



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 0 863 086 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
14.04.1999 Bulletin 1999/15

(51) Int Cl.6: **B65D 41/18, B65D 53/02**

(43) Date of publication A2:
09.09.1998 Bulletin 1998/37

(21) Application number: **98301238.6**

(22) Date of filing: **19.02.1998**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Py, Daniel**
Larchmont, New York 10538 (US)

(74) Representative: **Bayliss, Geoffrey Cyril et al**
BOULT WADE TENNANT,
27 Furnival Street
London EC4A 1PQ (GB)

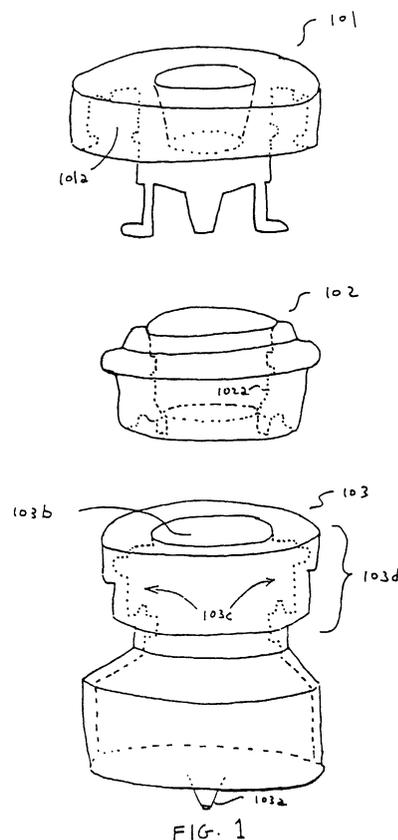
(30) Priority: **28.02.1997 US 808716**

(71) Applicant: **Py, Daniel**
Larchmont, New York 10538 (US)

(54) **System and method for mechanical closure of container openings**

(57) A mechanical lid or a plug (101) interacts with an opening (1036) of a pouch or a container (103), as well as with a rigid ring (102) placed inside the container (103) opening to provide a tight seal of the opening (1036). The mechanical plug (101) compresses both the outside of the opening (1036) and the inner face of the ring (102) placed inside the container opening (1036). The radial edge of the inner face of the mechanical plug (101) has an arch-shaped annular recess (101a) extending around the plug (101) such that the radial edge of the plug (101) is adapted to hug the perimeter of the container opening (1036). In addition, attached to the inner face of the mechanical plug (101) are two or more legs (1011) which extend perpendicular to the inner face of the mechanical plug (101) and engage the bottom of the rigid ring/radial groove combination. The outside surface of the neck region of the container opening (1036) and the interior surface of the annular recess of the mechanical plug (101) each has one or more protrusions (1013,1014,1015) which force the container material displaced by compression to be confined within a defined area, thereby ensuring the tightness of the seal for a prolonged period of time. The lower surface of the mechanical plug (101) is sloped downward in the direction of the centre, to which a plunger (1017) is attached for insertion into the liquid content of the container before the mechanical plug (101) is snapped into the container opening (1036), thereby substantially eliminating the residual air bubbles which may otherwise remain trapped between the surface of the liquid and the lower surface of the mechanical plug (101), which allows

airless filling of the container without the need for a vacuum condition.



EP 0 863 086 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 30 1238

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.6)
A	EP 0 537 920 A (UNILEVER PLC ;UNILEVER NV (NL)) 21 April 1993 * column 11, line 29 - column 12, line 17; figure 4 * ---	1,14,17	B65D41/18 B65D53/02
A	DE 603 165 C (SCHWEIGER) * the whole document * ---	1,14,17	
A	FR 1 089 047 A (FRANCO-SUISSE D'EMBOUITISSAGE) 14 March 1955 * the whole document * ---	1,14,17	
A	CH 424 512 A (BÜHLER) * the whole document * -----	1,14,17	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
BERLIN	19 February 1999	Olsson, B	
CATEGORY OF CITED DOCUMENTS		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	
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			

EPO FORM 1503 03 82 (P/MC01)

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

EP 98 30 1238

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-02-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0537920 A	21-04-1993	JP 2735441 B JP 5262364 A ZA 9207599 A	02-04-1998 12-10-1993 05-04-1994
DE 603165 C		NONE	
FR 1089047 A	14-03-1955	NONE	
CH 424512 A		NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82