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Datasheet for the decision of 18 November 2016

Case Number: T 0377/14 - 3.3.09

Application Number: 08737168.8

Publication Number: 2155488

IPC: B32B27/08, B65D35/08

Language of the proceedings: EN

Title of invention:
COLLAPSIBLE TUBE CONTAINERS

Patent Proprietor:
Boddington IP Limited

Opponent:
Nordenia Deutschland Gronau GmbH

Headword:

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
Novelty - generic disclosure versus specific embodiment
Inventive step - no bonus effect

Decisions cited:
T 0344/89, T 0651/91, T 0936/96

Catchword:

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Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0377/14 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 18 November 2016

Appellant: (Opponent)	Nordenia Deutschland Gronau GmbH Jöbkesweg 11 48599 Gronau (DE)
Representative:	Lorenz, Bernd Ingo Thaddeus Andrejewski - Honke Patent- und Rechtsanwälte GbR An der Reichsbank 8 45127 Essen (DE)
Respondent: (Patent Proprietor)	Boddington IP Limited 33 Cavendish Square London W1G OPW (GB)
Representative:	Boult Wade Tennant Verulam Gardens 70 Gray's Inn Road London WC1X 8BT (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 22 January 2014 concerning maintenance of the European Patent No. 2155488 in amended form.**

Composition of the Board:

Chairman	W. Sieber
Members:	M. O. Müller
	D. Prietzel-Funk

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent against the interlocutory decision of the opposition division that European patent No. 2 155 488 as amended met the requirements of the EPC.

II. With the notice of opposition the opponent had requested revocation of the patent in its entirety on the ground under Article 100(a) EPC (lack of novelty and lack of inventive step).

The documents submitted during the opposition proceedings included:

E1: WO 01/87596 A1;

E2: WO 00/58076 A1;

E5: EP 0 321 172 A2;

E6: WO 2006/084580 A1; and

E7: J. Nentwig, "Kunststoff-Folien Herstellung - Eigenschaften - Anwendung", Carl Hanser Verlag München Wien 2006, pages 64 to 72.

III. The request found allowable by the opposition division was filed on 4 October 2013 as main request, containing independent claims 1, 6, 7 and 9 to 13:

"1. A collapsible tube container comprising a side-wall formed from a multilayer polymeric material produced as a blown film with no subsequent lamination step, the side-wall comprising a longitudinal weld or join, and wherein the multilayer polymeric material comprises a

thickness of between 150 and 350 microns, more preferably of between 200 and 300 microns."

"6. Use of a multilayer polymeric material produced as a blown film with no subsequent lamination step to manufacture a collapsible tube container comprising a side-seam weld or join, wherein the multilayer polymeric material comprises a thickness of between 150 and 350 microns, more preferably of between 200 and 300 microns."

"7. A method of forming a collapsible tube container comprising a side-seam weld or join, the method comprising the steps of:

taking at least one strip of a multilayer polymeric material produced as a blown film with no subsequent lamination step and having a thickness of between 150 and 350 microns, more preferably of between 200 and 300 microns;

forming the at least one strip into an elongated container shape with overlapping or abutting edges; and

welding or joining the edges together."

"9. Use of a collapsible tube container as claimed in any one of claims 1 to 5 for packaging personal care products or foodstuffs or toothpaste or toothpaste type products."

Even though claims 10 to 13 are in the format of independent claims, they cite all features of claim 1 (claims 10 and 12) or claim 7 (claims 11 and 13) and thus are actually dependent on one of these two claims.

IV. The opposition division's decision, in as far as relevant to the present decision, can be summarised as follows:

The subject-matter of the main request was novel over E1, E2 and E5, since these documents did not disclose the feature of claim 1 of a multilayer material being produced from a blown film with no subsequent lamination step.

The subject-matter of the main request was also inventive in view of the closest prior-art document E2 alone or in combination with E7. The same applied when starting from E1, E5 or E6 as the closest prior art.

V. This decision was appealed by the opponent (hereinafter: the appellant). The appellant requested that the decision under appeal be set aside and that the European patent be revoked.

VI. In its response, the proprietor (hereinafter: the respondent) requested that the appeal be dismissed.

VII. On 23 August 2016, the board issued its preliminary opinion.

VIII. On 18 November 2016, oral proceedings were held before the board. The parties maintained their requests filed during the written proceedings and did not submit any new requests.

IX. So far as relevant to the present decision, the appellant's arguments can be summarised as follows:

The claimed subject-matter lacked novelty over each of E1, E2 and E5.

E1 disclosed squeezable containers the sleeves of which were made from a multilayer polymeric material that was wound up into a roll configuration and thus had a longitudinal weld as claimed. This material was produced by coextrusion, which anticipated blown film coextrusion as required by claim 1. Furthermore, the material also had a thickness within the claimed range.

E2 disclosed a container with a longitudinal weld or join in its side wall. The container was made from a coextruded multilayer polymeric material. The thickness was in the claimed range and the term "coextruded" in E2 anticipated blown film coextrusion. In fact, blown film coextrusion was even explicitly disclosed in E2. In addition, the commercial nine-layer sheet structure disclosed on page 23 of E2 was also novelty-destroying.

E5 disclosed a tube made from a multilayer polymeric material produced by one-step coextrusion with no subsequent lamination. The thickness of the material overlapped with that claimed and the skilled person would deduce from E5 that the coextrusion was a blown film coextrusion.

The claimed subject-matter also lacked inventive step over E2 as the closest prior art.

The objective technical problem was the provision of an alternative way of producing a multilayer polymeric material to be used to form the container of E2. The problem of reducing distortions referred to by the respondent had to be disregarded, since it was an additional problem that constituted a mere bonus effect and since furthermore, it was not disclosed in the patent. The skilled person starting from E2 and looking for an alternative way to produce the multilayer polymeric material would use blown film coextrusion since he wanted to operate his equipment at full scale. He would thereby arrive at the claimed subject-matter in an obvious way.

The same applied starting from any of E1 or E5 as the closest prior art. Furthermore, the claimed subject-matter lacked inventive step in view of E6 or E6 in combination with E7.

X. So far as relevant to the present decision, the respondent's arguments can be summarised as follows:

The claimed subject-matter was novel over E1, since this document did not disclose blown film coextrusion, let alone any such coextrusion in combination with the claimed thickness. Coextrusion as disclosed in E1 in general did not anticipate blown film coextrusion since a generic term could not take away the novelty of a specific embodiment.

Novelty was also present in view of E2. This document disclosed various options for coextrusion and in particular did not disclose any blown film coextrusion in combination with the claimed thickness. Hence, in

order to arrive at the claimed subject-matter, at least a double selection was necessary.

Lastly, the claimed subject-matter was also novel over E5. This document disclosed a tube the multilayer polymeric material of which was produced by lamination, contrary to what was required by claim 1. The further embodiment of E5 shown in figure 5, where no lamination step was applied, was a sheet rather than a tube, was not produced by blown film coextrusion and did not have the thickness required by the claims.

The claimed subject-matter was inventive in view of E2 as the closest prior art. The problem to be solved was the reduction of distortions created in the longitudinal weld or join during the welding process. In sheet coextrusion through a slot die, the molecules were oriented mainly in the machine direction, leading to distortion upon the welding process, while in blown film coextrusion a high entropic state with many different orientations was created that did not give rise to such distortions. There was no indication in E2 or any of the other cited documents of such a problem, let alone of the claimed solution. The same applied when starting from E1 or E5 as the closest prior art.

Reasons for the Decision

1. Novelty

1.1 The appellant contested novelty of the claimed subject-matter in view of E1, E2 and E5.

1.2 E1 (the sentence bridging pages 5 and 6) discloses squeezable containers for a flowable product comprising a head and a sleeve. According to page 11, lines 1 to 7

of E1, the container sleeve is made from a multilayer web structure that is wound up into a roll configuration (page 11, lines 1 to 7). This multilayer web structure is produced either via extrusion lamination or coextruded sheet processes (page 11, lines 1 to 3).

1.2.1 The winding up of the multilayer web structure into a roll configuration implies that the opposing ends of the web structure's side wall are joined so that a container sleeve with a longitudinal join is formed. This corresponds to the feature of a side wall comprising a longitudinal weld or join in claim 1.

1.2.2 Producing the container sleeve by extrusion lamination, one of the two options disclosed in the passage on page 11, includes adhesion of the multilayer web structure with, and thus lamination onto, monolayer extruded or coextruded polymers (page 11, lines 4 to 6). Hence, at least if produced by extrusion lamination, the container sleeves are prepared by lamination, contrary to what claim 1 requires.

The second option disclosed in the passage on page 11 for the manufacture of the container sleeve is coextrusion. The board acknowledges that, in line with the appellant's argument, the generic term "coextrusion" covers blown film coextrusion, as required by claim 1. It is however established jurisprudence (see e.g. T 651/91, catchword and point 4.3) that a generic disclosure does not take away the novelty of a specific embodiment covered thereby.

Furthermore, for both alternatives the passage on page 11 is silent about the thickness of the multilayer

web structure, a further feature of the container of claim 1.

1.2.3 As regards the thickness, the appellant referred to examples 2 and 3 of E1.

Example 2 discloses a coextruded tube with a sleeve thickness of 250 to 500 microns. This range is not identical to but only overlaps with the range required by claim 1 (150 to 350 microns). Furthermore, like the passage on page 11, this example does not disclose any blown film coextrusion.

Example 3 discloses a sleeve with a thickness of 275 to 330 microns, which is within the range required by claim 1. However, this sleeve has a "laminated foilless structure" (title of the first table on page 24), contrary to the requirement of claim 1 that the multilayer material is produced with no subsequent lamination step. Furthermore, like the passage on page 11, this example does not disclose any blown film coextrusion.

1.2.4 Thus E1 nowhere discloses a container comprising a side wall formed from a multilayer material with the combined features of (i) this material being produced by blown film coextrusion (ii) with no subsequent lamination step and (iii) having a thickness of 150 to 350 microns.

Hence, the subject-matter of claim 1, and by the same token of all remaining claims, is novel over E1.

1.3 E2 discloses a collapsible container having a body wall in the form of an asymmetric multilayer structure (page 6, lines 14 to 15). A preferred asymmetric

multilayer structure is the multilayer sheet 10, from which a tubular body 30 with a lapped or butt-welded side seam 34 is formed by wrapping and joining the edges of the multilayer structure together by heat sealing or welding (page 7, lines 22 to 26 in conjunction with figure 2). The multilayer structure is produced by coextrusion (page 6, lines 22 to 32 and claims 1 and 58).

As regards the type of coextrusion, E2 discloses conventional sheet coextrusion with a single slot die (page 21, lines 14 to 18) or cast coextrusion (page 26, lines 4 to 5), which equally implies extrusion of a sheet. As not disputed by the appellant, this is different from blown film coextrusion as required by claim 1. E2 furthermore discloses coextrusion blow moulding, multilayer injection moulding and blow moulding (page 22, lines 7 to 8). All three methods imply that the container is directly formed by injecting material into a container mould rather than forming a sleeve and joining its ends by welding. Thus the resulting container will not have any longitudinal weld or join as required by claim 1. Lastly, E2 also discloses blown film coextrusion (page 22, lines 1 to 5: coextrusion of a tubular sleeve and page 26, lines 4 to 5: "blown coextruded"). A multilayer polymeric material as required by claim 1, i.e. produced as a blown film with no subsequent lamination step, is thus only one of various options disclosed in E2.

1.3.1 As regards the thickness, the appellant referred to examples 1 to 5 of E2. The multilayer sheet structure disclosed in example 1 has a thickness of 10 mils (back-reference to comparative example K), corresponding to 254 microns, and those of examples 2

to 5 have a thickness of 11.0 mils, corresponding to 279.4 microns. Both thicknesses are within the range of 150 to 350 microns required by claim 1. The multilayer sheet structures of all examples are prepared by coextrusion, but the exact type of coextrusion is not disclosed.

The appellant furthermore referred to page 5, lines 17 and 18, where two thickness ranges are disclosed, namely "10 mils or more" and "less than 10 mils", which both overlap with the range as defined in claim 1. This passage too refers to coextruded multilayer sheet structures and does not disclose the type of coextrusion.

1.3.2 Consequently, at least a double selection is necessary in order to arrive at the subject-matter of claim 1, namely the selection of, firstly, blown film coextrusion from the various coextrusion options disclosed in E2 and, secondly, the specific thickness required by claim 1. There is no pointer in E2 for this double selection.

1.3.3 In an alternative attack, the appellant cited the commercial nine-layer sheet structure "OF" disclosed on page 23 of E2 as novelty-destroying. However, E2 does not disclose how this sheet structure is prepared. It is in particular not disclosed that it is a blown film produced with no subsequent lamination step, as required by claim 1. Therefore, also this attack must fail.

1.3.4 Consequently, the subject-matter of claim 1, and by the same token of all remaining claims, is novel over E2.

1.4 E5 refers to multiple sheet materials, packages and a method of making such packages (page 2, line 1). It relates in particular to lap seamed tubes (page 2, lines 5 and 6). These tubes are fabricated from sheet materials by folding them onto each other in a tubular configuration wherein an upper surface of an underlying layer is in facing contact with a lower surface of an overlying layer and by heating the sheet material such that the upper surface of the underlying layer is bonded to the lower surface of the overlying layer (page 4, lines 2 to 15). E5 thus discloses the feature of claim 1 of a side wall comprising a longitudinal weld or join.

The multilayer sheet of E5 disclosed in figure 1 represents one embodiment of E5 and is produced by first manufacturing a five-layer sub-structure by e.g. blow tubular coextrusion and then assembling it with the further layers of the sheet material by way of lamination (page 7, lines 4 to 10, page 18, lines 17 to 28). Hence, contrary to what claim 1 requires, the sheet material from which the tube in figure 1 of E5 is formed is not produced without any subsequent lamination step. This is in fact confirmed by E5 itself which states on page 18, line 18 that the sheet material "requires some laminating processing".

E5 discloses another embodiment depicted in figure 5, namely a multilayer sheet produced in a one-step coextrusion process (page 19, lines 21 to 25), i.e. without any subsequent lamination step. However the type of coextrusion is not disclosed for this embodiment. Furthermore, it is not directly and unambiguously derivable from E5 that the specific multilayer sheet of figure 5 is transformed into a tube or container, let alone one with a longitudinal weld or

join as required by claim 1. Lastly, the thickness of the specific multilayer sheet of figure 5 is not disclosed.

1.4.1 In view of the above, the subject-matter of claim 1, and by the same token of all remaining claims, is novel over E5.

2. Inventive step

2.1 The patent concerns collapsible tube containers formed from blown film multilayer polymeric materials (page 1, lines 3 to 4 and claim 1). It addresses *inter alia* the issue that when the multilayer polymeric material is processed to make these containers, competing forces cause distortion or ovality in the multilayer polymeric material and can detrimentally affect the forming of the tube (page 2, lines 50 to 53).

2.1.1 Like the patent, E2 refers to collapsible dispensing containers, e.g. tubes, for packaging food, toothpaste or cosmetic products (page 1, lines 11 to 13). Furthermore, again like the patent, E2 is directed to the problem of ovality (page 3, lines 24 to 29). Therefore, in line with the decision of the opposition division and the arguments of both parties, E2 can be considered to represent the closest prior art.

As set out above, E2 does not disclose the feature of claim 1 of a multilayer polymeric material, produced as a blown film with no subsequent lamination step, in combination with the thickness required by this claim.

2.1.2 The respondent explained that the objective problem to be solved in view of E2 was the reduction of

distortions created in the longitudinal weld or join during the welding process.

2.1.3 As a solution to this problem, the invention proposes the collapsible tube container of claim 1 with a side wall formed from a multilayer polymeric material, the side wall comprising a longitudinal weld or join and the multilayer polymeric material having a thickness of between 150 and 350 microns, characterised in that the multilayer polymeric material is produced as a blown film with no subsequent lamination step.

2.1.4 It needs to be examined whether this problem has been credibly solved over E2.

As explained by the respondent, in sheet coextrusion through a slot die the material to be extruded expands, and molecules are thereby oriented, exclusively in the direction in which the material is pushed through the slot die. Hence, there is orientation mainly only in one direction, namely the machine direction. Upon cooling, this orientation is locked. Upon subsequent reheating during welding of the sheet into a container, the molecular orientations relax and revert to their original shape. Thereby, on a macroscopic level, a stress in one direction is created that distorts the weld or join of the container.

In contrast to sheet coextrusion, in blown film coextrusion the material to be extruded is not only pushed through the die (in this case annular) and thus oriented in the machine direction but is additionally blown and thus expanded and oriented in directions perpendicular to the machine direction. Thereby, a high entropic state is created in which molecules are oriented in various different directions. When the

sheet is reheated during welding, relaxation accordingly occurs in many different directions, thereby creating stresses that partly offset each other. On a macroscopic level, there will therefore be less stress and thus less distortion.

It is therefore credible that the problem of reducing distortions created in the longitudinal weld or join during the welding process is indeed solved. This thus constitutes the objective technical problem.

2.1.5 The appellant argued that this problem was not disclosed in the patent and thus could not be taken into account for inventive step.

The board does not agree. The patent (page 2, lines 49 to 53 and page 4, lines 48 to 54) explicitly refers to the processing of a multilayer material with different individualised molecular orientation profiles and stress patterns to form a collapsible tube container. It mentions the problem that some of these orientation profiles or stresses are relieved during processing, causing distortion which detrimentally affects the forming of the tube. The resulting tubes can suffer from ovality and other distortions, which can ultimately compromise the structural integrity of the tube. The same disclosure is present on page 3, lines 15 to 20 and page 9, lines 5 to 15 of the application as filed.

The present problem of reducing distortions created in the longitudinal weld or join during the welding process is thus at the very least derivable from the application as filed. In this connection, the problem does not have to be explicitly disclosed in the

application as filed; it suffices if it is foreshadowed therein (T 344/89, point 5.3.1).

2.1.6 The appellant furthermore argued that the objective technical problem was just the provision of an alternative way of producing the multilayer polymeric material to be used to form the container. A skilled person having blown film coextrusion equipment at his disposal would aim to operate it at full capacity. When looking for an alternative method of production, he would therefore use his blown film coextrusion equipment and would thus arrive at the claimed subject-manner in an obvious way. The problem referred to by the respondent and the effect related thereto (reduction of distortions) was an additional problem that constituted a mere bonus effect. This problem should therefore not be taken into account. The appellant referred in this respect to T 936/96.

The board does not agree with the appellant's argument. It is established jurisprudence that the patent proprietor (in the present case the respondent) can rely on a technical effect in formulating the objective technical problem, if it is proven to have been credibly obtained by the distinguishing feature(s). Only if this is not the case can the problem be reformulated in a less ambitious way as the provision of an alternative. Arguing the other way round, like the appellant in the present case, and saying that the provision of an alternative is obvious and that therefore any effect has to be disregarded as being a mere bonus effect, would turn the problem-and-solution approach on its head, and thus is not permissible. The cited decision T 936/96 is not relevant; it concerns a different question, namely whether, starting from a technical problem defined in the patent, an additional

problem invoked by the proprietor and based on new experimental evidence qualifies merely as a bonus effect.

2.1.7 Since the appellant's arguments are thus not convincing, the objective technical problem remains reducing distortions created in the longitudinal weld or join during the welding process.

E2 does not address this problem. It rather refers to the problem of curling of multilayer sheets and any ovality caused thereby in the resulting tubes. Curling in E2 refers to the fact that the multilayer sheet does not lie flat on a flat surface but curls upward from the surface (page 3, lines 12 to 14). Hence, curling in E2 is present already before the welding process and does not relate to any stresses and thus problems caused during this process.

Furthermore, E2 does not indicate that the problem of reducing distortions created in the longitudinal weld or join during the welding process can be solved by applying a multilayer sheet that has been produced by blown film coextrusion.

In addition, none of the other cited documents E1, E5, E6 or E7 either addresses this problem or indicates its solution.

2.1.8 In a further attack starting from E2, the appellant argued that it would have been obvious to produce the commercial collapsible tube disclosed on page 23 of E2 by blown film coextrusion. However, in the same way as for the embodiments of E2 discussed above, also for this commercial embodiment E2 neither addresses the problem to be solved nor suggests its solution.

Therefore, the appellant's further attack must fail as well.

2.1.9 Therefore, the subject-matter of claim 1, and by the same token of all remaining claims, is inventive in view of E2 as the closest prior art.

2.2 The appellant has considered also E1 and E5 as the closest prior art. However, like E2, these two documents do not disclose a multilayer polymeric material produced as a blown film with no subsequent lamination step and having a thickness as required by claim 1. Therefore, for the same reasons as given above with regard to E2, the claimed subject-matter is inventive when starting from either of E1 or E5 as the closest prior art.

2.3 When discussing inventive step in the written proceedings, the appellant mentioned in passing E6 and a combination of E6 with E7, without however providing any arguments. As set out in the board's preliminary opinion (point 3.1), E6 is less relevant than E2 as the closest prior art. This not having been contested by the appellant in the subsequent proceedings, inventive step in view of E6 alone or in combination with E7 can be acknowledged as well.

3. Since the appealed decision was correct the appeal is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Cañueto Carbajo W. Sieber

Decision electronically authenticated