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Datasheet for the decision of 19 August 2014

Case Number: T 2588/11 - 3.2.07

Application Number: 04250922.4

Publication Number: 1449787

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Language of the proceedings: EN

Title of invention:
Heat-shrinkable packaging and method of forming it

Patent Proprietor:
CURWOOD, INC.

Opponent:
Sealed Air Corporation

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 2588/11 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 19 August 2014

Appellant: (Opponent)	Sealed Air Corporation 100 Rogers Bridge Road Building A Duncan, SC 29334-0464 (US)
Representative:	Franck, Peter Uexküll & Stolberg Patentanwälte Beselerstrasse 4 22607 Hamburg (DE)
Respondent: (Patent Proprietor)	CURWOOD, INC. 2200 Badger Avenue Oshkosh, Wisconsin 54904 (US)
Representative:	WP Thompson 55 Drury Lane London WC2B 5SQ (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 17 October 2011 concerning maintenance of the European Patent No. 1449787 in amended form.**

Composition of the Board:

Chairman	H. Meinders
Members:	V. Bevilacqua
	C. Brandt

Summary of Facts and Submissions

I. The appellant (opponent) filed an appeal against the decision of the opposition division maintaining the European patent No. 1 449 787 in amended form.

The appellant requested the impugned decision to be set aside and the patent to be revoked.

The patent proprietor (respondent) requested that the appeal be dismissed, or, alternatively, that in setting aside the decision under appeal the patent be maintained in amended form on the basis of one of the sets of claims filed as first and second auxiliary requests with letter of 13 August 2012.

Both parties filed an auxiliary request for oral proceedings.

II. The independent claims according to the main request correspond to those of the third auxiliary request in opposition proceedings, on the basis of which the patent was maintained. The features added and those removed with respect to the granted claims are respectively underlined and struck through.

Claim 1
An end-sealed packaging receptacle (10) formed from a sheet of a heat-shrinkable film (11), said sheet of a heat-shrinkable film (11) having a first side (12), an opposing second side (14), an inner surface (15) and an outer surface (13), said receptacle (10) comprising:
a first seal (16) connecting said first side (12) to said second side (14) and defining a tube member (18) having a first receptacle wall (20), a second receptacle wall (22), opposing first and second

receptacle edges (24, 26), an end (30) and a second end (28) ~~an open mouth~~ opposite said first end (30); a second seal (32) provided through said first and second receptacle walls (20, 22), said second seal (32) extending laterally across the width of both said first and second receptacle walls (20, 22) at a position proximate said end (30), whereby an empty product receiving chamber (34) is defined by said first receptacle wall (20), said second receptacle wall (22), said second seal (32) and said ~~open mouth~~ second end (28); and
characterised in that
the receptacle is a severed and separated individual receptacle, the second end of which is an open mouth (28), said first seal (16) comprises a peelable seal selected from a lap seal, a seal strip or a butt-seal including a butt-seal tape, said second seal (32) is non peelable, and said sheet of heat-shrinkable film (11) comprises a biaxially stretched film having a shrinkage value of at lest 20% shrink at 90°C in at least one direction.

Claim 43:
A method of forming an end-sealed, heat-shrinkable packaging receptacle (10) from a flat sheet of film (11) comprising:
(a) providing a sheet of heat-shrinkable thermoplastic film (11) having a first side (12) and an opposed second side (14);
(b) providing a first seal (16) between said first and second sides (12, 14) to form a tube member (18), said tube member (18) having a first receptacle wall (20), a second receptacle wall (22), a bottom (30) at a first end of the receptacle and ~~an open mouth~~ a second end (28) opposite the bottom;
and,

(c) providing a second seal (32) through said first and second receptacle walls (20, 22), said second seal (32) extending laterally across said tube member (18) at a position proximate said bottom (30);

characterised in that

the receptacle is formed as an individual receptacle which is severed and separated from the tube member, the second end of the receptacle is an open mouth, said first seal (16) comprise a peelable seal selected from a lap seal, a seal strip or a butt-seal including a butt-seat tape, said second seal (32) is non peelable, and said sheet of heat-shrinkable film (11) comprises a biaxially stretched film having a shrinkage value of at least 20% shrink at 90°C in at least one direction.

III. The following documents referred to in the decision under appeal are taken into account:

D1:US-A-5 888 648
D2:US-B-6 221 410
D3:EP-A-0 435 498
D4:US-A-4 944 409
D5:US-A-5 860 744

Furthermore the following two documents:

D6: US-A-5 752 369
D7: US-B-6 374 580

submitted with letter of 17 July 2014 for the oral proceedings on 19 August 2014 have also been under discussion, as well as:

D8: GB 921 980,

which was mentioned by both parties during the oral proceedings before the Board.

IV. According to the impugned decision D5 was considered as the closest prior art for the subject-matter of claims 1 and 43 of the auxiliary request III, on the basis of which the patent was maintained.

D5 did not disclose:
-a shrinkage value of 20% at 90°C;
-severed and separated receptacles with an open mouth.

The formulated partial problems were:
-how to provide a design alternative for the bag of D5;
-how to provide bags which can be used one at a time.

The subject-matter of claims 1 and 43 have been considered as involving inventive step because, even if the claimed shrinkage value was considered as an obvious measure, no solution to the second problem could be found in the prior art.

V. The submissions of appellant relevant to the present decision can be summarised as follows.

The subject-matter of claim 1 of the main request lacked an inventive step. The appellant argued this starting from D1 as well as from D5.

The subject-matter of claim 43 also lacked an inventive step.

The appellant argued this starting from D1, from D5 and also from D8, using a partial problems approach and pointing out that:

-The choice of an appropriate packaging material having suitable heat shrinking properties is within ordinary skill and

-No inventive step is needed to recognize that by not filling and closing a bag produced by a vertical form fill seal process (VFFS) as disclosed in D1 (and D5) one obtains an empty bag.

In addition to that the appellant argued that some of the amendments contained in claims 1 and 43 of the patent as maintained contravene Article 123(2) EPC. This was particularly evident when looking at claim 1, which as originally filed was directed to "a bag", and then, in the maintained patent, was broadened to "a receptacle".

VI. The submissions of the respondent relevant to the present decision can be summarised as follows.

Only the compliance with Article 123(2) EPC of amendments made after grant could be discussed before the Board. Therefore features which were already present in the claims of the patent as granted should be excluded from such a discussion.

An objection to these features could have been raised with the opposition under Article 100(c) EPC. Such an objection was also not admitted by the opposition division during the opposition proceedings.

The problem solution-approach was not correctly applied by the appellant, who formulated two distinct partial problems.

The claims of the maintained patent solved the single problem of being able to package products in individual bags providing a good shelf life without the need of having an expensive machine for producing such bags.

The features relating to the heat shrinking properties of the packaging material and the structural details of the bag solved together this problem and should not be dealt with separately.

Inventive step should be acknowledged, because starting from any appropriate prior art, whether it was D5, or the prior art mentioned in D5, or D8, no further document is available disclosing all the missing features.

VII. The Board sent an annex to the summons to oral proceedings (hereafter: "annex"), with its preliminary opinion.

VIII. Oral proceedings before the Board, at the end of which the decision was announced, took place on 19 August 2014.

Reasons for the Decision

1. Amendments-Article 123(2) EPC

1.1 The appellant argued in the written proceedings that the independent claims of the patent as maintained contain features which, when compared with the originally filed claims, contravene the requirements of Article 123(2) EPC.

Claim 1 as maintained was compared with original claims 1, 7, 18, 38, 39, 40, 71, 74 and claim 43 with claims 19, 39, 40, 71, 74 and 81, but both claims lacked for some features a literal basis.

However, some of the contested features were present in the claims as granted.

The Board observes that corresponding objections under Article 100(c) EPC were not raised with the opposition.

The objections were also not admitted during the first instance proceedings.

1.2 In the annex the Board has pointed out that when dealing with the substance of the amendments carried out in the opposition proceedings, one should start first and foremost from the claims of the patent as granted and only assess the amendments made to those claims.

These amendments have been made visible in the text of the claims as reproduced in point II above and are as follows:

for claim 1:

(a) using the designations "second" and "first" respectively to refer to the ends of the receptacle where the open mouth, respectively the opposite end is located;
(b) specifying that the "open mouth" is at the second end of the claimed receptacle;
(c) specifying that the receptacle is a "severed and separated individual receptacle";

for claim 43:

(d) using the terms "first end" and "second end" to refer to the location of the "bottom" respectively the end opposite the bottom of the receptacle;
(e) specifying that the open mouth of the receptacle is at the second end;
(f) specifying that the receptacle is formed as an "individual receptacle which is severed and separated from the tube member" as formed in the claimed method.

1.3 As explained in the annex, the Board saw no addition of information, without basis, being involved in explaining that the open mouth is at a second end, opposite a first end (amendments (a), (b), (d), (e)).

Furthermore support for “severed” and “individual”, and therefore also for “separated” (see amendments (c) and (f)) for the receptacle was to be found in the context of the basic embodiments of figures 1, 3 and 5 at the end of paragraph [0022], and in the context of the general description of the method at paragraph [0046] (references are to the A-publication of the application).

The fact that the receptacle is severed from the tube member was derivable from column 19, lines 10-34.

The Board therefore concluded that the independent claims 1 and 43 did not contain post-grant amendments which contravene the requirements of Article 123(2) EPC.

1.4 At the oral proceedings the appellant had no further reaction to the above position taken by the Board,

other than that the amendment of original claim 38 for a "bag" to "receptacle" in claims 1 and 43 of the patent as granted as well as the particular selection, without basis, of a non peelable seal for the second seal and a peelable seal for the first seal, in these same claims, was still an inadmissible amendment.
In this respect the Board observes (again) that these features are present in claims 1 and 43 of the patent as granted.

This means that these objections should have been raised with the opposition. That was not the case, nor were such objections admitted by the opposition division.
In like manner, the Board sees no reason to admit these objections in appeal, quite apart from the question whether the Board would need approval of the respondent in this matter.

2. *Inventive step - Claim 43*

2.1 Method claim 43 is formulated in a slightly broader way than product claim 1, because it does not refer to an empty product receiving chamber defined by the receptacle walls, the second seal and the second end. For this reason claim 43 will be discussed first.

2.2 The appellant submitted five distinct inventive step attacks for claim 43.

The first line of argumentation started from the vertical form fill seal (VFFS) method depicted in figure 4 of D5 and described in column 2 ("DISCLOSURE OF THE INVENTION").

A second line of argumentation started from the method mentioned under "BACKGROUND ART" of D5 (column 1, line 25 onwards).

A third line of argumentation started from D5 and considered the "BACKGROUND ART" and the "DISCLOSURE OF THE INVENTION" of this document as a single teaching.

Another line of argumentation started from D8, of which the contents correspond to those of DK-109591, which is the document cited and discussed in the "BACKGROUND ART" of D5.

Finally in the grounds of appeal the appellant also discussed inventive step starting from the method disclosed in D1.

All these attacks, together with the conclusion of the Board, will be presented and discussed in the following paragraphs.

2.3 The **invention of D5** as a starting point

Reference is made to the embodiment described in column 2, from line 1 of D5, which the Board regards as the prior art which comes closest to the subject-matter of claim 43.

2.3.1 For the Board, D5 discloses in this respect:

a method (see for example claim 5, see also column 3, from line 44) of forming an end-sealed, packaging receptacle (shown in figures 1 and 2) from a flat sheet of film comprising:

(a) providing a sheet of thermoplastic film (see column 3, from line 53) having a first side and an opposed second side (see figure 2);

(b) providing a first seal (13, as explained at column 4, starting from line 3) between said first and second sides to form a tube member, said tube member (as depicted in figure 2) having a first receptacle wall (2), a second receptacle wall (3), a bottom (11) at a first end of the receptacle (at the left portion of figure 1) and a second end (12) opposite the bottom; and,

(c) providing a second seal (13) through said first and second receptacle walls (2,3), said second seal (13) extending laterally across said tube member at a position proximate said bottom (11); whereby said first seal (10, see column 4) comprises a peelable lap seal and said second seal (13) is non peelable.

2.3.2 Differences

D5 therefore fails to disclose the following features of claim 43:

-That the receptacle is formed as an individual receptacle which is severed and separated from the tube member, the second end of the receptacle being an open mouth;

-That the receptacle is a heat shrinkable receptacle, the film is a heat shrinkable film and said sheet of heat-shrinkable film (11) comprises a biaxially stretched film having a shrinkage value of at least 20% shrink at 90°C in at least one direction.

Column 4, lines 54-67 of D5 clearly explains that according to the depicted and described embodiment (figures 1-4 relate to the same embodiment, see column 4, lines 24-25) the receptacle is formed as an individual receptacle which is severed and separated from the tube member **only after it has been closed**.

This passage makes clear that there is no "severed and separated" receptacle when the second end thereof is still an open mouth.

2.3.3 Effect(s) - problem(s) to be solved

Starting from the above formulated differences for claim 43 of the main request the following effects can be formulated.

The feature that the packaging receptacle is a severed and separated receptacle with an open mouth has the effect that the receptacle can be produced without contents and can be filled and sealed at another location from where it has been produced.

The problem which is formulated based on this effect is: how to provide an individualized package which can be filled and closed other than at the same time it is produced.

This makes it possible to use receptacles like those disclosed in D5 in a different manner (increased flexibility, see patent [0011]).

The feature that the sheet of film is heat-shrinkable and comprises a biaxially stretched film having a shrinkage value of at least 20% shrink at 90°C in at

least one direction has the effect that a package is obtained, of which the shape perfectly fits the shape of the contained object(s) when heat shrunk (see patent [0005]).

Starting from this feature and from its effect the following problem is formulated: how to eliminate or reduce the air remaining in the receptacle known from D5 after it has been filled, thereby extending shelf life of the product (patent [0005]).

2.3.4 As a result of the discussion in the oral proceedings and contrary to its preliminary opinion as set out in the annex, the Board regards these two features as **linked**, because the presence of the open mouth contributes to letting the air out from the interior of the receptacle when the packaging material is shrunk around the product.

Be that as it may, the main question to be answered is whether the skilled person is capable of modifying the known method (see figure 4 of D5) without the use of inventive skills so that individualised receptacles come out of the VFFS machine of D5 with an open mouth end.

2.3.5 Obviousness

The subject-matter of claim 43 is regarded as involving inventive step because, contrary to the opinion of the appellant, there is no teaching in the prior art that comes anywhere near using a VFFS machine to produce individualised packages with an open mouth as claimed in clam 43.

The appellant contends that such individualised receptacles, which are filled afterwards via an open mouth are disclosed in D5, column 1, lines 50-55.
That may be the case, however the manner in which these receptacles are formed, namely:

by folding a flexible packaging material onto itself, folding a flap over the so formed pouch portion, welding or adhering the inner face of the flap to the other face of the pouch by a longitudinal peelable weld and welding on one side the inner faces together by a non peelable weld,

does not give any indication how this single bag production can be adopted in the VFFS machine of D5.
To achieve the method of claim 43, this latter machine would need substantial modifications to produce and handle any individualised packages with an open mouth and without any contents, as foreseen by the teaching of column 1, lines 50-55.

2.3.6 This passage at most hints at using an older machine producing individual bags (the Danish document referred to is from 1961) of which the characteristics however are not known. The same applies to D8, the UK equivalent document of the Danish document, which mentions that the receptacle (pouch) can be formed from a continuos length of material folded to form the longitudinal seal, which is then heat sealed and severed at predetermined intervals.
Also this document does not teach how to achieve this on a VFFS machine.

2.3.7 Documents D6 and D7 show machines and methods for filling and closing flexible receptacles which are,

however, produced by a different type of machine, namely horizontal form fill machines.
The Board cannot see how these teachings could be adopted in a VFFS machine.

2.3.8 A skilled man who starts from a VFFS machine is aware that **filling** and **sealing** are two of the three essential steps of a vertical form fill seal process which is a process specifically designed for producing filled and closed packages.

It is not evident, also from general knowledge, how a VFFS machine should be modified to omit both these fundamental steps in order to produce receptacles formed as an individual receptacle which is severed and separated from the tube member, the second end of the receptacle being an open mouth, and still work accurately and efficiently.

2.3.9 Even if the modifications to the known machine would be kept to a minimum and only the closing step is omitted (this issue was discussed in the oral proceedings because claim 43 does not refer to an empty product chamber, like claim 1 does) a filled unclosed flexible receptacle would be obtained which once severed and separated from the rest of the tube material is difficult to handle in the VFFS machine of D5.

D6 and D7 show how a flexible receptacle which is already correctly positioned can be closed, but do not explain how to pick up such receptacles reliably from a VFFS machine and move them to any other device.

How to perform this step is not part of the general knowledge, nor is it self-evident, because without such a device the vertically filled bag would fall, pouring

out its contents in an uncontrolled way, since VFFS machines are generally used to package flowable materials.

2.3.10 As a consequence of the above, the teachings of any of these pieces of prior art (D5 "BACKGROUND ART", D6, D7 or D8) cannot help to modify the VFFS method of D5 into a **functioning method** as claimed in claim 43.

The subject-matter of claim 43 is therefore considered as involving an inventive step over these combinations of teachings (Article 56 EPC).

2.4 **D5-"BACKGROUND ART"** as a starting point

2.4.1 The background art as discussed in D5 (see from column 1, line 25) discloses:

a method of forming an end-sealed, heat-shrinkable packaging receptacle (a tobacco pouch, see line 27) from a flat sheet of film (described at lines 39-49) comprising:

(a) providing a sheet of film having a first side and an opposed second side;

(b) providing a first seal (see lines 29-30: the inner face of the flap is **welded or adhered peelably**) between said first and second sides to form a tube member (lines 27-28: "folding a flexible packaging material onto itself"), said tube member having a first receptacle wall, a second receptacle wall, a bottom at a first end of the receptacle and a second end opposite the bottom;
and,

(c) providing a second seal (see line 33: the flap are welded) through said first and second receptacle walls said second seal extending laterally across said tube member at a position proximate said bottom;

whereby

the receptacle is formed as an individual receptacle (see line 50: "single bags") the second end of the receptacle is an open mouth (line 50: "open at one side edge"), said first seal comprises a peelable lap seal (see lines 29-30: the inner face of the flap is **welded or adhered peelably**, said second seal is non peelable (see lines 52-53).

It is clear that the resulting package is a **tobacco pouch.**
The Board does not share the appellant's opinion that since the rest of D5 only relates to packaged products in general, this must also apply to the background art because, as discussed above, in D5 there is a clear distinction between the two.

2.4.2 This passage of D5 fails to disclose:

-That the film used is a thermoplastic heat-shrinkable film comprising a biaxially stretched film having a shrinkage value of at least 20% shrink at 90°C in at least one direction and;

-That the receptacle is severed and separated from the tube member.

As argued by the respondent at the oral proceedings, if the provision of one of these measures is inventive, the question of the other difference having a

synergetic effect or not and whether the other measure is obvious to the skilled person becomes moot.

2.4.3 The first difference has the effect that in the tobacco pouch in question the air would be excluded from the pouch when the latter is heat-shrunk (patent [0005]).

Already at this point of the considerations inventive step (Article 56 EPC) has to be acknowledged because starting from this method for producing **tobacco pouches** the skilled man would not consider heat shrinking such a pouch together with its tobacco, irrespective of the question whether air should be excluded from the package or not.

Heat shrinking a pouch containing tobacco necessarily implies a heat treatment of the bag material, but also of the tobacco, which is highly undesirable because it could spoil its flavour.

Further, the Board notes that the tobacco pouch as described in the "BACKGROUND ART" of D5 has a flap and is intended to be used (opened and re-closed using the flap) a plurality of times. Heat shrinking such a pouch would compromise the shape, and therefore the required functionality, of the flap, as well as the outward appearance of the pouch.

2.4.4 The result is that already for this reason the subject-matter of claim 43 involves inventive step over this consideration of the prior art (Article 56 EPC).

2.5 **D5-"BACKGROUND ART" and "DISCLOSURE OF THE INVENTION"** as a single piece of prior art

2.5.1 The appellant pointed out that figures 1 and 2 of D5 do not specifically show a tobacco pouch, because the "DISCLOSURE OF THE INVENTION" is not limited to tobacco, but refers to the packaging of generic "products" and argued that a skilled reader would never interpret the "BACKGROUND ART" of the same document as being limited to the packaging of tobacco, but would automatically understand that the method discussed in the "BACKGROUND ART" also encompasses the packaging of generic products.

Starting from this the appellant argued that the method of the "BACKGROUND ART" of D5, when used to package generic products should constitute the starting point to discuss inventive step.

The Board disagrees, as already partly explained in point 2.4.1 above.

This line of argumentation treats D5 as a reservoir from which features pertaining to two separate teachings are combined or interpreted in reverse order, to create one single prior art teaching.

The overall context of D5 makes clear that the receptacle of the invention and as shown in figures 1 and 2 **is produced with the VFFS method** of figure 4 (see column 4, starting from line 25).
This is completely separate from the method and the receptacle described at column 1 and referred to as "BACKGROUND ART".

The receptacle of the invention may be for the packaging of generic products, however, the method and receptacle as disclosed in the "BACKGROUND ART" are only disclosed for the packaging of tobacco.

As a result, this approach does not have the capacity to cast doubt on the inventive step of the method of claim 43 (see point 2.4 above).

2.6 **D8** as starting point

D8 is a British patent specification which corresponds to the Danish patent 109591, mentioned as "BACKGROUND ART" in column 1 of D5.

This document was discussed for the first time during oral proceedings as a possible starting point to attack inventive step of claim 43.

Also D8 relates **prima facie** to tobacco pouches, and for this reason the Board does not regard it as a suitable starting point for successfully attacking inventive step of the subject-matter of claim 43 because, for the same reasons as already discussed above in point 2.4, in relation to the "BACKGROUND ART" of D5.

D8 therefore also does not have the capacity to cast doubt on the inventive step of the method of claim 43.

2.7 **D1** as a starting point

2.7.1 D5 is the only document at hand mentioning that the first seal comprises a peelable seal (see column 4, lines 3-11) and the second seal is non peelable.

D1 fails to disclose this feature.

In addition to that, D1 "teaches away" from having heat shrinking in the thermoplastic film because the objective is to have "little or no shrinkage" (see column 2, lines 23, 24).In this light should be seen the example in which the shrinkage is mentioned, more in particular an extremely low shrinkage value, to achieve this goal (see column 11, lines 5-8).

For these reasons the Board concludes that D1 is not a suitable starting point for discussing inventive step.

A detailed analysis of the content of the disclosure of D1 supporting this opinion of the Board can be found in the following.

2.7.2 D1 discloses:
a method (VFFS, see from column 1, line 65 to column 2, line 9) of forming an end-sealed, packaging receptacle (see figure 1 and 1A) from a flat sheet of film comprising:

(a) providing a sheet of thermoplastic film (like PET, see column 4, line 17) having a first side (11) and an opposed second side (12);

(b) providing a first seal (13) between said first and second sides (11, 12) to form a tube member, said tube member having a first receptacle wall (the upper wall of figure 1A), a second receptacle wall (the lower wall), a bottom (16) at a first end of the receptacle and a second end (the upper end of figure 1) opposite the bottom; and,

(c) providing a second seal (as it is known in the VFFS, see at column 7, from line 30 to 44) through said first and second receptacle walls, said

second seal (16) extending laterally across said tube member (see figure 1) at a position proximate said bottom; whereby the receptacle is formed as an individual receptacle, and said first seal is a lap seal, and said sheet of film (11) comprises a biaxially stretched film (see example 9).

The method of D1 therefore fails to have the following features of claim 4:

-That the packaging receptacle (and the thermoplastic film) are heat shrinkable;

-That the packaging receptacle is severed and separated from the tube member, the second end of the receptacle being an open mouth;

-That the first seal comprises a peelable seal, the second seal is non peelable;

-That the biaxially stretched film has a shrinkage value of at least 20% shrink at 90°C in at least one direction.

2.7.3 The appellant argues that the first and third sets of features are implicitly disclosed in D1.

Concerning the third set of features (peelable seal versus non peelable seal) the appellant argues that a skilled reader would assume that in the bag of figure 1 of D1, the longitudinal lap seal 13 is peelable while the transversal seals 15 and 16 are non peelable because the film laminates used (see Figs. 6 and 7 of D1) are asymmetrical films with an inner sealant layer 62 or 72 respectively (column 11, line 22; column 12, line 7), and a main film substrate (66 in figure 6; see

column 11, line 31, and column 12, from line 16 onwards).

This argumentation is not convincing.

The teaching that with an asymmetric film (films having a sealing layer only on the internal side thereof) a strong seal is obtained in the case that two internal faces are sealed to each other, whereas a weaker (peelable) seal is obtained in the case of a sealing between an internal and an external face facing each other (lap seal), is contained in D5, but not in D1.

According to the summary of invention of D1, column 3, lines 51-64:

"the inventors herein have enabled the packaging artisan to design highly effective, easily-opened and reclosable seals, i.e., peelable hermetic seals, which can be implemented on existing form/fill/seal apparatus. The sealing and seal improvements of the present invention are especially useful for **closing packages** (i.e. for the second seal in the terms of claim 43) in which a multilayer film has been joined by means of fin and lap seals (the first seal in the terms of claim 43).

In other words what D1 certainly discloses is a non peelable second seal, leaving open the question whether the first seal is peelable or not.
If the first seal is a fin seal the same inner surfaces contact each other, i.e. will be non peelable as would be the second (transverse) seal.
If the first seal is a lap seal, it is not known whether it is peelable or not.

The teaching of D5 relating to asymmetric films (see column 4, lines 3-11) is related to the specific materials of D5, which are polyethylene for the inside layer and polypropylene for the outer layer. These are not necessarily foreseen in D1.

It is therefore not possible to consider the content of document D1 in the light of the particular teaching of D5.

2.7.4 Concerning the first set of features (heat shrinkable film), it should be noted that D1 discloses that the film is oriented (even biaxially oriented, see column 12, lines 65-67), which **in principle** one could call heat shrinkable.

However, D1 does not disclose the shrinkage value of at least 20% at 90°C.

In fact, D1 teaches away from this concept, because (see column 2, lines 21-25) to achieve hermetic seals "it is important to provide a sealing capability at as low a temperature as possible in order to retain...little or no film shrinkage", and (see column 11, from line 21) when suitable films are described, either no discussion of their shrinkage value is given, or these films should have very limited shrinkage (less than 2% at 120°).

2.7.5 D1 is therefore not suited to cast doubt on the inventive step of the subject-matter of claim 43, since the solution to the first problem is already not obvious.

3. *Inventive step-claim 1*

3.1 The appellant submitted two distinct inventive step attacks, the first starting from the receptacle disclosed in D1 (see the grounds of appeal), the second from the receptacle of figures 1 and 2 of D5.

D5 is, as already discussed for claim 43, a better starting point to discuss inventive step of claim 1, because it is the only document disclosing that the first seal (10) comprises a peelable lap seal (see column 4, lines 3-11) and the second seal (13) is non peelable.

3.2 Comparison D5-claim 1

D5 discloses an end-sealed packaging receptacle (see figures 1 and 2) formed from a sheet of a film, said sheet of film having a first side (2), an opposing second side (see figure 2), an inner surface and an outer surface, said receptacle comprising:

a first seal (10) connecting said first side (2) to said second side (4) and defining a tube member (displayed in cross section at figure 2) having a first receptacle wall (2), a second receptacle wall (3), opposing first and second receptacle edges (the top and bottom edges at figure 2), an end (12) and a second end (13) opposite said end (12); a second seal (13) provided through said first and second receptacle walls (2,3), said second seal (13, see column 4, from line 3 to line 11) extending laterally across the width of both said first and second receptacle walls at a position proximate said end, whereby a product receiving chamber is defined by said first receptacle wall, said second receptacle wall, said second seal

(13) and said second end (11); and whereby said first seal (10) comprises a peelable lap seal (see column 4, lines 3-11), and said second seal (13) is non peelable.

D5 also discloses a "severed and separated individual packaging receptacle" (see figure 1).

D5 neither mentions oriented films, nor heat shrinking, and the embodiment disclosed is clearly linked to a VFFS process(see figure 4).

3.3 Differences
D5 fails to disclose the following features of claim 1:

-The packaging receptacle has an open mouth, and is a severed and separated receptacle in which the product receiving chamber is empty;

-The sheet of film is heat-shrinkable film and comprises biaxially oriented film having a shrinkage value of at least 20% shrink at 90°C in at least one direction.

3.4 Effects and problems starting from D5

Starting from the above formulated differences for claim 1 of the main request the corresponding problems and effects are formulated in analogy with what was already discussed for claim 43.

These two features cannot be treated with a classical "partial problems" approach.

The feature that the packaging receptacle is a severed and separated receptacle with an open mouth in which the product receiving chamber is empty has the effect

that a product can be inserted after the production of the package, such that this receptacle can be transported without contents, and can be filled and sealed at another location than where it has been produced.

This difference, based on its effect, **solves on its own** the following first problem: how to provide an individualised package which can be filled and closed other than at the same time it is produced (increased flexibility, see patent [0012]).

The feature that the sheet of film is heat-shrinkable comprising a biaxially stretched film having a shrinkage value of at least 20% shrink at 90°C in at least one direction has the effect that a package is obtained, of which the shape perfectly fits the shape of the contained object(s) when heat-shrunk (see patent [0005]).

This second difference, based on its effect, contributes together with the first difference to the solution of the following second problem: how to eliminate or reduce the air remaining in the receptacle known from D5 after it has been filled, thereby extending shelf life of the product (see patent [0005]).

This is because an open mouth allows the air contained in the package to escape during the shrinking process (see patent [0001]).

The shrinking of a hermetically closed package like the one shown in D5 would not be possible unless further modifications are applied to the receptacle.

3.5 Obviousness

The subject-matter of claim 1 is regarded as involving inventive step because there is no teaching in the prior art that comes anywhere near of using a VFFS machine as in D5 to produce individualised packages with an open mouth and an empty product receiving chamber as claimed in claim 1.

In this respect the reasoning is the same as given for claim 43, see points 2.3.5 to 2.3.10 above.

The appellant argued that one should not take account of the method with which such receptacles were produced, but needed only to concentrate on the product features. These were represented by the receptacle depicted in figures 1 and 2 of D5, together with the passages of the description referring to it.

To produce this receptacle the skilled reader would find in D5 two possible alternative methods. One is an older method which produced separate receptacles with an open mouth to fill and seal, the other method is the VFFS method. Both are equally suitable, so the production method is not important.

The Board disagrees because the receptacle of figures 1 and 2 cannot be isolated from its production process when the question is what the skilled person would do in technical terms when confronted with the first problem, as discussed in point 3.4 above.

The overall context of D5 makes it clear that the receptacle of figures 1 and 2 **is produced with the VFFS method** of figure 4 (see column 4, starting from line 25), and that this is the invention, which is different

from the method and the receptacle described in column 1 of D5 and referred to as "BACKGROUND ART".

3.6 The above means that the answer to the question concerning the solution to the first problem is identical to the conclusions of the board given in point 2.3.5 to 2.3.10 above. These also take account of the solution to the second problem.

3.7

As result the receptacle of claim 1 involves inventive step (Article 56 EPC).

3.8 Comparison D1-claim 1

D1 discloses packaging receptacles formed by a form-fill seal process. Figures 1, 1A , 2 , 2A, show such receptacles after filling and closing (see column 1, line 65 to column 2, line 9).
Before filling, these receptacles have an open end, which is thereafter sealed by a transverse seal (26 or 27 in figure 2 of D1).

D1 discloses:
an end-sealed packaging receptacle (see figure 1 and 1A) formed from a sheet of a film (see figure 1A), said sheet of film having a first side (11), an opposing second side (12), an inner surface and an outer surface (see figure 1A), said receptacle comprising:

a first seal (13, see figure 1) connecting said first side (11) to said second side (12) and defining a tube member having a first receptacle wall (the upper wall in figure 1A), a second receptacle wall (the lower wall in figure 1A), opposing first and second receptacle edges (not indicated in figure 1A, indicated as 34 and 36 in figure 3), an end (see the lower weld 16 in

figure 1) and a second end (15, the upper end) opposite said end (16); a second seal (16, see column 8, starting from line 60) provided through said first and second receptacle walls (as explained at column 7, from line 30 to line 44), said second seal (16) extending laterally across the width of both said first and second receptacle walls (as it is clearly visible in figure 1) at a position proximate said end, whereby a product receiving chamber (all the disclosure of D1 is based on a form-fill-seal machine, see, for example, column 2, line 11) is defined by said first receptacle wall (upper wall), said second receptacle wall (lower wall), said second seal (16) and said second end;

whereby the receptacle is an individual receptacle (see figure 1 and 1A), the second (upper) end of which is (before the sealing step) an open mouth (one end is always left open to allow filling in the form fill seal, and only closed thereafter), said first seal (13) comprises a lap seal (see column 3, line 65, see also figure 1a).

D1 also mentions a biaxially stretched film (see for example reference 9 at column 15, line 50).

D1 fails to disclose the following features of claim 1, namely that:

-The first seal (13) is peelable and the second seal (15) is non peelable;

-The sheet of film is heat-shrinkable film and has a shrinkage value of at lest 20% shrink at 90°C in at least one direction;

-The packaging receptacle has an open mouth, and is a severed and separated receptacle having an empty product receiving chamber.

3.9 The appellant argues also here that the first and second sets of features of claim 1 are implicitly disclosed in D1, but the Board disagrees for the same reasons as already discussed in relation to claim 43, see points 2.7.3 and 2.7.4 above.

In point 2.7.4 it was also concluded that D1 could not cast doubt on inventive step being involved in the method of claim 43. That same reasoning applies for the receptacle of claim 1.

4. *D6, D7 and D8: Admission to the proceedings*

At the oral proceedings these documents were addressed by both parties.

The Board stated that admission of these documents possibly need not be decided on if, when taking them into account as the appellant requested, they would in any case not change the outcome.

As follows from the above, that is the case. The question of admissibility therefore needed no further consideration in this decision.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall H. Meinders

Decision electronically authenticated