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(54) **Housing for a sanitizing block**

(57) A housing for a toilet sanitising block comprises a base (2) for supporting a sanitizing block. An upwardly extending wall section (18) defines an enclosure for the sanitising block. A cap (20) is connected to the wall section (18) to cover the enclosure. At least one aperture (6)

is provided in the housing which is spaced from the base (2) to permit the release of fragrance from a sanitizing block contained within the housing.

The cap (20) has no apertures such that the sanitising block is protected from liquid and/or urine. The housing is intended to be installed in the drain of an urinal.

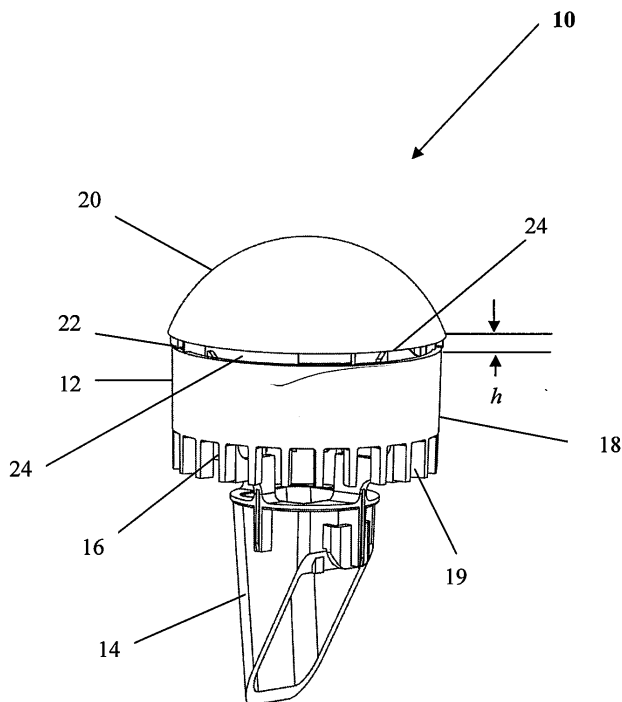


Fig 2

Description

[0001] The present invention relates to a housing for a sanitising block, and in particular a sanitising block housing for use in a urinal waste outlet assembly.

[0002] Odour control and sanitisation are concerns within the field of urinal waste outlets, and in particular reduced flush or 'waterless' urinals. A common means of odour prevention is to position an anti-bacterial and/or deodorising agent within the urinal or vicinity thereof. The agent is typically a solid block or 'cake' of disinfectant which dissolves upon contact with urine or water, thus releasing its anti-bacterial and deodorising compounds. The block may also include a fragrance release substance, or a fragrance releasing block may be provided in addition to the sanitising block. The greater the exposure to the fluid, the faster the rate of dissolution of the sanitising block and/or fragrance block.

[0003] In basic use, sanitising blocks are placed directly in the urinal bowl. However, this can be considered unsightly, and can lead to overexposure of the blocks to fluid flow, thereby increasing the rate of dissolution and hence reducing the lifespan of the product. Dispensers have been developed for holding the disinfectant block in position during dispensation of the disinfectant. Some known solutions comprise dispensers which act as a cage or housing for the block and are configured to clip onto the side wall of the toilet or urinal. In some arrangement a perforated dispenser within the urinal receptacle or bowl holds the antibacterial agent above the normal water level until flushing occurs, thus reducing the fluid exposure of the block and increasing lifespan.

[0004] Solutions are also known wherein the block is positioned within the waste outlet of the urinal rather than the bowl. GB 2355185A and GB2449364A disclose such solutions, which comprise a grid or mesh-like platform placed within the downpipe. The block is then placed on the platform, such that it rests in the flow of fluid as it passes through the waste outlet, the resulting dissolution releasing the antibacterial chemicals into the waste outlet assembly.

[0005] Other solutions place the sanitising block within housing in the bowl of the urinal. The housing covers the sanitising block and prevents contact of the block with the liquid flow from above. Dissolution of the block is achieved through the flow of liquid into the housing through the base, as the liquid level in the bowl rises. While this solution extends the lifespan of the block, the release of fragrance from the sanitising and or fragrance blocks is limited, and in cases where the liquid level remains above the base of the housing, can be prevented altogether.

[0006] Therefore, it is desirable to provide an improved housing for a sanitising block which addresses the above described problems and/or which provides improvements generally.

[0007] According to the present invention there is provided a housing for a sanitising block as described in the

accompanying claims.

[0008] In accordance with an embodiment of the present invention, there is provided a housing for a toilet sanitising block, the housing comprising a base for supporting a sanitizing block; an upwardly extending wall section defining an enclosure for the sanitising block; a cap connected to the wall section to cover the enclosure; and at least one aperture spaced from the base to permit the release of fragrance from a sanitizing block contained within the housing.

[0009] The at least one aperture may be defined between the wall section and the cap. By providing the apertures at the junction between the wall section and the cap, the apertures are arranged perpendicular to the vertical axis of the housing, and as such are prevented from receiving liquid such as urine directed at the housing from above.

[0010] The cap is preferably releasably connected to the wall section. Removal of the cap enables the sanitizing block to be replaced or inspected.

[0011] A plurality of releasable connection members may be provided for releasably connecting the cap to the wall section. Preferably the connection members support the cap in a spaced position from the wall section to define the at least one aperture. As such, it is not required to form apertures in the wall section or cap during manufacture, thereby simplifying manufacture. The releasable connection members may be any suitable connectors but are preferably twist fit connectors.

[0012] The connection members may each comprise a first connection element provided on the wall section and a corresponding second connection element provided on the cap. The connection elements are provided at corresponding locations about the cap and wall section and secure and locate the cap on the wall section.

[0013] At least one of the second connection elements may comprise a spacer portion extending downwardly of the lower edge of the cap and configured to engage the wall section to hold the cap in said spaced position.

[0014] The connection members are preferably configured to releasably connect the cap to the wall section to the wall section when the cap is rotated relative to the wall section. This enables the cap to be removed easily without pulling the entire housing from the waste outlet of the urinal.

[0015] The peripheral edge of the cap extends outwardly of the wall section to prevent liquid running off the cap from entering the housing via the at least one aperture. By extending past the outer periphery of the wall section, the cap forms an overhanging canopy. Therefore, liquid contacting and running off the cap is directed over and past the apertures, to prevent the liquid from entering the housing and causing accelerated dissolution of the sanitizing block.

[0016] The cap preferably has convex outer surface, and is preferably hemispherical in shape. This shape promotes run off of liquid from the cap, while directing liquid away from the wall section at the point of intersection.

[0017] The cap may comprise a main body section which is continuous and uninterrupted having no apertures. This prevents liquid flow into the housing.

[0018] In another aspect of the invention there is provided a housing for a toilet sanitizing block comprising an inner body element defining an enclosure for a sanitizing block; an outer cover element configured to connect to the inner body element, at least a part of the outer body element being formed of a transparent material; and a display element disposed between inner body element and the outer cover element and arranged such that at least a portion of the display element is visible through the transparent at least a part of the outer cover element. Sandwiching a display element between the inner element and the cover enables a multicolour printed display member to be provided which is visible through, but protected by the cover element.

[0019] The display device is provided with printed indicia. Preferably the inner body element and outer cover element are formed of a rigid plastic material which provide structural integrity, and the display element comprises a flexible material capable of conforming to the shape of the outer cover element and inner body element when disposed therebetween. While it is problematic to print directly onto a contoured rigid plastic member such as the cap section of a urinal housing, a flexible member such as the display member may be printed onto in a flat condition, and in multiple colours, and subsequently formed to the required shape.

[0020] The inner body element preferably comprises a removable cap section, and the outer cover element corresponds in shape to and covers the cap section, although it is not essential that the cap entirely covers the cap, merely the portion over which the display element is located. As such, the cap and outer cover define a display member which is able to be disconnected from the main part of the housing to allow the display member to be removed and replaced, or inserted in the first instance.

[0021] The outer cover element is removably connected to the inner body element, removal of the outer cover element permitting the display element to be inserted and/or removed from between the inner body and outer cover elements.

[0022] The outer cover member is preferably formed entirely from a transparent material, thereby simplifying manufacture by enabling the entire component to be manufactured in a single shot moulding operation.

[0023] The present invention will now be described by way of example only with reference to the following illustrative figures in which:

Figure 1 shows a known waste outlet assembly for a urinal, including a housing for a sanitizing block;

Figure 2 shows a housing for a sanitizing block according to an embodiment of the invention;

Figure 3 shows a detailed view of the overhanging cap of the arrangement of figure; and

Figure 4 shows an exploded view of the cap for the housing arrangement of Figure 2.

[0024] Figure 1 shows a known waste outlet assembly 1 for a reduced flush urinal. Such assemblies are known to incorporate a housing for a block of dissolvable disinfectant and/or deodorizing material, and an outlet pipe 3 for mounting the assembly 1 in the waste outlet of a urinal.

[0025] The housing comprises a base 2 for supporting the sanitizing block, and a cover section 4. The base 2 comprises a grid or mesh like support platform upon which the block rests. Fluid (such as water and urine) passes into and out of the assembly 1 through the apertures 6 in the cover 4 and through the apertures formed in the base 2, coming into contact with and partially dissolving the block 2 while in transit. The cover 4 shields the sanitizing block from direct contact with liquid such as urine or flush water (in the case of flush urinals) directed at the housing from above, thereby maximizing the lifespan of the block by prevent excessive dissolution.

[0026] The cover 4 is continuous and contains no apertures other than the apertures 6 formed by the castellated formation at its base. The apertures 6 are located substantially below the level of the base 2 and permit liquid flow into the housing, with the lower edges of the castellated section supporting the housing on the base of the urinal. Fragrance released through evaporation from the sanitizing block, or by a secondary fragrance block is trapped within the housing under the cover 4, with only a minimal amount being carried out of the housing with any downward flowing air. In the event that liquid levels are coincident with the top of the apertures 6, or higher, airflow (and hence fragrance release) out of the housing is prevented entirely.

[0027] Figures 2 shows an embodiment of the present invention, in which a waste outlet assembly 10 for a urinal sanitizing block comprises a housing 12 and an outlet 14 for connecting to the waste outlet of a urinal. The housing 12 includes a base 16, a wall section 18, and a cap 20.

[0028] The base section 16 comprises a grid like support surface for supporting the sanitizing block. The wall section 18 is cylindrical, and surrounds and extends upwards from the base 16, defining an enclosure for surrounding and containing the sanitizing block. At its base the wall section includes a castellated formation 19 defining a plurality of apertures for permitting liquid flow into and out of the housing 10. The wall section 18 connects to the outlet 14 at its base, and has an open upper end defined by the upper edge 22.

[0029] The cap 20 is located on top of the wall section 18 to cover the enclosure defined by the wall section 18, and prevent liquid from entering the housing from above. The cap 20 has a domed or hemispherical configuration, which facilitates the run off of liquid falling on it from above. The cap 20 is vertically spaced upwards from the

wall section 18 by a distance h , with a plurality of apertures 24 being defined between the lower edge 26 of the cap 20 and the upper edge 22 of the wall section 18.

[0030] As shown in Figure 3, the outermost diameter of the cap 20 defining the peripheral edge 23 is greater than the outermost diameter 25 of the wall section 18. As such, the peripheral edge 23 of the cap 20 extends outwardly of and overhangs the wall section 18 by a distance w shown the Figure 3. This overhang advantageously ensures that liquid running off the upper surface of the cap 20 flows past the apertures 24, and is prevented from entering the housing through the apertures 24.

[0031] The cap 20 is releasably secured to the wall section 18 by a plurality of releasable connection members 24. The connection members 24 comprise a first connector element 26 which extends downwards from the cap 20, and a corresponding second connector element which extends upwardly from the wall section 18. Each first connector element 26 includes a spacer portion 28 which extends outwardly of the inner edge of the wall section 18 and as such is arranged to engage the upper edge 22 of the wall section 18 to hold the cap 20 at the spaced distance h . Each first connector element 26 further includes a recessed portion 30 beneath the spacer portion 28, configured to be received within the wall section 18. The lower edge of the recessed portion includes a camming member 32 having a tapered leading edge. The camming member 32 is arranged to be received beneath a corresponding camming member on the second connector element, which includes a downwardly tapered leading edge. As the cap 20 is rotated, the camming members engage, and the camming member 32 of the cap 20 is forced downwardly, thereby urging the cap 20 towards the wall section 18 and holding the cap 20 in connection with the wall section 18. Rotation of the cap 20 in the opposing direction releases the camming member 32 and allows the cap 20 to be disconnected from the wall section 18.

[0032] It is desirable to be able to provide a urinal block housing with branding which is visible from above so it may be viewed by a person using the urinal. Due to the wet and corrosive conditions within a urinal, adhesive labels are not suited for such branding. It is known to print a logo or similar branding directly onto the upper surfaces of such products. However, the contoured nature of the products means that more detailed printing, including two colour prints, is not achievable in a simple and cost effective manner.

[0033] Therefore, the cap 20 of the present invention is configured to receive and display printed information provided on an easily printable material. As shown in Figure 4, the cap 20 includes an inner body member 40, and outer cover section 42, and a display medium 44. The display medium 44 is a flexible material which is preferably plastic. The inner body member 40 includes a display surface 46 configured to receive the display medium 44. The display medium 44 is provided as an initially flat sheet, which is able to be printed onto using

conventional printing techniques. The display medium 44 is formed such that it may be subsequently manipulated to conform to the shape of the display surface 46.

[0034] Specifically, the display medium 44 is formed as a C-shaped flat member. Manipulation of the display medium 44 to bring the free ends of the C shape together forms it into a substantially truncated conical shape which conforms to the truncated conical shape of the display surface 46. A ridge 48 is provided at the base of the display surface to locate the display medium 44.

[0035] The display medium 44 is preferably formed of a transparent material, with the underlying inner body member 40 being formed of an opaque material. In this way, the display medium itself is indistinguishable, and the printed material thereon appears to be printed directly on the inner body member 40.

[0036] The cover section 42 is formed having a domed shape and defines the upper surface of the cap 20. The cover is formed from a transparent plastic material. In this way, the display medium 44 is visible from above through the cover section 42. The cover section 42 is placed over and connected to the inner body member 40, and is configured such that when it is so connected the display medium 44 is clamped between the inner body member 40 and the cover section 42. The cover member 4 includes releasable connectors 50, which are received within recesses 52 on the inner body member 40. The cover 42 may therefore be removed to allow the display medium to be inserted and removed/replaced.

[0037] It will be appreciated that in further embodiments various modifications to the specific arrangements described above and shown in the drawings may be made. For example, while the cap cover section is described as being transparent, it may be only partially transparent. Furthermore, while the wall section is described as cylindrical, this is not limited to arrangements of a circular cross section and may apply to any hollow enclosure.

Claims

1. A housing for a toilet sanitising block, the housing comprising:
 - a base for supporting a sanitizing block;
 - an upwardly extending wall section defining an enclosure for the sanitising block;
 - a cap connected to the wall section to cover the enclosure; and
 - at least one aperture spaced from the base to permit the release of fragrance from a sanitizing block contained within the housing.
2. A housing according to claim 1 wherein the at least one aperture is defined between the wall section and the cap.

3. A housing according to claim 1 or 2 wherein the cap is releasably connected to the wall section.
4. A housing according to claim 3 comprising a plurality of releasable connection members for releasably connecting the cap to the wall section. 5
5. A housing according to claim 4 wherein the connection members support the cap in a spaced position from the wall section to define the at least one aperture. 10
6. A housing according to claim 5 wherein the connection members each comprise a first connection element provided on the wall section and a corresponding second connection element provided on the cap. 15
7. A housing according to claim 6 wherein at least one of the second connection elements comprises a spacer portion extending downwardly of the lower edge of the cap and configured to engage the wall section to hold the cap in said spaced position. 20
8. A housing according to any one of claims 4 to 7 wherein the connection members are configured to releasably connect the cap to the wall section to the wall section when the cap is rotated relative to the wall section; and/or wherein the peripheral edge of the cap extends outwardly of the wall section to prevent liquid running off the cap from entering the housing via the at least one aperture. 25 30
9. A housing according to any preceding claim wherein the cap has convex outer surface; and/or wherein the cap comprises a main body section which is continuous and uninterrupted having no apertures, to prevent liquid flow into the housing. 35
10. A housing for a toilet sanitizing block comprising: 40
 - an inner body element defining an enclosure for a sanitizing block;
 - an outer cover element configured to connect to the inner body element, at least a part of the outer body element being formed of a transparent material; and
 - a display element disposed between inner body element and the outer cover element and arranged such that at least a portion of the display element is visible through the transparent at least a part of the outer cover element. 50
11. A housing according to claim 10 wherein the display device is provided with printed indicia. 55
12. A housing according to claim 10 or 11 wherein the inner body element and outer cover element are formed of a rigid plastic material.
13. A housing according to any one of claims 10 to 12 wherein the inner body element comprises a removable cap section, and the outer cover element corresponds in shape to and covers the cap section.
14. A housing according to any one of claims 10 to 13 wherein the outer cover element is removably connected to the inner body element, removal of the outer cover element permitting the display element to be inserted and/or removed from between the inner body and outer cover elements.
15. A housing according to any one of claims 10 to 14 wherein the outer cover member is formed entirely from a transparent material and/or wherein the display element comprises a flexible material capable of conforming to the shape of the outer cover element and inner body element when disposed therebetween.

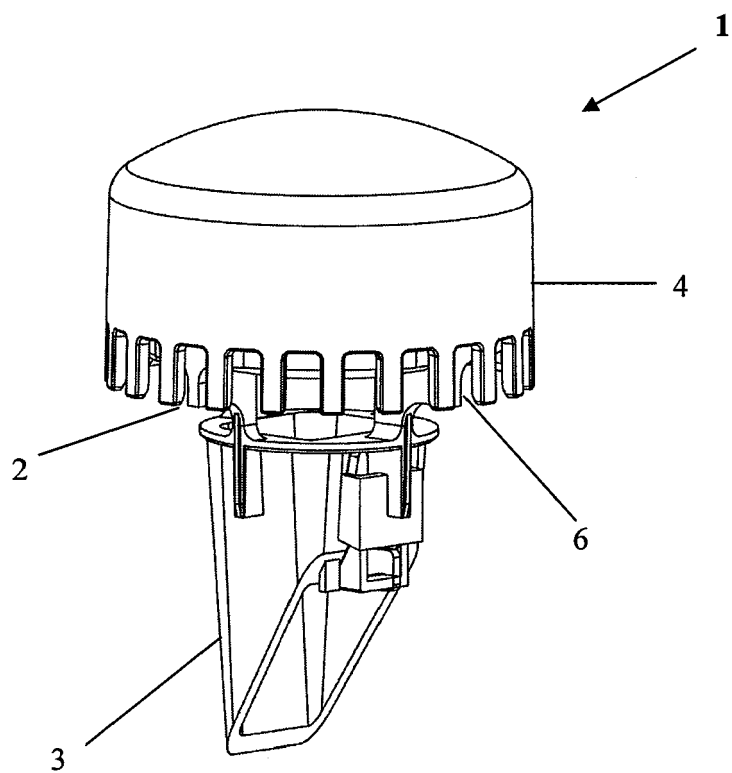


Fig 1

PRIOR ART

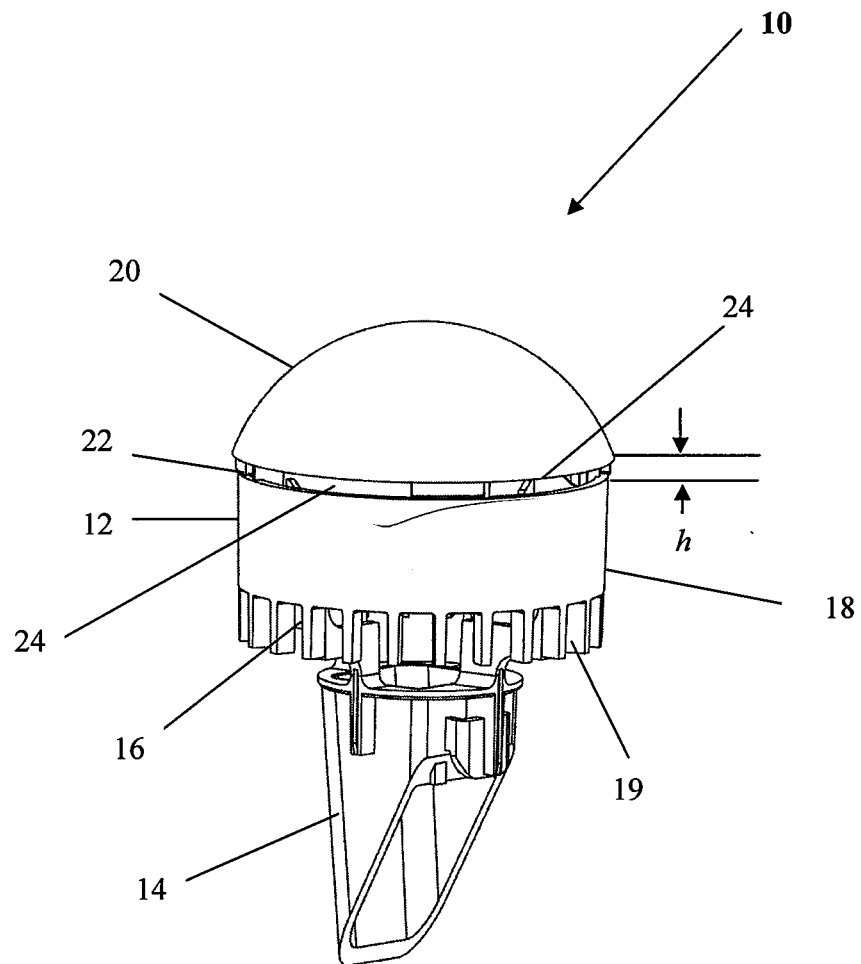


Fig 2

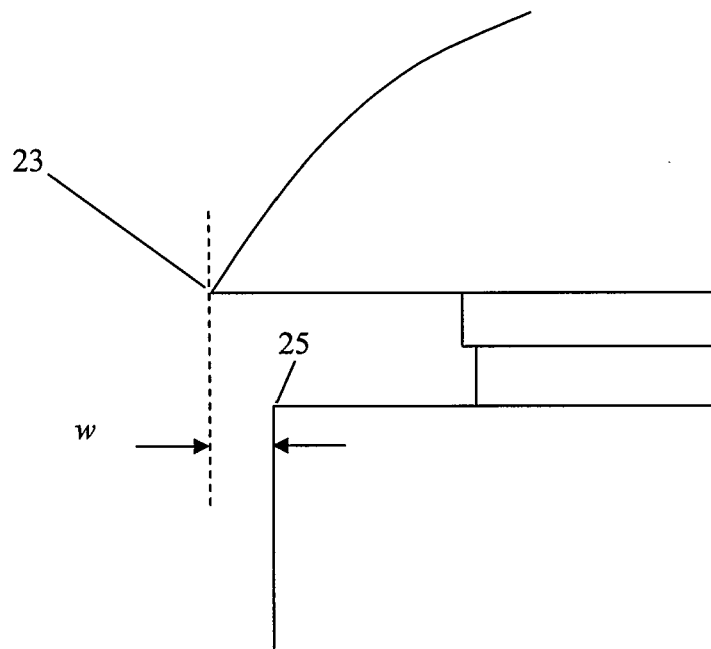


Fig 3

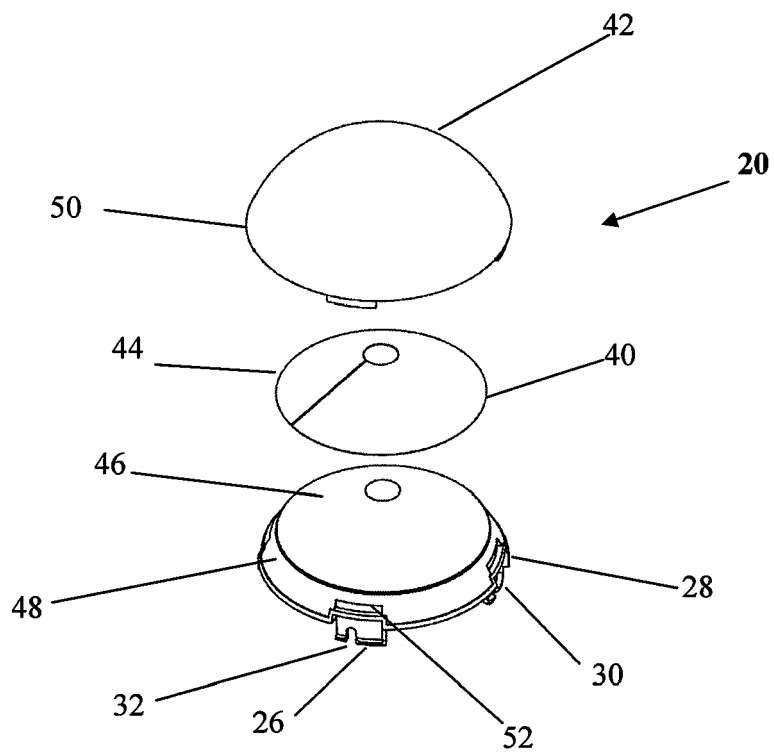


Fig 4

REFERENCES CITED IN THE DESCRIPTION

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