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(54) **APPARATUS FOR TREATMENT OF PORTABLE CONTAINERS**

VORRICHTUNG ZUR BEHANDLUNG VON TRAGBAREN BEHÄLTERN

APPAREIL POUR LE TRAITEMENT DE CONTENANTS PORTATIFS

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Description

[0001] The present invention refers to an apparatus for treatment of portable containers, in particular reusable containers for liquid, sludge and similar, according to the preamble of claim 1.

[0002] An apparatus for emptying, cleaning and sterilizing an object such as a bed pan has been disclosed in a document DE 21 52 966 A1. Said document comprising a closable chamber having an inlet permitting access to the closable chamber and a fluid outlet, a support capable of receiving the object to be cleaned, the support being rotatably mounted in the chamber, means for rotating the support, at least one nozzle located in the chamber for directing cleaning fluid towards the object on the support and electrical heating means located in the support so that an object placed in the support may be heated to a temperature sufficient to sterilize it. It is obvious that known apparatus is neither intended nor appropriate for treatment of portable containers, and represents rather complex and intricate solution in particular due to the electrical heating means which may come into contact with liquid and may represent serious danger to the user.

[0003] It is the object of the present invention to create an apparatus for treatment portable containers which can easily and reliably clean containers comprising a bottle-neck.

[0004] According to the invention, the object as set above is solved in a manner that an apparatus for treatment portable containers comprises a box like body being formed in the top section thereof with an elongated cut-out, an optionally flanged tubular reception port, which may be swivelled by means of a pivotal seating, being inserted through said cut-out into said body. Said flange and/or tubular port may be provided with a sensor which detects in said port a presence of a container to be treated. Furthermore, a water supply pipe is accommodated in said body, said pipe being attached with the first end thereof to a water source whereas a free end thereof being fitted with a nozzle. With regard to said port said nozzle is placed in a manner that it is arranged in the immediate vicinity of an outlet aperture of said port when the latter is placed in the starting i.e. approximately horizontal position. Said pipe is further provided with a valve being optionally attached via an inlet to a repository of a cleaning agent, chemical agent or similar.

[0005] The invention is further described in detail by way of non-limiting preferred embodiment, and with a reference to the accompanying drawings, where

- Fig. 1 shows a three-dimensional view of an apparatus for treatment portable containers according to the invention placed on a utility sink,
 Fig. 2 shows a cross-sectional view in a plane II-II of Fig. 1 of an apparatus according to the invention,
 Fig. 3 shows a detail III of Fig. 2.

[0006] According to the invention, an apparatus for treatment portable containers is further described in detail by way of an embodiment representing an apparatus for treatment portable container used for dejections with a dry toilet. It is of course obvious for a person skilled in the art that the apparatus of the kind can be utilized, with only minor modifications, with other containers for other purposes, without departing from the spirit and scope of the invention.

[0007] In a given case, said apparatus for treatment portable containers according to the invention comprises a box like body 1 being adapted for mounting on top of an existing sanitary element, such as a utility sink 2 for instance. Preferably, in such a case said body 1 is entirely open on the side of the connection with said utility sink 2, and simultaneously attached onto said utility sink 2 by means of a fixing means being typically provided on the utility sink 2, said fixing means being known per se and not shown in detail. Alternatively, it is provided for according to the invention that said body 1 optionally comprises a bottom, meaning that it is entirely enclosed, thus enabling it to be freely placed on an arbitrary base.

[0008] At the first end 3 of said body 1, that is at the end which, when properly used, faces a potential user of an apparatus according to the invention, and in the area of one of the longitudinal sides of said body 1, the latter is formed with an elongated cut-out 4. A tubular reception port 5 is inserted through said cut-out 4 into said body 1, said port being formed at the end thereof with a flange 6 projecting out of said body. Said port 5 is pivotally seated in the body 1 in a manner that it may be swivelled preferably in the vertical plane. In the present embodiment, said seating is formed as a spherical joint 7 known per se, wherein a socket of said joint being formed as a part of the body 1 and a ball of said joint being formed integrally with said port 5. Base position of said port 5 in said body 1 is represented by a centre line 8 of said port 5 being tilted for an angle α of about 10° with respect to a horizontal plane so that an inlet aperture 9 of said port 5 is always lifted above an outlet aperture 10 thereof. Furthermore, it is provided for according to the invention that the swivelling angle of said port 5 comprises preferably about 90° with respect to the base position of said port 5. In addition, it is provided for, according to the present invention that the dimensions of said port 5 and said flange 6 are adapted to the outlet appendage of each container to be treated by means of an apparatus according to the invention.

[0009] Further, a water supply pipe 11 is arranged in said body 1 of the apparatus according to the invention, said pipe 11 being connected at the first end thereof to a water source, such as the water supply network, whereas the free end of said pipe 11 being provided with a nozzle 1. With respect to said port 5, said nozzle 12 being placed in a manner that it is arranged in the immediate vicinity of an outlet aperture 10 of said port 5 when the latter is placed in the starting i.e. approximately horizontal position. However, when said port 5 is lifted to the end

position thereof said nozzle 12 is positioned outside the area of the aperture 10 of said port 5. Additionally, said pipe 11 is provided with a valve 13 which is controlled remotely by means of foot switch 14, for instance, arranged in the immediate vicinity of said utility sink 2. Said valve 13 enables or disables the water flow via said pipe 11 and, optionally, enables or disables supply of cleaning agent, chemical agent or similar from a repository 15 via an inlet 16 into said pipe 11 where said agent being mixed with the water and fed via said nozzle 12 into the container to be treated.

[0010] Furthermore, it is provided for according to the present invention that said port 5 or that said flange 6 is fitted with a sensor 17 which detects the insertion of the container to be treated into said port 5. Said sensor 17 allows for the valve 13 and/or the repository 15 to be activated via said switch 14 only when said sensor 17 detects the container to be treated being properly placed. Still further is provided for according to the present invention that a deflection blade 18 is arranged inside the body 1 and in the area under said port 5, which enables directing the content flowing out of the container into the flushing section of said utility sink 2.

[0011] The apparatus according to the invention operates as follows. The container to be treated is placed onto the apparatus according to the invention in a manner that the outlet appendage, which is a component part of each container, is tightly inserted into said tubular reception port 5 in the body 1 of the apparatus according to the invention. Said sensor 17 detects the inserted container and allows for the connection with the valve 13 and/or the repository 15, and optionally alerts the user of the apparatus according to the invention that the treatment of the container may be continued. Now, the user swivels the container from said approximately horizontal position into said approximately vertical position, thus emptying the container to be treated into said utility sink 2. When the container is emptied, it is swivelled again into said approximately horizontal position. In this position, the user is allowed for, by activating the switch 14 and optionally by simultaneous activation of the repository 15, to fill the container with the water and/or with the mixture of the water and the cleaning agent and/or chemical agent, and to swivels optionally the container again into said approximately vertical position in order to empty the container. Afterwards, the container may be taken of said port 5 and the apparatus according to the invention is ready for the next application.

[0012] The body 1 of the apparatus according to the invention is formed on the side thereof being averted from the utility sink 2 with an additional aperture 19 which can be manually opened and closed by means of a cover not shown. Said aperture 19 is intended for the container to be emptied conventionally, or to supervise the content flowing out of the container to be treated.

Claims

1. Apparatus for treatment of portable containers, in particular reusable containers for liquid, sludge and similar, whereby it comprises a box like body (1) being formed in the, in use, top section thereof with an elongated cut-out (4), whereby a water supply pipe (11) is accommodated in said body (1), said water supply pipe being attachable with the first end thereof to a water source and whereby said pipe (11) is provided with a valve (13), **characterised in that** a tubular reception port (5) is inserted through said cut-out into said body (1), said port (5) may be swivelled by means of a pivotal seating of the apparatus, and **in that** a free end of said pipe (11) is arranged in the immediate vicinity of an outlet aperture (10) of said port (5) when the latter is placed in the starting, approximately horizontal position, said pipe being optionally attached via an inlet (16) to a repository (15) of a cleaning agent, chemical agent or similar.
2. Apparatus according to claim 1, **characterised in that** said pivotal seating is formed as a spherical joint (7), wherein a socket of said joint being formed as a part of the body (1) and a ball of said joint (7) being formed integrally with said port (5).
3. Apparatus according to claim 1, **characterised in that** said tubular reception port (5) can be swivelled preferably in a vertical plane.
4. Apparatus according to any of the preceding claims, **characterised in that** a centre line (8) of said port (5) in the starting position thereof is tilted for an angle α of about 10° with respect to a horizontal plane.
5. Apparatus according to any of the preceding claims, **characterised in that** the swivelling angle of said port (5) in vertical plane comprises approximately 90° with respect to the starting position of said port.
6. Apparatus according to any of the preceding claims, **characterised in that** said port (5) is provided with a sensor (17) to detect a presence of the container to be treated.
7. Apparatus according to any of the preceding claims, **characterised in that** the free end of said pipe (11) is provided with a nozzle (12).
8. Apparatus according to any of the preceding claims, **characterised in that** a deflection blade (18) is arranged inside said body (1) and in the area under said port (5).

Patentansprüche

1. Vorrichtung zur Handhabung von tragbaren Behältern, insbesondere wiederverwendbaren Behältern für Flüssigkeiten, Schlamm und dergleichen, wobei diese einen boxähnlichen Körper (1) umfasst, der in dem sich im Gebrauch oben befindlichen Abschnitt davon mit einer länglichen Aussparung (4) ausgebildet ist, wobei ein Wasserzuleitungsrohr (11) in dem Körper (1) aufgenommen ist, wobei das Wasserzuleitungsrohr mit seinem ersten Ende an einer Wasserquelle anbringbar ist, und wobei das Rohr (11) mit einem Ventil (13) versehen ist, **dadurch gekennzeichnet, dass** ein rohrförmiger Aufnahmeanschluss (5) durch die Aussparung in den Körper (1) eingeschoben ist, wobei der Anschluss (5) mittels einer Drehaufnahme der Vorrichtung verschwenkt werden kann, und wobei ein freies Ende des Rohrs (11) in der unmittelbaren Nähe einer Auslassöffnung (10) des Anschlusses (5) angeordnet ist, wenn Letzterer in der Ausgangs- und annähernd horizontalen Stellung positioniert ist, wobei das Rohr über einen Einlass (16) optional mit einem Vorratsbehälter (15) für ein Reinigungsmittel, chemischen Mittel oder dergleichen verbunden ist.
2. Vorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Drehaufnahme als ein Kugelgelenk (7) ausgebildet ist, wobei dessen Gelenkpfanne als ein Teil des Körpers (1) ausgebildet ist, und wobei eine Kugel des Gelenks (7) integral mit dem Anschluss (5) ausgebildet ist.
3. Vorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der rohrförmige Aufnahmeanschluss (5) vorzugsweise in einer vertikalen Ebene verschwenkt werden kann.
4. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** eine Mittellinie (8) des Anschlusses (5) in seiner Ausgangsposition in einem Winkel α von etwa 10° in Bezug auf eine horizontale Ebene geneigt ist.
5. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Schwenkwinkel des Anschlusses (5) in einer vertikalen Ebene in Bezug auf die Ausgangsposition des Anschlusses näherungsweise 90° umfasst.
6. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Anschluss (5) mit einem Sensor (17) versehen ist, um die Anwesenheit eines zu handhabenden Behälters zu detektieren.
7. Vorrichtung nach einem der vorhergehenden An-

sprüche, **dadurch gekennzeichnet, dass** das freie Ende des Rohrs (11) mit einer Düse (12) versehen ist.

8. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** ein Ablenkblatt (18) im Inneren des Körpers (1) und in dem Bereich unter dem Anschluss (5) angeordnet ist.

Revendications

1. Appareil pour le traitement de contenants portatifs, en particulier de contenants réutilisables pour liquide, boue et similaire, il comprend ainsi un corps de type boîte (1) qui est formé dans la section, en utilisation, supérieure de celui-ci avec une découpe allongée (4), ce par quoi un tuyau d'alimentation en eau (11) est reçu dans ledit corps (1), ledit tuyau d'alimentation en eau étant apte à être fixé avec la première extrémité de celui-ci à une source d'eau, et ce par quoi ledit tuyau (11) comporte une valve (13), **caractérisé par le fait qu'un** orifice de réception tubulaire (5) est inséré à travers ladite découpe dans ledit corps (1), ledit orifice (5) peut être pivoté au moyen d'un siège pivotant de l'appareil, et **par le fait qu'une** extrémité libre dudit tuyau (11) est disposée au voisinage immédiat d'une ouverture de sortie (10) dudit orifice (5) lorsque ce dernier est placé dans la position de départ, approximativement horizontale, ledit tuyau étant facultativement fixé par l'intermédiaire d'une entrée (16) à un stockage (15) d'un agent de nettoyage, d'un agent chimique ou similaire.
2. Appareil selon la revendication 1, **caractérisé par le fait que** ledit siège pivotant se présente sous la forme d'un joint sphérique (7), un logement dudit joint faisant partie du corps (1) et une rotule dudit joint (7) étant formée d'un seul tenant avec ledit orifice (5).
3. Appareil selon la revendication 1, **caractérisé par le fait que** ledit orifice de réception tubulaire (5) peut être pivoté de préférence dans un plan vertical.
4. Appareil selon l'une quelconque des revendications précédentes, **caractérisé par le fait qu'un** axe longitudinal (8) dudit orifice (5) dans la position de départ de celui-ci est incliné d'un angle α d'environ 10° par rapport à un plan horizontal.
5. Appareil selon l'une quelconque des revendications précédentes, **caractérisé par le fait que** l'angle de pivotement dudit orifice (5) dans le plan vertical comprend approximativement 90° par rapport à la position de départ dudit orifice.
6. Appareil selon l'une quelconque des revendications

précédentes, **caractérisé par le fait que** ledit orifice (5) comporte un capteur (17) pour détecter la présence du contenant à traiter.

7. Appareil selon l'une quelconque des revendications précédentes, **caractérisé par le fait que** l'extrémité libre dudit tuyau (11) comporte une buse (12). 5
8. Appareil selon l'une quelconque des revendications précédentes, **caractérisé par le fait qu'**une lame de déviation (18) est disposée à l'intérieur dudit corps (1) et dans la zone sous ledit orifice (5). 10

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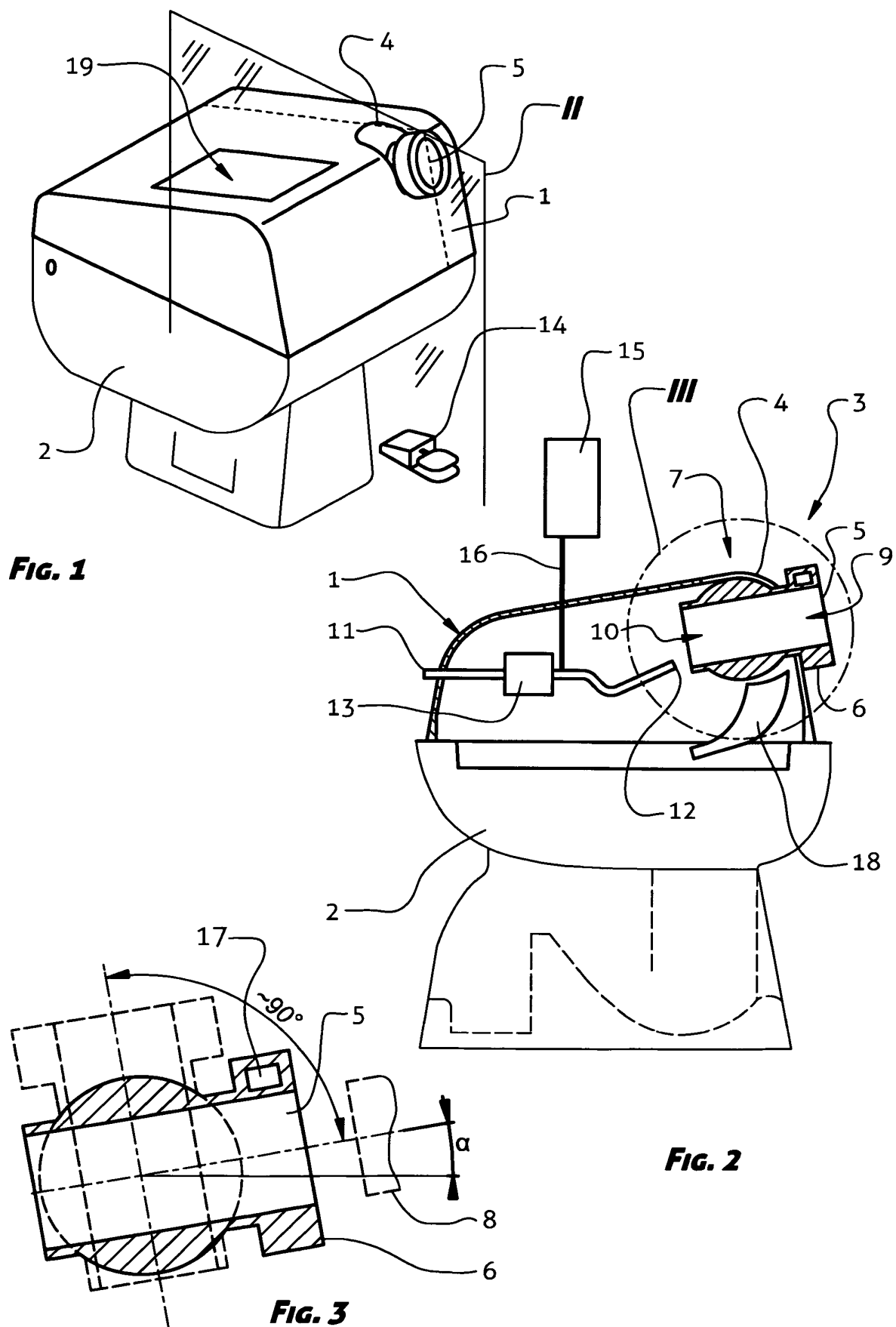
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REFERENCES CITED IN THE DESCRIPTION

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