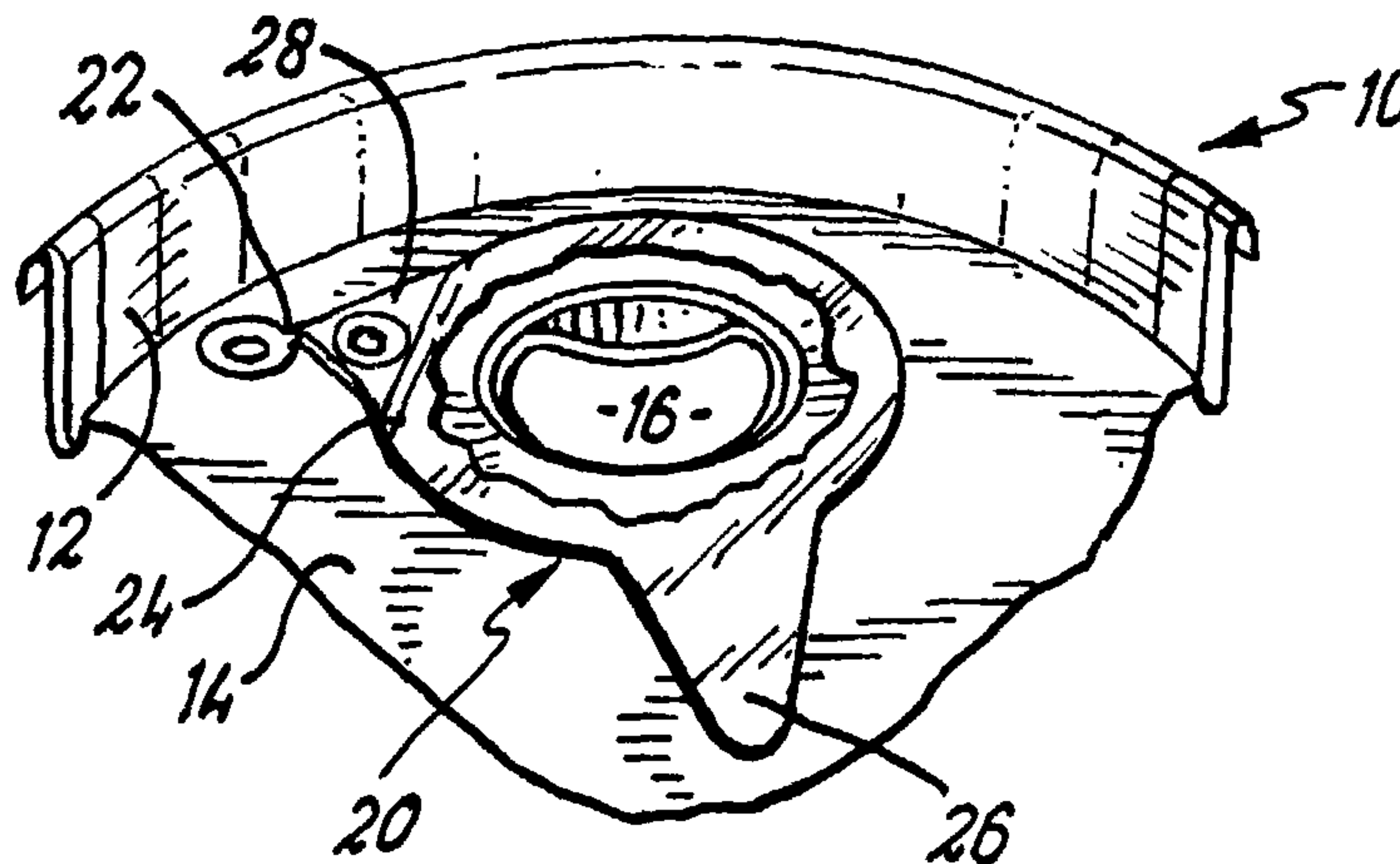




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(54) Title: OPENING ASSEMBLY



(57) Abrégé/Abstract:

A opening assembly (10) suitable for use on a can for containing carbonated beverages. The assembly (10) comprises a main part (14) with an oval opening (16). A flange (18) is provided around the underside of the opening (16), with a height inversely proportional to the diameter of the opening (16) at any point. A closure member (20) is provided comprising an upper part (14), cylindrical body part (30) which sliding fits through the opening (16), and an engagement member (34) on its underside. In a closed condition the engagement member (34) engages against the tallest part of the flange (18) to sealingly close the assembly (10). The closure member (20) can be rotated until the engagement member (34) is not engageable with the flange (18), and the member (20) can then be removed from the opening (16) to open the assembly (10). The member (20) can be replaced in the opening (16) and rotated to reclose the assembly (10).

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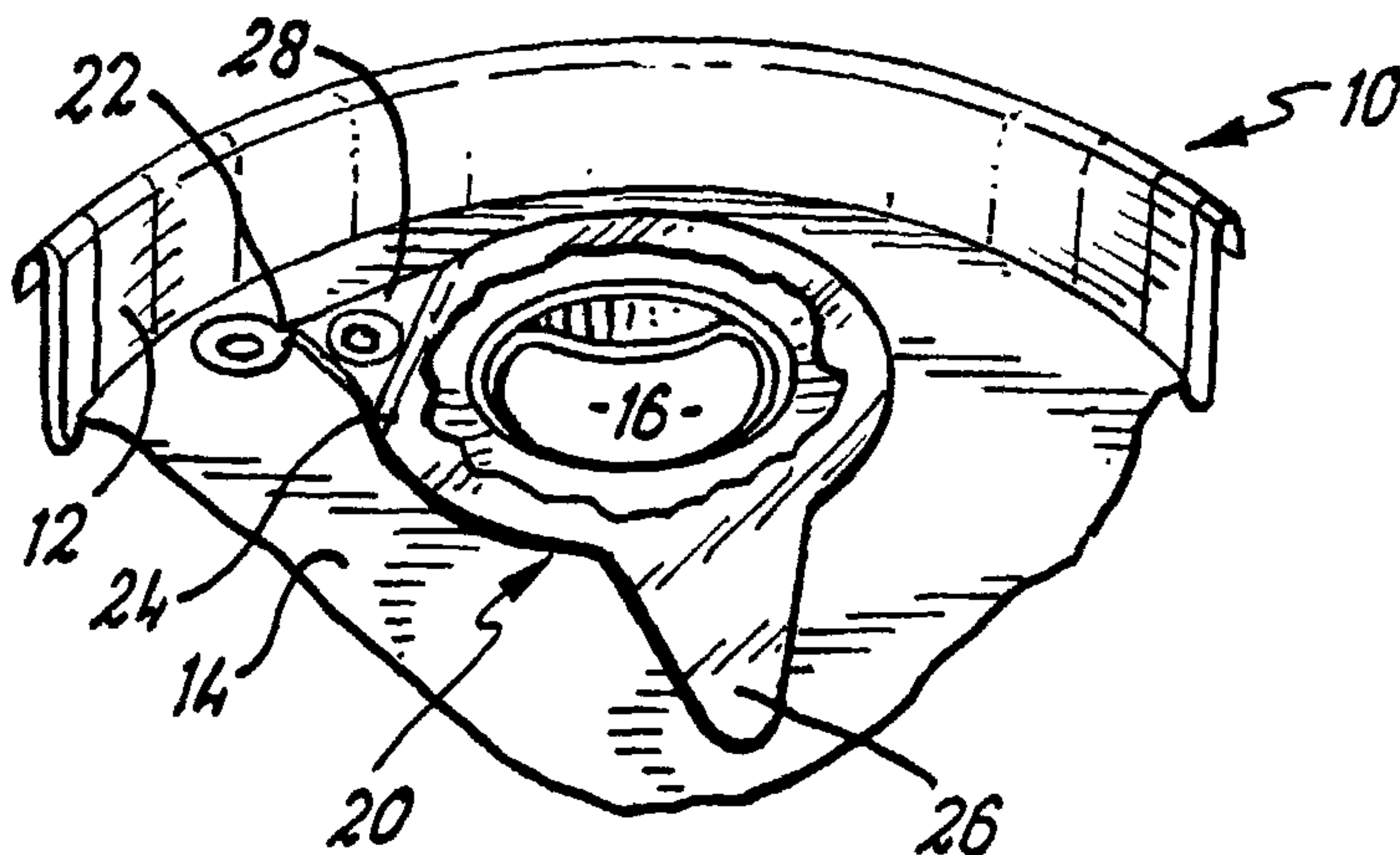
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(54) Title: OPENING ASSEMBLY



(57) Abstract: A opening assembly (10) suitable for use on a can for containing carbonated beverages. The assembly (10) comprises a main part (14) with an oval opening (16). A flange (18) is provided around the underside of the opening (16), with a height inversely proportional to the diameter of the opening (16) at any point. A closure member (20) is provided comprising an upper part (14), cylindrical body part (30) which sliding fits through the opening (16), and an engagement member (34) on its underside. In a closed condition the engagement member (34) engages against the tallest part of the flange (18) to sealingly close the assembly (10). The closure member (20) can be rotated until the engagement member (34) is not engageable with the flange (18), and the member (20) can

then be removed from the opening (16) to open the assembly (10). The member (20) can be replaced in the opening (16) and rotated to reclose the assembly (10).

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Opening Assembly

This invention concerns improvements in or relating to opening assemblies for beverages containers, and particularly but not exclusively opening assemblies for containers usable with carbonated beverages; and also beverage containers including such an opening arrangement.

One type of container conventionally used for carbonated beverages is a can with a ring pull arrangement. Whilst these have proved very popular, a number of disadvantages can be encountered with them. For instance, it is not possible to close the can once opened, and the contents therefore have to be consumed at one time. This can be a particular problem with children or when travelling, in that a container could for instance be knocked over and therefore the contents spilt. Also there is a potential hygiene problem as the top of the cans can become dirty, and this part can come into contact with some of the can's contents and/or a person drinking from the can.

According to the present invention there is provided an opening assembly for a beverage container which container is sealed after filling, the assembly comprising a main part which closes the container and in which is provided a port, and a closure member, the assembly being arranged such that in an initial condition following filling the closure member sealingly locates in the port to close same and hence close the container, the closure member can be removed from the port to open the container, and following opening, in a first orientation, the closure member can be relocated in the opening, and upon rotation of the closure member to a second orientation the closure member substantially sealingly recloses the opening and hence the container.

The port preferably has a greater diameter in a first direction and a lesser diameter in a second direction substantially perpendicular thereto. The port may be substantially oval.

The closure member preferably comprises an engagement part with a

greatest diameter in a longitudinal direction.

The closure member is preferably configured such that it can only be introduced into, or removed from, the port when the longitudinal direction of the engagement part is at least generally parallel to the first direction of the port. The assembly is preferably configured such that when the closure member is located in the port in the first orientation, and then rotated to the second orientation, the engagement part engages the underside of the main part adjacent the port around the second direction.

A flange is preferably provided around the port on the underside of the main part, against which flange the engagement part is engagable. The flange is preferably tallest at the part of the port adjacent the second direction, and the height of the flange may be substantially inversely proportional to the diameter of the port at any point.

The closure member may comprise an upper part which is always in normal use located outside of the container, and a body part extending therefrom which provides at or adjacent its free end the engagement part.

The body part is preferably slidably locatable substantially in the centre of the port.

The engagement part may comprise diametrically opposite projections on the body part, spaced from the upper part.

The upper part may be larger than the port so as to wholly cover the port when the closure member closes same. A handle part, which may comprise a projecting finger, is preferably provided on the upper part to facilitate rotation thereof.

A sealing member may be provided on the underside of the upper part and engageable against the main part around the opening.

made of neoprene, and which may be in the form of a washer located around the body part.

A breakable seal may be provided extending between the closure member and the main part to provide a visual indication when a container has been opened. The breakable seal is preferably arranged such that it must be broken to permit the closure member to move from the second orientation to the first orientation.

A link member may be provided extending between the closure member and the main part to prevent loss of the closure member.

A depression may be provided in the upper surface of the main part to facilitate rotation of the closure member.

The invention also provides an opening assembly for a drinks can, the assembly being according to any of the preceding fourteen paragraphs.

The invention further provides a beverage container including an opening assembly according to any of the preceding fifteen paragraphs.

The container may comprise a can. Alternatively, the container may be made of plastics material.

Embodiments of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:-

Fig. 1 is a diagrammatic partially cut away perspective view from above of part of a first opening assembly according to the invention;

Fig. 2 is a diagrammatic perspective view from below of a similar part of the assembly of Fig. 1 in a closed condition;

Fig. 3 is a similar view to Fig. 2 but in an open condition;

Figs. 4 and 5 are respectively upper and lower perspective views of part of the assembly of Fig. 1;

Figs. 6 and 7 are perspective views of further parts of the assembly of Fig. 1; and

Figs. 8 and 9 are plan views respectively in a fully closed and partially closed condition of a second opening assembly according to the invention.

Figs. 1 to 7 show a first opening assembly 10 suitable for use on a can for containing carbonated beverages. The assembly 10 forms the top part of a can and will be mounted to an upstanding flange of the can following filling.

The assembly 10 comprises an upstanding flange 12 surrounding a generally planar main part 14. A port in the form of an oval opening 16 is provided in the main part 14, towards one side thereof. A flange 18 is provided around the underside of the opening 16, and the height of the flange 18 is substantially inversely proportional to the diameter of the opening 16 at any point, and hence is at its tallest at the narrow part of the opening 16.

A closure member 20 is provided which in a closed condition is attached to the main part 14 by a breakable seal 22. The closure member 20 comprises an upper part 24 of generally circular configuration with a finger 26 projecting therefrom, and also a smaller tab 28 which mounts the breakable seal 22. On the underside in use of the upper part 24, a body part 30 which is cylindrical is provided. A neoprene washer 32 extends around the body part 30 against the underside of the upper part 24. An engagement member 34 is mounted on the underside of the body part 30 and provides two diametrically opposite radial fingers 36.

The assembly 10 can be formed using conventional techniques, with the

opening 16 being formed by pressing, and the flange 18 therearound also being formed by pressing. The body part 30 is formed by pressing out a central part of the upper part 24, and in fact leaves a well 38 in the top of the upper part 24. The engagement member 34 comprises a disc with two diametrically opposite fingers, and is riveted onto the body part 30.

In use, a can or other container is filled and the assembly 10 mounted thereon in a conventional manner. The assembly 10 will be closed as shown in Fig. 1 and this will be evidenced by the breakable seal 22. In a closed position the body part 30 extends into the opening 16 with the fingers 36 engaging against the tallest part of the flange 18. This arrangement urges the main part 14 against the washer 32 which surrounds the opening 16 to provide a seal.

To open the assembly 10 the closure member 20 is rotated in an anti-clockwise direction as shown in Fig. 1. This causes the seal 22 to break, and once the fingers 36 are aligned generally parallel to the longitudinal direction of the opening 16, the closure member 20 can be lifted therefrom. If it is required to reclose the opening 16 the closure member 20 can be placed back therein, with the fingers 36 pointing generally parallel to the longitudinal direction of the opening 16. The closure member 20 can then be rotated in a clockwise direction bringing the fingers 36 against the tallest part of the flange 18 and thereby urging the upper part 24 against the washer 32 and thus against the main part 14 around the opening 16.

There is thus provided an opening assembly of relatively simple and conventional construction but which provides for ready opening and also reclosing of a beverage container as required.

Figs. 8 and 9 show a second assembly 50 according to the invention which is similar to the first assembly except as follows. Rather than a finger on the upper member a wire loop 52 is provided. A breakable seal 54 is provided between an upstanding part 56 on the main part of the assembly 50 and the wire loop 52. A flexible link (not shown) may be provided between said part

and for instance the loop 52 to prevent loss of the closure member 60. A depression 58 is provided in the main part opposite the opening 62 to facilitate rotation of the closure member. The assembly 50 can be used in a similar manner to the assembly 10.

Various modifications may be made without departing from the scope of the invention. For instance, the opening may be a different shape, though the oval shape has been found to be advantageous in that it essentially provides for automatic correct location of the closure member on the opening. The engagement member may be a different shape or take a different form. The closure member may have a different form. Whilst the embodiments described above are described in relation to beverage cans, such assemblies could be used on a wide range of different containers.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

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CLAIMS

(94)

1. An opening assembly for a beverage container which container is sealed after filling, the assembly comprising a main part which closes the container and in which is provided a port, and a closure member, the assembly being arranged such that in an initial condition following filling the closure member sealingly locates in the port to close same and hence close the container, the closure member can be removed from the port to open the container, characterised in that the port has a greater diameter in a first direction and a lesser diameter in a second direction substantially perpendicular thereto, and following opening, in a first orientation, the closure member can be relocated in the opening, and upon rotation of the closure member to a second orientation the closure member substantially sealingly re-closes the opening and hence the container.
2. An assembly according to claim 1, characterised in that the port is substantially oval.
3. An assembly according to claims 1 or 2, characterised in that the closure member comprises an engagement part with a greatest diameter in a longitudinal direction.
4. An assembly according to claim 3, characterised in that the closure member is configured such that it can only be introduced into, or removed from, the port when the longitudinal direction of the engagement part is at least generally parallel to the first direction of the port.
5. An assembly according to claim 4, characterised in that the assembly is configured such that when the closure member is located in the port in the first orientation, and then rotated to the second orientation, the engagement part engages the underside of the main part adjacent the port around the second direction.
6. An assembly according to claim 5, characterised in that a flange is provided around the port on the underside of the main part, against which flange the engagement part is engagable.
7. An assembly according to claim 6, characterised in that the flange is tallest at the part of the port adjacent the second direction.
8. An assembly according to claim 7, characterised in that the height of the flange is substantially inversely proportional to the diameter of the port at any point.

9. An assembly according to any of claims 3 to 8, characterised in that the closure member comprises an upper part which is always in normal use located outside of the container, and a body part extending therefrom which provides at or adjacent its free end the engagement part.
10. An assembly according to claim 9, characterised in that the body part is slidably locatable substantially in the centre of the port.
11. An assembly according to claims 9 or 10, characterised in that the engagement part comprises diametrically opposite projections on the body part, spaced from the upper part.
12. An assembly according to any of claims 9 to 11, characterised in that the upper part is larger than the port so as to wholly cover the port when the closure member closes same.
13. An assembly according to claim 12, characterised in that a sealing member is provided on the underside of the upper part and engageable against the main part around the opening.
14. An assembly according to claim 13, characterised in that the sealing member comprises a resilient member.
15. An assembly according to claim 14, characterised in that the sealing member is made of neoprene.
16. An assembly according to any of claims 13 to 15, characterised in that the sealing member is in the form of a washer located around the body part.
17. An assembly according to any of claims 10 to 16, characterised in that a handle part is provided on the upper part to facilitate rotation thereof.
18. An assembly according to claim 17, characterised in that the handle part comprises a projecting finger.
19. An assembly according to any of the preceding claims, characterised in that a breakable seal is provided extending between the closure member and the main part to provide a visual indication when a container has been opened.

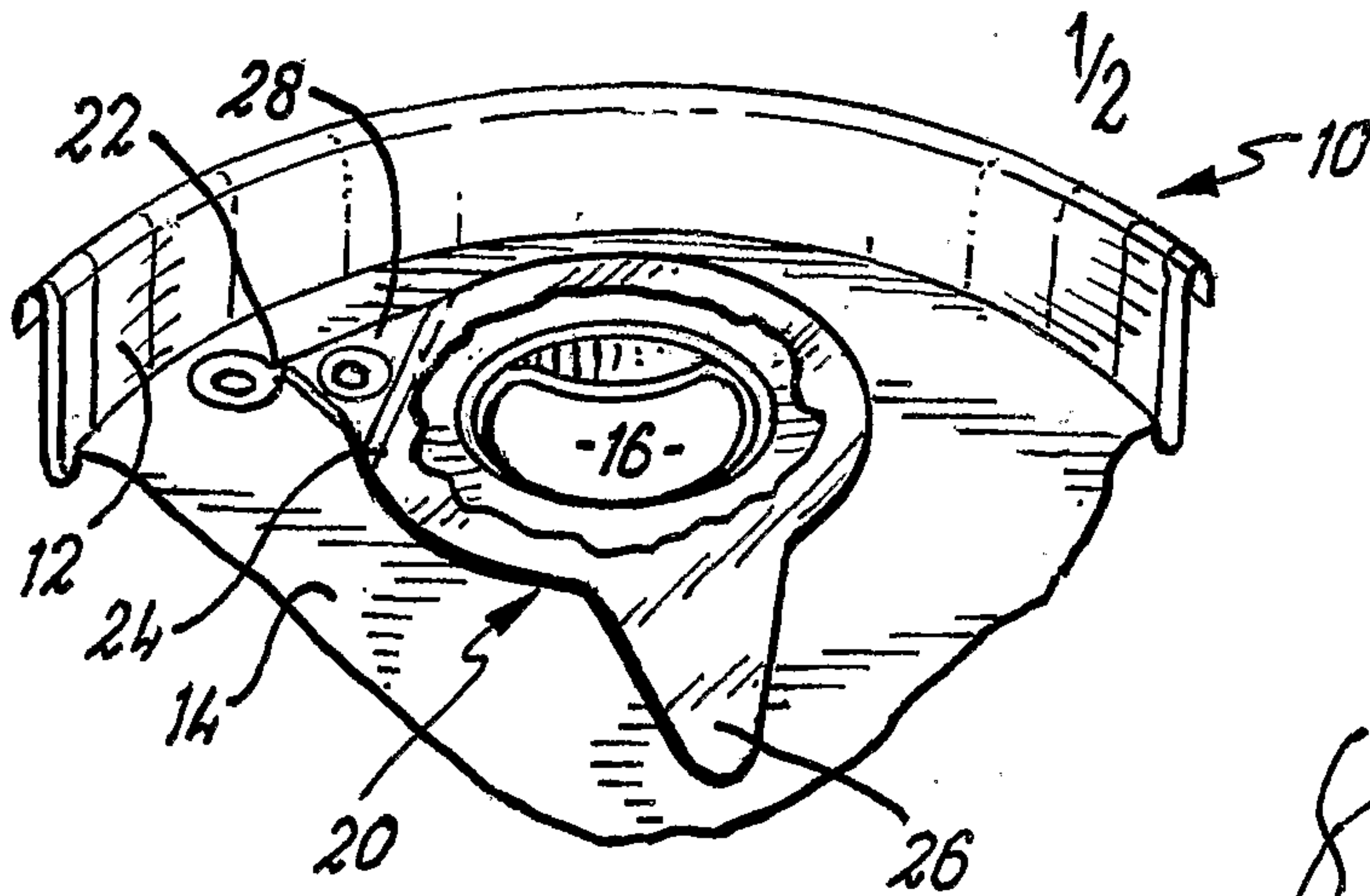
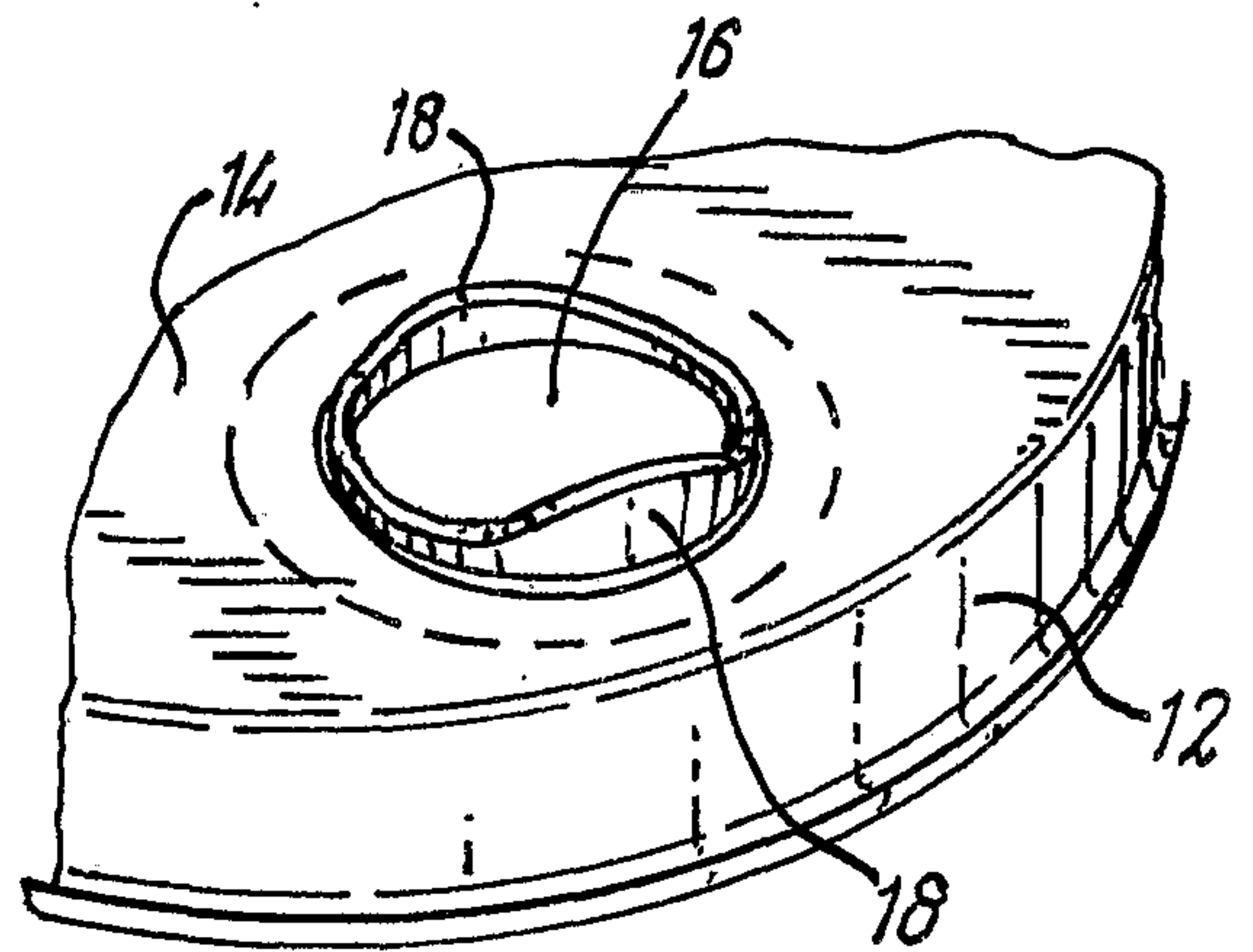
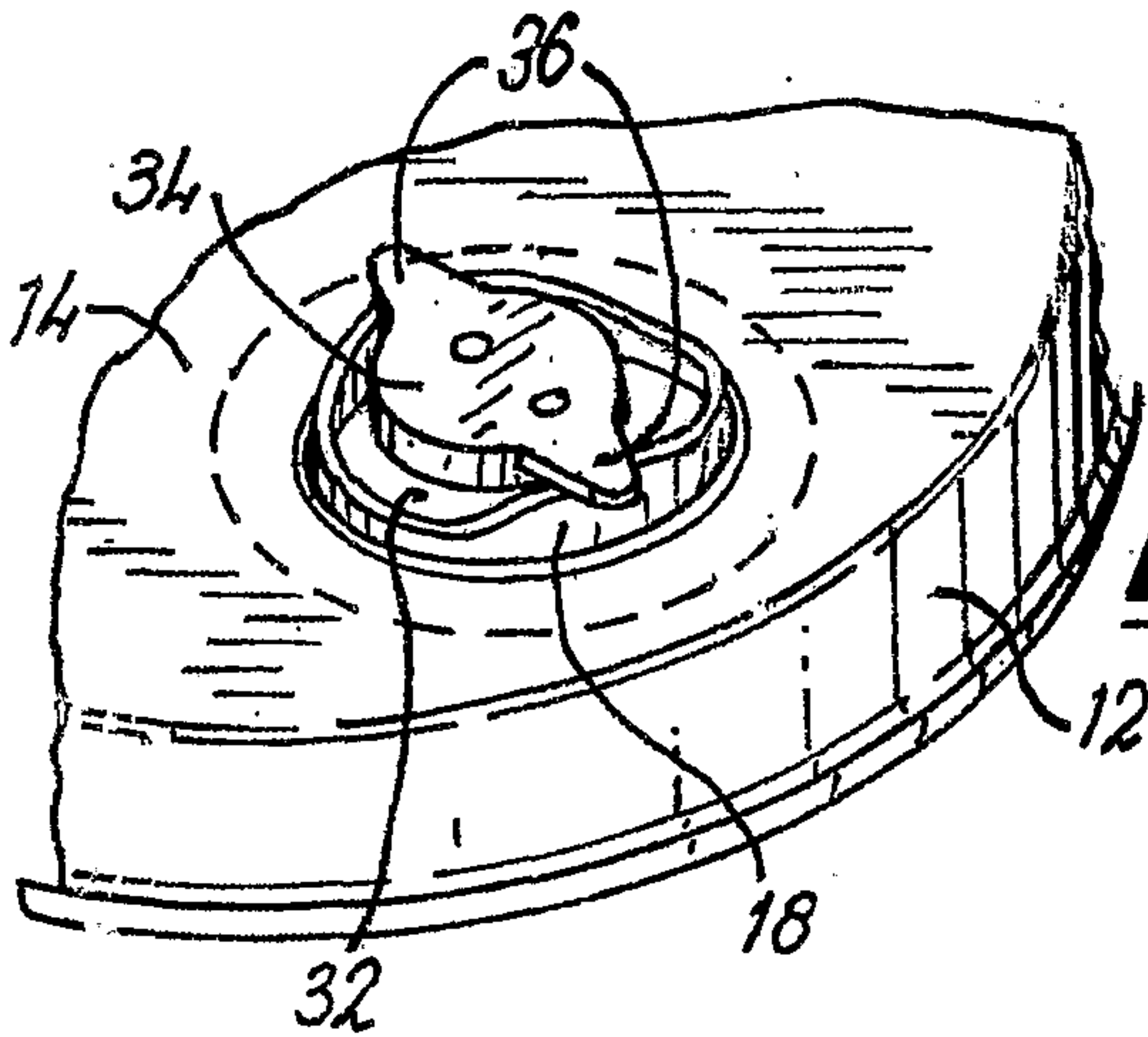
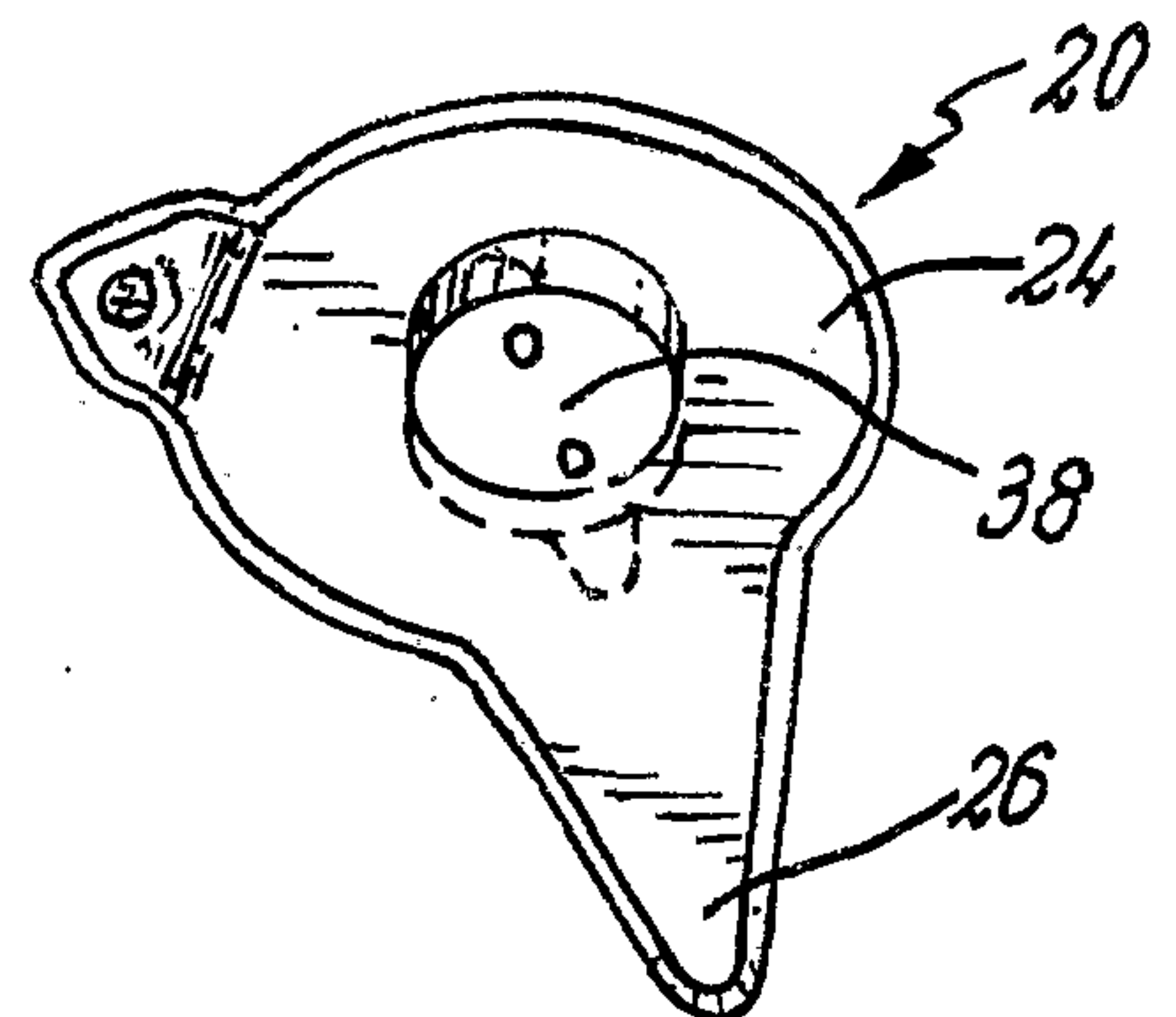
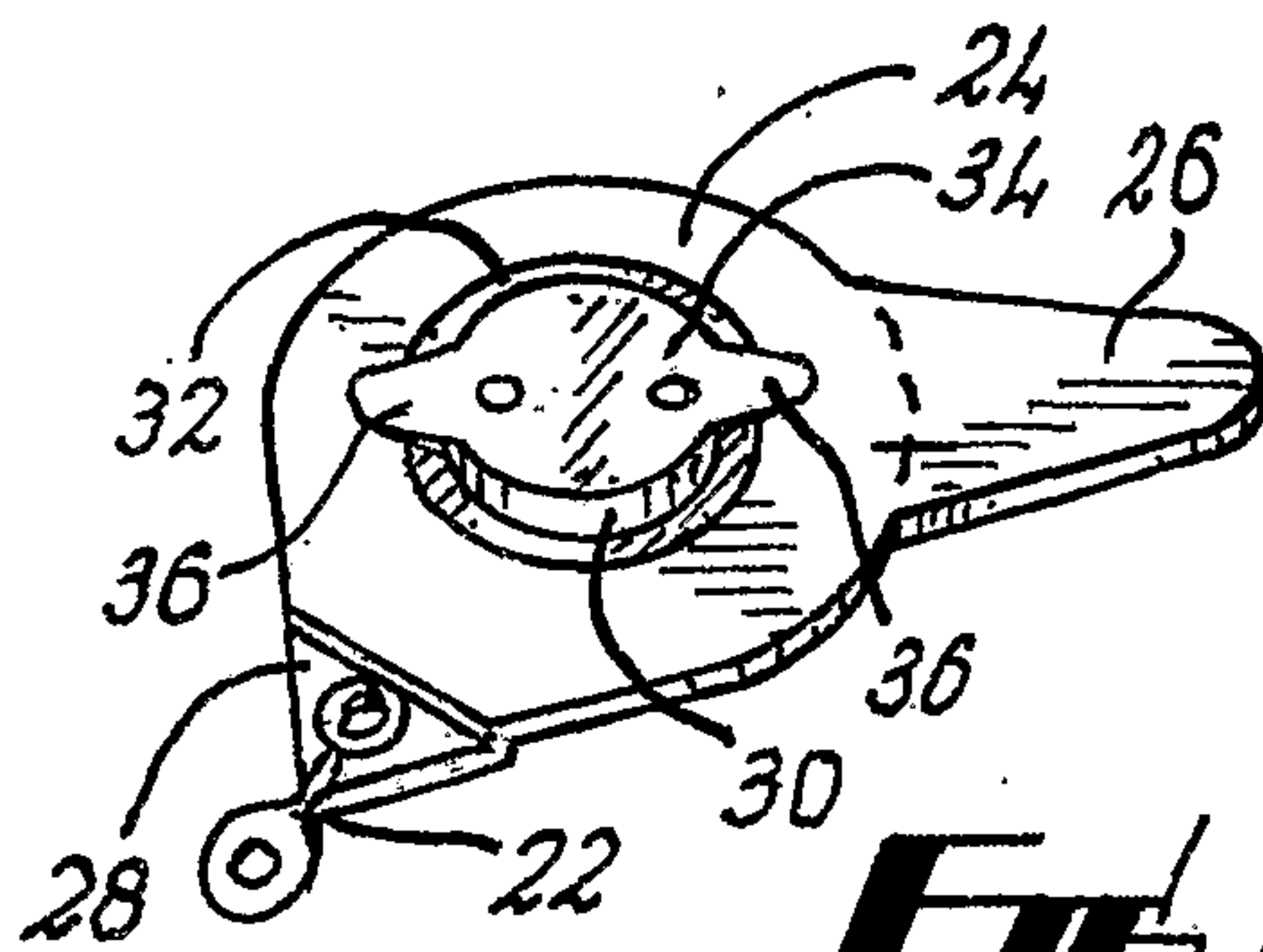
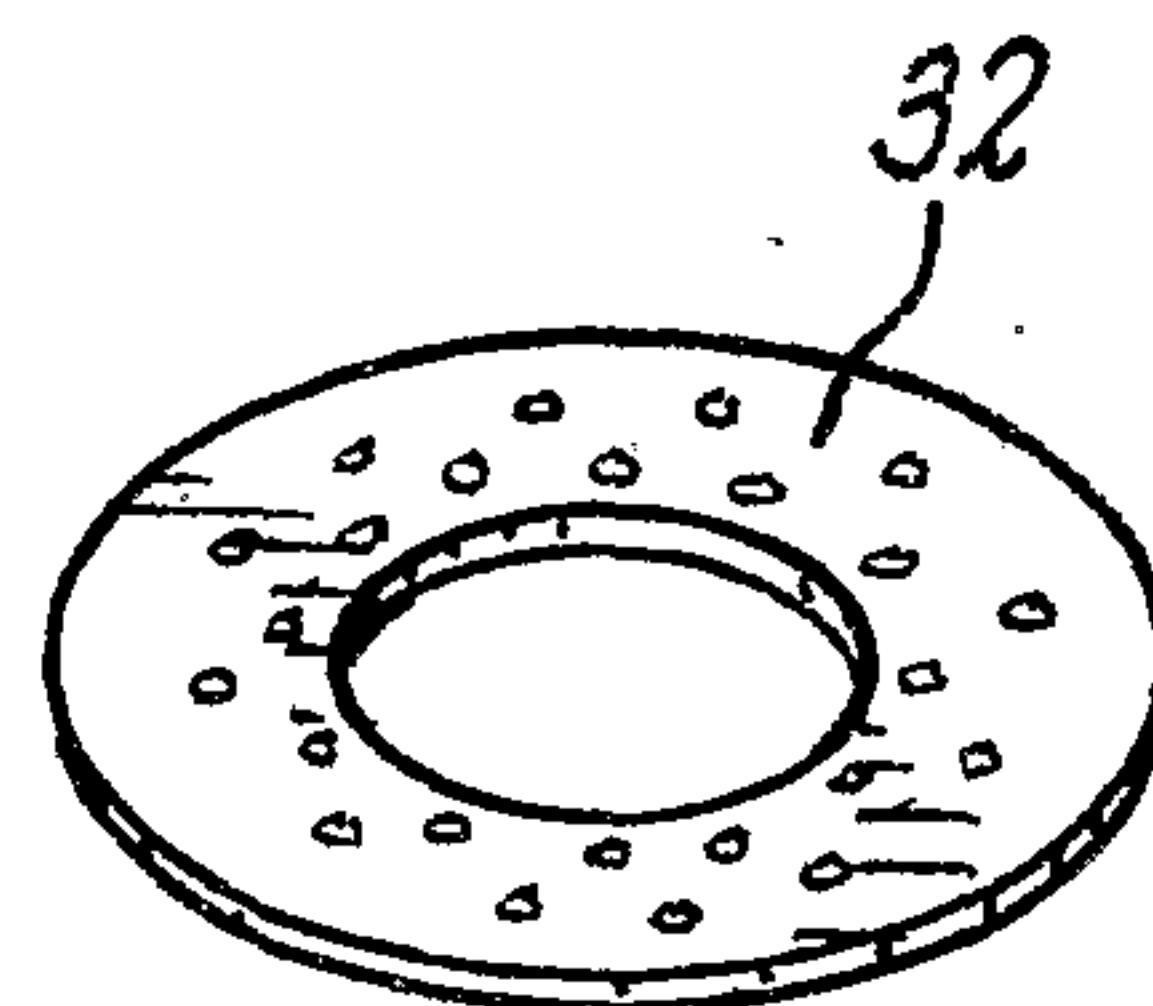
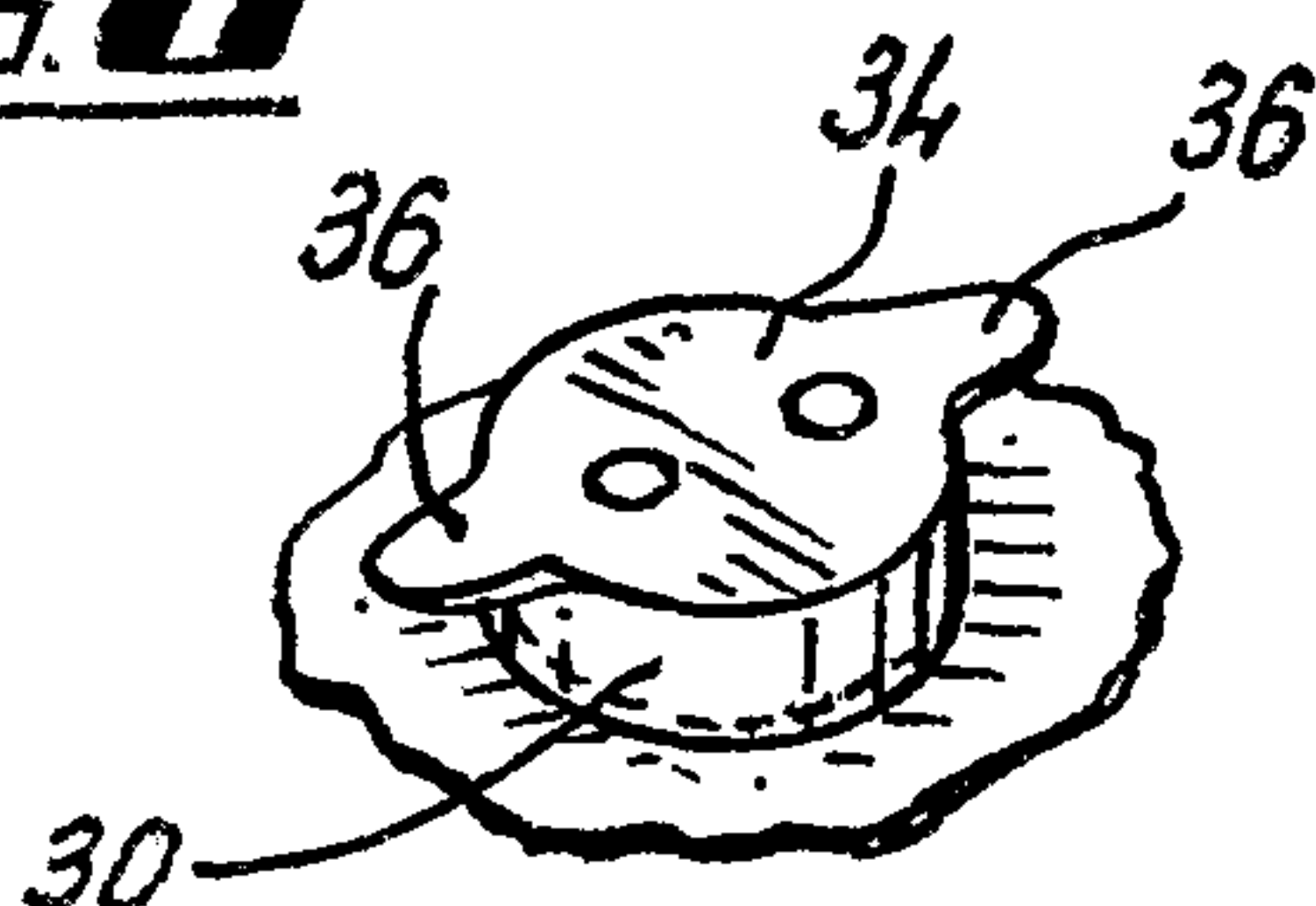
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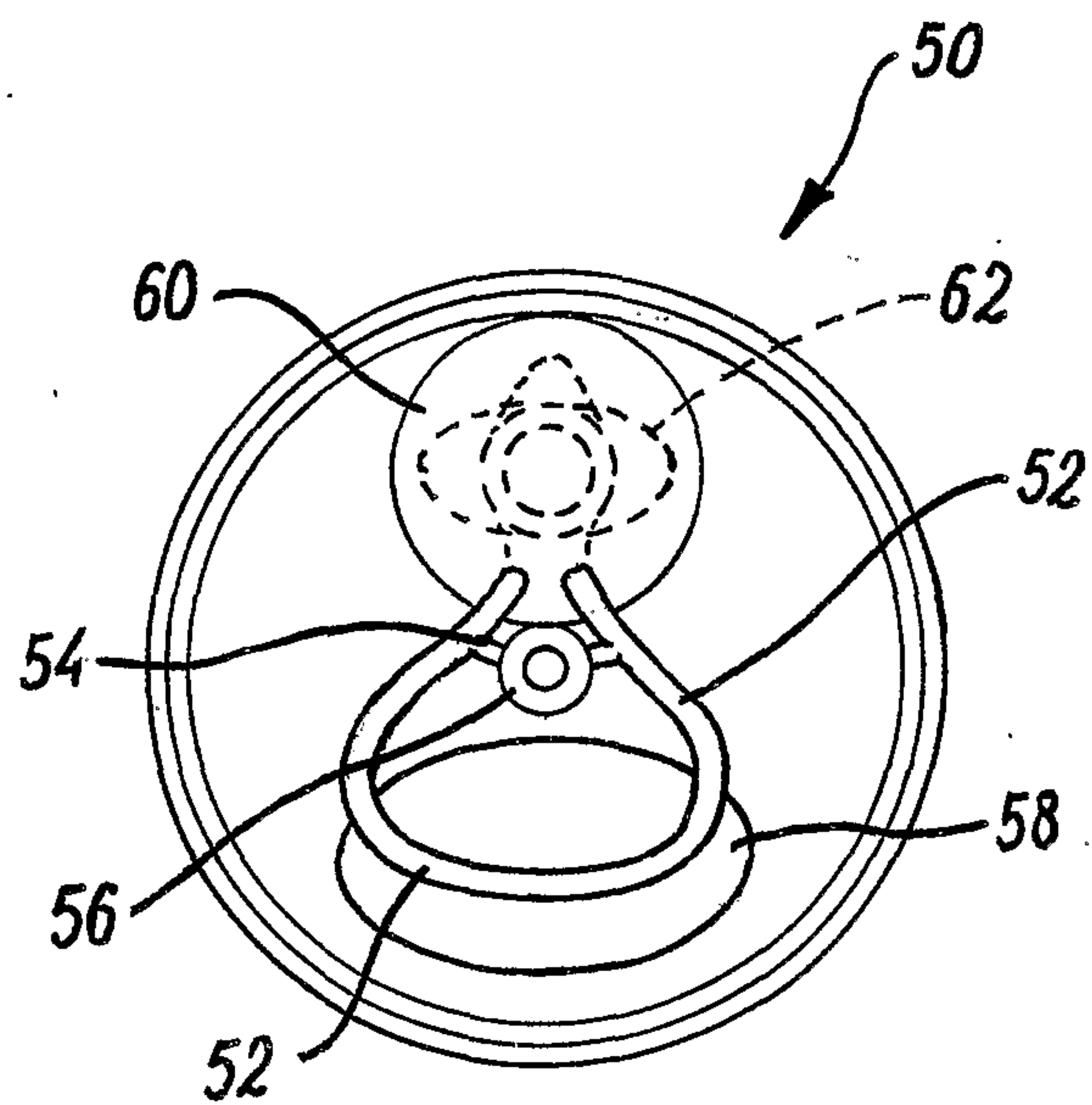
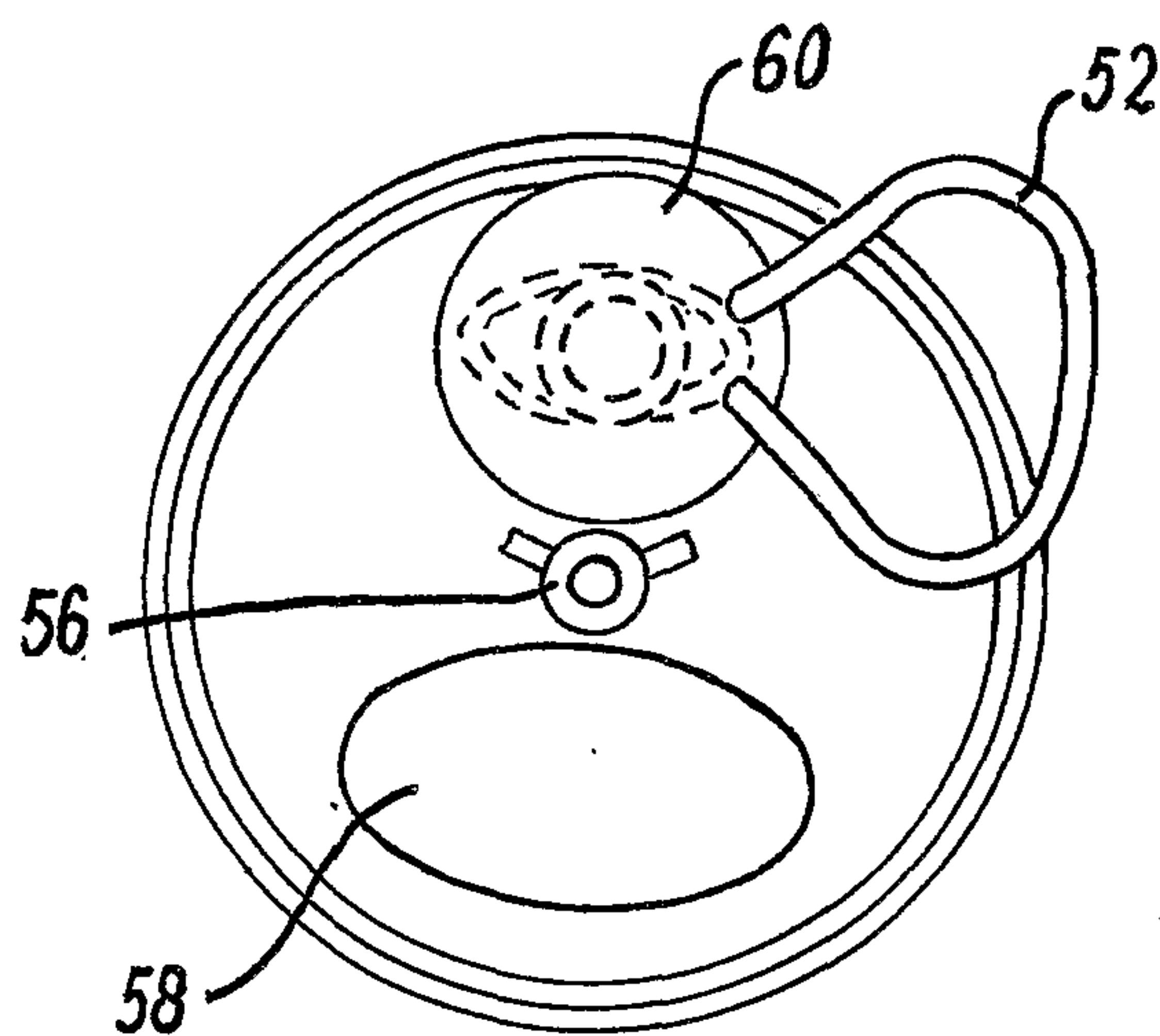
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20. An assembly according to claim 19, characterised in that the breakable seal is arranged such that it must be broken to permit the closure member to move from the second orientation to the first orientation.
21. An assembly according to any of the preceding claims, characterised in that a link member is provided extending between the closure member and the main part to prevent loss of the closure member.
22. An assembly according to any of the preceding claims, characterised in that a depression is provided in the upper surface of the main part to facilitate rotation of the closure member.
23. An opening assembly for a drinks can, characterised in that the assembly is according to any of the preceding claims.
24. A beverage container characterised in that the container includes an opening assembly according to any of the preceding claims.
25. A container according to claim 24, characterised in that the container comprises a can.
26. A container according to claim 24, characterised in that the container is made of plastics material.

**Fig. 1****Fig. 3****Fig. 2****Fig. 4****Fig. 5****Fig. 6****Fig. 7**

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**FIG. 8****FIG. 9**

