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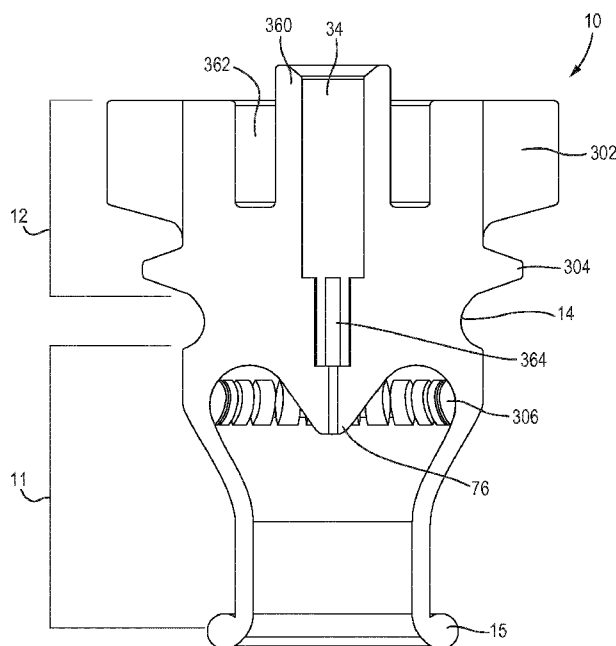
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(54) Title: AMPOULE CLOSURE

Fig. 34



(57) Abstract: A closure for an ampoule, the closure comprising: a cap portion arranged to engage with a broken neck of an opened ampoule; and a cylindrical skirt portion extending from the cap portion, the skirt portion being elastically deformable and being arranged to move from a first position in which it is at least partially folded back on itself to a second position in which it is unfolded and extends away from the cap portion. The closure can close off an opening such as that formed in an ampoule when the neck is snapped and the top removed. As the cap portion engages with the broken neck, it reduces the chances of users receiving lacerations from the sharp edges. The cap portion also seals the ampoule, preventing the contents from being spilled and/or wasted. The closure also provides a degree of impact protection, reinforcement and strengthening to the now weakened open end of the ampoule, e.g. in case the ampoule is dropped. The skirt portion not only provides a seal around the ampoule body by being in close contact therewith, but also holds the cap portion firmly against the broken rim of the open ampoule, thus holding the closure in place by means of the friction between the skirt portion and the outer surface of the ampoule body.



**Published:**

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**

25 October 2018 (25.10.2018)

# INTERNATIONAL SEARCH REPORT

International application No <b>PCT/EP2018/056775</b>
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A61J1/14 ADD. A61J1/06                      A61J1/20				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b>				
Minimum documentation searched (classification system followed by classification symbols) A61J				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	US 5 595 326 A (BOUGAMONT JEAN-LOUIS [FR] ET AL) 21 January 1997 (1997-01-21)  column 2, line 66 - column 5, line 5 figures 1-9	1, 2, 6-39, 49-55, 60-62		
A	----- US 2010/301089 A1 (MUELLER FRANK [AT]) 2 December 2010 (2010-12-02) paragraph [0043] - paragraph [0059] figures 1-10	1, 50, 60		
A	----- US 2015/329339 A1 (OBERLI JOEL [CH] ET AL) 19 November 2015 (2015-11-19) paragraph [0022] - paragraph [0045] figures 1-4 -----	1, 50, 60		
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
* Special categories of cited documents :  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;">                     "A" document defining the general state of the art which is not considered to be of particular relevance                      "E" earlier application or patent but published on or after the international filing date                      "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)                      "O" document referring to an oral disclosure, use, exhibition or other means                      "P" document published prior to the international filing date but later than the priority date claimed                 </td> <td style="width: 50%; border: none; vertical-align: top;">                     "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention                      "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone                      "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art                      "&amp;" document member of the same patent family                 </td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family			
Date of the actual completion of the international search	Date of mailing of the international search report			
21 June 2018	19/09/2018			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Schiffmann, Rudolf			

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2018/056775

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
  
1, 2, 6-39, 49-55, 60-62

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2, 6-39, 49-55, 60-62

A closure for an ampoule having a cap engaging the broken neck of the ampoule having a skirt extending from the cap, the skirt being elastically deformably to be folded back and unfolded and related methods (cl. 49-54)

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2. claims: 3-5

A closure for an ampoule having a cap comprising a circumferential groove as a skirt seat

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3. claims: 40-48

A closure for an ampoule having a cap engaging the broken neck of the ampoule having a skirt extending from the cap, the cap having a convex shape surface projecting inside the ampoule neck

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4. claims: 56-59

Packaging for an ampoule closure comprising two blisters

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2018/056775
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5595326	A	21-01-1997	AT 177973 T 15-04-1999
			DE 69508445 D1 29-04-1999
			DE 69508445 T2 28-10-1999
			DK 0662352 T3 11-10-1999
			EP 0662352 A1 12-07-1995
			ES 2129767 T3 16-06-1999
			FR 2714892 A1 13-07-1995
			US 5595326 A 21-01-1997
-----			
US 2010301089	A1	02-12-2010	EP 2256083 A1 01-12-2010
			US 2010301089 A1 02-12-2010
-----			
US 2015329339	A1	19-11-2015	AU 2013243887 A1 13-11-2014
			AU 2017219033 A1 14-09-2017
			CA 2869421 A1 10-10-2013
			CN 104220361 A 17-12-2014
			EP 2834185 A1 11-02-2015
			JP 6312652 B2 18-04-2018
			JP 2015512361 A 27-04-2015
			KR 20140142359 A 11-12-2014
			US 2015329339 A1 19-11-2015
			WO 2013151696 A1 10-10-2013
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