



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 645 521 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 158(3) EPC

(43) Date of publication:
12.04.2006 Bulletin 2006/15

(51) Int Cl.:
B65D 51/30 (1968.09)

(21) Application number: **04734269.6**

(86) International application number:
PCT/ES2004/000229

(22) Date of filing: **21.05.2004**

(87) International publication number:
WO 2005/002987 (13.01.2005 Gazette 2005/02)

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**

(72) Inventor: **MAYOR LOPEZ, Adela**
E-08185 LLI A DE VALL (Barcelona) (ES)

(30) Priority: **04.07.2003 ES 200301609 U**

(74) Representative: **Carpintero Lopez, Francisco et al**
Herrero & Asociados, S.L.,
Alcalá, 35
28014 Madrid (ES)

(71) Applicant: **Fabri-Plast S.A.**
08185 Lli A De Vall (Barcelona) (ES)

(54) **CAP COMPRISING RECEPTACLE FOR DESICCANT**

(57) Stopper with container for a desiccator for use in vessels basically comprising a main part (1) that integrates a body (2) and a desiccator container (3) obtained from a single injection mould, with a seal (4) independent

of the aforementioned elements provided with a mouth (5) that is inserted by pressure in the body (2) with the aid of a crown of uniformly spaced protrusions (6) inside the body (2), which delimit on the bottom a band (8) in which said mouth (5) is housed.

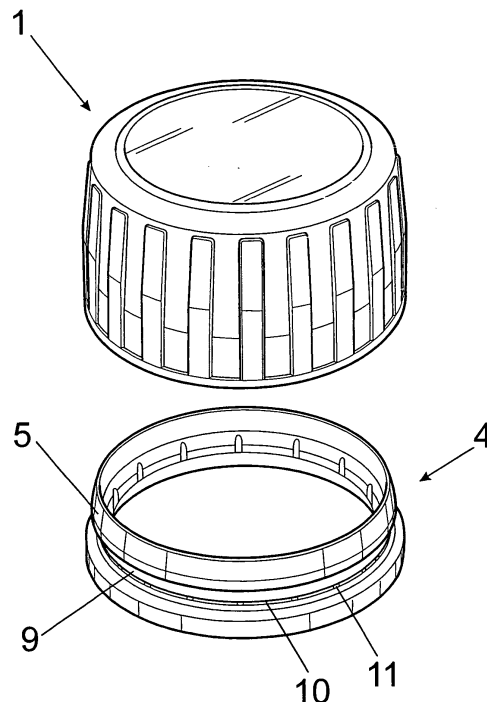


FIG.1

EP 1 645 521 A1

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a stopper of the type that incorporate a container with a desiccator, applicable in vessels generally used in pharmaceuticals, in which the desiccator prevents humidity from entering the vessel.

[0002] The object of the invention is a stopper comprised of two parts: a main part that integrates the body of the stopper and the container with the desiccator; and another part consisting of the safety seal. The two parts are independent and have means for simplifying their assembly, the main part being conceived with different shapes and heights for application in different vessels, yet maintaining the same diameter for attaching it to the same type of seal.

BACKGROUND OF THE INVENTION

[0003] Stoppers incorporating desiccators are preferably used in pharmaceutical applications to prevent humidity from entering the vessel. This is the case in vessels containing products in powder form, in which the humidity is absorbed by the desiccator preventing the powder product from compacting with time.

[0004] The desiccator is held in a container that is normally attached as an independent element in a housing established for such purpose in the body of the stopper. On another hand, the stopper is completed by a safety seal conceived to guarantee the tamper-proof conditions of the vessel.

[0005] Thus, the stopper generally comprises three independent parts: body, container and seal; which require three different moulds for manufacturing them with the corresponding cost implications, as well as requiring a proper assembly and fit for their correct inclusion in the vessel.

[0006] The holder of the present invention also holds Spanish Utility Model with application number 200300723, which proposes the use of a single mould to obtain a one-part stopper integrating the aforementioned components in order to reduce manufacturing costs. However, the use of this one-part stopper is limited to certain vessels, as when a stopper with a different height and shape is required for a different vessel an entirely new mould must be manufactured.

[0007] As the seals used in all stoppers are basically the same, as opposed to the stopper body which as an identification element of the stopper varies in design and height with the vessel in which it is used, the need arises to use a single mould for the seal and to change the body of the stopper with a container, maintaining the approach of minimising the moulds used to manufacture stoppers, which is the object of the invention described below.

DESCRIPTION OF THE INVENTION

[0008] The stopper with a container for a desiccator disclosed in this invention entirely fulfils the expectations described above, mainly comprising a stopper body comprising a container with a desiccator, preferably silica-gel, conceived as a single main part obtained from a mould with a shape according to the part to be obtained, and an independent seal obtained from a universal mould, on which the stopper body is coupled by pressure.

[0009] The seal conceived in this manner will be mass-produced, ensuring its use in any type of vessel on which will also be attached a main part with a variable shape and size but the same external diameter as the mouth of the seal.

[0010] Thus, the stopper comprises two parts, the main part consisting of the body and the container, being provided with means for coupling by pressure on the other part, which consists of the seal.

[0011] The main part incorporates an outer wall on which a thread is provided that matches the thread made in the neck of the vessel and an inner wall concentrically with the outer wall that internally defines a compartment that constitutes the container for the desiccator.

[0012] The means described for coupling the body on the seal consist of a crown of uniformly spaced protrusions on the inside and on the base of the outer wall, delimiting on the bottom a band in which is housed the upper mouth of the seal after it is inserted under pressure and the crown of protrusions has been overcome.

[0013] The seal, along the entire perimeter of its mouth, has a slight inwardly-converging slope that facilitates the gradual displacement of its outer face in contact with the protrusions during the assembly by pressure of the stopper body and seal, until overcoming them so that the mouth is left at the aforementioned band of the stopper body.

[0014] From said mouth, the seal is extended on the bottom by a wall interrupted by a horizontal weakened line in which uniformly distributed breakable points are disposed which, once broken by turning the stopper body with respect to the vessel seal, will break this seal.

DESCRIPTION OF THE DRAWINGS

[0015] To complete the description being made and in order to aid a better understanding of the characteristics of the invention, according to a preferred example of embodiment, a set of drawings is accompanied forming an integral part of the description where, for purposes of illustration only and in a non-limiting sense the following is shown:

Figure 1.- Shows an exploded view of the stopper object of this invention representing the main part composed of the body and container for desiccator and another part consisting of the seal.

Figure 2.- Shows a cross-section side view of the two parts before they are attached to each other.

Figure 3.- Shows a cross-section side view of the stopper with the two parts attached to each other. 5

Figure 4.- Shows a perspective view of the main part from below, showing the crown of protrusions of the stopper body. 10

PREFERRED EMBODIMENT OF THE INVENTION

[0016] The stopper with container for desiccator constituting the object of this invention is used to seal the vessel on which it is screwed, to make it tamper-proof and to prevent humidity from entering it, mainly consisting of a main part (1) comprised of a body (2) and a desiccator container (3) obtained from a single mould and another part consisting of an independent seal (4), which is provided with a mouth (5) that is inserted by pressure and is attached to the stopper body (2) with the aid of coupling means defined in the body (2). 15 20

[0017] The coupling means of the body (2) consist of a crown of uniformly spaced protrusions (6) inside and on the base of an external wall (7) of the body (2), which delimit on the bottom a band (8) in which the mouth (5) of the seal (4) is housed with a slightly converging slope after it is inserted by pressure overcoming the crown of protrusions (6). 25

[0018] Below the mouth (5) of the seal extends a wall (9) provided with a horizontal weakened line (10) with breakable points (11) that are broken when the seal of the vessel is broken. 30

35

Claims

1. Stopper with container for a desiccator essentially **characterised in that** it comprises a main part (1) that conforms a body (2) and a desiccator container (3) obtained from a single mould and another part consisting of an independent seal (4) provided with a mouth (5) that is inserted by pressure and is attached to the body (2) of the stopper with the aid of coupling means defined in the body (2). 40 45
2. Stopper with container for a desiccator according to claim 1, **characterised in that** the coupling means of the body (2) consist of a crown of uniformly spaced protrusions (6) inside and on the base of an external wall (7) of the body (2), which delimit on the bottom a band (8) in which the mouth (5) of the seal (4) is housed with a slightly converging slope after it is inserted by pressure overcoming the crown of protrusions (6). 50 55

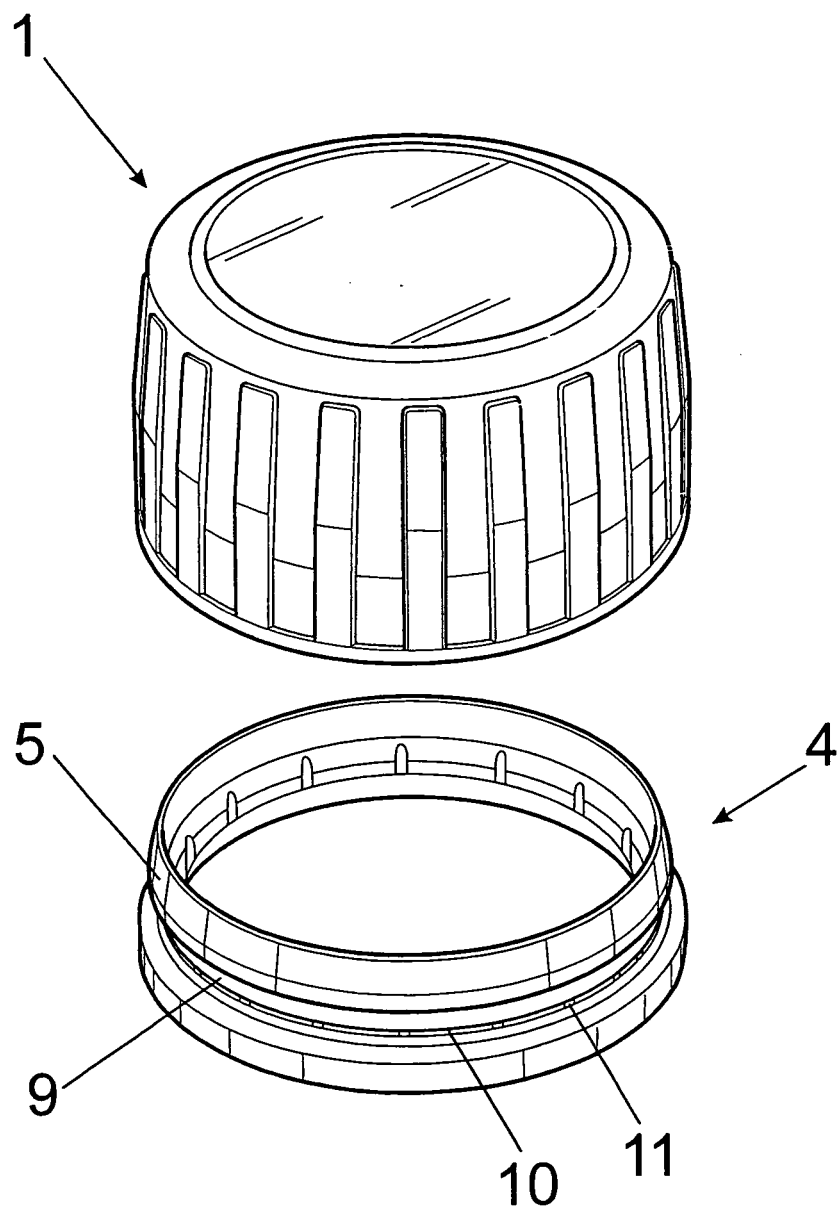
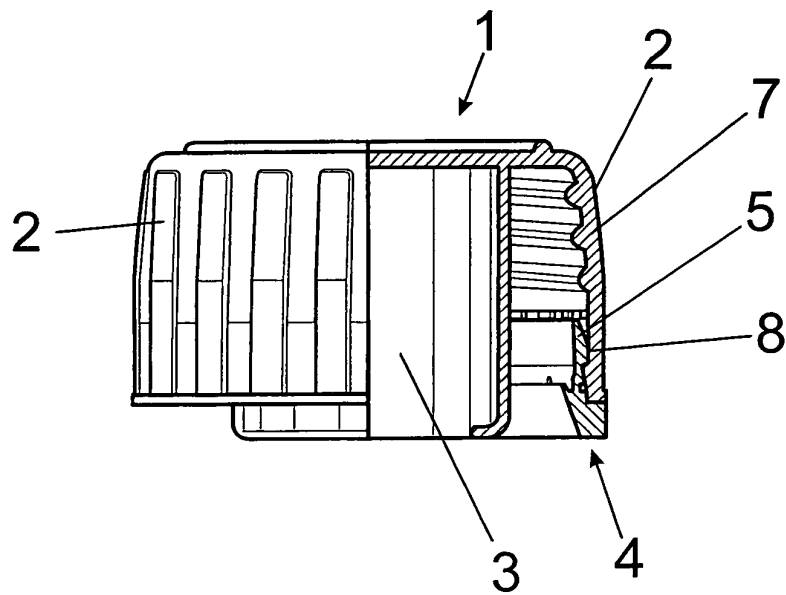
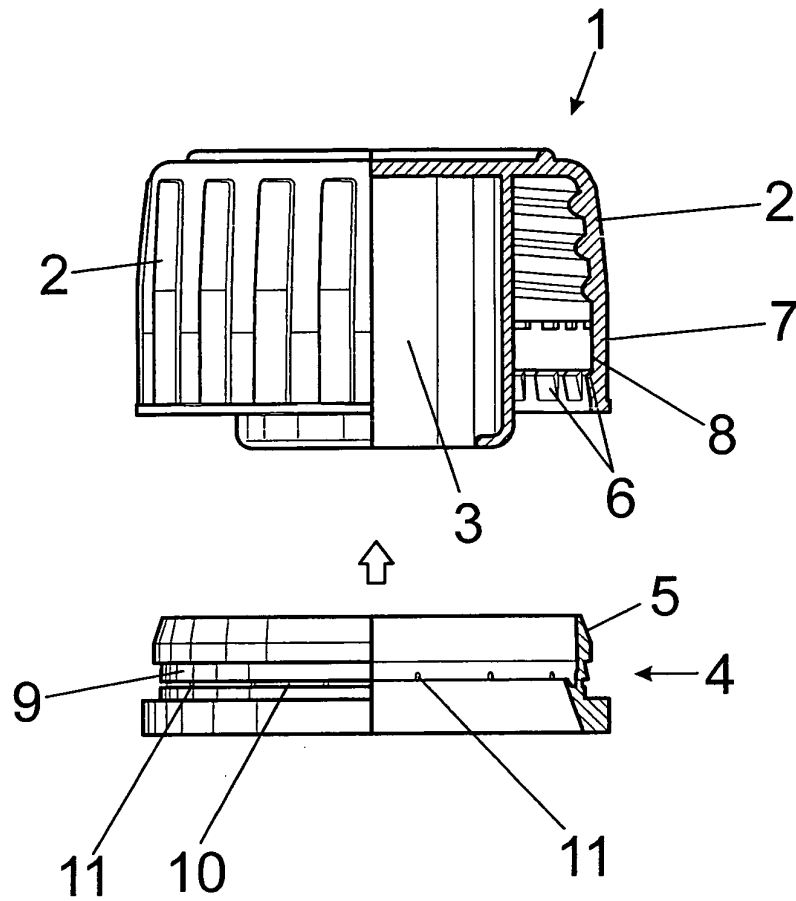


FIG.1



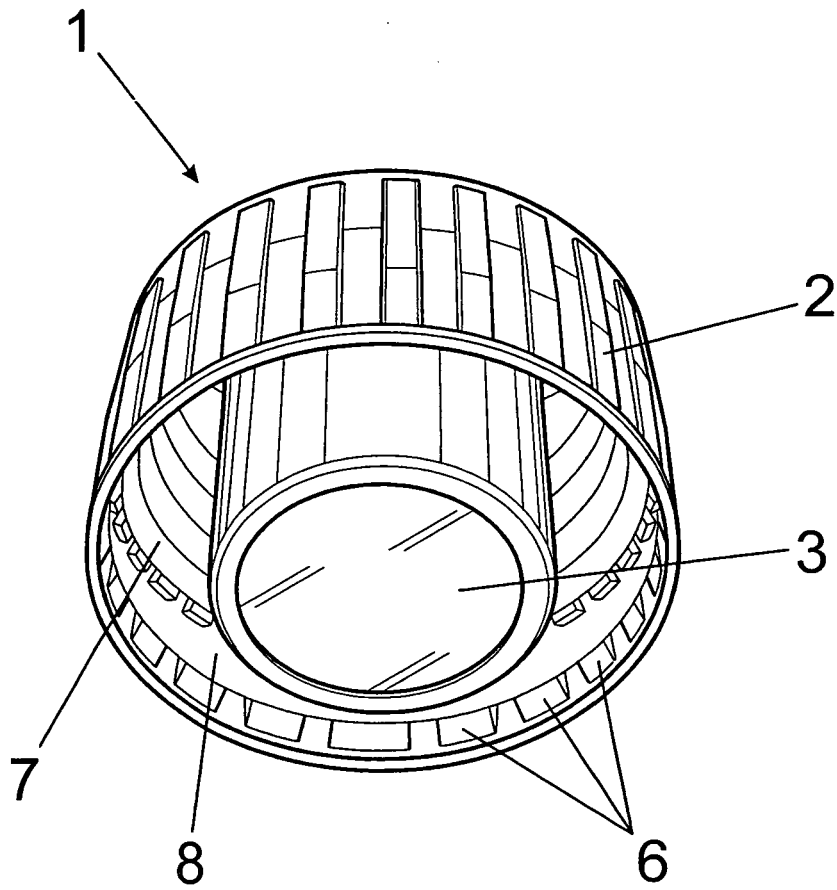


FIG.4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2004/000229

A. CLASSIFICATION OF SUBJECT MATTER		
Int.Cl.7 B65D 51/30 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Int.Cl.7 B65D51/30		
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)		
CIBEPAT,EPODOC,WPI		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	DE 19949688 A1 (Gaplast GmbH) 26.04.2001, the whole document	1 2
Y A	FR 2705646 A (Airsec Ind. S.A.) 02.12.1994, abstract; figures.	1 2
A	ES 2108673 T3 (Plaspaq S.A.) 16.08.2001, claim 1; figures.	1,2
A	US 4748735 A (Hayes) 07.06.1988, column 3, lines 4 - 17; figures	1
A	DE 19842073 A1 (Gaplast GmbH) 09.03.2000, the whole document	1
<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: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document 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
04 August 2004 (04.08.04)		08 September 2004 (08.09.04)
Name and mailing address of the ISA/ SPTO		Authorized officer
Facsimile No.		Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/ ES 2004/000229

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19949688 AC	26.04.2001	WO 0126973 A AU 1992601 A EP 20000982956 AT 262452 T DE 50005814 D	19.04.2001 23.04.2001 06.10.2000 15.04.2004 29.04.2004 29.04.2004
FR2705646 A B	02.12.1994	none	-----
US 4748735 A	07.06.1988	US 4694970 A WO 8707583 A EP 19870904194 CA 1288389 C DE 3788802 D DE 3788802 T	22.09.1987 17.12.1987 12.06.1987 03.09.1991 24.02.1994 11.05.1994 11.05.1994
DE 19842073 AC	09.03.2000	WO 0013986 A CA 2341423 A AU 6462099 A EP 1109728 A EP 19990952314 CN 1315916 T HU 0103474 A JP 2002524358 T BR 9913302 A	16.03.2000 16.03.2000 27.03.2000 27.06.2001 06.08.1999 03.10.2001 28.02.2002 06.08.2002 24.09.2002

Form PCT/ISA/210 (patent family annex) (July 1992)