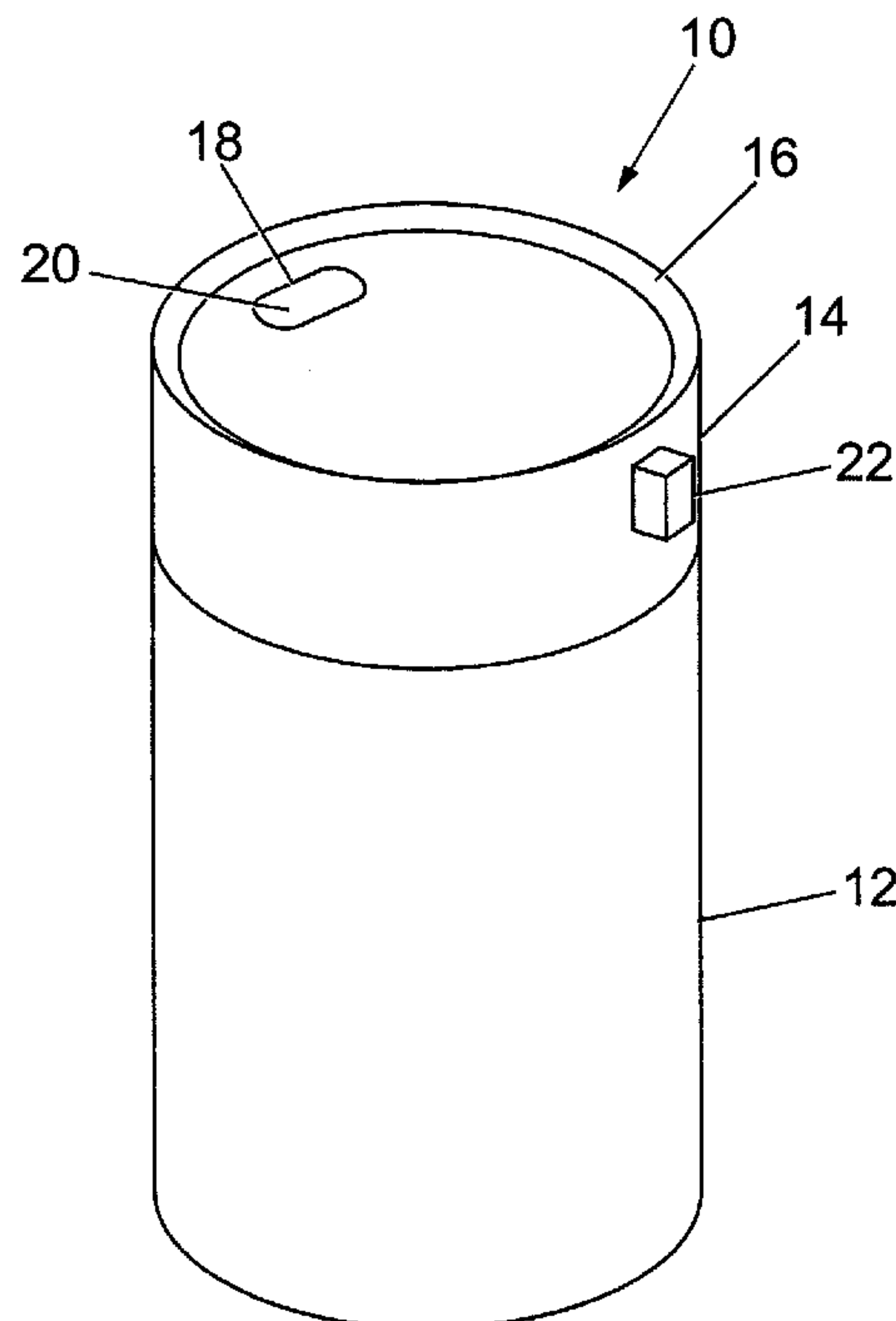




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(54) Title: IMPROVED LID FOR A CONTAINER



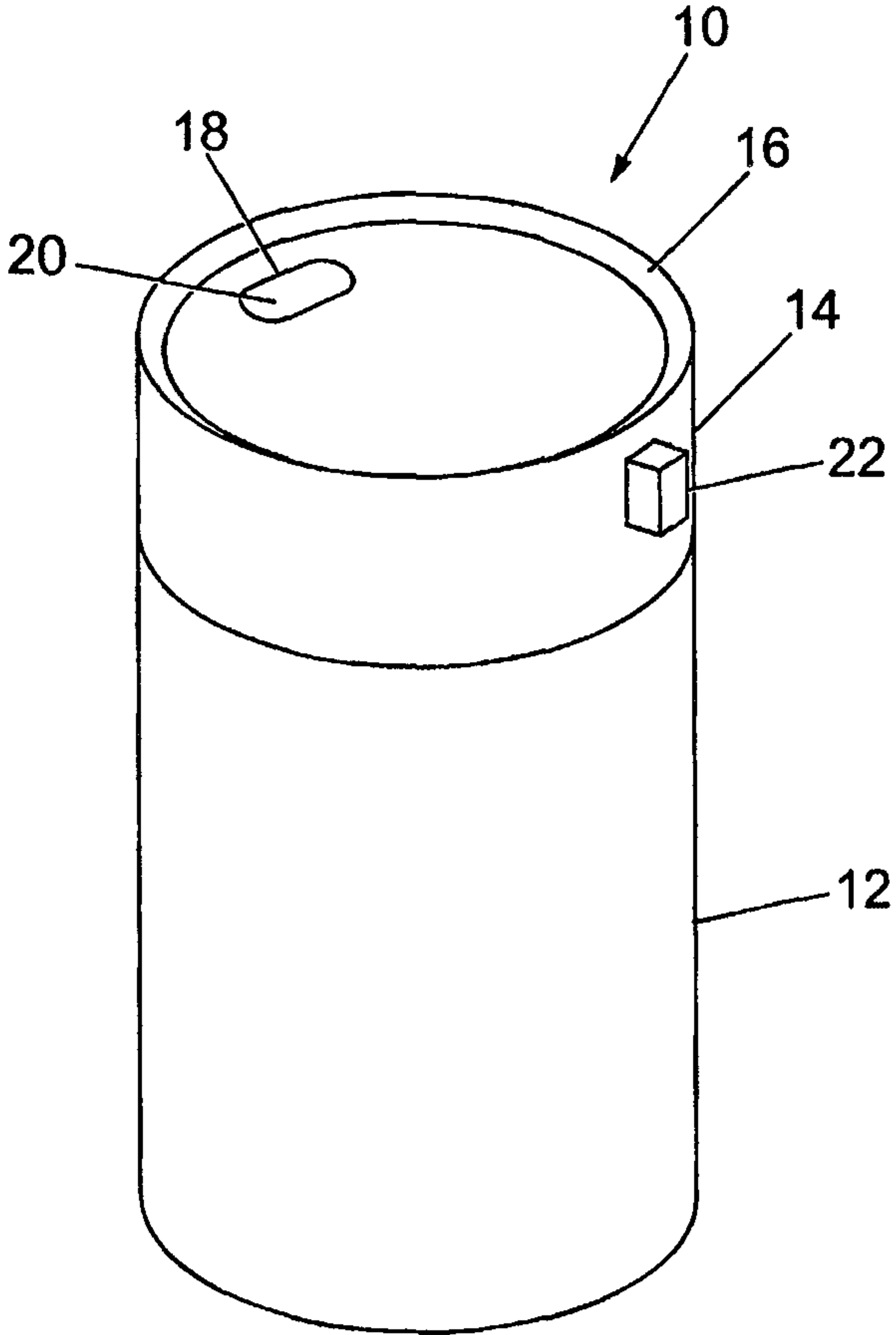
(57) **Abrégé/Abstract:**

A lid (14) and a container (12) are disclosed which are ideally suited for drinks and particularly hot drinks such as tea or coffee. The top of the lid (14) / container (12) has an aperture with a closure (20). When the container (12) is not in use, the closure (20) remains closed. However, a user can, by means of a sliding trigger (22), open the closure (20) whenever they wish to take a drink. This has the advantage of avoiding spillage, while being easier to operate than existing automatic opening arrangements for drinks containers.



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(54) Title: IMPROVED LID FOR A CONTAINER (57) Abstract A lid (14) and a container (12) are disclosed which are ideally suited for drinks and particularly hot drinks such as tea or coffee. The top of the lid (14) / container (12) has an aperture with a closure (20). When the container (12) is not in use, the closure (20) remains closed. However, a user can, by means of a sliding trigger (22), open the closure (20) whenever they wish to take a drink. This has the advantage of avoiding spillage, while being easier to operate than existing automatic opening arrangements for drinks containers. 		

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1 IMPROVED LID FOR A CONTAINER

2

3 This invention relates to an improved lid for a
4 container. Particularly but not exclusively it relates
5 to an improved lid for a drinking vessel.

6

7 Commonly, drinking vessels for hot drinks are provided
8 either without lids or with flexible plastic lids.

9 This has the associated problem that if the vessel is
10 dropped or knocked over, the hot drink spills or leaks
11 which is messy and may cause injury. Furthermore,
12 actually drink from the vessel.

13

14 Attempts have been made to overcome the problems
15 associated with known lids by introducing a drinking
16 hole into a hard, reusable lid. Such known lids
17 include a sprung button mechanism. To drink from a
18 vessel having this type of lid fitted, the button must
19 be depressed into the body of the lid to slide open a
20 cover provided over the drinking hole. Such push and
21 slide mechanisms have associated disadvantages,
22 however. For example, during use the mechanism is
23 prone to sticking so the cover does not open
24 effectively. Furthermore, the radial movement involved
25 in pressing the button against the force of the spring
26 is unnatural, awkward and stressful on the finger of
27 the user. This makes the known lid particularly
28 unsuitable for the elderly or infirm who find it
29 difficult to depress the button with sufficient force.

30

31

AMENDED SHEET

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1 According to the present invention there is provided a
2 lid for a container, the lid having an aperture, a
3 closure for occluding the aperture and a trigger for
4 controlling the configuration of the closure, the
5 closure being actuatable between a first configuration
6 where the aperture is open and a second configuration
7 where the aperture is closed, characterised in that the
8 configuration of the closure can be changed by sliding
9 of the trigger on an outer surface of the lid.

10

11 Preferably, the sliding of the trigger is in a
12 direction towards the top of the lid.

13

14 Preferably the lid is for a drinks container. It may
15 be for a coffee mug. Alternatively, the container may
16 be for other products. For example, it may be for
17 toothpaste, sugar or cream. The lid is preferably
18 adapted to be releasably fitted to the container.

19

20 According to another aspect of the present invention
21 there is provided a drinks container comprising a main
22 body and a lid in accordance with the present
23 invention, the lid being adapted to fit onto the main
24 body of the container.

25

26 Preferably the drinks container is reusable.

27

28 Preferably the trigger is connected to the closure by
29 means of a bar and pivot arrangement. When the trigger
30 is operated, this may transfer the motion to the
31 closure via the bar and pivot arrangement. Typically
32 the closure is adapted to be biased into the closed
33 position. This may be by means of a spring. The
34 spring may be provided between the bar and pivot
35 arrangement and a portion of the lid.

36

1 Preferably in use the trigger is adapted to slide
2 upwards in relation to the exterior surface of the lid,
3 to move the closure into the open position. This may
4 enable the user to conveniently drink from a container
5 having the lid fitted thereto. The trigger may be in
6 the form of a button. The button may be decorated; it
7 may be in the form of a novelty shape, it may be heart-
8 shaped, or in the shape of a cartoon character.

9
10 Preferably the lid is of plastics material. It may be
11 made by injection moulding. Preferably the lid and/or
12 the container are insulated.

13
14 According to a further aspect of the invention there is
15 provided a substantially sealed container having an
16 aperture provided therein, a closure for the aperture,
17 the closure being controlled by a trigger, the closure
18 being actuable between a closed configuration and an
19 open configuration by operation of the trigger.

20
21 Specific embodiments of the invention will now be
22 described, by way of example only, with reference to
23 the accompanying drawings in which:

24
25 Fig 1 is a perspective view of a drinks container
26 having a lid in accordance with an embodiment of
27 the present invention;

28
29 Fig 2 is a plan view of the lid of the drinks
30 container of Fig 1;

31
32 Fig 3 is a cross sectional view through the line
33 B-B in Fig 2;

34
35 Fig 4 is a side elevation of the lid of Fig 2;

36

1 Fig 5 is a cross sectional view through the line
2 A-A in Fig 4;

3
4 Fig 6 is a side elevation of a bar used in the
5 embodiment of Fig 1, having a closure attached to
6 one end;

7
8 Figs 7a and b are side elevations of the bar of
9 Fig 6 showing spring attachments:

10
11 Fig 8 is a side elevation of a pivot for use in
12 the embodiment of Fig 1;

13
14 Fig 9 is a front elevation of the pivot of Fig 8;

15
16 Fig 10 is an end elevation of the bar of Fig 6;

17
18 Fig 11 is a partial view in perspective of the
19 interior of the lid of Fig 1, showing threads for
20 attaching the lid to the body of the drinks
21 container;

22
23 Fig 12 is a plan view of a lid in accordance with
24 another embodiment of the present invention;

25
26 and

27
28 Fig 13 is a side view in cross section of the lid
29 of Fig 12.

30
31 Referring to the accompanying drawings, a drinks
32 container, generally denoted 10, is shown in Fig 1.
33 The drinks container 10 generally consists of a main
34 body 12 and a lid 14. The container is generally
35 cylindrical. The main body 12 is cup shaped and is
36 suitable for holding coffee, tea or any other drink.

1 The body 12 has a double-walled plastic construction
2 and as a result has good insulating properties.

3
4 The lid 14 is fitted to the main body 12 of the
5 container by means of a partial thread which will be
6 described in more detail below.

7
8 The lid 14 may be removed from the main body 12 for
9 filling the container and then replaced once the
10 container is filled. When the lid 14 is in place, it
11 seals the container and the exterior surface of the lid
12 14 is flush with the exterior surface of the main body
13 12.

14
15 It can be seen in Fig 1 that the lid 14 has a raised
16 rim 16 around its top edge, and the reasons for this
17 will be explained below.

18
19 The lid 14 is provided with an oblong drinking hole 18
20 which is shown sealed in Fig 1 by a closure 20. The
21 lid 14 is also provided with a trigger 22 for opening
22 and closing the closure 20. The mechanics of this
23 operation will become clear on reading the following
24 description. It should be noted at this stage,
25 however, that the trigger 22 protrudes from the outer
26 surface of the lid 14.

27
28 Referring to Figs 2 to 11, assembly and operation of
29 the lid 14 will now be described.

30
31 Fig 2 is a view from above of the lid 14 of Fig 1, but
32 without the trigger 22 in place. The drinking hole 18
33 and closure 20 can be clearly seen in Fig 2, as can the
34 rim 16 around the edge of the lid 14.

35
36 Now taking a cross section through B-B in Fig 1, the

1 hole 18, closure 20, and rim 16 can be seen in Fig 3.
2 Also visible in Fig 3 is a double-wall construction 24
3 in the top part of the lid 14, and threads 26 for
4 attachment of the lid 14 to the main body of the
5 container in use.

6
7 Also, in the view of Fig 3 it can be seen that the lid
8 14 has a generally cylindrical shape which is open at
9 its lower end and closed at its upper end by a top
10 surface 36. Depending from the top surface 36, to the
11 right of centre of the lid 14 as viewed in Fig 3, is a
12 pivot 28. The pivot 28, in this example, consists of
13 two parallel metal arms 30, each having a slot 32
14 provided therein. The slots 32 are straight slots
15 arranged to be parallel to the top surface 36 of the
16 lid, and each extending into a bulb-shaped section 34
17 at one end (the left as viewed in Fig 3). The pivot 28
18 can be seen in more detail in Figs 8 and 9 of the
19 drawings.

20
21 Fig 4 is another side view of the lid 14 of the drinks
22 container, after a quarter (90°) turn from the position
23 shown in Fig 3.

24
25 The view in Fig 4 is from the end of the lid 14
26 furthest from the drinking hole 18. In the view of Fig
27 5, a bar 38 is shown in position resting on the pivot
28 28. The bar 38 is roughly semi-circular in cross
29 section in this example and is made from a length of
30 plastics material. Other suitable materials may be
31 used. One end 40 of the bar 38 is narrowed, the bar
32 having a step 42 toward that end 40. This allows the
33 end 40 of the bar 38 to protrude through a slot 44 in
34 the exterior surface of the lid 14. The position of
35 the slot 44 can be seen in Fig 4.

36

1 At its mid-point, the bar 38 is provided with a pair of
2 metal or plastic cross arms 46. These arms 46 project
3 out of the bar 38 and, on assembly of the lid 14, the
4 arms 46 are introduced into the slots 32 in the pivot
5 28 and rest in the bulb-shaped cut-outs 34, supporting
6 the bar 38 in place. The arms 46 and narrow end 40
7 also can be seen in Fig 10 of the drawings. It should
8 be noted that the narrow end 40 of the bar 38 is
9 smaller than the slot 44, and the end 40 is free to
10 move within the slot 44 about an axis through the cross
11 arms 46.

12
13 The narrow end 40 of the bar 38 is now ready to have
14 the trigger 22 attached. The trigger 22 shown in Fig 1
15 is generally cube-shaped, and made of plastic.
16 However, any shape or design of trigger may be provided
17 and any materials may be used in its manufacture.

18
19 At the uppermost end of the bar 38, as viewed in Fig 5,
20 the bar 38 is joined to the underside of the hole
21 closure 20. This may be by gluing, for example. The
22 closure 20 can be seen attached to the bar 38 in Fig 6.

23
24 It will be noted at this stage, that the closure 20 is
25 thinned around its outermost edge 48. This is to
26 provide for an improved seal when the closure is in the
27 closed position over the hole. The position shown in
28 Fig 6 is the position of the bar 38 when the hole is
29 closed. It is desirable to bias the bar 38, and thus
30 the closure 20, into this position. This may be
31 achieved by providing a spring 50 on the bar 38.

32
33 Possible spring attachments may be seen in Figs 7a and
34 b. The springs 50 are of resilient plastic, in this
35 example, and are connected between the top of the bar
36 38 and the top of the lid (Fig 7a) or the end of the

1 bar and the side of the lid (Fig 7b). However, other
2 spring attachments are envisaged. For example the
3 spring 50 may be provided in tension between the top of
4 the bar and the top of the lid but to the left of the
5 pivot in the view of Fig 7a. The spring 50 biases the
6 closure 20 into the sealed position. This is the
7 position seen in Fig 1, with the lid 14 fully assembled
8 and fitted to the body 12 of the container, the
9 container having coffee or other drink therein.

10

11 The lid 14 is locked to the body of the container by
12 interaction of threads 26, seen in Fig 11, with
13 corresponding grooves (not shown) in the body. This
14 forms an airtight seal. Four equally spaced threads 26
15 are provided in this example, each having a length of
16 $1/8$ of the circumference of the lower edge of the lid.
17 The profile of a typical thread 26 can be seen in Fig
18 11. With this thread arrangement, a simple quarter
19 turn will open or close the lid with respect to the
20 main body. Other thread arrangements could be used.

21

22 To drink from the container 10, a user simply lifts it
23 to their mouth, tilting the base upwards as they would
24 with a normal cup, but ensuring their mouth covers the
25 hole 18. The user then slides the trigger 22 upwards,
26 ie toward themselves, using their finger. This
27 movement of the trigger 22 is transferred to the narrow
28 end 40 of the bar 38, which moves upwards within the
29 slot 44 in the lid, against the force of the spring 50.
30 The bar 38 pivots on the pivot 28 and the movement is
31 then transferred to a downward movement of the other
32 end of the bar 38. Thus the closure 20 moves away from
33 the top surface 26 of the lid 14. This opens the seal
34 and the user can take a drink.

35

36 When the user is satisfied, release of finger pressure

1 on the trigger 22 allows the spring 50 to return the
2 bar 38 and closure 20 to the start position, resealing
3 the lid.

4
5 The rim 16 around the top of the lid 14 catches any
6 small amount of beverage which remains outside the
7 container after the user stops drinking, to prevent
8 spillage.

9
10 In the sealed position, the container 10 can be safely
11 carried or stored with minimal risk of spillage. After
12 use, the container, including the lid 14, may be
13 washed, dried and re-used. Conveniently the size of
14 the container can be modified depending on the desired
15 end use. For example, the capacity of the cup may be
16 varied, and the cup may be tapered to fit a cup holder
17 in a car. The container may be used in the take-away
18 industry, or by drivers, campers, office workers,
19 pedestrians or sports supporters, for example.

20
21 A further embodiment of the present invention can be
22 seen in Figs 12 and 13. The embodiment is similar to
23 that already described.

24
25 The lid 114 has a drinking hole 118, closure 120 and
26 trigger 122. However, it can be seen from Fig 13 that
27 the trigger is "L"-shaped in cross section for ease of
28 operation. Lifting the trigger 122 causes the bar 138
29 to pivot on the pivot 128, opening the closure 120 for
30 drinking. In this example the spring 150 extends
31 between the side of the lid 114 and the underside of
32 the closure 120.

33
34 The embodiments described have many advantages over
35 known arrangements. The containers enable users to
36 drink hot or cold liquids without risk of spillage

1 while moving. They are particularly of benefit to the
2 young, aged or infirm as grasping a handle is not
3 required and there is reduced risk of scalding through
4 spillage. The container can be used by a right or left
5 handed user. In addition, the trigger is light to the
6 touch, so less stressful on finger muscles. The upward
7 movement of the trigger is very natural and easier for
8 a user than operation of known lids. The container is
9 also environmentally friendly as it can be reused. In
10 particular the need for disposable cups in the take-
11 away food industry is reduced.

12

13 Modification and improvements may be made to the
14 foregoing without departing from the scope of the
15 invention.

16

1 CLAIMS:

- 2
- 3 1. A lid for a container, the lid having an aperture,
4 a closure for occluding the aperture and a trigger for
5 controlling the configuration of the closure, the
6 closure being actuatable between a first configuration
7 where the aperture is open and a second configuration
8 where the aperture is closed, characterised in that the
9 configuration of the closure can be changed by sliding
10 of the trigger on an outer surface of the lid.
- 11
- 12 2. A lid for a container as claimed in claim 1
13 wherein the sliding of the trigger is in a direction
14 towards the top of the lid.
- 15
- 16 3. A lid for a container as claimed in either claim 1
17 or 2 wherein the lid is for a drinks container.
- 18
- 19 4. A lid for a container as claimed in any one of the
20 preceding claims wherein the lid is adapted to be
21 releasably fitted to the container.
- 22
- 23 5. A lid as claimed in any one of the preceding
24 claims wherein the closure is adapted to be biased
25 into the closed position.
- 26
- 27 6. A lid as claimed in claim 5 wherein the closure is
28 adapted to be biased into the closed position by means
29 of a spring.
- 30
- 31 7. A lid as claimed in any one of the preceding
32 claims wherein the trigger is connected to the closure
33 by means of a bar and pivot arrangement.
- 34
- 35 8. A lid as claimed in claim 7, as dependent on claim
36 6, wherein the spring is provided between the bar and

1 pivot arrangement and a portion of the lid.

2

3 9. A lid as claimed in any one of the preceding
4 claims wherein in use the trigger is adapted to slide
5 relative to the exterior surface of the lid towards the
6 closure to move the closure into the open position.

7

8 10. A lid as claimed in any one of the preceding
9 claims in which the trigger is in the form of a button.

10

11 11. A drinks container comprising a main body and a
12 lid in accordance with any of the preceding claims, the
13 lid being adapted to fit onto the main body of the
14 container.

15

16 11. A drinks container as claimed in claim 11 that is
17 reusable.

18

19 12. A substantially sealed container having an
20 aperture provided therein, a closure for the aperture,
21 the closure being controlled by a trigger, the closure
22 being actuatable between a closed configuration and an
23 open configuration by operation of the trigger.

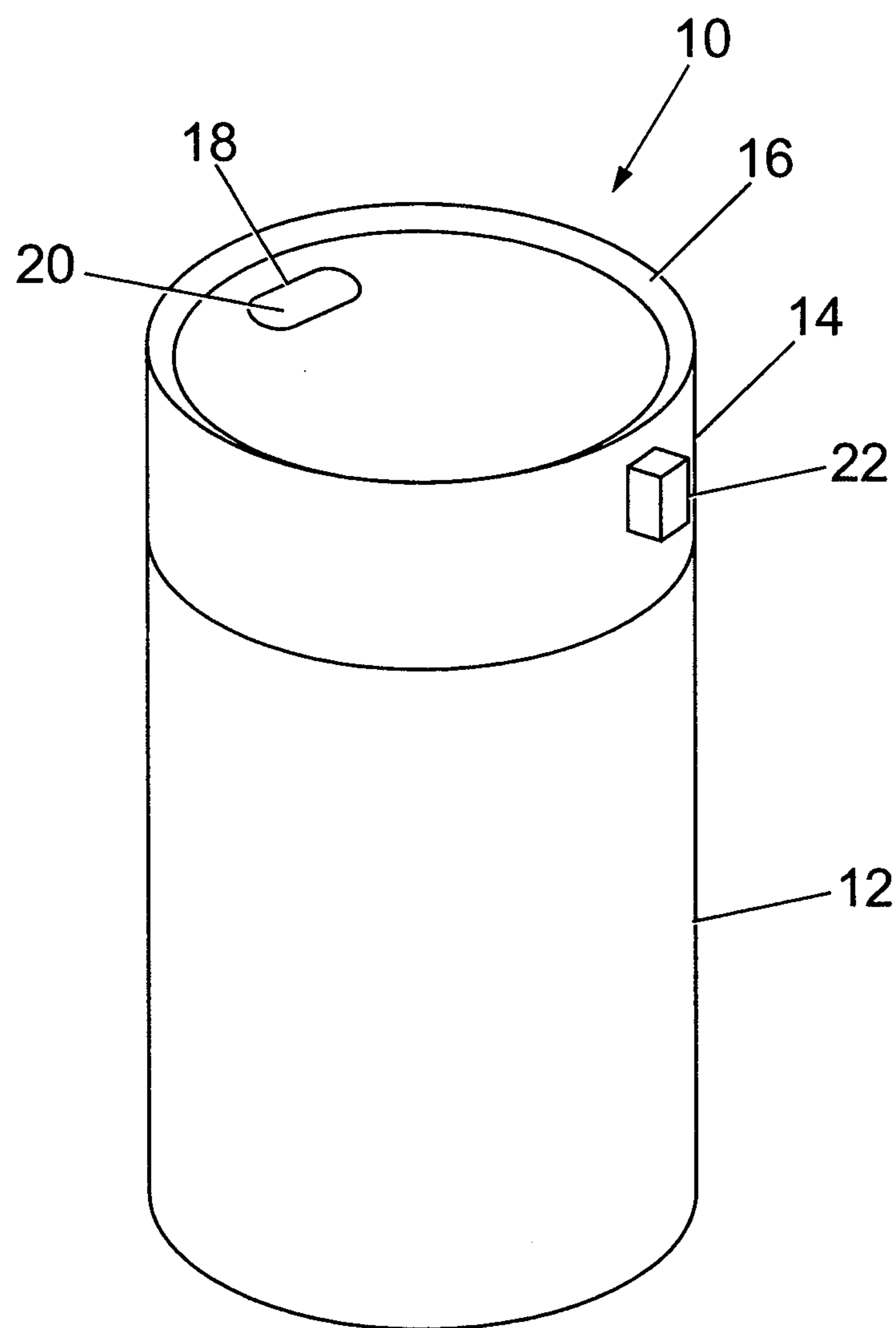
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25 13. A lid substantially as described herein with
26 reference to the accompanying drawings.

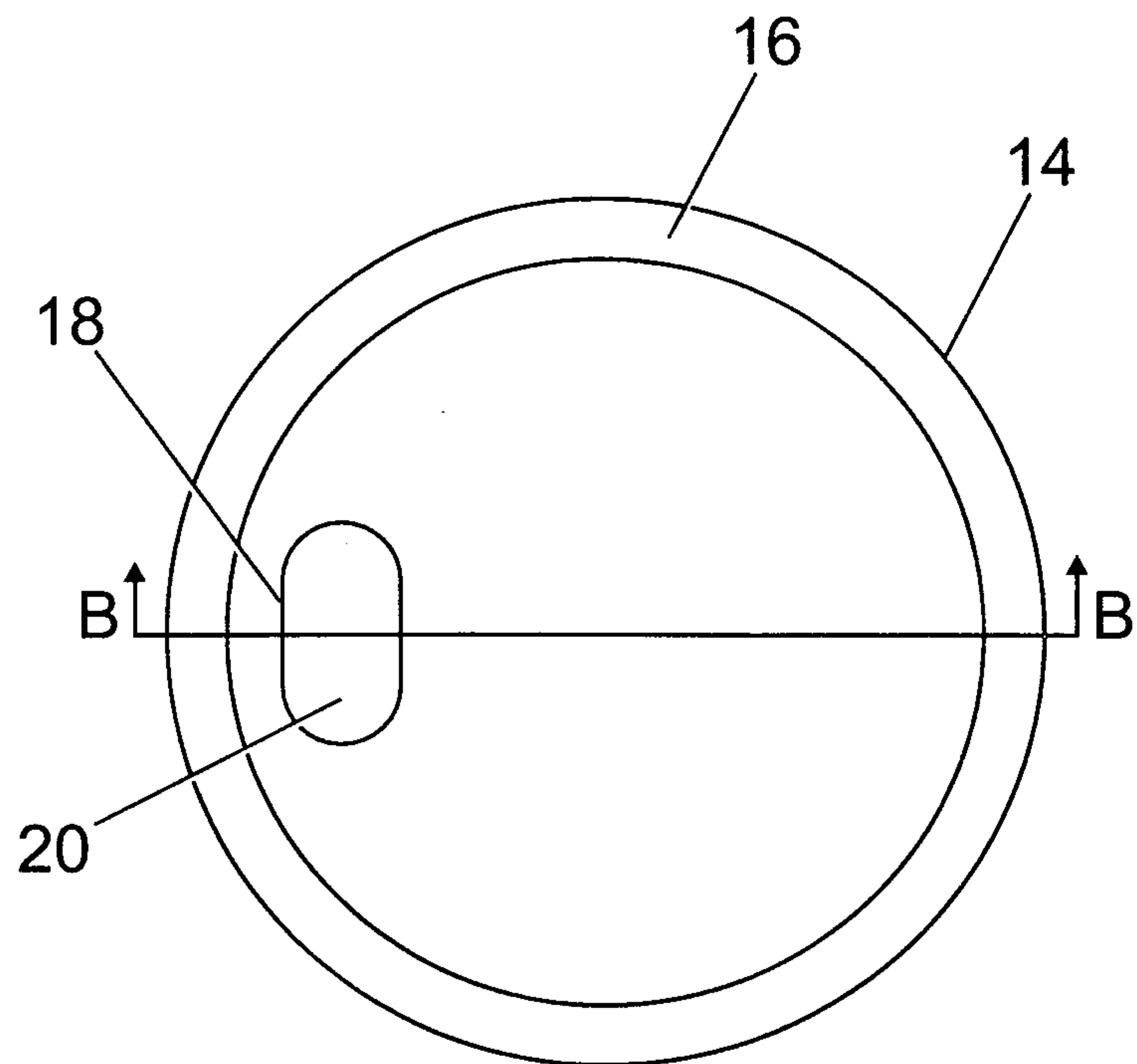
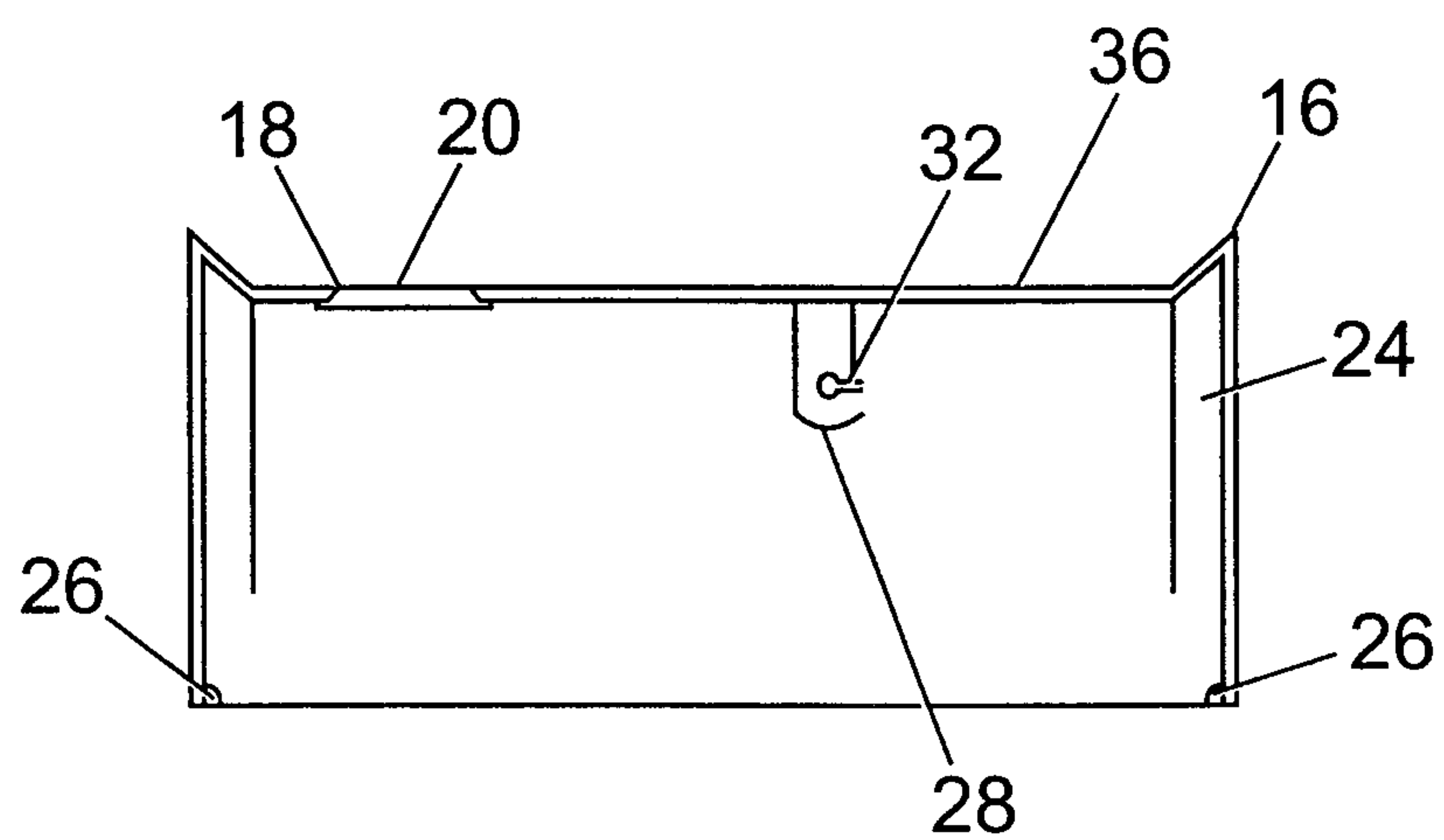
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28 14. A container substantially as described herein with
29 reference to the accompanying drawings.

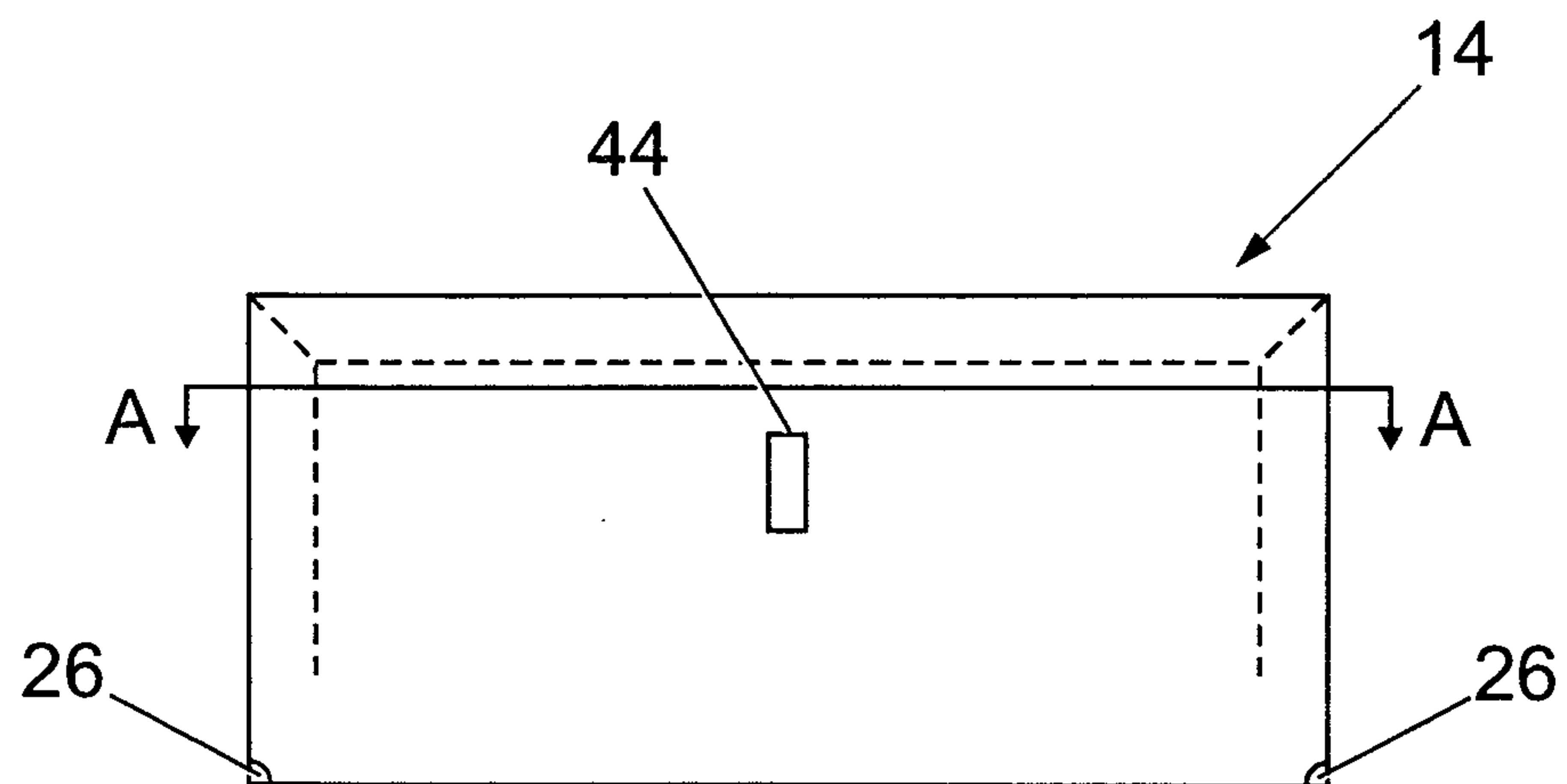
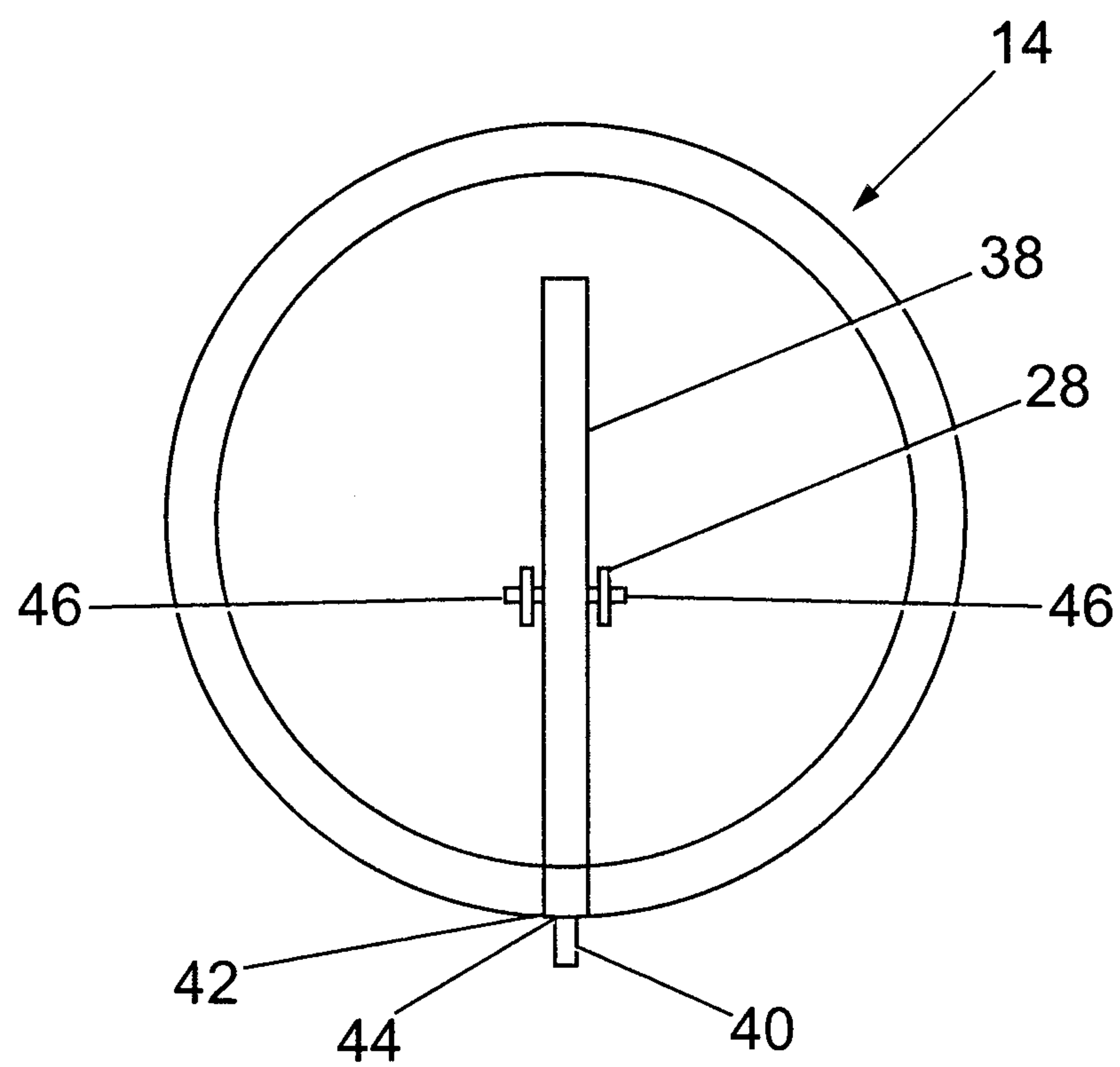
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*Fig. 1*

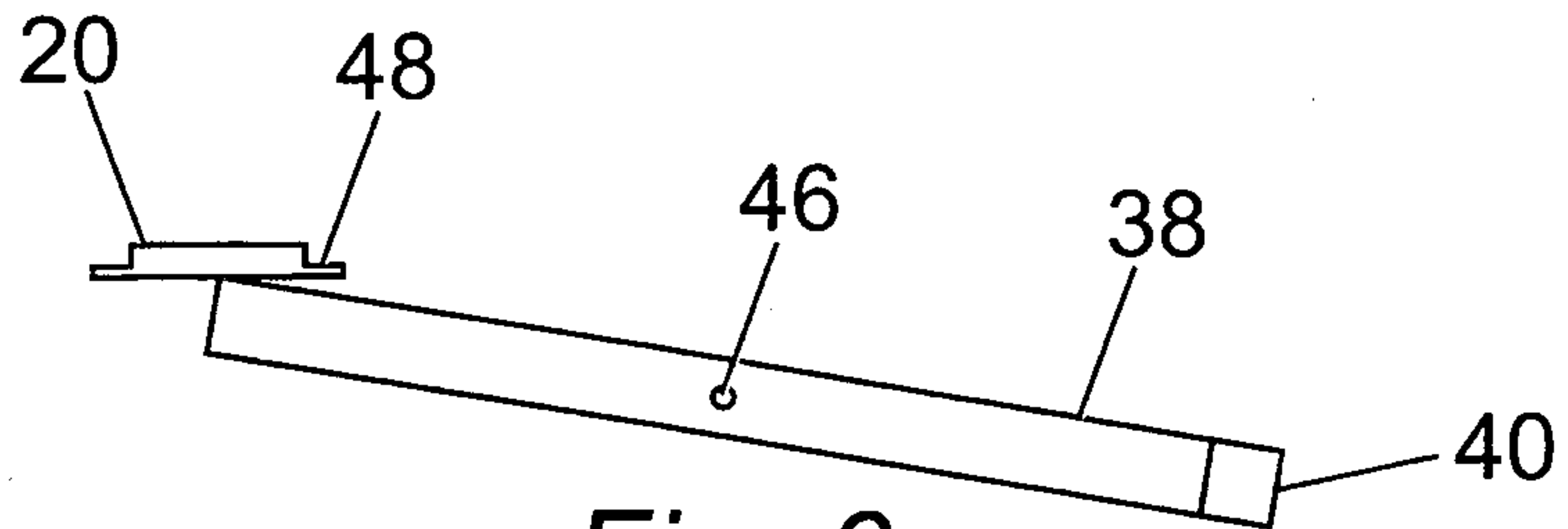
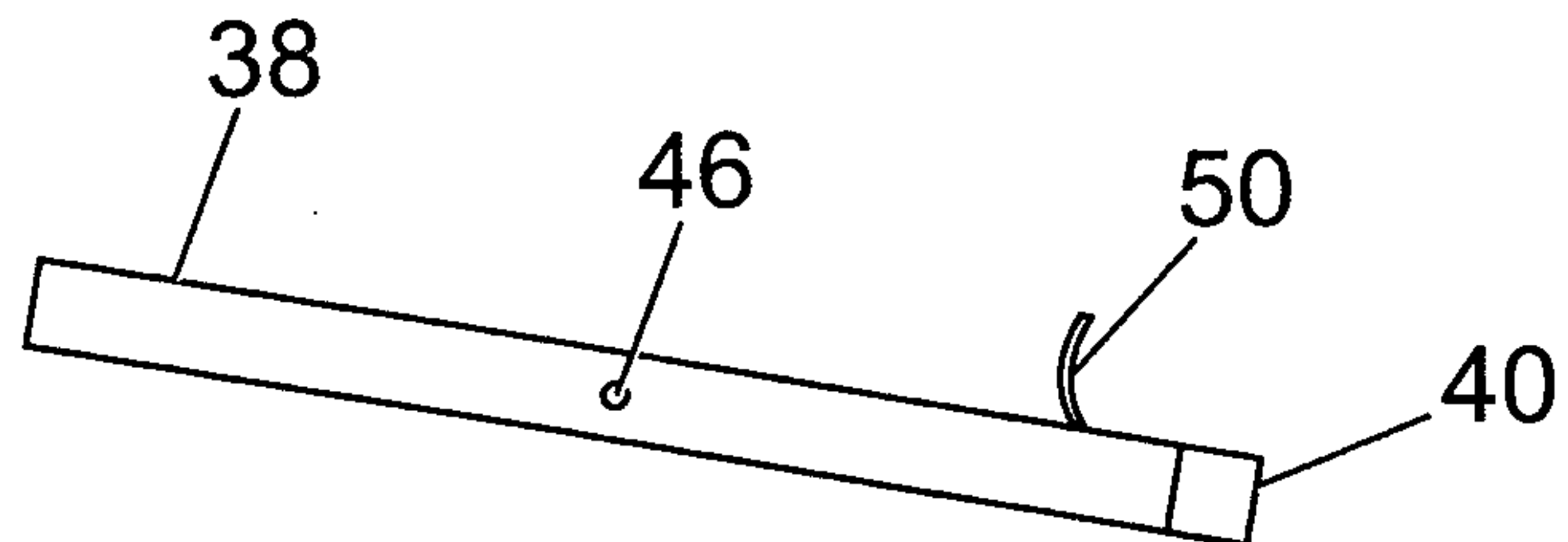
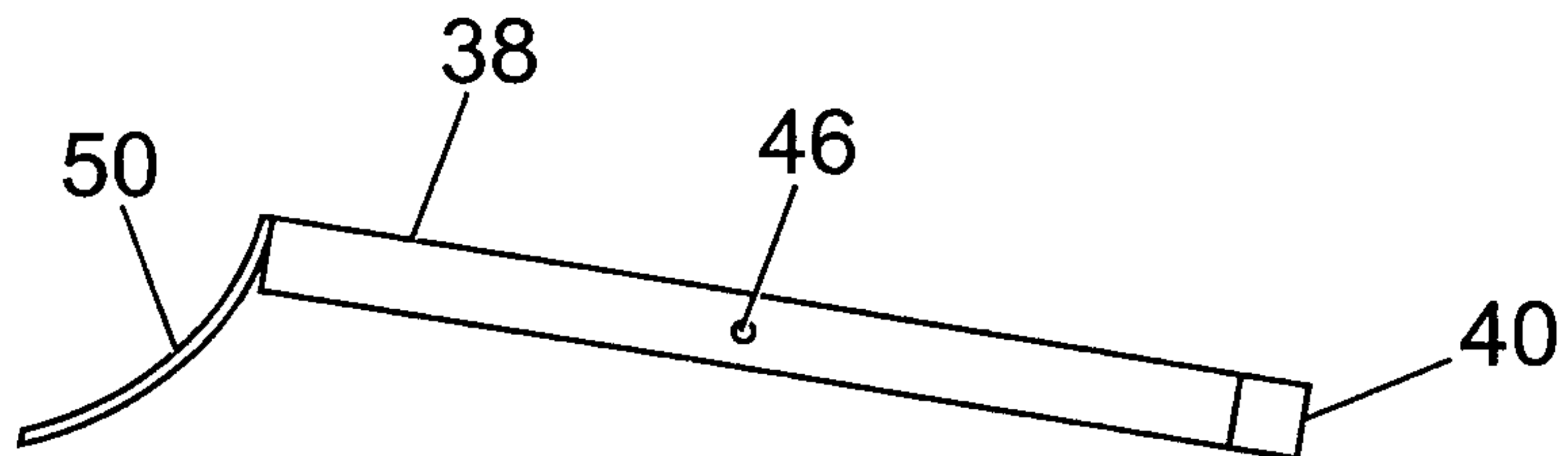
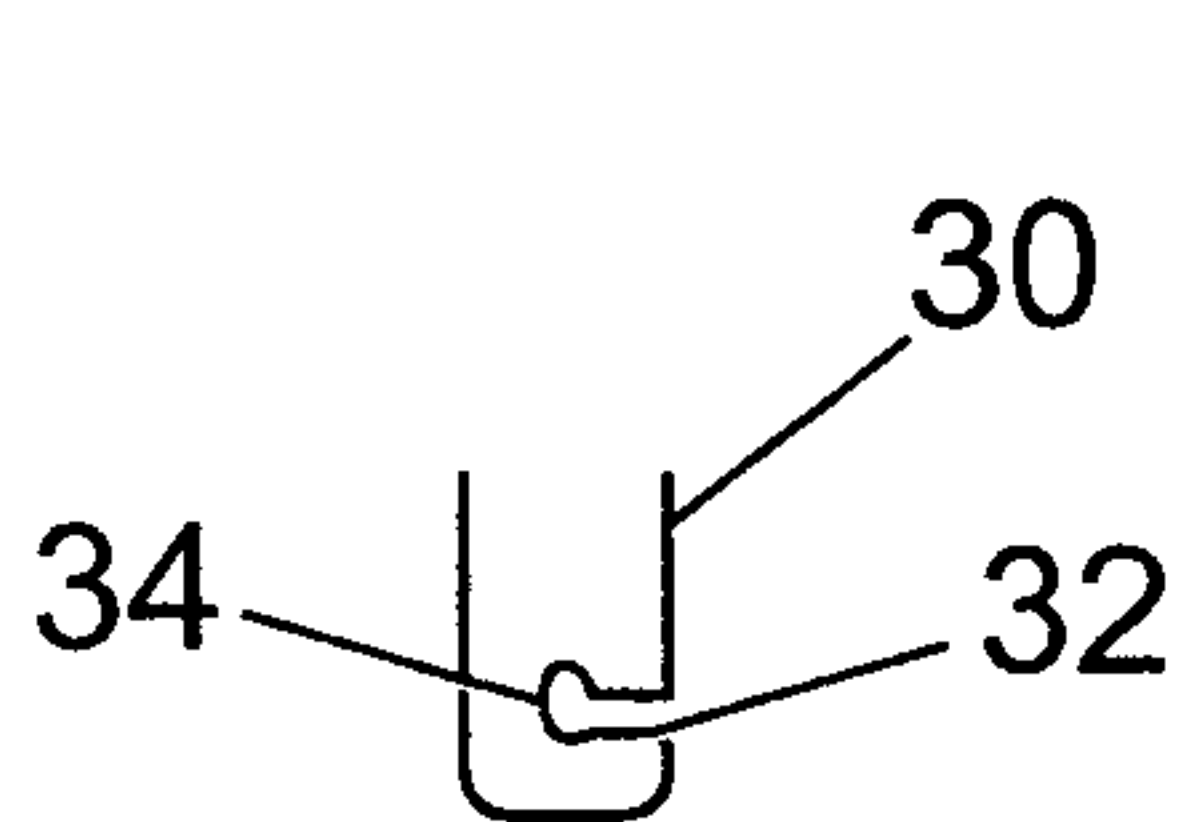
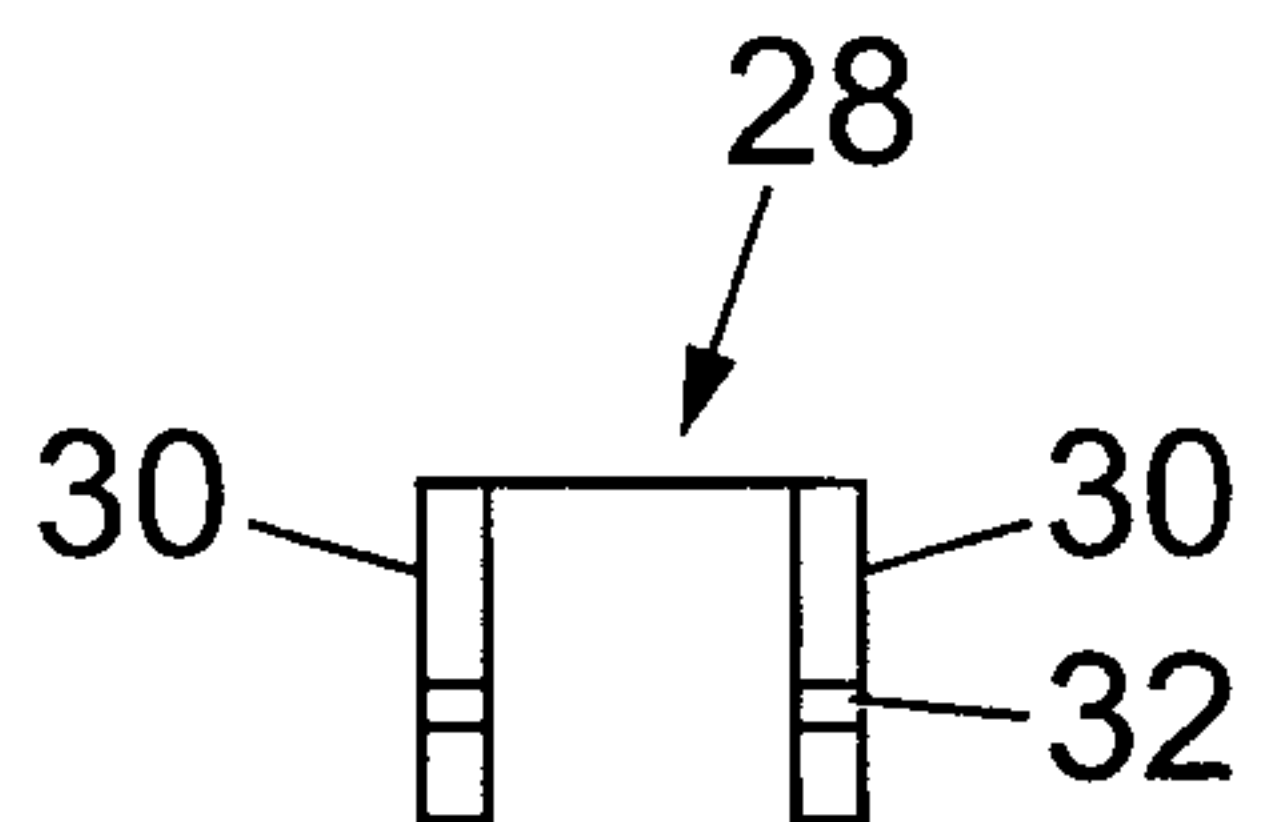
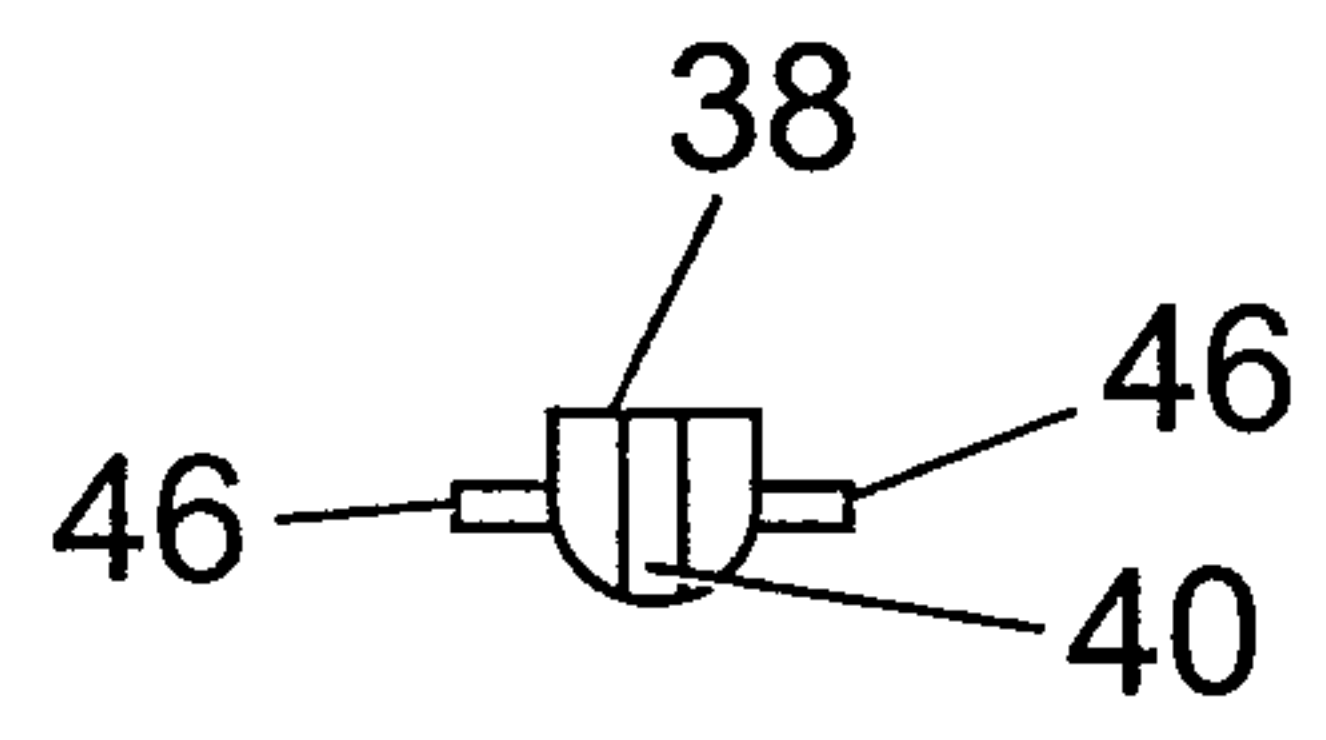
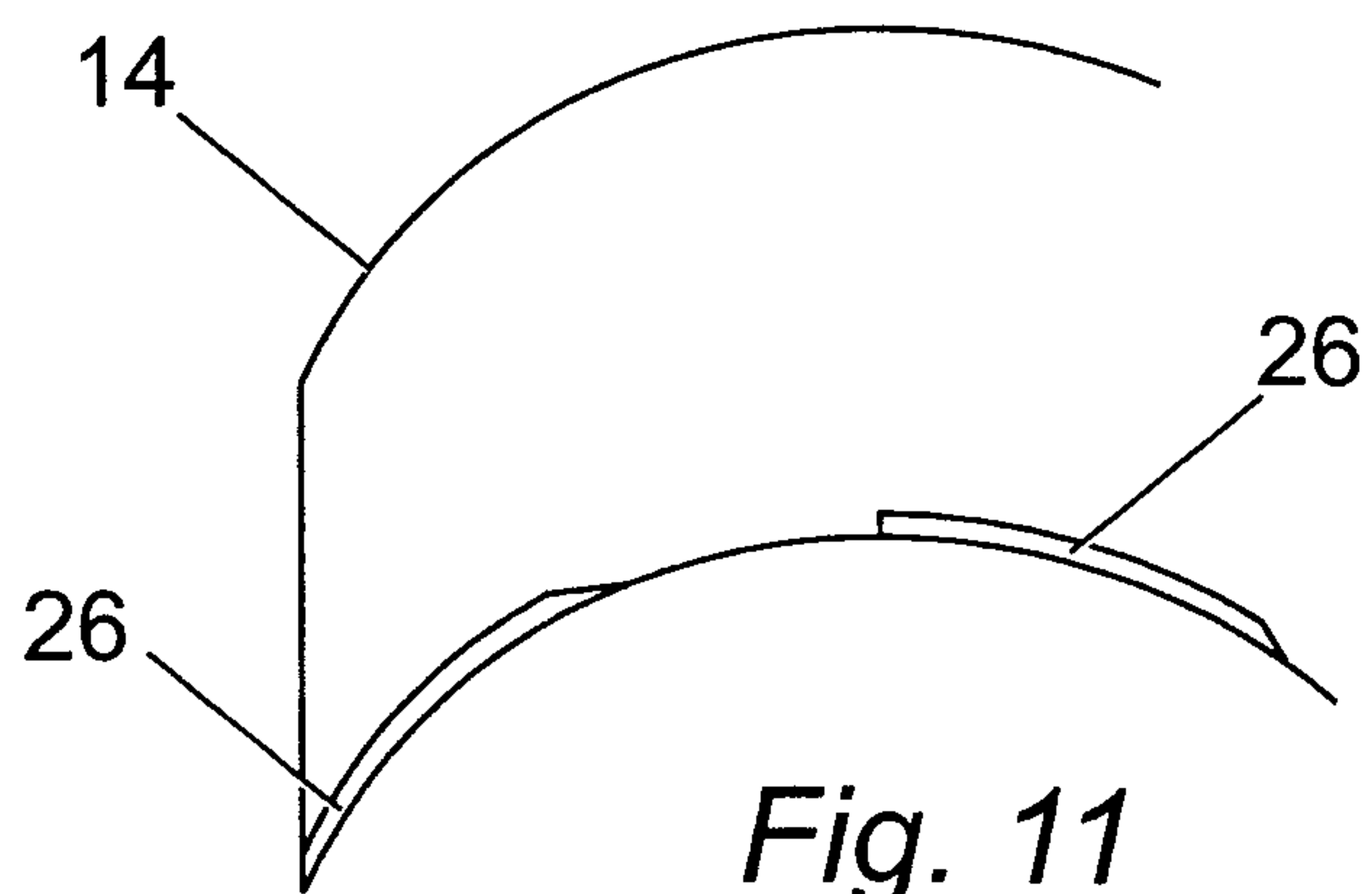
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*Fig. 2**Fig. 3*

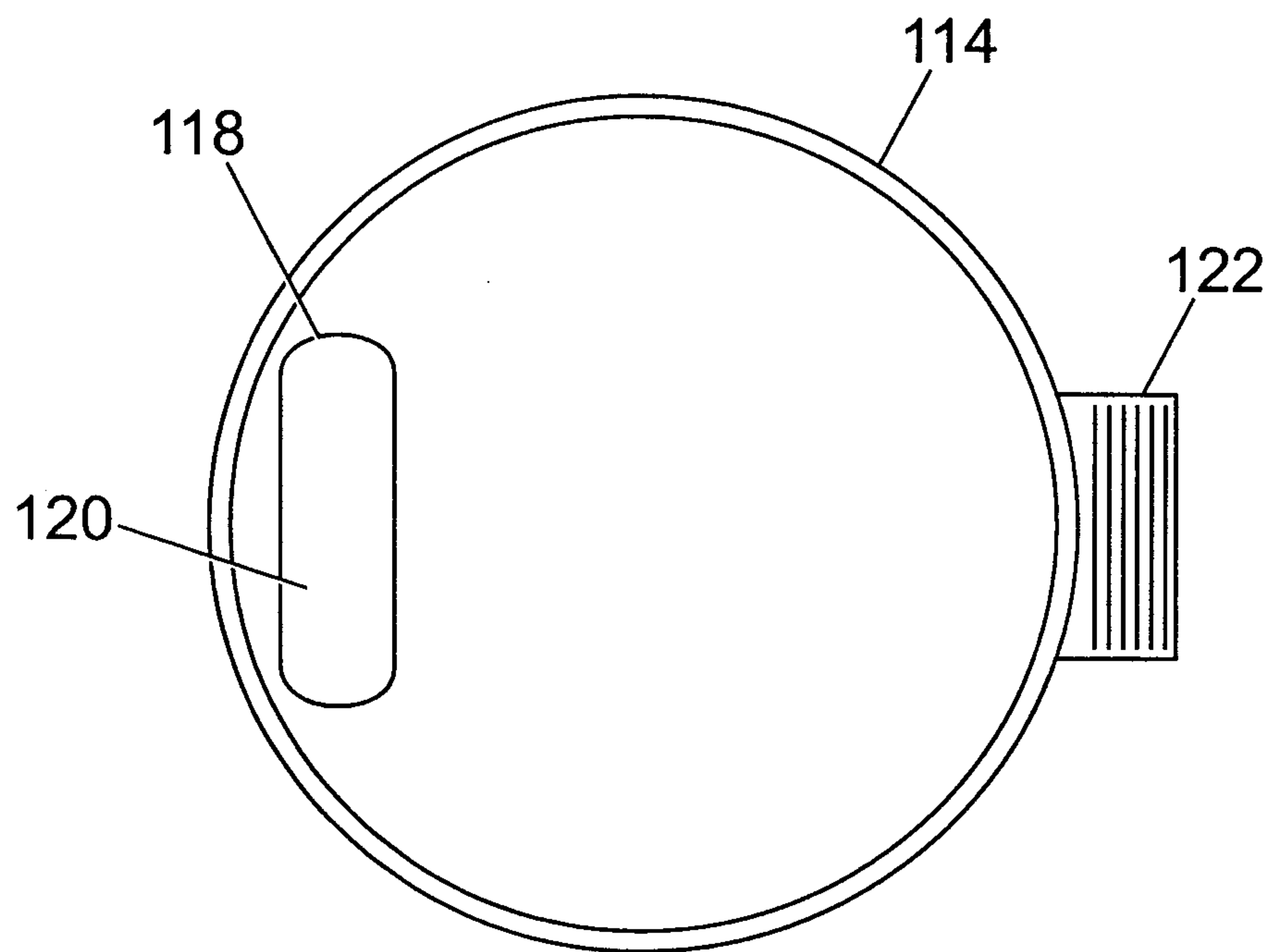
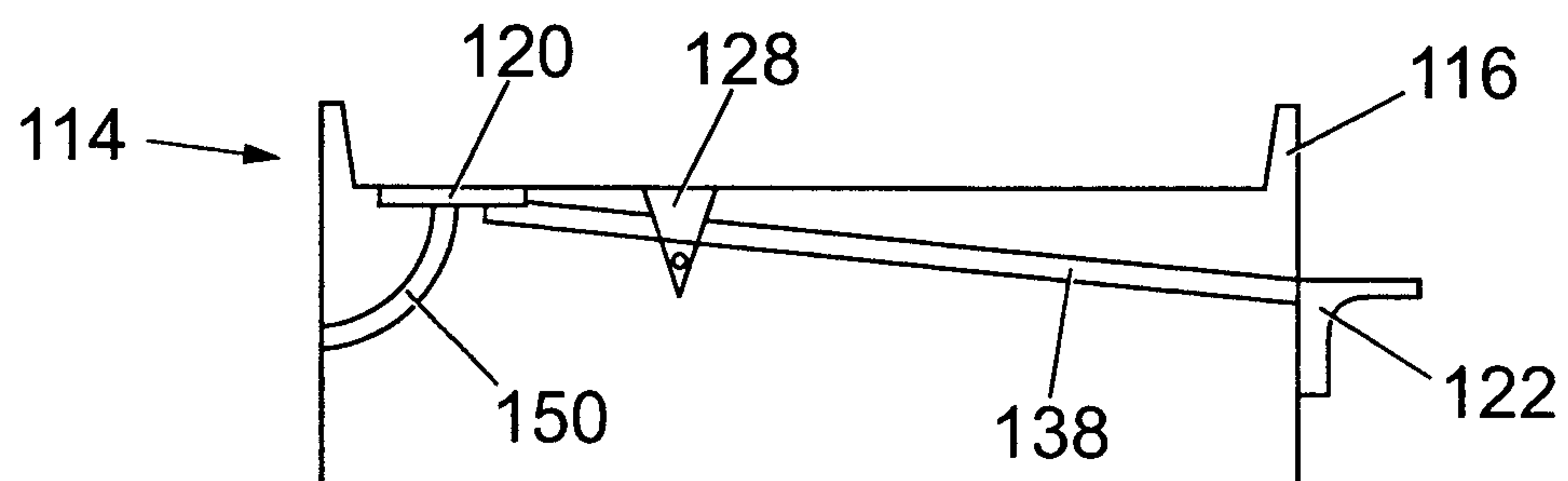
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*Fig. 4**Fig. 5*

4 / 5

*Fig. 6**Fig. 7a**Fig. 7b**Fig. 8**Fig. 9**Fig. 10**Fig. 11*

5 / 5

*Fig. 12**Fig. 13*

