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Courier Press, Leamington Spa, England.

Description

This invention relates to a closable container.

Circumstances may arise where a sealable container is needed for the medium-term or long-term storage of articles or substances, yet it is also desirable for the container to be easily openable for frequent or repetitive access to its contents. One common instance is the use of an ice bucket to store or transport ice cubes followed or preceded by use of the same bucket for dispensing ice, for example, at a social gathering such as a party or picnic. While a firm, positive seal of a closure member on the bucket is desirable during transport and storage, a loose, easily opened closure of the bucket is preferred during the frequent access to the ice at the gathering.

Storage containers heretofore available have been provided with closures intended for either tight sealing or for loose covering, but not both. Although it may be possible to cover loosely a container with a lid intended for tight sealing, typically no means are provided for maintaining the lid in a proper orientation and relationship with the container. Thus, for example, the lid may rest skewed and leave gaps or may bind or become stuck. Simiarly, containers provided with closures intended for loose covering are typically not provided with means for obtaining a tight seal using the same parts.

US—A—3,756,480 discloses a three-part press type seal, which seal comprises a locally distortable closure member contractably and distensibly constructed and having an elastic memory such that it is adapted to seal hermetically an open-mouthed container. The seal has a peripheral bead which may be contracted from a first diameter to a second smaller diameter by depressing a plunger which distorts a seal member formed integrally with the bead. Also disclosed in US—A—3,756,480 is the use of such a seal to close tightly a container having a generally circular throat with a cylinder wall and an annular ledge below the wall which are sealingly engaged by the seal bead.

However, there remains a need for a container closure that is adapted for two modes of closing, a first mode in which the closure member rests loosely upon the container and may easily be removed or replaced, yet which provides a uniform closing of the container, and a second mode in which the closure member tightly seals the container. Furthermore, it may desirable for such a closure to have insulative properties for example when used in a container for hot or cold contents.

Accordingly, the present invention provides a closable container, comprising a container, having a throat opening, and a closure member comprising an elastically distortable seal member having a peripheral bead portion that is selectively contractible from a first bead diameter to a second smaller bead diameter, said bead portion being releasably, sealingly engageable with the inner surface of the throat opening, said throat opening defining a first wall portion having a diameter greater than said first bead diameter, a second wall portion that is formed below and adjacent said first wall portion and has a diameter less than said first bead diameter and at least equal to said second bead diameter, a first annular ledge extending inwardly and disposed between said first wall portion and said second wall portion, and a second annular ledge extending inwardly below said second wall portion.

Thus, in a preferred embodiment, the present invention meets the aforementioned needs by providing a closure for a container having a generally circular throat opening and a closure member having an elastically distortable seal member with a peripheral bead portion which is selectively contractable from a first bead diameter to a second, smaller bead diameter. The container throat is configured with a substantially cylindrical upper wall portion of a diameter greater than the first bead diameter, and an adjacently cylindrical lower wall portion of a diameter less than the first bead diameter but no smaller than the second bead diameter. A first inwardly projecting annular ledge is situated between the upper and lower wall portions. A second inwardly projecting annular ledge is situated immediately below the lower wall portion. When the closure member is placed loosely on the container, the peripheral bead rests upon the first ledge encircled, but not engaged, by the upper wall portion. When the peripheral bead is selectived contracted by a distorting force, the closure member may be inserted farther into the container throat with the peripheral bead resting upon the second ledge. The distorting force may then be released, and the peripheral bead will then be sealingly engaged with lower wall portion and seated upon the second ledge.

According to a feature of a preferred embodiment of the invention, the closure member is provided as a three part press type seal for example, as described in US—A—3,756,480. The container may be an ice bucket or the like and, in a preferred embodiment, the dead air space within the three-part press type seal is used in a novel way for its insulative value.

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, an embodiment of a closable container of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

FIGURE 1 is a perspective view of a closable container of the invention;

FIGURE 2 is a top plan view of the closable container of Figure 1;

FIGURE 3 is a sectional side view taken along the line 3—3 of Figure 2;

FIGURE 4 is a fragmentary sectional view similar to FIGURE 3, but showing the closure member in a loose resting position;

FIGURE 5 is similar to Figure 4, but with the closure member removed; and

FIGURE 6 is a top plan view of the closable

container of Figure 1, but with the closure member removed.

Figures 1 to 6 illustrate, as one preferred form of a closable container of the invention, an ice bucket. Referring firstly to Figures 1 and 2, the ice bucket comprises a container indicated generally at 10 and a closure member 11. The container 10 is substantially cylindrical with a closed bottom and a generally circular throat opening. The closure member 11, shown in Figures 1 and 2 in a tightly sealed position, sits within the throat of the container 10. The container 10 presents an upper circumferential rim 12. The closure member 11 has a protruding plunger 13 in its center encircled by a flared flange 14.

As best shown in Figure 3, the container 10 is constructed in two parts to comprise an outer container 17 and an inner container 16 nested within the outer container 17. The inner container 16 and outer container 17 each has a substantially cylindrical wall 18, 19, respectively, and a substantially planar bottom 21, 22 respectively. The outer container 17 is somewhat larger than the inner container 16 so that a dead air space 23 is formed therebetween.

Encircling the upper extent of the outer container 17 there is a flange comprising a horizontal annular portion 24, a depending cylindrical portion 26 and an upstanding slightly outward flared portion 27. Encircling the upper extent of the inner container 16 there is a second horizontal annular portion 28 with a peripheral second depending portion 29. The inner container 16 and outer container 17 are preferably made of resilient materials, such as polypropylene and polyethylene, so that the inner side of the said depending portion resiliently engages the outer side of the upstanding portion 27 in a well known manner thereby forming a unitary, yet disassembleable container 10.

As is most easily seen in Figures 5 and 6, a throat opening 25, that is generally circular when viewed in plan, is formed at the upper extent of the wall 18 of the inner container 16. The throat opening 25 presents a substantially cylindrical first wall portion 31. A substantially cylindrical second wall portion 32, having a diameter less than that of the first wall portion 31, is formed adjacent and below the first wall portion 31. An annular, inwardly extending, first ledge 33 is formed between the first wall portion 31 and the second wall portion 32, and an annular, inwardly extending, second ledge 34 is formed below the second wall portion 32. Thus, the upper and lower ledges are concentric and the upper first ledge 33 has a greater diameter than the lower second ledge 34.

The closure member 11 is more clearly illustrated in Figure 3, wherein it is shown in a position tightly covering the container 10. The closure member may be constructed in accordance with the disclosure of US—A—3,756,480. Briefly described, the closure member 11 comprises, in its general organization, an elastically deformable seal member 36, a top wall 37, and the plunger 13. About the periphery of the seal member 36 there is a bead portion 38 and an upstanding rim 39. The upper edge of the rim 39 engages the circumferential edge of the top wall 37.

The bead portion 38 has a circumferential outer edge 41 and an underside 42. The throat opening 25 of the inner container 16 and the closure member 11 are so dimensioned that, when the seal member 36 is in its relaxed, undistorted state, the inner diameter of the first wall portion 31 is slightly greater than the outer diameter of the bead outer edge 41, and the inner diameter of the second wall portion 32 is slightly less than the outer diameter of the bead outer edge 41. Furthermore, the inner diameter of the second wall portion 32 is substantially equal to or slightly greater than the outer diameter of the bead outer edge 41 when the seal member 36 is in its distorted state and the bead is contracted.

Figures 3 and 4 illustrate the two closing modes of the closure of the invention. In Figure 3, the closure is in the tight sealing mode. The closure member 11 is readied for insertion by depressing the plunger 13 which acts upon the center of the seal member 36 to distort the seal member 36 and contract the bead portion 38 to a diameter small enough for the closure member 11 to be inserted into the throat opening 25 with the bead underside 42 contacting the second ledge 34. After insertion, the plunger 13 is released and elastic forces in the seal member 36 uniormly urge the bead portion 38 outward. The container 10 is thus tightly sealed with bead outer edge 41 firmly engaging the second wall portion 32 and the bead underside 42 seated upon the second ledge 34. The closure member 11 may be removed by reversing the process just described.

In Figure 4, the closure member is shown in a loose covering mode. The closure member 11 is inserted in its undistorted state into the throat opening 25 until the bead underside 42 comes to rest atop the first ledge 33. In this position, a small annular gap is present between the bead outer edge 41 and the first wall portion 31. The closure member 11 rests properly centered and oriented horizontally without wedging or binding. No gaps are left between the bead underside 42 and the first ledge 33. The closure member 11 may be removed from and replaced into this position with ease.

In a preferred embodiment, the first ledge 33, second ledge 34, and bead underside 41 are equally sloped, thereby imposing a self-centering action on the closure member 11. Although the first wall portion 31 and second wall portion 32 are substantially cylindrical, it is desirable to form the wall portions with an upward and outward draft angle, thus assisting centering the closure member 11 and, additionally facilitating removal of the container from a mould during manufacture. In the preferred embodiment, the draft angle is one degree from nominal vertical. It is within the scope of the invention to provide other draft angles or ledge slopes, although the ledges

should, desirably be close enough to horizontal that no wedging action occurs.

It should be appreciated that when the invention is practiced according to the preferred embodiment, the dead air space 43 of the closure member 11 between the seal member 36 and top wall 37 is useful for thermally insulating the contents of the container 10. It should be understood, however, that the container of the invention is not limited to use in ice buckets or other thermal containers.

Claims

1. A closable container, comprising a container, having a throat opening, and a closure member comprising an elastically distortable seal member having a peripheral bead portion that is selectively contractible from a first bead diameter to a second, smaller bead diameter, said bead portion being releasably, sealingly engageable with the inner surface of the throat opening, said throat opening defining a first wall portion having a diameter greater than said first bead diameter, a second wall portion that is formed below and adjacent said first wall portion and has a diameter less than said first bead diameter and at least equal to said second bead diameter, a first annular ledge extending inwardly and disposed between said first wall portion and said second wall portion, and a second annular ledge extending inwardly below said second wall portion.

2. A closable container according to claim 1, wherein the seal member is a three-part press type seal.

3. A closable container according to claim 1 or claim 2, wherein a dead air space within the closure member provides for thermal insulation.

4. A closable container according to claim 1, 2 or 3, wherein the container is an ice bucket.

5. A closable container according to any one of claims 1 to 4, wherein the first and second annular ledges and the bead portion underside are equally sloped downwardly and inwardly.

6. A closable container according to any one of claims 1 to 5, wherein the first and second wall portions are substantially cylindrical.

Patentansprüche

1. Verschließbares Behältnis, aufweisend einen Behälter mit einer halsartigen Öffnung und ein Schließelement, welches ein elastisch verformbares Dichtelement aufweist, welches einen Umfangsrandbereich besitzt, der wahlweise zusammenziehbar ist von einem ersten Randdurchmesser zu einem zweiten, kleineren Randdurchmesser, wobei der Randbereich lösbar und dichtend mit der inneren Fläche der halsartigen Öffnung zusammenwirkt, wobei weiter die halsartige Öffnung einen ersten Randbereich darstellt, der unterhalb und angrenzend dem ersten Randbereich ausgebildet ist und einen Durchmesser besitzt der geringer ist als der erste Randdurchmesser und zumindest gleich dem zweiten Randdurchmesser, und wobei weiter ein erster kreisringförmiger Ansatz sich nach innen erstreckt und zwischen dem ersten Randbereich und dem zweiten Randbereich angeordnet ist und ein zweiter kreisringförmiger Ansatz sich nach innen erstreckt unterhalb des zweiten Randbereiches.

2. Verschließbares Behältnis gemäß Anspruch 1, wobei das Dichtelement eine dreiteilige Druckdichtung ist.

3. Verschließbares Behältnis nach Anspruch 1 oder 2, wobei ein Totluftraum in dem Abdeckelement für eine thermische Isolation sorgt.

4. Schließbares Behältnis nach Anspruch 1, 2 oder 3, wobei daß Behältnis ein Eiskübel ist.

5. Schließbares Behältnis nach einem der Ansprüche 1 bis 4, wobei die ersten und zweiten kreisringförmigen Ansätze und der Randunterbereich in gleicher Weise nach unten und innen gekrümmt sind.

6. Schließbares Behältnis nach einem der Ansprüche 1 bis 5, wobei die ersten und zweiten Randbereiche im wesentlichen zylindrisch sind.

Revendications

1. Récipient obturable comprenant un récipient ayant une ouverture à gorge et un organe de fermeture comprenant un organe d'étanchéité déformable élastiquement ayant une portion de bourrelet périphérique pouvant se contracter sélectivement d'un premier diamètre de bourrelet à un second diamètre de bourrelet plus petit, ladite portion de bourrelet pouvant s'engager de façon libérable et étanche dans la surface interne de l'ouverture à gorge, ladite ouverture à gorge définissant une première portion de paroi ayant un diamètre supérieur au premier diamètre de bourrelet, une seconde portion de paroi qui est formée au-dessous et de façon contiguë à la première portion de paroi et comporte un diamètre inférieur au premier diamètre de bourrelet et au moins égal au second diamètre de bourrelet, un premier rebord annulaire s'étendant vers l'intérieur et disposé entre la première portion de paroi et la seconde portion de paroi, et un second rebord annulaire s'étendant vers l'intérieur audessous de la seconde portion de paroi.

2. Récipient obturable selon la revendication 1, dans lequel l'élément d'étanchéité est un joint d'étanchéité du type à compression en trois parties.

3. Récipient obturable selon la revendication 1 ou 2, dans lequel un espace d'air mort à l'intérieur de l'élément de fermeture assure l'isolation thermique.

4. Récipient obturable selon la revendication 1, 2 ou 3, dans lequel le récipient est un bac à glaçons.

5. Récipient obturable selon l'une quelconque des revendications 1 à 4, dans lequel le premier et le second rebord annulaire et la partie inférieure

de la portion du bourrelet présentent une inclinaison égale dirigée vers le bas et vers l'intérieur.

6. Récipient obturable selon l'une quelconque des revendications 1 à 5, dans lequel la première et la seconde partie de paroi sont essentiellement cylindriques.

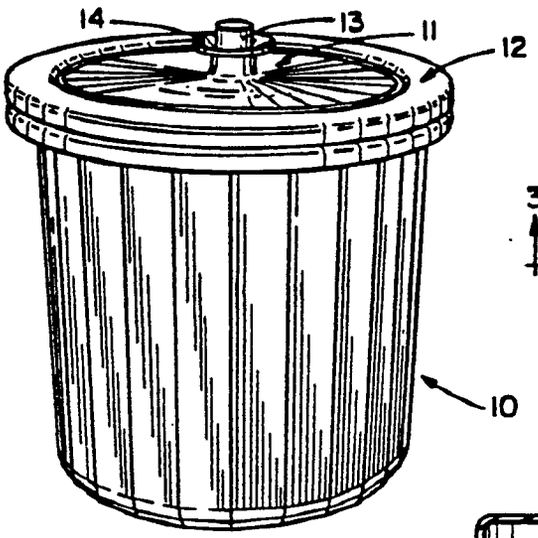

FIG.1

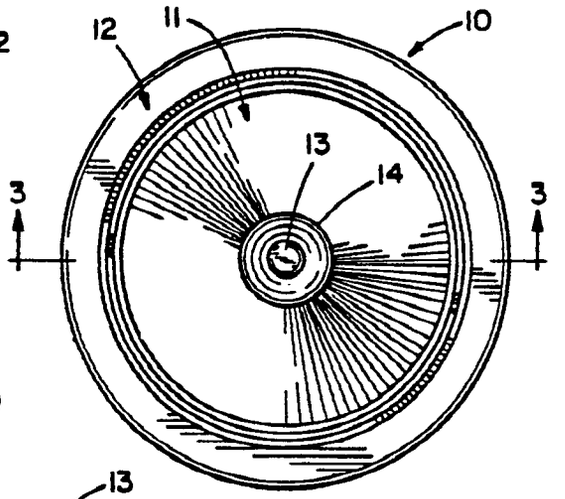

FIG.2

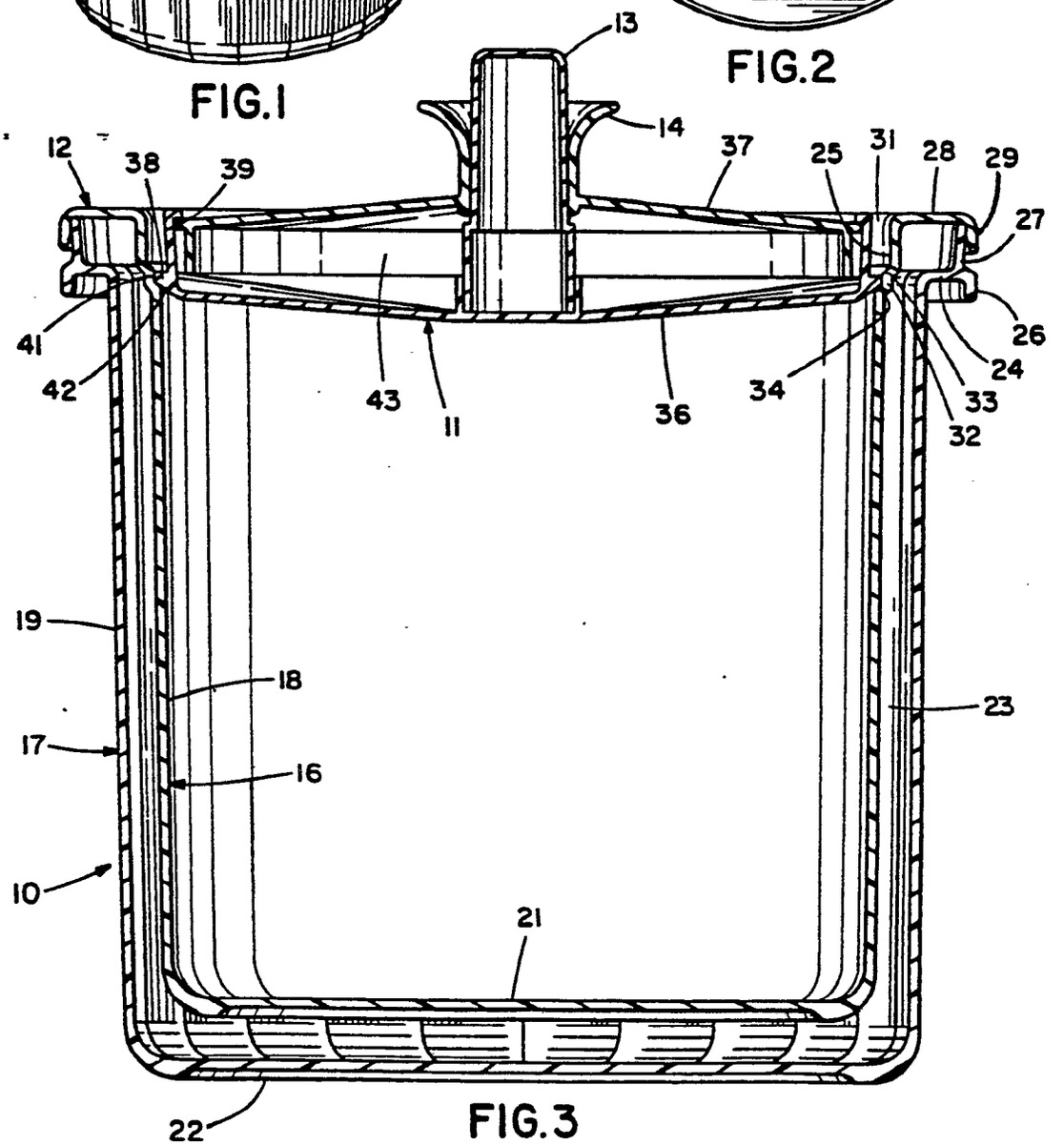

FIG.3

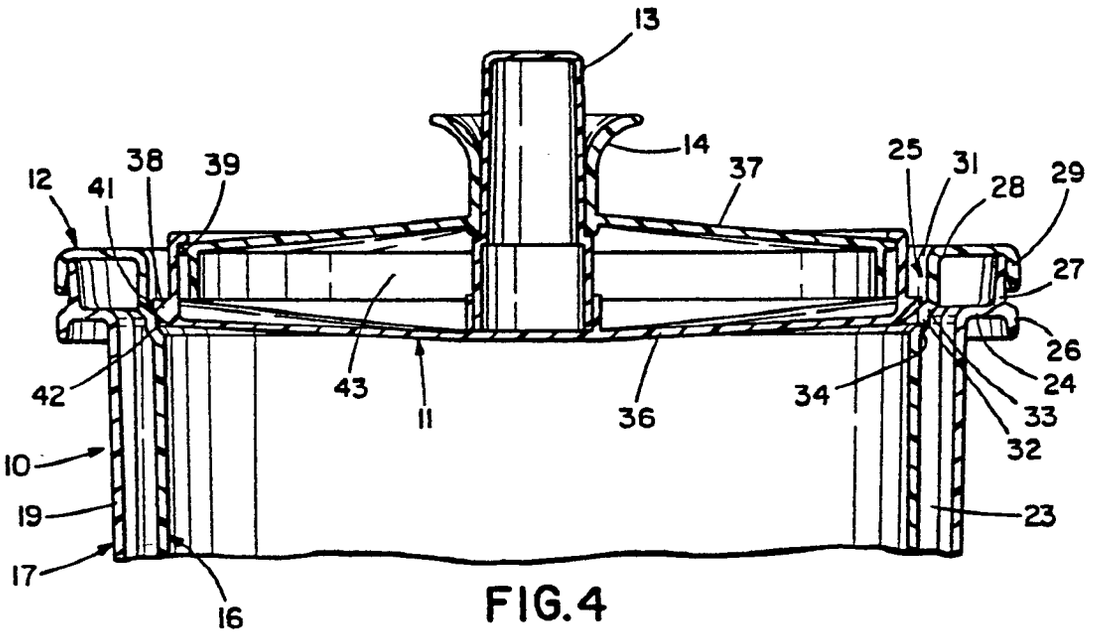

FIG.4

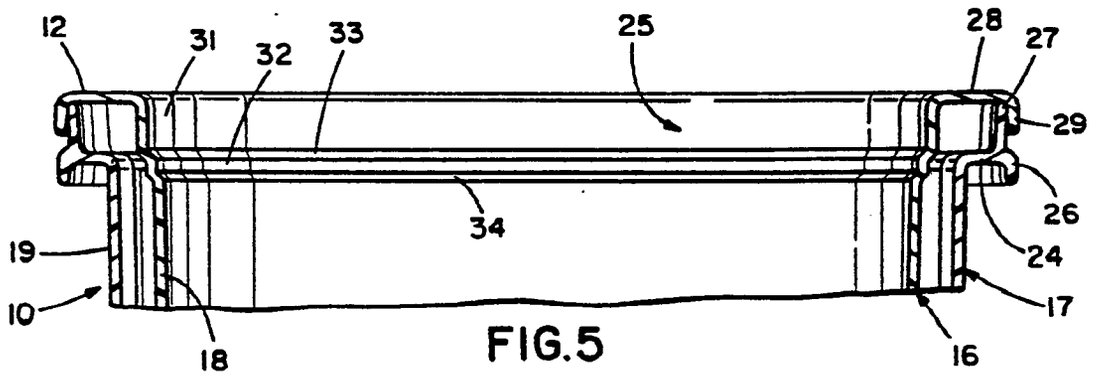

FIG.5

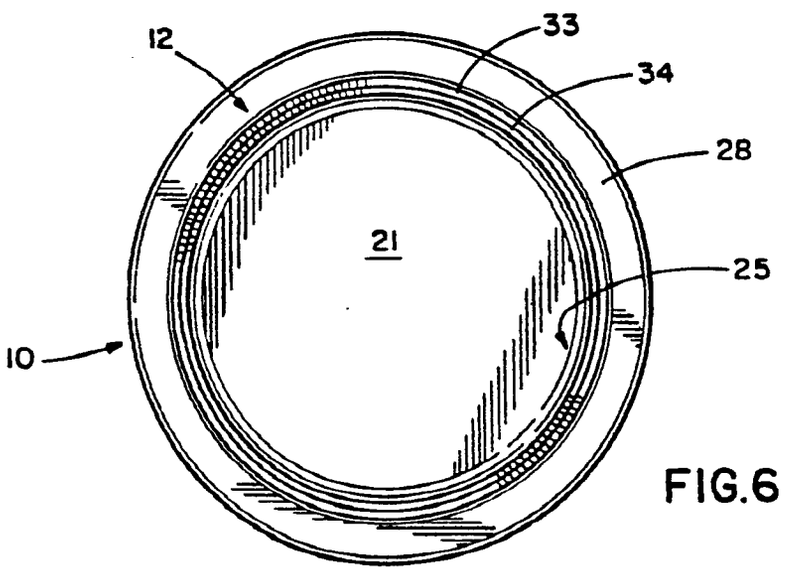

FIG.6