BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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File Number: T 54/88 - 3.2.1

Application No.: 84 301 681.7

Publication No.: 0 120 644

Title of invention: Improved closure

Classification: B65D 55/02, B65D 41/34

D E C I S I O N
of 9 April 1991

Applicant: Johnsen & Jorgensen Plastics Ltd

Headword:

EPC Article 56

Keyword: "Inventive step (yes)"

Headnote

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 54/88 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 9 April 1991

Appellant : Johnsen & Jorgensen Plastics Ltd
Parkside House
Grinstead Road
London SE8 5AB (GB)

Representative : James Denmark
Bailey, Walsh & Co.
5 York Place
Leeds LS1 2SD (GB)

Decision under appeal : Decision of Examining Division 2.3.08.082 of the European Patent Office dated 30 September 1987 refusing European patent application No. 84 301 681.7 pursuant to Article 97(1) EPC.

Composition of the Board :

Chairman : F. Gumbel
Members : S. Crane
W. Moser

Summary of Facts and Submissions

I. European patent application No. 84 301 681.7, filed on 13 March 1984, with priority being claimed from United Kingdom application No. 8 306 980, dated 14 March 1983, was refused by a decision of the Examining Division dated 30 September 1987.

II. The reason given for the decision was that the subject-matter claimed lacked inventive step with respect to the state of the art known from

US-A-3 837 518 (D1)
GB-A-1 404 084 (D2)
EP-A-56 730 (D3)
FR-A-2 333 717 (D4)

and accordingly did not conform with the requirements of Articles 52(1) and 56 EPC.

III. A Notice of Appeal was filed against this decision on 20 November 1987, the appeal fee being paid one day later.

The Statement of Grounds of Appeal was filed on 20 January 1988.

IV. The Statement of Grounds of Appeal was accompanied by two new independent Claims 1 and 2 on the basis of which the Appellants requested grant of a patent. As an auxiliary request, the Appellants also asked for oral proceedings to be held.

In the Statement of Grounds the following arguments were brought forward:

None of the prior art documents cited in the contested decision disclosed a closure of the press-and-turn type which was both child-resistant and effectively tamper resistant.

The Appellants had developed a closure in which these two goals were satisfactorily achieved, the closure being applied to the container in a simple, effective way that departed from the conventional method for applying press-and-turn closures.

The combination of the features of the closure and the way it was applied to the container had led to significant commercial success, for which evidence was provided.

V. The Board issued communications pursuant to Article 110(2) EPC on 26 March 1990, 11 June 1990 and 2 October 1990 directed to the questions of inventive step, clarity (Article 84 EPC), addition of subject-matter (Article 123(2) EPC) and two-part form of claim (Rule 29(1) EPC). On the question of inventive step the Board pointed to the relevance of a further document which had been cited in the Search Report but not mentioned in the contested decision, namely

DE-A-3 041 230 (D5).

VI. In response to these communications the Appellants filed new application documents on the basis of which the grant of a patent was requested. Further to a telephone call from the Rapporteur on 27 March 1990 minor linguistic amendments of these documents were agreed.

Independent Claims 1 and 2 (the only claims) as filed on 1 December 1990 and amended according to the request of the Appellants read as follows:

1. "A method of applying a closure to a container in order to provide a child-resistant (CR) and tamper-resistant (TR) container and closure assembly wherein the container (8) has a body, an open mouth and an external screw thread (7) on the body below the mouth and wherein the closure (1) comprises an inner cap (2) with a depending skirt (5) provided with an internal screw thread (6) for engagement with the external screw thread (7) on the body, an outer cap (3) including a depending skirt (11), a tear band (13) connected to the skirt (11) by frangible means and drive means (18, 19) on the inner and outer caps (2, 3) of the closure (1) which are interengageable with one another by axial downward movement of the outer cap when in use to allow the closure (1) to be unscrewed from the container, engagement of the drive means (18, 19) being prevented by cooperation between the tear band (13) and the container body with each other while the tear band (13) is in position, characterised in that the inner and outer caps (2, 3) are initially applied to the container separately, the inner cap (2) first being screwed on to the container body like any ordinary screw cap and the outer cap (3) then being applied over the top of the inner cap by simple top pressure, an annular external projecting bead (17) being provided on the body below the screw thread (7) and the tear band (13) having an annular internal bead (16) which engages below the external bead (17) on the container body when the closure and the container are assembled so as to anchor the band (13) in position, whereby an assembly is provided in which if an attempt be made to unscrew the closure without first removing the band (13) the band (13) will be prevented from rising with the outer cap (3) and the frangible means will break so that the assembly is

both CR and TR when the band (13) is in operative position and is still CR after the frangible means has been broken."

2. "A method of applying a closure to a container in order to provide a child-resistant (CR) and tamper resistant (TR) container and closure assembly wherein the container (8) has a body, an open mouth and an external screw thread (7) on the body below the mouth and wherein the closure (1) comprises an inner cap (2) with a depending skirt (5) provided with an internal screw thread (6) for engagement with the external screw thread (7) on the body, an outer cap (3) including a depending skirt (11), a tear band (13) connected to the skirt by frangible means, drive means (18, 19) on the inner and outer caps (2, 3) of the closure (1) which are interengageable with one another by axial downward movement of the outer cap when in use to allow the closure (1) to be unscrewed from the container, and means for preventing engagement of the drive means (18, 19) while the tear band (13) is in position, characterised in that said engagement preventing means comprises an anchor band (12) disposed below the tear band (13) and connected thereto by frangible means, the anchor band being engageable with the container body to prevent downward movement thereof and in that the inner and outer cap (2, 3) are initially applied to the container separately, the inner cap (2) first being screwed on to the body like any ordinary screw cap and the outer cap (3) then being applied over the top of the inner cap by simple top pressure, an annular external projecting bead (17) being provided on the body below the screw thread (7) and the anchor band having an annular internal bead which engages below the external bead (17) on the container body when the closure and the container are assembled so as to anchor the anchor band (12) in position, whereby an assembly is provided in which if an attempt be made to unscrew the closure without first

removing the tear band (13) the anchor band (12) will be prevented from rising with the outer cap (3) and the frangible means between the bands (12, 13) will break so that the assembly is both CR and TR when the tear band (13) is in operative position and is still CR after the frangible means between the bands (12 and 13) has been broken."

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC; it is, therefore, admissible.

2. **Formal allowability of the amendments**

Claims 1 and 2 both relate to a method of applying a closure of particular construction to a container. In Claim 2 the closure construction is that specifically shown in the drawing wherein an anchor band is attached via a removable tear band to the depending skirt of the outer cap of the closure. In Claim 1 on the other hand the closure construction corresponds to the alternative mentioned in the description in which the anchor band is constituted by the tear band. The features of the claims concerning the construction of the closures correspond in essence to those of the originally filed claims; those features concerning the method of assembly are taken from page 6, line 10 to page 7, line 11 of the original description. Since the technical effects achieved by the invention depend both on the construction of the closure assembly and the way it is applied there can be no objection to the combination of features relating to both these aspects in the claims.

The amended claims, therefore, satisfy the requirements of Articles 84 and 123(2) EPC.

3. State of the art

3.1 The closest state of the art is shown in document D1, on which the respective preambles of Claims 1 and 2 are based.

This document relates to a child-resistant closure of the press-and-turn type which is also provided with an element intended to render the closure tamper-resistant, i.e. to make it extremely difficult to open the closure without revealing this fact. This element consists of a tear band attached to the bottom of the depending skirt of the outer cap of the closure, this tear band being located adjacent a shoulder portion of the container. The tear band, therefore, prevents the outer cap from being moved towards the inner cap to engage the drive means provided on the caps, which engagement can only be achieved after the tear band has been removed. The absence of the tear band, therefore, makes it evident that the closure has been opened. In those embodiments where the method of applying the closure to the container is mentioned this is achieved by the provision of further one-way drive means between the caps effective only in the tightening direction. Torque applied to the outer cap is, therefore, transferred to the inner cap to screw it onto the container.

3.2 Documents D2 and D3 relate to tamper-resistant closures provided with an anchor band and a tear band but which are not of the press-and-turn child-resistant type.

Document D4 on the other hand relates to a child-resistant closure of the press-and-turn type but which is not tamper-resistant. Furthermore, the press-and-turn

arrangement is different to that specified in the present claims. Thus, in this state of the art the outer and inner caps are, according to the most relevant embodiments, in screw-threaded engagement with each other and the inner cap has dogs which by pressing on the outer cap can be engaged with grooves in the container neck. Thus, on pressing and turning the outer cap, which is permanently attached to the neck of the container, the end walls of the caps move apart from each other to open a flow path for the contents of the container.

Document D5 relates to a child-resistant press-and-turn closure assembly of the same general configuration as specified in the present claims which closure assembly is furthermore tamper-resistant. The tamper-resistance is obtained by means of a tear band removably attached to the bottom of the depending skirt of the inner cap and engaging an external bead on the neck of the container. It is thus impossible to unscrew the inner cap without first removing the tear band. The outer and inner caps are provided with supplementary one-way interengaging drive means so that the inner cap can be screwed onto the container neck by torque applied to the outer cap. It is evident, therefore, that the closure is applied to the container as an assembled unit.

4. **Novelty**

The subject-matter of present Claims 1 and 2 is distinguished from the closest prior art disclosed in document D1 by the features of the respective characterising clauses of the claims. These are in essence, according to Claim 1, that the tear band has an annular internal bead that engages below an external bead on the container body and that the inner and outer caps

are applied separately to the container. Claim 2 differs from Claim 1 in that the simple tear band is replaced by the combination of a tear band and an anchor band.

The subject-matter of Claims 1 and 2 is, therefore, novel.

5. **Inventive step**

5.1 Complete tamper-resistance is not provided by the closure disclosed in document D1 for the following reasons: It might be possible by taking advantage of the resiliency of the outer cap either to bring the drive means of the caps into engagement without removing the tear band or by applying sufficient lateral gripping force to the depending skirt of the outer cap to provide sufficient frictional engagement between the caps to enable the inner cap to be unscrewed. Since the tear band only abuts against the shoulder the container and is not prevented against moving upwardly with the outer cap, the closure could be removed in this way without damaging the tear band and be subsequently replaced without leaving any evidence of tampering.

Furthermore, when the inner cap is screwed on via the outer cap by means of supplementary one-way drive means there is also the danger firstly that the torque applied to the inner cap might lie outside the range required and secondly that the tear band might be damaged. These dangers arise due to the fact that, unless the tolerances are very precisely controlled, the tear band may engage the shoulder of the container before the inner cap is fully screwed on, thus reducing the torque applied to the inner cap and subjecting the tear band to tearing forces.

In this respect, the Board notes that in contrast to the embodiments of Figures 1 to 5 and 6 and 7 the embodiments of Figures 8 to 10 and 11 to 13 of document D1 do not specifically disclose supplementary one-way clutch means for screwing the closure onto the container. On the other hand, it is apparent from the introductory description of document D1 at column 1, lines 15 to 27 that the closures involved are intended to be applied on the production line as an assembled unit by a simple screwing on operation. The most plausible explanation for this inconsistency is that for applying the closure on the production line the depending skirts of the caps are brought into frictional engagement in a manner analogous to that suggested above for unauthorised opening. Once the tear band has, in use, been removed then the press-and-turn drive means can also function to allow reclosing of the container by the user without any difficulty.

5.2 With regard to the closest state of the art according to document D1 the technical problem to be solved is to be seen in the provision of a closure system for a container in which the closure is so constructed that the container and closure assembly is child-resistant and completely tamper-resistant and the closure is applied to the container in a manner which is simple, reliable and does not endanger the effectiveness of the means providing child- and tamper-resistance.

5.3 This problem is solved according to the method of the present claims in that the tear band (Claim 1) or anchor band associated with the tear band (Claim 2) is engaged below a bead on the container body, whereby the tear band must, therefore, be removed or at least damaged before the closure can be opened, and in that the inner and outer caps are applied separately to the container. It is, therefore, unnecessary to provide supplementary means

acting between the caps to allow torque transfer from the outer cap to inner cap during application to the container; instead the inner cap is applied first in conventional manner like any screw cap and the outer cap is applied over the inner cap by simple top pressure. There is, therefore, no danger to the integrity of the tear band during the assembling operation. Furthermore, the torque applied to the inner screw cap can be accurately controlled.

5.4 None of the cited prior art documents contain any suggestion to apply a press-and-turn closure of the general configuration specified in the claims in two stages. By departing from the conventional technique of pre-assembling the outer and inner caps and applying them as a unit by torque applied to the outer cap, the claimed methods not only avoid the need for providing means to transfer this torque but also allow the inner cap to be applied with an accurately controlled degree of tightness. Furthermore, the annular internal bead on the tear band or anchor band associated with the tear band can easily be forced over the annular external bead on the container body as the outer cap is applied over the inner cap. The risk of damage to the tear band is, therefore, reduced in comparison with the situation where the closure is applied as an assembled unit, the tear band in that case possibly being subjected to tearing forces as indicated in point 5.1 above.

Furthermore, although the positive engagement of a container body and a tear band or an anchor band associated with the tear band is known in the art of tamper-resistant containers from documents D2, D3 and D5, this would not appear as an immediately obvious modification of the closure shown in document D1, where the tear band merely abuts the shoulder of the container,

since the diameter of the tear band is significantly greater than that of the container neck and would thus require interengaging bead configurations of large radial extent. In any case, the distinction of the claimed subject-matter over the closest state of the art does not lie solely in the provision of interengaging beads on the tear band or anchor band and the container body but in the combination of these features with the particular way in which the closure is applied to the container. As indicated above, these latter features have no counterpart in the state of the art.

The Board, therefore, comes to the conclusion that the subject-matter of Claims 1 and 2 cannot be derived in an obvious manner from the state of the art and accordingly constitutes a patentable invention (Articles 52(1) and 56 EPC).

6. Oral proceedings according to the auxiliary request of the Appellants were not necessary as their main request has been fully met.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division with the order to grant a patent on the basis of the following documents:

Claims: 1 and 2 filed on 1 December 1990, amended as agreed by telephone on 27 March 1991

Description: pages 1 to 3, 3a and 6 filed on
1 December 1990,
pages 2 and 3 amended as agreed by telephone
on 27 March 1991,
pages 4 and 5 filed on 13 August 1990

Drawings: sheet 1/1 as originally filed.

The Registrar: The Chairman:

S. Fabiani F. Gumbel