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(54) LARGE WASTE COLLECTION CONTAINER

(57) The present invention relates to a large waste collection container (10) with a capacity of up to 1,700 litres, in particular with a capacity of 1,100 litres, comprising a container body (11), having a container bottom (18), a side wall (12) projecting upwards from the container bottom (18), an insertion opening (20) which is formed at the upper end of the side wall (12) and which is delimited by an upper edge (19) of the container body (19), and a drive gear (26), which comprises a plurality of wheel devices (27), in particular four wheel devices (27), the wheel devices (27) being arranged in the region of the container bottom (18) on the side wall (12) or below the container bottom (18) and extending below the container bottom (18). In order to allow additional container components to get alternatively connected to the container body (11), at least one receiving device (30) is arranged or formed on the upper edge (19) or in the region of the upper edge (19) of the container body (11) for selectively receiving and in particular detachably holding additional container components. The receiving device (30) has at least one receiving profile element (31, 32) which is provided for receiving and holding the additional container components on the container body (11). Furthermore, the receiving profile element (30) has a fastening device for fastening the additional container component, in particular in a detachable manner.

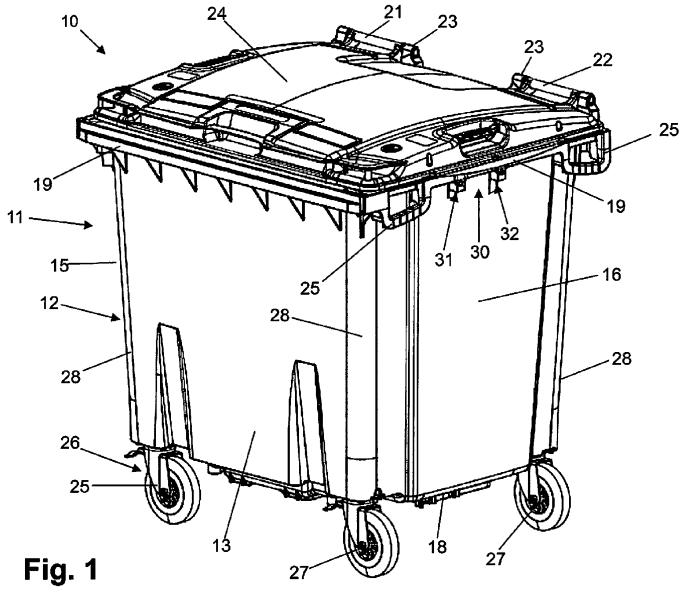

Fig. 1

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Description

[0001] The present invention relates to a large waste collection container having a capacity of up to 1,700 litres. More particularly, the invention relates to a large waste collection container having a capacity of 1,100 litres.

[0002] Such large waste collection containers are generally known in the state of the art. First of all, they consist of a container body that serves to receive and hold the waste. The container body consists of a container bottom and a side wall which projects upwards from the container bottom. At the upper end of the side wall there is an insertion opening which is limited by an upper edge of the container body. As a rule, the container body has an approximately rectangular, pot-shaped form. For better manageability of the large waste collection container, it has a drive gear, which usually consists of four wheel devices, which are arranged below the container bottom in its corner areas. In order to be able to maneuver the large waste collection container, it has one or more handle elements, in particular in the area of the upper edge of the container body. The open upper side of the container body, which provides the insertion opening, through which the waste is filled, is closed by means of a lid device. For this purpose, the lid device is hinged to the container body.

[0003] This type of large waste collection container is often discharged into waste collection vehicles. For this purpose, the waste collection vehicles have a chute with a lifting device. By means of the lifting device, the large waste containers are gripped, lifted, and tilted into a receiving area of the waste collection vehicle. For this purpose, the large waste containers have, preferably on their side wall segments, corresponding trunnion elements which are pick-up pins and which cooperate with the lifting device. The lid device opens and the waste in the large waste container falls into the receiving area of the waste collection vehicle. As a rule, the waste collection vehicles also have a pressing device, which in particular has a pressing plate construction. The waste poured into the receiving area is pressed together by the pressing device and pushed into the collection container of the waste collection vehicle.

[0004] The production of such large waste collection containers basically involves first manufacturing the individual components, which are then assembled in a further assembly step. For example, the container body and the lid device are first manufactured separately, for example by means of an injection moulding process. For transport, the individual components are stacked. It is advantageous to combine as many components per stack as possible for a given stack height. This is especially true for voluminous container bodies. In order to combine as many of these as possible in a single stack, it is necessary that, at least during transport, as few container components as possible protrude from the outside of the container body.

[0005] Usually, the individual container components are assembled at a later point in time. Then, for example, the lid device is arranged on the container body and the wheel devices are mounted in the area of the container bottom.

[0006] Up to now, it was common for the trunnion devices to be firmly attached to the side wall of the container body. The trunnion devices are located in the upper half of the container body and protrude far from the side wall due to the length of the trunnion element. In such a case, container bodies on which the trunnion devices are already arranged can only be stacked in insufficient numbers, especially if, as in the case of transport, a certain stacking height must not be exceeded. This increases the transport costs.

[0007] Furthermore, it has become common practice in the circular economy to construct large waste collection containers in a modular way so that individual container components can be replaced if they are damaged or if the existing large waste collection container is to be used for other applications.

[0008] The present invention is based on the object of further optimising such large waste collection containers, which are known per se, in the aforementioned direction.

[0009] This object is solved according to the invention by the large waste collection container with the features according to the independent claim 1. Further features and details of the invention become evident from the dependent claims, the description, and the drawings.

[0010] The present invention is directed to a large waste collection container with a capacity of up to 1,700 litres. For example, the large waste collection container may be a large waste collection container as described at the beginning, so that reference is made in full to the corresponding explanations above in order to avoid repetition. In particular, the large waste collection container is a large waste collection container with a capacity of 1,100 litres.

[0011] The large waste collection container comprises a container body which in turn comprises a side wall, a container bottom and an insertion opening. The side wall projects upwards from the container bottom and ends in an upper edge of the container body, which delimits the insertion opening formed at the upper end of the side wall. These mentioned components delimit the receiving space of the container in which the waste is collected and stored at least temporarily. The term waste basically includes all types of refuse, but also recyclable materials, which can be collected in such a container.

[0012] The container body can, for example, have a rectangular, pot-shaped form in plan view. A pot is in particular a vessel, which is open at the top for receiving and holding the waste.

[0013] In one embodiment, the side wall is formed from four side wall segments. The side wall segments abut each other in corner areas, which are preferably rounded corner areas. In one embodiment, a first side wall segment is formed as a rear side, a second side wall segment is formed as a front side, and a third and fourth side wall

segments are formed as transverse sides extending between the rear side and the front side. In such an embodiment, the container body has in particular a rectangular or approximately rectangular shape.

[0014] In addition, the large waste collection container comprises a drive gear. A drive gear is in particular the entirety of the components by means of which the container can be moved. The drive gear comprises a plurality of wheel devices, in particular four wheel devices, wherein the wheel devices are arranged in the region of the container bottom on the side wall or below the container bottom and extend below the container bottom. In each case, the wheel device is preferably arranged in a corner region of the container body, preferably in the region of the container bottom or below the container bottom. Two or more of these wheel devices, for example all four wheel devices, can be designed as a steering wheel device. At least one wheel device has a braking device. Each wheel device can have its own individual axle, but it is also conceivable that two wheel devices are coupled to each other via a common axle.

[0015] The open upper side of the container body, i.e. the insertion opening through which the waste is filled in, is preferably closed by means of a lid device. For this purpose, the lid device is hinged to the container body, in particular it can be swivelled or pivoted. The lid device can be made of one or more parts. For example, the lid device may be a hinged lid which is usually hinged to the side of the container body. In another embodiment, the lid device may be a hinged lid, such as a flat lid, which is hinged, in particular via hinges, to the upper edge of the container body, in particular to the upper rear edge. The lid device can also be a round lid, a sliding lid, or the like.

[0016] Such large waste collection containers are usually made of robust materials, such as metal or hard plastics.

[0017] According to the present invention, additional container components are or can now get arranged at the upper edge of the container body or in the area of the upper container edge. For this purpose, a receiving device is provided at or in the upper edge of the container body, which forms the seat for further container components.

[0018] If the additional container components were arranged on a simple open container edge, this container edge would not be able to withstand occurring forces, for example bending forces. A completely closed edge can better withstand forces acting on it, especially against bending, but is disadvantageous for the functionality of some container components, such as trunnion devices. A good compromise has been found with the present invention.

[0019] In principle, a relatively simple container edge can be used, which is preferably reinforced, for example, using a honeycomb structure to ensure good stability. According to the invention, the advantages of a closed container edge are provided by the receiving device, so that container components, such as trunnion devices and the like, can now also be arranged on the upper container edge without any problems.

[0020] In order to be able to optionally mount various container components, for example an additional handle device and/or a trunnion device and/or a communication device, on the container body, the large waste collection container comprises a receiving device according to the invention. The receiving device is arranged or formed on the upper edge or in the region of the upper edge of the container body for optionally receiving and, in particular, releasably holding additional container components. The receiving device is in particular a type of adapter device, i.e. a connecting element, via which additional container components can be mounted on the container body.

[0021] For example, the receiving device can be an initially independent component which is then arranged, i.e. mounted, on the side wall and/or on the upper edge of the container body. In another embodiment, however, the receiving device can also be an integral part of the side wall and/or the upper edge of the container body. The upper edge of the container body, which corresponds in particular to the upper end of the side wall of the container body, is that region of the container body which delimits the insertion opening and which is opposite the container bottom. The handling of the large waste collection container in particular can be improved by the special arrangement of the receiving device, as will be explained in more detail below.

[0022] Additional container components that protrude outwards from the side wall of the container body during the intended use of the large waste collection container are only mounted by means of the receiving device when required, which has a positive effect on the number of container bodies stacked per defined stacking height. In addition, individual container components can be easily exchanged if necessary and replaced if damaged. In principle, the invention is not limited to certain additional container components that can be arranged on the container body in this way. Some preferred embodiments in this regard will be explained in more detail in the further course of the description.

[0023] According to the invention, the receiving device comprises at least one receiving profile element which is provided for receiving and holding the additional container components on the container body. The receiving profile element is characterised in that it is or has a receiving leg which cooperates with the container component to be fastened. The receiving profile element can be designed in different ways.

[0024] In one embodiment, the at least one receiving profile element is designed as a closed receiving hollow profile element. A hollow profile element is in particular a partially or completely closed hollow body which is designed to receive a corresponding counterpart of the container component to be fastened. For this purpose, the receiving hollow profile element comprises an insertion opening which is provided for inserting the additional con-

tainer components. The hollow receiving profile element is in particular a type of receiving pocket. For fastening the additional container component, a corresponding fastening area of the container component is pushed into the hollow profile element via the insertion opening. Preferably, this fastening area, which is for example a solid profile element, is adapted to the contour of the hollow profile element.

[0025] In another embodiment, the at least one receiving profile element is designed as a solid profile element. This is then preferably inserted into a corresponding counterpart of the additional container component. This counterpart can then be designed in an analogous manner as in the previously described embodiment example, namely as a hollow profile element with a corresponding insertion opening.

[0026] In both embodiments, it is realised in particular that the receiving profile element of the receiving device and the additional container component are inserted into each other by way of a plug-in connection.

[0027] The receiving profile element comprises a fastening device for fastening the additional container component, in particular in a detachable manner. Likewise, the additional container component to be fastened has a corresponding fastening device. Preferred examples of this are described in more detail below.

[0028] In principle, it is sufficient for the present invention if the receiving device comprises a single receiving profile element. In a preferred embodiment, the receiving device comprises two receiving profile elements spaced apart from each other.

[0029] The receiving device can be designed in different ways. In one embodiment, the receptacle is U-shaped or approximately U-shaped. For this purpose, it has two receiving profile elements which are designed in the form of receiving legs which project from a base element. The base element is either an independent component which is or will be subsequently arranged on the upper container edge of the container body. Alternatively, the base element is functional in nature, which means that the base element is formed by a partial area of the upper container edge from which the receiving profile elements project. The receiving legs are in particular formed as hollow profile elements, whereby the receiving legs are preferably open at their free ends. In this way, the container components to be received can be easily pushed into the receiving legs.

[0030] In one embodiment, the receiving profile element is connected at a first end to the upper edge of the container body and projects downwards from the upper edge of the container body in the direction of the container bottom. If the receiving profile element is formed as a receiving hollow profile element, the insertion opening is formed in a second end of the receiving profile element opposite to the first end, or the insertion opening is formed laterally in the wall of the receiving profile element. In the first case, the additional container component is inserted into the hollow profile element(s) from below. In the second case, the additional container component is inserted laterally into the hollow profile element.

[0031] Preferably, the receiving profile element has a length of only a few centimetres, for example a length of less than/equal to 10cm, preferably less than/equal to 7.5cm, preferably less than/equal to 5cm. In particular, the length of the receiving profile element is selected in such a way that, on the one hand, a firm connection between the receiving device and the additional container component is ensured. On the other hand, the receiving profile element should be kept as short as possible to ensure good stackability of the container bodies.

[0032] In a preferred embodiment, the side wall of the container body has four side wall segments, a first side wall segment being formed as the front side, a second side wall segment being formed as the rear side and a third and fourth side wall segment being formed as transverse sides, the transverse sides connecting the front side and the rear side. In such a case, the receiving device is preferably arranged or formed on one or both transverse sides, preferably centrally on the transverse side between the front side and the rear side. Depending on the requirements and the case of application, receiving devices can also be arranged or formed on the front side and/or the rear side.

[0033] Preferably, additional container components are detachably connected to the container body via the receiving device. This can be realised in different ways. In one embodiment, the fastening device of the receiving profile element is provided to create a snap-in connection or a screw connection.

[0034] In one embodiment, the receiving profile element, if it is designed as a receiving hollow profile element, comprises at least one fixing opening as a fastening device, which is provided in such a way that it is able to cooperate with corresponding fixing elements, in particular fixing screws or latching tabs or noses, of the additional container component. The additional container component to be fixed therefore preferably also has a number of fixing elements corresponding to the number of fixing openings. The fixing elements can be, for example, fixing screws, fixing bolts or the like. However, the fixing can also be carried out by means of a snap-in connection, a clip connection, or another type of plug-in connection. If the receiving profile element is a solid profile element and the counterpart of the additional container component to be fixed is a hollow profile element, the fixing is carried out in the correspondingly reversed manner.

[0035] In the following, some additional container components are described that can be arranged on the upper edge of the container body via the receiving device.

[0036] For example, the additional container component may be in the form of an additional handle device and/or a trunnion device and/or a communication device, the invention not being limited to these three examples mentioned.

[0037] According to one embodiment, the additional

container component is formed as a handle device comprising a handle element having at least one fixing leg projecting from the handle element. Preferably, the handle element has two fixing legs, each of which projects from the handle element at one end of the handle element. Thereby, the at least one fixing leg is provided in such a way that it is able to cooperate with the at least one receiving profile element of the receiving device. Either the receiving profile element of the receiving device is formed as a hollow receiving profile element. In this case, the fixing leg is preferably a solid profile element which is inserted into the hollow profile element of the receiving device. Alternatively, the receiving profile element is designed as a solid profile element. In this case, the fixing leg is preferably designed as a hollow profile element which is pushed over the receiving profile element of the receiving device. The use of such an additional handle element is preferred for large waste containers which have a lid device in the form of a flat lid.

[0038] This container component is, for example, a U-shaped handle device. Two fixing legs are provided at each of the free ends of the handle element, which project from the handle element forming the base. For example, the fixing legs can cooperate with the receiving profile elements of the receiving device, preferably by inserting the receiving legs into them. This plug-in connection is fixed by fixing elements, for example in the form of fixing screws, which are inserted into corresponding fixing openings of the receiving profile elements. Alternatively, a snap-in connection or clip connection can be realised. In the latter case, the fixing legs preferably have latching tabs or noses that snap or engage into the fixing openings of the receiving profile elements after the fixing legs of the handle device have been pushed into the receiving device over the free ends of the receiving profile elements.

[0039] In one embodiment, the attachment of the additional container component to the container body is provided by means of a latching connection, wherein the additional container component comprises at least one latching tab provided to cooperate with a latching opening of the receiving profile element of the container.

[0040] Such an additional handle device, which is placed in particular centrally on a transverse side of the side wall of the container body, improves in particular the handling of the large waste collection container. If the container is pulled, it will always move straight ahead by itself. Counter-steering by the user is not necessary. This would be necessary if the handle device was placed laterally on the transverse side of the side wall, which would cause the container to wobble.

[0041] According to another embodiment, the additional container component is designed as a trunnion device. The trunnion device is in particular provided in such a way that it is able to be connected to the receiving device by means of a formlock connection. In the case of a formlock connection, the connecting partners are blocked in particular by themselves and/or by a connecting element. Such a formlock connection stabilises the connection on the one hand. On the other hand, it can reduce the number of screws required and allows an initial positioning of the trunnion for automated assembly. In particular, the trunnion device is mounted to the container body via the receiving device at the uppermost position thereof. If the container edge is a reinforced member, occurring forcers can get compensated.

[0042] In an embodiment in which at least one trunnion device is provided as the container component to be fastened, two fixing legs are preferably provided on each trunnion device, which are provided in such a way that they are able to cooperate with the receiving device, in particular to cooperate with the receiving profile elements of the receiving device, preferably to be inserted into the receiving profile elements. Via the trunnion device, the large waste collection container can be gripped by the lifting device of a waste collection vehicle.

[0043] In one embodiment, the trunnion device comprises a base body from a first surface of which a trunnion element projects. On one of its end faces, which is preferably aligned perpendicular to the first surface of the trunnion device and which is provided for cooperation with the receiving device, the trunnion device has a rectilinear course with at least one, preferably two recesses formed therein. In the at least one recess, a fixing leg is arranged or formed which projects outwards from the recess, i.e. in the direction of the receiving profile elements of the receiving device, wherein the at least one fixing leg is provided in such a way that it is able to cooperate with the at least one receiving profile element of the receiving device.

[0044] The connection is then made, for example, according to the tongue and groove principle. The size and shape of the recesses are preferably adapted to the size and shape of the receiving profile elements, so that the receiving profile elements fit closely into the recesses. If the receiving profile elements are designed as receiving hollow profile elements, the fixing legs of the trunnion device are simultaneously inserted into the receiving hollow profile elements so that the receiving profile elements are held between the fixing legs on the one hand and the wall of the recess or recesses on the other hand. Fixation can then take place via suitable fixing elements, as also described above in connection with the handle device, for example via fixing screws or latching tabs corresponding to corresponding fixing openings, so that at this point full reference is also made to the explanations in this regard above.

[0045] According to one embodiment, the trunnion device comprises a communication device, a chip element for example. Or the trunnion device comprises a device for receiving a communication device, a small pocket or recess for example which is preferably covered by a small lid or flap.

[0046] In one embodiment, the additional container component is formed as a communication device comprising a fixing leg, the fixing leg being provided such that

it is capable of cooperating with the at least one receiving profile element of the receiving device. This may be, for example, a communication device for wireless communication, such as an NFC device, an RFID device, or the like. Fixation can then be effected by means of suitable fixing elements, as also described above in connection with the handle device, for example by means of fixing screws or latching tabs that correspond to corresponding fixing openings, so that at this point full reference is also made to the explanations in this regard above.

[0047] Since the receiving device is provided for detachably arranging the additional container components, the additional container components can now be arranged on the container body as required and exchanged if necessary. In one embodiment, a kit is therefore provided with additional container components, which are preferably a at least one handle device and/or at least one trunnion device and/or at least one communication device.

[0048] If the receiving device is initially present as an independent component which is then arranged, i.e. mounted, on the upper edge of the container body, the receiving device preferably has a fastening device for fastening to the large waste collection container, in particular to its container body. In this case, the receiving device is also a component of the kit. The kit is then in particular a retrofit kit.

[0049] According to the present invention, the receiving device can be used to receive various additional container components, for example a handle device and/or, as required, a trunnion device and/or a communication device. If this is desired, an additional handle device can thus be used if required, which further increases the manageability, in particular the maneuverability of the large waste collection container. Or a trunnion device can be arranged, for example if the large waste collection container is to be emptied into a waste collection vehicle via a corresponding lift device. Or a communication device can be arranged, which enables communication between the large waste collection container and an external location. It is also possible to exchange the individual container components at short notice as required. The aforementioned kit is particularly suitable for this purpose.

[0050] The holding device according to the invention reduces the effort required for assembly. In addition, the number of required components, for example the required fixing means, can be reduced, which in turn reduces the costs.

[0051] The invention will now be explained in more detail by means of some embodiments with reference to the accompanying drawings. They show:

Figures 1 and 2	a large waste collection container which has a holding device in the area of the upper edge of the container body for the attachment of additional container components;
Figures 3 to 5	an example of an embodiment in which an additional container component designed as a trunnion device is arranged on the large waste collection container;
Figures 6 to 8	an example of an embodiment in which an additional container component in the form of a handle device is arranged on the large waste collection container; and
Figures 9 and 10	an example of an embodiment in which an additional container component designed as a communication device is arranged on the large waste collection container.

[0052] The Figures depict a large waste collection container 10, which has a filling volume of 1,100 litres.

[0053] The general configuration of the large waste collecting container 10 according to the invention is shown in Figures 1 and 2. The waste collection container 10 consists of a container body 11, which is used to receive and store waste. The container body 11 has a rectangular, pot-shaped contour in plan view. The container body 11 consists of a container bottom 18 and a side wall 12. The side wall 12 in turn consists of a front side 13, a rear side 14 and two transverse sides 15, 16, wherein the individual segments of the side wall 12 abut each other in corner areas 28, which are formed as rounded corners. Side wall 12 and the container bottom 18 delimit a receiving space 17. For better manageability of the large waste collection container 10, a drive gear 26 with four wheel devices 27 is provided on the container bottom 18. The open upper side of the container body 11 forms an insertion opening 20, which is delimited by the upper edge 19 of the container body 11, via which the waste is filled in, and which is closed by means of a lid device 24. For this purpose, the lid device 24, which is a hinged lid, is hinged to the container body 11, for example to its rear side 14, via a fastening device 23 in the form of a hinge device. For filling the container body 11, the lid device 24 is folded open. For better handling of the large waste collection container 10, two handle elements 21, 22 are arranged or formed on its rear side 14, namely at the greatest possible distance from one another in a transition region between a transverse side 15, 16 and the rear side 14 of the side wall 12. Additional handle elements 25 for better handling of the large waste collection container 10 are located on the transverse sides 15, 16 in the region of the upper edge 19 of the container body 11, nearby the corner areas 28.

[0054] In order that additional container components can be arranged on the container body 11, the large waste collection container 10 comprises a receiving device 30. The receiving device 30 is provided in the region of the upper container edge 19 on at least one transverse side 16. It consists of two receiving profile elements 31, 32, which are each formed as hollow receiving profile elements. With a respective first end 31a, 32a, the re-

ceiving profile elements 31, 32 are connected to the upper edge 19 of the container body 11. The receiving profile elements 31, 32 project downwards from the upper container edge 19 in the direction of the container bottom 18. At their respective second end 31b, 32b, the receiving profile elements 31, 32 each comprise an insertion opening 31c, 32c, via which respective corresponding components of the additional container components to be fastened can be pushed into the receiving profile elements 31, 32. Fixing openings 31d, 32d in the receiving profile elements 31, 32 serve to allow the additional container components to be fixed to the receiving profile elements 31, 32, and thus to the container body 11. The receiving profile elements 31, 32 are provided at a distance from each other on the upper edge 19 of the container body.

[0055] Figures 3 to 5 show an embodiment in which an additional container component in the form of a trunnion device 50 is releasably arranged on the container body 11 of the large waste collection container 10 via the receiving device 30.

[0056] As can be seen in particular from Figure 4, the trunnion device 50 has a base body 51 from whose first surface 52 a trunnion element 53 projects, which cooperates with a lifting device of a refuse collection vehicle during an emptying operation. On one of its end faces 54, which is provided for cooperation with the receiving device 30, the trunnion device 50 shows a rectilinear course and two recesses 55, 56 formed therein. Each recess 55, 56 comprises a recess space 55c, 56c, which is delimited by two recess walls 55a, 56a and a recess base 55b, 56b. In each of the two recesses 55, 56, that is in each recess space 55c, 56c, a fixing leg 57, 58 is arranged or formed which projects from the recess base 55b, 56c in a direction outwards from the recess 55, 56, i.e. in the direction of the receiving profile elements 31, 32 of the receiving device 30. For fixing purposes, each fixing leg 57, 58 has a respective latching tab 57a, 58a. If required, a communication device 59 can be arranged on the trunnion device, for example in the form of a tag or chip. For that reason, the trunnion device 50 can comprise a small pocket which acts as a receiving device for the communication device 59. The receiving device can get closed by a small lid or flap.

[0057] The size and shape of the recesses 55, 56 are adapted to the size and shape of the receiving profile elements 31, 32, so that the receiving profile elements 31, 32 fit closely into the recesses 55, 56. Since the receiving profile elements 31, 32 are designed as receiving hollow profile elements, the fixing legs 57, 58 of the trunnion device 50 are inserted into the receiving hollow profile elements at the same time, so that the receiving profile elements 31, 32 are held between the fixing legs 57, 58 on the one hand and the walls of the recesses 55, 56 on the other. Fixation can then take place via suitable fixing elements, which are designed in the form of the latching tabs 57a, 58a. In the fixing position, the latching tabs 57a, 58a engage in the fixing openings 31c, 32c of the receiving profile elements 31, 32. To remove the trunnion device, the latching tabs 57a, 58a are then pressed inwards so that the locking connection is released and the fixing legs 57, 58 of the trunnion device 50 can be pulled downwards out of the receiving profile elements 31, 32. The connection of the trunnion device 50 with the receiving device 30 and via this with the container body 11 is designed as a formlock connection.

[0058] Figures 6 to 8 show an embodiment in which an additional container component in the form of a handle device 40 is releasably arranged on the container body 11 of the large waste collection container 10 via the receiving device 30.

[0059] As can be seen in particular from Figure 7, the handle device 40 comprises a handle element 41 and two fixing legs 44, 45, which each project from the handle element 41 at one end 42, 43 of the handle element 41. The fixing legs 44, 45 are provided in such a way that they are able to cooperate with the receiving profile elements 31, 32 of the receiving device 30, which are designed as hollow receiving profile elements.

[0060] The fixing legs 44, 45 of the handle device 40 cooperate with the receiving profile elements 31, 32 of the receiving device 30 in such a way that the receiving profile elements 31, 32 are inserted into them. This plug-in connection is fixed by fixing elements in the form of latching tabs or noses 44a, 45a on the fixing legs 44, 45, which engage corresponding fixing openings 31d, 32d of the receiving profile elements 31, 32 after the fixing legs 44, 45 of the handle device 40 have been pushed into the receiving profile elements 31, 32 of the receiving device 30 via the second ends 31b, 32b and the insertion openings 31c, 32c of the latter.

[0061] Figures 9 and 10 show an embodiment in which an additional container component in the form of a communication device 60 is detachably arranged on the container body 11 of the large waste collection container 10 via the receiving device 30. The communication device comprises the actual communication module 61, which operates wirelessly and is designed in particular as an NFC element or RFID element. A fixing leg 62 is pushed from below into the insertion opening 32d of one of the hollow receiving profile elements 32. Fixation can then be effected by means of suitable fixing elements, as also described above in connection with the handle device and the trunnion device, for example by means of fixing screws or latching tabs which correspond to a corresponding fixing opening 32d in the receiving profile element 32.

[0062] Since the receiving device 30 is provided for detachably arranging the additional container components, the additional container components can now be arranged on the container body 11 as required and, if necessary, exchanged.

List of reference numerals

[0063]

10 Large waste collection container
11 Container body
12 Sidewall
13 Front side
14 Rear side
15 Transverse side
16 Transverse side
17 Receiving space
18 Container bottom
19 Upper edge of the container body
20 insertion opening
21 First handle element
22 Second handle element
23 Fastening device
24 Lid device
25 Other handle elements
26 Drive gear
27 Wheel device
28 Corner area

30 Receiving device
31 Receiving profile element (receiving hollow profile element)
31a First end of the receiving profile element
31b Second end of the receiving profile element
31c Insertion opening
31d Fixing opening
32 Receiving profile element (receiving hollow profile element)
32a First end of the receiving profile element
32b Second end of the receiving profile element
32c Insertion opening
32d Fixing opening
40 Handle device (additional container component)
41 Handle element
42 First end of the handle element
43 Second end of the handle element
44 Fixing leg
44a Latching tab
45 Fixing leg
45b Latching tab

50 Trunnion device (additional container component)
51 Base body
52 First surface
53 Trunnion element
54 Front side
55 Recess
55a Recess wall
55b Recess base
55c Recess space
56 Recess
56a Recess wall
56b Recess base
56c Recess space
57 Fixing leg
57a Latching tab
58 Fixing leg
58a Latching tab
59 Communication device

60 Communication device (additional container component)
61 Communication module
62 Fixing leg

Claims

1. A large waste collection container (10) with a capacity of up to 1,700 litres, in particular with a capacity of 1,100 litres, comprising a container body (11), having a container bottom (18), a side wall (12) projecting upwards from the container bottom (18), an insertion opening (20) which is formed at the upper end of the side wall (12) and which is delimited by an upper edge (19) of the container body (11), and a drive gear (26), which comprises a plurality of wheel devices (27), in particular four wheel devices (27), the wheel devices (27) being arranged in the region of the container bottom (18) on the side wall (12) or below the container bottom (18) and extending below the container bottom (18), **characterized in in that** at least one receiving device (30) is arranged or formed on the upper edge (19) or in the region of the upper edge (19) of the container body (11) for selectively receiving and, in particular, detachably holding additional container components, that the receiving device (30) comprises at least one receiving profile element (31, 32) which is provided for receiving and holding the additional container components on the container body (119), and **in that** the receiving profile element (30) comprises a fastening device for fastening the additional container component, in particular in a detachable manner.

2. The large waste collection container (10) according to claim 1, **characterised in that** the side wall (12) is formed from four side wall segments, that a first side wall segment is designed as the rear side (14), that a second side wall segment is designed as the front side (13), and that a third and fourth side wall segment are designed as transverse sides (15, 16) each, that the at least one receiving device (30) is/are arranged or formed on one or both transverse sides (15, 16) and/or on the rear side (154) and/or on the front side (13) and that the container body (11) has, in particular, a rectangular or approximately rectangular shape.

3. The large waste collection container (10) according to claim 1 or 2, **characterized in that** the receiving device (30) comprises two receiving profile elements (31, 32) spaced apart from one another.

4. The large waste collection container (10) according to anyone of claims 1 to 3, **characterised in that** the at least one receiving profile member (31, 32) is formed as a receiving hollow profile member, and **in that** the receiving hollow profile member comprises an insertion opening (31c, 32c) provided for insertion of the additional container components.

5. The large waste collection container (10) according to anyone of claims 1 to 4, **characterised in that** the receiving profile member (31, 32) is connected by a first end (31a, 32a) to the upper edge (19) of the container body (11) and projects downwardly from the upper edge (19) of the container body (11), and **in that** when the receiving profile member (31, 32) is formed as a hollow receiving profile member, an insertion opening (31c, 32c) is formed in a second end (31b, 32b) of the receiving profile member (31, 32) opposite the first end (31a, 32a), or that the insertion opening is formed laterally in the wall of the receiving profile member (31, 32).

6. The large waste collection container (10) according to anyone of claims 1 to 5, **characterized in that** the fastening device of the receiving profile element (31, 32) is provided for producing a snap-in connection or a screw connection.

7. The large waste collection container (10) according to anyone of claims 1 to 6, **characterized in that** the receiving profile element (31, 32), if it is designed as a hollow receiving profile element, comprises at least one fixing opening {31d, 32d) as a fixing device, which fixing opening (31d, 32d) is provided in such a way that it is capable of interacting with corresponding fixing elements, in particular fixing screws or latching tabs (44a, 45a; 57a, 58a), of the additional container component.

8. The large waste collection container (10) according to anyone of claims 1 to 7, **characterised in that** the additional container component is designed as an additional handle device (40) and/or as a trunnion device (50) and/or as a communication device (60).

9. The large waste collection container (10) according to anyone of claims 1 to 8, **characterized in that** the additional container component is designed as a handle device (40) having a handle element (41) which comprises at least one fixing leg (44, 45) which projects from the handle element (41), the handle element (41) comprising in particular two fixing legs (44, 45) which each project from the handle element (41) at one end (42, 43) of the handle element (41), the at least one fixing leg (44, 45) being provided in such a way that it is able to cooperate with the at least one receiving profile element (31, 32) of the receiving device (30).

10. The large waste collection container (10) according to anyone of claims 1 to 9, **characterised in that** the additional container component is designed as a trunnion device (50), and **in that** the trunnion device (50) is provided such that it is capable of being connected to the receiving device (30) by means of a formlock connection.

11. The large waste collection container (10) according to anyone of claims 1 to 10, **characterized in that** the trunnion device (50) comprises a base body (51) from whose first surface (52) a trunnion element (53) projects, **in that** the trunnion device (50) comprises on one of its end faces (54), which is provided for cooperation with the receiving device (30), a particularly rectilinear course with at least one, preferably two recesses (55, 56) formed therein, and that in the recess (55, 56) a fixing leg (57, 58) is arranged or formed which projects outwardly from the recess (55, 56), wherein the at least one fixing leg (57, 58) is provided in such a way that it is able to cooperate with the at least one receiving profile element (31, 32) of the receiving device (30).

12. The large waste collection container (10) according to anyone of claims 1 to 11, **characterised in that** the additional container component is formed as a communication device (60) comprising a fixing leg (62), the fixing leg (62) being provided so as to be able to cooperate with the at least one receiving profile element (31, 32) of the receiving device (30).

13. The large waste collection container (10) according to anyone of claims 1 to 12, **characterized in that** the attachment of the additional container component to the receiving means (30) is provided by means of a snap-in connection, that the additional container component comprises at least one latching tab (44a, 45a; 57a, 58a) provided to cooperate with at least one fixing opening (31d, 32d) of the receiving means (30).

14. The large waste collection container (10) according to anyone of claims 1 to 13, comprising a lid device (24) for closing the insertion opening (20) of the container body (11), the lid device (24) being articulated, in particular pivotably, on the container body (11) via at least one fastening device (23).

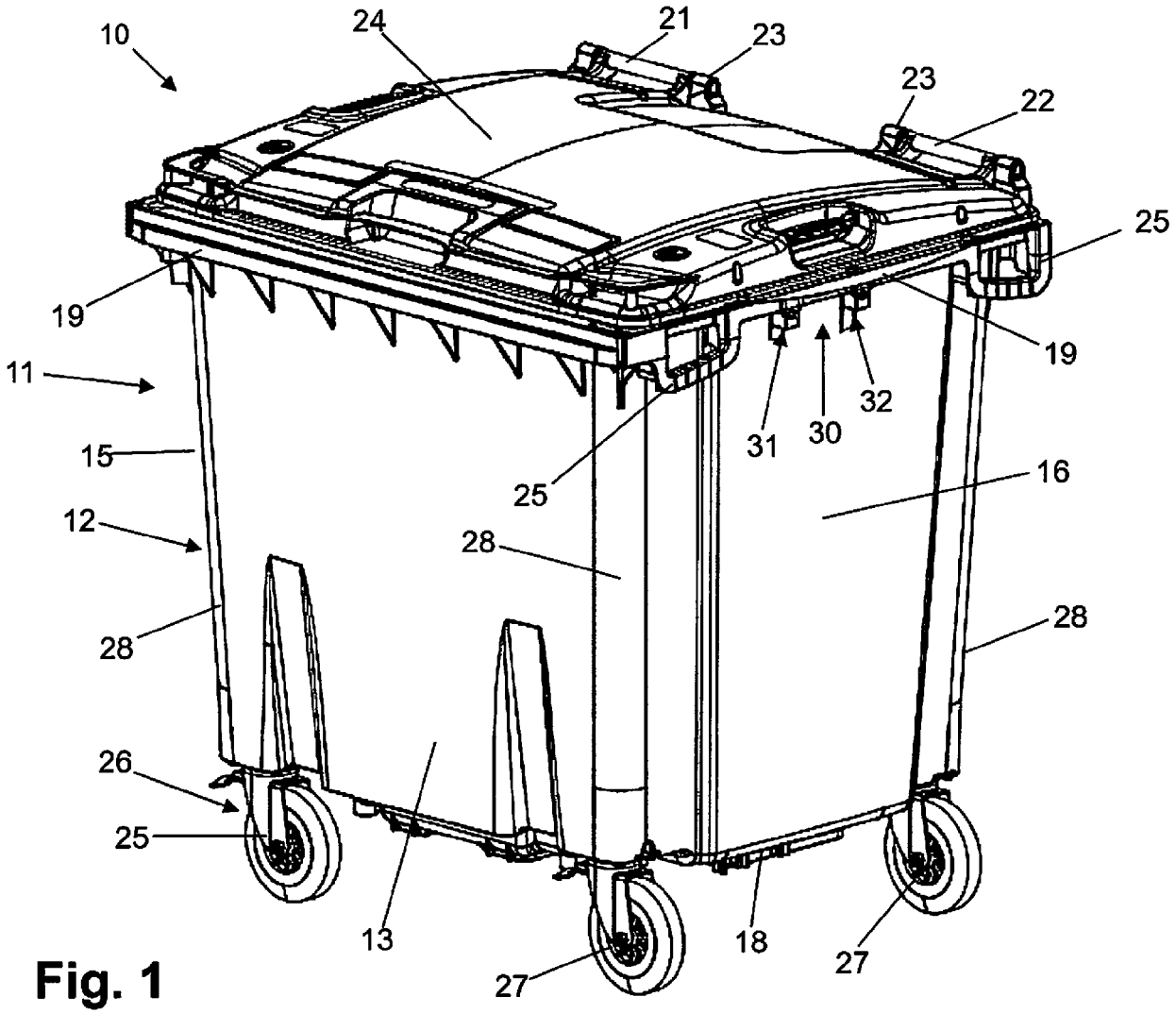
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Fig. 1

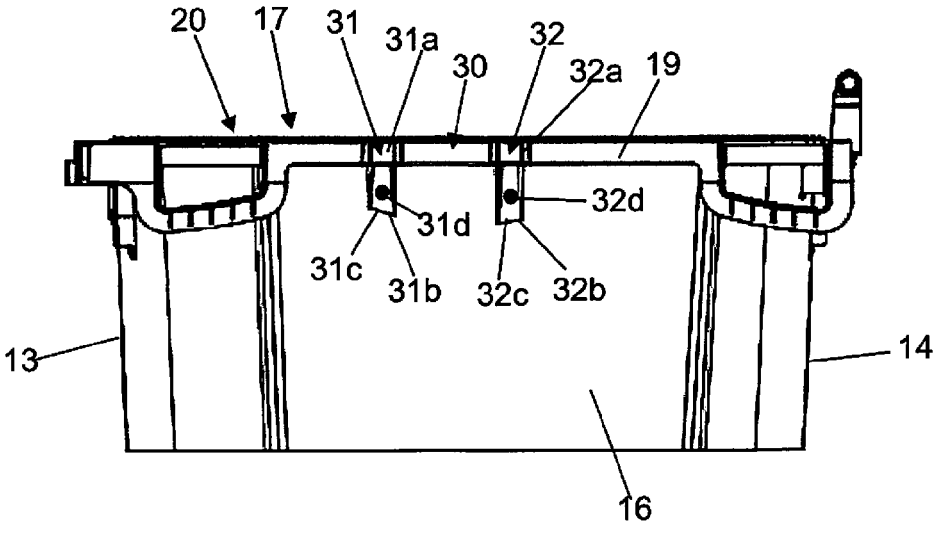
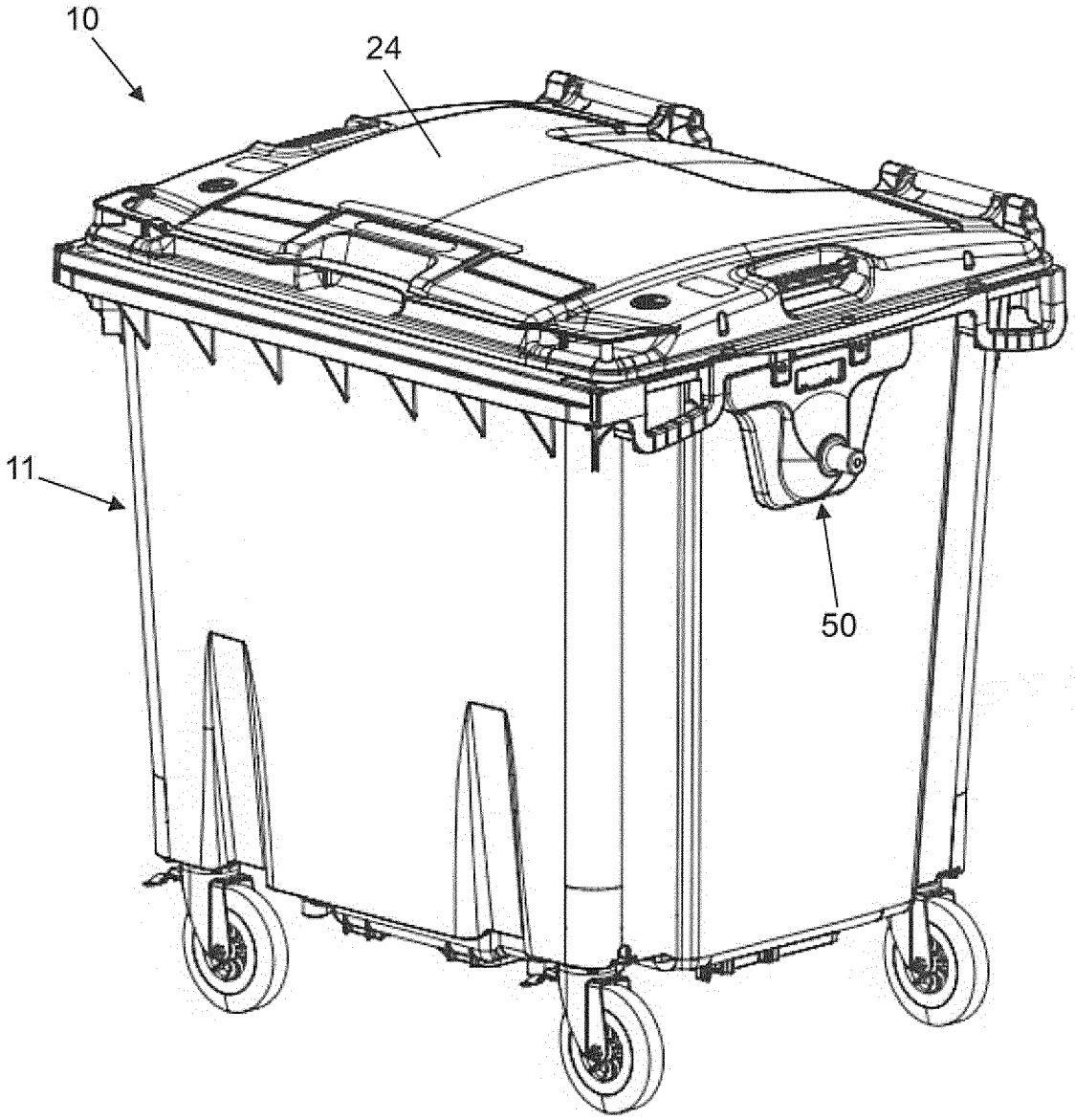

20
17
31
31a
30
32
32a
19
31d
32d
31c
31b
32c
32b
13
14
16

Fig. 2



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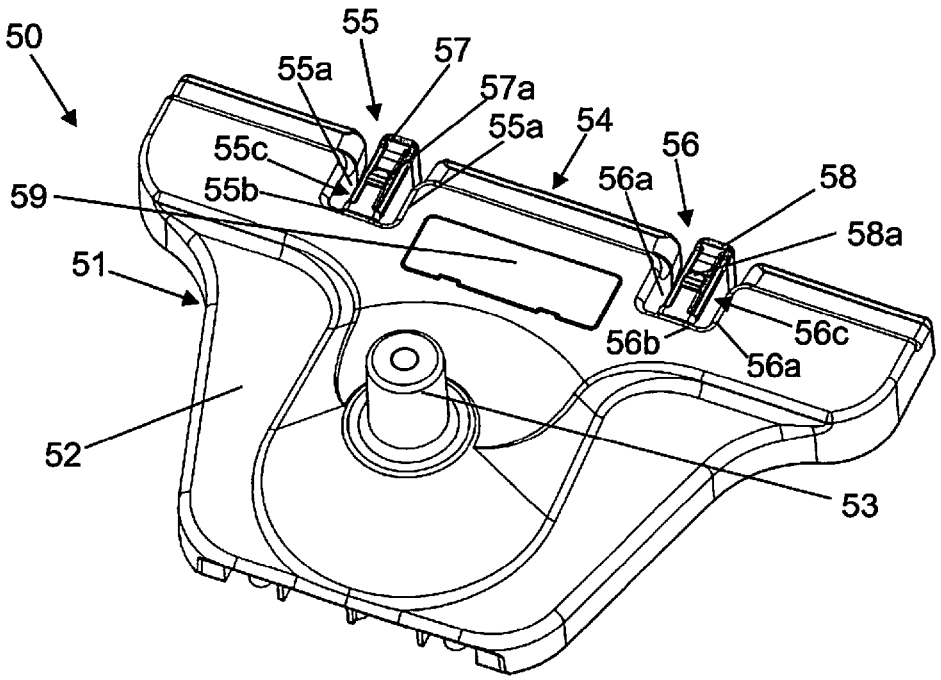
50
55
57
55a
57a
55a
54
56
55c
55b
56a
58
59
58a
51
56b
56c
56a
52
53

Fig. 4

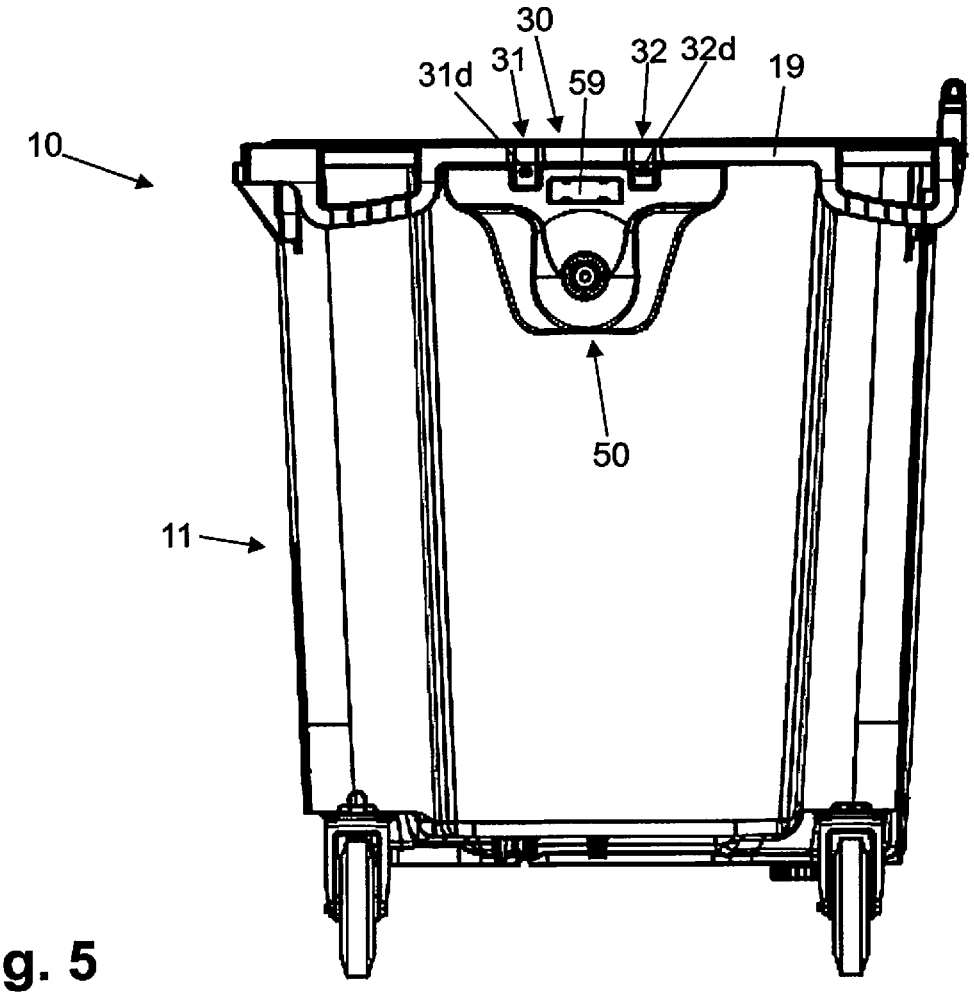
30
31d
31
59
32
32d
19
10
50
11

Fig. 5

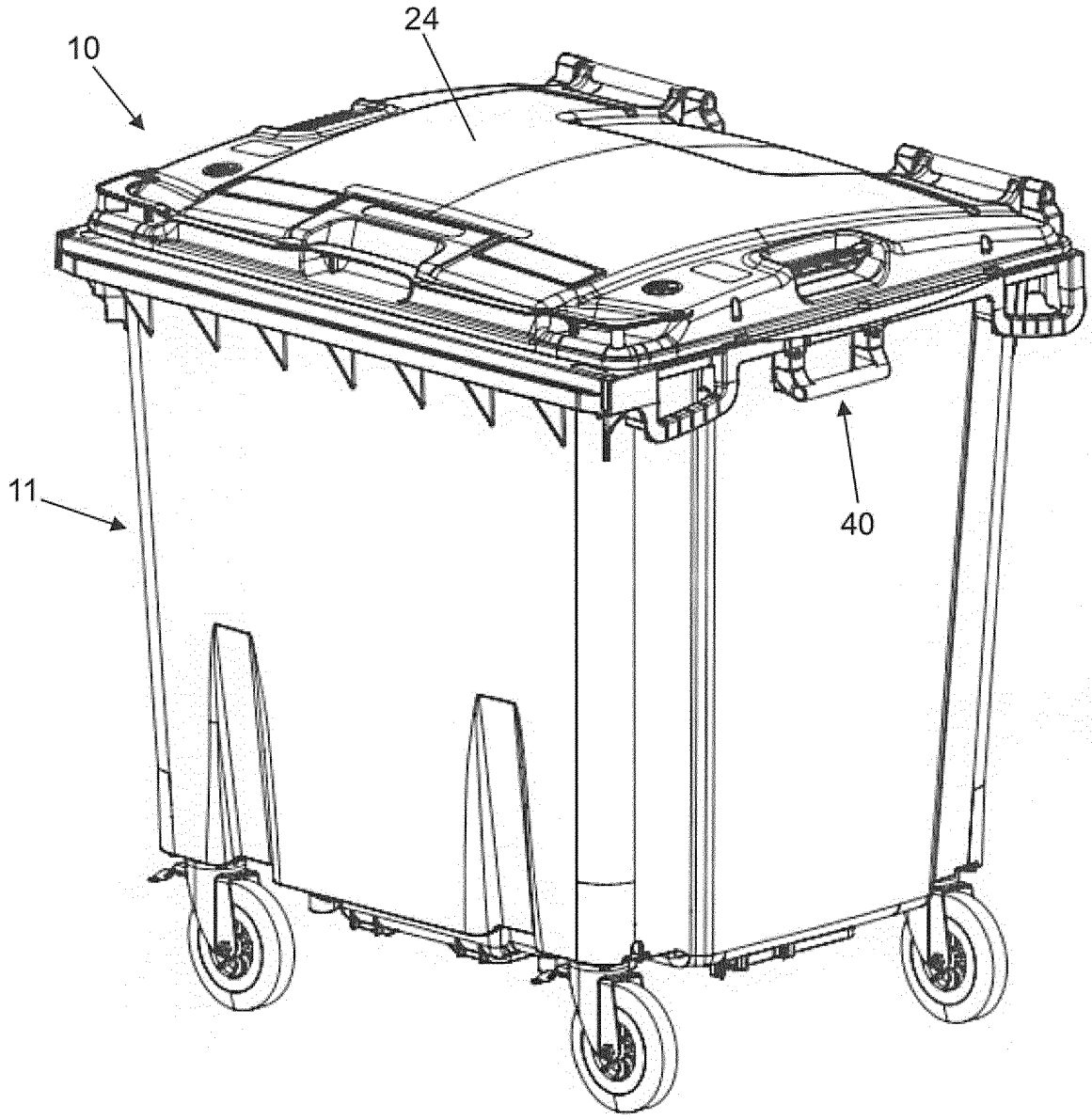

Fig. 6

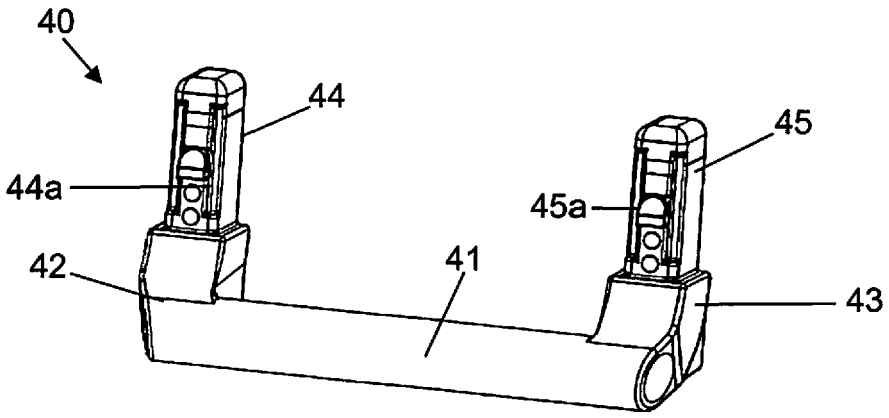

Fig. 7

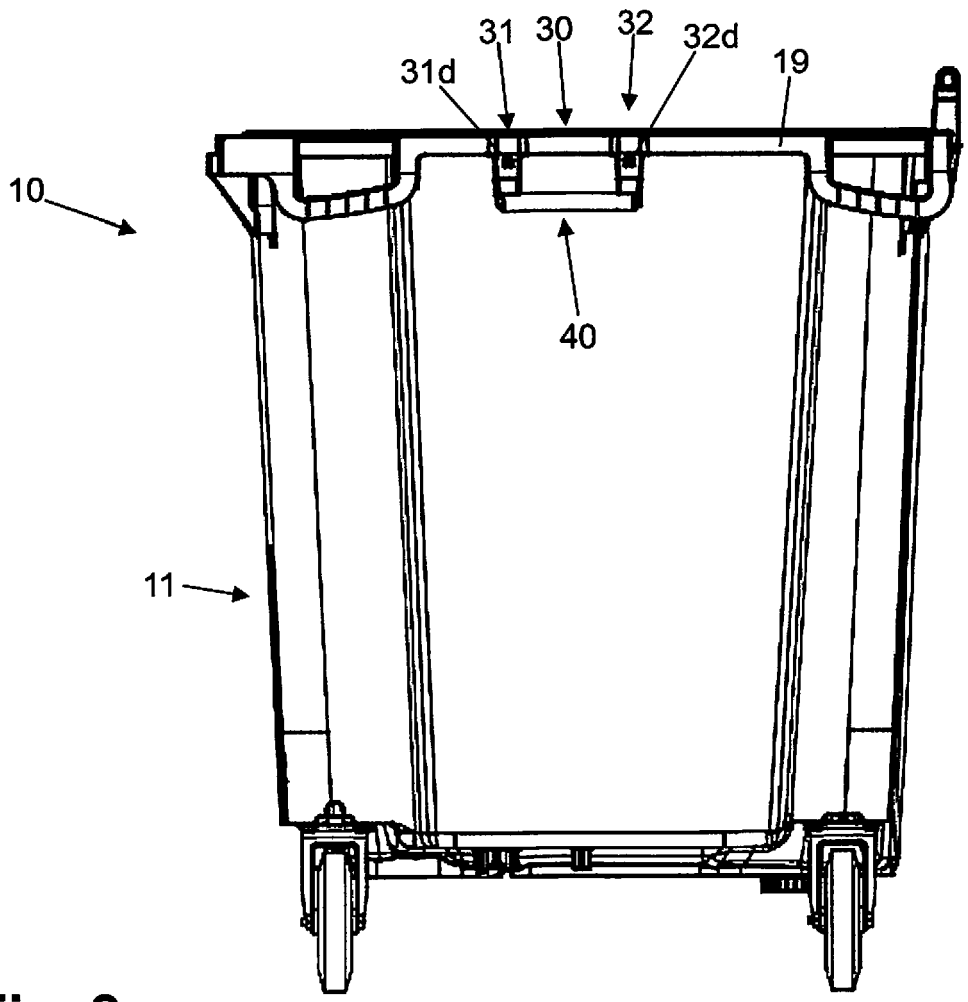

Fig. 8

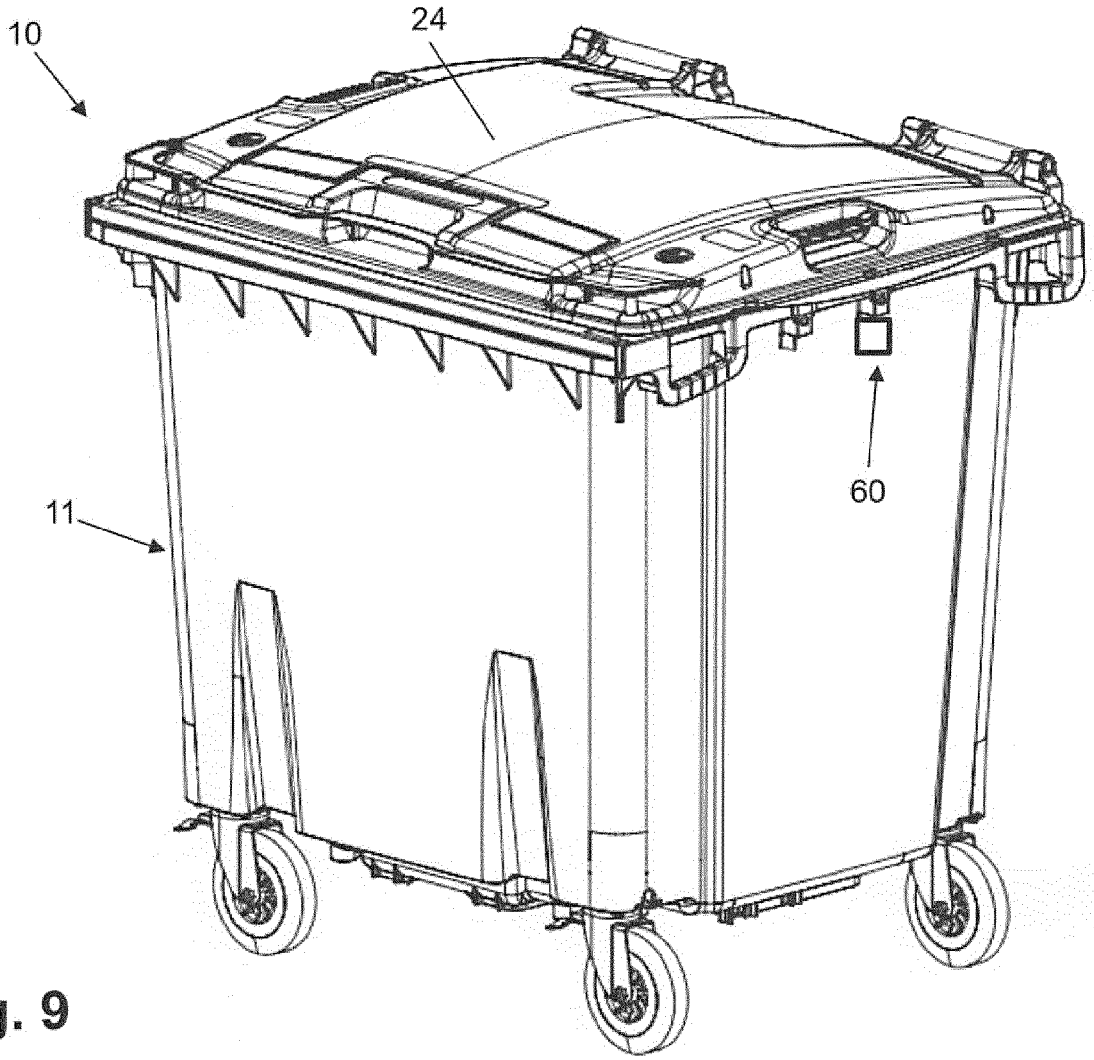

Fig. 9

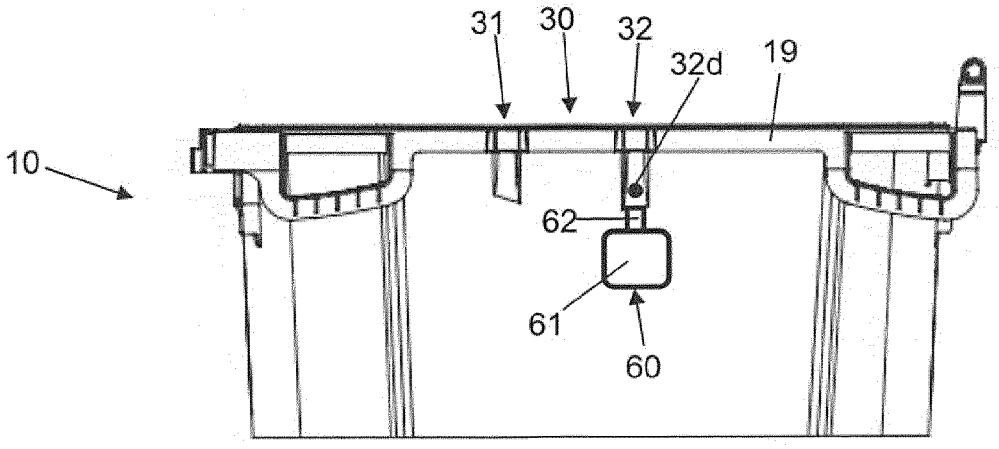

Fig. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 23 17 4996

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y A	CA 2 996 345 A1 (REHRIG PACIFIC CO [US]) 23 August 2018 (2018-08-23) * page 5, line 15 - page 6, line 2; figures 13-18 *	1-8,10, 13,14 9,12 11	INV. B65F1/12 B65F1/14
Y	US 2002/153681 A1 (YOUNG ROGER L [US]) 24 October 2002 (2002-10-24) * paragraphs [0031] - [0034]; figure 4 *	9	
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TECHNICAL FIELDS SEARCHED (IPC)

B65F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	3 October 2023	Serrano Galarraga, J

CATEGORY OF CITED DOCUMENTS

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03-10-2023

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82