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Datasheet for the decision of 26 February 2013

Case Number: T 2422/10 - 3.2.07

Application Number: 03773019.9

Publication Number: 1572540

IPC: B65B 55/10, A61L 2/20

Language of the proceedings: EN

Title of invention:
CONTROL OF STERILIZATION DEVICE AND METHOD

Patent Proprietor:
Tetra Laval Holdings & Finance S.A.

Opponent:
SIG Technology AG

Headword:
-

Relevant legal provisions:
EPC Art. 56
EPC R. 4(1), 4(5)

Keyword:
"Inventive step - no (main and auxiliary requests)"
"Request for simultaneous translation - not granted"

Decisions cited:
G 0004/95, T 0131/07, T 0774/05, T 0418/07

Catchword:
Interpretation from German into the language of the proceedings (English) for the English-speaking German representative (no) (point 1.3).
Same interpretation for accompanying person, if Board does not intend to hear that person (no) (point 1.4).

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 2422/10 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 26 February 2013

Appellant: (Opponent)	SIG Technology AG Laufengasse 18 CH-8212 Neuhausen am Rheinfall (CH)
Representative:	Thielmann, Andreas COHAUSZ & FLORACK Patent- und Rechtsanwälte Partnerschaftsgesellschaft Bleichstrasse 14 D-40211 Düsseldorf (DE)
Respondent: (Patent Proprietor)	Tetra Laval Holdings & Finance S.A. Avenue Général-Guisan 70 CH-1009 Pully (CH)
Representative:	Müller Schupfner & Partner Bavariaring 11 D-80336 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 8 October 2010 rejecting the opposition filed against European patent No. 1572540 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman: H. Meinders
Members: G. Patton
I. Beckedorf

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division to reject the opposition against the patent No. 1 572 540.

The opposition was 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 these grounds did not prejudice the maintenance of the patent as granted.

II. The respondent (patent proprietor) replied to the appeal and filed auxiliary requests I to VI.

The Board provided the parties with its preliminary non-binding opinion annexed to the summons for oral proceedings that the subject-matter of independent claim 20 of the main request did not present an inventive step on the basis of D4 and D7 and that none of the features added to the independent claims 20 of the auxiliary requests could justify an inventive step (Article 56 EPC). Document D7, which was not admitted in the opposition procedure, was regarded as being *prima facie* relevant so that it was to be admitted in the appeal procedure.

In reaction the respondent filed additional auxiliary requests VII to IX.

The appellant also reacted to the Board's preliminary opinion, raising a lack of inventive step objection

against the subject-matter of claim 1 of the main request (granted patent) on the basis of D4 and D7.

III. With letter of 25 January 2013 the appellant informed the Board that it would speak German during the oral proceedings and be accompanied by a patent expert of the appellant, to make oral submissions.

The respondent informed the Board with letter of 25 January 2013 that it would, during the oral proceedings scheduled for 26 February 2013, speak English and be accompanied by a technical expert working in the Patent Department of the respondent, the latter to present arguments on novelty and inventive step of the claimed subject-matter. He requested simultaneous interpretation from German into English, the language of the proceedings.

Based on Rule 4(1) and 4(5) EPC the Board informed the parties with its communication of 5 February 2013 that it did not see a need to accede to the simultaneous interpretation request from German into English since the respondent's representative could understand German, having written all submissions in this case in German. For the possibility that the interpretation was requested for the announced accompanying person, the Board stated that such persons had no right to simultaneous interpretation, in particular since the Board did not see a need in this case to hear the person.

Oral proceedings took place on 26 February 2013 at the beginning of which the respondent challenged the Board's position on the simultaneous interpretation

request. As a German national the respondent's representative admitted that he could obviously understand German. After discussing this issue, the respondent's representative chose to speak German instead of English for the rest of the oral proceedings, which were thereafter held in that language. The respondent withdrew all his auxiliary requests I to IX filed in writing and replaced them by a new single auxiliary request I.
The present decision was announced at the end of the oral proceedings.

IV. The appellant requested that the decision under appeal be set aside and the patent be revoked.

V. The 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 the set of claims filed as new auxiliary request I during the oral proceedings.

VI. Claim 1 of the main request (patent as granted) reads as follows:

"A device for sterilization in production of packages (8), which is adapted for sterilization with a gaseous sterilizing agent kept in the gaseous phase throughout the sterilization process, said device comprising a heating zone (2), a sterilization zone (3) and a venting zone (4), characterised in that it further comprises an ambient temperature sensor (27) for sensing the ambient temperature outside the device (1), a concentration meter (29) for measuring the concentration of sterilizing agent in the sterilization

zone (3) and a first control unit for controlling the amount of sterilizing agent introduced in the sterilization zone (3) based on the temperature measured by the ambient temperature sensor (27) and the concentration measured by the concentration meter (29)."

Claim 20 of the main request (patent as granted) reads as follows:

"A method of sterilizing packages (8) in production of the packages (8), said packages (8) having an open end (11) and a closed end (12), wherein a gaseous sterilizing agent is used and kept in the gaseous phase throughout the sterilization process characterised in that an ambient temperature and a concentration of sterilizing agent in a sterilization zone (3) where sterilization is performed are measured and used for controlling the amount of sterilizing agent introduced in the sterilization zone (3)."

Claim 1 of the new auxiliary request I reads as follows (in bold the amendments with respect to claim 1 of the main request; emphasis added by the Board):

"A device for sterilization in production of packages (8), which is adapted for sterilization with a gaseous sterilizing agent kept in the gaseous phase throughout the sterilization process, said device comprising a heating zone (2), a sterilization zone (3) and a venting zone (4), characterised in that it further comprises an ambient temperature sensor (27) for sensing the ambient temperature outside the device (1), a concentration meter (29) for measuring the

concentration of sterilizing agent in the sterilization zone (3) and a first control unit for controlling the amount of sterilizing agent introduced in the sterilization zone (3) based on the temperature measured by the ambient temperature sensor (27) and the concentration measured by the concentration meter (29), **wherein the device is adapted to sterilize packages (8) before filling of the packages (8), said packages (8) having an open end (11) and a closed end (12), and wherein the device further comprises means (17,20) for controlling a flow of gaseous sterilizing agent in the sterilization zone (3), such that the gaseous sterilizing agent flows essentially in a direction from the open end (11) of the packages (8) towards the closed end (12) of the packages (8), and wherein the means (17,20) for controlling the flow of gaseous sterilizing agent are arranged to introduce the gaseous sterilizing agent in a top portion (18) of the sterilization zone (3) and to evacuate the gaseous sterilizing agent in a bottom portion (19) of the sterilization zone (3), maintaining a flow of gaseous sterilizing agent essentially from top to bottom."**

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

D2: Knuppertz, H., W., "Konstruktive Anforderungen an Aseptikanlagen", presentation in Munich, 22-23 October 1987

D3: Kessler, H., G., "Prufung der Abpackmaschine Typ combibloc aseptic-Füller cf 5.000 zur Abpackung ultrahocherhitzer Milch", Welt der Milch, Nr 5, 1977

D4: US-A-5 258 162

D7: EP-B-0 969 881

VIII. The appellant argued in substance essentially as follows

Main request

Starting from D4 as closest prior art, features

c) an ambient temperature sensor (27) for sensing the ambient temperature outside the device (1);

d) a concentration meter (29) for measuring the concentration of sterilizing agent in the sterilization zone (3) and

e) a first control unit for controlling the amount of sterilizing agent introduced in the sterilization zone (3) based on the temperature measured by the ambient temperature sensor (27) and the concentration measured by the concentration meter (29)

are the only distinguishing features of device claim 1.

D7, which was not admitted in the opposition proceedings, should be admitted in the appeal proceedings since it is *prima facie* relevant. Indeed, it concerns monitoring and control of sterilization processes, i.e. the function of the distinguishing features, and discloses features d) and e) mentioned above.

In addition, the device of D7 deals with sterilization, i.e. killing bacteria, with the same essential steps of sterilizing and venting as in D4, is therefore not limited to sterilizing medical devices so that its structural differences with the device of D4 cannot be a reason for disregarding or for not combining its teaching with the teaching of D4.

The distinguishing features lead to the objective technical problem of providing a device enabling to control the amount of sterilizing agent introduced, so that condensation is avoided.
Using his common general knowledge as illustrated by D2 that condensation of the sterilizing agent is linked to the surface temperature of the packages, the skilled person would immediately think of measuring the ambient temperature outside the device, i.e. the initial temperature of the packages before heating and sterilizing. Therefore, the combination of the teaching of D7 with the device of D4 together with application of common general knowledge of the skilled person as illustrated by D2 is obvious, leading to the claimed subject-matter not presenting an inventive step (Article 56 EPC).

New auxiliary request I

Still starting from D4 as closest prior art, the only additional distinguishing feature, apart from features c), d) and e) already discussed, is feature i):

i) to evacuate the gaseous sterilizing agent in a bottom portion (19) of the sterilization zone (3), maintaining a flow of gaseous sterilizing agent essentially from top to bottom.

This feature i) has no synergetic effect with features c), d) and e) so it can be dealt with independently for inventive step. In view of the objective technical problem of avoiding recontamination of the packages the skilled person, having his common general knowledge as illustrated by D2 to decrease air turbulence, would have the choice between only two possibilities for the air flow in the sterilizing zone. By trying out these

two possibilities, in particular the evacuation of the gaseous sterilizing agent in a bottom portion of the sterilization zone as also illustrated by D3, and recognizing the advantages of such a laminar flow from top to bottom, he would think of adopting it also in the device of D4.

IX. The respondent argued essentially as follows

Main request

In addition to features c), d) and e), feature bc) - the venting zone - should also be regarded as a further distinguishing feature of claim 1 over the closest prior art D4 since there is no separate venting zone in the device of D4.

D7 is not *prima facie* relevant since it concerns a sterilizing device with only one chamber, i.e. different from the device of the contested patent and from D4 which both comprise several zones, and aims at sterilizing medical devices, which is different from packages for edible content like in the contested patent or D4. Consequently, the skilled person would not consider nor combine the teaching of D7 with that of D4 and, hence, D7 should not be admitted in the appeal proceedings. In any case, the combination of its teaching with the device of D4 does not lead to the claimed subject-matter since D7 does not disclose feature c). In fact, none of the cited documents discloses feature c) so that the appellant's view can only be based on an *ex post* analysis. An inventive step should therefore be recognized.

New auxiliary request I

D4 neither discloses features f), g) and i), which should be regarded as additional distinguishing features to features c), d) and e):

f) the device is adapted to sterilize packages (8) before filling of the packages (8), said packages (8) having an open end (11) and a closed end (12)

g) the device further comprises means (17,20) for controlling a flow of gaseous sterilizing agent in the sterilization zone (3), such that the gaseous sterilizing agent flows essentially in a direction from the open end (11) of the packages (8) towards the closed end (12) of the packages (8)

i) to evacuate the gaseous sterilizing agent in a bottom portion (19) of the sterilization zone (3), maintaining a flow of gaseous sterilizing agent essentially from top to bottom.

Feature i) enables to avoid recontamination of the packages, in particular recontamination by the conveyor belt and, hence, should be regarded as having a synergetic effect with features c), d) and e) leading to the more general technical problem of optimizing the sterilization process. Since none of the cited prior art discloses the combination of the distinguishing features, an inventive step should be recognized.

Request of simultaneous interpretation during oral proceedings

The respondent considers that it has an absolute right to simultaneous translation into the language of the proceedings according to Rule 4(5) EPC, if the other party employs a different language. The expression "if necessary" used in Rule 4(5) EPC is to be interpreted

in combination with Rule 4(1) EPC in this sense. The Board has no discretional power to decide on this issue. The decisions cited by the Board were not applicable since the professional representative as well as the accompanying person were not speaking two different languages.

Reasons for the Decision

1. *Respondent's request of simultaneous interpretation from German to English during the oral proceedings*

1.1 According to Rule 4(1) EPC "*any party to oral proceedings before the European Patent Office may use an official language of the European Patent Office other than the language of the proceedings, if such party gives notice to the European Patent Office at least one month before the date of such oral proceedings or provides for interpretation into the language of the proceedings.*"

The appellant's letter of 25 January 2013 with the indication of the use of German was filed in time and, consequently, the appellant was allowed to use this language during the oral proceedings.

However, the respondent's request of the same day for interpretation from German into English, although filed in due time, is to be rejected.

1.2 It could be argued - as does the respondent - that if one party to proceedings before the EPO uses an official language different from the language of the

proceedings, there shall be an interpretation from that other language into the language of the proceedings for the party/parties using the language of the proceedings.

However, this general rule needs to be set against the principle of efficiency of the proceedings and the duty of all services of the EPO, including the Boards of Appeal, to observe the finances of the EPO.
It is precisely for this purpose that Rule 4(5) EPC states:
"*The European Patent Office shall, if necessary, provide at its own expense interpretation into the language of the proceedings, or, where appropriate, into its other official languages, unless such interpretation is the responsibility of one of the parties.*"

It is the Board's opinion that this wording of Rule 4(5) EPC allows the Board to assess the necessity of such an interpretation. See in this respect T 131/07, not published in OJ EPO, point 8.4 of the reasons, acknowledging such discretion

1.3 The respondent's professional representative is German and has submitted all substantive submissions in German (see the reply to the statement of grounds of appeal and the reply to the Board's preliminary opinion). It is therefore evident that this representative is quite capable of understanding any oral submissions of the appellant's professional representative at the oral proceedings made in German without the need for interpretation. This was also admitted by the respondent's representative at the beginning of the oral proceedings.

In this respect the request for interpretation for the benefit of the representative is refused.

1.4 A request for interpretation to the benefit of an accompanying person would not justify the arrangement of interpretation at the expenses of the EPO either because it is the Board's opinion that accompanying persons do not by themselves have an automatic right to interpretation. This may for instance be dependent on whether the Board intends to let them address the Board, see in this respect T 131/07 (*supra*).

1.4.1 As set out in its communication of 5 February 2013, the Board itself does not see a need to hear the accompanying person at the oral proceedings.

1.4.2 Decision G 4/95 (OJ EPO 1996, 412) sets out the conditions under which an accompanying person may be allowed to make oral submissions. In point (3)(a) of the order it is stated that "*Such oral submissions cannot be made as a matter of right, but only with the permission of and under the discretion of the EPO.*" The Board, therefore, has a discretional power to allow or not such submissions.

1.4.3 The accompanying person for the respondent was announced as a technical expert to speak on "novelty and inventive step". However (as indicated in the Board's communication of 5 February 2013), these topics constitute the entire substantive issues of the case. These are, however, to be presented by the appointed professional representative in the context of European patent law. The accompanying person is, however, not

presented as qualified in the latter or under training to become qualified.
Points (1) and (2) of the order of G 4/95 (*supra*) state that an accompanying person "*may be allowed to make oral submissions on specific legal or technical issues on behalf of that party, otherwise than under Article 117 EPC, in addition to the complete presentation of the party's case by the professional representative.*"

The Board understands this to mean that the topic on which the accompanying person will speak should be specific and should be an addition to the case as presented by the professional representative of the party.

Both conditions are not fulfilled in the present case, the Board therefore does not see any need to allow oral submissions of the person accompanying the respondent's representative. See in this respect T 774/05, not published in OJ EPO, point 5 of the reasons.

1.4.4 The above being as it is, the Board does not see the need to provide for simultaneous interpretation from German to English for the accompanying person. In this respect it concurs with T 418/07, not published in OJ EPO, point 6 of the reasons, that providing interpretation to suit merely the convenience of a party is not a sufficient reason.

1.5 The respondent's representative raised the question what would have happened if a colleague representative, not understanding German, would have attended the oral proceedings instead of him.

It is, however, not the function of the Boards of Appeal to give rulings in their decisions on hypothetical situations or on questions not relevant to the case.

2. *Main request*

Claim 1 can be split up as follows:

a) A device for sterilization in production of packages (8), which is adapted for sterilization with a gaseous sterilizing agent kept in the gaseous phase throughout the sterilization process
b) said device comprising
   ba) a heating zone (2)
   bb) a sterilization zone (3)
   bc) and a venting zone (4)
c) an ambient temperature sensor (27) for sensing the ambient temperature outside the device (1)
d) a concentration meter (29) for measuring the concentration of sterilizing agent in the sterilization zone (3) and
e) a first control unit for controlling the amount of sterilizing agent introduced in the sterilization zone (3) based on the temperature measured by the ambient temperature sensor (27) and the concentration measured by the concentration meter (29).

For claim 20 this is as follows:

A) A method of sterilizing packages (8) in production of the packages (8)

B) said packages (8) having an open end (11) and a closed end (12)
C) wherein a gaseous sterilizing agent is used and kept in the gaseous phase throughout the sterilization process
D) an ambient temperature and a concentration of sterilizing agent in a sterilization zone (3) where sterilization is performed are measured, and
E) used for controlling the amount of sterilizing agent introduced in the sterilization zone (3).

2.1 *Novelty (Article 54(1) EPC)*

Novelty of the claimed subject-matter has not been contested by the appellant. None of the cited prior art discloses all the features of claims 1 and 20. As a consequence, novelty of the subject-matter of claims 1 and 20 is acknowledged.

2.2 *Inventive step (Article 56 EPC)*

Claim 1

2.2.1 As admitted by both parties, D4 is considered as being the closest prior art for claim 1 since the disclosed apparatus comprises a structure similar to the claimed one, i.e. different zones for pre-heating and sterilizing with a conveyor belt for conveying the packages to be sterilized through the zones (see also contested patent, paragraph [0002] citing D4).

2.2.2 D4 (column 4, line 5 to column 6, line 8; figures 1-3) discloses a device for sterilization (2) in production

of packages (3), like package cartons, which is adapted for sterilization with a gaseous sterilizing agent kept in the gaseous phase throughout the sterilization process, said device comprising a heating zone (27), a sterilization zone (28) and a venting zone (filling zone 29 or sterilization zone 28).

As a consequence, only features c), d) and e) of claim 1 are not known from D4.

2.2.3 The respondent is of the opinion that, in addition to said features c), d) and e), a venting zone (feature bc)) is also not disclosed in D4.

In its view, the overall disclosure of the contested patent refers only to clear separate zones for each of the sterilization steps, in particular a specific separate zone for venting (zone 4, figure 1). Therefore, since the claims of a granted patent have to be read and interpreted in view of this description and the figures, the device of claim 1 is to be regarded as requiring a separate venting zone.

2.2.4 This view cannot be shared by the Board for the reason that either the filling zone (29) or the sterilization zone (28) of D4 may be considered as being a venting zone within the broad meaning of present contested patent.

In particular, ventilation is explicitly performed in D4 in the said sterilization zone (28) after sterilization has occurred (column 5, lines 38-59). The ventilation step of D4 in the said sterilization zone (28) aims at the same goal as the ventilation step of

the contested patent, paragraph [0017], in which any residual sterilizing agent is vented away. Therefore, D4 discloses a venting zone.

Since claim 1 does not specify that the zones are to be separate from each other, it also encompasses devices in which different sterilization process steps are performed within the same zone, like in D4. Contrary to the respondent's view it is not because the contested patent discloses only an embodiment with separate zones, figure 1, that the claim in its broad meaning is limited by such interpretation.
Furthermore, from claim 7 it is clear that a preferred embodiment is foreseen for which the zones are separate from each others. This, however, also implies *a contrario* that the zones of claim 1 need not be separate from each other.

Consequently, feature bc) is not a distinguishing feature over D4.

2.2.5 As put forward in the contested patent, paragraph [0072], the distinguishing features c), d) and e) lead to optimal conditions for the sterilizing process, more particularly to avoid condensation by controlling the necessary amount of sterilizing agent introduced (see also paragraphs [0004]-[0008], [0034], [0042], [0066] and [0074]).

2.2.6 The objective technical problem is therefore to enable in the sterilizing device of D4 to control the amount of the sterilizing agent introduced so that condensation is avoided.

2.2.7 Document D7, which was filed late during the opposition proceedings and, for this reason, was not admitted by the Opposition Division, is admitted by the Board for the reasons given below, by applying the *prima facie* relevancy criteria which have (incorrectly) not been applied by the Opposition Division.

D7 deals with monitoring and control of sterilization processes and discloses the measurement of an ambient temperature among other parameters and the use of this parameter together with the measurement of the concentration of the sterilizing agent in the sterilizing zone for controlling the sterilizing concentration (D7, claims 1, 7 and 8). As a result, D7 directly discloses features d) and e) of the characterizing part of claim 1.

Although D7 does not explicitly disclose that the measured ambient temperature is outside the device, it shows the link between an ambient temperature measurement and its use by the control unit for controlling the amount of sterilizing agent introduced in the sterilizing zone. The document therefore appears *prima facie* relevant and, hence, is admitted in the appeal proceedings.

2.2.8 The respondent considers that D7 is not *prima facie* relevant since it relates to the sterilization of medical devices (column 2, lines 1-5), which is different from packages with an edible content as in the contested patent, paragraph [0066], or in D4, column 1, lines 17-21.

Furthermore, D7 does not relate to a sterilizing device with different zones like in the contested patent or in D4, since it comprises only a single sterilizing chamber (1), i.e. no heating zone or venting zone, and does not comprise a conveyor belt (figure 1).

Consequently, D7 deals with another type of device for another type of product to be sterilized so that the skilled person would not consider D7 and, in any case, would not think of combining its teaching with the device of D4. This is all the more true since D7 does not address the technical problem of keeping the sterilant in the gaseous phase in all the zones in order to ensure that the sterilization process is safely performed (as does the device of D4), since the device of D7 comprises only one chamber.

2.2.9 This view cannot be shared by the Board since, as argued by the appellant, D7 is not limited to sterilizing medical devices, in view of its overall disclosure as illustrated by its claim 1. It is rather concerned with sterilizing processes in general (paragraphs [0001], [0002] and [0016]), i.e. killing bacteria, like the contested patent or D4.

Like D7, the device of D4 can also be regarded as comprising a single chamber (housing 30) with separate zones. The conveyor belt used in D4 is not an essential feature with respect to the sterilizing process in itself. Although the devices of D7 and D4 exhibit indeed structural differences, the essential sterilizing process steps are applied in a similar way in both documents, namely sterilizing and venting, so

that the skilled person would not exclude the consideration of the teachings of D7.

In particular, taking into consideration the objective technical problem starting from D4 as discussed under point 2.2.6 above, the skilled person would look for prior art dealing with the general control of sterilization processes since this is the function of the distinguishing features c), d) and e). In doing so he would inevitably come across D7 which clearly states, already in its title, that it is concerned with the monitoring and control of sterilization processes.

The respondent's arguments against admitting D7 therefore cannot hold.

2.2.10 As just mentioned, the skilled person facing the objective technical problem of controlling the amount of sterilizing agent while avoiding condensation, would indeed consider D7.

As already discussed under point 2.2.7 above, D7 directly discloses features d) and e) of the characterizing part of claim 1. Figure 1 and paragraph [0023] do not show where the "environmental" temperature (=ambient temperature) is measured. However, as it is the case with sensor 8C for sensing the presence and concentration of the sterilant "in the environment around the sterilization system", it is implicit that the ambient temperature measurement is also performed outside the device (feature c)). This is also evident from the mention, in paragraph [0023], that the preferred location for such sensors "are known

to those skilled in the art". D7 therefore discloses the technical means necessary to solve the problem.

2.2.11 The Board shares the appellant's view as put forward during the oral proceedings that the issue of condensation is closely linked to the surface temperature of the packages during the sterilization process as illustrated for instance by D2 (page 6, "Temperatur der Packungsoberfläche"), which reflects the common general knowledge of the skilled person in the technical field of devices for sterilization in the filling of packages with foodstuffs at the end of 1980s (see also contested patent, paragraph [0058]).

Since the packages are stored outside the device, the skilled person would immediately realize that to know the surface temperature of the packages it is easiest to measure the temperature outside in order to better control the overall sterilizing process, more specifically the heating of the packages in order to reach the proper surface temperature and, hence, avoid condensation in the sterilization zone. As argued by the appellant, the parameters to be controlled inside the device are influenced by the outside parameters, among them in first place the ambient temperature.

Consequently, starting from D4 the skilled person facing the above mentioned objective technical problem, more particularly of avoiding condensation, would immediately consider D7, using at the same time his common general knowledge as illustrated by D2. In doing so, he would arrive at the claimed subject-matter in an obvious manner (Article 56 EPC).

2.2.12 The respondent considers that the temperature measurement, which is listed among many other parameters in claim 8 of D7, is only performed in order to calibrate the sensors for measuring the concentration of the sterilant (claim 7), not to control the concentration of the sterilizing agent as claimed.

In addition, D2 is completely silent on a temperature sensor located outside the device for measuring the ambient temperature. It further cannot count as common general knowledge.

2.2.13 Irrespective of whether, as pointed out by the respondent, the measurement of the ambient temperature in D7 is to calibrate the sensor for measuring the concentration of the sterilant (claim 7), the measured concentration of sterilant, based on said calibration, is used in D7 for controlling the sterilizing agent in the sterilizing chamber (1) (paragraphs [0002] and [0016]). It is clear for instance from paragraph [0022] that the sensor 8C located outside the device, for which calibration is performed by measuring environmental parameters, more particularly the temperature, is connected to the control unit (14) to operate valves or pumps in order to control the sterilant delivery line (3). Consequently, the measurement of the ambient temperature outside the device in D7 is directly correlated with controlling the sterilizing agent in the sterilizing chamber.

Concerning D2, it is true that the document does not disclose the measurement of an ambient temperature outside the device, but this is not relevant, as D7

already teaches this, as just discussed (see also point 2.2.7). In any case, D2 explicitly teaches that the surface temperature of the packages belongs to the essential parameters to control in order to avoid condensation of the sterilant (page 5, fourth paragraph to page 7, first paragraph). Therefore, in order for the surface of the packages to reach the required temperature within the very short time (sterilization takes roughly 1 second; see D4, column 5, lines 38-39), the heating has to be performed correctly so that the skilled person would immediately recognize that the starting point of the heating process has to be known, i.e. the initial temperature of the surface of the packages, so as to know the amount of heat to bring in.

Finally, D2 can be considered common general knowledge in the technical field of the patent in suit since it relates to a talk given at a seminar organized in particular for those active in the field of sterilizing packaging for foodstuffs.

In light of the above, the subject-matter of claim 1 lacks an inventive step (Article 56 EPC).

3. *Auxiliary request*

Claim 1 of the auxiliary request results from the combination of granted claims 1, 9, 12 and 13 and, hence, contains the following additional features with respect to claim 1 of the main request:

f) the device is adapted to sterilize packages (8) before filling of the packages (8), said packages (8) having an open end (11) and a closed end (12)

g) the device further comprises means (17,20) for controlling a flow of gaseous sterilizing agent in the sterilization zone (3), such that the gaseous sterilizing agent flows essentially in a direction from the open end (11) of the packages (8) towards the closed end (12) of the packages (8)

h) the means (17,20) for controlling the flow of gaseous sterilizing agent are arranged to introduce the gaseous sterilizing agent in a top portion (18) of the sterilization zone (3) and

i) to evacuate the gaseous sterilizing agent in a bottom portion (19) of the sterilization zone (3), maintaining a flow of gaseous sterilizing agent essentially from top to bottom.

3.1 Document D4 can still be considered as the closest prior art for the same reasons as given under point 2.2.1 above vis-à-vis claim 1 of the main request.

3.2 The device of D4 is adapted to sterilize packages (3) before filling. The packages sterilized by the device of D4 are cartons which are to be filled and sealed in the filling zone (29). They are conveyed through the device's zones by a conveyor belt (4).
It is clear from D4 that the cartons have an open end and a closed end and are held in the upright position standing on their closed end during the sterilizing process (column 1, lines 43-58; column 4, lines 5-22; figures 1-3), since they are subsequently filled from above (column 5, lines 1-3; column 5, line 68 to column 6, line 8), without changing their orientation.

The device of D4 further comprises means (17, 18, 19, 25, 26) for controlling a flow of gaseous sterilizing

agent in the sterilization zone (28), such that the gaseous sterilizing agent flows essentially in a direction from the open end of the packages (3) towards the closed end of the packages (3) via the conduit (25), said means (17, 18, 19, 25, 26) for controlling the flow of gaseous sterilizing agent being arranged to introduce the gaseous sterilizing agent in a top portion of the sterilization zone (28) (column 4, lines 37 to column 5, line 38; figure 1).

3.3 Features f), g) and h) are therefore disclosed by D4. On the other hand, feature i) is a distinguishing feature since the sterilizing gas is taken out of the device of D4 via the outflow pipe (35), also arranged in a top portion of the sterilization zone (28). Consequently features c), d), e) and i) are the distinguishing features of claim 1 of the auxiliary request over D4 (see point 2.2.2 above).

3.4 The distinguishing feature i) has the technical effect of decreasing the air turbulence in the sterilization zone due to the laminar gas flow from the top to the bottom so that recontamination is avoided (contested patent, paragraphs [0018] and [0019]).

Consequently, said distinguishing feature i) does not exhibit a synergic effect with the above discussed distinguishing features c), d) and e) (see point 2.2.5 above). As a result, the inventive merit of feature i) can be assessed independently from the merit of distinguishing features c), d) and e).

3.5 The objective technical problem associated with distinguishing feature i) is then to provide a sterilizing device in which recontamination is avoided.

As illustrated by D2, page 9, second complete paragraph, the skilled person is aware of the link existing between air turbulence and micro-organisms remaining in the atmosphere of the sterilizing zone, which leads to recontamination. In view of this, the skilled person would try to minimize the air turbulence and would be left with the choice between only two known and usual possibilities of sterilizing gas flow: from top to top like in D4, or from top to bottom. Indeed, as illustrated for instance in D3 (first page, paragraph bridging middle and right-hand columns), evacuating the sterilizing agent in a bottom portion of a sterilizing device is a known and applied measure in the present technical field. This is independent of whether the sterilizing agent is in a spray or vapour form. The skilled person would therefore try this only other available possibility and in doing so would realize the advantages of making the sterilizing gas flow from top to the bottom, obtaining a laminar flow with less turbulence, reducing the amount of micro-organisms in the atmosphere of the sterilizing zone, i.e. avoiding recontamination. In view of these advantages he will adopt the laminar flow, from top to bottom, in the device of D4 without the need of any inventive skills. Feature i) can therefore not justify an inventive step.

Consequently, starting from D4 the skilled person applying the teaching of D7 together with his common general knowledge as illustrated by D2 and D3, would

arrive at the claimed subject-matter in an obvious manner (Article 56 EPC).

3.6 The respondent agrees that the flow of the sterilizing gas from the top to the bottom portion enables to avoid the recontamination of the sterilized packages, more particularly recontamination by the conveyor belt (contested patent, paragraphs [0018] and [0019]). The respondent considers, however, that there is a synergetic effect between feature i) and features c), d) and e) since they solve in combination the objective, more general technical problem of optimizing the sterilizing process.
Since the combination of distinguishing features is not disclosed in the cited prior art, inventive step has to be acknowledged.

3.7 This view cannot be shared by the Board since the individual technical effects have to be considered. If there is no synergy between the effect(s) for feature i) on the one hand and the effect(s) for features c), d) and e) on the other hand, there is no room for determining a more general, all encompassing objective problem. Consequently, the problem-solution approach can be applied independently for feature i).

In light of the above, the subject-matter of claim 1 of the auxiliary request lacks an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar: The Chairman:

G. Nachtigall H. Meinders