

DEVICE FOR THE DISINFECTING OR CLEANING OF A HOUSEHOLD RUBBISH
CONTAINER AND THE METHOD FOR DISINFECTING OR CLEANING SUCH A
CONTAINER

The present invention concerns a device for the disinfecting or cleaning of a household rubbish container and a method for disinfecting or cleaning such a container.

5 The field of application of the present invention is that of containers for waste and in particular that of containers of relatively large size used in particular in properties in joint occupation and able to be taken up by rubbish collection vehicles for discharge thereof.

Currently, such containers generally are substantially right-angled parallelepipedal in form and have a lid. The waste is simply introduced into the internal
10 space of the container, which causes problems of cleanliness of these containers. Residual dirt is in particular found in the bottom of the containers due to discharges or refuse sticking to the bottom wall of the container. Inconveniencies relating to odour and cleanliness are thus posed.

The disinfecting of household rubbish containers is traditionally done by an
15 operator manually, after the containers have been emptied of their waste.

This operation is a tedious task for the operator since this requires of him a significant handling of the containers and thereby requires a great deal of time for its execution. It is therefore usual to find that this type of work is not carried routinely after each collection of household rubbish.

20 The document WO-A-2010/146004 discloses a device for disinfecting a container for the removal of solid waste, said container being provided with a lid that is hinged at the rim of the opening so as to allow at least one rotation between a closed position and an open position obtained by the actuation of a user enabling him to insert bags of waste in the container. The device has at least one receptacle containing a disinfection
25 product that is applied to the internal surface of the wall of the container. The receptacle is provided with at least one pump that emits a spray of said product by pressure applied to the button of said pump. Means are also provided that are connected to the lid of the container and are designed to produce a spray of the disinfectant product when the lid is closed following the actuation thereof by the user
30 after the insertion of a bag of waste.

Though this document presents automatic actuation of the delivery of a cleaning and disinfecting fluid during a movement of opening and closing the lid by a device for

dispensing maintenance fluid directly incorporated in the container, it does however have many drawbacks.

In this document, the distribution of fluid takes place at the opening and closing phases of the lid, that is to say very frequently and very often when the container is at least partially filled. Its efficacy is therefore low while using a large quantity of maintenance fluid.

In addition, the fluid-dispensing device is situated at the top part of the container since actuation thereof is linked to the lid. Consequently the dispensing of the fluid, moreover a simple spraying, is not effective for cleaning the bottom of the container, the sprayed fluid generally not arriving as far as the bottom of the container, especially when the latter is filled with refuse.

Finally, the reliability of such a spray system can be called into question.

Another system for delivering a disinfecting liquid is known from US-A-2010264168. This publication shows an actuator resting on the ground outside the container and the piston of which arms a part delivering liquid when the container is lifted. On descent, the piston retracts in contact with ground so as to discharge the liquid. Because of the bearing on the ground, the reliability and mechanical strength of the piston system is more than doubtful. Repeated movements of the container may cause multiple deliveries of liquid when this is not required.

The problem at the basis of the invention is cleaning a household rubbish container effectively without requiring the aid of a cleaning device external to said container.

To achieve this objective, there is provided according to the invention a rubbish container having an opening for the deposition of rubbish inside it and incorporating a cleaning or disinfecting device configured so as to provide the delivery of a cleaning or disinfecting fluid inside the container, characterised in that the cleaning or disinfecting device comprises means for delivering a dose of fluid inside the container configured to deliver the dose of fluid after an inclination of the container and then its return to the normal position of use.

The technical effect obtained is better cleaning or disinfecting of the container. As the spreading of the dose of washing or disinfecting fluid takes place after this discharge when the container is returned to its normal position of use, the container is then emptied of all its rubbish and the washing or disinfecting can take place directly on the bottom of the container. Thus all the fluid combined in a dose is allocated to the cleaning or disinfecting of said container and there is no longer any loss of fluid by contact with rubbish.

In addition, the quantity of fluid contained by a dose is advantageously substantially always equivalent, which affords economy of fluid, a dose being calculated so as to represent the predetermined quantity necessary and sufficient for effective cleaning or disinfecting.

5 The inclination of the container, which consists of a movement comprising a rotation of the container able to modify the angle made by its opening with respect to the horizontal, can be fixed so as to be greater than a threshold value in order to trigger the delivery of the product. The threshold value can for example be at least 10° or at least 90° (which means that the product is delivered only after a phase of turning the
10 container over).

The invention can also have at least optionally any one of the following features:

- the delivery means comprise means for forming a dose of fluid inside the container and means for spreading said fluid in the container, the formation means being active when the container is inclined in the position of discharging the rubbish
15 that it contains and the spreading means being active when the container has been returned to its normal position of use;

- the means for forming a dose of fluid comprise a dosing element filled with a dose of fluid when the container is inclined in the discharge position. The use of a dosing element is a rapid and simple way of creating a dose of cleaning or disinfecting
20 fluid as well as having, at each washing or disinfecting, an equivalent dose of fluid;

- the cleaning or disinfecting device comprises a fluid reservoir, the dosing element being connected by a first pipe to said reservoir for taking off a quantity of fluid from said reservoir by gravity when the container is tilted, this quantity forming a dose of fluid, the dosing element also being connected to said reservoir by a second pipe
25 providing an air intake between dosing element and reservoir. Such a use of a dosing element associated with a reservoir makes it possible to achieve the formation of a dose automatically when the container is tilted during unloading thereof, by simple means functioning according to the principle of communicating vessels;

- the spreading means comprise a third pipe emerging from the dosing element
30 for discharge of the dose of fluid with a view to spreading thereof in the container, this third pipe being directed towards the bottom part of the container when said container is in its normal position of use. Thus the spreading of the dose of fluid takes place automatically as soon as the container is returned to its normal position of use;

- the cleaning or disinfecting device is inserted removably in a housing fixed
35 towards the bottom part of the container when said container is in its normal position of use. This allows the extraction of the cleaning or disinfecting device in particular for

filling its reservoir. The housing also has the advantage of protecting the device against miscellaneous dirt;

- the housing comprises an orifice for discharging the dose of fluid in the container, this discharge orifice being oriented towards the bottom part of the container when said container is in its normal position of use. Thus the bottom of the container is preferentially treated;

- the housing surrounds the cleaning or disinfecting device, the housing comprising a body for receiving said device and a removable lid covering said body. This makes it possible to completely surround the device in order to protect it while making it possible to remove the device easily from the housing in particular for recharging it with fluid;

- the body and/or the removable lid does not have any sharp corner externally. Thus there is no risk of bursting bags of rubbish thrown into the container or retaining various elements thrown into the container;

- the reception body of the housing is substantially in the form of a parallelepiped with a base and four walls, one of said walls being at least partially in abutment against the inside of the container. This is the form most suited to receiving a reservoir with a substantially similar shape, which is mainly the shape of the reservoir of the washing or disinfecting device;

- the discharge orifice of the housing is disposed on the base of the body or on the bottom portion of one of the walls of said body. Thus the bottom of the container is effectively treated. The location of the discharge orifice on the bottom portion of a wall is advantageous because said orifice is liable to be soiled less than when it is disposed directly facing the bottom of the container, an accumulation of rubbish on this orifice then being possible;

- the base of the body has a declivity directing the dose of fluid towards said discharge orifice. This allows discharge of all the fluid from the housing and reduces losses of fluid;

- the lid has, at its part oriented towards the body, firstly, on one side of said part, at least one tongue entering a recess provided on the reception body and, secondly, on the body opposite said part, a means of locking the lid with respect to said body;

- the locking means is composed of a locking lug inserted by pivoting in a locking notch provided in the reception body;

- the lid comprises a passage enabling a user to have access to the locking means in order to effect a pivoting of said locking lug.

Another aspect of the invention is a cleaning or disinfecting device in particular suitable for equipping a rubbish container.

According to the invention, it is advantageously on the internal wall of the container body that the device is situated. The latter is thus independent of any lid of the container.

The invention also concerns a method for cleaning or disinfecting such a household rubbish container by means of a cleaning or disinfecting device internal to the container, this method comprising sequences for delivering a cleaning or disinfecting fluid in the interior of the container, this container being emptied of rubbish that it contains by tilting said container into a discharge position, characterised by the step of forming a dose of fluid inside the container when it is tilted into the rubbish-discharge position and the step of spreading the dose of fluid in the container when the container has been returned to its normal position of use.

Advantageously, the step of forming a dose of fluid and the step of spreading said dose of fluid take place automatically respectively on putting into the discharge position and putting into the normal position of use. Thus making the step of forming a dose dependent on the step of tilting the container for discharging thereof just like the triggering of the step of spreading the dose formed does not require the addition of any particular element, for example a mechanical or electronic element.

Other features, aims and advantages of the present invention will emerge from a reading of the following detailed description and with regard to the accompanying drawings given by way of non-limitative example and in which:

- figure 1 is a schematic representation of a plan view in perspective of a household rubbish container according to the present invention showing the interior of said container with the housing for the cleaning or disinfecting device,

- figure 2 is a schematic representation of a side view of a household rubbish container according to the present invention showing in particular the position of the housing for the cleaning or disinfecting device in said container, this container then being in the position for discharging the rubbish that it contains,

- figure 3 is a schematic representation of a front view in perspective of a cleaning or disinfecting device intended to be integrated in a household rubbish container according to the present invention,

- figure 4 is a schematic representation of a perspective view from below of part of the cleaning or disinfecting device intended to be integrated in a household rubbish container according to the present invention, this part being shown enlarged with respect to figure 3,

- figure 5 is a schematic representation of a front view of a cleaning or disinfecting device intended to be integrated in a household rubbish container according to the present invention, this device being shown in the tilted position in which the dosing element fills,

5 - figure 6 is a schematic representation of a front view of a cleaning or disinfecting device intended to be integrated in a household rubbish container according to the present invention, this device being shown returned to its normal position of use, in which position the cleaning or disinfecting fluid is discharged from the dosing element,

10 - figure 7 is a schematic representation of a plan view of a housing integrating a cleaning or disinfecting device for a household rubbish container according the present invention,

 - figure 8 is a schematic representation of a front view in perspective of the top portion of a housing integrating a cleaning or disinfecting device for a household
15 rubbish container according to the present invention,

 - figure 9 is a schematic representation of a front view in perspective of the locking means of a housing integrating a cleaning or disinfecting device for a household rubbish container according to the present invention, this figure 9 being enlarged with respect to figure 8, the locking means being shown in section,

20 - figure 10 is a schematic representation of a front view of the bottom portion of a housing integrating a cleaning or disinfecting device for a household rubbish container according to the present invention, the orifice for spreading the cleaning or disinfecting fluid in the container being in particular visible in this figure, this figure 10 being enlarged with respect to figure 8.

25 Referring to figures 1 and 2, the present invention concerns a container for the depositing of household rubbish. The container 1 according to the present invention has an external appearance unchanged compared with the prior art.

 Such a container 1 has a substantially parallelepipedal shape with lateral walls and a bottom 4 delimiting an internal space for receiving rubbish. In its normal position of use,
30 which corresponds to the position of the container 1 for the reception of rubbish, the bottom 4 of the container 1 is close to the ground, the container 1 being movable by means of wheels 5 then resting on the ground. Though figure 2 shows a single pair of wheels 5, the container 1 can also be provided with two pairs of wheels 5.

 The container 1 has an opening 3 for the depositing of household rubbish in the
35 interior thereof. This opening 3 is situated, in the normal position of use of the container 1 for receiving rubbish, at the top part of the container 1. This opening 3 can

be closed by a lid, not shown in the figures, this lid being pivotable between a position of closing the container 1 and the opening position in which the opening 3 is accessible to the users for depositing rubbish or for discharging rubbish that the container 1 contains.

5 In accordance with the present invention, the container 1 incorporates a cleaning or disinfecting device with sequences of delivering a maintenance fluid inside the container 1. This device is shown in figures 1 and 2, being placed inside the housing 6, internal to the container 1. This device and its housing 6 are situated close to the bottom 4 of the container 1 in order to clean said bottom 4 by spreading a cleaning or disinfecting liquid inside the container 1. It is in fact the bottom 4 of the container 1 that is the most liable to be soiled by remains of rubbish not discharged from the container 1 and it is necessary to clean or disinfect this bottom 1 regularly and automatically.

To effect such cleaning or disinfecting, it is necessary for the container 1 to be previously empty of any rubbish so that the bottom 4 of the container 1 is indeed accessible to the cleaning or disinfecting fluid.

This is what is proposed by the present invention with a cleaning or disinfecting device comprising means for forming a dose of fluid inside the container 1 and means for spreading said fluid in the container 1, the formation means being active when the container 1 is tilted into the position of discharging the rubbish that it contains and the spreading means being active when the container 1 is returned to its normal position of use. Thus the cleaning or disinfecting takes place in a container 1 emptied of its rubbish as soon as the container 1 is returned to the normal position of use.

According to an alternative that is not illustrated, the formation of the dose and the spreading thereof are both consecutive on the return to the normal position, but the tilting and repositioning movement is detected so as to control the delivery of the dose. For example, a movement sensor system may trigger a fluid dispenser (with a pump or the like) after these two movements.

Figure 2 shows a container 1 in the position of discharging its rubbish. This discharge can take place by pouring the rubbish from the container 1 into a rubbish tipper truck. To do this, the container 1 is subjected to a rotation movement F_r , generally while being connected to the rubbish tipper truck by a device carried by said tipper truck and the rubbish that leaves the container 1 in the direction of discharge of the rubbish F_e falling by gravity into the tipper truck. This operation is also referred to as tipping over the container 1 with a view to discharge thereof.

35 As shown in figure 2, it is not necessary for the container 1 to be completely turned over with its bottom 4 then situated as the top part of the container 1 and the

container 1 then extending substantially vertically. It suffices for the container 1 to be sufficiently tilted for the rubbish to leave the container 1 by gravity and fall outside said container 1.

For an effective cleaning or disinfecting of the bottom 4 of the container, it is
 5 necessary to advantageously place the cleaning or disinfecting device close to the bottom. In figure 1, the housing 6 receiving the cleaning or disinfecting device is placed on a low portion of a lateral wall of the container 1 close to the bottom, substantially in a middle portion of said lateral wall. In figure 2, the housing 6, drawn in broken lines, is situated on a low portion of a lateral wall of the container 1 close to the
 10 bottom 4 towards a bottom edge of the lateral wall not carrying a wheel 5.

The positioning of the housing 6 receiving the cleaning or disinfecting device may be any positioning that makes it possible to obtain an action on the bottom 4 of the container 1 effective for spreading concerning in particular a large part of the bottom 4.

The cleaning or disinfecting device will now be described according to one
 15 embodiment with regard to figures 3 to 6.

In these figures, the cleaning or disinfecting device 2 has a dosing element 8 filled with a dose of fluid when said container is tilted for discharging the rubbish out of the container, as was shown in figure 2. The means for forming a dose of fluid inside the container 1 according to the present invention comprise this dosing element 8.
 20 Thus, during this discharge of rubbish, a quantity sufficient and necessary for the cleaning or disinfecting of the container 1 is formed by accumulation in the dosing element 8.

The cleaning or disinfecting device 2 comprises a reservoir 7 of cleaning or disinfecting fluid containing sufficient fluid for effecting several doses of fluid. This
 25 reservoir 7 comprises a filling plug 12 at its top end in a normal position of use. A neck 13 is provided between the plug 12 and the reservoir 7. The dosing element 8 is disposed substantially above the reservoir 7 when the latter is in the normal position of use, that is to say with its plug 12 pointing upwards. The dosing element 8 is connected by a first pipe 11 to said reservoir 7, by means of its neck 13.

This first pipe 11 serves to take off from the reservoir 7 a quantity of fluid
 30 sufficient to form a dose of fluid then contained and stored in the dosing element 8. This taking off is effected by gravity when the container is tilted for discharge thereof. To do this, the cleaning or disinfecting device 2 is provided with a second pipe 9 providing an air intake between the dosing element 8 and the reservoir 7. This second
 35 pipe 9 extends from the bottom part of the reservoir to the dosing element 8,

advantageously emerging in said dosing element 8 on the side opposite to the side on which the first pipe 11 emerges.

The functioning of the cleaning or disinfection device 2 is as follows. It is broken down into a step of forming a dose of fluid in the dosing element 8 when the container is tilted for discharging the waste contained in it and by the spreading of said dose on the bottom of the container when the container is returned to its normal position of use. This is very advantageous because there is now no or very little rubbish in the container, and cleaning or disinfecting thereof can then take place very effectively, the bottom of the container then being accessible to the cleaning or disinfecting fluid.

When the container is tilted for discharge thereof, the cleaning or disinfecting device 2, which is advantageously situated in a housing itself fixed to the container, is tilted accordingly. The cleaning or disinfecting device 2 is thus in the inclined position shown in figure 5 with the neck 13 of the reservoir 7 being the lowest part of the device 2. The dosing element 8, which is situated close to the neck 13 of the reservoir 7, then fills with a quantity of cleaning or disinfecting fluid leaving the reservoir 7 through the first pipe 11 between dosing element 8 and reservoir 7.

This quantity is sufficient to form a cleaning dose then stored in the dosing element 8. The dose is formed by gravity according to the communicating-vessels principle by means of the second pipe 9 serving as an air intake and connecting the dosing element 8 to the reservoir 7 as previously mentioned. This is because the level of fluid 14 in the reservoir 7 extends substantially horizontally in this tilted position of the device 2 and is on the same horizontal line as the level of fluid in the second pipe 9, which enables the dosing element 8 to be filled.

The second operating step of the cleaning or disinfecting device 2 is essentially illustrated by figure 6. This second step concerns the discharge of the dose of fluid out of the dosing element 8. The dosing element 8 comprises a third pipe 10 for discharge of the dose of fluid with a view to spreading thereof in the container, this third pipe 10 being directed towards the bottom part of the container when said container is in its normal position of use. The means of spreading said fluid in the container according to the present invention comprises this third pipe 10. These spreading means are for example supplemented by the means for discharging or directing fluid present in the housing, as will be seen subsequently.

After discharge of the rubbish from the container, during which the filling of the dosing element 8 takes place, the container is returned to the normal position of use and the cleaning or disinfecting device once again occupies a substantially vertical position in its housing in the container, as shown in figure 6. The dosing element 8,

which is again filled with cleaning or disinfecting fluid, is emptied of its fluid through the third discharge pipe 10, said pipe 10 being directed towards the bottom of the device 10 whereas it was directed upwards at the previous step illustrated in figure 5.

Thus a method for cleaning or disinfecting a household rubbish container
 5 according to the present invention by the use of a cleaning or disinfecting device 2 internal to the container, this method comprising sequences of delivery of a cleaning or disinfecting fluid inside the container, this container being emptied of the rubbish that it contains by tilting of said container into a discharge position, is characterised by the step of forming a dose of fluid inside the container when it is tilted into the rubbish-
 10 discharge position and the step of spreading the dose of fluid in the container when the container has been returned to its normal position of use.

Advantageously, in the method, the step of forming a dose of fluid and the step of spreading said dose of fluid take place automatically respectively during the putting into the discharge position or the putting into the normal position of use. The normal position
 15 of use advantageously corresponds to a position in which the bottom of the container 1 is substantially parallel to the ground or to a position where the lateral walls of the container have a substantially vertical principal direction.

The fluid flows into the third discharge pipe 10 in the direction of discharge of the fluid Ff and leaves through the orifice 10a terminating the third discharge pipe 10,
 20 advantageously close to the connection of the second pipe 9 with the reservoir, but this is not obligatory. This is also particularly clearly visible in figure 4.

The features of the housing 6 of the cleaning or disinfecting device will now be explained with regard to figures 7 to 10.

In figure 7, the cleaning or disinfecting device, of which the reservoir 7, the
 25 dosing element 8, the first pipe 11, the plug 12 and the second pipe 9 covering the third pipe at a distance can be seen, is removably inserted in a housing 15 fixed towards the bottom part of the container 1 when the latter is in its normal position of use so that the cleaning or disinfecting fluid is spread over the bottom of this container 1. This housing 15 advantageously comprises a reception body 15a at least partially surrounding the
 30 cleaning or disinfecting device. This housing 15 also advantageously comprises a removable lid covering said body 15a. In figure 7 only the reception body 15a is visible.

The reception body 15a of the housing 15 is substantially in the form of a parallelepiped with a base 15b and for lateral faces. One of said lateral faces of the
 35 body 15a forms a lateral wall 15c in abutment against the inside of the container 1, this at least partially. This abutment advantageously takes place against a lateral wall of

the container 1. If the edges of the lateral wall in abutment 15c are straight, the other edges of the lateral walls are rounded so as not to present any sharp corner that could burst plastic bags filled with rubbish introduced into the container 1. The housing 15 advantageously has a shape not facilitating the attachment of rubbish on its external part. This will in particular be the case with its lid, as will be described with regard to figure 8.

The reception body 15a of the housing 15 is advantageously adapted to the cleaning or disinfecting device so that the latter occupies substantially all the space inside this body 15a. In figure 7, the reception body 15a has substantially a rectangular cross section with a longitudinal wall of said body 15a as the wall 15c in abutment against the inside of the container 1. The lateral wall of the reservoir 7 not carrying the second pipe 9 is substantially opposite and at a short distance from a lateral wall of the body 15a of the housing 15 while the second pipe 9 is situated opposite and at a short distance from the opposite lateral wall of the body 15a. The other front and rear walls of the reservoir 7 are situated opposite and at a short distance from an associated wall of the reception body 15a. Thus the cleaning or disinfecting device can move only slightly in the body 15a of the housing 15.

To increase the holding of the cleaning or disinfecting device in the body 15a, fixing ribs 24 are provided on the inside of each lateral or longitudinal wall of the body 15a, limiting further the movement of the device with respect to the wall of the body 15a that carries them.

Advantageously, one of the walls of the cleaning or disinfecting device carries a protrusion 24a, for example in the form of two ribs that can be inserted between two fixing ribs 24 carried internally by a wall of the body 15a. It is preferred that this be the lateral wall of the reservoir 7 opposite to the wall carrying the second pipe 9 that carries this protrusion.

In the normal position of use, the cleaning or disinfecting device is introduced through the top in the body 15a of the housing 15, by making said device descend in said body 15a. In order to avoid putting the device in an reversed position in the body 15a of the housing 15, that is to say a position with a pivoting of 180° of the device about a vertical axis, at least one positive-location rib 25 is advantageously provided inside the body 15a on at least one of its walls.

Such a positive-location rib 25 extends towards the inside of the body 15a and is advantageously disposed on the inside of the wall of the body 15 which the lateral wall of the reservoir 7 carrying the second pipe 9 of the device is opposite, this positive-location rib 25 not being facing said pipe but offset with respect to it. This is because

empty spaces exist inside the body 15a of the housing 15 on each side of the second pipe 9, these spaces being able to receive said rib 25. On the other hand, this positive-location rib forms a stop when the cleaning or disinfecting device is introduced in the reverse position with facing the opposite side of the reservoir 7 not carrying the second pipe 9, such a side not having any empty spaces. Thus the insertion of the device in the reverse position in the reception body 15a is made impossible.

The base 15b of the reception body 15a of the housing 15 comprises an orifice 16 for discharging the dose of fluid into the container 1, and more particularly towards the bottom thereof. This discharge orifice 16 is therefore advantageously oriented towards the bottom part of the container 1 when said container 1 is in its normal position of use. This discharge orifice 16 is advantageously situated facing and below the outlet orifice of the third pipe, not visible in figure 7 and serving for discharging fluid out of the cleaning or disinfecting device.

Advantageously, the discharge orifice 16 can also be situated on a lower portion of a wall of the body 15a of the housing 15. This is because such a lower portion of a wall of the body 15 is less susceptible to be soiled by deposits of rubbish, which is an obstacle to the spreading of the clearing or disinfecting fluid out of the housing 15.

Figure 8 shows a lid 17 fitting on top of the reception body 15a of the housing 15. This lid 17 is advantageously removable so that the cleaning or disinfecting device is removed from the housing 15 in particular to fill the reservoir 7 of this device once again.

Advantageously, the lid 17 does not have externally any sharp corner for the reasons mentioned above in consideration of the reception body 15a of the housing 15. The base of the lid 17 corresponds to the opening at the top part of the body 15a while having the same cross section, advantageously a rectangular cross section.

In figure 8, the lid 17 has its highest part in the normal position of use of the container 1 on its wall in abutment against the wall of the container 1, a wall that extends the wall 15c of the body 15a. In the direction of its width, the lid 17 has an inclined portion 17a approaching the body 15a and not having externally any sharp corner.

For fixing thereof removably to the reception body 15a of the housing 15, the lid 17 has, at its part oriented towards the body, firstly, on one side of said part, at least one lug 18 entering a recess 18a provided on the reception body 15a and, secondly, on the side opposite said first part, a means 19 for locking the lid 17 with respect to said body 15a.

A passage 20 is formed in the inclined portion 17a of the lid 17 in order to allow access to the user for locking or unlocking the locking means 19, in particular by means of a suitable tool.

This locking means 19 is particularly clearly visible in figure 9. In this figure, the locking means 19 is composed of a locking lug 22 that can be introduced into a locking notch 23 present in the facing part of the reception body 15a when said lug is pivoted advantageously in a plane parallel to the plane of the top opening of the reception body 15a. The pivoting is effected by the user by action of a means actuated by said user on a head 21 carried by the locking means 19, this head extending along the pivot axis of the lug 22. For example, without this being limitative, the head 21 may be in the form of a triangle or a square and actuated by a corresponding tool.

Figure 10 shows the lower portion of a housing integrating a cleaning or disinfecting device for a household rubbish container according to the present invention.

In this figure there is visible the orifice 10a of the third pipe 10 discharging fluid from the reservoir 7 after a quantity of cleaning or disinfecting fluid has previously been dosed in the dosing element. This orifice 10a is substantially above a curved connecting part connecting the second pipe 9 to the lower part of the reservoir 7. The reception body 15a of the housing 15 has, on its base 15b, a discharge orifice 16 for spreading cleaning or disinfecting fluid in the container and in particular on the bottom thereof.

In figure 10, the discharge orifice 16 is situated directly below the orifice 10a of the third pipe 10. Thus the cleaning or disinfecting fluid can flow more or less directly from the third pipe 10 to the container. When a certain quantity of fluid is able to flow inside the reception body 15a of the housing 15 and in particular on its base 15b, it is advantageous to provide a declivity on this base 15b, directing the dose of fluid spread towards said orifice 16. This is obtained by slopes at the bottom 26 on each side of the discharge orifice 16 of the housing 15, the inclination of which is oriented towards the discharge orifice 16, these slopes at the bottom 26 conducting the fluid towards the orifice 16. Thus all the fluid of a dose spread in the housing 15 is discharged from the housing 15 into the container.

Outside the housing 15, close to the discharge orifice 16, there may be an auxiliary device for enabling the fluid to be spread over the entire surface of the bottom of the container but this is not at all obligatory. For example, this device may be composed of a tube having multiple perforations through which the fluid flows towards the bottom of the container.

The invention is not limited to the embodiments described but extends to any embodiment in accordance with its spirit.

REFERENCES

- | | | |
|----|------|-----------------------------------|
| | 1. | Container |
| | 2. | Cleaning or disinfecting device |
| 5 | 3. | Opening |
| | 4. | Bottom |
| | 5. | Wheel |
| | 6. | Housing |
| | 7. | Reservoir |
| 10 | 8. | Dosing element |
| | 9. | Second pipe |
| | 10. | Third pipe |
| | 10a. | Orifice |
| | 11. | First pipe |
| 15 | 12. | Plug |
| | 13. | Neck |
| | 14. | Fluid level |
| | 15. | Housing |
| | 15a. | Reception body |
| 20 | 15b. | Base |
| | 15c. | Lateral wall in abutment |
| | 16. | Discharge orifice |
| | 17. | Lid |
| | 17a. | Inclined portion |
| 25 | 18. | Tongue |
| | 18a. | Recess |
| | 19. | Locking means |
| | 20. | Passage |
| | 21. | Head |
| 30 | 22. | Locking lug |
| | 23. | Locking notch |
| | 24. | Fixing rib |
| | 24a. | Protrusion |
| | 25. | Positive-location rib |
| 35 | 26. | Slope at bottom 26 |
| | Fe. | Direction of discharge of rubbish |

- Ff. Direction of discharge of fluid
- Fr. Rotation movement of container

CLAIMS

1. Rubbish container having an opening for the deposition of rubbish inside it and incorporating a cleaning or disinfecting device configured so as to provide the delivery of a cleaning or disinfecting fluid inside the container, wherein the cleaning or disinfecting device comprises delivery means for a dose of fluid inside the container configured to deliver the dose of fluid after an inclination of the container and then its return to the normal position of use, and wherein the delivery means comprise means for forming a dose of fluid inside the container and means for spreading said fluid in the container, the means for forming being active when the container is inclined in the position of discharging the rubbish that it contains and the means for spreading being active when the container has been returned to its normal position of use.

2. Container according to claim 1, wherein the means for forming a dose of fluid comprise a dosing element filled with a dose of fluid when the container is inclined in the discharge position.

3. Container according to claim 2, wherein the cleaning or disinfecting device comprises a fluid reservoir, the dosing element being connected by a first pipe to said reservoir for taking off a quantity of fluid from said reservoir by gravity when the container is inclined, this quantity forming a dose of fluid, the dosing element also being connected to said reservoir by a second pipe providing an air intake between dosing element and reservoir.

4. Container according to claim 3, wherein the means for spreading comprise a third pipe emerging from the dosing element for discharge of the dose of fluid with a view to spreading thereof in the container, this third pipe being directed towards a bottom part of the container when said container is in its normal position of use.

5. Container according to any claim 3, wherein the cleaning or disinfecting device is inserted removably in a housing fixed towards a bottom part of the container when said container is in its normal position of use.

6. Container according to claim 5, wherein the housing comprises an orifice for discharging the dose of fluid in the container, this orifice being oriented towards the bottom part of the container when said container is in its normal position of use.

7. Container according to claim 6, wherein the housing surrounds the cleaning or disinfecting device, the housing comprising a body for receiving said device and a removable lid covering said body.

8. Container according to claim 7, wherein the body and/or the removable lid does not have any sharp corner externally.

9. Container according to claim 7, wherein the reception body of the housing is substantially in the form of a parallelepiped with a base and four walls, one of said walls being at least partially in abutment against the inside of the container.

10. Container according to claim 9, wherein the discharge orifice of the housing is disposed on the base of the body or on the bottom portion of one of the walls of said body.

11. Container according to claim 10, wherein the base of the body has a declivity directing the dose of fluid towards said discharge orifice.

12. Container according to claim 8, wherein the lid has, at its part oriented towards the body, firstly, on one side of said part, at least one tongue entering a recess provided on the reception body and, secondly, on the body opposite said part, a means of locking the lid with respect to said body.

13. Container according to claim 12, wherein the locking means is composed of a locking lug inserted by pivoting in a locking notch provided in the reception body.

14. Container according to claim 13, wherein the lid comprises a passage enabling a user to have access to the locking means in order to effect a pivoting of said locking lug.

15. Method for cleaning or disinfecting such a household rubbish container according to any one of the preceding claims by means of a cleaning or disinfecting device internal to the container, this method comprising delivering a cleaning or disinfecting fluid in the interior of the container, this container being emptied of rubbish that it contains by tilting said container into a discharge position, the method comprising a step of forming a dose of fluid inside the container when it is tilted into the rubbish-discharge position and a step of spreading the dose of fluid in the container when the container has been returned to its normal position of use.

16. Method according to claim 15, wherein the step of forming a dose of fluid and the step of spreading said dose of fluid take place automatically

respectively when putting in the discharge position or putting in the normal position of use.

ABSTRACT

DEVICE FOR THE DISINFECTING OR CLEANING OF A HOUSEHOLD RUBBISH
CONTAINER AND THE METHOD FOR DISINFECTING OR CLEANING SUCH A
CONTAINER

5 The present invention concerns a rubbish container (1) having an opening (3) for
the deposition of rubbish inside it and incorporating a cleaning or disinfecting device (2)
configured so as to provide the delivery of a cleaning or disinfecting fluid inside the
container (1), characterised in that the cleaning or disinfecting device (2) comprises
means for delivering a dose of fluid inside the container configured to deliver the dose
10 of fluid after an inclination of the container (1) and then its return to the normal position
of use.

Application to the collection and removal of rubbish for the cleanliness of rubbish
containers.

15 Figure 1