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(54) **INSERTION DEVICE FOR A HINGED LID OF A CONTAINER**

(57) The present invention relates, among other aspects, to a fastening device (30) being provided for pivotably fastening a lid device (61) to a container body (51) of a waste container (50). The fastening device (30) comprising a first fastening element (31) being attached to the container body (51); a second fastening element (32) being part of the lid device (61); wherein the first fastening element (31) and the second fastening element (32) are configured to get pivoted relative to one another via a common pivot axis, said common pivot axis being realized by a pin element (33). In order to allow stopping the pivoting movement of the lid device (61) in several defined pivoting positions, the fastening device (30) comprises an insertion device, said insertion device (10) being provided for getting inserted into the fastening device (30), in particular into the second fastening element (32), for pivotably fastening the lid device (61) to the container body (51); said insertion device (10) comprising an elongated basic body (11), which extends in a longitudinal extension direction (12); said basic body (11) comprising a first leg (13), a second leg (14) and a base element (15), which extends between a first end of first leg (13) and a first end of second leg (14); the first leg (13), second leg (14) and base element (15) delimiting a receiving space (16), said receiving space (16) being provided for receiving the pin element (33) of the fastening device (30); said insertion device (10) further comprising a protrusion (17) which extends outwards from the basic body (11), in particular from the second leg (14), said protrusion (17) being provided as a stopper device (23) for stopping the pivoting movement of the lid device (61) in a defined pivoting position when inserted in the fastening device (30).

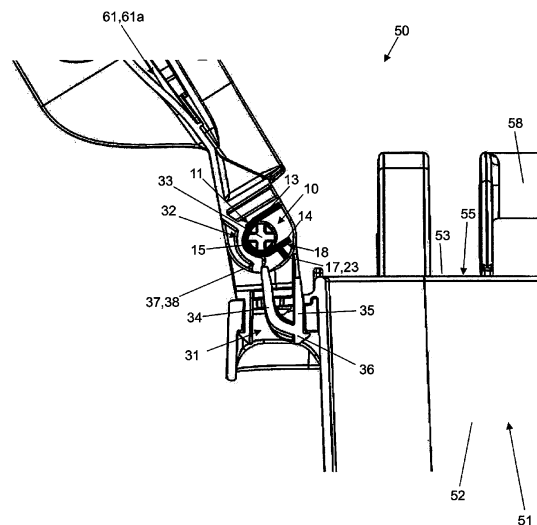


Fig. 6

Description

[0001] The present invention firstly relates to an insertion device, which is provided for getting inserted into a fastening device for pivotably fastening a lid device to a container body, in particular a container body of a waste container. Furthermore, the invention relates to such a fastening device as well as to a waste container.

[0002] Waste containers per se are well known in prior art. Usually they are used for temporarily storing waste and/or valuable substances. Such waste containers often have a rectangular or approximately rectangular container body, which consists of a container bottom and a side wall extending upwards from the container bottom, the container bottom and the side wall delimiting a receiving space of the waste container. At its upper end, which generally represents the upper edge of the container body as well, the container body comprises an insertion opening, through which waste or valuable substances are inserted into the container body. The receiving opening is covered by a lid device, said lid device being, in particular pivotably, mounted to the container body.

[0003] For some time, the development of such waste containers has been such that different fractions of waste and valuable materials can be collected separately at the same time in the receiving space delimited by the container body. In this case, the waste container may have at least one partition wall which is arranged within the container body in such a way that the receiving space is divided into two or more separate compartments which are separated from one another. However, each compartment interacts with the common insertion opening.

[0004] In the general state of the art, therefore, solutions have already become known for waste containers of this type, in which the lid device is divided into two or more lid elements. Each lid element covers a portion of the insertion opening, but the lid elements together close the entire insertion opening. In this way, when using a partition wall, each individual compartment of the receiving space can be opened and closed individually via a lid element assigned to it. Preferably, the size of the individual lid elements is adapted to the size of the individual compartments.

[0005] The arrangement of the lid elements, or the lid device in an undivided form, is realized via corresponding fastening devices, which are basically already known in the prior art and which are often designed in the form of hinge devices or act as such hinge devices.

[0006] There is a need to be able to arrange the lid device, in particular also the lid elements in the case of a divided lid device, as simply as possible on the container body by means of suitable fastening devices. One such known solution is described in EP 3 722 229 A2, from which the present invention departs. Therein, a fastening device is disclosed, which is provided for pivotably fastening a lid device to a container body of a waste container. The fastening device comprises a first fastening

element, which is designed in such a way that it is capable to be attached to the container body. In addition, the fastening device comprises a second fastening element, which is part of the lid device. The first fastening element and the second fastening element are configured to get pivoted relative to one another via a common pivot axis, said common pivot axis being realized by a pin element. The first fastening device comprises a stopper device, which is provided in such way that it is capable to stop and fix the pivot movement of the first and second fastening elements in relation to one another in a defined pivoting position, said first stopper device in particular comprising a spring element. An embodiment according to said known solution is depicted in Figures 1 to 4 and is described in more detail further below.

[0007] With this known solution it is possible to position the lid device or the lid elements, respectively in three different pivoting positions, which is fully closed, fully open and an intermediate pivoting position at an angle greater than 90 degrees.

[0008] However, due to recent developments, it becomes more and more important to generate more such intermediate pivoting positions, or to create the possibility of providing different pivoting positions.

[0009] Therefore, it is the object of the present invention to provide a solution, which is preferably configured as a supplement to already existing fastening solutions, for example as described in EP 3 722 229 A2, or which comprises such a supplement, without having to replace individual components of the waste container, such as the fastening devices, and which allows that the pivot movement of the first and second fastening elements in relation to one another can get stopped and fixed in at least one intermediate pivoting position.

[0010] In accordance with the present invention, this object is solved according to a first aspect of the invention by the insertion device with the features according to independent claim 1, according to a second aspect of the present invention by the fastening device with the features according to independent claim 9, and according to a third aspect of the present invention by the waste container with the features according to independent claim 15.

[0011] Additional features and details of the present invention become apparent from the dependent claims, from the description and from the drawings. Therein, features and details which are described in connection with one of the aspects according to the invention apply with respect to their disclosure in their entirety also to the other aspects according to the invention, so that statements made with respect to one aspect of the invention also apply to their full extent to the other aspects of the invention, and vice versa.

[0012] According to the first aspect, the invention is directed to an insertion device which is capable to get, in particular detachably, inserted into a fastening device, which in turn is used to pivotably fasten a lid device to a container body, in particular to a container body of a

waste container. Therefore, the insertion device can get used as a supplementary component in connection with the fastening device, and therefore to fastening devices which already do exist. The insertion device is structurally simple and also inexpensive. According to the second aspect, the invention is directed to a such a fastening device, which comprises such an insertion device. According to the third aspect, the invention is directed to a waste container incorporating such a fastening device and therefore, such an insertion device as well.

[0013] All different aspects of the present invention are subject to the same common basic idea that they make use of a specific insertion device, that can get, in particular detachably, inserted into a fastening device, in order to provide at least one additional intermediate pivoting position for the lid device, in which the pivot movement of the lid device can get stopped and fixed.

[0014] According to the present invention the insertion device as well as the fastening device are used in connection with a container. The present invention is neither limited to any specific kind of containers, nor to any specific fields of application for such containers. The only requirement is that the container comprises a lid device, and that the lid device is pivotably mounted to the container body via at least one fastening device. According to a preferred embodiment, the different aspects of the invention are realized in connection with a waste container for at least temporarily storing waste and/or valuable substances.

[0015] According to the first aspect, the invention is directed to an insertion device, which comprises the features of independent claim 1. The insertion device is provided for getting inserted into a fastening device, which in turn is provided for pivotably fastening a lid device to a container body, in particular to a container body of a waste container. The insertion device is a component, that can be provided as a supplement to already existing solutions and that can get easily incorporated into such existing solutions, fastening devices for example.

[0016] According to the present invention, the insertion device comprises a basic body. According to a preferred embodiment, the basic body is provided as an elongated basic body, which extends in a longitudinal extension direction. In particular, the elongated basic body is defined by the relation that it has a length which is greater than its width and/or height.

[0017] The basic body is a holding element for a protrusion, which acts as a stopper element and which is described in more detail further below. The basic body delimits a receiving space. In use with the fastening device, as will be described in detail further below, it is the function of the receiving space to take up and to encompass the pin element of the fastening device. The basic body comprises a wall element, which at least partially encompasses the receiving space. According to one embodiment the wall element, and therefore the basic body, is fully closed. For example, in this case the basic body is provided as a hollow member, a hollow tubular, cylindrical

of the like member, for example a hollow sleeve. In combination with a fastening device, a pin element can get pushed through said basic body. According to a different embodiment, the basic body is provided as a partially open member, which means that the wall element of the basic body only partially encompasses the receiving opening. In this case, the basic body is preferably configured as some kind of an open sleeve or open profile element that gets put over the pin element.

[0018] According to an embodiment, the basic body comprises a first leg, a second leg and a base element, which extends between a first end of the first leg and a first end of the second leg. Both legs can extend in an angle of inclination to the longitudinal extension direction, in particular perpendicular to the longitudinal extension direction. The first leg, second leg and base element delimit a receiving space.

[0019] According to an embodiment, the basic body is U-shaped. Alternatively, or in addition the base element of the basic body is linear or curved. In particular the shape of the base element is adapted to the shape of the pin element. Alternatively, or in addition the first leg of the basic body extends in a straight-forward direction, or in a curved direction, or in an inclined direction, compared to the longitudinal extension direction of the basic body, in particular perpendicular to the longitudinal extension direction of the basic body. Alternatively, or in addition, the second leg of the basic body extends in a straight-forward direction or in a curved direction, or in an inclined direction, compared to the longitudinal extension direction of the basic body, in particular perpendicular to the longitudinal extension direction of the basic body.

[0020] According to an embodiment, the first leg of the basic body is longer than the second leg of the basic body.

[0021] According to the invention, the insertion device further comprises at least one protrusion which extends outwards from the basic body, in particular from the second leg. The protrusion serves a specific purpose. It is provided as a stopper element for stopping the pivoting movement of the lid device in a defined pivoting position when the insertion device is inserted in the fastening device. This will be described in more detail in connection with the second and third aspects of the invention further below. Therefore, at this point, full reference is made to the description further below with regard to the configuration and function of the protrusion as well. According to one embodiment the insertion device comprises only one protrusion. According to another embodiment, the insertion device comprises two or more protrusions which are provided in a distance to each other on the basic body, the second leg for example.

[0022] According to an embodiment, the protrusion is designed as a planar element. In particular a planar element is an element that has two dimensions, namely the length and the width, that are much greater than the third dimension, the height in the present case. According to an embodiment, the protrusion is configured as a plate, as a rectangle, as a triangle, or the like. In any case the

protrusion is not limited to specific configurations.

[0023] According to an embodiment, the protrusion extends in the longitudinal extension direction of the basic body.

[0024] According to an embodiment, the protrusion extends outwards from the second leg, wherein the second leg comprises a second end opposite to the first end and wherein the protrusion extends outwards from the second leg in a defined distance from the second end. The distance of the protrusion from the second end of the second leg defines the pivoting position and in particular the opening angle at this position, where the lid element gets stopped or fixed. According to preferred embodiments, the distance is preferably less than 40%, preferably less than 30%, preferably less than 20%, preferably less than 10% of the length of the second leg. When the insertion device comprises more than one protrusion, more than one different pivoting positions and in particular opening angles can get realized.

[0025] According to this first aspect of the invention, in addition to the actual pivoting movement of the lid device, the insertion device is intended for the lid device to be held and fixed in a specific position in relation to the container body.

[0026] For this purpose, the insertion device provides at least one stopper element, which is realized by the at least one protrusion, that is provided in such a way that it is able to stop and fix the pivoting movement of the first and second fastening elements in relation to one another in at least one defined pivoting position. A stopper element is basically any form of device that makes it possible to at least temporarily prevent, that is to say stop, the pivoting process of the second fastening element in relation to the first fastening element. If the stopper element is activated, which will be explained in more detail further below, it is able to fix the lid device, which is preferably connected to the second fastening element, in a fixed, defined pivoting position in relation to the container body, which is preferably connected to the first fastening element. This means that the pivoting movement is stopped or prevented in this defined pivoting position. In the case of the waste container described above, this means in particular that the protrusion of the insertion device serves to stop or prevent the pivoting movement of the lid device in at least one defined - intermediate - pivoting position, which lies between the fully closed and fully open position of the lid device, and to ensure that the lid device is held in this defined pivot position. Depending on the distance of the protrusion from the second end of the second leg, this is preferably the case at an opening angle of less than 90 degrees, or in principle at an opening angle at which the lid device automatically falls shut due to gravity forces, once the opening forces are released. For example, such an opening angle is advantageous when a waste container, preferably automatically, gets discharged into a waste collection vehicle.

[0027] According to an embodiment the basic body comprises a first end and a second end. At the first end

and/or at the second end, a fixing element protrudes outwards from the basic body, in particular from the second leg. This fixing element is provided for fastening and securing the insertion device in, on or at the fastening device, such that the insertion device can extend the functionality of the fastening device. Furthermore, the fixing element is provided to prevent the insertion device from individually rotating, when it is attached to the fastening device. Therefore, it is preferably provided that the insertion device interacts with the fastening device. This will be described in more detail further below.

[0028] The present invention is not limited to specific configurations of this fixing element. For example, the fixing element is a planar element, particular said planar element being defined as mentioned further above. For example, the fixing element can be configured as some kind of a wing element. Alternatively, or in addition, the fixing element extends perpendicular to the longitudinal extension direction of the basic body.

[0029] According to an embodiment the fixing element comprises a latching device said latching device being provided to interlock the insertion device with the fastening device. The latching device preferably comprises a latching surface which interacts with a component of the fastening device, for example by nestling against a surface of the fastening device or by resting against such a surface. Furthermore, the fixing element preferably comprises a latch nose which interacts, for example creates a clip-connection, with a component of the fastening device.

[0030] According to an embodiment, the first end of the basic body defines a first end face thereof, and the second end of the basic body defines a second end face thereof. In this case, at least a portion of the fixing element, in particular of the latching device and/or of the latch nose, may partially protrude over the first and/or second end face.

[0031] According to the second aspect, the invention is directed to a fastening device, which comprises the features of independent claim 9. This fastening device is provided for pivotably fastening a lid device to a container body, in particular to a container body of a waste container.

[0032] The fastening device comprises a first fastening element which is designed in such a way that it is capable to be attached to the container body, or that it is part of the container body. In the first alternative, the first fastening element is an individual component, that gets or is, in particular detachably, connected to the container body. In the second alternative, the first fastening element is an integral part of the container body.

[0033] In addition, the fastening device comprises a second fastening element which is designed in such a way that it is capable to be attached to the lid device or that it is part of the lid device. In the first alternative, the second fastening element is an individual component, that gets or is, in particular detachably, connected to the lid device. In the second alternative, the second fastening

element is an integral part of the lid device.

[0034] Preferably the fastening device is provided as a hinge device, the first fastening element being a first component of said hinge device, and the second fastening element being a second component of said hinge device.

[0035] The first fastening element and the second fastening element are configured to get pivoted relative to one another via a common pivot axis. According to the invention this common pivot axis is provided by a pin element. In this case, the fastening device comprises a pin element, via which the first and second fastening element are connected to one another. To fix the pin element, in particular against unintentional removal, against unintentional slipping out or to prevent vandalism, the pin element is preferably designed in a special way, namely such that a locking device is arranged or designed on the pin element. The pin element preferably has a pin shaft which is delimited at its first end by a pin head and at its second end by a pin tip.

[0036] According to the invention, the fastening device comprises an insertion device, in particular an insertion device according to the first aspect of the invention. Therefore, the disclosure of the first aspect of the invention with regard to the insertion device, as well as the general description of the invention, as well as the description of the waste container according to the third aspect of the invention, apply with respect to the disclosure in entirety also to the fastening device according to the second according to the invention, so that all of the statements made with respect to the first aspect, third aspect and with respect to the general description of the invention also apply to their full extend to the second aspect of the invention, and vice versa.

[0037] The insertion device is provided for getting inserted into the fastening device. In particular the insertion device is an individual component, that gets inserted into the fastening device such that it becomes part of said fastening device. Thus, the insertion device is preferably provided as a supplement to the fastening device that can get easily added to the fastening device and which is therefore capable of expanding the functionality of the fastening device.

[0038] According to a preferred embodiment the insertion device is provided for getting connected to or getting inserted into the second fastening element, for pivotably fastening the lid device to the container body, in particular to the container body of a waste container. In such a case, the insertion device is preferably mounted between the second fastening element and the pin element.

[0039] According to the invention and in accordance with the first aspect of the invention, the insertion device comprises a basic body, which delimits a receiving space, said receiving space being provided for receiving the pin element of the fastening device. When the insertion device is connected to the fastening device, in particular to the second fastening element thereof, the pin element comes to rest inside the receiving space of the

insertion device. Thus, the insertion device is arranged between the pin element and the fastening device, in particular the second fastening element thereof, such that the insertion device gets rotated in the same way as the fastening device, in particular as the second fastening element. According to a preferred embodiment, the shape of the receiving space of the insertion device, in particular the shape of the base element thereof, corresponds to the shape of the pin element.

[0040] The insertion device further comprises at least one protrusion which extends outwards from the basic body, said protrusion being provided as a stopper device for stopping the pivoting movement of the lid device in a defined pivoting position when the insertion device is inserted in the fastening device.

[0041] By means of the fastening device, the lid device is pivotably connected to the container body. Since the first fastening element and the second fastening element are configured to get pivoted relative to one another via their common pivot axis, which is preferably provided as that pin element, the lid device can get pivoted into different positions. In one position, the lid device is completely closed. In a second position, the lid device is completely open. In addition, it is now possible to provide at least one additional - intermediate - position, in which the pivot movement of the lid device gets stopped and fixed. In one embodiment, this - intermediate - pivot position is provided by the insertion device. In this case, a number of-intermediate- positions is provided, which correspond to the number of protrusions extending outwards from the basic body of the insertion device. In this case the number of-intermediate- positions can get provided by the insertion device only. According to a preferred embodiment the insertion device comprises one such protrusion such that the insertion device is capable of providing one - intermediate- position.

[0042] According to a different embodiment, the fastening device itself comprises at least one stopper device that is provided in such a way that it is capable to stop and fix the pivoting movement of the first and second fastening elements in relation to one another in at least one defined- intermediate- pivoting position. In this case the insertion device is preferably provided to create at least one additional- intermediate- pivoting position. Again, a stopper device is basically any form of device that makes it possible to at least temporarily prevent, that is to say stop, the pivoting process of the second fastening element in relation to the first fastening element. If the stopper device is activated, it is capable to fix the lid device, which is connected to the second fastening element, in a fixed, defined pivoting position in relation to the container body, which is connected to the first fastening element. This means that the pivoting movement is stopped or prevented in this defined pivoting position.

[0043] In the case of a waste collection container described above, this means in particular that the stopper device serves to stop or prevent the pivoting movement of the lid device in at least one defined - intermediate-

pivoting position, which lies between the fully closed position and the fully open position of the lid device, and to ensure that the lid device is held and fixed in this defined pivot position.

[0044] According to an embodiment, the fastening device comprises a first stopper device, which in particular is provided with the first fastening element, and which is provided in such way that it is capable to stop and fix the pivot movement of the first and second fastening elements in relation to one another in a defined pivoting position. In particular, the first stopper device comprises a spring element or is designed as a spring element. According to one alternative, the first stopper device comprises a spring element which is arranged on the first fastening element. According to a different alternative, the first stopper device is embodied as a spring element, which is embodied on the first fastening element. A spring element is, in particular, such a component which, during use, can be elastically deformed or deformed when subjected to a force. In the process, restoring forces arise in the spring element. If the applied force is removed, the spring element moves back to its initial position due to the restoring forces. In a preferred embodiment, the spring element is designed in the form of a bending spring.

[0045] According to an embodiment, the first fastening element comprises a locking device which is capable of fixedly connecting at least the first stopper device to the container body. For this purpose, the locking device preferably comprises a latch tab incorporating a latch nose, or the locking device is designed as a latching tab incorporating a latch nose, said latching tab providing a spring function. At one end, the latching tab is connected to the first stopper device, for example at the base thereof. The second, preferably free end of the latching tab preferably has an outwardly projecting latch nose. When inserted into a corresponding receptacle, the latching tab slides into the receptacle and is compressed in the process. Because of the restoring forces, as soon as the latching tab has passed the receptacle, the latching tab snaps back so that it can no longer be easily pulled out.

[0046] According to an embodiment, the at least one protrusion of the insertion device is provided as a second stopper device for stopping the pivoting movement of the lid device in at least one first - intermediate - pivoting position when inserted in the fastening device. The second stopper device acts in relation to the first stopper device.

[0047] According to an embodiment, the fastening device comprises at least one third stopper device, which in particular is provided with the second fastening element, said third stopper device being provided for stopping the pivoting movement of the lid device in at least one second - intermediate - pivoting position. The third stopper device preferably comprises a stop element that acts in relation to the first stopper device.

[0048] If the first stopper device, for example the spring element, comes into contact with the second stopper de-

vice and/or with the third stopper device, the further movement of the second and/or third stopper device, preferably in a defined - intermediate - pivot position described above, is initially prevented, i.e. fixed. Nevertheless, there is the possibility, because of the elasticity of the spring element, that a movement beyond this stop point is possible. With regard to a waste container and the option for opening the lid device beyond the defined - intermediate - pivoting position, this means that the opening process of the lid device is initially prevented when the first stopper device comes into contact with the respective second and/or third stopper device. However, due to the elasticity of the spring element, the resistance occurring at the point of impact can be overcome by applying force, since the spring element can be bent further due to its elasticity, to the extent that it can slide past the stopper device in the bent state.

[0049] Depending on the configuration, the second stopper device can either be arranged at the second fastening element or formed on/in it. In a preferred embodiment, the second stopper device is a fixed, in particular an integral part of the second fastening element.

[0050] According to a preferred embodiment, the fastening device comprises a first stopper device assigned to the first fastening element, at least one third stopper device assigned to the second fastening element, as well as at least one second stopper device assigned to the insertion device. The first stopper element interacts with the second stopper device as well as with the third stopper device. The insertion device in turn is assigned to the second fastening element. The term "interaction" means in particular that the stopper devices work together or cooperate in the defined - intermediate - pivoting position in such a way that they jointly perform the desired function, namely fixing the two fastening elements in this position in relation to one another. For example, the different stopper devices interact with each other in such a way, that, if they come into contact, the second stopper device and/or the third stopper device abut(s) against the first stopper device.

[0051] According to a preferred embodiment, at least one first - intermediate - pivoting position is realized by an effective connection of the first stopper device of the first fastening element of the fastening device with the second stopper device of the insertion device. This is preferably the case at an opening angle of less than 90 degrees, or in principle at an opening angle at which the lid device automatically falls shut due to gravity forces, when the opening forces are released. This is advantageous when the waste container, preferably automatically, gets discharged into a waste collection vehicle. At least one second - intermediate - pivoting position is realized by an effective connection of the first stopper element of the first fastening element of the fastening device with the third stopper device of the second fastening element of the fastening device. This is preferably the case at an opening angle of more than 90 degrees, at an opening angle of more than 100 degrees, for example round about

125 degrees, for example, or in principle at an opening angle at which the lid device remains open due to gravity forces, which makes it easier to fill and close the waste container, since the lid device does not fall shut unintentionally. Thus, the lid device can take up at least four pivoting positions, a completely closed position, a completely open position and at least two - intermediate - positions therebetween as described above.

[0052] According to the third aspect, the invention is directed to a waste container, which comprises the features of independent claim 15. The waste container is provided for at least temporarily storing waste and/or valuable substances. The waste container generally comprises a container body and a lid device for closing an insertion opening being provided in the container body. The lid device is pivotably mounted to the container body via at least one fastening device. According to the invention the fastening device is configured according to the second aspect of the invention. With this regard, the waste container preferably makes use of an insertion device according to the first aspect of the invention. Therefore, the disclosure of the first aspect of the invention as well as the disclosure of the second aspect of the invention as well as the general description of the invention apply with respect to the disclosure in entirety also to the waste container according to the third aspect of the invention, so that all of the statements made with respect to the first and second aspect and with respect to the general description of the invention also apply to their full extent to the waste container according to the third aspect of the invention, and vice versa.

[0053] According to an embodiment, the waste container comprises a container body. Furthermore, the waste container comprises a lid device for covering an insertion opening being provided in the container body. The lid device is pivotably mounted to the container body. Preferably, the lid device is pivotably mounted to the container body via at least one hinge device, said hinge device comprising or being a fastening device with an insertion device according to the first and second aspect of the invention.

[0054] In the following, preferred embodiments of such a waste container, wherein an insertion device according to the first aspect of the invention and/or a fastening device according to the second aspect of the invention can get implemented, are described in detail.

[0055] Such a waste container may have a holding capacity of up to 1100 litres, for example between 200 litres and 700 litres, in particular a holding capacity of 240 litres or of 370 litres or of 660 litres. Nevertheless, the present invention is also applicable in connection with bigger waste containers having a holding capacity of up to 1700 litres. In any case the present invention is not limited to waste containers having a specific holding capacity.

[0056] In particular the waste container is a movable waste container, which means that the waste container is equipped with a number of wheels, two, three or four wheels for example. In particular the wheels are attached

to the waste container, via at least one axle, at its lower end, in the area of the container bottom for example.

[0057] In order to ensure that the waste container can get tilted easily, in particular when it is full, it is preferably also provided that a foot tilting device is arranged or formed on or in the side wall of the container body, for example on or in the rear wall, above the axis of a running gear, which comprises the wheels. This is preferably a kind of step that is arranged or designed as a tipping aid in the axle area on the container body.

[0058] In its basic configuration the waste container comprises a container body. The container body comprises a side wall which sideways borders a receiving space inside the container body. The present invention is not limited to specific shapes of the side wall and therefore, of the container body. For example, the side wall can have a round shape, an elliptical shape, an oval shape, or the like. According to a different embodiment the side wall can have a polygonal shape. According to a preferred embodiment the side wall comprises a rectangular shape or a shape approaching at least a rectangle, such that the container body shows a respective shape as well.

[0059] Downwardly closed is the container body by means of a container bottom, which is the bottom of the container body and from which the side wall protrudes upwardly. Preferably the height of the sidewall is greater than, in particular a multiple of the width and of the depths of the bottom of the container body. At the upper end of the side wall, which is, in comparison to the container bottom, the opposite end of the side wall, and which represents the upper edge of the container body as well, the container body comprises an insertion opening for the waste and/or for the valuable substances. According to a preferred embodiment, the insertion opening is bordered by the sidewall of the container body, such that the insertion opening spans the entire cross section of the container body at its upper end or edge.

[0060] At its upper end, the container body preferably comprises at least one handle element, which is attached to the container body and which preferably protrudes outwardly therefrom. By means of such a handle element the user can move the waste container.

[0061] For covering the insertion opening, the waste container is provided with a lid device, said lid device being mounted to the waste container, to the container body for example. The lid device is pivotally mounted to the container body at the upper edge of the container body. Preferably, the lid device comprises a handle element, a handle strip for example, by means of which the user can open and close the lid device. The lid device is preferably divided and consists of several lid elements, for example two or more lid elements. The lid device or each lid element is arranged on the container body via at least one fastening device, preferably via two fastening devices. The lid elements are preferably articulated laterally on the container body. If the lid device is undivided, it is also arranged on the container body via at least one

fastening device, preferably via two fastening devices. The arrangement can be realized either on the side or on a rear wall. The lid device can be locked or can be locked using a suitable lock, for example a gravity lock. A single lock for the entire lid device, or a separate lock for each lid element, can be implemented here.

[0062] In a further embodiment, at least individual lid elements and/or individual fastening devices are designed with different colors. The different coloring allows the user of the waste container, which is closed by such a lid device, to be signaled which type of waste and/or valuable materials are to be thrown into the receiving space of the waste container assigned to the corresponding lid element. In another embodiment, the lid elements and/or the fastening devices are designed in the same color. To achieve a different coloring as described above, in such a case preference is given to color markings, in particular of different colors, for example in the form of clips, tags, labels, badges or the like arranged on at least one lid element or a component of the lid element. The number and color of the color markings used can vary depending on the number of receiving compartments provided in the waste container for receiving, in particular different, waste fractions.

[0063] The waste container comprises at least one fastening device according to the invention, by means of which the lid device of the waste container is arranged or articulated in a pivoting manner on the container body. In order to avoid repetition, reference is therefore made to the full content of the statements on the first and second aspects of the invention as well as to the general description of the invention, in particular with regard to the design, functioning and effect of the fastening device.

[0064] In a preferred embodiment, the first fastening element of the fastening device is arranged or formed on the container body, while the second fastening element of the fastening device is arranged or formed on the lid device. Or else, in another preferred embodiment, the second fastening element of the fastening device is arranged or formed on the container body, while the first fastening element of the fastening device is arranged or formed on the lid device.

[0065] The side wall and the bottom of the container body limit an inner space of the container body, said inner space being the receiving space for storing the waste and/or the valuable substances.

[0066] For the purpose of storing different fractions of waste and/or of valuable substances at the same time, it is preferably provided that the inner space of the container body is divided into a number of different compartments, for example by use of one or more divider plates, by use of additional insertion containers or by use of a combination thereof. If one or more insertion containers are placed inside the container body, which functions as the main container body of the waste container in this situation, the one or more additional insertion containers are preferably mounted to some kind of a frame. According to a preferred embodiment such a multi compartment

waste container is provided for storing two or more different fractions of waste and/or valuable substances at the same time.

[0067] Preferably the waste container and its components is/are manufactured from a plastic material, a weatherproofed, a resilient plastic material for example, from metal or from a combination of different such materials.

[0068] For a better understanding of the present invention, preferred embodiments of the present invention will now be described by way of an example with reference to the accompanying drawings, in which

Figures 1 to 4 depict several views of a waste container incorporating a fastening device which is/are known in the prior art;
 Figure 5 depicts a waste container according to the present invention, which incorporates a fastening device as well as an insertion device according to the present invention;
 Figure 6 schematically depicts the basic configuration and functionality of the fastening device according to the present invention, which incorporates an insertion device according to the present invention;
 Figures 7 depict several views of an insertion device according to the present invention; and
 Figures 8 to 11 depict several views, how the fastening device and the insertion device according to the invention are used with a waste container.

[0069] All of the Figures show embodiments in connection with a waste container 50. The Figures show various embodiments relating to a waste container 50 in the form of a mobile, two-wheeled waste container with a capacity of up to 1100l, preferably with a capacity of up to 204l, or up to 380l, or up to 660l. Identical components in the various drawings are each provided with identical reference numbers.

[0070] Figures 1 to 4 show embodiments of a waste container 50 that is known from the prior art and from which the present invention departs.

[0071] According to Figure 1, the waste container 50 initially consists of the container body 51. The container body 51 has a side wall 52 which delimits the container body 51 laterally. The side wall 52 has a rectangular shape. The container body 51 is closed off at the bottom by the container bottom 54, from which the side wall 52 protrudes and extend upwards. The side wall 51 and the container bottom 54 delimit the receiving space 56 of the container body 51, in which waste and/or valuable materials can be filled. At the upper edge 53 of side wall 52, the container body 51 has an insertion opening 55 for

waste and/or or valuable materials, the insertion opening 55 preferably being delimited by the side wall 52 of the container body 51 and extending over the entire cross-sectional area of the container body 51 in the region of its upper edge 53. A handle 58 is provided on the container body 51 in the area of the upper edge 53, by means of which the waste container 50 can get handled. In the area of the container bottom 54 the waste container 50 comprises two wheels 59 which are each arranged on the container body 51 so as to be rotatable via an axle 60.

[0072] For closing the insertion opening 55, the waste container comprises a lid device 61, which, in the present embodiment, is provided as a divided lid device 61 comprising a first lid element 61a and a second lid element 61b. Each lid element 61a, 61b is assigned to a compartment inside the receiving space 56, the compartments being generated by making use of a divider plate 57.

[0073] Each lid element 61a, 61b, or in case of an undivided lid device 61, is pivotably connected to the container body 51 via two fastening devices 30. Each fastening device 30 comprises a first fastening element 31, by means of which the fastening device 30 is, preferably detachably, connected to the container body 51. Each fastening device 30 further comprises a second fastening element 32, which is part of the lid elements 61a, 61b respectively. The first fastening element 31 and the second fastening element 32 are configured to get pivoted relative to one another via a common pivot axis, said common pivot axis being realized by a pin element 33.

[0074] With regard to Figure 2, the fastening device 30 will now be described in more detail. The fastening device 30 has a first fastening element 31 and a second fastening element 32. The fastening device 30 is arranged on the upper edge 53 of the container body 51 via the first fastening element 31, while the fastening device 30 is arranged or formed on the lid device 61 or the lid elements 61a, 61b via the second fastening element 32.

[0075] The first fastening element 31 is connected to the container body, 51, into a suitable receptacle at the upper edge 53 of the container body 51, for example. For that reason, the first fastening element 31 comprises a latching tab 35 having a latch nose 36 at its free end. The latching tab 35 is inserted into the corresponding receptacle in the upper edge 53 of the container body 51 and is thereby pressed together. Once the latch nose 36 has passed the receptacle, the latch tab 35 snaps back and grips the receptacle from behind.

[0076] Various functions can be implemented by means of fastening device 30. For example, it is possible that the pivoting movement of the lid device 61, 61a, 61b in relation to the container body 51 of the waste container 50 is at least temporarily prevented and fixed in a certain position, which is referred to as a defined - intermediate - pivoting position. For this purpose, the first fastening element 31 comprises a first stopper device 34, which is connected to the latching tab 35. The first stopper device 34, which is provided as a spring element, serves to stop or prevent the pivoting movement of the lid device 61,

61a, 61b in a defined - intermediate - pivot position, which lies between a fully closed position and a fully open position of the lid device 61, 61a, 61b, and to ensure that the lid device 61, 61a, 61b is held in this defined - intermediate - pivot position.

[0077] For this purpose, the fastening device 30 further comprises second fastening element 32 which is assigned to the lid device 61, 61a, 61b. The second fastening element 32 comprises a third stopper device 37 which comprises a stop element 38. The third stopper device 37, in particular stop element 38, is provided to interact with the first stopper device 34. For example, the third stopper device 37 is configured in such a way that it is capable of getting in contact with the first stopper device 34, in particular to abut against first stopper device 34.

[0078] As described above, by means of the fastening device 30, it is possible to bring the lid device 61, 61a, 61a into different pivot positions and to hold the lid device 61, 61a, 61b in these pivot positions. This will now be explained with regard to Figures 3 and 4. By making use of a fastening device 30 as shown in Figures 1 and 2, which per se is known in the prior art, it is first of all possible to bring the lid device 61, 61a, 61b into a fully closed position. In this position the lid device 61, 61a, 61b fully covers the insertion opening 55 of container body 51.

[0079] As shown in Figure 3 it is possible to bring the lid device 61, 61a, 61b into a second pivoting position 64, which is defined as an - intermediate - pivot position. The defined - intermediate - pivoting position 64 is preferably at an opening angle 64a of greater than 90 degrees, or basically at an installation angle at which the lid device 61, 61a, 61b remains open due to the gravity forces, which simplifies filling and closing of the container body 51, since the lid device 61, 61a, 61b may not fall shut unintendedly. Furthermore, it is possible to bring the lid device 61, 61a, 61b into a fully open position 65, which is shown in Figure 4.

[0080] Figure 5 depicts a waste container 50 which is similar in construction to the waste container 50 shown in Figure 1. Therefore, with regard to the basic construction of this waste container 50, and in order to avoid repetitions, full reference is made to the description of waste container 50 depicted in Figure 1.

[0081] The waste container 50 shown in Figure 5 represents an embodiment according to the present invention. In comparison to the waste container 50 shown in Figure 1, the waste container 50 according to Figure 5 comprises an additional component, which is an insertion device 10. Each fastening device 30, which comprises a first fastening element 31, a second fastening element 32 and a pin element 33, interacts with such an insertion device 10.

[0082] This will generally be explained with regard to Figure 6 first. Again, the fastening device 30 has a first fastening element 31 and a second fastening element 32. The fastening device 30 is arranged on the upper edge 53 of the container body 51 via the first fastening element 31, while the fastening device 30 is arranged or

formed on the lid device 61 or the lid elements 61a, 61b via the second fastening element 32. The basic construction of the fastening device 30 according to Figure 6 is similar to the basic construction of the fastening device 30 depicted in Figure 2. Therefore, at this point, full reference is also made to the description of waste container 50 depicted in Figure 1.

[0083] Similar to the embodiment shown in Figure 2, the first fastening element 31 is connected to the container body, 51 by means of a latching tab 35 having a latch nose 36 at its free end. The first fastening element 31 comprises a first stopper device 34, which is connected to the latching tab 35. The first stopper device 34 is provided as a spring element. The fastening device 30 further comprises second fastening element 32 which is assigned to the lid device 61, 61a, 61b. The second fastening element 32 comprises a third stopper device 37 which comprises a stop element 38. The third stopper device 37, in particular stop element 38, is provided to interact with the first stopper device 34. For example, the third stopper device 37 is configured in such a way that it is capable of getting in contact with the first stopper device 34, in particular to abut against first stopper device 34.

[0084] The insertion device 10 can get detachably inserted into fastening device 30, in order to provide at least one additional - intermediate - pivoting position for the lid device 61, 61a, 61b, in which the pivot movement of the lid device 61, 61a, 61b can get stopped and fixed. Therefore, the insertion device 10 can get used as a supplement to already existing fastening devices 30.

[0085] In general, the insertion device 10 comprises an elongated basic body 11, which consists of a first leg 13, a second leg 14 and a base element 15. A protrusion 17 extends outwards from the basic body. This protrusion 17 defines a second stopper device 23.

[0086] By making reference to Figures 6 and 7, the insertion device 10 will now be explained in detail.

[0087] The insertion device 10 comprises a basic body 11, which extends in a longitudinal extension direction 12. The basic body 11 comprises a first leg 13, a second leg 14 and a base element 15, which extends between a first end 13a of the first leg 13 and a first end 14a of the second leg 14. Both legs 13, 14 extend perpendicular to the longitudinal extension direction 12. The first leg 13, second leg 14 and base element 15 delimit a receiving space 16. In use with the fastening device 30, as depicted in Figure 6, the receiving space 16 takes up and encompasses the pin element 33 of the fastening device 30. Preferably, the basic body 11 is U-shaped having a base element 15 which is adapted to the configuration of pin element 33. The first leg 13 of the basic body 11 is longer than the second leg 14 of the basic body 11.

[0088] The insertion device 10 further comprises a protrusion 17 which extends outwards from the basic body 11, in particular from the second leg 14. The protrusion 17 is provided as a second stopper device 23 for stopping the pivoting movement of the lid device 61, 61a, 61b in a defined pivoting position when the insertion device 10

is inserted in the fastening device 30, as depicted in Figure 6. The protrusion 17 is designed as a planar element, which extends in the longitudinal extension direction 12 of the basic body 11.

[0089] Each leg 13, 14 comprises a second end 13a, 14b respectively. When the protrusion 17 extends outwards from the second leg 14, the protrusion 17 extends outwards from the second leg 14 in a defined distance 18 from the second end 14b, which is depicted in Figure 6. The distance 18 of the protrusion 17 from the second end 14b of the second leg 14 defines the pivoting position and in particular the opening angle at this position, where the lid element 61, 61a, 61b gets stopped or fixed.

[0090] The basic body 11 comprises a first end 11a and a second end 11b, both ends defining an end face of the basic body 11. At the first end 11a and/or at the second end 11b, a fixing element 19, 29 protrudes outwards from the basic body 11, in particular from the second leg 14. This fixing element 19, 29 is provided for fastening and securing the insertion device 10 in, on or at the fastening device 30, the second fastening element 32 for example. The fixing element 19, 20 is a planar element and extends perpendicular to the longitudinal extension direction 12 of the basic body 11. The fixing element 19, 20 comprises a latching device 21, 22, said latching device 21, 22 being provided to interlock the insertion device 10 with the fastening device 30, the second fastening element 32 for example. The latching device 21, 22 preferably comprises a latching surface which interacts with a component of the fastening device 30, the second fastening element 32 for example, for example by nestling against a surface of the fastening device 30 or by resting against such a surface. Furthermore, the latching device 21, 22 comprises a latch nose 21a, 22a, which interacts, for example creates a clip-connection, with a component of the fastening device 30, the second fastening element 32 for example.

[0091] The first end 11a of the basic body 11 defines a first end face thereof, and the second end 11b of the basic body 11 defines a second end face thereof. At least one portion of the fixing element 19, 20, in particular of the latching device 21, 22 and/or of the latch nose 21a, 22a, partially protrudes over the first and/or second end face.

[0092] As depicted in Figure 6, the first fastening element 31 and the second fastening element 32 are configured to get pivoted relative to one another via a common pivot axis, which is realized by pin element 33. The insertion device 10 is provided for getting inserted into the fastening device 30. The insertion device 10 is an individual component, that gets inserted into the fastening device 30 such that it becomes part of the fastening device 30. Thus, the insertion device 10 is provided as a supplement to the fastening device 30 that can get easily added to the fastening device 30 and which is therefore capable of expanding the functionality of the fastening device 30 in comparison to the fastening device depicted in Figures 1 to 4.

[0093] As shown in Figure 6, the insertion device 10 is provided for getting connected to or getting inserted into the second fastening element 32, for pivotably fastening the lid device 61, 61a, 61b to the container body 51. The insertion device 10 is mounted between the second fastening element 32 and the pin element 33.

[0094] The first fastening element 31 of fastening device 30 comprises a first stopper device 34, which is provided in such way that it is capable to stop and fix the pivot movement of the first and second fastening elements 31, 32 in relation to one another in a defined pivoting position.

[0095] The protrusion 17 of the insertion device 10 is provided as a second stopper device 23 for stopping the pivoting movement of the lid device 61, 61a, 61b in at least one first - intermediate - pivoting position when inserted in the fastening device 30. The second stopper device 23 acts in relation to the first stopper device 34.

[0096] Furthermore, the fastening device 30 comprises a third stopper device 37, which is provided with the second fastening element 32. The third stopper device 37 is provided for stopping the pivoting movement of the lid device 61, 61a, 61b in at least one second - intermediate - pivoting position. The third stopper device 37 comprises a stop element 38 that acts in relation to the first stopper device 34.

[0097] If the first stopper device 34, for example the spring element, comes into contact with the second stopper device 23 and/or with the third stopper device 37, the further movement of the second and/or third stopper device 23, 37, preferably in a defined - intermediate - pivot position described above, is initially prevented, i.e. fixed. Nevertheless, there is the possibility, because of the elasticity of the spring element, that a movement beyond this stop point is possible.

[0098] The functionality of the fastening device 30 incorporating an insertion device 10 will now be explained in connection with Figures 8 to 11.

[0099] Figure 8 shows a situation, in which the lid device 61 is in a fully closed position 62. None of the different stopper devices 34, 23, 37 is in contact with each other. According to Figure 9, a first - intermediate - pivoting position 63 is realized by an effective connection of the first stopper device 34 of the first fastening element 31 of the fastening device 30 with the second stopper device 23 of the insertion device 10. In this case the second stopper device 23 abuts against the first stopper device 34. This is preferably the case at an opening angle 63a of less than 90 degrees, or in principle at an opening angle at which the lid device 61 automatically falls shut due to gravity forces, when the opening forces are released. This is advantageous when the waste container 50, preferably automatically, gets discharged into a waste collection vehicle. Es evident from Figure 10, second - intermediate - pivoting position 64 is realized by an effective connection of the first stopper element 34 of the first fastening element 31 of the fastening device 30 with the third stopper device 37 of the second fastening ele-

ment 32 of the fastening device 30. In this case the third stopper device 37, in particular its stop element 38, abuts against the first stopper device 34. This is preferably the case at an opening angle 64a of more than 90 degrees, at an opening angle of round about 125 degrees for example, or in principle at an opening angle at which the lid device 61 remains open due to gravity forces, which makes it easier to fill and close the waste container 50, since the lid device does not fall shut unintendedly. Finally, Figure 11 shows a situation, in which the lid device 61 is in a fully open position 65. Thus, the lid device 61 can take up at least four pivoting positions, a completely closed position (Figure 8), a completely open position (Figure 11) and at least two - intermediate - positions (Figures 9 and 10) therebetween as described above.

[0100] The present invention preferably relates, among other aspects, to a fastening device 30 being provided for pivotably fastening a lid device 61, 61a, 61b to a container body 51 of a waste container 50. The fastening device 30 comprises a first fastening element 31 being attached to the container body 51, which preferably comprises a first stopper device 34; a second fastening element 32 being part of the lid device 61, which preferably comprises a third stopper device 37; wherein the first fastening element 31 and the second fastening element 32 are configured to get pivoted relative to one another via a common pivot axis, said common pivot axis being realized by a pin element 33. In order to allow stopping the pivoting movement of the lid device 61 in several defined - intermediate - pivoting positions 63, 64 between a fully closed position 62 and a fully open position 65, the fastening device 30 comprises an insertion device 10, which in particular is a supplement to the fastening device 30, said insertion device 10 being provided for getting inserted into the fastening device 30, in particular into the second fastening element 32, for pivotably fastening the lid device 61 to the container body 51; said insertion device 10 comprising an elongated basic body 11, which extends in a longitudinal extension direction 12; said basic body 11 comprising a first leg 13, a second leg 14 and a base element 15, which extends between a first end of first leg 13 and a first end of second leg 14; the first leg 13, second leg 14 and base element 15 delimiting a receiving space 16, said receiving space 16 being provided for receiving the pin element 33 of the fastening device 30; said insertion device 10 further comprising at least one protrusion 17 which extends outwards from the basic body 11, in particular from the second leg 14, said protrusion 17 being provided as a second stopper device 23 for stopping the pivoting movement of the lid device 61 in a defined pivoting position when inserted in the fastening device 30.

List of reference numerals

[0101]

10 Insertion device

11	Basic body
11a	First end
11b	Second end
12	Longitudinal extension direction
13	First leg
13a	First end
13b	Second end
14	Second leg
14a	First end
14b	Second end
15	Base element
16	Receiving space
17	Protrusion
18	Distance
19	Fixing element
20	Fixing element
21	Latching device
21a	Latch nose
22	Latching device
22a	Latch nose
23	Second stopper device
30	Fastening device
31	First fastening element
32	Second fastening element
33	Pin element
34	First stopper device
35	Latching tab
36	Latch nose
37	Third stopper device
38	Stop element
50	Waste container
51	Container body
52	Side wall
53	Upper edge of the container body
54	Container bottom
55	insertion opening
56	Receiving space
57	Divider plate
58	Handle
59	Wheel
60	Axle
61	Lid device
61a	First lid element
61b	Second lid element
62	Closed position of the lid device
63	First pivoting position of the lid device
63a	Opening angle
64	Second pivoting position of the lid device
64a	Opening angle
65	Fully open position of the lid device

Claims

1. An insertion device (10), said insertion device (10) being provided for getting inserted into a fastening device (30) for pivotably fastening a lid device (61)

to a container body, in particular to a container body (51) of a waste container (50), said insertion device (10) comprising a basic body (11); said basic body (11) delimiting a receiving space (16); said insertion device (10) further comprising at least one protrusion (17) which extends outwards from the basic body (11), said protrusion (17) being provided as a stopper element for stopping the pivoting movement of the lid device (61) in a defined pivoting position when the insertion device (10) is inserted in the fastening device (30).

2. The insertion device according to claim 1, **characterized in that** the basic body (11) comprises a first leg (13), a second leg (124) and a base element (15), which extends between a first end (13a) of first leg (13) and a first end (14a) of second leg (14); the first leg (13), second leg (14) and base element (15) delimiting said receiving space (16), and that, in particular, the at least one protrusion (17) extends outwards from the second leg (14).

3. The insertion device according to claim 1 or 2, **characterized in that** the basic body (11) is U-shaped and/or that the base element (15) is linear or curved and/or that the first leg (13) extends perpendicular to the longitudinal extension direction (12) of the basic body (11), and/or that the second leg (14) extends perpendicular to the longitudinal extension direction (12) of the basic body (11).

4. The insertion device according to anyone of claims 1 to 3, **characterized in that** the protrusion (17) is designed as a planar element and/or that the protrusion (17) extends in the longitudinal extension direction (12) of the basic body (11).

5. The insertion device according to anyone of claims 2 to 4, **characterized in that** the protrusion (17) extends outwards from the second leg (14), that the second leg (14) comprises a second end (14b) opposite to the first end (14a) and that at least one protrusion (17) extends outwards from the second leg (14) in a defined distance (18) from the second end (14b), the distance (18) being preferably less than 40%, preferably less than 30%, preferably less than 20%, preferably less than 10% of the length of the second leg (14).

6. The insertion device according to anyone of claims 1 to 5, **characterized in that** the basic body (11) comprises a first end (11a) and a second end (11b), and that, at the first end (11a) and/or at the second end (11b), a fixing element (19, 20) protrudes outwards from the basic body (11), in particular from the second leg (14).

7. The insertion device according to claim 6, **characterized in that**

terized in that the fixing element (19, 20) is a planar element and/or that the fixing element (19, 20) extends perpendicular to the longitudinal extension direction (12) of the basic body (11).

8. The insertion device according to claim 6 or 7, **characterized in that** the fixing element (19, 20) comprises a latching device (21, 22), said latching device (21, 22) being provided to interlock the insertion device (10) with the fastening device (30).

9. A fastening device (30), said fastening device (30) being provided for pivotably fastening a lid device (61) to a container body, in particular to a container body (51) of a waste container (50), said fastening device (30) comprising a first fastening element (31) which is designed in such a way that it is capable to be attached to the container body (51) or that it is part of the container body (51); a second fastening element (32) which is designed in such a way that it is capable to be attached to the lid device (61) or that it is part of the lid device (61); wherein the first fastening element (31) and the second fastening element (32) are configured to get pivoted relative to one another via a common pivot axis, said common pivot axis being provided by a pin element (33); **characterized in that** the fastening device (30) comprises an insertion device (10), in particular an insertion device (10) according to anyone of claims 1 to 8; said insertion device (10) being provided for getting inserted into the fastening device (30), in particular into the second fastening element (32), for pivotably fastening the lid device (61) to the container body, in particular to the container body (51) of a waste container (50); said insertion device (10) comprising a basic body (11); said basic body (11) delimiting a receiving space (16), said receiving space (16) being provided for receiving the pin element (33) of the fastening device (30); said insertion device (10) further comprising at least one protrusion (17) which extends outwards from the basic body (11), said protrusion (17) being provided as a stopper element for stopping the pivoting movement of the lid device (61) in a defined pivoting position (63) when inserted in the fastening device (30).

10. The fastening device according to claim 9, **characterized in that** the shape of the receiving space (16) of the insertion device (10), in particular the shape of the base element (15) thereof, corresponds to the shape of the pin element (33).

11. The fastening device according to anyone of claims 9 or 10, **characterized in that** the fastening device (30) comprises a first stopper device (34), which in particular is provided with the first fastening element (31), and which is provided in such way that it is capable to stop and fix the pivot movement of the

first and second fastening elements (31, 32) in relation to one another in a defined pivoting position (63, 64), said first stopper device (34) in particular comprising a spring element or being designed as a spring element.

12. The fastening device according to anyone of claims 9 to 11, **characterized in that** at least one protrusion (17) of the insertion device (10) is provided as a second stopper device (23) for stopping the pivoting movement of the lid device (61) in a first pivoting position (63) when inserted in the fastening device (30).

13. The fastening device according to anyone of claims 9 to 12, **characterized in that** the fastening device (30) comprises a third stopper device (37), which in particular is provided with the second fastening element (32), said third stopper device (37) being provided for stopping the pivoting movement of the lid device (61) in a second pivoting position (64).

14. The fastening device according to any one of claims 12 or 13, when dependent on claim 11, **characterized in that** the first pivoting position (63) is realized by an effective connection of the first stopper device (34) with the second stopper device (23), and/or that the second pivoting position (64) is realized by an effective connection of the first stopper device (34) with the third stopper device (37).

15. A waste container (50), which is provided for at least temporarily storing waste and/or valuable substances, wherein the waste container (50) comprises a container body (51), and wherein the waste container (50) comprises a lid device (61) for closing an insertion opening (55) being provided in the container body (51), said lid device (61) being pivotably mounted to the container body (51) via a fastening device (30), **characterized in that** the fastening device (30) is configured according to anyone of claims 9 to 14.

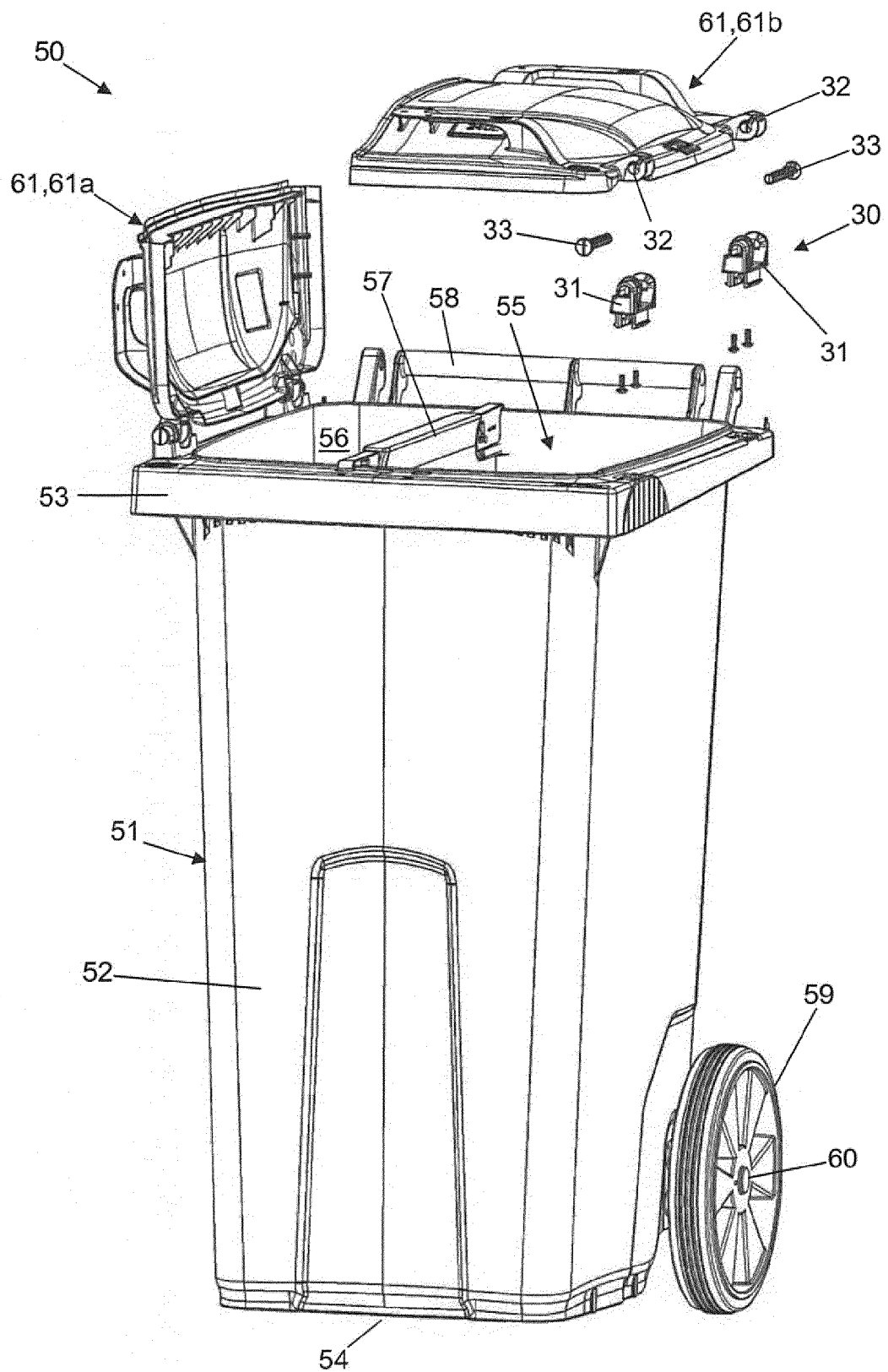


Fig. 1 (Prior Art)

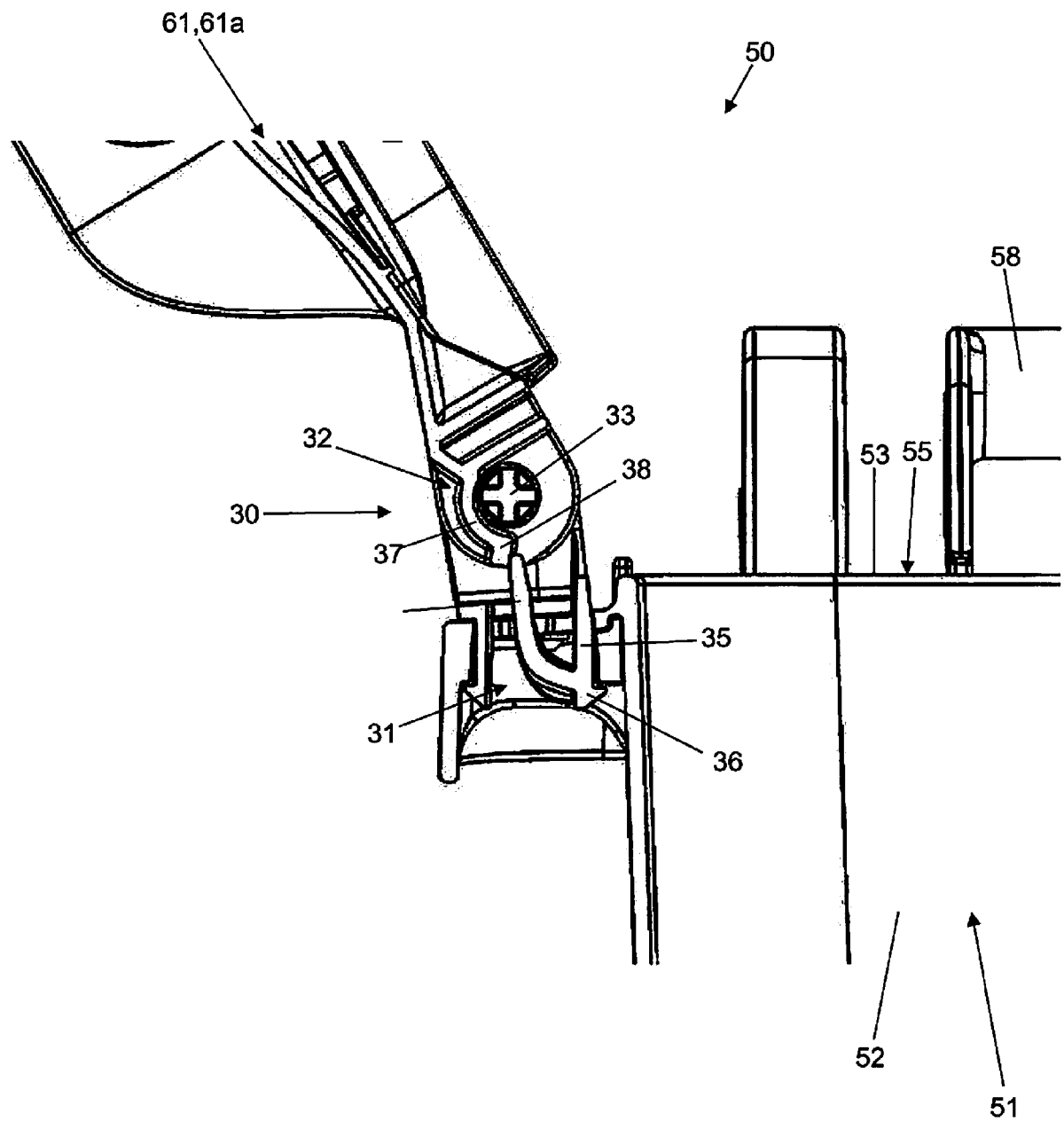


Fig. 2 (Prior Art)

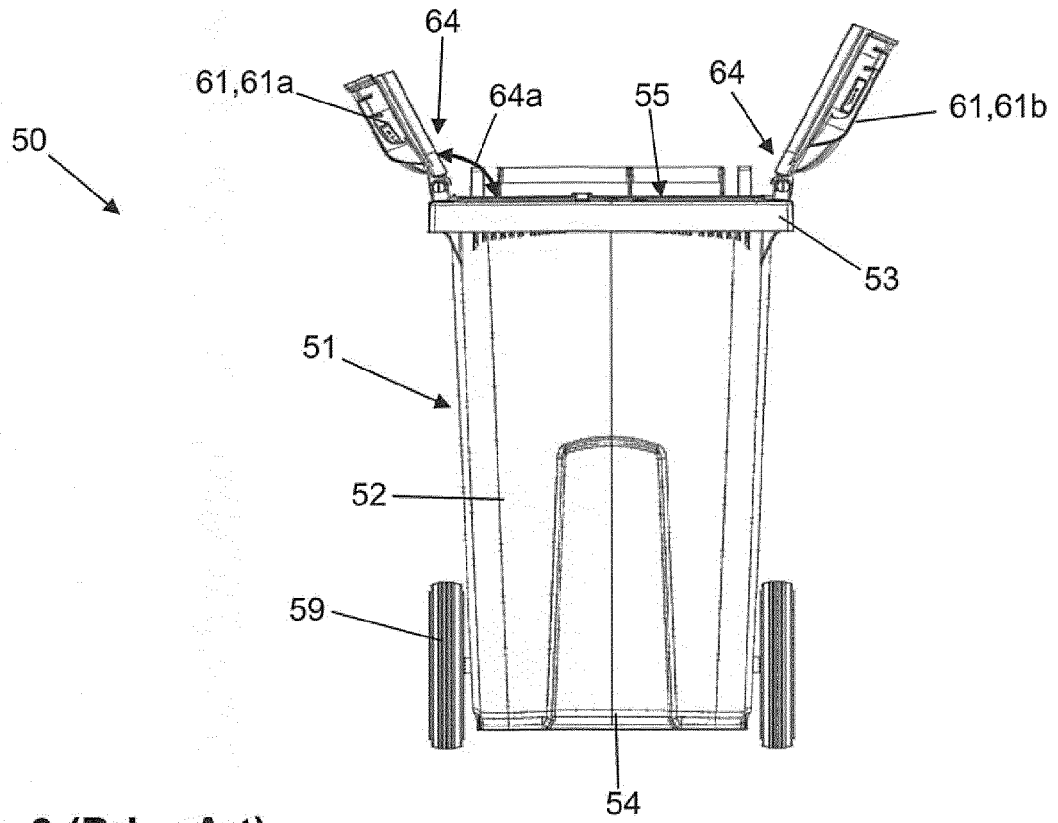


Fig. 3 (Prior Art)

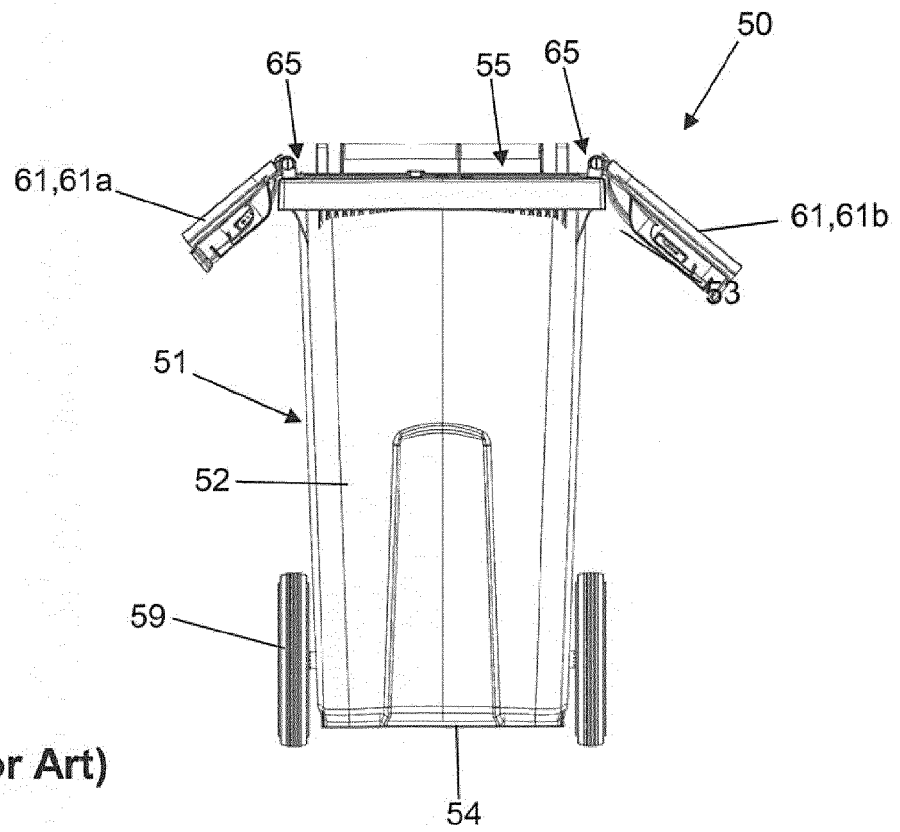


Fig. 4 (Prior Art)

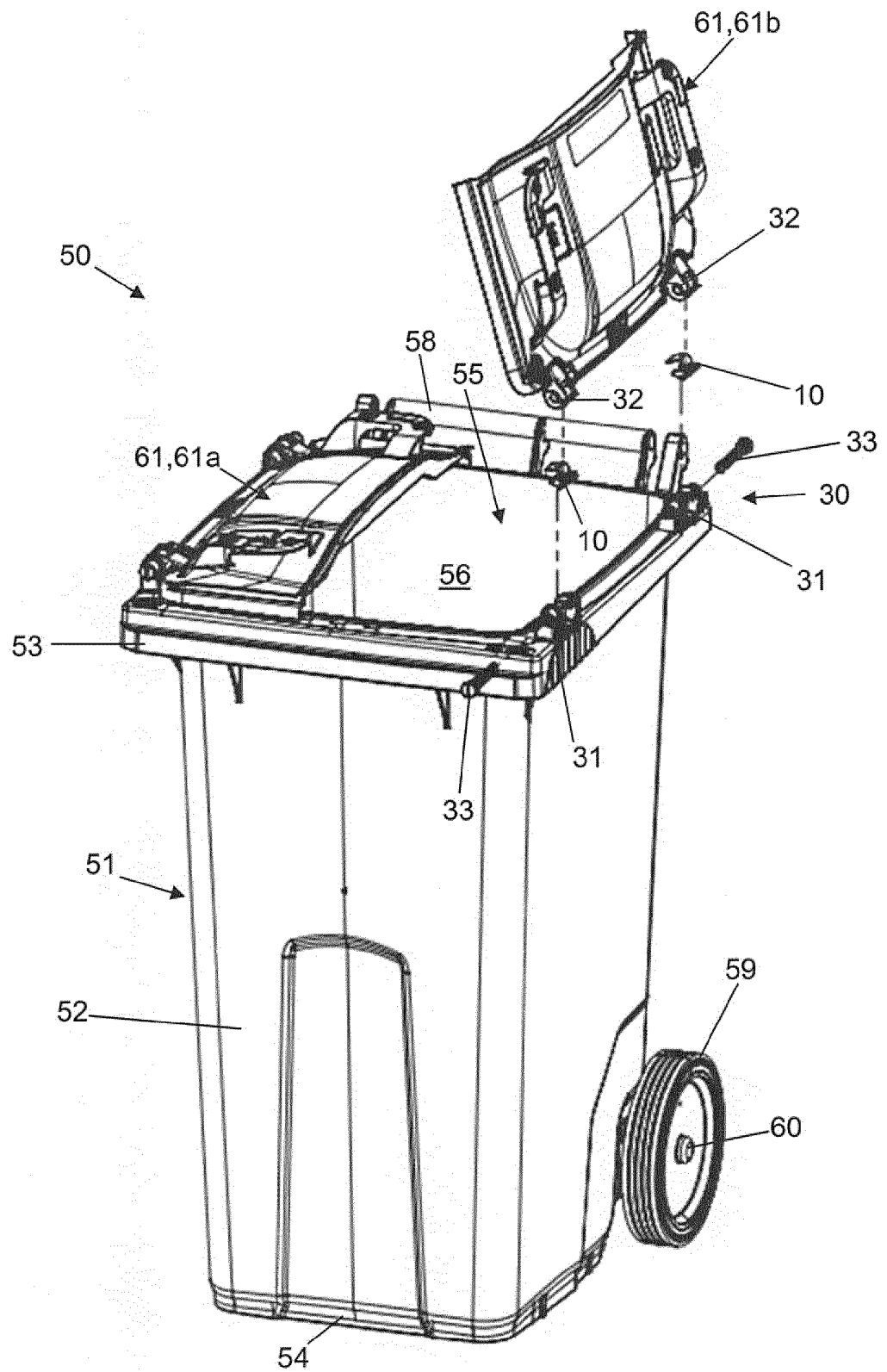


Fig. 5

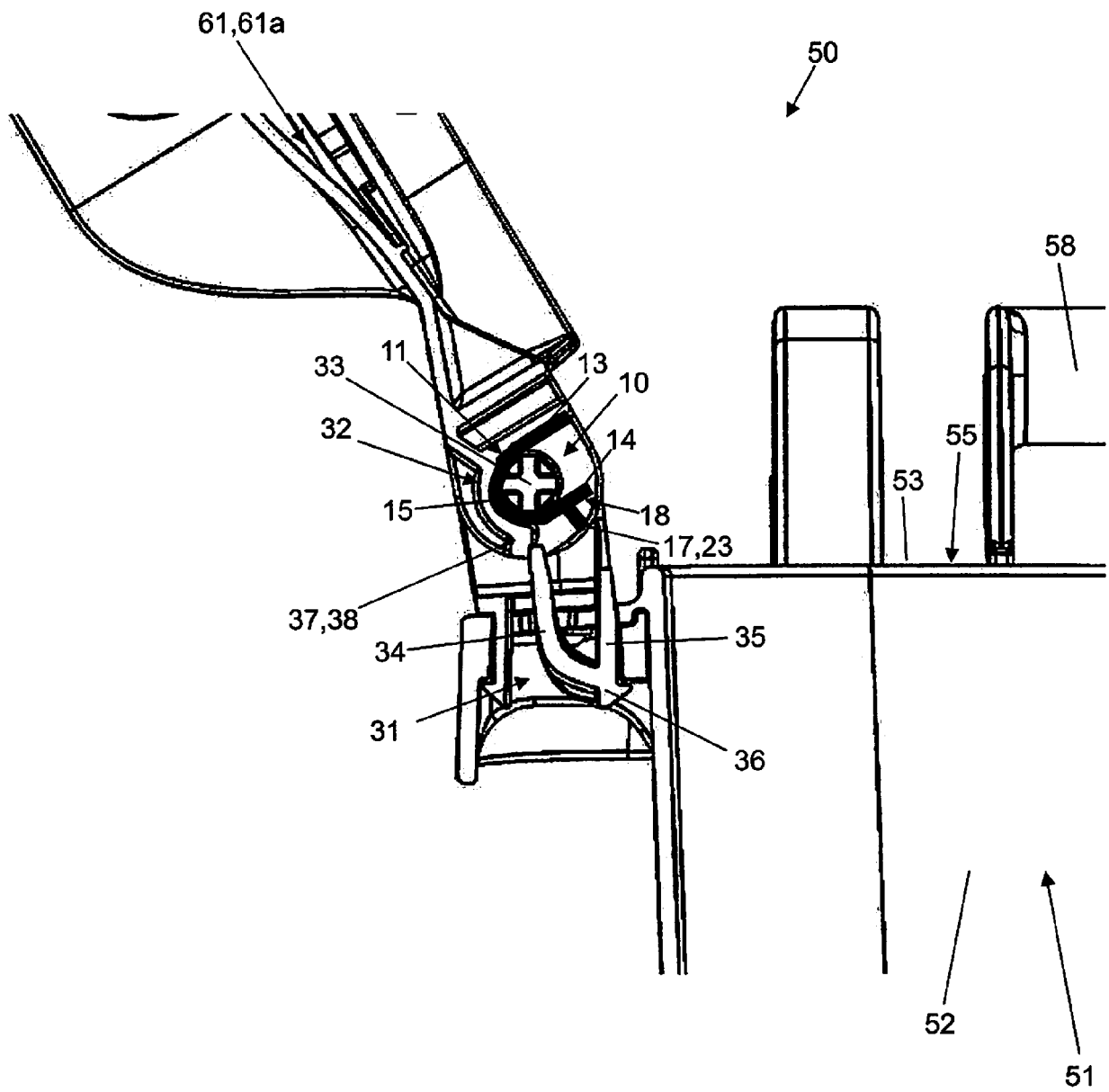


Fig. 6

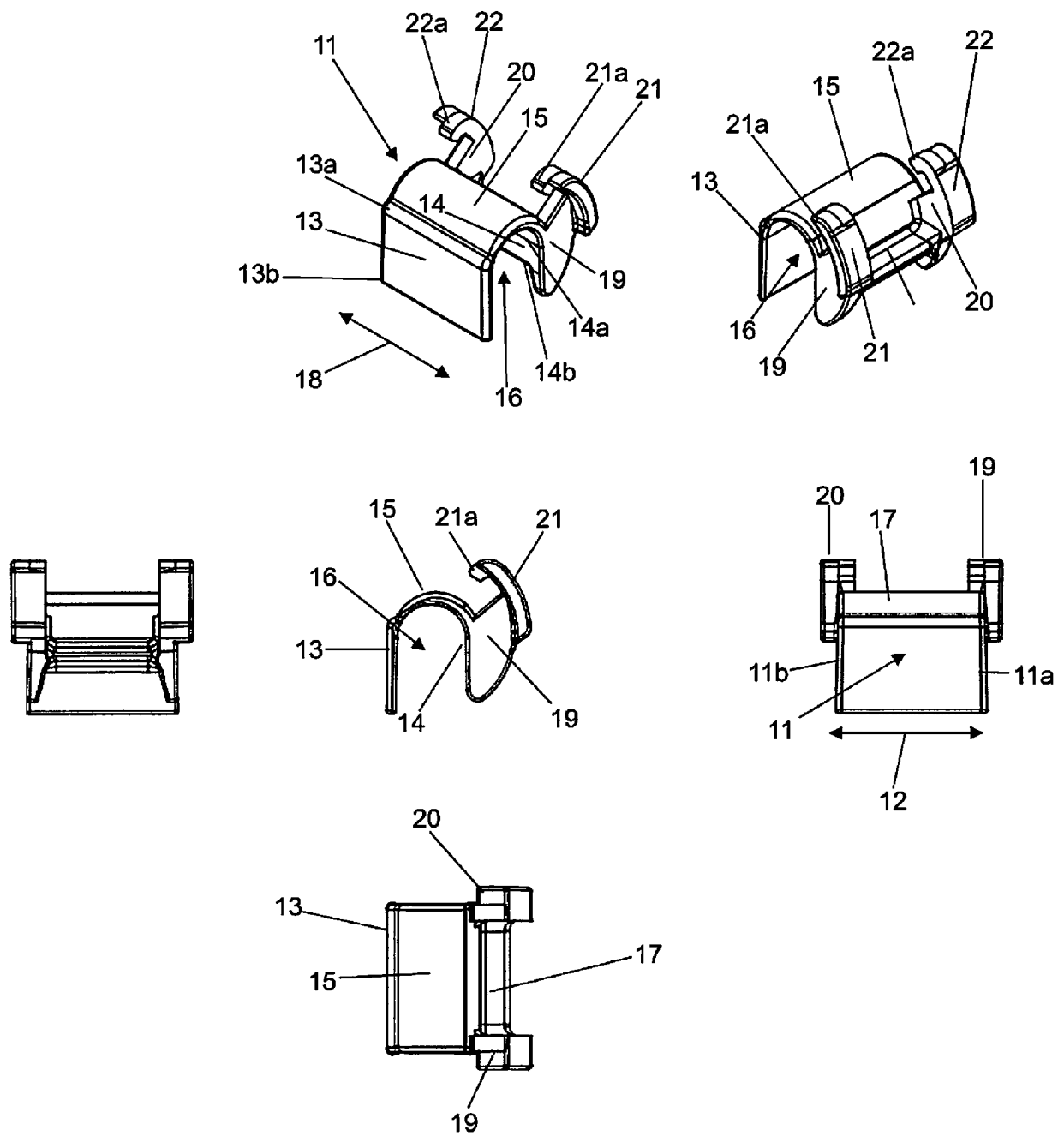


Fig. 7

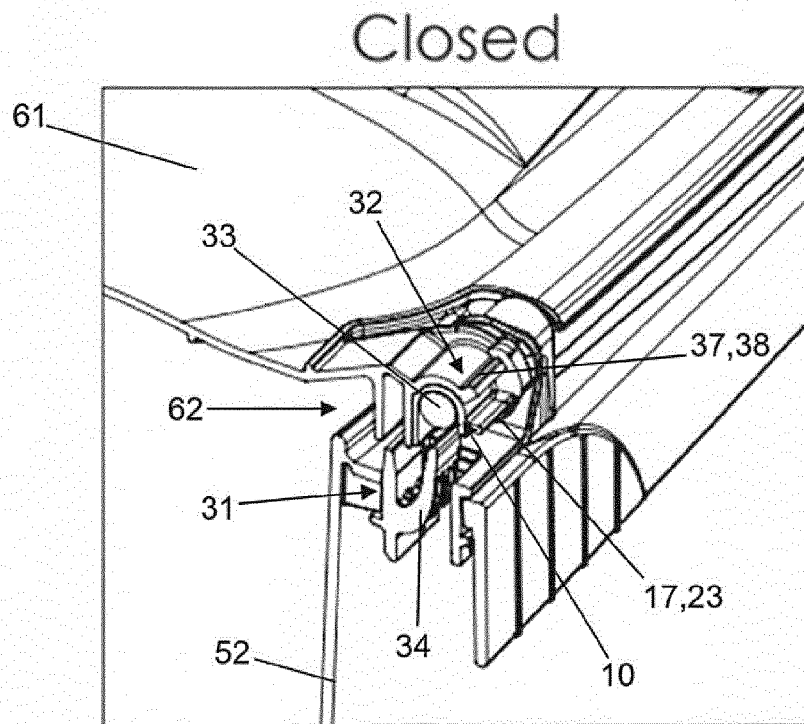


Fig. 8

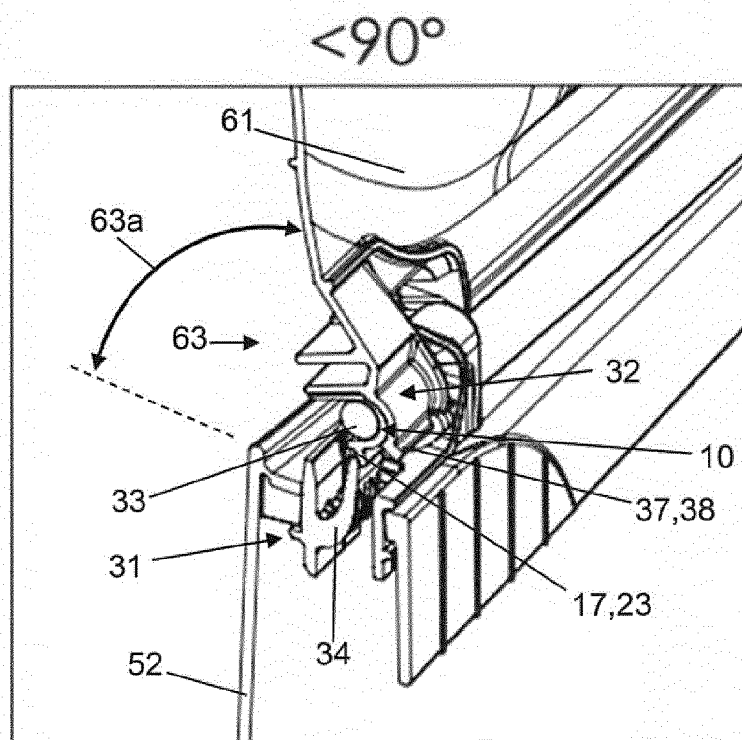


Fig. 9

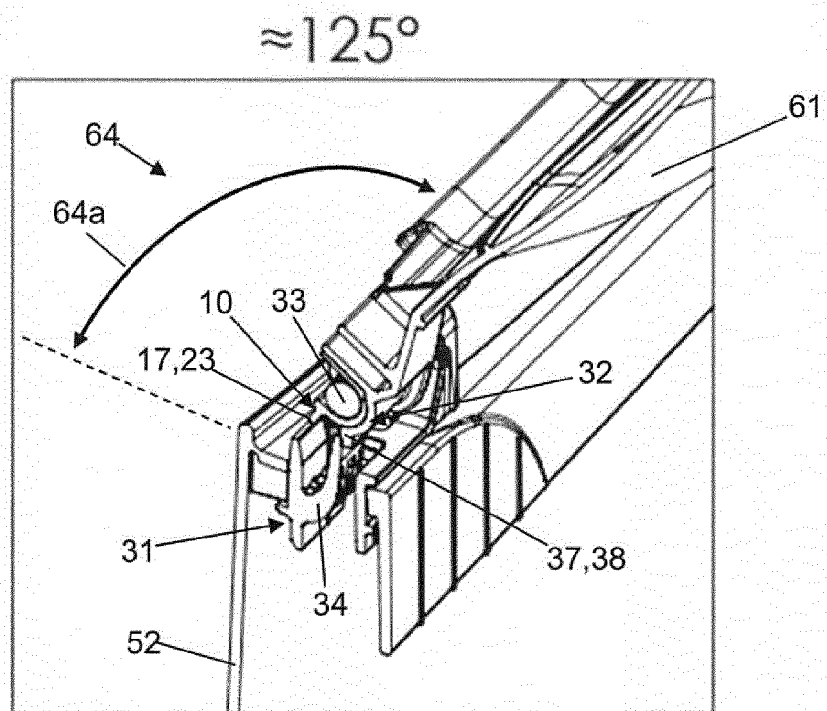


Fig. 10

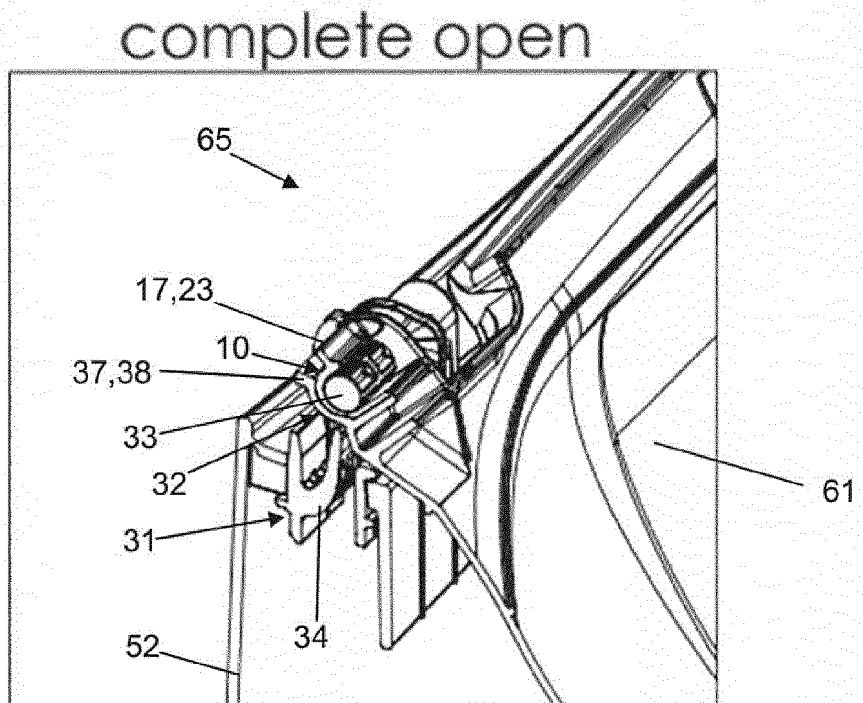


Fig. 11



EUROPEAN SEARCH REPORT

Application Number

EP 23 16 9955

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 20 2012 012214 U1 (KOMOS GMBH [DE]) 1 February 2013 (2013-02-01)	1-10, 12, 15	INV. B65F1/00
Y	* paragraphs [0039] - [0045]; figures *	11, 13	B65F1/16
A	-----	14	
X	DE 298 01 927 U1 (WOLLESKY DETLEF [DE]) 10 June 1998 (1998-06-10)	1-10, 12, 15	
Y	* the whole document *	11, 13	
A	-----	14	
Y, D	EP 3 722 229 A2 (ESE WORLD BV [NL]) 14 October 2020 (2020-10-14)	11, 13	
A	* the whole document *	12, 14, 15	

			TECHNICAL FIELDS SEARCHED (IPC)
			B65F B65D E05D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 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	

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

EP 23 16 9955

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-09-2023

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