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(54) **LARGE WASTE COLLECTION CONTAINER**

(57) The present invention relates to a large waste collection container (10), having a capacity of up to 1.700 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) formed at the upper end of the side wall (12), which opening being delimited by an upper edge (19) of the side wall (12), and a drive gear (26), which has 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 that a tilting movement can be easily carried out with such a container, a foot-tilt-device (29) is arranged or formed above the container bottom (18) on or in the side wall (12). Two spaced-apart handle elements (21, 22) are provided, arranged, or formed on the upper edge (19) of the side wall (12). The foot-tilt-device (29) and the handle elements (21, 22) are provided on one side of the container body (11). The foot-tilt-device (29) forms a first force application point (35a) on which a compressive force is exerted or acts when a tilt movement (47) of the container body (11) is performed. The handle elements (21, 22) each form a second and third force application point (36a, 37a), on which a traction force is exerted or acts when a tilt movement (47) of the container body (11) is performed.

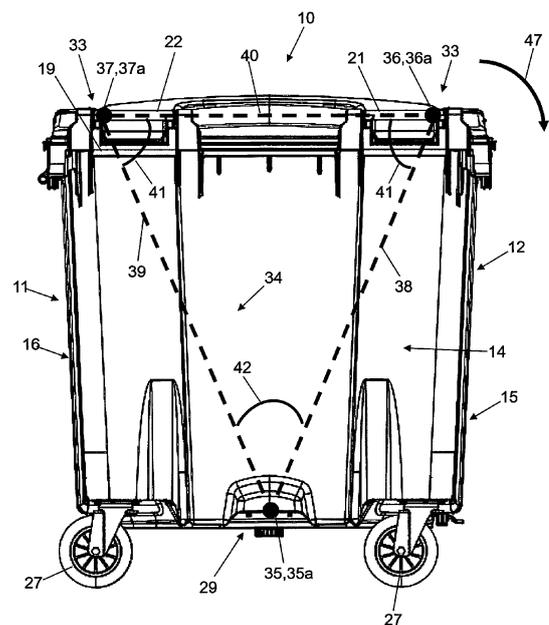


Fig. 2

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.

[0003] For emptying purposes, the large waste collection container is usually moved to an emptying point, emptied there and then brought back to its intended location. In addition, large waste collection containers are often used in commercial and industrial environments, where they also have to be moved to other locations as required. In all these cases, it is not uncommon for the large waste containers to have to overcome uneven surfaces such as edges, steps, and the like. For this purpose, it is necessary to tilt the large waste collection containers.

[0004] Due to the dimensions of large waste collection containers, especially with regard to their width, depth, and height, this results in bulkiness in handling. In addition, the large waste collection containers, when loaded, are very heavy due to their large capacity. Therefore, it is a great challenge for the operating personnel to tilt the large waste collection container when needed.

[0005] In the general state of the art, it has already become known in connection with two-wheeled or three-wheeled waste collection containers to integrate a foot-tilt-device in the container body to ergonomically support a tilt function.

[0006] With regard to two-wheeled containers and three-wheeled containers, however, quite different requirements apply than for large waste collection containers. For one thing, they have a much smaller filling capacity, which is usually up to 350 litres, for example, up to 240 litres. Therefore, even when full, these containers are much lighter than large waste collection containers. In addition, they have a much smaller width and height compared to the large waste collection containers. A handle element, which is located on the upper edge of the container body for handling the container, is therefore lower than in comparison to the large waste collection container. Due to the narrow width of the container, usually only one handle element is provided, which then ex-

tends continuously over the entire width of the container body. For comparison: a two-wheeled bin, for example, has a height from the floor to the upper edge of the container body of between 800mm and 1100mm, and a width of between 450mm and 750mm. Large waste collection containers, on the other hand, have a height from the floor to the upper edge of the container body of greater than 1200mm, often greater than 1300mm, and a width of more than 1300mm.

[0007] In addition, the wheel devices of large waste collection containers, which can have a diameter of 200 mm, are usually arranged below the container bottom, so that the container bottom, and thus the entire container body, is at a distance from the ground level on which the large waste collection container is located. In the case of two-wheeled and three-wheeled waste collection containers, the wheel devices are located on the side of the container body and do not extend at all, or at most only very slightly, downwards over the container bottom. This is because the container bottom also serves to support the waste collection container on the ground surface, with which the bottom element must therefore come into direct contact. This means that the centre of gravity of the two-wheeled and three-wheeled waste collection containers is lower than that of the large waste collection containers. Due to the fact that large waste collection containers should be as light as possible, stability criteria must also be taken into account.

[0008] Due to the aforementioned differences between two-wheeled and three-wheeled waste collection containers on the one hand, and large waste collection containers on the other hand, it is therefore not possible to use a foot-tilt-device known from the two-wheeled or three-wheeled waste collection container for a large waste collection container without further ado.

[0009] The present invention is based on the object of further optimising such large waste collection containers, which are known per se, so that a tilting movement can be carried out with them, in particular without any problems.

[0010] This object is solved according to the invention by the large waste collection container with the features according to the independent claim 1. Additional features and details of the invention become apparent from the dependent claims, from the description and from the drawings.

[0011] Surprisingly, the inventors have found out, contrary to the previous trend, that it is possible under certain circumstances to provide the large waste collection container with a foot-tilt-device. The inventors have found out that this is possible in particular when the provision of the foot-tilt-device device is flanked by further measures, so that these measures in combination result in enabling a tilting operation of the large waste collection container with the aid of a foot-tilt-device.

[0012] 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.

[0013] 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.

[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.

[0015] 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.

[0016] 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.

[0017] In one embodiment, the side wall is formed from four side wall segments, i.e. four side wall components. The side wall segments abut each other in corner areas, which are preferably rounded corner areas.

[0018] 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.

[0019] 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.

[0020] Such large waste collection containers are usually made of robust materials, such as metal or hard plastics.

[0021] According to the invention, a foot-tilt-device is now arranged or formed beneath the container bottom or above the container bottom on or in the side wall. According to one embodiment, the foot-tilt-device is an independent component which is connected to the container body. According to another embodiment, the foot-tilt-device is an integral part of the container body. According to a preferred embodiment, the foot-tilt-device is an integral part of the container body and it is formed above the container bottom in the side wall of the container body. According to this embodiment, a portion of the foot-tilt-device is provided by the container sidewall, whilst another portion of the foot-tilt-device is provided by the container bottom.

[0022] A foot of an operator is placed in the foot-tilt-device during a tilting operation, as will be described in more detail below. According to the invention, it is preferably realised that on or in the side wall of the container body, preferably on or in a rear side, the foot-tilt-device is arranged or formed. This is preferably a type of foot step which serves as a tipping aid. This can ensure easy tipping of the large waste collection container, in particular even when full.

[0023] The advantages of such a foot-tilt-device realized with a large waste collection container will now be explained at hand of an example. Especially after emptying, the large waste collection container is standing on the street, and that is usually lower than the sidewalk. Usually, the front comb of the container is aimed towards the back of the waste collection vehicle or truck, where the lifter device is located. In this situation, the back handle devices are aimed towards the operative for taking the container out of the lifter device. The operative then turns the container from the lifter device towards the higher sidewalk and then needs to get the container back onto the higher sidewalk. Currently, that requires repositioning of the operative standing on the sidewalk, lifting the container manually and pulling the first two wheel devices onto the sidewalk. With the foot-tilt-device according to the invention, the operative can just stay behind the container and tip the front side upwards with his foot and the two handle elements and push it forward onto the sidewalk. So, it is a huge advantage, especially after the emptying of the container when it stands at the lower street level position next to the truck. It also creates a big difference with footsteps in two-wheel containers, where the functioning is mainly helping to tip over a full container.

[0024] The foot-tilt-device can, for example, be arranged or formed from the outside on the side wall of the

container body. If good stackability of the large waste collection container, in particular of its container body, is to be achieved, it is preferably provided that the foot-tilt-device extends from the outer surface of the side wall inwards towards the centre of the container body, for example in the form of a depression, recess or the like. In this case, the foot-tilt-device is preferably closed off from components of the side wall and/or the container bottom, except for one opening, so that the container body does not have any unwanted openings through which waste picked up could penetrate to the outside.

[0025] The foot-tilt-device can be designed in different ways. Some preferred embodiments are described below.

[0026] According to one embodiment, the foot-tilt-device comprises a closed, pot-shaped form that has an opening on one side. In one embodiment, the foot-tilt-device, as seen from the opening, has in particular a tapering course. In this case, the foot-tilt-device may be a recess in the side wall, or it may be an embodiment as described further above. The opening in the foot-tilt-device is dimensioned in such a way that a user can enter the foot-tilt-device with his shoe. In one embodiment, the foot-tilt-device comprises a bottom element, which is preferably part of the container bottom. In one embodiment, the bottom element has an inclined course, for example, inclining upwards as seen from the direction of the opening. In one embodiment, the foot-tilt-device comprises, starting from the bottom element, a wall which preferably has a rounded or vault-like course. The wall can also have an inclined course, for example, inclining downwards as seen from the direction of the opening. In this case, the foot-tilt-device tapers, starting from the opening. This facilitates the "threading" of the user's shoe into the foot-tilt-device. At the same time, this improves the transmission of a force, as described in more detail below.

[0027] In one embodiment, the foot-tilt-device is arranged or formed in the area of the container bottom, in the side wall of the container body. The foot-tilt-device can also be arranged or formed below the container bottom. In one embodiment, the foot-tilt-device is arranged or formed above the container bottom of the large waste collection container.

[0028] Furthermore, according to the invention, two spaced-apart handle elements are provided which are arranged or formed on the upper edge of the container body. For example, if the container body is polygonal, for example rectangular, the handle elements can be arranged or formed on the rear side of the container body. The large waste collection container can be moved and steered by means of the handle elements.

[0029] In one embodiment, the handle elements are arranged or formed in the area of the transition of a transverse side to the rear side on the rear side of the container body. As will be explained further below, it is of particular advantage if the handle elements are spaced as far apart as possible, i.e. are offset as far as possible on the side

wall of the container body.

[0030] In one embodiment, the handle elements extend above the upper edge of the container body. This means that the handle elements extend beyond the upper edge of the container body and project upwards from it. In this case, the handle elements are located above the upper edge of the container body. Advantages of such a configuration will be explained in more detail further below. In another embodiment, however, the handle elements can also project laterally outwards from the side wall.

[0031] In one embodiment, each handle element is part of a fastening device for a lid device. For example, the fastening device is a hinge device. Such a fastening device comprises, for example, a first fastening component which is arranged or formed on the container body. In addition, the fastening device comprises a second fastening component which is arranged or formed on the lid device and which cooperates with the first fastening component. In one embodiment, the handle elements are each components of a second fastening component, and thus components of the lid device.

[0032] In one embodiment, the foot-tilt-device and the handle elements are provided on one and the same side wall segment of the container body, in particular on its rear side, especially if the container body has a rectangular or approximately rectangular shape. Then the said components lie in particular in one plane.

[0033] If the container body is rectangular and preferably has a front side, a rear side and two transverse sides, which connect the front side and the rear side with each other, whereby the individual wall parts abut each other in corner areas of the container body, the foot-tilt-device is preferably arranged or formed in the rear side of the container body. The handle elements, by means of which the container can be moved and steered, are then also located at the rear side. The operative can step with his foot into the foot-tilting-device and pull the handle elements towards him. This tilts the container body in the direction of the operative.

[0034] The forces used by the operative are divided between the handle elements, which are preferably located above the upper edge of the container body, on which a traction force then acts, and the foot-tilt-device, on which a compressive force then acts. On the one hand, this reduces the amount of force required. Furthermore, the tilting process can be carried out smoothly and in a controlled manner, as the points of application of the forces are far apart from each other. This simplifies the handling during the tilting process. This principle is explained in detail below.

[0035] According to the invention, the foot-tilt-device forms a first force application point on which a compressive force is exerted or acts when a tilting movement of the container body is performed. The handle elements, which are preferably provided above the upper edge of the container body, form a second and third force application point on which a traction force is exerted or acts

when a tilting movement of the container body is performed. This takes into account the requirements described in the introduction to the description, to which reference is made at this point as well.

[0036] In order to be able to carry out a tilting operation safely and without problems, according to one embodiment the foot-tilt-device and the handle elements form the corners of an imaginary triangle, which is formed as an isosceles, acute-angled triangle. An isosceles triangle is a triangle with at least two sides of equal length. Consequently, the two angles opposite the sides of equal length are also equal. The two sides of equal length are called legs, the third side is called the base. The corner point of the triangle opposite the base is called the tip. The angles adjacent to the base are called base angles. An acute triangle is a triangle in which all angles are less than ninety degrees. The two legs of the imaginary triangle then form an imaginary line between each of the handle elements and the foot-tilt-device, while the base of the imaginary triangle forms an imaginary line between the handle elements.

[0037] The inventors have found that a tilting process of the large waste collection container can be performed well in particular if the different corners of the triangle are spaced apart from each other as much as possible. The legs for example have a length greater than 1000mm, preferably greater than 1100mm, in particular a length of 1168mm. The length of the base is preferably greater than 850mm, preferably greater than 900mm and is for example 914mm.

[0038] The inventors have found that a tilting process of the large waste collection container can be performed well in particular when the base angles of the imaginary triangle have a magnitude between 55 degrees and 75 degrees, preferably between 60 degrees and 70 degrees, preferably of 67 degrees, and the angle in the tip of the imaginary triangle has a magnitude between 70 degrees and 30 degrees, preferably between 60 degrees and 40 degrees, preferably of 46 degrees.

[0039] In one embodiment, the foot-tilt-device is arranged or formed centrally on or in a side wall segment of the side wall of the container body, in particular on or in the rear side of the container body. For example, the foot-tilt-device can be arranged or formed centrally between two transverse wall segments of the side wall of the container body. In particular, if the two handle elements are provided as far apart from each other as possible at the upper edge of the container body, as described above, the force required for a tilting operation is distributed in such an optimised manner that the container can be tilted easily, even when it is filled. At the same time, the stability requirements are always maintained.

[0040] In one embodiment, the container bottom comprises a cross-shaped base area that is, for example, plate-shaped. This further improves the stability of the container. In such a case, the foot-tilting-device is provided, for example, in the area of the cross-shaped base

element.

[0041] In one embodiment, the container body comprise a plurality of wheel brackets, in particular four wheel brackets, which are provided for fastening the wheel devices. A wheel bracket is here in particular a partial area of the container body on which the wheel devices of the drive gear are arranged. To increase stability while reducing weight, the wheel brackets preferably have a honeycomb structure. For example, the wheel brackets are each formed in or beneath a, preferably rounded, corner area between two adjacent side wall segments of the container body.

[0042] For example, if the container body comprises a container bottom with a cross-shaped base area, the wheel brackets may be offset in height from the cross-shaped base area. For example, the cross-shaped base area is located further away from the upper edge of the container body than the wheel brackets. In this way, the entire centre of gravity of the container body and thus of the large waste collection container moves further downwards, which additionally facilitates the tilting process.

[0043] In one embodiment, a liquid outlet is formed in the container bottom, in particular one that can be closed by means of a closing element. The function of the liquid outlet is to allow liquid in the container body to be drained off. This liquid can get into the container body, for example, due to moist waste or if the lid device is not closed properly. Due to the constantly advancing circular economy, large waste collection containers are also being reused more and more often. This means that the large waste collection containers must be cleaned before they are reused. Alternatively, the large waste collection containers are also cleaned by the users themselves at regular intervals. For this purpose, it is not uncommon for the container body to be tilted on its side so that its interior can be easily cleaned with a water hose or high-pressure cleaner, for example. However, the water that collects inside the container body must be removed from the container body again. In one embodiment, the liquid outlet is formed at the lowest point when the container body is in a tilted position, or when the container body is in a lateral position. However, it is also possible to provide two or more such liquid outlets, which are then formed at different points. This arrangement or formation of the liquid outlet can be realised at different places of the container body, so that the invention is not limited to specific embodiments in this respect.

[0044] In one embodiment, the liquid outlet is formed in the transition area between the container bottom and the side wall, for example in or in front of a corner area of the container body. In this way, it is preferably realised that the liquid outlet is partly formed in the container bottom, but also partly in the side wall.

[0045] In another embodiment, the liquid outlet is formed entirely in the container bottom, but not in the centre, but is led up to the container side wall. The liquid outlet is then formed in front of, in particular directly in front of, the transition area from the container bottom to

the side wall, as seen from the container bottom. In this case, the liquid outlet is located in the container bottom in the area of the side wall. It preferably extends up to the side wall or at least close to the side wall. When the large waste collection container is placed in the lateral position for cleaning, it will usually not come to rest in a horizontal position, but still in a slightly inclined position. If, for example, the large waste collection container is tilted over its rear side, on which the handle elements and/or fastening elements for the lid device are usually still located, it will rest on these handle elements or fastening elements after the tilting process. The lowest point where the water collects is then the transition area between the container bottom and the side wall, for example the rear side. In this case, the liquid outlet is preferably positioned in such a way that, although it is formed in the container bottom, it reaches up to this transition area and preferably ends in this transition area. In another preferred embodiment, the liquid outlet can also be formed entirely in the side wall in a corresponding manner, in such a way that it is brought up to the container bottom. The liquid outlet is then formed in front of, in particular directly in front of, the transition area from the side wall to the container bottom, as seen from the side wall.

[0046] In a preferred embodiment, the liquid outlet is formed in or in front of a corner edge of the container body. The corner edge is located, for example, where two wall segments, for example the front side or rear and a transverse side, abut each other. The corner edge is preferably rounded.

[0047] Depending on the design form, the liquid outlet is preferably guided straight downwards or obliquely outwards.

[0048] Preferably, the liquid outlet can be formed, preferably centrally, between the foot-tilt-device and a side wall segment of the container body, or in or in front of a corner region of the container body, or in the region of the foot-tilt-device in the container bottom. The user can then tilt the container body or bring it into the lateral position with the aid of the foot-tilt-device, as described further above. The water in the container body can then flow out of the container body via the liquid outlet.

[0049] When the liquid outlet is not needed, it is preferably closed by a closing element, for example a stopper, a screw cap or the like. The closing element is preferably connected to the liquid outlet from the outside, i. e. from outside the container body, which simplifies handling.

[0050] In the following, the invention is explained in more detail with reference to the accompanying drawings by means of an example of an embodiment. It shows:

Figure 1 a large waste collection container according to the invention incorporating a foot-tilt-device;

Figure 2 a view of the rear side of the large waste collection container, in which the imaginary power triangle is shown;

Figure 3 a top view of the container body of the last waste collection container with the lid device being removed;

Figure 4 a perspective view from below on the container body of the large waste collection container without wheel devices; and

Figure 5 a perspective view from below on the container body of the large waste collection container according to Figure 4 with wheel devices being mounted thereon.

[0051] Figure 1 depicts a large waste collection container 10, which has a filling volume of 1,100 litres.

[0052] 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.

[0053] 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. Side wall 12, container bottom 18 and the insertion opening 20 delimit the receiving space 17 provided by container body 11. 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. Further 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.

[0054] In order to be able to tilt the large waste collection container 10, a foot-tilt-device 29 is provided in the area of the container bottom 18, in the side wall 12, for example in the rear side 14. The foot-tilt-device 29 is arranged centrally in the rear side 14 and consists of a bottom element 30, which has an inclined course and is part of the container bottom 18, a curved wall 32, which is part of the rear side 14, and an opening 31, through which the user inserts his shoe into the foot-tilt-device 29.

[0055] The interaction of the foot-tilt-device 29 with other components and measures, that make it easy to tilt the large waste collection container 10, even when it is loaded, is now explained with reference to Figure 2. There, a view of the rear side 14 of the large waste col-

lection container 10 of Figure 1 is shown. As can be seen, the foot-tilt-device 29 is mostly located above the wheel devices 27, and centrally in the rear side 14 between the transverse sides 15 and 16. The first and second handle elements 21, 22 are located in the area of the upper edge 19 of the container body 11, and as far apart from each other as possible, so that they are each located in the transition area 33 between the transverse sides 15, 16 and the rear side 14.

[0056] The handle elements 21, 22 extend to above the upper edge 19 of the container body 11 and project upwards from the upper edge 19. Each handle element 21, 22 is part of the fastening device 23 for the lid device 24.

[0057] Both the foot-tilt-device 29 and the handle elements 21, 22 are provided at the rear side 14 of the container body 11 in one common plane.

[0058] The forces exerted by the operative for creating a tilt movement 47 of the large waste collection container 10 are split up on the handle elements 21, 22 and the foot-tilt-device 29. The foot-tilt-device 29 forms a first force application point 35a on which a compressive force is applied or acts when a tilting movement of the container body 11 is performed. The handle elements 21, 22 form second and third force application points 36a, 37a, on which a traction force is exerted or acts respectively when a tilting movement of the container body 11 is performed. In order to be able to safely and smoothly perform a tilting operation, the foot-tilt-device 29 and the handle elements 21, 22 form the corners of an imaginary triangle 34, which is formed as an isosceles, acute-angled triangle. The two sides of equal length of the triangle 34 are provided by legs 38, 39, the third side is the base 40. The corner point 35 of the triangle opposite the base 40 is called the tip. The other two corner points 36, 37 of the triangle 34 are the base points. The angles 41 adjacent to the base 40 are called base angles. The angle at the tip 35 is marked with reference number 42. The two legs 38, 39 of the imaginary triangle 34 form an imaginary line between each of the handle elements 21, 22 and the foot-tilt-device 29, while the base 40 of the imaginary triangle 34 forms an imaginary line between the handle elements 21, 22.

[0059] In order that a tilting process of the large waste collection container 10 can be carried out well, in a preferred embodiment, the legs 38, 39 each have a length of 1168mm. The length of the base 40 is 914mm, for example. The base angles 41 of the imaginary triangle 34 have a magnitude of 67 degrees, while the angle 42 in the tip of the imaginary triangle 34 has a magnitude of 46 degrees.

[0060] Figure 3 shows a top view on the container body 11 through the insertion opening 20 with the lid device 24 being removed. It can be seen how the foot-tilt-device 29 extends in the form of a recess from the outer surface of the rear side 14 towards the centre of the container body 11. The foot-tilt-device 23 is located in the rear side 14 centrally between the two transverse sides 15, 16. A

closable liquid outlet 46 is also provided in the region of the container bottom 18. To increase stability, the container bottom 18 comprises a cross-shaped base area 43, the foot-tilt-device 29 being provided in this cross-shaped base area 43.

[0061] Figures 4 and 5 show two representations of the container body 11 in an upside-down position. Here, one can see a wheel bracket 44 with a honeycomb structure 45 in each of the rounded corner areas 28, which serve to fasten the wheel devices 27. In relation to the cross-shaped base area 43 of the container bottom 18, the wheel brackets 44 are slightly offset upwards towards the upper edge 19. The two beams of the cross-shaped base area 43 are perpendicular to each other, and the wheel brackets 44 are positioned in the areas next to two perpendicular beam segments. While Figure 4 shows the container body 11 without any wheel devices 27, Figure 5 shows a container body 11 in which the wheel devices 27 are mounted on the wheel brackets 44.

List of reference numerals

[0062]

25	10	Large waste collection container
	11	Container body
	12	Sidewall
	13	Front side
	14	Rear side
30	15	Transverse side
	16	Transverse side
	17	Receiving space
	18	Container bottom
	19	Upper edge of the container body
35	20	Insertion opening
	21	First handle element
	22	Second handle element
	23	Fastening device
	24	Lid device
40	25	Additional handle elements
	26	Drive gear
	27	Wheel device
	28	Corner area
	29	Foot-tilt-device
45	30	Bottom element of the foot-tilt-device
	31	Opening of the foot-tilt-device
	32	Wall of the foot-tilt-device
	33	Transitional area from a transverse side to the rear side of the container body
50	34	Imaginary triangle
	35	Corner (tip) of the triangle
	35a	First force application point (compressive force)
	36	Corner (base point) of the triangle
	36a	Second force application point (traction force)
55	37	Corner (base point) of the triangle
	37a	Third force application point (traction)
	38	Leg of the triangle
	39	Leg of the triangle

- 40 Base of the triangle
- 41 Base angle
- 42 Angle of the tip
- 43 Cross-shaped base area of the container bottom
- 44 Wheel bracket
- 45 Honeycomb structure
- 46 Liquid outlet
- 47 Tilt movement

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 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), **characterised in**

that a foot-tilt-device (29) is arranged or formed beneath the container bottom (18) or above the container bottom (18) on or in the side wall (12), **that** two spaced apart handle elements (21, 22) are provided which are arranged or formed at the upper edge (19) of the container body (11), **that** the foot-tilt-device (29) and the handle elements (21, 22) are provided on one side of the container body (11), in particular in one common plane,

that the foot-tilt-device (29) forms a first force application point (35a) on which a compressive force is exerted or acts when a tilt movement (47) of the container body (11) is carried out, and **that** the handle elements (21, 22) each form a second and third force application point (36a, 37a) on which a traction force is exerted or acts respectively when a tilt movement (47) of the container body (11) is performed.

2. The large waste collection container (10) according to claim 1, **characterized 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 foot-tilt-device (29) and the handle elements (21, 22) are provided on one and the same side wall segment of the container body (11), in particular on its rear side (14), 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 2, **characterized in that** the handle elements (21, 22) are arranged or formed on the rear side (14) of the container body (11) in the region of the transition (33) of a transverse side (15; 16) to the rear side (14).
4. The large waste collection container (10) according to anyone of claims 1 to 3, **characterised in that** the handle elements (21, 22) extend to above the upper edge (19) of the container body (11).
5. The large waste collection container (10) according to anyone of claims 1 to 4, **characterized in that** each handle element (21, 22) is part of a fastening device (23) for a lid device (24), in particular of a hinge device.
6. The large waste collection container (10) according to anyone of claims 1 to 5, **characterised in that** the foot-tilt-device (29) and the handle elements (21, 22) form the corners (35, 36, 37) of an imaginary triangle (34) which is formed as an isosceles, acute-angled triangle, that the two legs (38, 39) of the imaginary triangle (34) form an imaginary line between a respective handle element (21, 22) and the foot-tilt-device (29), and that the base (40) of the imaginary triangle (34) forms an imaginary line between the handle elements (21, 22) and the foot-tilt-device (29), and that the base (40) of the imaginary triangle (34) forms an imaginary line between the handle elements (21, 22).
7. The large waste collection container (10) according to claim 6, **characterized in that** the base angles (41) of the imaginary triangle (34) have a magnitude between 55 degrees and 75 degrees, preferably between 60 degrees and 70 degrees, preferably of 67 degrees, and that the angle in the tip (42) of the imaginary triangle (34) has a magnitude between 70 degrees and 30 degrees, preferably between 60 degrees and 40 degrees, preferably of 46 degrees.
8. The large waste collection container (10) according to anyone of claims 1 to 7, **characterized in that** the foot-tilt-device (29) comprises a closed, pot-shaped form which has an opening (31) on one side, and that the foot-tilt-device (29), as seen from the opening (31), has in particular a tapering course.
9. The large waste collection container (10) according to anyone of claims 2 to 8, **characterised in that** the foot-tilt-device (29) is arranged or formed centrally on or in a side wall segment of the side wall (12) of the container body (11), in particular on or in

the rear side (14) of the container body (11).

10. The large waste collection container (10) according to anyone of claims 1 to 9, **characterised in that** the container bottom (18) comprises a cross-shaped base area (43), and that the foot-tilt-device (29) is provided in the region of the cross-shaped base area (43). 5
11. The large waste collection container (10) according to anyone of claims 1 to 10, **characterized in that** the container body (11) comprises a plurality of wheel brackets (44), in particular four wheel brackets (44), which are provided for fastening the wheel devices (27), and that the wheel brackets (44) are formed in particular in corner regions (28) between two adjacent side wall segments of the container body (11). 10 15
12. The large waste collection container (10) according to claim 11, **characterised in that** the wheel brackets (44) comprise a honeycomb structure (45). 20
13. The large waste collection container (10) according to anyone of claims 1 to 12, **characterised in that** a liquid outlet (46), in particular a closable liquid outlet, is formed in the container bottom (18). 25
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). 30 35

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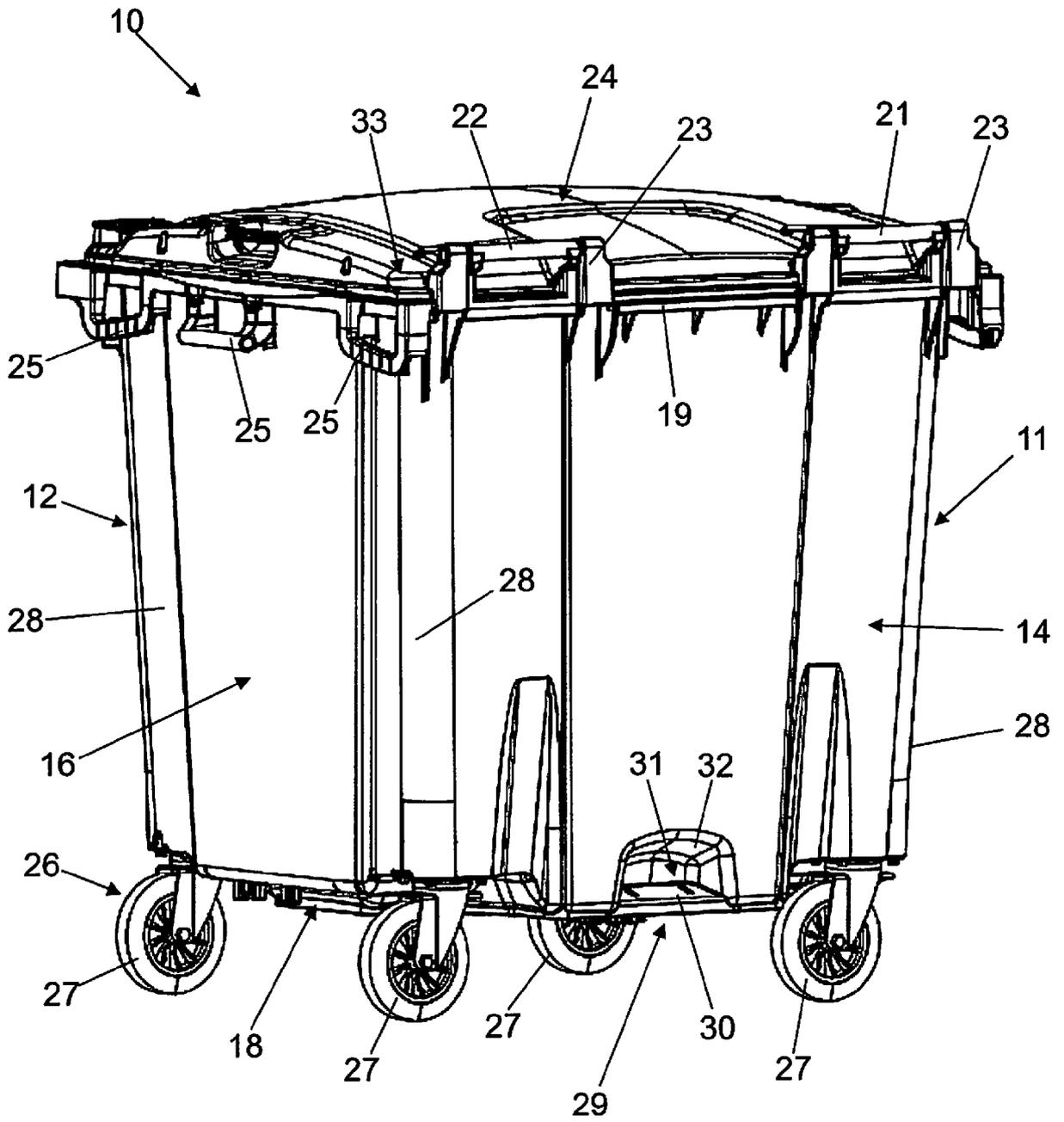


Fig. 1

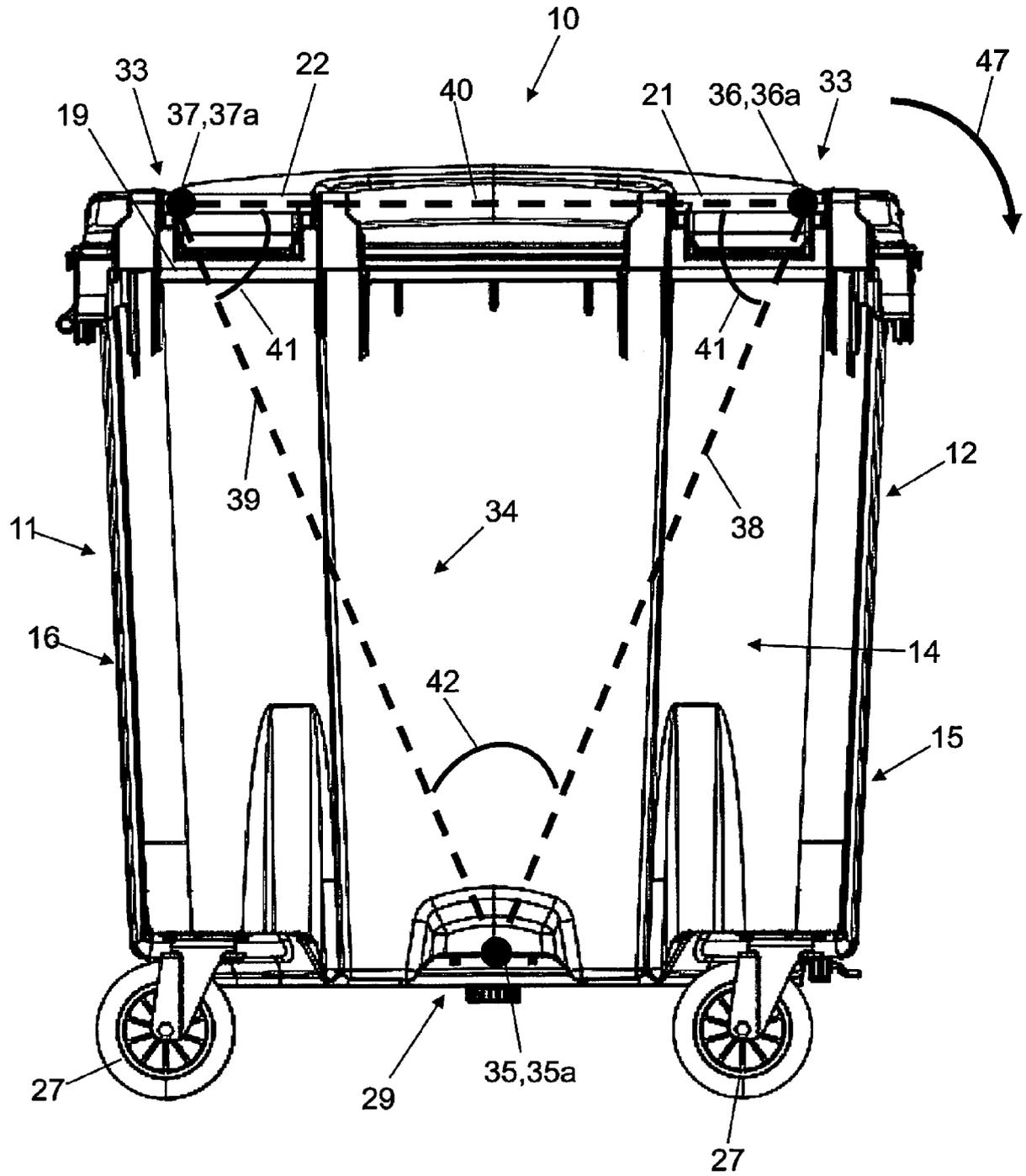


Fig. 2

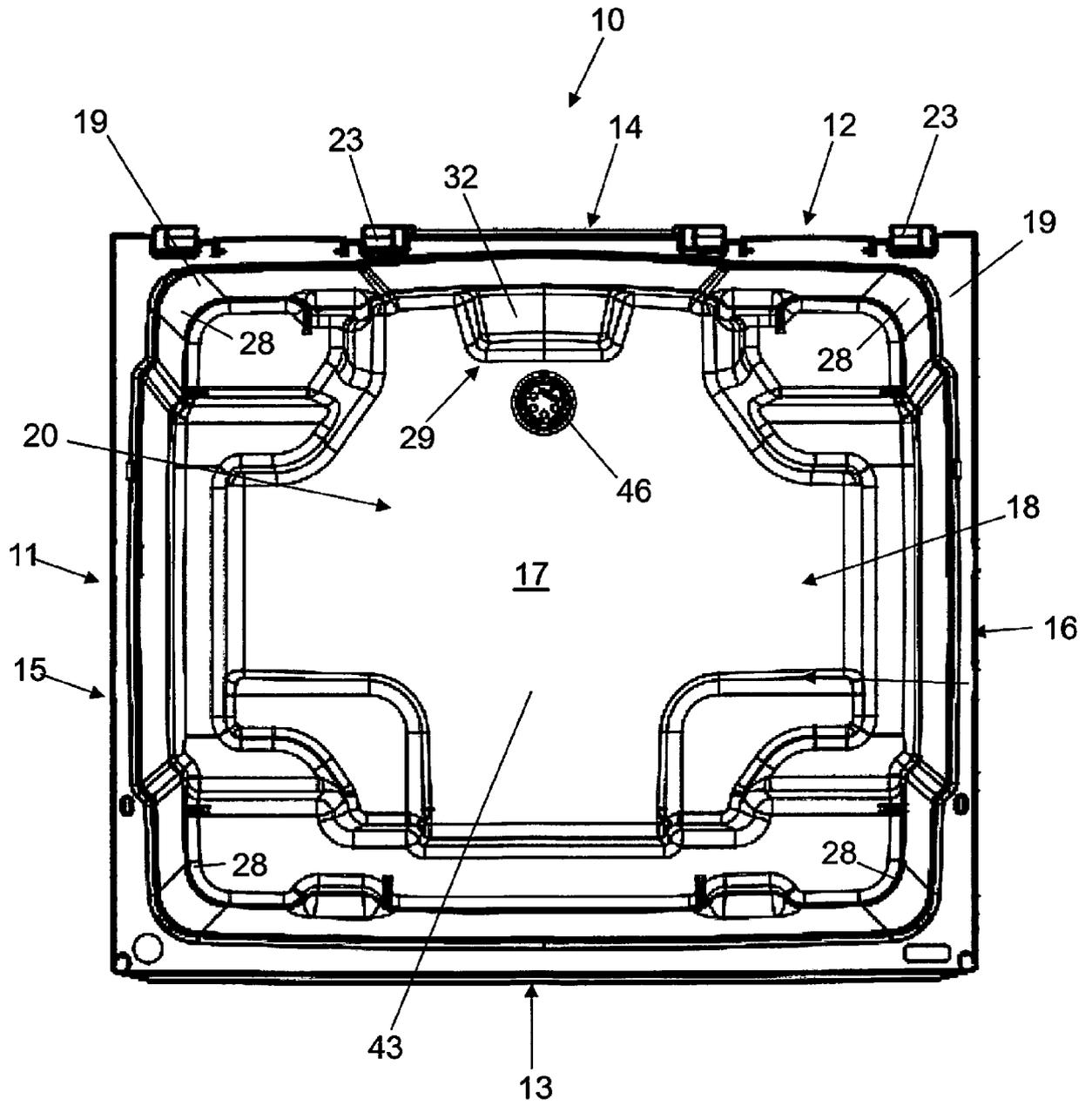


Fig. 3

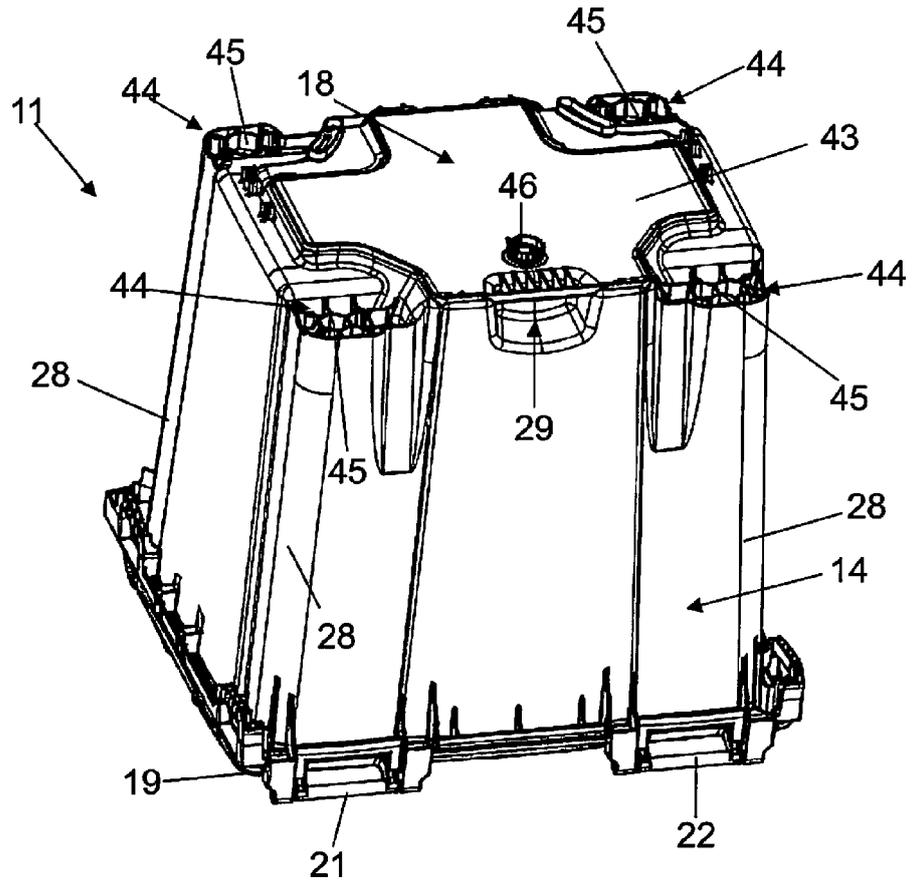


Fig. 4

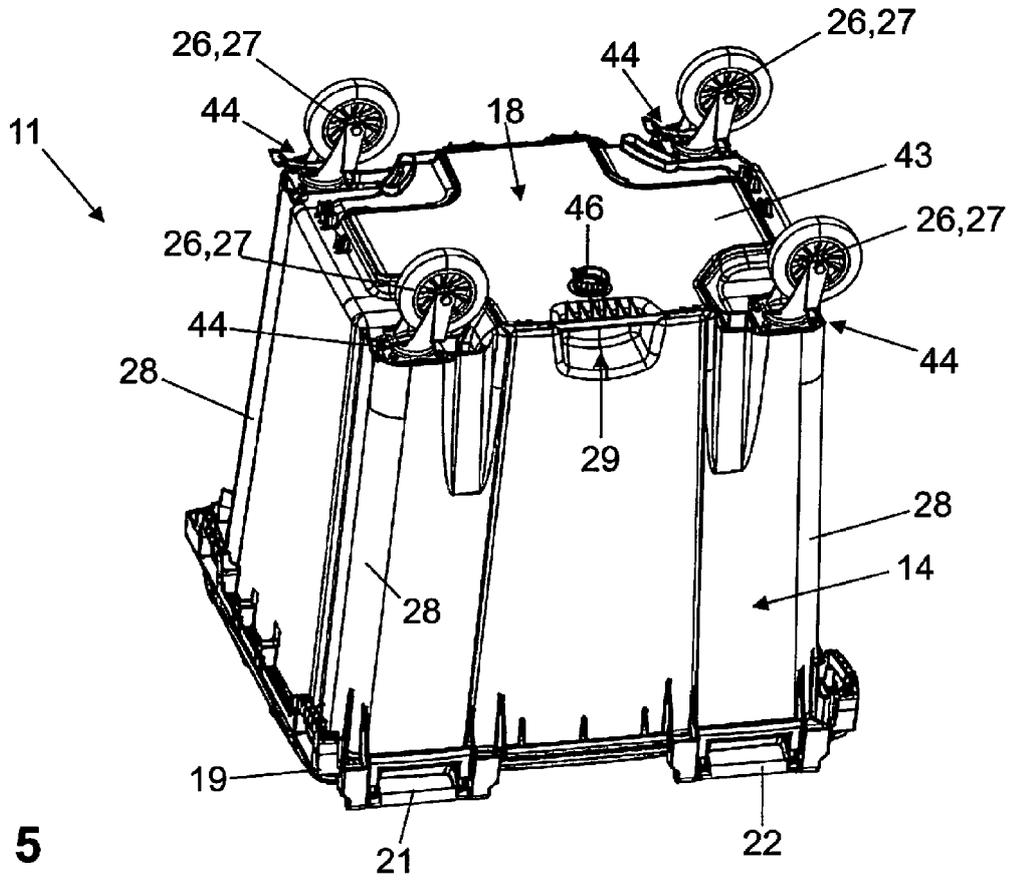


Fig. 5



EUROPEAN SEARCH REPORT

Application Number

EP 23 17 4995

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Y	* column 2, line 60 - column 3, line 25; figures *	10-12	B65F1/14
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 September 2023	Examiner Serrano Galarraga, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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