BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS | BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE | CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [X] To Chairmen and Members
(C) [ ] To Chairmen

D E C I S I O N
of 10 February 1995

Case Number: T 0208/92 - 3.2.4

Application Number: 84300076.1

Publication Number: 0115380

IPC: B65B 55/02

Language of the proceedings: EN

Title of invention:
Method of packaging foodstuffs in plastics containers

Patentee:
AMERICAN NATIONAL CAN COMPANY

Opponent:
AB Akerlund & Rausing

Headword:
Packaging foodstuffs

Relevant legal provisions:
EPC Art. 54, 56, 100

Keyword:
"New opposition ground - admitted (no)"
"Identification of the claimed subject-matter"
"Inventive step (yes)"

Decisions cited:
G 0009/91, G 0010/91

Catchword:

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0208/92 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 10 February 1995

Appellant: (Opponent)
AB Akerlund & Rausing
Box 22
S-221 00 Lund 2 (SE)

Representative:
Graudums, Valdis
Albihn West AB
Stora Nygatan 15
S-411 08 Göteborg (SE)

Respondent: (Proprietor of the patent)
AMERICAN NATIONAL CAN COMPANY
8770 West Bryn Mawr Avenue
Chicago
Illinois 60631 (US)

Representative:
MacGregor, Gordon
ERIC POTTER CLARKSON
St. Mary's Court
St. Mary's Gate
Nottingham NG1 1LE (GB)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office dispatched on 10 January 1992 rejecting the opposition filed against European patent No. 0 115 380 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: C. A. J. Andries
Members: P. Petti
J. P. B. Seitz

Summary of Facts and Submissions

I. The opposition against the European patent No. 115 380 was rejected by the Opposition Division in its decision dispatched on 10 January 1992. The opposition was based on Article 100(a) EPC with respect to inventive step (Article 56 EPC).

II. The wording of Claim 1 of the patent as granted reads as follows:

"1. A method of producing a foodstuff package which aims to secure sterility, comprising packing a foodstuff in a plastics container having a bottom wall of less stress resistance than the sidewall, involving exposing the interior of the sealed container, which is filled with the foodstuff leaving an unfilled headspace to the effects of sterilising temperatures and low internal pressures therein which result in deformation of the plastic thereof, characterized by leaving a selected unfilled headspace volume in the container upon filling same and sealing the container at a selected reduced air pressure so as to allow in subsequent steps of the process a temporary bulging and a reversal of the bulging of the plastics bottom wall of the container to occur; maintaining, e.g. in a steam-containing atmosphere the container and foodstuff long enough and at a temperature level sufficient to secure sterility of the container and foodstuff, under conditions which cause the bottom wall to bulge outwardly; and while the bottom wall is at a reforming temperature level whereat the plastic is soft, reforming the container bottom wall without significantly panelling the container sidewall to remove the bulge of the bottom wall by providing a pressure differential wherein the pressure externally of the container exceeds the pressure internally thereof."

III. On 11 March 1992 the Appellant (Opponent) lodged an appeal against this decision and simultaneously paid the appeal fee. A statement setting out the appeal grounds was received on 21 April 1992.

IV. With the statement of grounds the Appellant introduced a new ground for opposition, namely Article 100(c) EPC. The Appellant also contested the novelty and the inventive step of the subject-matter of Claim 1 as granted, particularly with respect to the content of document US-A-3 977 153 (E5).

The Respondent (Proprietor) contested the Appellant's arguments. He also requested that the arguments of the Appellant relating to Article 100(c) EPC should not be admitted into the proceedings and that the appeal proceedings should be limited to the ground invoked in the Notice of Opposition.

V. With the communication dated 2 December 1994 the Board informed the parties that the arguments of the Appellant relating to Article 100(c) EPC would not be admitted into the proceedings.

VI. Oral proceedings were held on 10 February 1995. The parties - although duly summoned - did not appear. In accordance with the provisions of Rule 71(2) EPC, the proceedings were continued without them.

VII. The Appellant requested that the decision under appeal be set aside and the patent revoked.

The Respondent requested that the appeal be dismissed, so that the patent could be maintained as granted. The Respondent also submitted an auxiliary request based on a new set of claims.

Reasons for the Decision

1. The appeal is admissible.

2. *Procedural matter*

According to the decision G 9/91, OJ EPO 1993, 408 and the opinion G 10/91, OJ EPO 1993, 420 of the Enlarged Board of Appeal (see particularly sections 18), new grounds for opposition "may in principle not be introduced at the appeal stage". An exception to the above principle is justified if "the patentee agrees that a fresh ground for opposition may be considered" and "...such a ground should only...be admitted into the proceedings, if considered by the Board to be already prima facie highly relevant".

In the present case the Respondent did not agree with the introduction of the new ground.

Moreover, the Board does not consider this ground as "already prima facie highly relevant".

Therefore, the arguments of the Appellant relating to Article 100(c) EPC are not admitted into the proceedings.

3. Objections concerning Claim 1 as granted and relating to Article 100(b) EPC were raised during the proceedings although such an opposition ground was not contained in the Notice of Opposition. The Opposition Division, in the decision under appeal, considered however these objections to be "not justified".

In this context, it must be emphasised that, see Article 100(b) EPC, the patent as a whole, i.e. description, drawings and claims, must disclose the invention in a manner sufficiently clear and complete for it to be carried out by a skilled person. Since the description clearly discloses the invention, the Board has no reason to doubt that the patent in suit meets this requirement.

4. *Identification of the subject-matter of Claim 1*

4.1 Some features of Claim 1 need to be interpreted in order to identify the subject-matter defined by the claim so that it can be compared with the prior art.

4.2 The feature "...exposing the interior of the sealed container, which is filled with the foodstuff leaving an unfilled headspace to the effects of sterilising temperature and low internal pressure therein..." implies that the foodstuff is sterilised "in situ", i.e. in the sealed container. In this context, the fact that the interior of the container is exposed to the effects of low internal pressure does not imply that a direct action of applying low pressure is performed but only that, since the container is sealed at a reduced pressure, the interior of the container will be subject to low internal pressure when the container is cooled after the hot-sterilising process (see the description of the patent, page 3, lines 49 to 54). The statement "...which result in deformation of the plastic thereof..." defines the result of the latter feature.

4.3 The feature "...maintaining...the container and foodstuff long enough and at a temperature level sufficient to secure sterility of the container and foodstuff, under conditions which cause the bottom wall to bulge outwardly..." tells the skilled reader of the

claim not only that the bulging of the bottom wall is due to the level of the sterilising temperature but also that the sterilising process is carried out under conditions which permit bulging of the bottom wall to take place when the sterilisation step is carried out. In other words, no steps are taken to avoid bottom bulging during the sterilisation step.

4.4 The last characterising features of Claim 1 (from the expression "...and while the bottom wall..." to the expression "...the pressure internally thereof.") define the reforming step of the method. The reforming of the container bottom wall should be considered as being the inward deformation of the bottom wall obtained by performing the action of providing a pressure differential. These features indicate that the reforming step begins after the conclusion of the thermal sterilising step, i.e. when the container bottom wall is distended outwardly, but before the temperature is below a certain level.

In the context of these features, the term "soft" is considered to be sufficiently clear in so far as these features also refer to a "reforming temperature". In the description of the patent it is stated that the "reformable temperature" depends on the nature of the plastics and the value of 44°C is indicated for polyethylene-polypropylene blends (see page 9, lines 10 to 12).

The reforming step results in the bulge of the bottom wall being removed without significantly panelling the container sidewall, as explicitly stated by these features. The expression "...without significantly panelling the container sidewall..." can be construed by taking account of the drawings (see particularly Figures 1E, 1G and 1F).

4.5 The term "selected", used in Claim 1 before the expressions "unfilled headspace volume" and "reduced air pressure" has to be interpreted in the context of the features of Claim 1 according to which the filling and the sealing of the container have to be made in such a manner that a specific (selected) headspace volume and a specific (selected) reduced air pressure are present which allow "...a temporary bulging and a reversal of the bulging...to occur" in the meaning of the present patent.

Indeed, according to the description (page 11, line 61 to page 12, line 39) and to the drawings (Figure 11), the performance of the filling and sealing steps of the method according to Claim 1 requires a relationship between the parameters "unfilled headspace volume" and "reduced air pressure", namely that the volume of the initial headspace (i.e. the fill height of the container) must be selected in accordance with the reduced air pressure (i.e. the vacuum level) at which the container will be sealed.

In other words, the unfilled headspace volume and the reduced air pressure are selected relatively to each other "so as to allow...a temporary bulging and a reversal of the bulging of the plastics bottom wall of the container to occur".

Such an interpretation of the expressions "selected unfilled headspace volume" and "selected reduced air pressure" corresponds to the interpretation made by the Respondent in the letter of 13 November 1992 (see page 16, paragraph 5.13).

5. *The prior art*

5.1 During the Appeal proceedings the parties have based their arguments on the following documents:

E5: US-A-3 977 153;
D1: CH-A-403 605;
P1: "Plastics Containers for perishable foods", S. I. Turtle, in "LWT-Report", Munich, 9-11 June 1978, pages 386 to 391.

5.2 Document E5 is not explicitly directed to a method of producing a foodstuff package but to a method of making a container for food products. However, document E5 describes a plastics container suitable for being retorted with the food therein for sterilisation of the food (see column 2, lines 14 to 16 and 32 to 35). Thus, this document implicitly discloses a method of producing a foodstuff package which aims to secure sterility, comprising packing foodstuff in a plastic "container which has a body portion [i.e. bottom wall and sidewall] formed from a sheet comprising a plurality of thermoplastic layers which are not securely bonded together", said container being filled with a foodstuff and then sealed by an interlocking closure which holds the plastic layers firmly in place (see column 4, lines 35 to 42). The drawings show a filled container with a headspace (Figures 1 and 3). In document E5 the possibility of retorting the filled containers from temperatures of about 113°C (235°F) to about 120°C (250°F) is explicitly indicated. Therefore document E5 implicitly teaches that the interior of the sealed container, filled with the foodstuff leaving an unfilled headspace, can be exposed "to the effects of sterilising temperatures" (sterilisation "in situ").

Document E5 however does not contain any specific information concerning the filling and the sealing of the container. In particular no explicit information concerning a sealing resulting in a reduced air pressure can be derived from this document. In any case, no information concerning the selection - in the meaning of Claim 1 (see section 4.5 above) - of the volume of the initial headspace in relation with a reduced air pressure can be derived unequivocally from document E5.

The fact that solely retorting temperatures and consequently retorting handling times are defined in the description cannot be considered as a disclosure of the remaining circumstances during retorting. Indeed document E5 neither contains the information that the retorting step is carried out under conditions which permit that the bulging of the bottom wall of the container occurs, nor relates to a subsequent "reforming" step.

The fact that the container according to document E5 is described as being capable of withstanding retort temperatures (see abstract) without container failure (column 1, lines 45 and 46) does not imply that the container side walls will not panel.

5.3 Document D1 discloses a method of producing a foodstuff which aims to secure sterility and in which the foodstuff is packaged in a plastics container which may have a concave bottom wall (see Claims I and II). The method comprises the steps of filling the container with the foodstuff by leaving an unfilled headspace volume, while the container is surrounded by a cooling medium and sealing the container immediately after its filling (see Claim I and sub-claim 2). The sterilisation step is not carried out after the sealing of the container but either during the filling because the foodstuff is hot

enough to sterilise itself and the container (see sub-claim 1) or by sterilising container and foodstuff separately from each other before the filling step (see column 2, lines 7 to 23). Since document D1 describes the sealing as occurring immediately after the hot filling of the container, it can be derived from this document that the interior of the sealed container is exposed to the effects of low internal pressure (see also page 1, lines 37 to 43). The feature that the bottom wall may have less stress resistance than the sidewall appears to be implicitly disclosed in so far as a concave bottom wall of the container may become more concave (bulging) due to the effect of low internal pressure after cooling (see page 1, lines 37 to 46). According to the disclosure of document D1, there is however no deformation of the container during the sterilisation process but there is a deformation during the subsequent cooling after sealing of the container has occurred.

5.4 Document P1 refers to tests carried out with plastics containers sealed with a cap. It is stated that in general these containers needed a carefully controlled overpressure of air during retorting in order to avoid bulging during the retorting.

6. *Novelty*

6.1 Having regard to the analyses of the prior art made in sections 5.2 to 5.4 above, the subject-matter of Claim 1 is novel (Article 54 EPC).

6.2 The objection of lack of novelty raised by the Appellant is based on a "ex post facto" interpretation of document E5. Even if the bottom wall of the container described in document E5 were to be suitable for bulging (in general) when the container is submitted to a

thermal sterilisation step and then suitable for being reformed (in general) if a pressure differential were to be provided, this would not mean that the teaching of bulging and reforming of the container bottom wall in the meaning of the opposed patent would have been made available to the public. Indeed there is not a single indication in document E5 that reforming to approximately the original form of the container bottom wall takes place not only after bulging has taken place but also during that time prior to the cooling when the bottom was at a reforming temperature. Furthermore, there is not the slightest indication that therefore there should be selected a specific unfilled headspace volume as well as a reduced air pressure.

7. *Inventive step*

7.1 The method of producing a foodstuff package as implicitly disclosed in document E5 appears to be closer than the method known from document D1 to the subject-matter of Claim 1 in so far as document E5 implicitly discloses a sterilisation in situ (see section 5.2 above), whereas document D1 does not disclose any sterilisation "in situ".

7.2 The method according to Claim 1 essentially differs from that disclosed in document E5 by the features specified in the characterising portion of Claim 1.

The technical problem solved by the combination of features of Claim 1 is "to improve the configuration of the container [filled with foodstuff] after thermal processing" (see patent description, page 3, lines 62 to 63).

7.3 The solution of this problem is based on the idea of allowing bulging of the bottom wall of the filled container to occur during the thermal sterilisation step and then actively removing the bulge of the bottom wall by a controlled pressure differential between the external and internal pressures to which the container is subject, after the conclusion of the thermal sterilising step and during the time the bottom wall is still at a reforming temperature.

None of the documents cited during the appeal proceedings suggests this idea. In particular, it must be considered that document D1 does not disclose a sterilisation "in situ" and moreover points to a system (cooling) to **avoid deformations** during sterilisations and filling, and that document P1 rather gives a suggestion in an opposite direction, i.e. of carefully controlling the overpressure of air during the thermal sterilisation step (retorting) in order to avoid not only bulging during heating but also reforming during the subsequent cooling, (page 387, left hand column, lines 4 to 13: no outwardly distortion, no collapse).

Thus, it would not be possible for a skilled person starting from the prior art according to document E5 and confronted with the above mentioned technical problem, to follow a logical path to arrive at the subject-matter of Claim 1.

7.4 Therefore, the subject-matter of Claim 1 involves an inventive step (Article 56 EPC) having regard to the prior art known from documents E5, D1 and P1.

8. Claim 1, as well as the dependent Claims 2 to 25 which concern particular embodiments of the invention as defined by Claim 1, can form the basis of an allowable patent. The appeal therefore has to be dismissed so that the opposed patent can be maintained as granted according to the Respondent's main request.

Therefore there is no need to consider the Respondent's auxiliary request.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. Andries