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(54) **DEVICE FOR CLOSING CONTAINERS, SUCH AS BOTTLES, CANS OR THE LIKE**

(57) Closing device for containers, such as bottles, cans, or the like, comprising a stable coupling element (220) at a dispensing opening (201) of said container (200) and a removable closing element (230), to close said dispensing opening, comprising engaging members (233) of said closing element (230) in said closing position, wherein,
the stable coupling element (220) at a container opening consists of a cylindrical capsule which peripherally delimits at least one dispensing duct (224) open at the two ends of said capsule,
said capsule (220) having a stable coupling end to be coupled to the wall (201) that surrounds an opening of said container (200),
said capsule (220) having an end opposite the container (200) and provided with removable coupling members (227) to be removably coupled to a closing element (230);
a closing element (230) shaped as a cylindrical cup and having coupling members (233) intended to engage the coupling members (227) at the opposite-to-the-container end of said capsule (220),
characterized in that
said closing element (230) has an axial annular extension (240) at the head end facing the container (200), the annular extension (240) being connected to the said closing element (230) by a number of bridges (245) of material spread along its circumference,
said axial extension (240) of the closing element (230) being provided with axial and/or circumferential retaining

members cooperating with retaining members integral with said capsule (220), so that upon removal of said closing element (230), the bridges of material (245) are cut due to a relative circumferential and/or axial movement between said closing element (230) and said ring (240) .

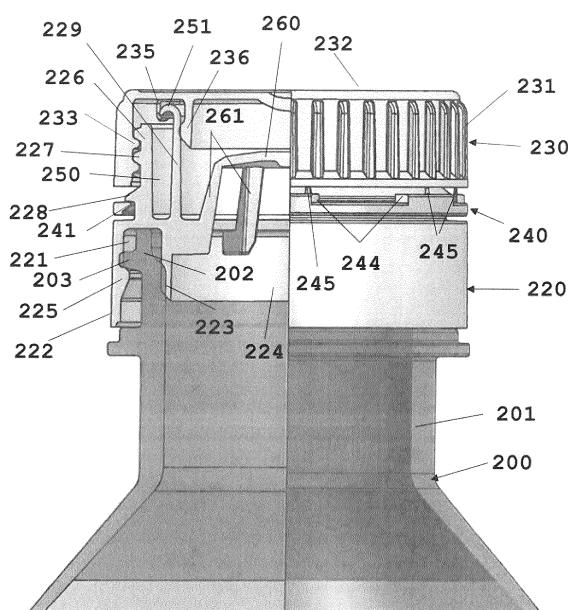


Fig. 3



EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 124 599 A (GUALA ANGELO SPA) 22 February 1984 (1984-02-22)	1-4,10, 12-15,18	INV. B65D41/04
Y	* page 1, line 123 - page 2, line 93; figures 3,5,6 *	5-9,11, 16,17	B65D41/34 B65D47/04 B65D47/06 B65D47/12
A	US 6 325 227 B1 (EKKERT LEN [US]) 4 December 2001 (2001-12-04) * column 3, line 44 - column 4, line 52; figures 3,7 *	1,10,12, 13	
Y	AU 2010 100 650 A4 (IP CO NOMINEES PTY LTD) 22 July 2010 (2010-07-22)	11	
A	* page 5, line 7 - page 6, line 5; figures 4,5 *	1-10, 12-18	
Y	FR 3 019 801 A1 (PROCAP FRANCE [FR]) 16 October 2015 (2015-10-16)	5-9,16	
A	* page 4, line 17 - page 6, line 27; figures *	1-4, 10-13,18	
Y	ES 1 078 137 U (BETAPACK SA [ES]) 28 November 2012 (2012-11-28)	16,17	TECHNICAL FIELDS SEARCHED (IPC)
A	* claim 1; figures *	1-15,18	B65D
A	US 3 850 328 A (GUALA PIERGIACOMO ANGELO ROBER [IT]) 26 November 1974 (1974-11-26) * column 2, line 13 - column 3, line 37; figures 1-6 *	1-18	
A	FR 1 436 748 A (ALCA SA) 29 April 1966 (1966-04-29) * claim 1; figures 1,3 *	1-18	
A	WO 96/20872 A2 (SANDER DIETER [CA]; MEYER UWE F [CA]) 11 July 1996 (1996-07-11) * abstract; figures *	1-18	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 February 2020	Examiner Zanghi, Amedeo
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			



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION
SHEET B

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4, 10-13, 18

A closing device for container comprising a stable coupling element and a removable closing element wherein the closing element is provided with an annular extension, a ring, being connected to the closing element by a number of bridges, according to claim 1. Furthermore, the ring has one or more inner radial recesses intended to be arranged behind one or more outer radial protrusions on the cylindrical capsule.

2. claims: 1, 5-9

It should be considered that claim 9 is in effect dependent on claim 8 because the cylindrical section are first defined there.

A closing device for container comprising a stable coupling element and a removable closing element wherein the closing element is provided with an annular extension, a ring, being connected to the closing element by a number of bridges, according to claim 1. Furthermore the coupling of the capsule to the opening of the container takes place by interlocking means elastically forcing the interlock of said capsule on at least one wall band surrounding said dispensing opening of the container.

3. claims: 1, 14, 15

It should be considered that claim 15 is in effect dependent on claim 14 where the regulator, the shielding wall, is defined.

A closing device for container comprising a stable coupling element and a removable closing element wherein the closing element is provided with an annular extension, a ring, being connected to the closing element by a number of bridges, according to claim 1. Furthermore the dispensing opening of the dispensing duct delimited by the capsule is provided with a regulator comprising a shield and a plurality of arms.

The shielding wall and the radial arms are both dimensioned so that the dispensing mouths have a passage port in a radial, and/or axial and/or circumferential direction, able to generate a fluid meniscus that slows down or prevents the fluid flow in a direction opposite to the spill due to the effect of the surface tension of the fluid itself.

4. claims: 1, 14, 16, 17

It should be considered that claim 16 is in effect dependent

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

on claim 14 where the regulator, the shielding wall, is defined.

A closing device for container comprising a stable coupling element and a removable closing element wherein the closing element is provided with an annular extension, a ring, being connected to the closing element by a number of bridges, according to claim 1. Furthermore the dispensing opening of the dispensing duct delimited by the capsule is provided with a regulator comprising a shield and a plurality of arms.

The regulator has at least two dispensing openings each of which having an overall passage port different from each other arranged at a different angular position with respect to the axis of the dispensing duct.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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