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[Continued on nextpage]

(54) Title: CLOSURE

(57) Abstract: A container closure (10) is provided and comprises a base (50) and a lid (55), and the footprint of the lid is larger than the footprint of the base.

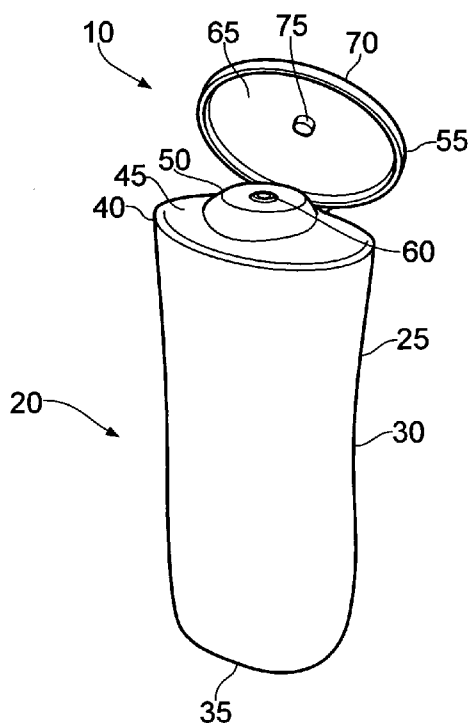


FIG. 2



WO 2012/004668 A1

CLOSURE

The present invention relates generally to a container closure and particularly to a closure comprising a base and a lid.

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It is known to provide closures for containers which comprise a base connectable to a container and a lid for closing the base. An important consideration when producing closures is to attempt to minimise the amount of material required; however, this must not come at the expense of the performance of the closure.

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The present invention seeks to address the problems with known closures.

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According to a first aspect of the present invention there is provided a container closure comprising a base and a lid, the footprint of the lid being larger than the footprint of the base.

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The present invention is based upon a "big lid, small base" principle in which the base and lid do not have to be the same size as each other, in other words the lid does not have to fit flush onto the base. Effectively, therefore, a deliberate overhang is created. This allows, for example, the dimensions of a base to be minimised whilst maintaining a required exterior appearance with the closure in a closed position, that is with just the lid in view.

25

The extent to which the footprint of the lid is larger than the footprint of the base can be selected based on the particular requirements of a container pack. For example, the lid may be: approximately 10% larger; larger by an amount in the range of 10% to 100%; larger by an amount in the range of 100% to 200%; larger an amount in the range 200% to 500%; or larger by an amount in the range 500% to 1,000%. The size difference may fall outside of these ranges if appropriate.

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The base may be connected to the lid by a hinge, for example a snap hinge or film hinge. The hinge may be at least partly external, for example extending from an external surface of the lid. In other embodiments the lid is attachable to the base but removable therefrom for example using a screw-or snap- engagement system.

5

The base may be provided with engagement means for engaging a container, for example screw threads or snap engagement means.

The footprint of the lid and/or base may be selected to match corresponding
10 components of a container. For example, the lid may be sized (e.g. minimised) to be flush fitting with a container shoulder; and the base may be sized to match a container neck or an equivalent structure such as a gully with engagement means for connecting to the base. This allows a closure with the minimum amount of material to be formed. In one embodiment the periphery of the lid is substantially flush with the periphery of a
15 container when they meet in a closed position.

The shape of the base may be substantially the same as the shape of the lid when viewed in plan, or the shapes may be different. For example, a circular base may be used in combination with an ellipsoidal lid

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The lid may be formed to seal the base, for example by blocking a dispensing orifice formed in the base.

The base may be located substantially centrally with respect to the lid when viewed in
25 plan, although offset arrangements are possible.

The present invention also provides a container having a closure as described herein.

The present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a closure formed according to the present invention
5 shown connected to a container;

Figure 2 is a perspective view of the closure of Figure 1 shown in an open position;

Figure 3 is a magnified view of the closure of Figure 1;
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Figure 4 is a magnified view of the closure of Figure 5;

Figure 5 is a schematic under plan view of the closure of Figures 1 to 4;

15 Figure 6 is a perspective view of a closure formed according to an alternative embodiment and shown attached to a container;

Figure 7 is a perspective view of the closure of Figure 6 shown in an open position;

20 Figure 8 is a schematic under plan view of a closure formed according to an alternative embodiment;

Figure 9 is a schematic under plan view of a closure formed according to a further embodiment;

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Figure 10 is a schematic under plan view of a closure formed according to a still further embodiment;

Figure 11 is a front perspective view of a closure formed according to an alternative embodiment;

Figure 12 is a rear perspective view of the closure of Figure 11

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Figure 13 is a plan view of the closure of Figure 11;

Figure 14 is an underplan view of the closure of Figure 11;

10 Figure 15 is a front elevation of the closure of Figure 11;

Figure 16 is a rear elevation of the closure of Figure 11;

Figure 17 is a side elevation of the closure of Figure 11;

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Figure 18 is a front perspective view of the closure of Figure 11 shown in an open position;

Figure 19 is a rear perspective view of the closure of Figure 18;

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Figure 20 is a plan view of the closure of Figure 18;

Figure 21 is an underplan view of the closure of Figure 18;

25 Figure 22 is a front elevation of the closure of Figure 18; and

Figure 23 is a side elevation of the closure of Figure 18.

Referring first to Figures 1 to 4 there is shown a closure generally indicated 10 connected to a container generally indicated 20.

The container 20 comprising an elongate hollow body 25 with a generally ellipsoidal section and having a shallow wasted portion 30 approximately half way along its length. At one end of the body 25 the container is closed by a base 35. At the other end of the body 20 is a shoulder region 40 which merges into a top panel 45. The panel 45 includes an opening (not shown) through which product carried in the container 20 can pass. The opening is covered by the closure 10.

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The closure 10 comprises a base 50 and a lid 55.

The base 50 is generally circular and is connected to the panel 45, in this embodiment by a snap-fit engagement. The base 50 includes a central dispensing orifice 60 through which product from the container 20 can pass the base 50 is connected to the lid 55 by a hinge element 85 shown best in Figure 5. The lid 65 comprises a generally ellipsoidal-shape top plate which is convexly domed. A shallow side wall 70 depends from the periphery of the plate 65. A spigot 75 depends from the underside of the plate 65 and is positioned centrally so that in the close position shown in Figures 1 and 3 it engages into the orifice 60 to seal it.

20

The lid 55 is dimensioned to match the outline of the shoulder region 40 on the container body. It will be noted that the lid 55 is significantly (in this embodiment) approximately 3 times) larger than the base 50. This means, therefore, that in the closed position shown in Figures 1 and 3 the lid 55 is flush with the container body 25, but is not flush with the base 50, which is dimensioned to fit around the body orifice. The closure 10 is therefore presented in a "small base with big lid" format that allows the material for the base 50 to be reduced whilst maintaining a flush-fitting lid 55. In other words, the base and lid are not flush fitting.

25

Referring now to Figures 6 and 7 there is shown a closure 110 formed according to an alternative embodiment and connected to a container 120. The container 120 and closure 110 are very similar to the container and closure of Figures 1 to 5. However, in 5 this embodiment the closure 110 is provided with an opening mechanism which allows for one-handed opening.

The closure 110 comprises a base 150 and a lid 155. The spigot 175 on the lid 155 is arranged to hold the lid firmly on the base in the closed position shown in Figure 6 a 10 lever 180 is provided at the front of the base 150. The closure is arranged so that in a first phase of the opening the lever is activated but does not release the locking forces. As the unlocking mechanism moves in this phase it causes energy to be stored in the form of deformation of the lid and/or the base. When the unlocking mechanism reaches its 15 final position the lock is released and the stored energy is released to flip open the lip. In this respect the mechanism is similar to that shown in patent document number EP1619134, the content of which are incorporated herein by reference.

As with the closure showing in Figures 1 to 5, the lid 155 is significantly larger than the base 150 thus providing the same benefit in material reduction. 20

Referring now to Figure 8 there is shown a closure 210 formed according to an alternative embodiment.

The closure 210 comprises a generally circular base 250 and a generally circular lid 255. 25 The base 250 is connectable to a container (not shown). The lid 255 is attachable to the base 250 by cooperating formations, in this embodiment screw thread formation (not shown).

The lid 255 is considerably larger than the base 250 and thus a significant overhang is present. The base 250 is offset from the centre of the lid 255.

Referring now to Figure 9 there is shown a closure 310 formed according to an alternative embodiment. The closure 310 comprises a circular base 350 and a circular lid 355. In this embodiment the base is positioned generally centrally with respect to the lid. The base 350 and lid 355 are connected by a strap hinge 365.

Referring now to Figure 10 there is shown a closure 410 formed according to an alternative embodiment. The closure 410 comprises a generally circular base 450 and a generally circular lid 455. The lid 455 is slightly larger than the base 450 and thus a peripheral overhang region is present. In this embodiment the base 450 is connectable to a container using screw thread formations and the lid is snap fit onto the base.

Referring now to Figures 11 to 23 there is shown a closure 510 formed according to an alternative embodiment. The closure 510 is very similar to the closure 10 of Figure 1 to 5 and comprises a larger lid 555 hingedly connected to a smaller base 550. Because the base is smaller and located inboard of the periphery of the lid, the hinge extends inwardly from the periphery of the lid to connect to the base.

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CLAIMS

- 5 1. A container closure comprising a base and a lid, the footprint of the lid being larger than the footprint of the base.
2. A closure as claimed in Claim 1, in which the footprint of the lid is larger than the footprint of the base by an amount of at least 10%.
- 10 3. A closure as claimed in Claim 1 or Claim 2, in which the footprint of the lid is larger than the footprint of the base by an amount in the range of 10% to 100%.
4. A closure as claimed in Claim 1, in which the footprint of the lid is larger than the footprint of the base by an amount in the range 100% to 200%.
- 15 5. A closure as claimed in any preceding claim, in which the base is connected to the lid by a hinge.
6. A closure as claimed in any preceding claim, in which the lid is sized to match the size of a container shoulder.
7. A closure as claimed in any preceding claim, in which the base is sized to match the size of a container neck.
- 25 8. A closure as claimed in any preceding claim, in which the shape of the base is substantially the same as the shape of the lid when viewed in plan.
9. A closure as claimed in any of Claims 1 to 7, in which the shape of the base is different to the shape of the lid when viewed in plan.
- 30

10. A closure as claimed in any preceding claim in which the base is located substantially centrally with respect to the lid when viewed in plan.

5 11. A closure as claimed in any preceding claim, in which the periphery of the lid is flush fitting with the periphery of container region onto which it closes.

12. A closure substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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13. A container in combination with a closure as claimed in any preceding claim.

14. A combination substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

15

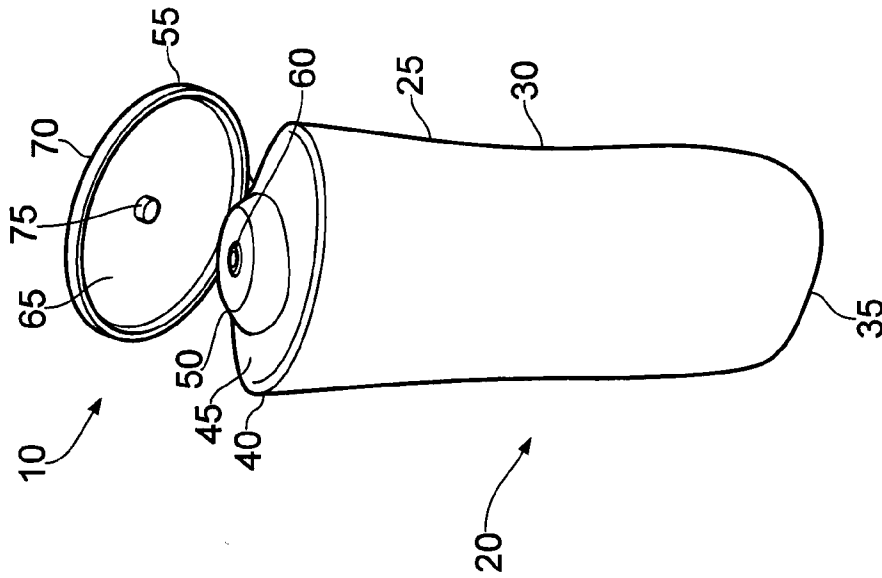


FIG. 1

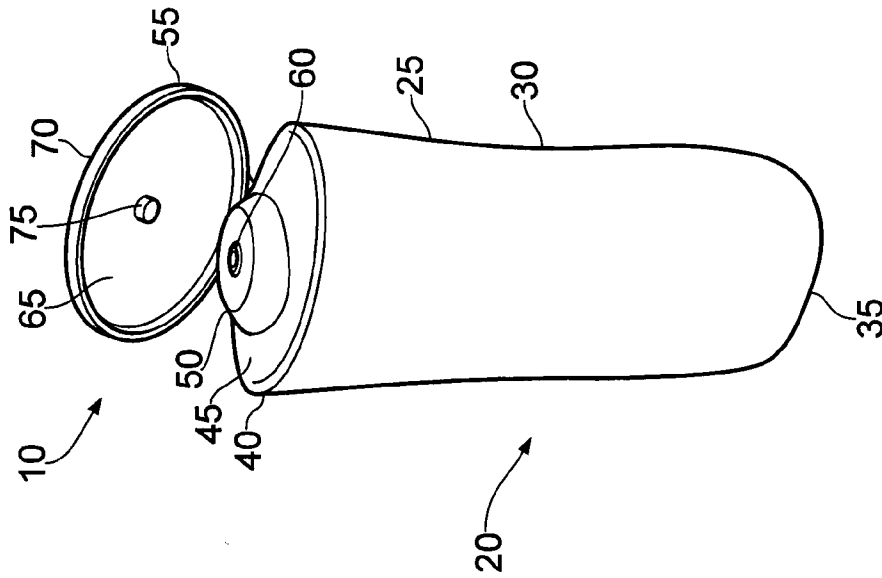


FIG. 2

2/18

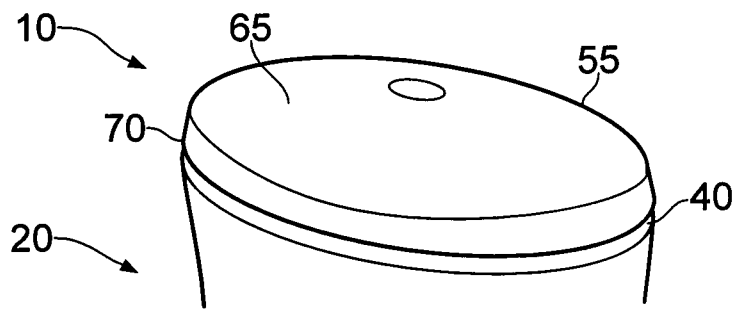


FIG. 3

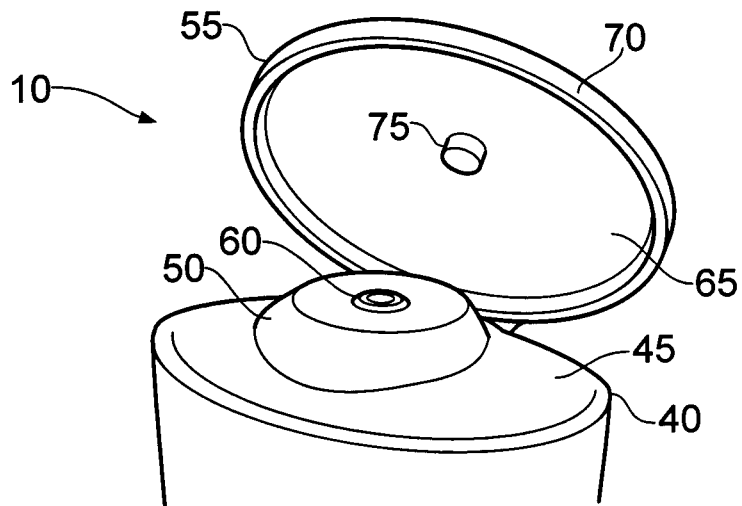


FIG. 4

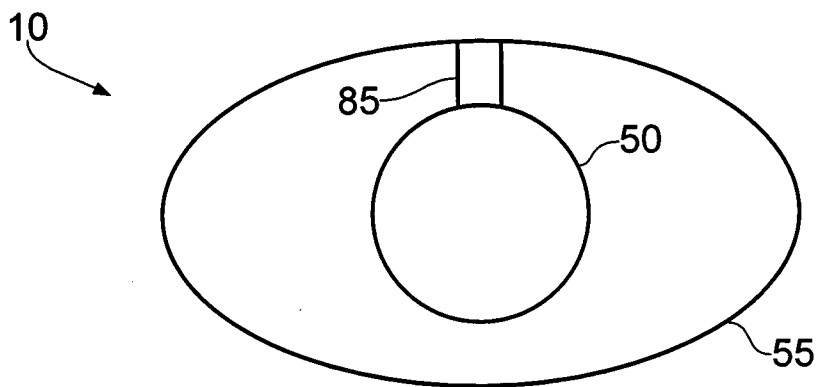


FIG. 5

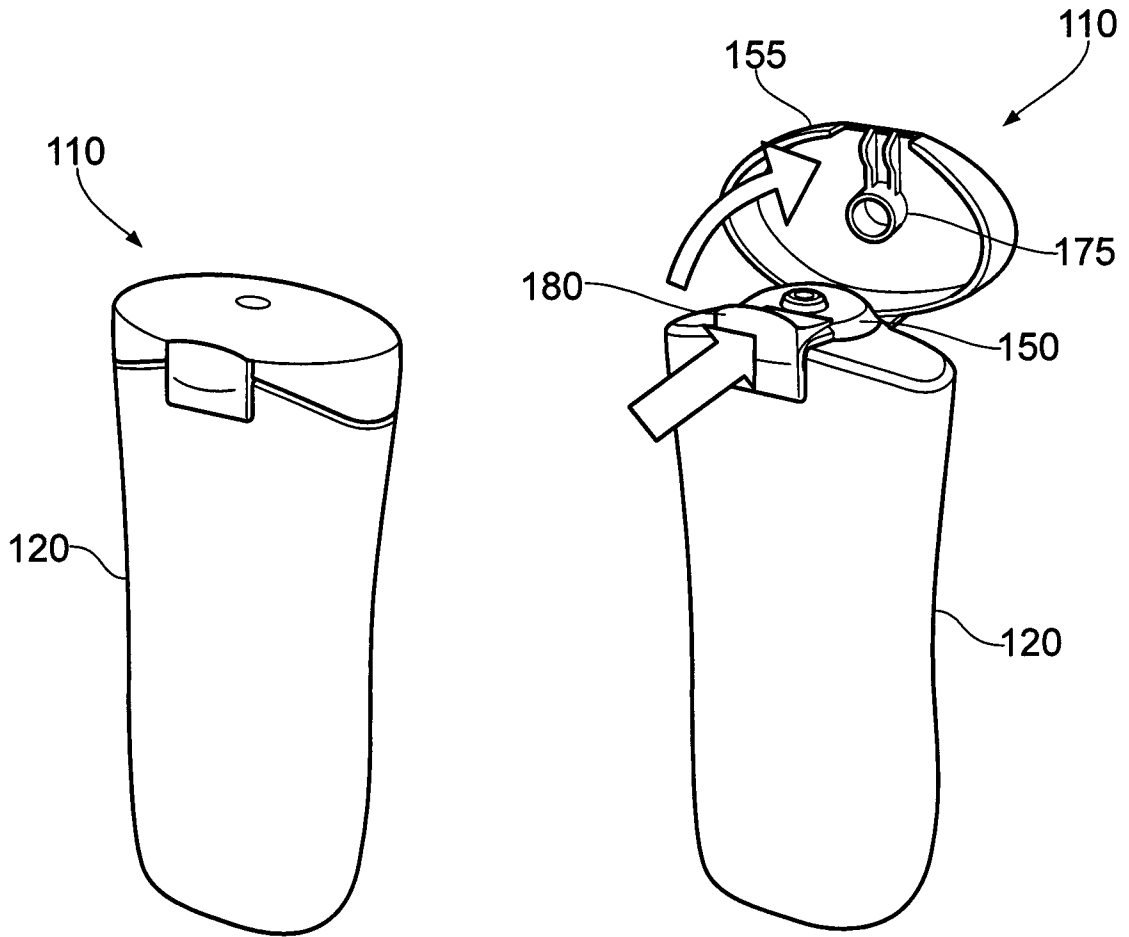


FIG. 6

FIG. 7

4/18

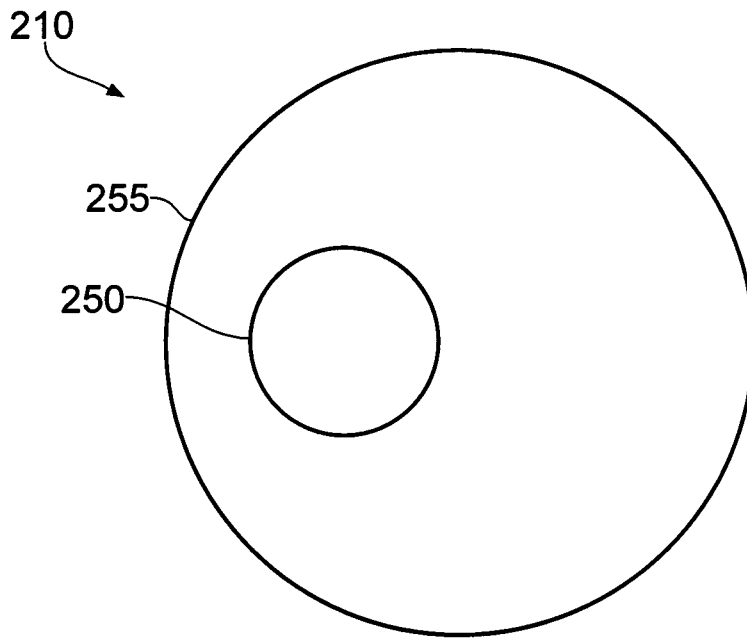


FIG. 8

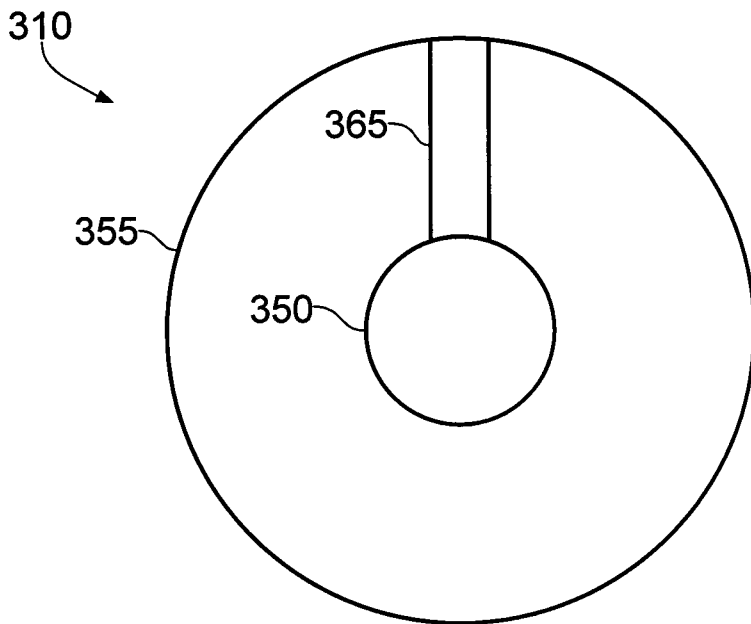


FIG. 9

5/18

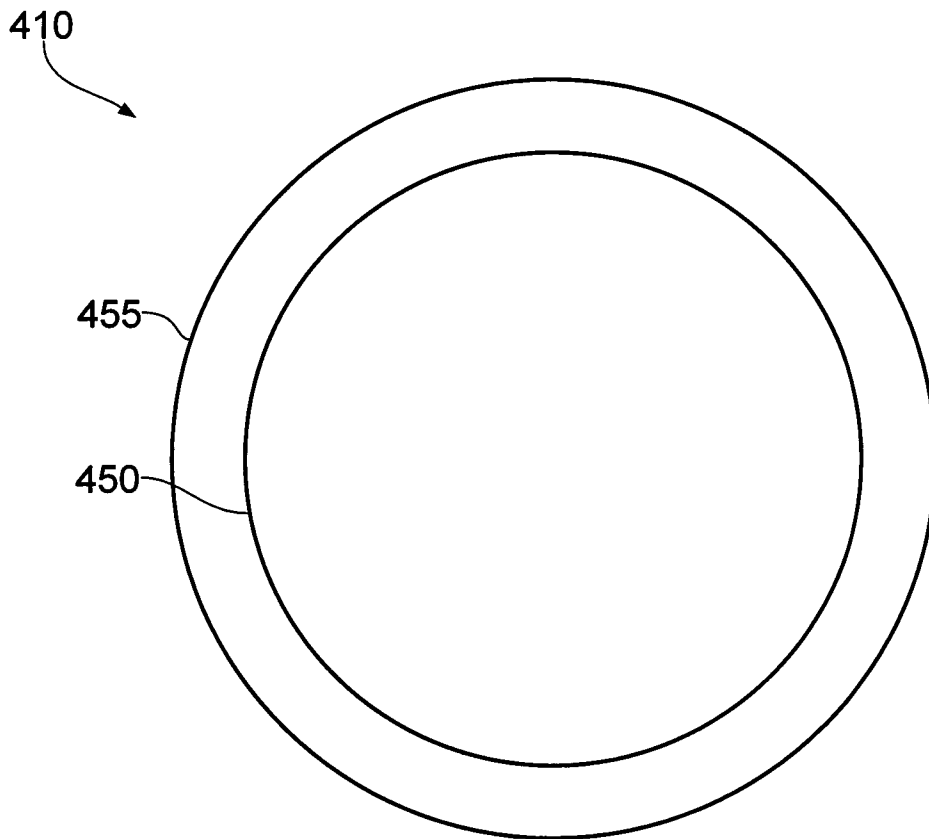


FIG. 10

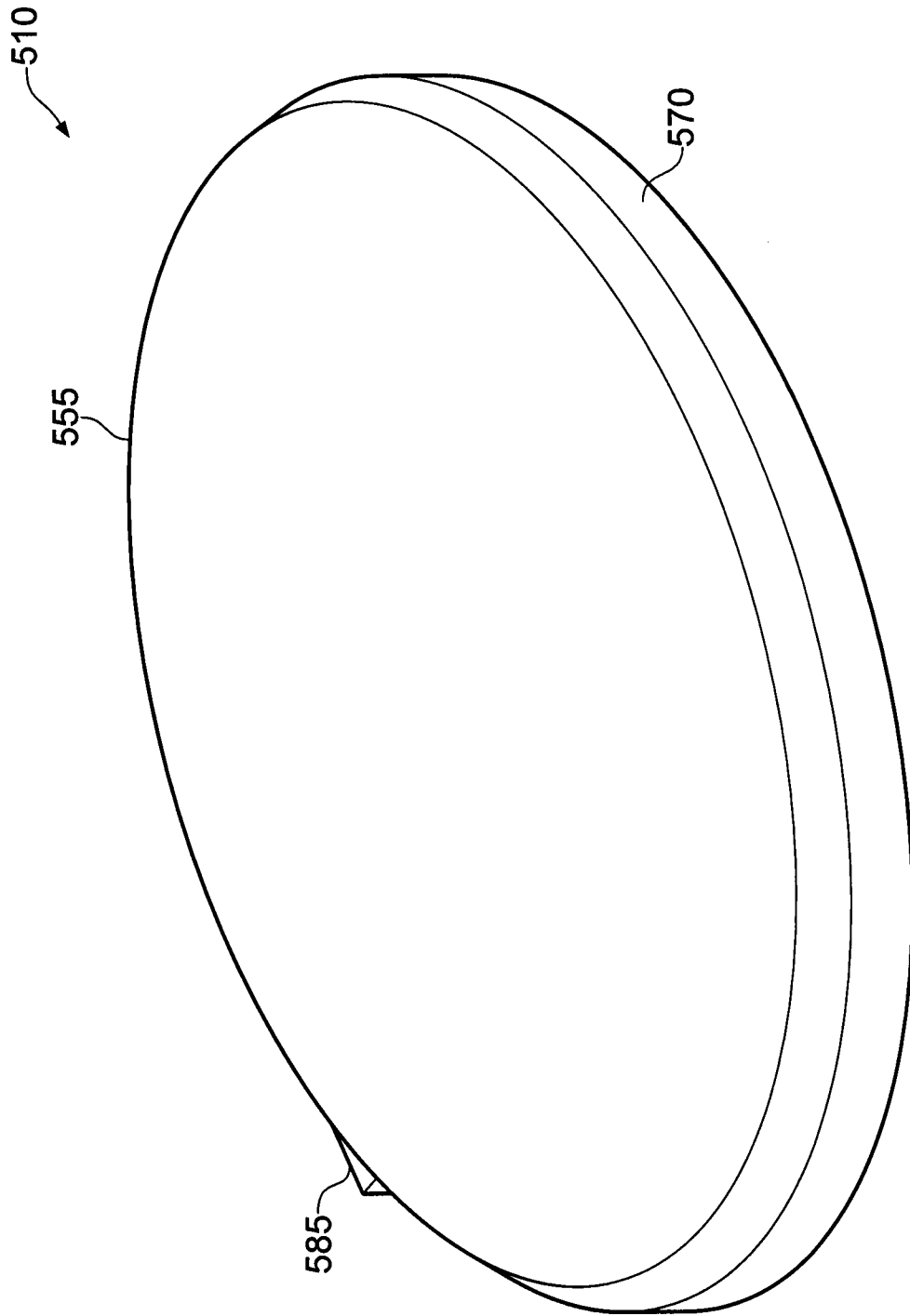


FIG. 11

7/18

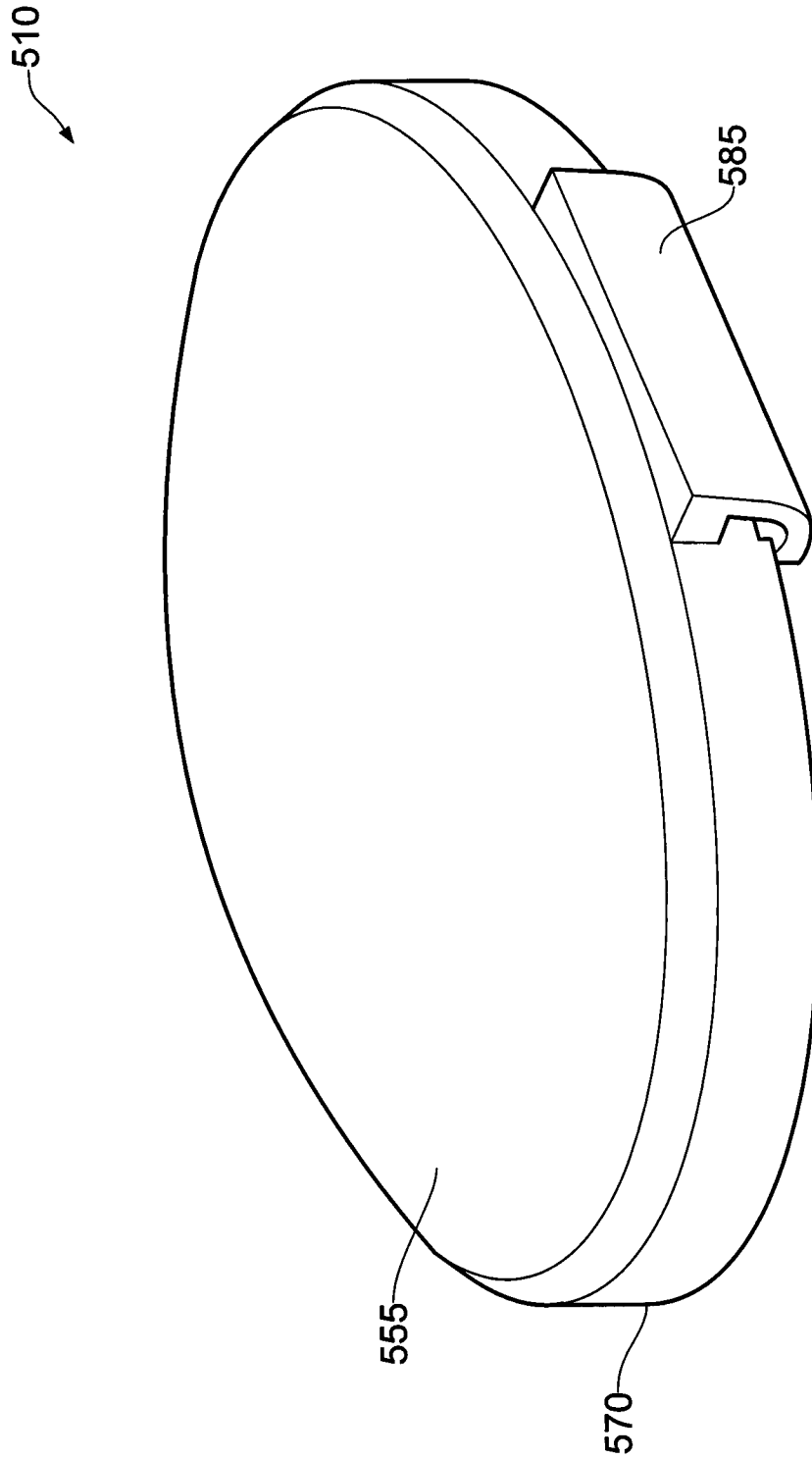


FIG. 12

8/18

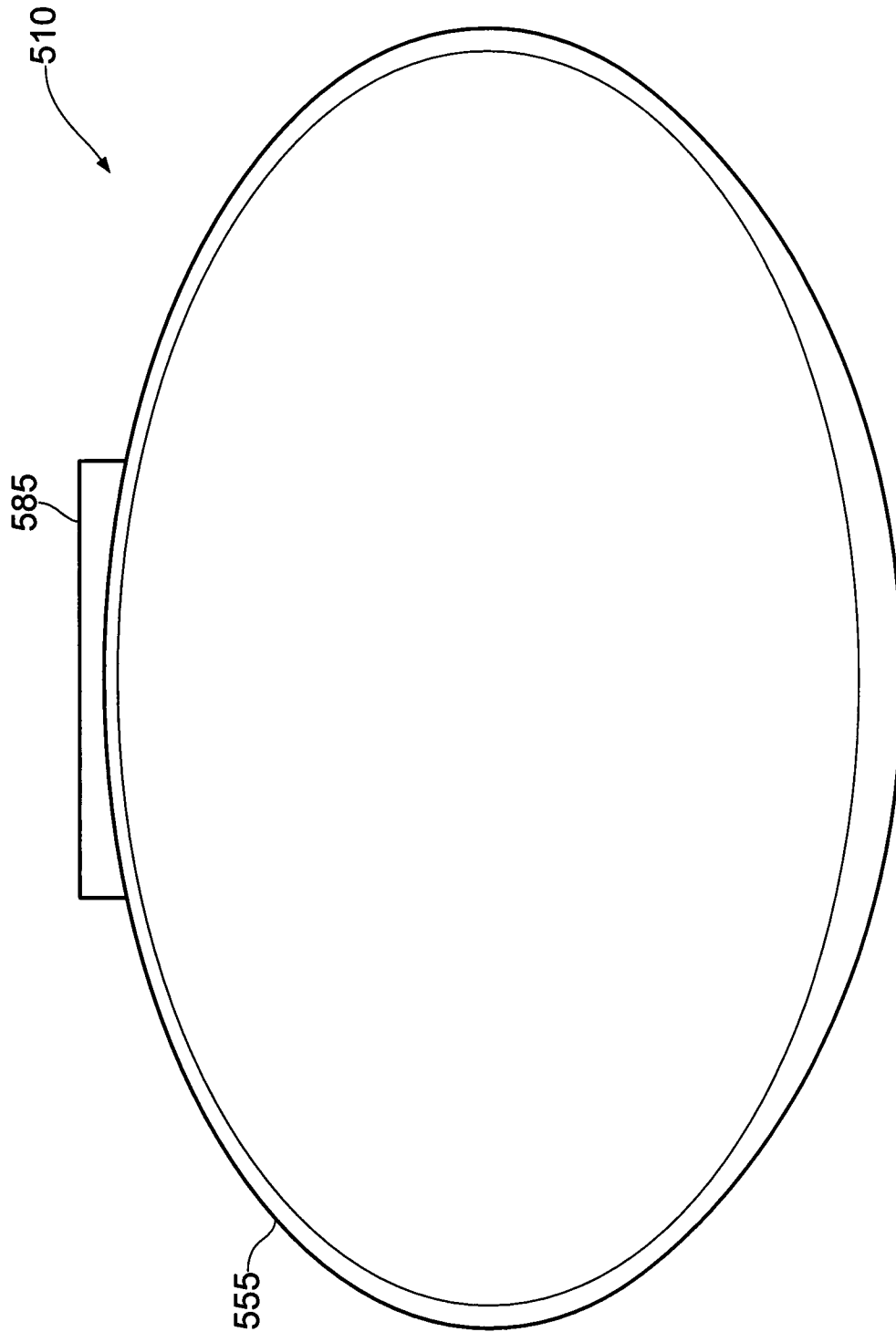


FIG. 13

9/18

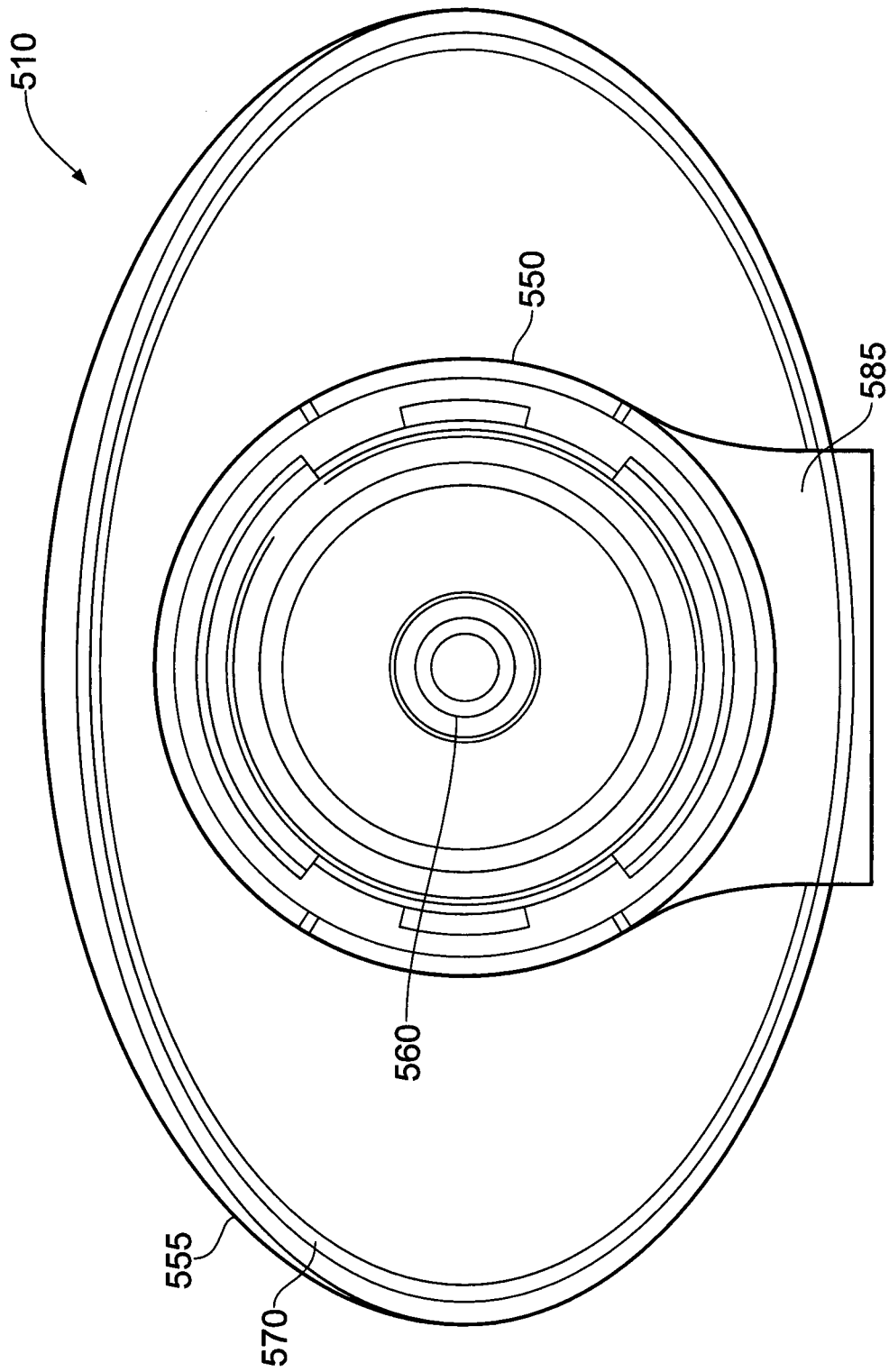


FIG. 14

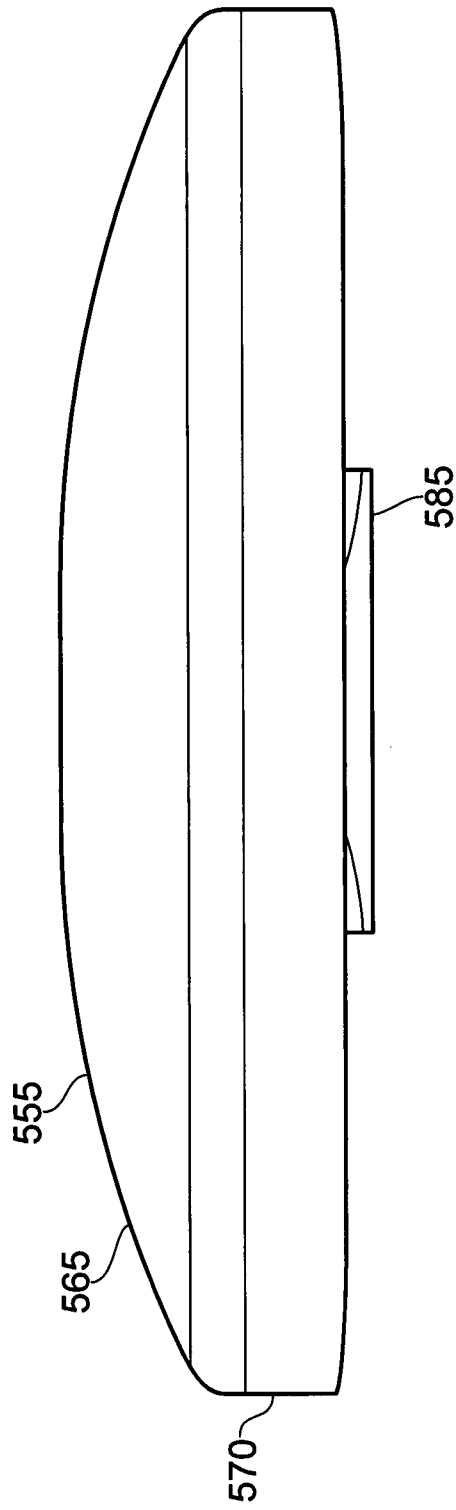


FIG. 15

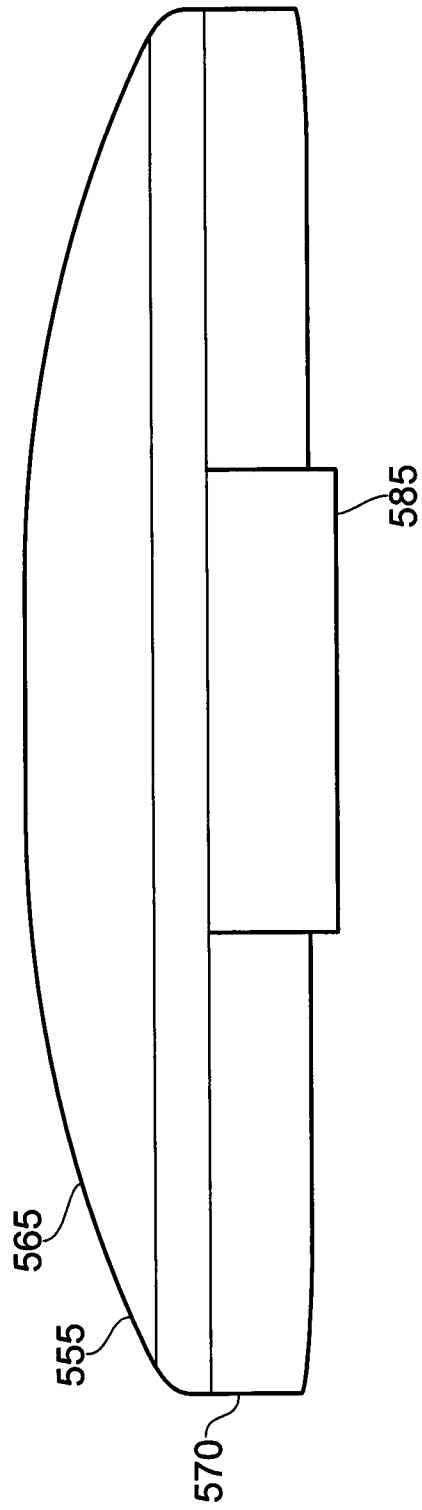


FIG. 16

12/18

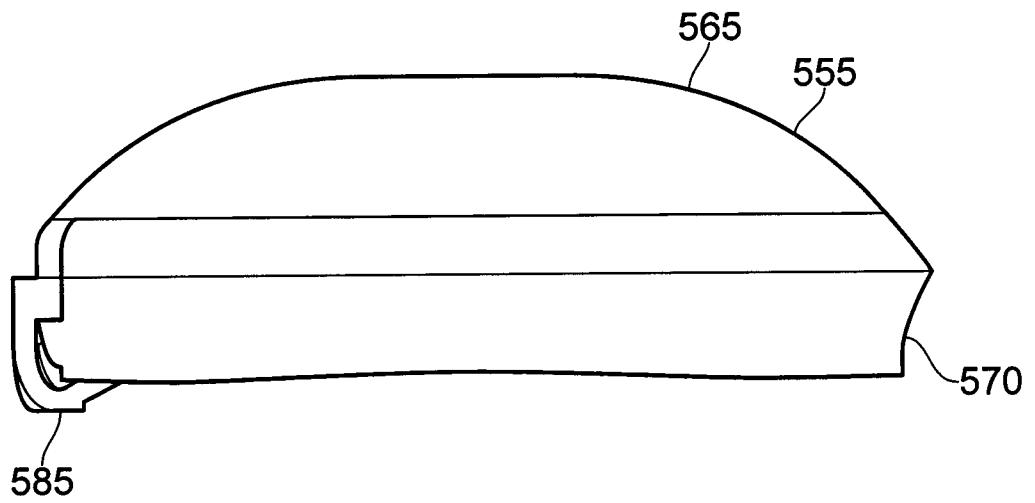


FIG. 17

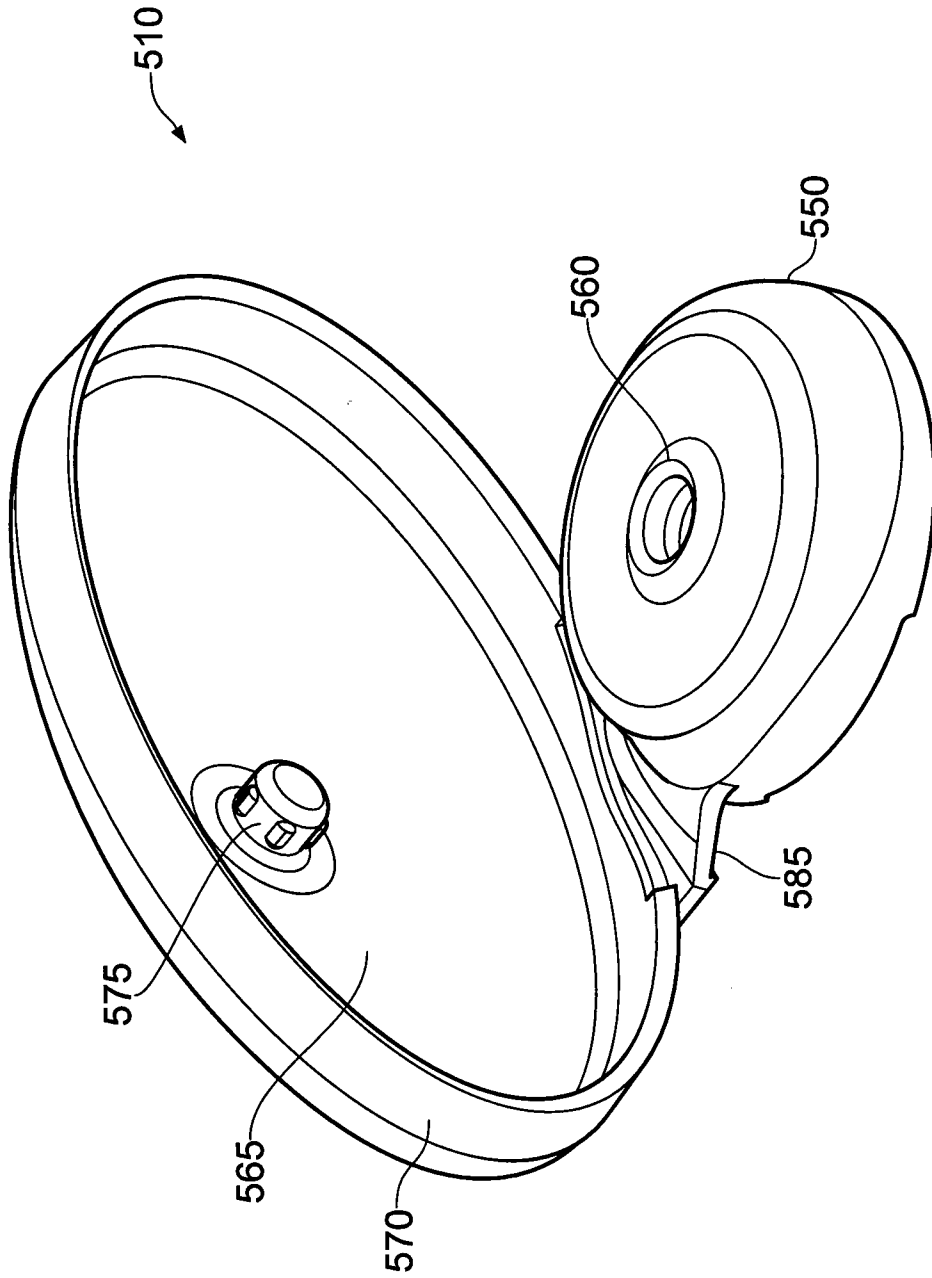


FIG. 18

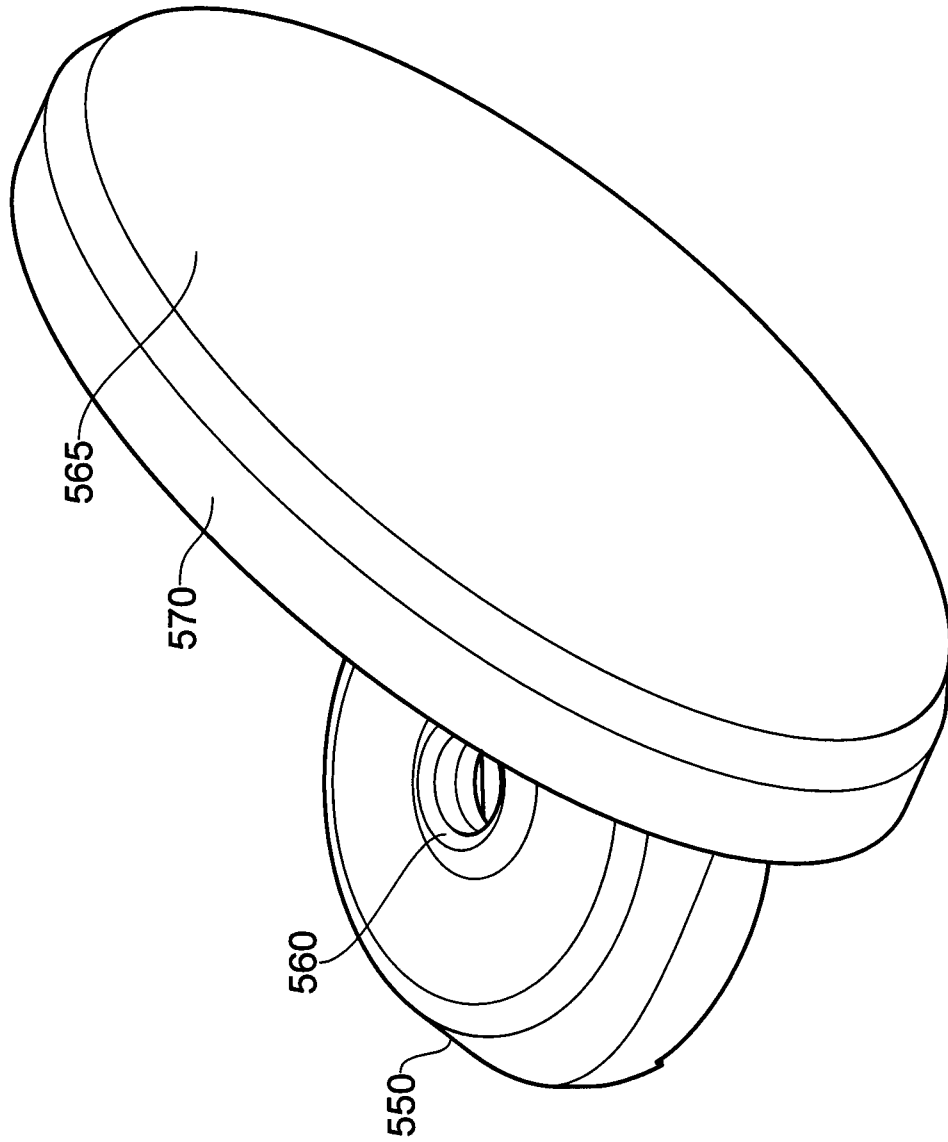


FIG. 19

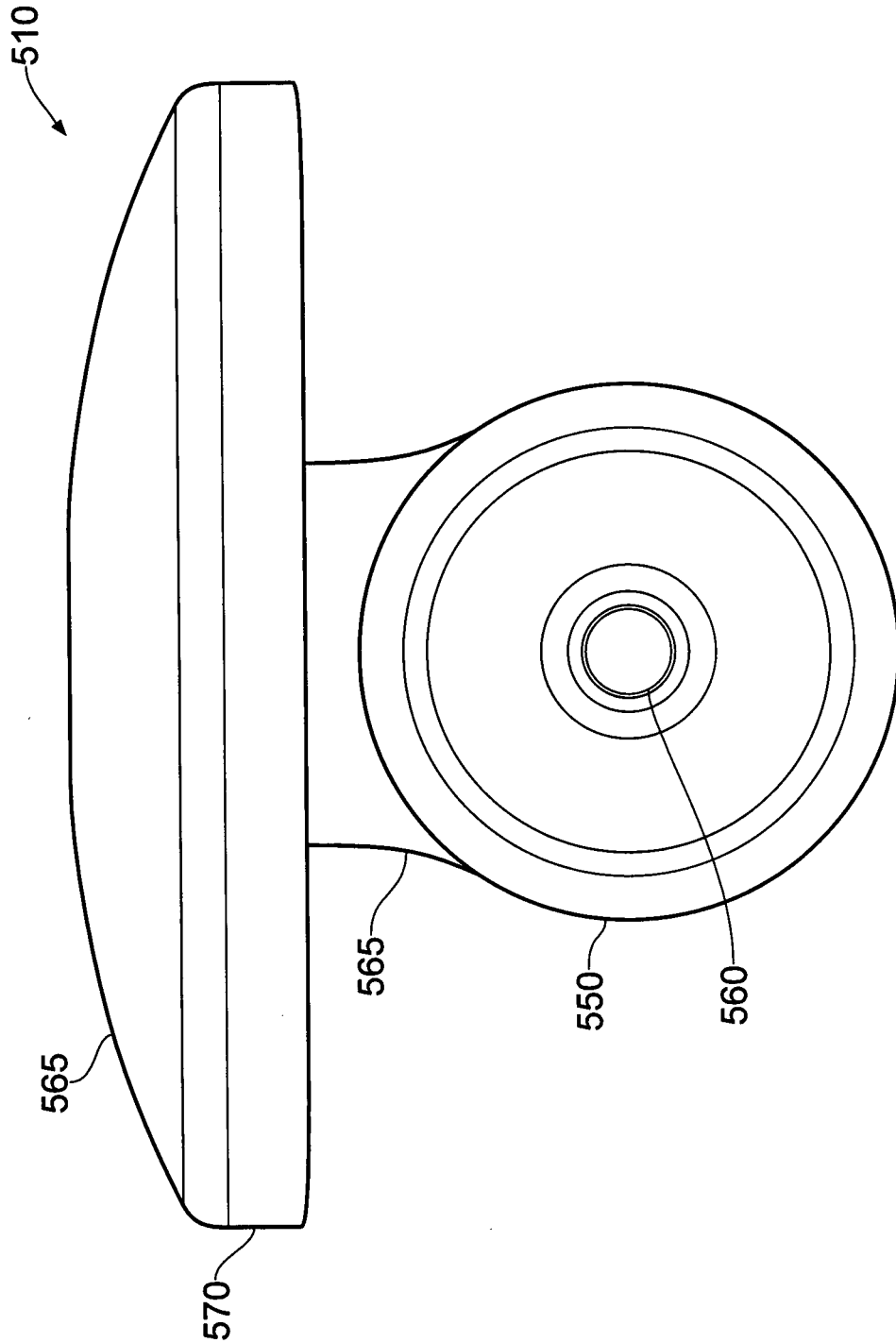


FIG. 20

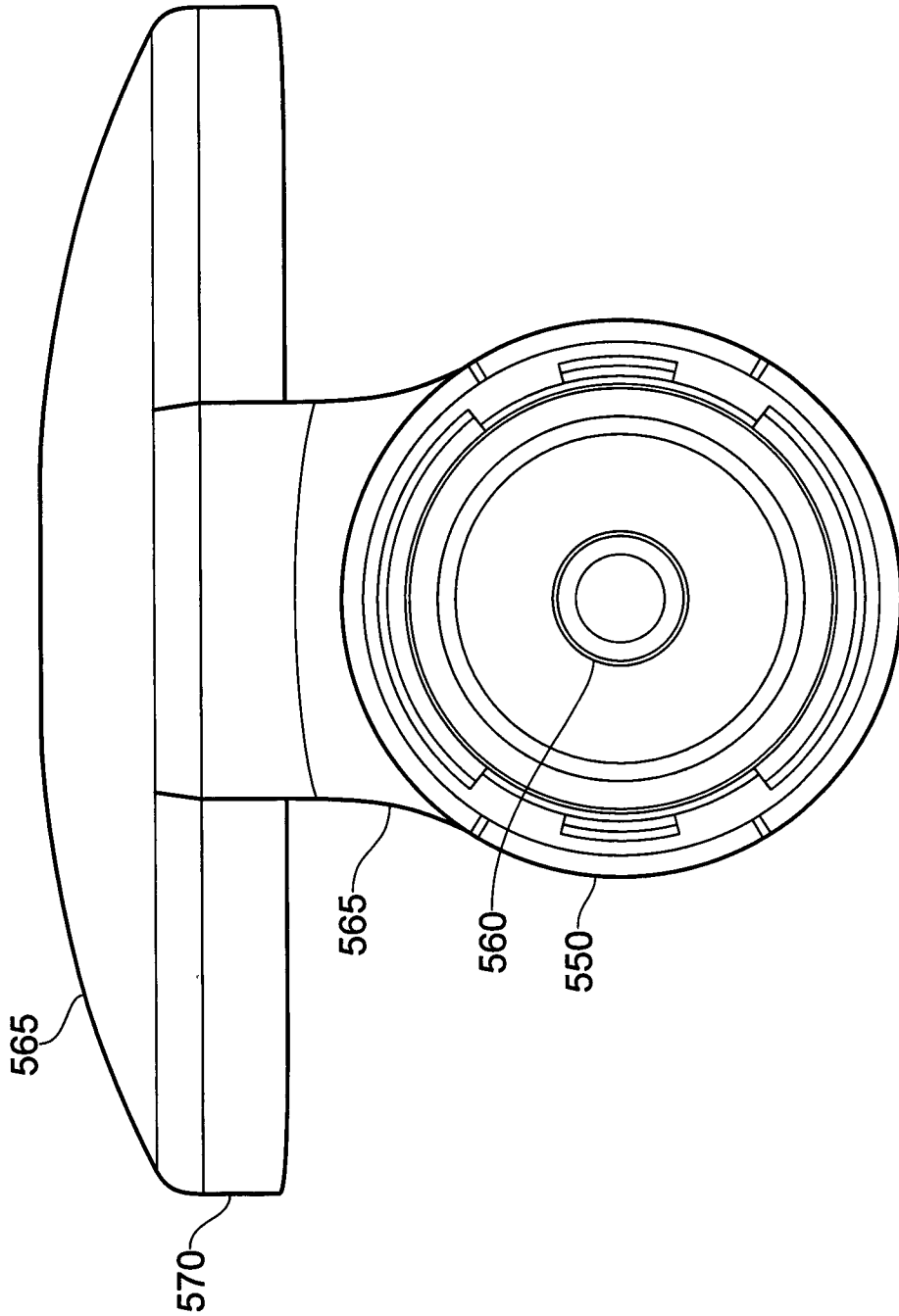


FIG. 21

17/18

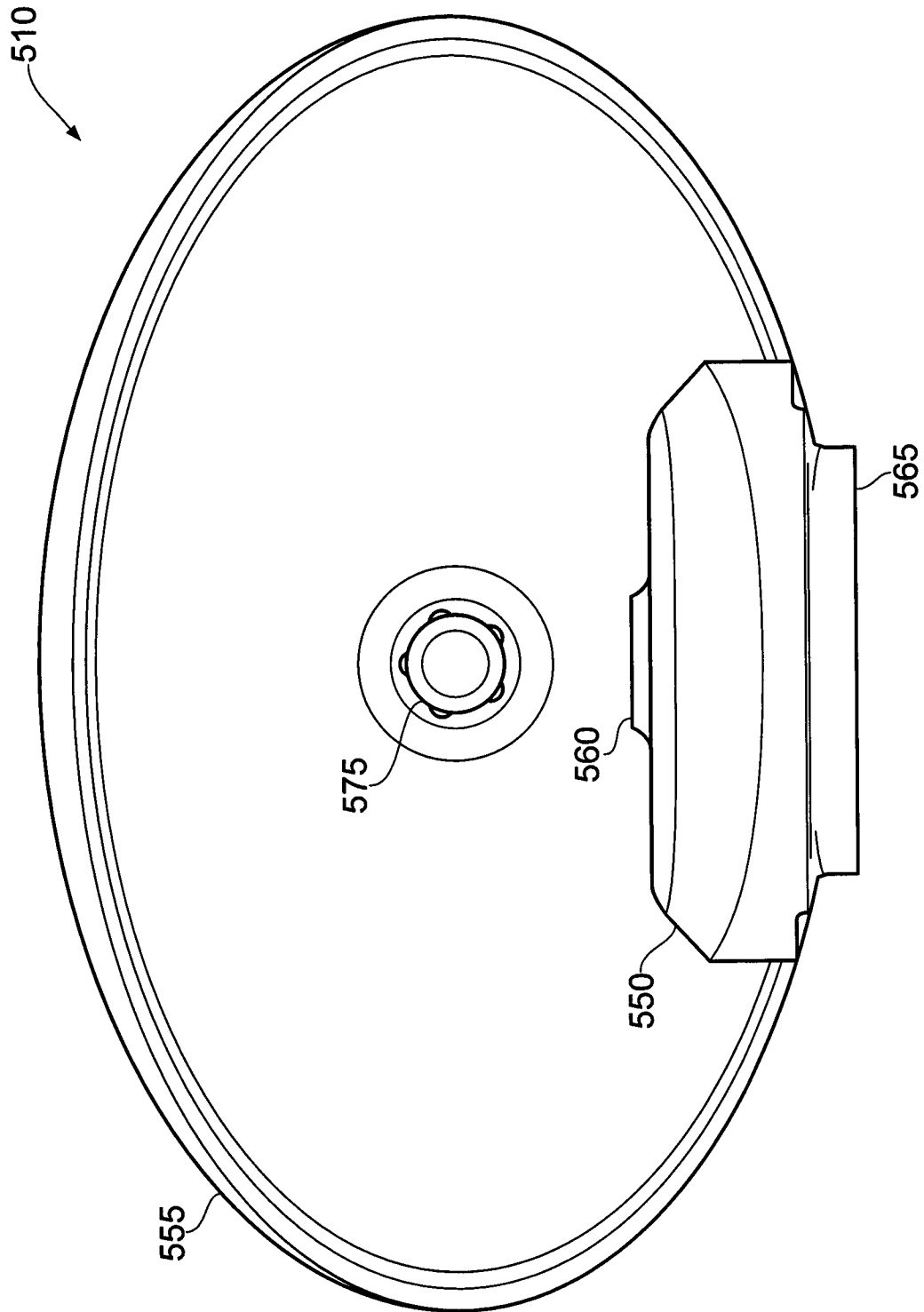


FIG. 22

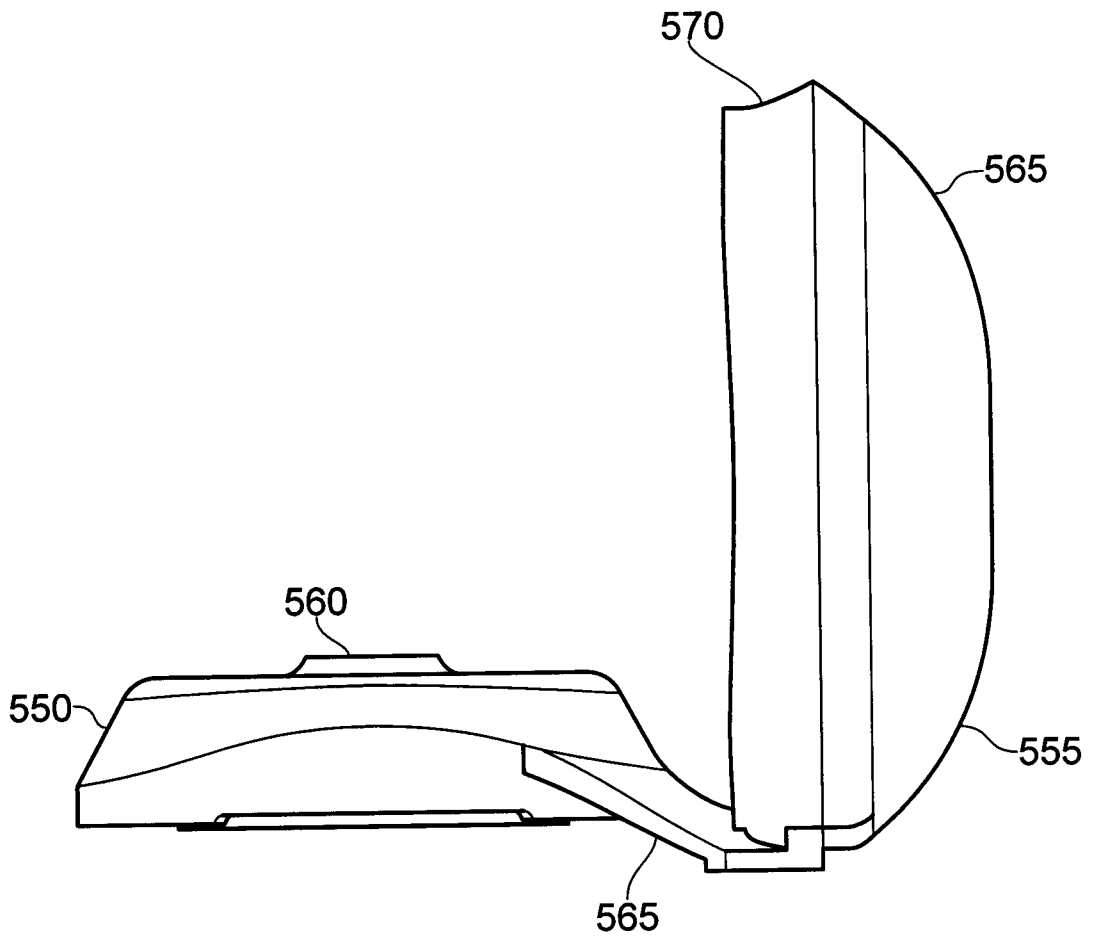


FIG. 23

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/001912

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D47/08
 ADD.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 095 374 A (RICARD PAUL J [US] ET AL) 1 August 2000 (2000-08-01) column 3, line 11 - column 4, line 61; figures 1-7 -----	1-10, 13
X	GB 2 422 372 A (RITCHIE GARRY [GB]) 26 July 2006 (2006-07-26) pages 5-6; figures 1-4 -----	1-3, 5-10, 13
X	US 5 979 706 A (GRUSSMARK STEPHEN M [US]) 9 November 1999 (1999-11-09) column 5, line 12 - line 25; figure 5 -----	1-3, 5-10, 13
X	CA 2 406 986 A1 (ROWSWELL GARTH [CA]) 8 April 2004 (2004-04-08) pages 4-8; figures 1-2 -----	1-10, 13

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 11 October 2011	Date of mailing of the international search report 18/10/2011
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Fournier, Jacques
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2011/001912

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6095374	A	01-08-2000	NONE
GB 2422372	A	26-07-2006	W0 2006079771 A1 03-08-2006
US 5979706	A	09-11-1999	NONE
CA 2406986	A1	08-04-2004	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2011/001912

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: **12, 14**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/2 10

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos. :

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos. :

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 12, 14

Claims 12 and 14 violate Rule 6.2 a) PCT.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.