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Datasheet for the decision of 9 August 2016

Case Number: T 1686/12 - 3.2.07

Application Number: 06111411.2

Publication Number: 1837288

IPC: B65D51/20, B65D53/04

Language of the proceedings: EN

Title of invention:
Vessel closing laminate

Patent Proprietor:
Selig Sealing Products, Inc.

Opponent:
Alfelder Kunststoffwerke Herm. Meyer GmbH

Headword:

Relevant legal provisions:
EPC Art. 84, 56

Keyword:
Claims - clarity (yes)
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 1686/12 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 9 August 2016

Appellant: (Patent Proprietor)	Selig Sealing Products, Inc. 342 East Wabash Street Forrest, IL 61741 (US)
Representative:	Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES (GB)
Respondent: (Opponent)	Alfelder Kunststoffwerke Herm. Meyer GmbH Hildesheimer Strasse 78 31061 Alfeld/ Leine (DE)
Representative:	Einsel, Martin Patentanwälte Einsel & Kollegen Jasperallee 1a 38102 Braunschweig (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 21 May 2012 concerning maintenance of the European Patent No. 1837288 in amended form.**

Composition of the Board:

Chairman	H. Meinders
Members:	G. Patton
	C. Brandt

Summary of Facts and Submissions

I. The patent proprietor (appellant) lodged an appeal against the decision to maintain the European patent No. 1 837 288 in amended form.

The opposition had been filed against the patent as a whole and was based on Article 100(a) EPC (lack of novelty and lack of inventive step).

The Opposition Division held that the subject-matters of the claims 1 of the main request (patent as granted) and of the then first and second auxiliary requests were lacking inventive step and that none of the raised grounds for opposition prejudiced the maintenance of the patent in accordance with the then third auxiliary request.

II. With its statement setting out the grounds of appeal, the appellant requested that the decision be set aside and the patent maintained according to the main request (patent as granted) or, alternatively, according to one of the first and second auxiliary requests filed therewith, subsidiarily that oral proceedings be held.

The opponent (respondent) requested that the appeal be dismissed, subsidiarily that oral proceedings be held.

III. The Board provided the parties with its preliminary non-binding opinion annexed to the summons for oral proceedings that the subject-matters of the claims 1 of all requests appeared to lack inventive step.

In reaction, the appellant filed a third auxiliary request with its letter dated 11 July 2016.

At the oral proceedings held on 9 August 2016, after having discussed inventive step of the subject-matters of the claims 1 of the main request and the first and second auxiliary requests, the appellant filed a new main (and sole) request to replace all requests on file.

The present decision was announced at the end of the oral proceedings.

IV. The documents of the opposition proceedings of relevance for the present decision are the following:

D1: US-A-2003/0196418;
D2: DE 91 08 868 U; and
D3: EP-B-0 717 710.

V. The appellant requested that the decision be set aside and the patent be maintained according to the new main request (claims 1 to 17) as filed during the oral proceedings on 9 August 2016.

VI. The respondent requested that the appeal be dismissed.

VII. Claim 1 of the main request reads as follows (in bold the amendments with respect to claim 1 of the patent as granted; deletions in strikethrough)

"A **container fitted with a screw cap in which is positioned a vessel closing assembly cut from a** vessel closing laminate~~ (1)~~ **, said vessel laminate** comprising: a seal laminate~~ (3)~~ comprising a bottom subassembly~~ (4, 5)~~ of layers including a foil layer~~(5);~~ **and bottom food contact layers that are induction heat sealable**; and a seal substrate attached to the uppermost layer of the bottom subassembly of layers wherein the seal substrate

has a top plastics material layer ~~(10)~~ and further includes a free tab ~~(50)~~ lying wholly within the circumference of the seal;
a wax layer ~~(11)~~ on top of the plastics material layer ~~(10)~~ of the seal substrate; and
an absorbent liner ~~(12)~~ adhered to the plastics material layer ~~(10)~~ of the seal substrate by means of the wax layer ~~(11)~~, characterized in that the said seal substrate has a bottom foam layer ~~(7)~~ **and in that in the vessel closing laminate the wax layer has a coatweight in the range from 4 to 18g m^{-2}, wherein the bottom sub-assembly of layers of the vessel closing assembly have been sealed to the mouth of the container by induction heating and the wax layer has been absorbed by the absorbent liner.**"

Taking into consideration that the patent proprietor is the sole appellant and that claims 11-17 correspond to claims 1-7 as maintained by the Opposition Division, said claims 11-17 need not be considered in the present decision in view of the prohibition of *reformatio in peius*. It is hence not necessary to recite the wording of independent method claim 11.

VIII. The appellant argued essentially as follows:

Amendments

Claim 1 is drafted as a product-by-process claim. In the final claimed product the wax layer is no longer present but it has to be mentioned for the vessel closing laminate which is an intermediate product. There is no inconsistency within the claim and, hence, the requirements of Article 84 EPC are fulfilled.

Inventive step

The distinguishing features of claim 1 vis-à-vis the closest prior art D1 are the following:

i) the vessel laminate comprises a **wax layer** instead of a release layer (11) of nitro-cellulose or of a silicone compound and a layer (12) of low density polyethylene LDPE;
ii) the wax layer having a coatweight in the range from **4 to 18 g.m^{-2}**;

and after sealing to the mouth of the container by induction heating:

iii) said wax layer has been **absorbed** by the absorbent liner.

In view of their synergetic technical effect the problem to be solved is to provide a vessel closing laminate having a seal and a liner that are initially adhered together but released from one another after sealing the vessel closing laminate to the container by induction heating.

None of the available prior art is concerned with the problem and discloses the claimed solution so that their teaching in combination with D1 could not lead to the subject-matter of claim 1. D2 even teaches the contrary since a wax layer has to remain between the seal and liner to provide a tearing effect. There is no evidence that the claimed solution belongs to the skilled person's common general knowledge. An inventive step is hence to be acknowledged.

IX. The respondent argued essentially as follows:

Amendments

It is unclear whether the wax layer is present or not in the final product of claim 1. Such an inconsistency within the claim leads to unclarity.

Inventive step

The skilled person would immediately think of wax when reading about the release layer in the closest prior art D1. In any case, wax is an obvious alternative to the adhesive layer of D1 in view of either the disclosure of D2 or D3, or the skilled person's common general knowledge (feature i). After a bit of trial and error the skilled person would come up with the claimed coatweight for the wax layer (feature ii). He would then arrive at the claimed subject-matter since the wax layer would inevitably (or at least could) be absorbed by the adjacent cardboard in D1 (feature iii). As a result, an inventive step cannot be acknowledged.

Reasons for the Decision

1. *Amendments*

1.1 Claim 1 is based on original claims 1, 5, 7, 11 and 14 and restricts the scope of claim 1 of the patent as granted (combination of claims 1, 5, 7, 11 and 14 of the patent as granted).

The other dependent claims 2-10 are based on original claims 2, 3, 4, 6, 8, 9, 10, 12 and 13, respectively.

Claims 11-17 correspond to claims 1-7 as maintained by the Opposition Division and cannot be the subject of reviewed examination for any amendments.

Therefore, the requirements of Articles 123(2) and (3) EPC are fulfilled. This has not been contested by the respondent.

1.2 At the oral proceedings the respondent argued that it would not be clear in claim 1 whether the wax layer would actually be present or not in the claimed end product. For the respondent, a wax layer appears to be present in the vessel laminate ("comprising:...a wax layer") while it is also mentioned having been absorbed ("the wax layer has been absorbed by the absorbent liner"). Such an inconsistency within the claim would render said claim unclear (Article 84 EPC).

The Board cannot share this view for the following reasons as put forward by the appellant. Claim 1 is construed as a product-by-process claim, including process steps, e.g induction heating, to achieve the claimed product, i.e. a container fitted with a screw cap in which is positioned a vessel closing assembly. In the final claimed product the wax is no longer present as a layer since it has been totally absorbed by the liner due to the induction heating. In the process to achieve this, the vessel laminate is an intermediate product which needs to comprise such a wax layer. This is explicit from claim 1 so that there is no inconsistency. Thus, the requirements of Article 84 EPC are fulfilled.

2. *Novelty*

The subject-matter of claim 1 is novel since none of the available prior art discloses in combination all the features of claim 1. This has not been contested by the respondent.

3. *Inventive step*

The respondent contests the inventive step of the subject-matter of claim 1 starting from D1 as closest prior art and combining it with the teaching of D2 and/or the skilled person's common general knowledge, possibly also taking into account the teaching of D3.

3.1 Closest prior art

The Board shares the parties' view that D1 can be regarded as the closest prior art. As a matter of fact, like claim 1, D1 lies in the technical field of a container fitted with a screw cap in which is positioned a one-component seal and liner having a free tab lying wholly within the circumference of the seal (contested patent, claims 1, 11 and 14; D1, paragraph [5] and claim 1). For ease of positioning in the cap, the seal and the liner are temporarily kept together.

3.2 Disclosure of D1

Document D1 discloses a container ("bottle" 30) fitted with a screw cap (20) in which is positioned a vessel closing assembly ("one-component liner and seal" 1) cut from a vessel closing laminate, said vessel laminate comprising:

a seal laminate ("seal portion" 3) comprising a bottom subassembly ("hot melt adhesive layer" 4, "aluminium foil layer" 5) of layers including a foil layer ("aluminium foil layer" 5) and bottom food contact layers (4, 5) that are induction heat sealable; and a seal substrate attached to the uppermost layer of the bottom subassembly of layers (4, 5) wherein the seal substrate has a top plastics material layer ("polyethylene terephthalate layer" 10) and further includes a free tab (8) lying wholly within the circumference of the seal;

a release layer (11) of nitro-cellulose (e.g. cellulose acetate proponiate CAP) or of a silicone compound and a layer of low density polyethylene LDPE (12) on top of the plastics material layer (10) of the seal substrate; and

an absorbent liner ("cardboard" 13) adhered to the plastics material layer (10) of the seal substrate by means of the layers (11, 12), the said seal substrate having a bottom foam layer (7),

wherein the bottom sub-assembly of layers (4, 5) of the vessel closing assembly (1) have been sealed to the mouth of the container (30) by induction heating (paragraphs [8], [48]-[50] and [52]; claims; figures 3 and 4).

3.3 As a consequence, the only distinguishing features of claim 1 vis-à-vis D1 are that:

i) the vessel laminate comprises a **wax layer** instead of the release layer (11) of nitro-cellulose or of a silicone compound and the layer (12) of low density polyethylene LDPE of D1;

ii) the wax layer having a coatweight in the range from **4 to 18 g.m^{-2}**;

and that after sealing to the mouth of the container by induction heating:

iii) said wax layer has been **absorbed** by the absorbent liner, i.e. totally absorbed.

3.4 The respondent considers that the skilled person reading about an adhesion system with a release layer as in D1 (layers 11 and 12) would immediately think of wax in the first place. Therefore, this feature (wax layer) would practically be implicit in the disclosure of D1.

The Board cannot share this view since D1 neither discloses explicitly, nor implicitly, nor suggests wax. Neither nitrocellulose (CAP) or the silicone compound for the release layer (11) nor LDPE for the layer (12) can be assimilated to wax (impugned decision, point II. 1). Hence, this feature is unambiguously a distinguishing feature of claim 1 over the disclosure of D1.

3.5 Contrary to the appellant's view there is no fault in the impugned decision with regard to an alleged failure not to take into account that the presence of a foam would be optional, i.e. not essential in D1. As a matter of fact, as argued by the respondent, D1 explicitly discloses the use of a foam (7) in the embodiments of figures 1 and 2 similarly to the claimed subject-matter. Therefore, this feature cannot be regarded as a distinguishing feature over D1.

3.6 Technical effect(s)

The distinguishing features have the synergetic effects that, on the one hand, the wax ensures that the seal and liner remain adhered together during the processing steps of the vessel closing assembly till it is fitted into the screw cap and, on the other hand, the wax is completely absorbed in the absorbent liner on induction heating so that it is no longer present as a layer between the seal and the liner (contested patent, paragraphs [24] and [26]). Hence, after sealing of the vessel closing assembly to the mouth of the container, the wax no longer provides adhesion between the seal and the liner, contrary to the very aim of D1 to maintain such adhesive bond between the liner and the seal also after induction heating (paragraph [24]). As a result, contrary to the claimed product, tearing is still required in D1 in order to separate the seal and the liner on opening.

3.7 Problem to be solved

As a consequence, the problem to be solved can be regarded as to provide a vessel closing laminate having a seal and a liner that are initially adhered together but are released from one another after sealing to the container by induction heating.

In view of the technical effects as mentioned under point 3.6 above, indeed the problem to be solved can no longer be regarded as to merely provide an alternative adhesion system in the one-component seal and liner of D1. The impugned decision, point II.1.2, II.2.2 and II. 3.2 and the provisional opinion of the Board in the annex to the summons thus no longer apply.

3.8 Obviousness

The skilled person will certainly come across D2 which lies in the same technical field as that of D1 and the contested patent of a container fitted with a screw cap in which is positioned a one-component seal and liner having a free tab lying wholly within the circumference of the seal for a container fitted with a screw cap (page 1; claim 1).

Document D2 discloses a vessel closing laminate comprising (page 6, line 4 to page 7, line 10; figures):

a seal laminate ("Membranfolie") comprising a bottom subassembly ("Heißsiegelschicht" 6; "Metallscheibe" 3) of layers including a foil layer ("Metallscheibe" 3); and a seal substrate attached to the uppermost layer of the bottom subassembly of layers wherein the seal substrate has a top plastics material layer ("Kunststofffolie" 5) and further includes a free tab ("freigehaltener Randbereich" 10) lying wholly within the circumference of the seal;

a wax layer ("Verbindungsschicht" 9) on top of the plastics material layer (5) of the seal substrate; and

an absorbent liner ("Kartonscheibe" 8) adhered to the plastics material layer (5) of the seal substrate by means of the wax layer (9).

The wax layer in the one-component seal and liner of D2 enables to release the liner ("Sekundärdichtung") from the seal ("Membranfolie", "Folienmenbran") on opening ("Die Haftung ... ist so gering"), the liner remaining

in the cap and the seal adhered to the neck of the container (page 6, lines 9-17) by heat sealing.

3.9 As a consequence, the Board shares the respondent's opinion that in view of D2, possibly also in view of D3 which also discloses a wax layer (claim 3) in a vessel closing assembly, or in view of his common general knowledge, the skilled person would indeed consider wax as a possible alternative adhesion system in the one-component seal and liner of D1.

3.10 However, none of the available documents D1, D2 or D3 is concerned with the above problem (see point 3.7 above) and discloses the claimed solution, in particular absorption of the wax layer by the absorbent liner.

Regarding D2, the Board shares the appellant's view that, contrary to the claimed invention, it is clear that the wax layer (9) is not (fully) absorbed by the cardboard (8) since tearing is mandatory for separating the liner from the seal, i.e. adhesion exists to some extent (page 6, lines 8-14: "Abreißen"). Thus, D2 implicitly teaches that a sufficient amount of wax remains as a separate layer between the liner and the seal after the vessel closing assembly has been sealed to the mouth of the container by induction heating. Consequently, D2 does not disclose the claimed solution so that the combination of its teaching with D1 would not lead to the claimed subject-matter.

Regarding D3, it is uncontested by the respondent that neither induction heating nor absorption of the wax layer by an adjacent layer is disclosed. As a matter of fact, the wax layer remains in the vessel closing

assembly ("Dichtscheibe" 2), see wax layer (2b) in figure 1, wax layer (2c) in figure 3 and claim 3.

As a consequence, the solution is not known from the available prior art, nor is there any evidence that it would belong to the skilled person's common general knowledge, so that the subject-matter of claim 1 involves inventive step.

3.11 At the oral proceedings, the respondent argued that the skilled person, applying wax as an obvious alternative adhesive layer in the vessel closing assembly of D1 (feature i), would after a bit of trial and error select the claimed coatweight in an obvious manner (feature ii). By doing so, he would immediately arrive at the claimed subject-matter since the distinguishing feature relating to the wax layer being fully absorbed would inevitably (or at least could) be achieved (feature iii). For the respondent, a wax layer incorporated in place of the adhesive system (layers 11 and 12) in the one-component seal and liner of D1 at the claimed coatweight would inevitably be fully absorbed by the adjacent cardboard (13) when the assembly is induction heat-sealed to a container. As a result, the distinguishing features would not justify inventive step.

3.12 The Board cannot share this view for the reasons put forward by the appellant at the oral proceedings that D2 explicitly discloses that adhesion between the seal and the liner still remains after sealing of the vessel closing assembly to the mouth of the container (page 6, lines 9-15). Consequently, D2 unambiguously teaches that the wax layer is not completely absorbed by the absorbent liner after heating, contrary to claim 1 of the contested patent.

Thus, even by applying a wax layer in D1, the claimed result to be achieved (feature iii) will not inevitably be obtained after induction heating. Further, the issue at stake is not whether the skilled person "could" do it but rather whether he "would" do it. In view of the contrary disclosure of D2, the skilled person would certainly not come to the claimed solution.

4. *Adapted description*

The appellant filed at the oral proceedings an adapted description to the main request, against which neither the respondent, nor the Board had objections.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the claims according to the main request (claims 1 to 17) and pages 2 to 6 of the description, both as filed during the oral proceedings on 9 August 2016, and figures 1 to 4 of the patent as granted.

The Registrar: The Chairman:

B. Atienza Vivancos H. Meinders

Decision electronically authenticated