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(54) **Entertainment machine button**

(57) An entertainment machine button comprising an outer member and an inner member arranged to move

relative to the outer member, the inner member being arranged such that an upper region thereof covers an upper region of the outer member.

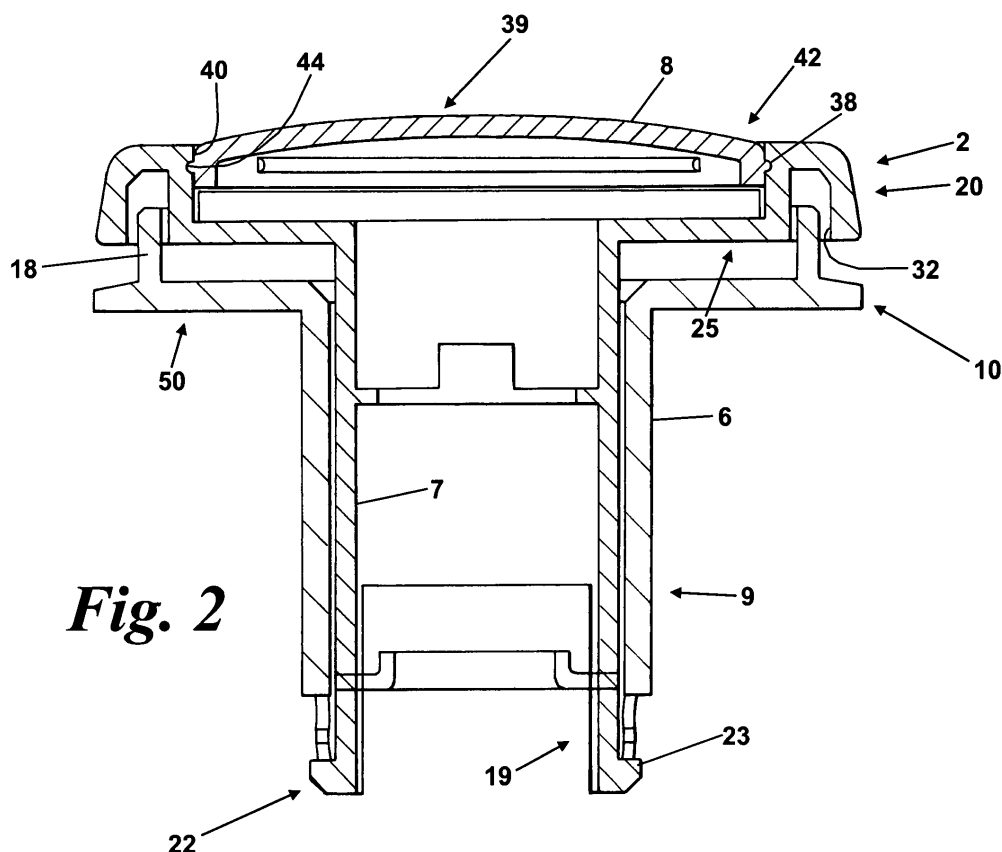


Fig. 2

Description

Field of the invention

[0001] This invention relates to the field of buttons for entertainment machines and in particular, but not exclusively, the field of pay to play entertainment machines which are released for play by payment of credit provided by coins, tokens, credit payments and the like.

Background of the invention

[0002] Entertainment machines are provided in environments in which drinks are often consumed around the machines. As such it is likely that drink will be spilled onto the machine. Some drinks, such as alcoholic drinks, can be sugary such that when the liquid from the drink evaporates away a sticky residue can remain.

[0003] Such sticky residues can be a problem since they can cause buttons to stick should the residue enter the button. This has been a problem for many years within the entertainment machine industry.

[0004] Further, in embodiments in which the machines provide prizes to winning games it can be tempting for players to try and gain access to the inside of the machine in order to try and fraudulently win a prize. As such it is common for buttons on an entertainment machine to be physically attacked as they are seen as a weakness that may allow entry to the inside of the machine. As such buttons need to be robust.

Summary of the invention

[0005] According to a first aspect of the invention there is provided an entertainment machine button comprising an outer member and an inner member arranged to move relative to the outer member, the inner member being arranged such that an upper region thereof covers an upper region of the outer member.

[0006] Such a button is advantageous because liquid ingress into the button may be prevented by the upper region of the inner member covering the upper region of the outer member. Relative movement between the inner and outer members may allow for switching action.

[0007] Conveniently, either or both of the inner and outer members are shaped roughly like a top-hat. Such a shape may be convenient because it allows the outer member to be readily mounted upon a surface. Also, the planar portion of the top hat may permit the upper region to cover the upper region of the outer member.

[0008] In one embodiment the tubular portions of the inner and outer members are arranged to slideably fit within one another. Such an arrangement provides a convenient way of providing the relative movement.

[0009] In one embodiment a groove, which may be annular, is provided in the underside of the planar portion of the top-hat of the inner member which is arranged to co-operate with an up-standing flange, which also may

be annular, extending from the planar portion of the top-hat of the outer member. If the grooves / flange are not annular then they are conveniently of complimentary shapes. It is convenient if at least one of or both the groove and the flange enclose a central region of the planar portions, which can help to seal the central region.

[0010] In another embodiment a downwardly depending flange is provided on the underside of the planar portion of the top-hat of the inner member, which is arranged to co-operate with a groove in the planar portion of the top-hat of the outer member. Each of these arrangements help to prevent the ingress of liquid into the button since they provide what may be referred to as a labyrinth between the inner and outer members. In some embodiments there may be provided more than one groove, flange combination. In other embodiments the inner member may be provided with both grooves and flanges, which may be arranged to co-operate with complementary grooves and flanges on the outer member such that the grooves and flanges mesh with one another. In such an arrangement it is convenient that, in use, the meshed grooves and flanges provide an enclosed central region. As such, it is convenient if a labyrinth of grooves and flanges is provided which together enclose a central region of the planar portion. In use, the groove / flange combination may be arranged to prevent ingress of liquid to a central region of the button.

[0011] A retention means may be provided to retain the inner member within the outer member. Such a retention means is convenient because it helps prevent the inner member being removed from the outer member, which may increase the security of a machine on which the button is provided.

[0012] In one embodiment the retention means comprises a barb extending from the tubular portion of the inner member, which is arranged to engage, when the button is assembled, with the tubular portion of the outer member. In another embodiment the barb extends from the tubular portion of the outer member and co-operates with the tubular portion of the inner member.

[0013] In one particular embodiment the barb extends from an end region of the tubular portion of the inner member and is arranged such that it engages a bottom face of the tubular portion of the outer member.

[0014] The planar portion of the inner member may be provided with a recess. Such a recess is convenient because it allows indicia and the like to be retained such that the button can be used to provide a variety of functions.

[0015] Generally, the recess is provided such that it opens to the upper surface of the planar portion since this makes access to the recess convenient.

[0016] The button may also comprise a cover member. Conveniently, the cover member is arranged to be received in the recess and may be dimensioned such that it fits within the recess. In some embodiments the cover member may be received in the recess although it may extend beyond the recess.

[0017] An anchor means may be provided and arranged to anchor the cover member to the inner member. In one embodiment the anchor means comprises a groove on one of the cover member or the recess and a protrusion on the other of the cover member or the recess. In other embodiments the anchor member may comprise a screw thread, a bayonet arrangement, one or more screws or the like, adhesive, etc.

[0018] Conveniently, the button also comprises illumination means such as an incandescent bulb, Light Emitting Diode (LED) or the like.

[0019] According to a second aspect of the invention there is provided an entertainment machine comprising at least one button according to a first aspect of the invention.

Brief description of the drawings

[0020] There now follows by way of example only a detailed description of the present invention with reference to the accompanying drawings in which:

Figure 1 shows an entertainment machine incorporating a button according to one embodiment of the present invention;

Figure 2 shows an example of cross-section of a button according to the embodiment of the present invention;

Figure 3 shows an example of an outer member of a button according to the embodiment of the present invention;

Figure 4 shows an example of an inner member of a button according to the embodiment of the present invention; and

Figure 5 shows an example of a cover member of a button according to the embodiment of the present invention.

Detailed description of the drawings

[0021] Figure 1 shows an entertainment machine 1 comprising at a convenient user operable height a button 2 according to an embodiment of the present invention, a coin input slot and reject button 3, three mechanical reels 4 and a prize dispenser 5.

[0022] Figure 2 shows a cross-section of the button 2 according to one embodiment of the present invention comprising an outer member 6, an inner member 7 and a cover member 8. The cover member 8 is positioned inside a recess 40 in the inner member 7, which in turn is located inside the outer member 6 as will be described further hereinafter. In this embodiment the cover member 8 is manufactured from a transparent plastics material whereas the inner member 7 and the outer member 6

are manufactured from an opaque plastics material. This may be varied in other embodiments.

[0023] The outer member 6 shown in Figures 2 and 3 comprises a tubular portion 9, which in this embodiment can be considered cylindrical, and a planar portion 10 provided at an upper region thereof, which in this embodiment can be considered annular. The cylindrical portion 9 and the annular portion 10 form a top-hat like structure. In the present embodiment an upstanding annular flange 18, concentric with the annular portion 10, is provided at an outer edge region of the annular portion 10. A region of the annular portion 10 extends beyond the upstanding annular flange 18 but is fabricated such that its upper surface 17 is inclined to the horizontal.

[0024] The inner member 7 shown in Figures 2 and 4 also comprises a tubular portion 19 and a planar portion 20 to provide a top-hat like structure, which in the present embodiment can also be considered as a cylindrical portion 19 and an annular portion 20. The cylindrical portion 19 of the inner member 7 is arranged to fit, slideably, inside the cylindrical portion 9 of the outer member 6 and as will be described hereinafter the annular portion 20 of the inner member 7 is arranged to fit over, and substantially cover, the annular portion 10 of outer member 6.

[0025] A bottom end region 22 of the cylindrical portion 19 of the inner member 7 comprises a barb 23 extending therefrom. The barb 23 may be thought of as a retention means and is arranged to overlap the bottom face 12 of the cylindrical portion 9 of the outer member 6, thus retaining the inner member 7 within the outer member 6 once it has been inserted therein.

[0026] An underside surface 25 of the annular portion 20 of the inner member 7 has an upwardly extending annular groove 32, concentric with the annular portion 20, provided at an outer region thereof. The groove 32 is arranged such that when the inner member 7 is received within the outer member 6 the upstanding flange 18 is received with therein. The height of the flange / depth of the groove is generally arranged such that the two co-operate whether or not the button is in an operated or un-operated condition - Figure 2 shows an un-operated button in which the inner member 7 can be moved downwardly compared the outer member 6.

[0027] An upper surface 42 of the annular portion 20 of the inner member 7 has a circular recess 40 defined therein concentric with the annular portion 20. An annular groove 38 is provided in a top region of the recess 40 whose function is to provide a location for the cover member 8 as shown in Figure 5. The annular groove 38 may be thought of as an anchor means.

[0028] The cover member 8 shown in Figures 2 and 5 comprises a domed region 39 with a downwardly depending flange 43 provided at an outer region thereof. A protrusion 44 is provided on an outer surface of the downwardly depending flange 43 and arranged such that when the cover member 8 is received within the recess 40 the protrusion 44 engages the groove 38 around the recess.

[0029] In use the cover member 8 is fitted into the inner

member 7, which in turn is fed into the outer member 6 until the barb 23 of the inner member 7 is below the bottom face 12 of the cylindrical portion 9 of the outer member 6. The outer member 6 is secured in an entertainment machine such that the bottom surface 50 of the annular portion 10 of the outer member 6 is located adjacent the surface of the entertainment machine. The inner member 7 is connected to a spring operated retractable shaft such that, when the button 2 is pressed, movement of the inner member 7 occurs until the annular portion 20 of the inner member 7 contacts the annular portion 10 of the outer member 6. When the button 2 is released the shaft returns the inner member 7 to its original position.

[0030] Irrespective of whether the button is pressed or not, the button is arranged such that at least a portion of the upstanding flange 18 is positioned within the groove 32.

[0031] The arrangement of the groove 32 in the annular portion 20 of the inner member 7 and the upstanding flange 18 means that spillages of drink onto the button 2 do not seep into its internal workings; as such a labyrinth arrangement is provided around a central region of the planar portions 10, 20 of the top-hat like structures to stop the ingress of liquid. The inclined surface 17 may also help prevent the ingress of liquid.

[0032] Furthermore, the presence of the barb 23 at the bottom end region 22 of the cylindrical portion 19 of the inner member 7 helps to prevent the unauthorised removal of the inner member 7 and access to the inner components of the entertainment machine.

Claims

1. An entertainment machine button (2) comprising an outer member (6) and an inner member (7) arranged to move relative to the outer member (6), the inner member (7) being arranged such that an upper region thereof covers an upper region of the outer member.
2. A button (2) according to claim 1 comprising at least one groove (32) in one of the inner member (7) or the outer member (6) and at least one flange (18) on the other of the inner member (7) or the outer member (6), the at least one flange (18) and at least one groove (32) arranged, in use, to co-operate.
3. A button (2) according to claim 2 in which, when meshed, the at least one groove (32) and the at least one flange (18) enclose a central region of the inner member (7) and/or outer member (6).
4. A button (2) according to claim 2 or claim 3 wherein the at least one groove (32) is provided on the inner member (7) and the at least one flange is (18) provided on the outer member (6).
5. A button (2) according to claim 2 or claim 3 wherein the at least one groove (32) is provided on the outer member (6) and the at least one flange (18) is provided on the inner member (7).
6. A button (2) according to any of the claims 2 or 3 wherein a plurality of grooves (32) and flanges (18) are provided on the outer member (6) and a plurality of complementary grooves (32) and flanges (18) are provided on the inner member (7).
7. A button (2) according to any preceding claim, wherein, in use, tubular portions (9, 19) of both the inner and outer members (7, 6) are arranged to slideably fit within one another.
8. A button (2) according to claim 7 wherein either or both of the inner member (7) and the outer member (6) is shaped roughly like a top-hat, comprising the tubular portion (9, 19) and a planar portion (10, 20).
9. A button (2) according to claim 8 when it depends from claim 4, wherein the at least one groove (32) is provided in the underside (25) of the planar portion (20) of the top-hat of the inner member (7).
10. A button (2) according to claim 9, wherein the at least one flange (18) is provided on the upperside of the planar portion (10) of the top-hat of the outer member (6).
11. A button (2) according to any of the claims 2 to 10, wherein both the at least one groove (32) and the at least one flange (18) are annular.
12. A button (2) according to any preceding claim wherein either, or both, of the inner member (7) and the outer member (6) are provided with a retention means (23), arranged in use to retain the inner member (7) within the outer member (6).
13. A button (2) according to claim 12 when depending upon claim 7, wherein the retention means (23) comprises:
 - a barb (23) extending from the tubular portion (20) of the inner member (7); or
 - a barb (23) extending from the tubular portion (10) of the outer member (6).
14. A button (2) according to 13, wherein the barb (23) extends from an end region (22) of the tubular portion of the inner member and is arranged such that it engages a bottom face of the tubular portion (10) of the outer member (6).
15. A button according to any preceding claim, wherein the inner member (7) is provided with a recess (40).

16. An entertainment machine (1) comprising at least one button (2) according to any of the claims 1 to 15.

17. A method of preventing the ingress of liquid into the internal workings of an entertainment machine (1) by providing a button (2) according to any of the claims 1 to 15.

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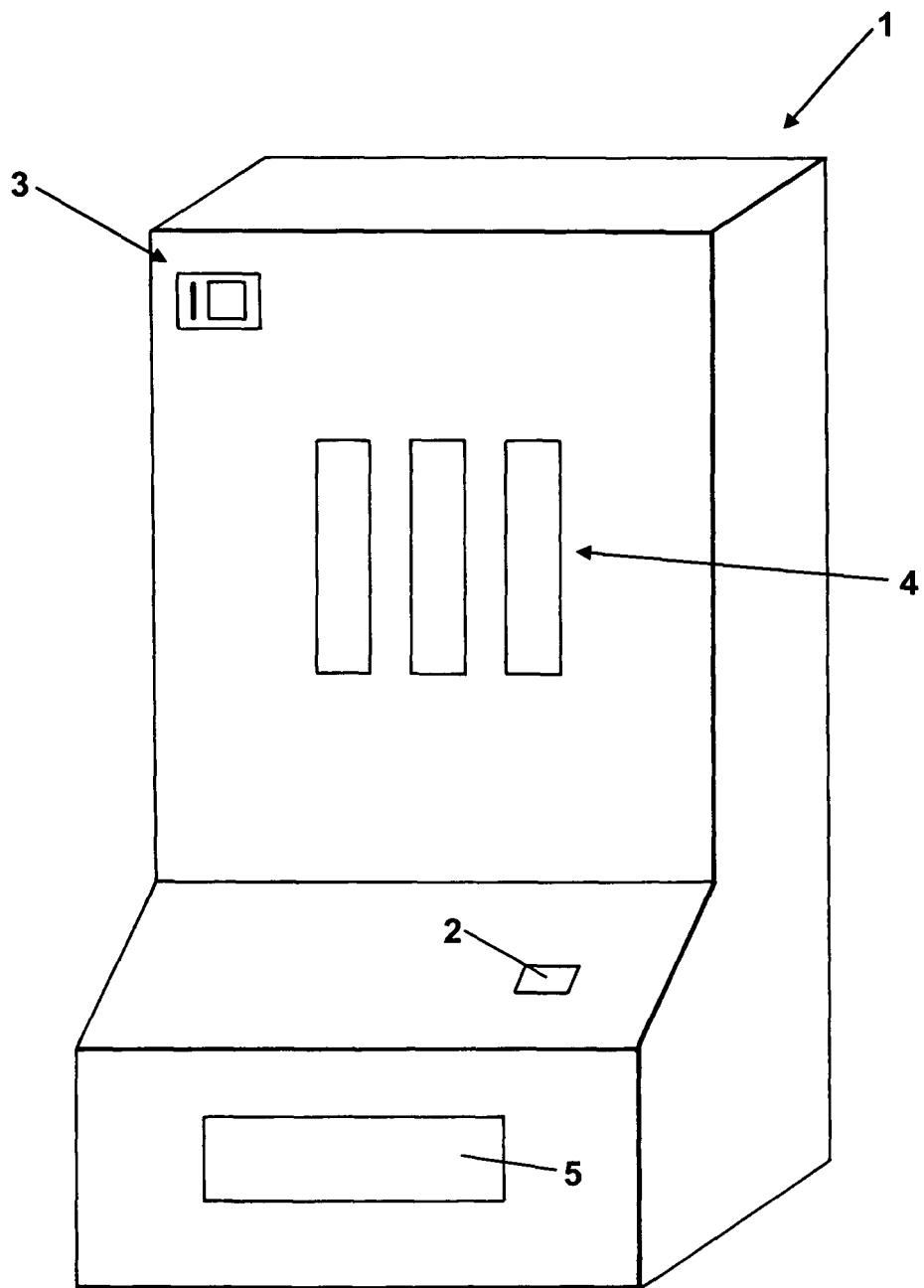


Fig. 1

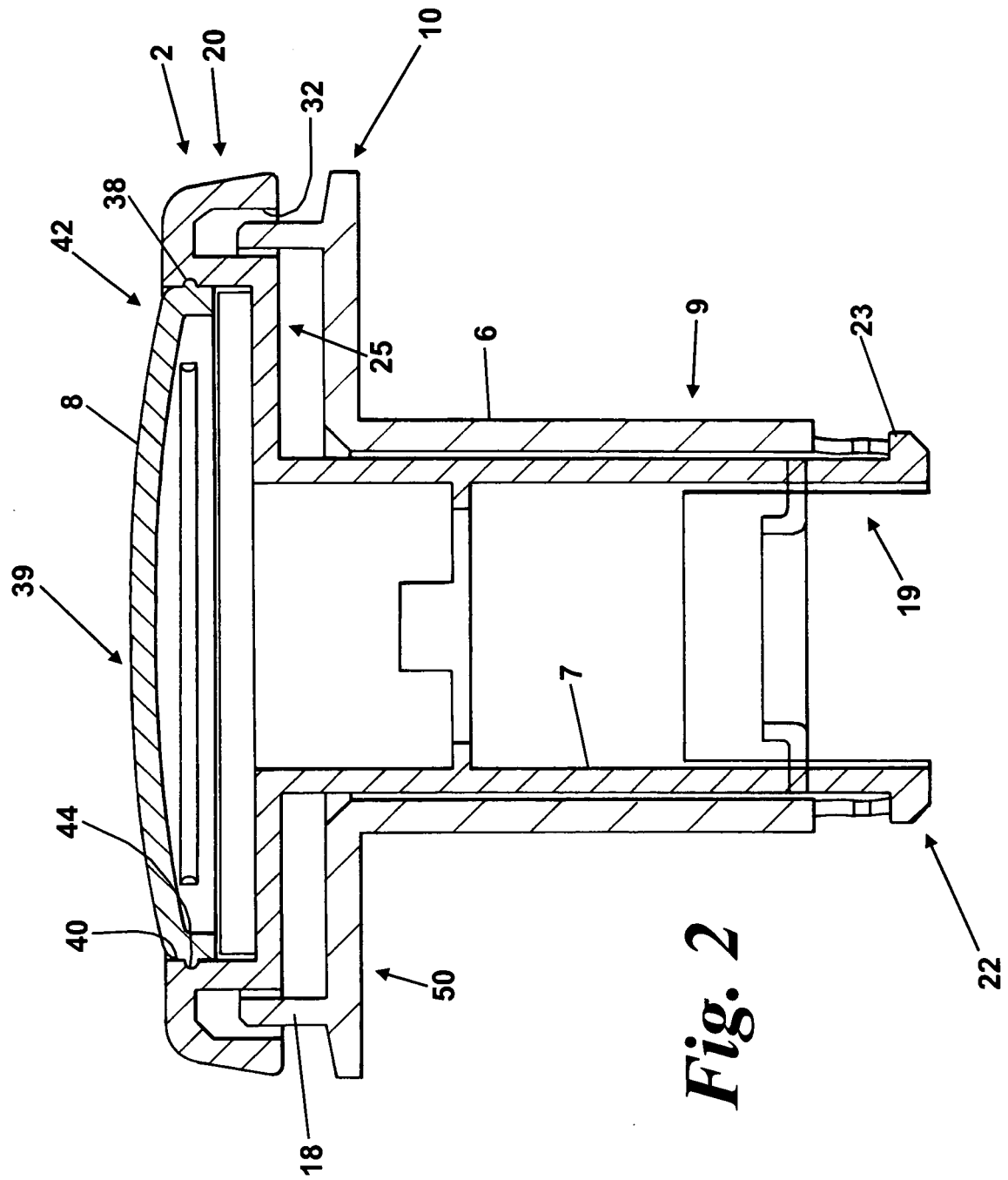


Fig. 2

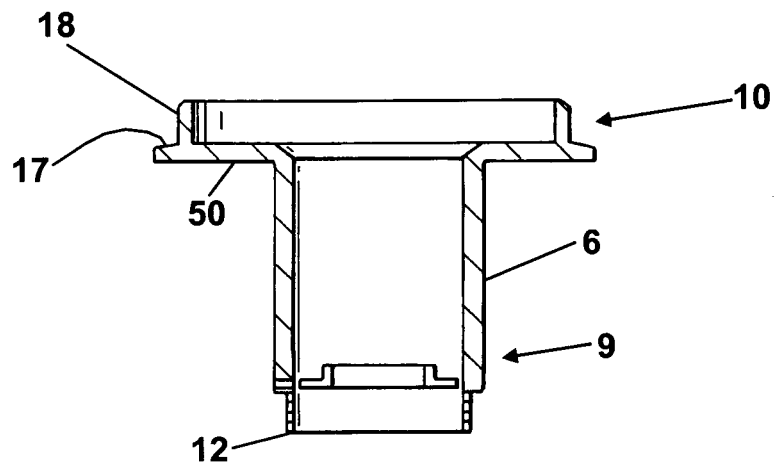


Fig. 3

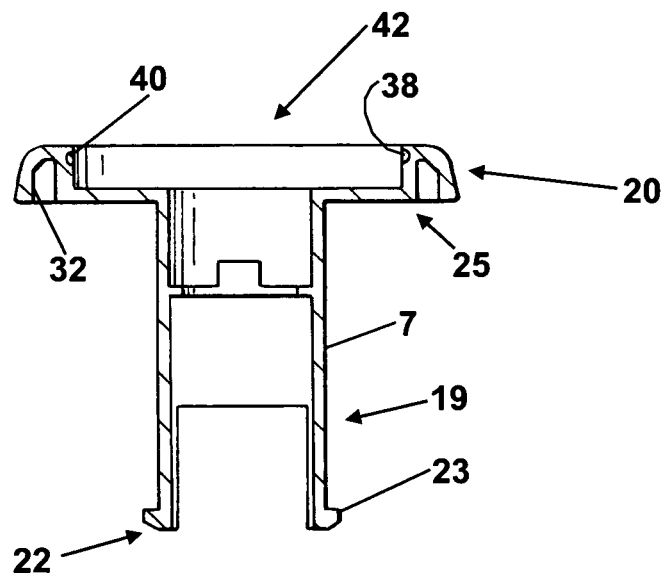


Fig. 4

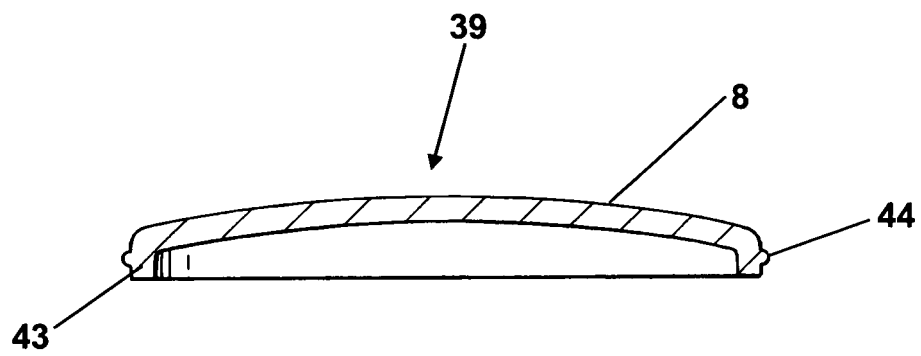


Fig. 5