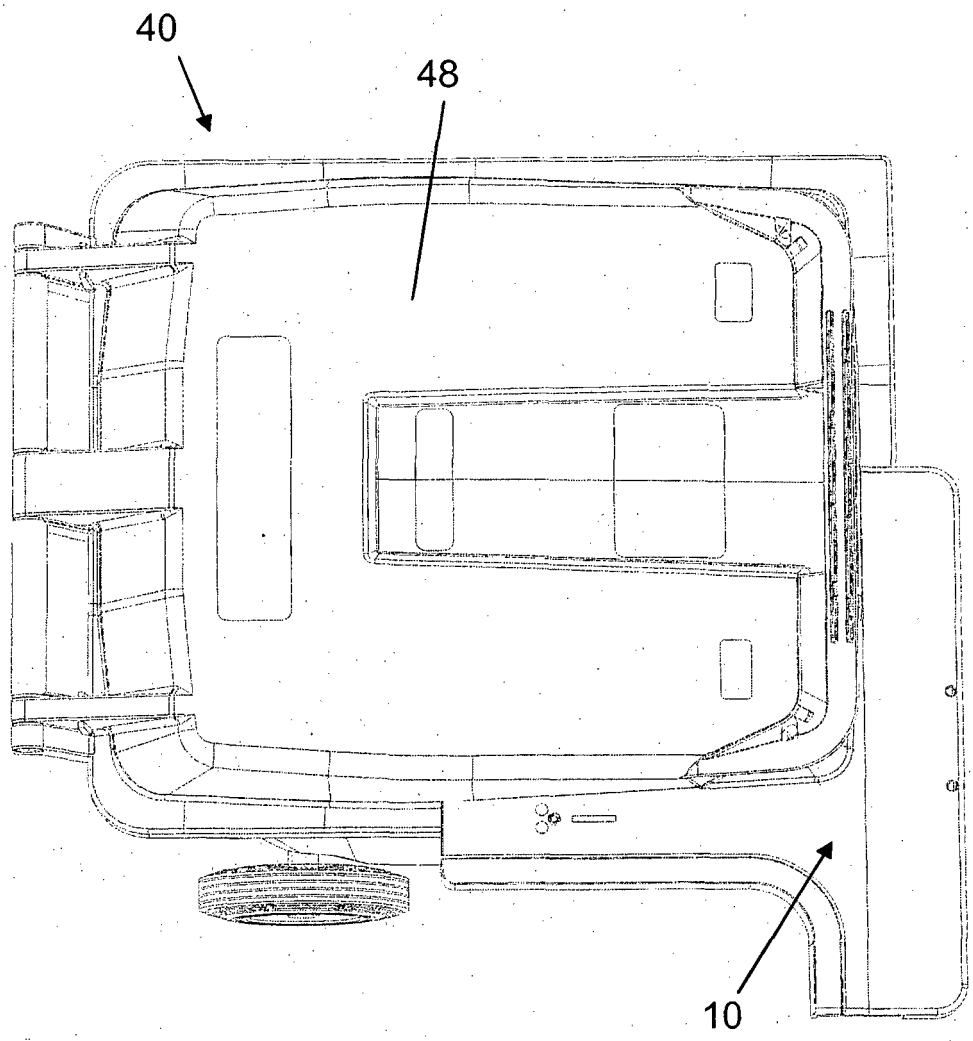

Fig. 11

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2004087537 A1 **[0003]**