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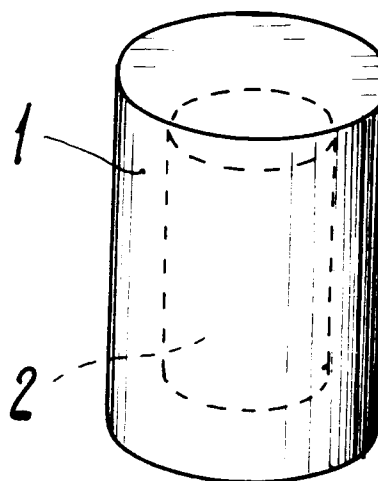
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DE ES FR GR(71) Applicant: **Fantin, Lino**
Via Pirandello, 3
I-36100 Vicenza(IT)(72) Inventor: **Fantin, Lino**
Via Pirandello, 3
I-36100 Vicenza(IT)(74) Representative: **Modiano, Guido et al**
MODIANO, JOSIF, PISANTY & STAUB
Modiano & Associati Via Meravigli, 16
I-20123 Milano(IT)(54) **Stopper-like closure for liquid containers.**

(57) The present invention relates to a sealing closure for containers of liquids, for example wine. The closure comprises a substantially cylindrical plastic element (1) made of synthetic material, such non-toxic foamed polystyrene for food use, in which an also substantially cylindrical elastic insert (2), such as ground granulated cork, is axially embedded.

*Fig. 1***EP 0 496 194 A1**

The present invention relates to a sealing closure for containers of liquids.

It is known that substantially cylindrical disposable cork closures, pushed inside the end of bottle necks, are currently mainly used for the bottling of liquids such as wine.

The closures, which are larger in diameter than their seats, sealingly close the bottles by exerting a pressure on the walls which is such as to contrast the pressures which the wines generate inside the bottles.

However, although they are extensively used, cork closures are not free from problems, including a high cost and the fact that they are subject to diseases (fungi) which give the wines an extremely unpleasant smell.

Another problem is the scarce availability of raw material, due to the fact that the barks of cork-yielding trees require several years to reconstitute.

Closures made of high-density plastics are less widely used; they are substantially composed of a head from which there extends a tubular element suitable for being inserted in the bottle neck.

The tubular element is externally provided with flanges suitable for producing a seal against the walls of the neck of the bottle.

These closures owe their scarce diffusion to their unpleasant aesthetics and to the fact that the seal is localized in a small number of flange lines and is therefore troublesome.

Furthermore, conventional corkscrews suitable for cork closures cannot be used to extract said plastic closures.

The aim of the present invention is to provide a new sealing closure for containers of liquids which eliminates the problems described above in known types.

A consequent primary object is to provide a closure which is fully non-toxic and does not have the risk of yielding unpleasant smells to the bottled liquids.

Another important object is to provide a closure which can also be sterilized.

Still another object is to provide a closure which can be manufactured with low-cost and widely available raw material.

Yet another object is to provide a closure which is characterized by low production costs.

Not least object is to provide a closure whose aesthetics is substantially equivalent to that of a conventional cork closure.

This aim, these objects and others which will become apparent hereinafter are achieved by a sealing closure for containers of liquids, characterized in that it comprises a substantially cylindrical plastic element in which an also substantially cylindrical elastic insert is axially embedded.

Further characteristics and advantages of the

invention will become apparent from the detailed description of some embodiments thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

- 5 figure 1 is a perspective view of a first embodiment of the closure according to the invention;
- figure 2 is a longitudinal sectional view of the first embodiment of the closure according to the invention;
- 10 figure 3 is a perspective view of a second embodiment of the closure according to the invention;
- figure 4 is a longitudinal sectional view of the embodiment of figure 3;
- 15 figure 5 is a perspective view of a first embodiment of the insert which is embedded in the closure structure according to the invention;
- figure 6 is a perspective view of a second embodiment of the insert which is embedded in the closure structure according to the invention.
- 20 figure 7 is a perspective view of a third embodiment of the closure according to the invention;
- figure 8 is a longitudinal sectional view of the closure of figure 7;
- 25 figure 9 is a perspective view of a fourth embodiment of the closure according to the present invention; and
- figure 10 is a longitudinal sectional view of the closure of figure 9.

30 With reference to the above figures, the closure according to the invention comprises a substantially cylindrical plastic element 1 which is conveniently made of synthetic material, preferably non-toxic foamed polystyrene for food use.

35 An also substantially cylindrical elastic insert 2 is axially embedded inside the element 1 and is preferably constituted by ground granulated cork or by high-density plastic material with resilient characteristics, or by natural or synthetic rubber.

40 According to the invention, the outer plastic element 1 is suitable for constituting a sort of sealing gasket on the walls of the neck of the bottle, whereas the resiliency of the internal insert 2 is suitable for producing the thrust on the walls which is necessary in order to withstand the pressures which form inside the bottle.

The elastic insert 2 is completely embedded in the plastic element 1 and therefore cannot yield bad smells to the liquid in any way.

50 The plastic element 1 is produced in the same shade of color as cork and therefore its aesthetics is substantially equivalent to that of conventional commercially available closures.

55 A varied embodiment of the closure according to the invention, illustrated in figures 3 and 4, can comprise an outer plastic element 3 with conically concave end faces 4 in order to constitute guides for the point of a conventional corkscrew to

be used for extraction.

An elastic insert 5 is embedded in the plastic element 3 in this case as well.

In order to increase thrust in the median region, the elastic insert, designated by the reference numeral 6 in figure 5, can conveniently be barrel-shaped.

In another case, shown in figure 6, the elastic insert, which is now designated by the numeral 7, is cylindrical and has a pair of toroidal outer ridges 8 which are suitable for generating more highly compressed local regions where tightness is increased.

According to a further aspect of the present invention, as seen in figures 7 and 8, the closure comprises a substantially cylindrical elastic element 9 provided with an axially extending elastic shank 10 which is embedded in a similarly shaped seat of a substantially cylindrical plastic element 11. The diameters of the elastic element 9 and the plastic element 11 are substantially equal.

According to a further aspect of the present invention, as seen in figures 9 and 10, a substantially cylindrical elastic insert 12 is axially embedded inside a substantially cylindrical plastic element 13 such that one end of the elastic insert 12 is substantially flush with the corresponding end of the plastic element 13.

In practice it has thus been observed that the closure according to the invention has achieved the intended aim and objects.

Said closure is in fact characterized by low cost of the raw material, low production cost, complete non-toxicity and no possibility of yielding unpleasant smells to the liquid.

By virtue of the presence of the external element made of foamed polystyrene, the closure can furthermore be sterilized.

The invention thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, so long as they are compatible with the contingent use, as well as the dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Sealing closure for containers of liquids, characterized in that it comprises a substantially cylindrical plastic element (1;3;11;13) in which an also substantially cylindrical elastic insert (2;5;6;7;9;12) is axially embedded.
2. Closure according to claim 1, characterized in that said plastic element (1;3;11;13) is made of synthetic material, preferably non-toxic foamed polystyrene for food use or another equivalent material.
3. Closure according to claim 1, characterized in that said elastic insert (2;5;6;7;9;12) is made of ground granulated cork.
4. Closure according to claim 1, characterized in that said elastic insert (2;5;6;7;9;12) is made of high-density plastic material with resilient characteristics.
5. Closure according to claim 1, characterized in that said elastic insert (2;5;6;7;9;12) is made of natural or synthetic rubber.
6. Closure according to one or more of the preceding claims, characterized in that said plastic element (3) has concave end faces (4).
7. Closure according to claim 6, characterized in that said concave end faces (4) are conical.
8. Closure according to one or more of the preceding claims, characterized in that said elastic insert (6) is barrel-shaped.
9. Closure according to one or more of the preceding claims, characterized in that said elastic insert (7) has at least one toroidal external ridge (8).
10. Closure according to claim 1, characterized in that said elastic insert (2) is completely embedded in said plastic element (1).
11. Closure according to claim 1, characterized in that said elastic insert (12) has an end flush with a corresponding end of the plastic element (13).
12. Closure according to claim 1, characterized in that said elastic insert (9) and said plastic element (11) have substantially equal diameters, said elastic insert (9) being provided with an axial extending shank (10) embedded in a similarly shaped axial seat of said plastic element (11).

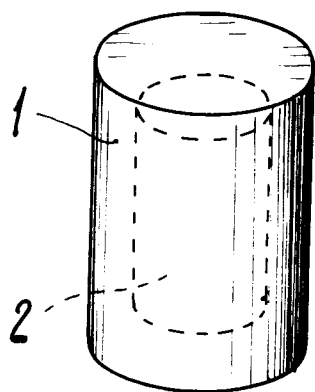


Fig. 1

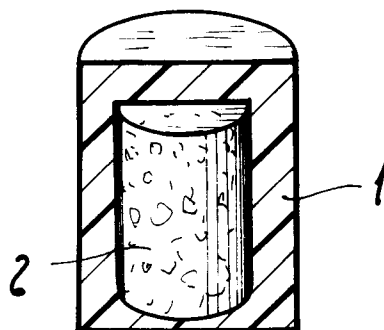


Fig. 2

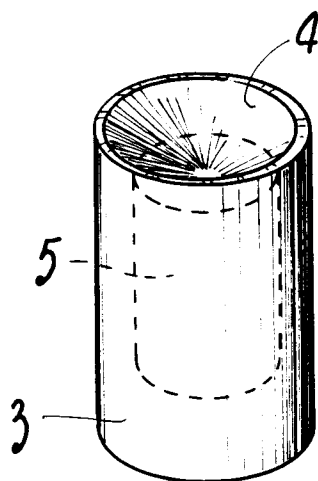


Fig. 3

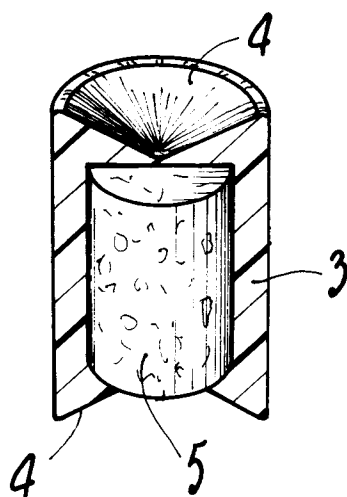


Fig. 4

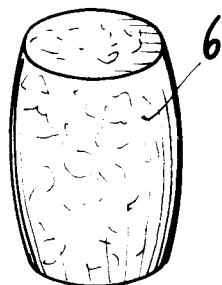


Fig. 5

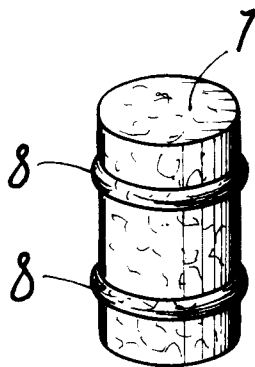


Fig. 6

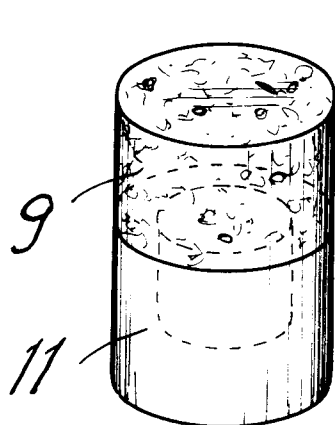


Fig. 7

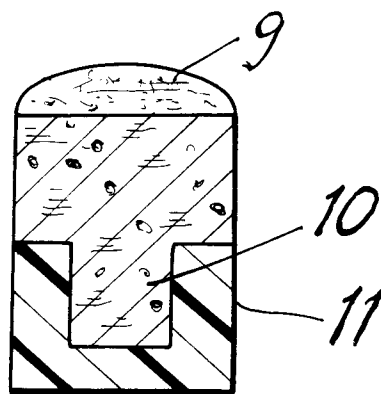


Fig. 8

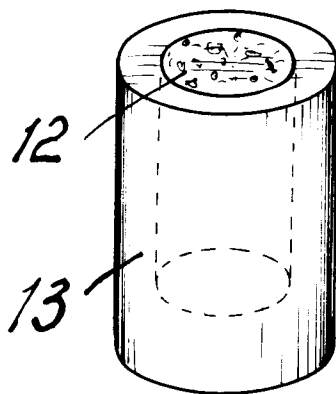


Fig. 9

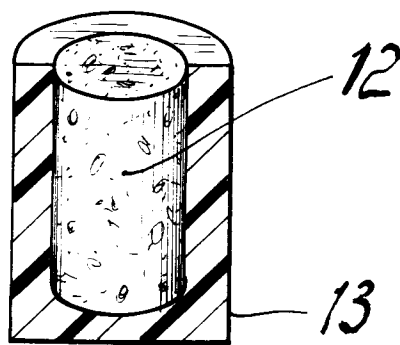


Fig. 10



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EUROPEAN SEARCH REPORT

Application Number

EP 92 10 0058

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	AT-A-291 802 (FRITJOFF SCHWAZLER)	1, 2, 10	B65D39/00
Y	* page 1, line 31 - line 37 *	11	
A	* page 2, line 21 - line 26; claim 1; figures * ---	3, 6	
X	BE-A-692 940 (BADISCHE ANILIN & SODA) * page 4, line 5 - line 15; figures * ---	1-4, 10	
Y	GB-A-10 646 (JONSON & SON LTD) 1911	11	
A	* page 2, line 31 - line 37 * ---	1, 2, 3, 5	
X	FR-E-66 535 (F. BARBIER)	1, 2	
A	* page 2, left column, line 30 - line 38; figure 4 * ---	6, 12	
A	FR-A-1 349 033 (INDUSTRIA CORCHERA BERTRAN) * claim 1; figures * ---	1, 12	
A	FR-A-1 002 259 (VIS-WERK) * claim G; figures * ---	1, 4, 5, 11	
A	FR-A-1 576 492 (J.D. GOUJON) * page 2, line 28 - line 31 * -----	1, 2	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
The present search report has been drawn up for all claims			B65D
Place of search THE HAGUE		Date of completion of the search 21 APRIL 1992	Examiner AMEDEO ZANGHI
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			