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(54) **An opener device**

(57) A bottle opener device (1) comprises an element (8) to remove a cap (15) of a bottle (2), and two ultra-violet light bulbs (7) to sterilise part of the bottle (2). The removal element (8) may remove the cap (15) upon movement of the bottle (2) relative to the removal element (8) in a pivoting manner. The ultra-violet light bulbs (7) emit energy pulses in the form of ultra-violet light to sterilise part of the bottle (2). The device (1) comprises a sensor to determine whether the cap (15) of the bottle (2) has been removed. The ultra-violet light bulbs (7) are triggered to sterilise part of the bottle (2), responsive to the sensor determining that the cap (15) of the bottle (2) has been removed. The device (1) comprises a transparent window (5) to enable a person to view the ultra-violet light bulbs (7) emitting energy pulses. The device (1) comprises a clamp element (6) to clamp the device (1) to a support structure (3). The device (1) comprises an electronic monitor (4) to display digital advertising content.

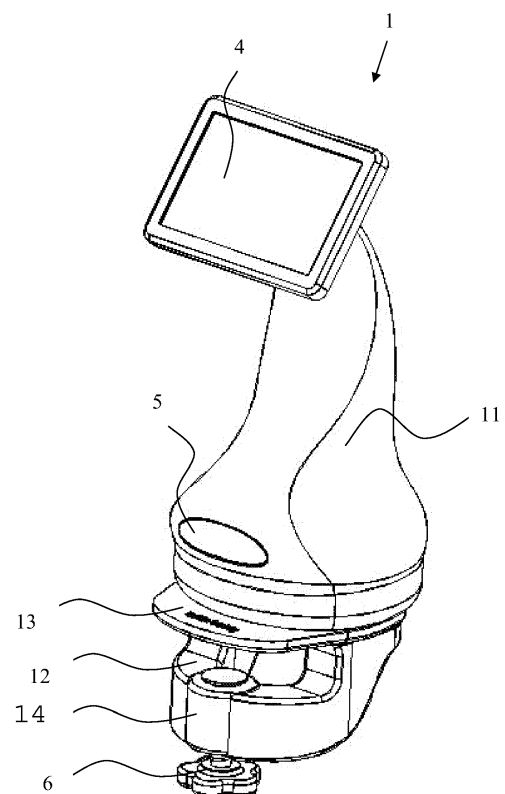


Fig. 1

Description

[0001] This invention relates to an opener device.

Statements of Invention

[0002] According to the invention there is provided an opener device comprising:

means to remove a cap of a container, and

means to clean at least part of the container.

[0003] By cleaning the container, the invention provides a hygienic means of accessing the contents of the container, for example a drink or food in the container.

[0004] In one embodiment of the invention the removal means is engagable with a cap to remove the cap. Preferably the removal means comprises a protruding tooth engagable with a cap to remove the cap. Ideally the removal means is configured to remove a cap upon movement of a container relative to the removal means. Most preferably the removal means is configured to remove a cap of a bottle.

[0005] In another embodiment the cleaning means is configured to emit energy to clean at least part of a container. Preferably the cleaning means is configured to emit one or more energy pulses. Ideally the cleaning means is configured to emit light. Most preferably the cleaning means is configured to emit ultra-violet light.

[0006] In one case at least part of the cleaning means is curved in shape. Preferably at least part of the cleaning means is toroidal in shape. In this manner the cleaning means may be arranged relative to the container with the cleaning means surrounding the container.

[0007] In another case the cleaning means is configured to clean at least part of a container after removal of a cap of the container. In this manner the surface of the container being cleaned is maximised. Preferably the device comprises means to determine whether a cap of a container has been removed. Ideally the cleaning means is configured to clean at least part of a container, responsive to the determining means determining that a cap of the container has been removed.

[0008] In one embodiment the cleaning means is configured to clean at least part of a neck of a container. Preferably the cleaning means is configured to sterilise at least part of a container. In this manner any microorganisms on the container are removed.

[0009] In another embodiment the device comprises means to indicate to a person cleaning of at least part of a container. In this manner the person may have confidence that it is hygienic to access the contents of the container, for example a drink or food in the container. Preferably the indicating means is configured to enable a person to view cleaning of at least part of a container.

[0010] In one case the device comprises means to mount the device to a support. Preferably the mounting

means is configured to releasably mount the device to a support. In this manner the device may be easily repositioned if desired. Ideally the mounting means is configured to clamp the device to a support.

[0011] In another case the device comprises means to display a visual image. In this manner the device may be used for advertising purposes. Preferably the display means is configured to display digital content. Ideally the device comprises means to store digital content to be displayed. Most preferably the device comprises means to determine digital content to be displayed. In this manner the digital content may be selected to suit a particular target audience. The determining means may be configured to determine the type of a container. In this manner the digital content may be selected to match the type of container being opened. Preferably the device comprises means to transfer digital content from the storage means to the display means, responsive to the type of a container being determined.

[0012] In one embodiment the invention provides a bottle opener device. In another embodiment the invention provides a can opener device.

[0013] In another embodiment the invention provides a computer implemented device.

[0014] The invention also provides in a further aspect a computer program product comprising computer program code capable of causing a computer system to operate the device of the invention when the computer program product is run on a computer system.

[0015] The computer program product may be embodied on a record medium. The computer program product may be embodied on a carrier signal. The computer program product may be embodied on a read-only memory.

Brief Description of the Drawings

[0016] The invention will be more clearly understood from the following description of some embodiments thereof, given by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is an isometric view of an opener device according to the invention,

Fig. 2 is an exploded isometric view of the device of Fig. 1,

Fig. 3 is a cut-away isometric view of part of the device of Fig. 1,

Fig. 4 is an isometric view of the device of Fig. 1 in use,

Fig. 5 is a side view of the device of Fig. 1 in use,

Figs. 6 to 11 are isometric views of the device of Fig. 1 and a bottle in use,

Fig. 12 is a cut-away isometric view of part of the device of Fig. 1 and a bottle in use,

Fig. 13 is a side view of the device of Fig. 1 and a bottle in use,

Fig. 14 is an isometric view of the device of Fig. 1 and a bottle in use,

Fig. 15 is an isometric view from the front of another opener device according to the invention,

Fig. 16 is an isometric view from the rear of the device of Fig. 15,

Fig. 17 is an isometric view from the rear of the device of Fig. 15 and a bottle in use,

Fig. 18 is a side view of the device of Fig. 15 and a bottle in use,

Fig. 19 is an isometric view of another opener device according to the invention in use,

Fig. 20 is an isometric view of another opener device according to the invention and a bottle in use,

Fig. 21 is a side view of the device of Fig. 20 and a bottle in use,

Fig. 22 is an isometric view of another opener device according to the invention in use,

Fig. 23 is an isometric view of the device of Fig. 22 and a bottle in use,

Fig. 24 is an isometric view of another opener device according to the invention and a bottle in use,

Fig. 25 is a side view of the device of Fig. 24 and a bottle in use,

Fig. 26 is an isometric view of another opener device according to the invention and a bottle in use,

Fig. 27 is an isometric view of the device of Fig. 26 and a bottle in use, and

Fig. 28 is an isometric view of the device of Fig. 26 and a bottle in use.

Detailed Description

[0017] Referring to the drawings, and initially to Figs. 1 to 14 thereof, there is illustrated a computer implemented bottle opener device 1 according to the invention.

[0018] The device 1 comprises an element 8 to remove a cap of a container, and two ultra-violet light bulbs 7 to

sterilise part of a neck of the container (Fig. 3). In this case the removal element 8 is employed to remove a cap 15 of a bottle 2, and the two ultra-violet light bulbs 7 are employed to sterilise part of the neck of the bottle 2.

[0019] The removal element 8 comprises a central opening 16 and a protruding tooth extending into the central opening 16 (Fig. 2). The upper part of the neck of the bottle 2 may be inserted into the central opening 16, and the protruding tooth is engagable with the cap 15 to remove the cap 15. The removal element 8 may remove the cap 15 upon movement of the bottle 2 relative to the removal element 8 in a pivoting manner (Fig. 11). The device 1 comprises a housing element 9 located radially outwardly of the removal element 8 surrounding the removal element 8 to protect the removal element 8 (Fig. 3).

[0020] Each ultra-violet light bulb 7 is curved in shape. In this case each ultra-violet light bulb 7 is toroidal in shape, as illustrated in Fig. 3. The device 1 comprises a housing element 10 located radially outwardly of the two ultra-violet light bulbs 7 and radially inwardly of the two ultra-violet light bulbs 7 surrounding the two ultra-violet light bulbs 7 to protect the two ultra-violet light bulbs 7 (Fig. 3). The housing element 10 is located radially outwardly of the housing element 9 surrounding the housing element 9. The ultra-violet light bulbs 7 emit energy pulses in the form of ultra-violet light to sterilise part of the neck of the bottle 2.

[0021] The ultra-violet light bulbs 7 are employed to sterilise part of the neck of the bottle 2 after removal of the cap 15 of the bottle 2. In particular the device 1 comprises a sensor to determine whether the cap 15 of the bottle 2 has been removed. The sensor may be provided in any suitable form, for example a mechanical sensor and/or an electronic sensor. The ultra-violet light bulbs 7 are triggered to sterilise part of the neck of the bottle 2, responsive to the sensor determining that the cap 15 of the bottle 2 has been removed. The ultra-violet sterilisation with the pulsed light sterilises part of the neck of the bottle 2.

[0022] The device 1 comprises a transparent window 5 to enable a person, such as a customer in a bar or a restaurant, to view the ultra-violet light bulbs 7 emitting energy pulses in the form of ultra-violet light to sterilise part of the neck of the bottle 2 (Fig. 1). In this manner the device 1 indicates to the customer that sterilisation of part of the neck of the bottle 2 is taking place.

[0023] As the ultra-violet light pulse is activated, an additional light such as a LED may be activated and may remain activated for a longer period of time to indicate visually to a consumer that the bottle 2 has been sterilised.

[0024] The device 1 comprises a protruding upper lip 13 which may extend over the upper surface of a support structure 3, such as a bar top or a table top, and a protruding lower lip 14 which may extend beneath the lower surface of the support structure 3 (Figs. 1 and 5). A recess 12 is defined between the upper lip 13 and the lower lip 14 into which the support structure 3 may extend. The

device 1 comprises a clamp element 6 extending upwardly from the lower lip 14. The clamp element 6 may be extended to engage the lower surface of the support structure 3 to clamp the device 1 to the support structure 3 (Fig. 5). In this manner the device 1 may be releasably mounted to the support structure 3.

[0025] The device 1 comprises an electronic monitor 4 to display digital advertising content by means of visual images (Fig. 1), and means to store the digital content to be displayed. The digital content may be a static advertising image, and/or moving screen images. The device 1 comprises a sensor to determine the type of the bottle 2 being opened and thus to determine the appropriate digital content to be displayed by the electronic monitor 4. The sensor may determine the type of the bottle 2 by scanning a barcode on the neck of the bottle 2. The device 1 also comprises means to transfer digital content from the storage means to the electronic monitor 4, responsive to the type of the bottle 2 being determined. In this manner the digital content may be selected to match the type of the bottle 2 being opened. The electronic monitor 4 may be connected in communication with one or more other data stores, for example by means of an internet connection.

[0026] By determining the type of the bottle 2 being opened and the time and the date of opening, this data may be employed by a drink supplier for stock control purposes.

[0027] The device 1 comprises an elongate neck element 11 extending from the transparent window 5 to the electronic monitor 4 (Fig. 1).

[0028] The video screen 4 is attached to the unit 11. The screen 4 may be a static advertising display area that has interchangeable insert advertisements.

[0029] Fig. 2 is an exploded view showing components of the device 1. Fig. 3 is a sectional view detailing the unit 1.

[0030] In use, the protruding upper lip 13 is extended over the upper surface of the support structure 3 and the protruding lower lip 14 is extended beneath the lower surface of the support structure 3. The support structure 3 extends into the recess 12. The clamp element 6 is extended to engage the lower surface of the support structure 3 to clamp the device 1 to the support structure 3 (Fig. 5). In this manner the device 1 is releasably mounted to the support structure 3.

[0031] Fig. 4 illustrates the unit 1 prior to fixing to the table/bar 3. Fig. 5 illustrates the unit 1 fixed to the table 3 with the table clamp 6.

[0032] The upper part of the neck of the bottle 2 is inserted into the central opening 16, and the bottle 2 is positioned with the cap 15 engaging with the protruding tooth of the removal element 8 (Figs. 6 to 10). The bottle 2 is moved relative to the removal element 8 in a pivoting manner to remove the cap 15 of the bottle 2 (Figs. 11 to 13). In this manner the device 1 opens the bottle 2.

[0033] Fig. 6 illustrates the bottle 2 with the lid/cap 15 on the bottle 2 prior to insertion into the unit 1. Fig. 7

illustrates a view from below prior to insertion of the bottle 2. Fig. 8 illustrates a rear view of the bottle 2 approaching the unit 1. Fig. 9 illustrates the bottle 2 being pushed up into position within the unit 1. Fig. 10 illustrates the unit 1 with the bottle 2 in the vertical position prior to opening of the lid 15 by pulling back the bottle 2. Fig. 11 illustrates the bottle 2 levered back, releasing the lid 15 which then falls to the ground.

[0034] The sensor determines when the cap 15 of the bottle 2 has been removed. After removal of the cap 15 of the bottle 2, the ultra-violet light bulbs 7 emit energy pulses in the form of ultra-violet light to sterilise part of the neck of the bottle 2, responsive to the sensor determining that the cap 15 of the bottle 2 has been removed (Figs. 11 to 13). A customer may view through the transparent window 5 the ultra-violet light bulbs 7 emitting energy pulses in the form of ultra-violet light to sterilise part of the neck of the bottle 2. In this manner the device 1 indicates to the customer that sterilisation of part of the neck of the bottle 2 is taking place.

[0035] Once the lid 15 is released the ultra-violet light pulse is emitted for a short period of time, in this case of the order of milliseconds, and sterilises the top of the bottle 2. Fig. 12 illustrates the main body 11, the bulb housing 10, the bottle top opener 8, the ultra-violet bulb high intensity pulse 7, the clear material window 5 which may focus light or direct it, and the table clamp 6. Fig. 12 illustrates a sectional view. Fig. 13 illustrates a side view at the same time period. Fig. 14 illustrates the sterilised bottle 2 beside the unit 1 ready for safe use by the consumer.

[0036] The electronic monitor 4 displays digital advertising content by means of visual images. The sensor determines the type of the bottle 2 being opened to determine the appropriate digital content to be displayed. Digital content is transferred from the storage means to the electronic monitor 4, responsive to the type of the bottle 2 being determined. In this manner the digital content may be selected to match the type of the bottle 2 being opened.

[0037] In Figs. 15 to 18 there is illustrated another computer implemented bottle opener device 20 according to the invention, which is similar to the computer implemented bottle opener device 1 of Figs. 1 to 14, and similar elements in Figs. 15 to 18 are assigned the same reference numerals.

[0038] In this case the device 20 comprises a substantially spherical shaped main body 11. The device 20 does not comprise a transparent window. The area 4 for displaying advertising media may be cut flat.

[0039] Fig. 19 illustrates a further computer implemented bottle opener device 30 according to the invention, which is similar to the computer implemented bottle opener device 20 of Figs. 15 to 18, and similar elements in Fig. 19 are assigned the same reference numerals.

[0040] In this case the device 30 does not comprise an electronic monitor.

[0041] Referring to Figs. 20 and 21 there is illustrated

another computer implemented bottle opener device 40 according to the invention, which is similar to the computer implemented bottle opener device 1 of Figs. 1 to 14, and similar elements in Figs. 20 and 21 are assigned the same reference numerals.

[0042] In this case the walls of the device 40 are translucent to enable a person, such as a customer in a bar or restaurant, to view the ultra-violet light bulbs 7 emitting energy pulses in the form of ultra-violet light to sterilise part of the neck of the bottle 2. In this manner the device 40 indicates to the customer that sterilisation of part of the neck of the bottle 2 is taking place. The device 40 does not comprise a transparent window. The entire unit 40 lights up like a beacon to indicate that sterilisation has taken place

[0043] The device 40 is fixedly attached to the upper surface of the support structure 3. In this manner the device 40 is releasably mounted to the support structure 3. The device 40 does not comprise a clamp element.

[0044] The device 40 does not comprise an electronic monitor. The sides may be of advertising material which may be backlit. The light may be activated for a time period once sterilisation has taken place.

[0045] The device 40 comprises a substantially cube shaped main body 11.

[0046] The unit 40 has the front side on display to the consumer.

[0047] In Figs. 22 and 23 there is illustrated another computer implemented bottle opener device 50 according to the invention, which is similar to the computer implemented bottle opener device 40 of Figs. 20 and 21, and similar elements in Figs. 22 and 23 are assigned the same reference numerals.

[0048] In this case the device 50 comprises an elongate curved main body 11. The concave portion of the curve faces away from a user towards a customer.

[0049] The unit 50 may be located behind a barman rather than facing a customer. The top section may be back lit.

[0050] Figs. 24 and 25 illustrate a further computer implemented bottle opener device 60 according to the invention, which is similar to the computer implemented bottle opener device 40 of Figs. 20 and 21, and similar elements in Figs. 24 and 25 are assigned the same reference numerals.

[0051] In this case the device 60 comprises a substantially cylindrical shaped main body 11 with an upper dome 61.

[0052] Referring to Figs. 26 to 28 there is illustrated another computer implemented bottle opener device 70 according to the invention, which is similar to the computer implemented bottle opener device 50 of Figs. 22 and 23, and similar elements in Figs. 26 to 28 are assigned the same reference numerals.

[0053] In this case the device 70 comprises an elongate curved main body 11. The convex portion of the curve faces away from a user towards a customer.

[0054] It will be appreciated that the invention may also

be employed as a computer implemented can opener device. The device may comprise an element to remove a cap of a can, and one or more ultra-violet light bulbs to sterilise part of the can.

[0055] The embodiments of the invention described previously with reference to the accompanying drawings comprise computer implemented bottle opener devices and/or processes performed by the computer implemented bottle opener devices. However the invention also extends to computer program products, particularly computer program products comprising computer program code stored on or in a carrier adapted to bring the invention into practice and capable of causing a computer system to operate the computer implemented bottle opener devices when the computer program product is run on a computer system. The program may be in the form of source code, object code, or a code intermediate source and object code, such as in partially compiled form or in any other form suitable for use in the implementation of the computer implemented bottle opener devices according to the invention. The carrier may comprise a storage medium such as ROM, such as a CD-ROM, or magnetic recording medium, such as a floppy disk or hard disk. The carrier may be an electrical or optical signal which may be transmitted via an electrical or an optical cable or by radio or other means.

[0056] The invention is not limited to the embodiments hereinbefore described, with reference to the accompanying drawings, which may be varied in construction and detail.

Claims

1. An opener device comprising:
 - means to remove a cap of a container, and
 - means to clean at least part of the container.
2. A device as claimed in claim 1 wherein the removal means is engagable with a cap to remove the cap.
3. A device as claimed in claim 1 or 2 wherein the removal means is configured to remove a cap upon movement of a container relative to the removal means.
4. A device as claimed in any of claims 1 to 3 wherein the cleaning means is configured to emit energy to clean at least part of a container.
5. A device as claimed in claim 4 wherein the cleaning means is configured to emit ultra-violet light.
6. A device as claimed in any of claims 1 to 5 wherein at least part of the cleaning means is curved in shape.
7. A device as claimed in any of claims 1 to 6 wherein

the cleaning means is configured to clean at least part of a container after removal of a cap of the container.

8. A device as claimed in claim 7 wherein the device comprises means to determine whether a cap of a container has been removed. 5
9. A device as claimed in any of claims 1 to 8 wherein the cleaning means is configured to sterilise at least part of a container. 10
10. A device as claimed in any of claims 1 to 9 wherein the device comprises means to indicate to a person cleaning of at least part of a container. 15
11. A device as claimed in claim 10 wherein the indicating means is configured to enable a person to view cleaning of at least part of a container. 20
12. A device as claimed in any of claims 1 to 11 wherein the device comprises means to mount the device to a support.
13. A device as claimed in any of claims 1 to 12 wherein the device comprises means to display a visual image. 25
14. A device as claimed in claim 13 wherein the display means is configured to display digital content. 30
15. A device as claimed in claim 14 wherein the device comprises means to determine digital content to be displayed. 35

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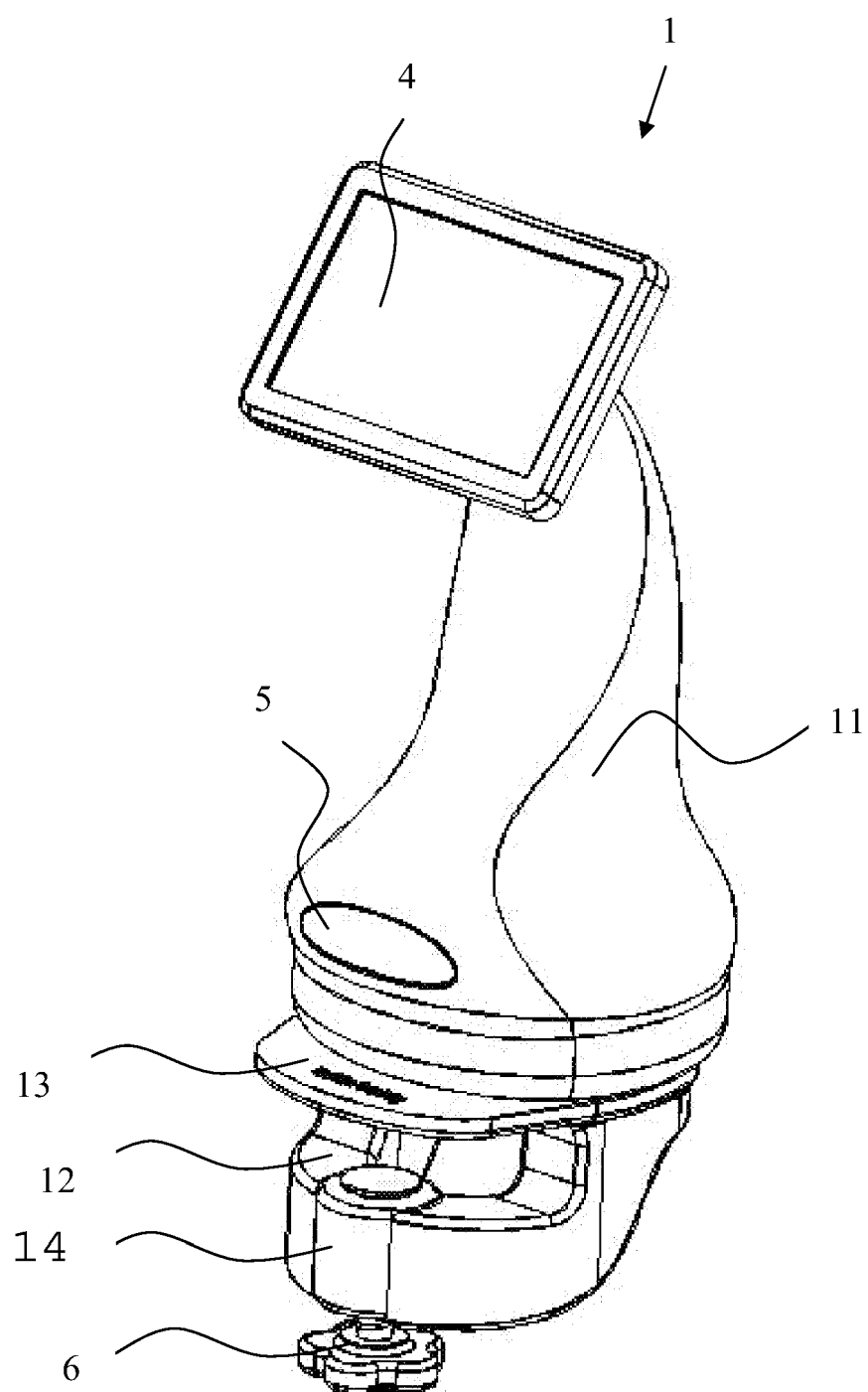


Fig. 1

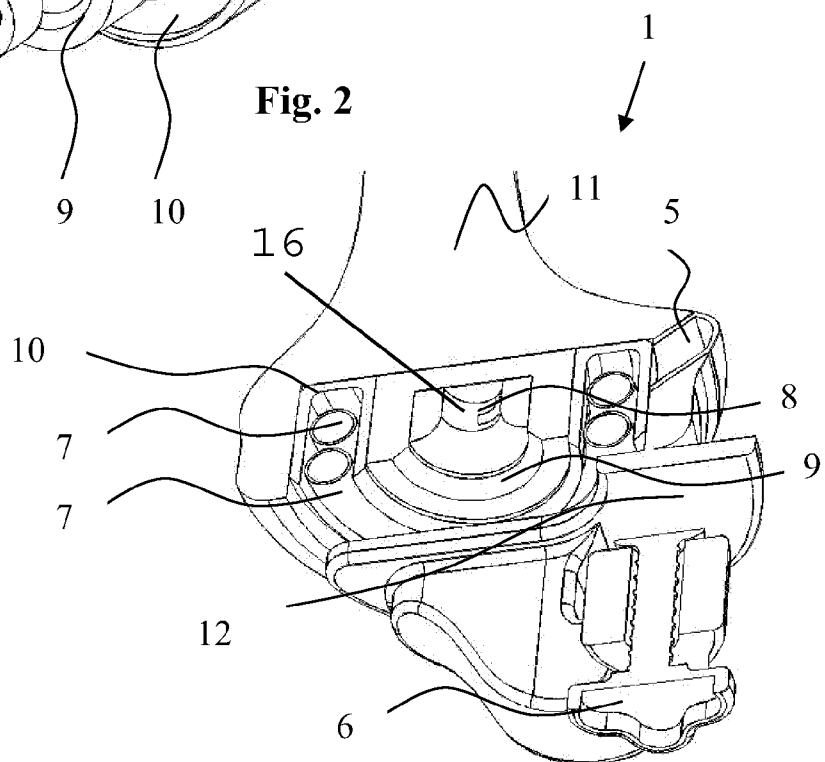
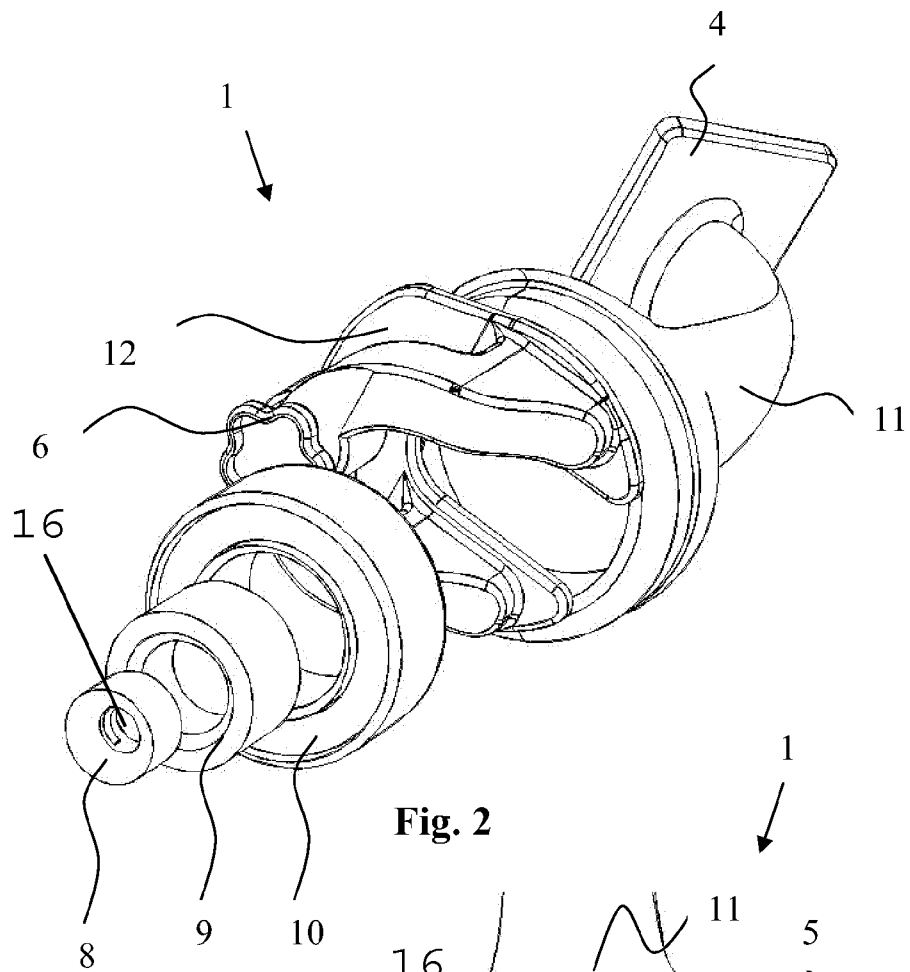


Fig. 3

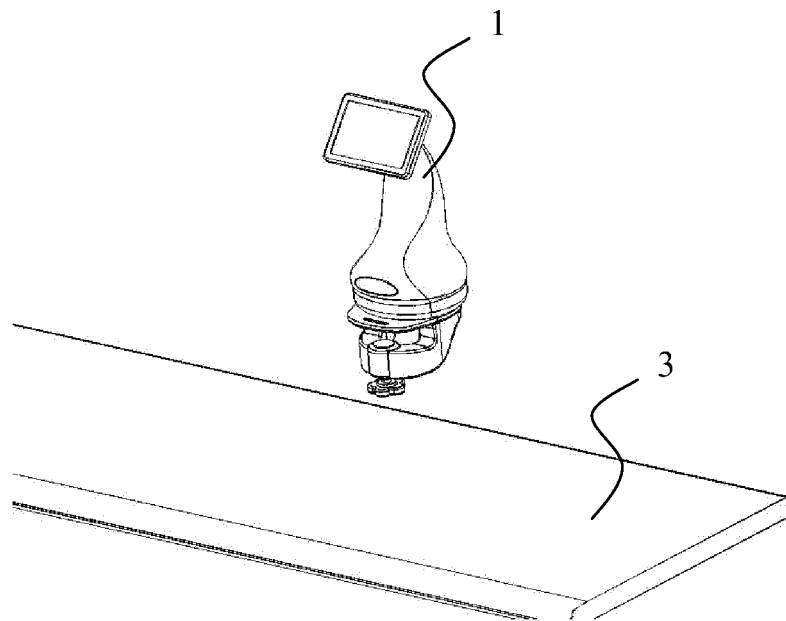


Fig. 4

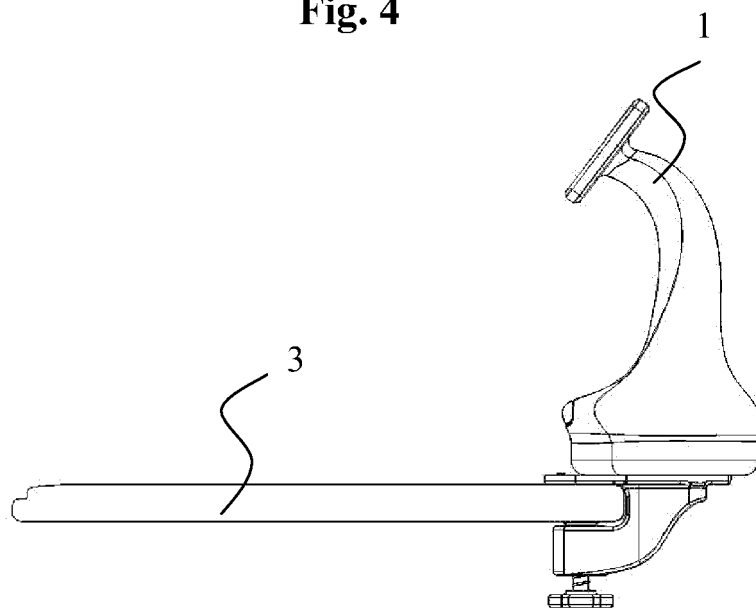


Fig. 5

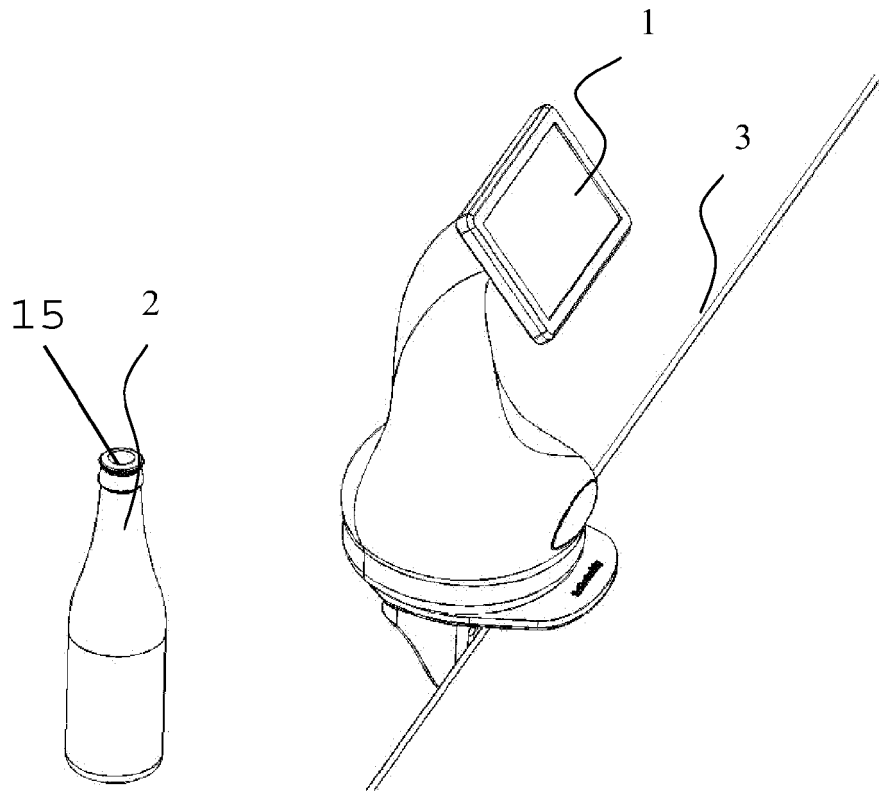


Fig. 6

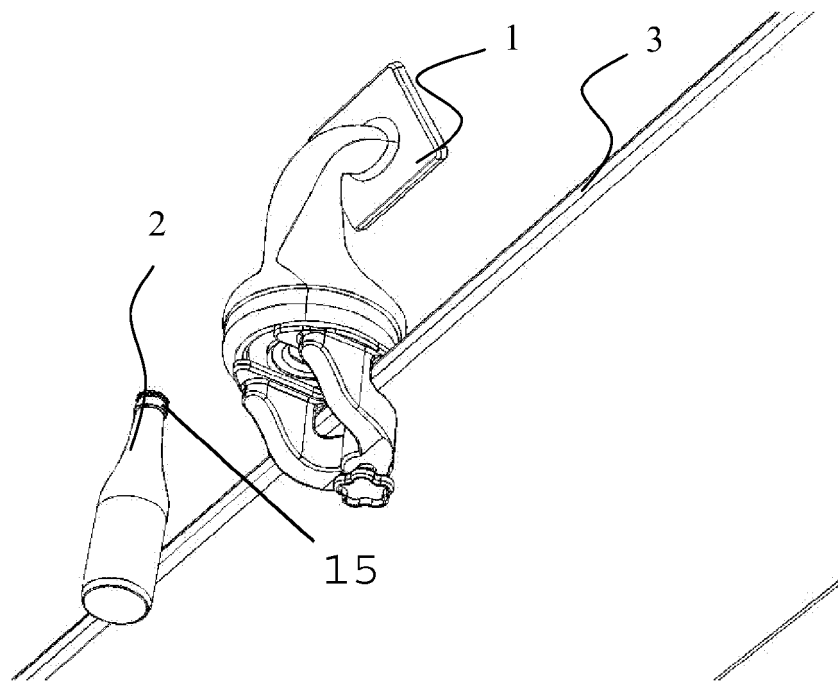


Fig. 7

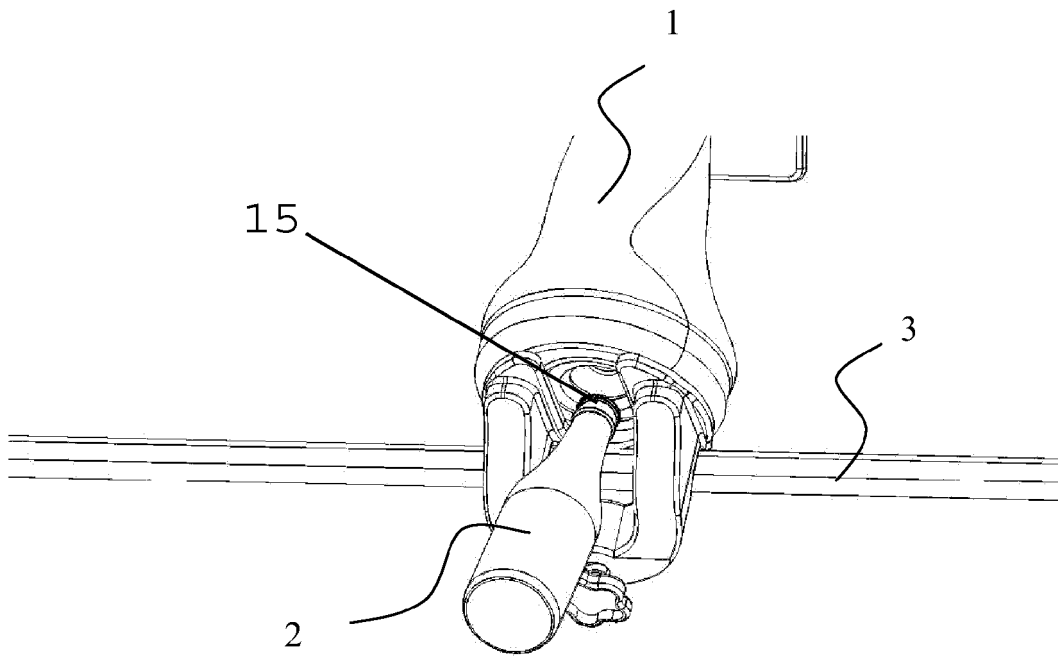


Fig. 8

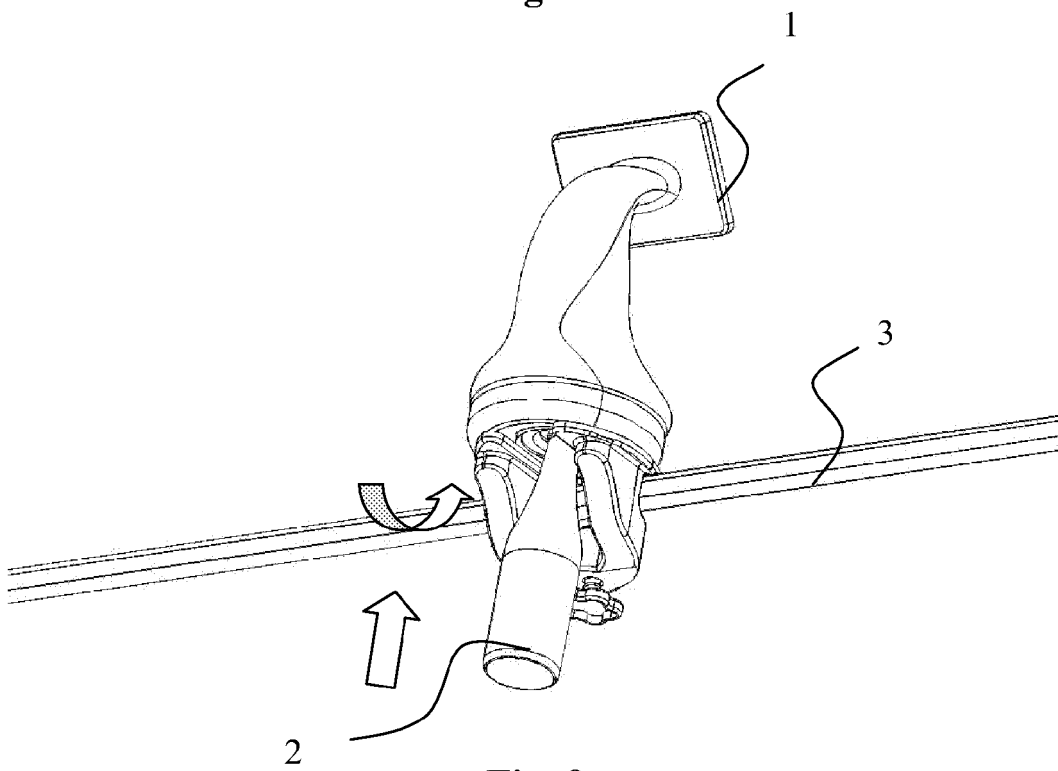


Fig. 9

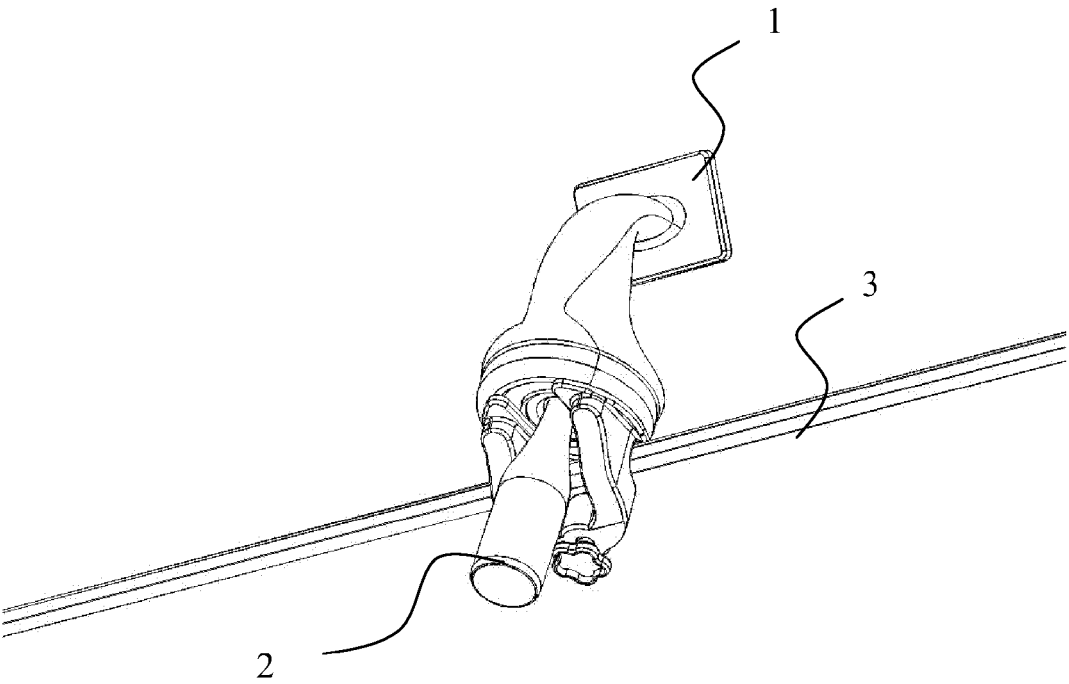


Fig. 10

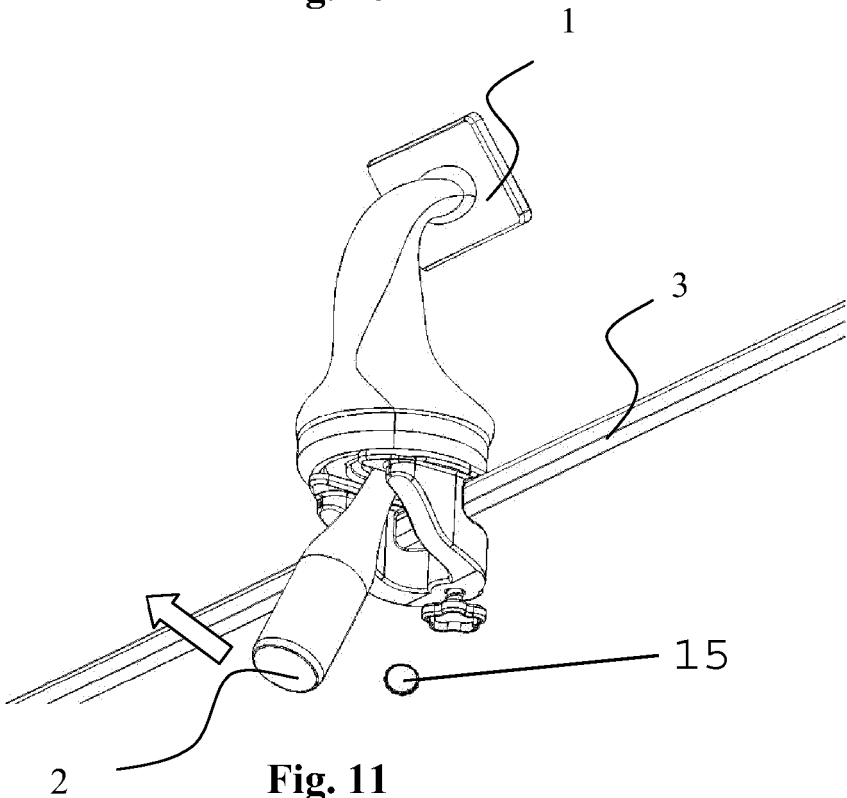


Fig. 11

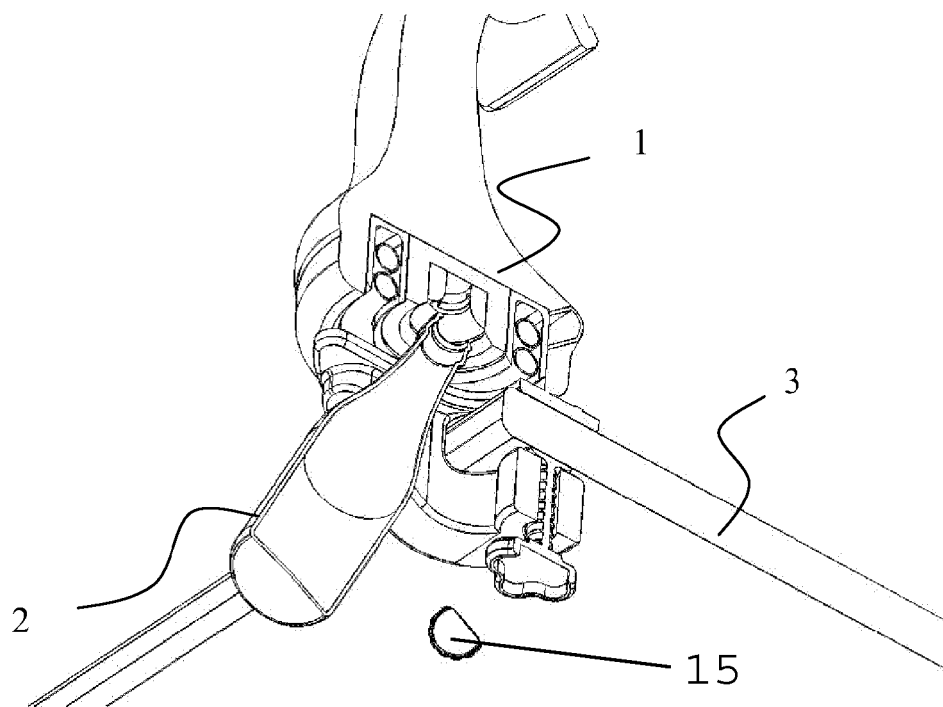


Fig. 12

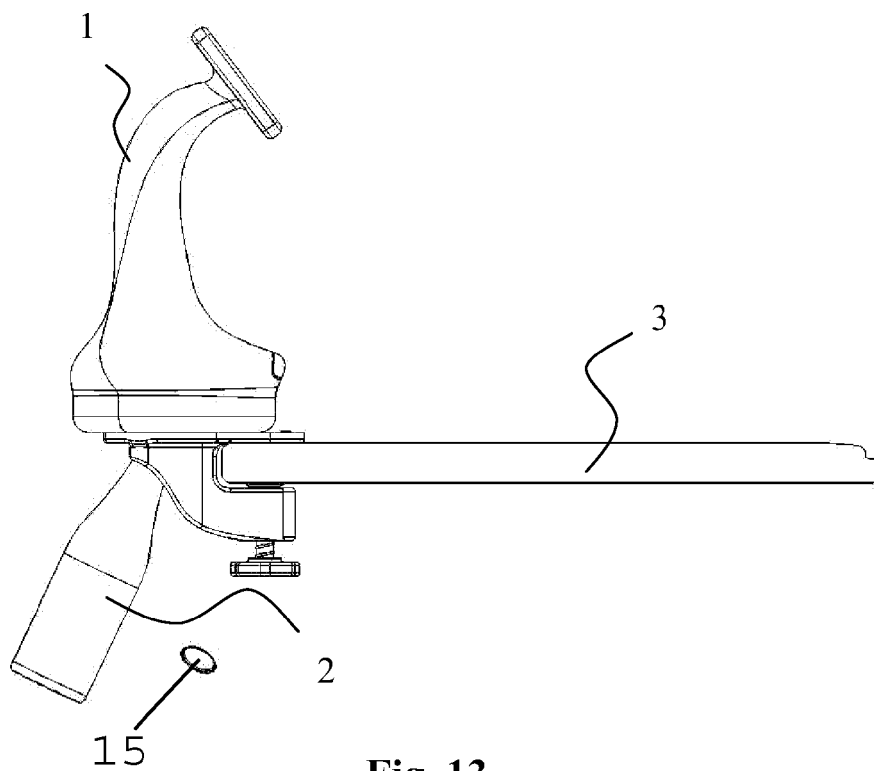


Fig. 13

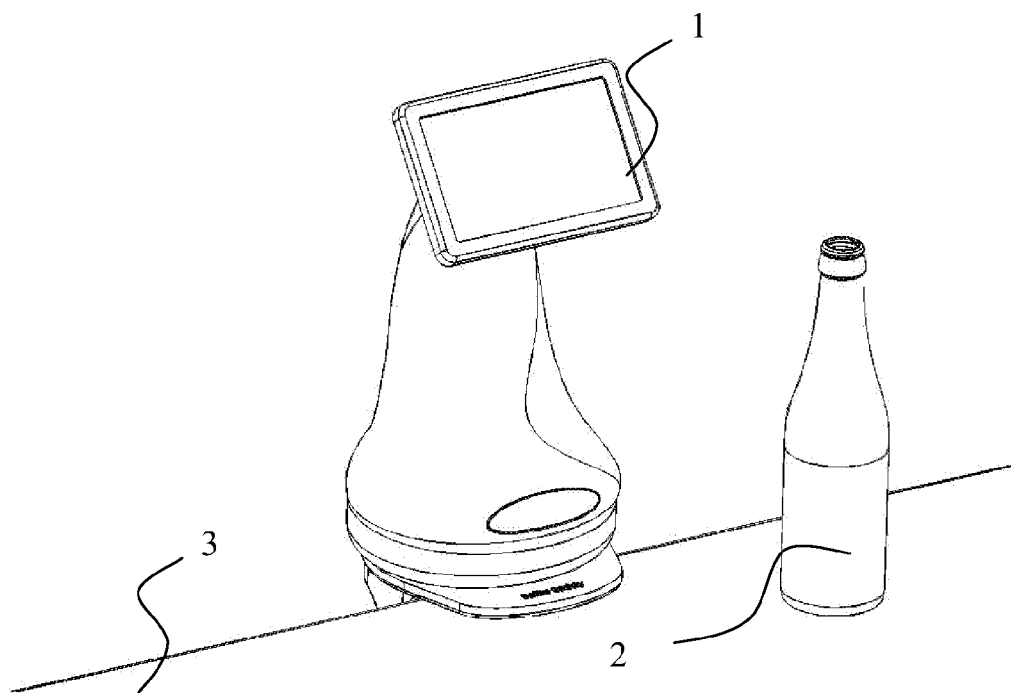


Fig. 14

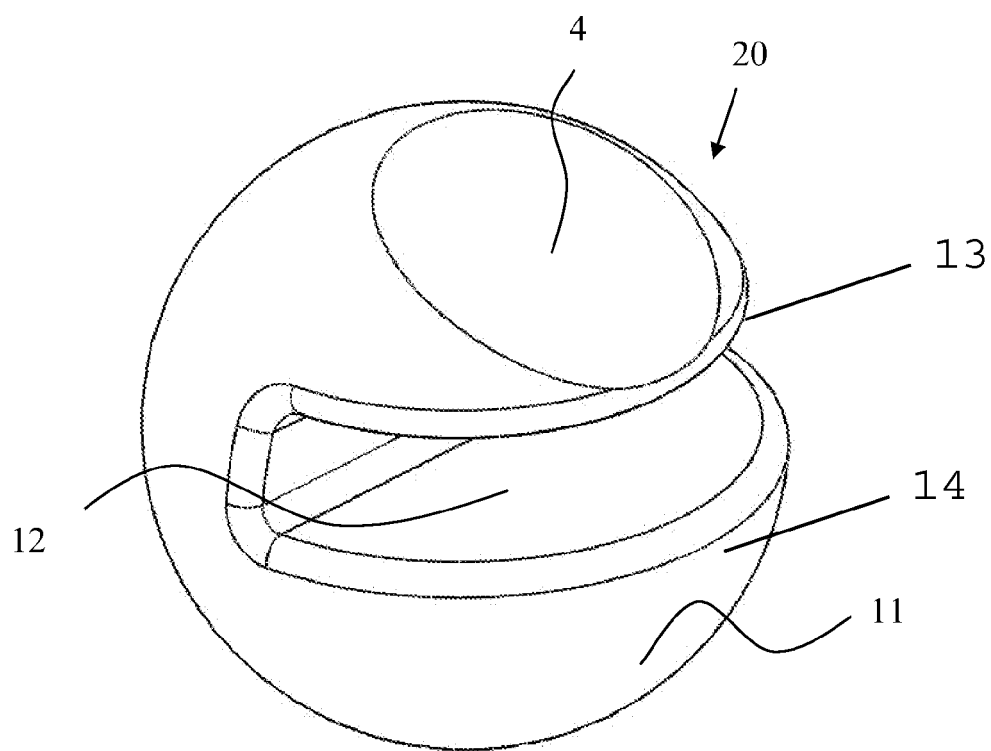


Fig. 15

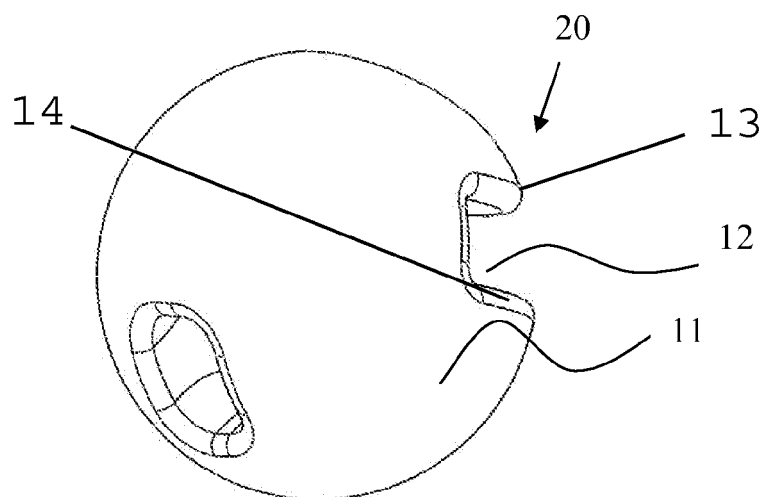


Fig. 16

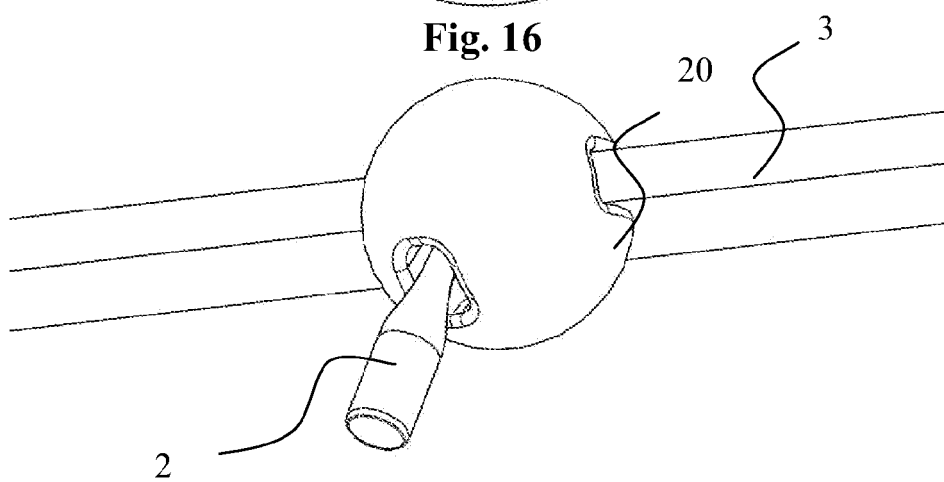


Fig. 17

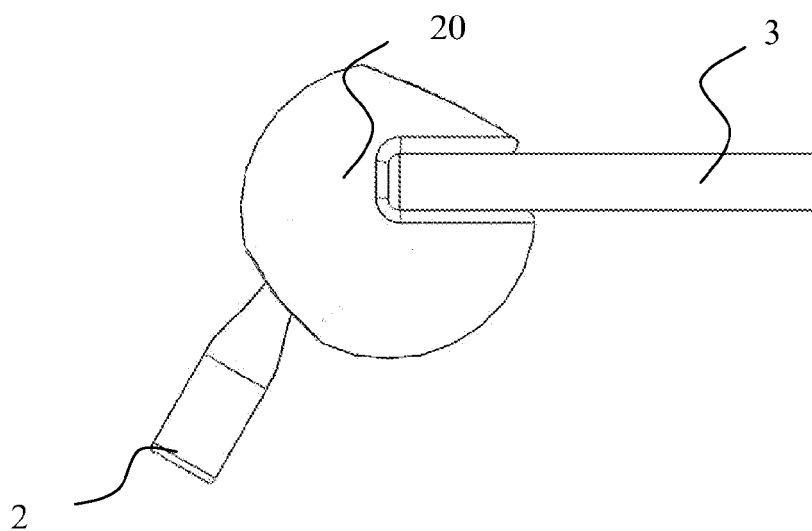


Fig. 18

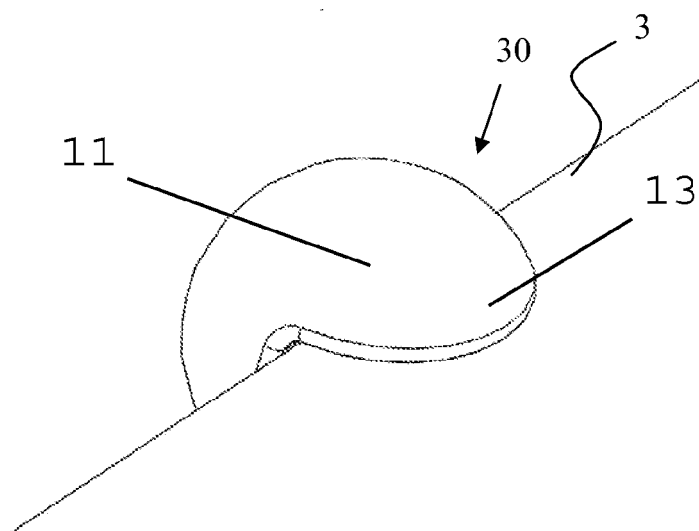


Fig. 19

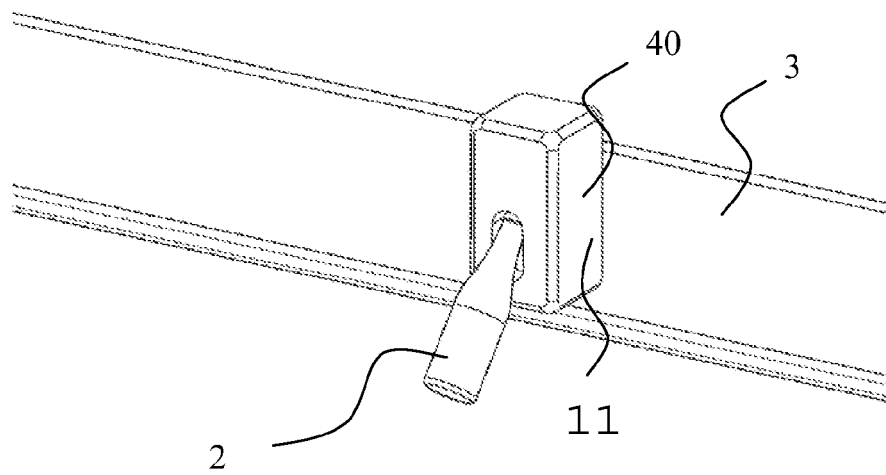


Fig. 20

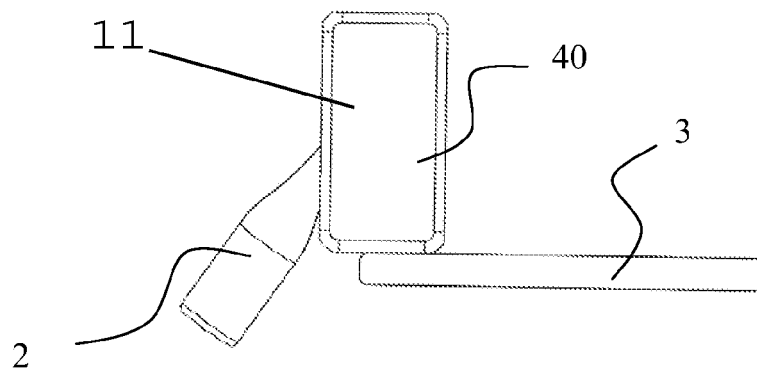


Fig. 21

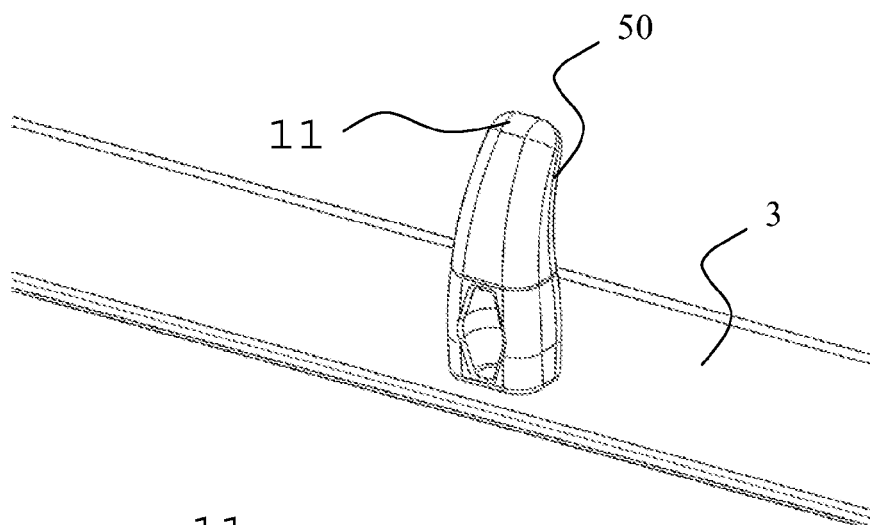


Fig. 22

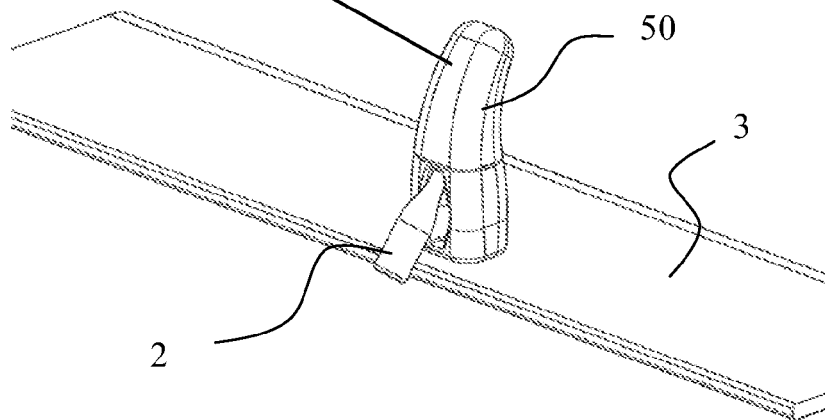


Fig. 23

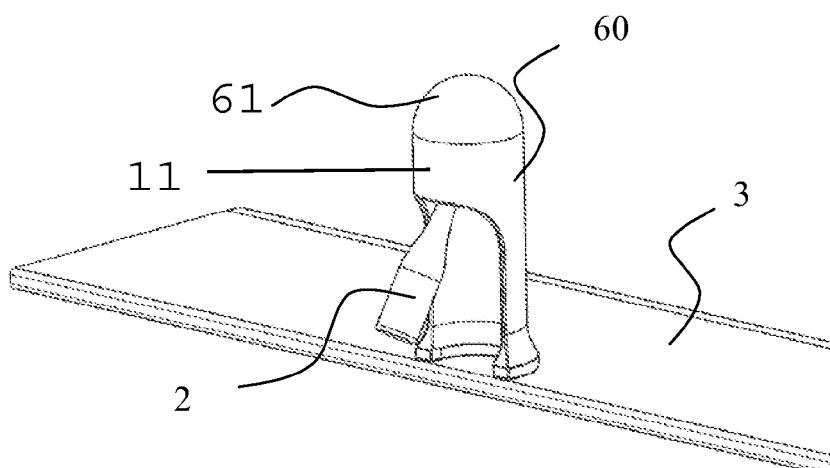


Fig. 24

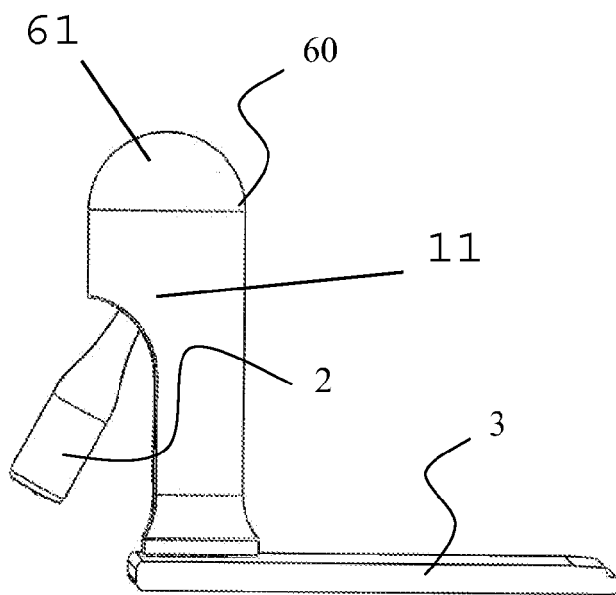


Fig. 25

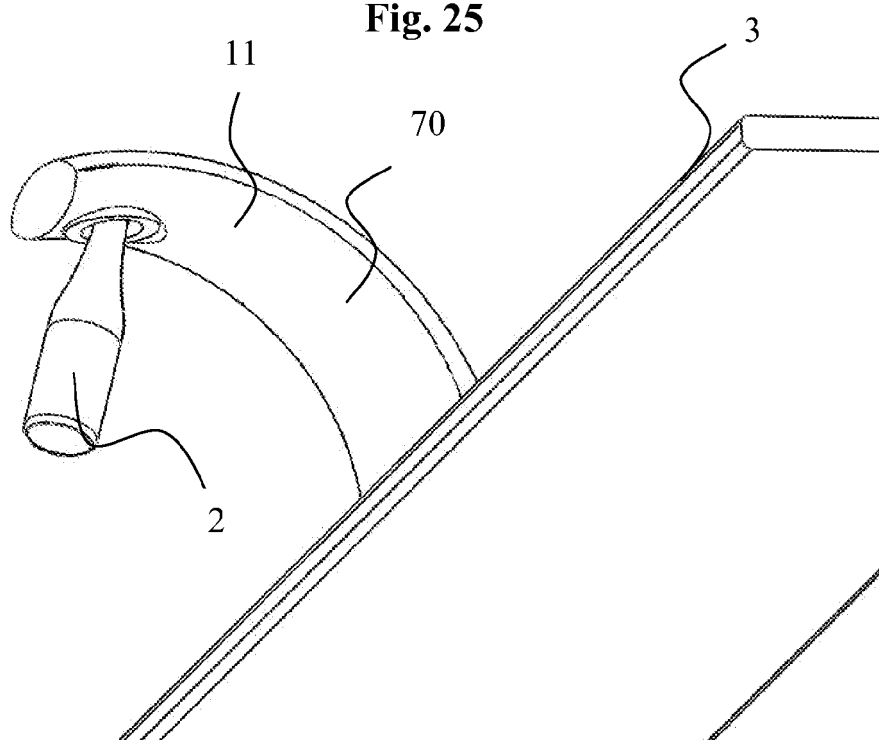


Fig. 26

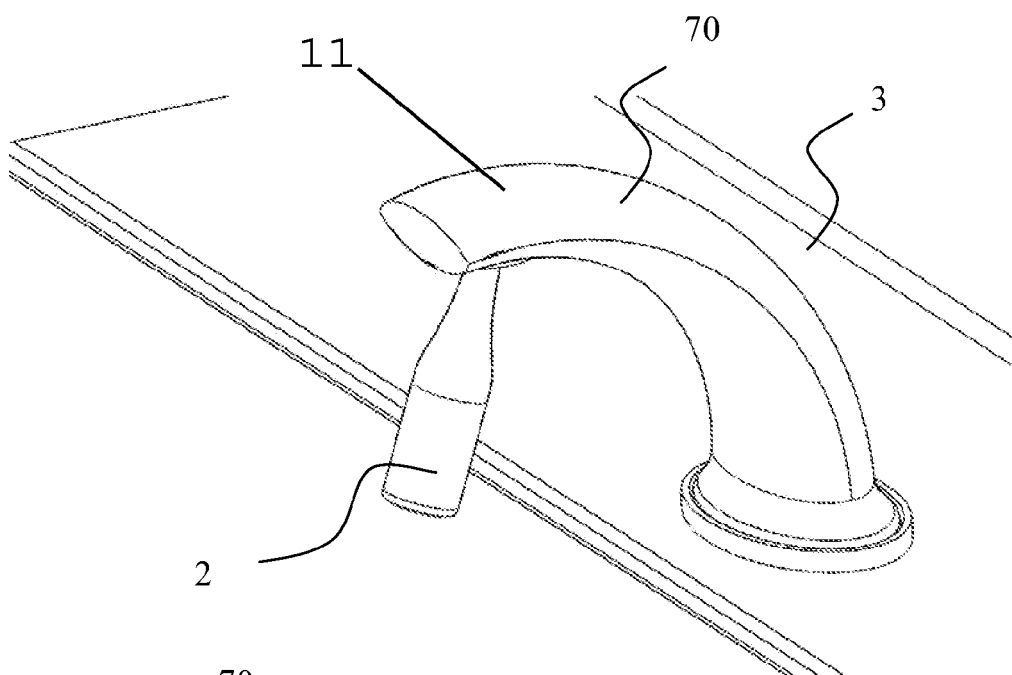


Fig. 27

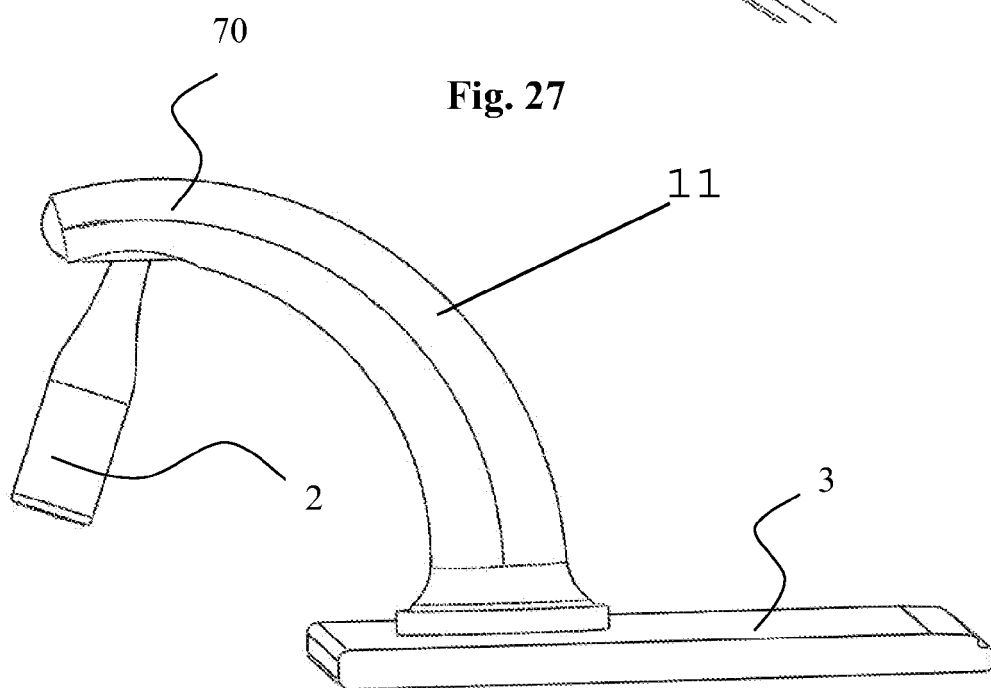


Fig. 28



EUROPEAN SEARCH REPORT

Application Number
EP 10 19 2123

DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 May 2011	Examiner Wartenhorst, Frank
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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