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D E C I S I O N
of 28 March 1995

Case Number: T 0423/93 - 3.2.1
Application Number: 84112523.0
Publication Number: 0140282
IPC: B65D 1/28, B65D 77/20, B65D 81/34,
B31F 1/100

Language of the proceedings: EN

Title of invention:

Can-like container and method for manufacturing same

Patentee:

Showa Denko Kabushiki Kaisha

Opponent:

AB Åkerlund & Rausing

Headword:

-

Relevant legal provisions:

EPC Art. 56
Rule 67

Keyword:

"Inventive step (main request no, auxiliary request yes)"
"Reimbursement of appeal fee (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0423/93 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 28 March 1995

Appellant: AB Åkerlund & Rausing
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Respondent: Showa Denko Kabushiki Kaisha
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office dated 9 March 1993
concerning maintenance of European patent
No. 0 140 282 in amended form.

Composition of the Board:

Chairman: F. A. Gumbel
Members: S. Crane
J.-C. Saisset

Summary of Facts and Submissions

- I. European patent No. 0 140 282 was granted on 25 July 1990 on the basis of European patent application No. 84 112 523.0.
- II. The patent was opposed by the Appellants on the grounds that its subject-matter lacked inventive step with respect to the state of the art (Article 100(a) EPC). They requested revocation of the patent in its entirety. As state of the art the following documents were referred to during the course of the opposition proceedings.
- (P1) US-A-4 210 618
 - (P2) GB-A-1 456 036 (family equivalent of SE-A-370 203)
 - (P3) CH-A-634 789
- III. By its decision dated 9 March 1993 the Opposition Division found that the patent was to be maintained in amended form.
- IV. A Notice of Appeal against this decision was filed on 6 May 1993 and the appeal fee paid on the same day. The Statement of Grounds of Appeal was filed on 8 July 1993.

The Appellants requested that the decision under appeal be set aside and the patent revoked in its entirety. They also requested reimbursement of the appeal fee.

In support of their requests the Appellants presented substantially the following arguments:

The decision of the Opposition Division was based on a line of reasoning that had neither been advanced by the Respondents (Proprietors of the patent) nor mentioned by the Opposition Division in its communication to the parties. Moreover this line of reasoning, i.e. that the wrinkles or folds in the container body improved adhesion to the injection moulded tray, lacked any substantive basis in the patent specification. The Appellants had therefore been deprived of their right to be heard on this question. In view of this substantial procedural violation the appeal fee should be reimbursed.

With regard to the substantive issue of the inventive step of the subject-matter of Claim 1 reference was to be had to documents P1 and P2. Both of these disclosed containers having parts comprising a multi-layer sheet with at least a metal foil layer combined with an injection moulded support. The formation of folds or wrinkles in the sheet would occur automatically as the sheet was formed to the required shape. Thus the claim contained nothing of inventive significance.

- V. In a communication dated 22 February 1994 pursuant to Article 110(2) EPC the Board expressed its preliminary view that taking into account the teachings in particular of documents P2 and P3 the subject-matter of the then valid Claim 1 seemed to lack inventive step. In this respect it was noted that although stated in the patent specification that the container body of document P3 comprised folds in its side walls, no specific teaching of this could be found in the document itself. However, the provision of such folds was well known in the art as witnessed by the documents GB-2 123 786, US-A-4 130 236, US-A-3 038 634 and DE-C-33 414 cited in the course of the pre-grant examination proceedings.

The Board also indicated that the request of the Appellants for reimbursement of the appeal fee seemed justified.

VI. With a letter dated 22 June 1994 the Respondents filed an amended Claim 1 and amended pages 1 and 2 of the description and made an auxiliary request for oral proceedings if the request for maintenance of the patent in amended form could not be followed.

Oral proceedings were held on 28 March 1995.

The Appellants, as they had already indicated in their letter of 4 October 1994, did not attend. Pursuant to Rule 71(2) EPC the oral proceedings were continued without them.

At the oral proceedings the Respondents made the following main and auxiliary requests:

Main Request: Maintenance of the patent in amended form on the basis of Claim 1 and pages 1 and 2 of the description filed with letter dated 22 June 1994, dependent Claims 2 to 8 as granted, Claim 9 filed with the letter dated 26 November 1992, pages 2a to 5 filed with letter dated 2 December 1991, and the drawings as granted.

Auxiliary Request: Maintenance of the patent in amended form on the basis of the single claim and the description submitted at the oral proceedings together with the drawings as granted.

Claim 1 of the main request reads as follows:

"A container comprising
a container body (141, B), said container body consisting of a multi-layer sheet composed of at least a metal foil layer and a hot-melt resin layer, margin portions of said container body containing folds in side wall portions thereof,
a cover (142, A) made of a multi-layer sheet composed of at least a metal foil layer 146 and a hot-melt resin layer (145, 147) formed on one side of said metal foil layer, peripheral portions of said hot-melt resin layer of said cover being heat-sealed to said hot-melt resin layer of said container body, and
a tray (C) enclosing at least a lower portion of the outer surface of said container body, said tray being injection moulded directly to the outer surface of said container body (141, B)."

Dependent Claims 2 to 8 relate to preferred embodiments of the container according to Claim 1.

Independent Claim 9 reads as follows:

"A method for forming a container comprising the steps of: providing a blank sheet, said blank sheet comprising a metal foil layer having a thickness of no more than 40 μm , and a hot-melt resin layer formed on at least one side of said metal foil layer, cutting said sheet to provide a blank having dimensions in accordance with desired dimensions of said container body, placing said blank over one side of a female mold, said female mold having a hollow central portion having dimensions established in accordance with said desired dimensions of said container body, said female mold having grooves in its side wall portions, pressing

a male mold against said blank and into said hollow portion of said female mold thereby to provide a container body having wrinkles in side wall portions corresponding to said wall portions of said female mold; and attaching a cover to said container body, said cover comprising a metal foil layer having a hot melt-resin layer on at least one side thereof, and the step of providing a tray around said container body, said step of providing said tray comprising injection moulding a resin material around a portion of said body opposite said cover."

The single claim according to the auxiliary request corresponds to Claim 9 of the main request.

VIII. In support of their requests the Respondents argued substantially as follows:

The essential idea underlying the invention was that it was possible to strengthen a pre-existing self-supporting container body made of a multi-layer sheet material by injection moulding a support tray onto the outer surface of the container body. Document P2 disclosed nothing of the sort. Instead it proposed making a container by placing a piece of diffusion resistant foil into an injection mould and then forming the container body by injection of plastics onto the outside of the foil. Thus the known method produced a container but did not strengthen an existing one. Since document P2 was wholly silent about strengthening it could not teach the skilled man how to strengthen a container body.

As for the method of Claim 9 none of the state of the art documents proposed forming a container body from the type of sheet material specified in the claim by press

moulding the sheet into a grooved female mould such that wrinkles were formed in side wall portions of the sheet. These wrinkles enhanced the bond between the container body and the tray injection moulded around it. Although this effect was not specifically mentioned in the patent specification it was evident to the skilled man that it would arise.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.
2. *Amendments*
 - 2.1 Claim 1 according to the main request corresponds in substance to Claim 1 as granted, the only significant difference being that the claim is drafted in one-part rather than two-part form. Since the preamble of granted Claim 1 contained a feature, i.e. that side wall portions of the container body had folds, which is not disclosed in document P3 on which, as is apparent from the description, the preamble was based, this amendment seems appropriate in the circumstances.

Independent Claim 9 of the main request is substantially equivalent to independent Claim 9 as granted except in that it is clarified that the mould forming of the blank sheet is to produce the container body rather than the container itself.

The amendments made to the description do not go beyond those necessary to bring this into line with the terms of the amended claims and to refer to further relevant state of the art.

There are therefore no objections under Articles 123(2) and (3) EPC to the documents corresponding to the main request.

- 2.2 The single claim of the auxiliary request corresponds to Claim 9 of the main request. The description according to the auxiliary request has been derived from that according to the main request by making clear that the containers as described with reference to Figures 1 and 1A to 1C and 2, which figures are retained for illustrative purposes, do not embody the claimed invention.

Thus there are also no objections under Articles 123(2) and (3) EPC to the documents corresponding to the auxiliary request.

3. *State of the art*

- 3.1 Document P1 relates to a container comprising a substantially tubular body portion provided with bottom and cover parts. The tubular body portion is an extruded plastics part of the outside of which is bonded a laminate of aluminium foil sandwiched between two films of polypropylene. The bottom and cover parts are of injection moulded plastics having bonded thereto on the side forming the inside of the container a laminate as mentioned above.

- 3.2 Document P2 discloses with reference to Figures 1 to 4 and 8 to 11 a method of making a container in which an originally flat piece of sheet material is pressed by the male part of an injection mould into the cavity of the mould, whereby the sheet material is formed into the

shape of the container, and the plastics is injected into the mould to adhere to the sheet material and provide a supporting portion therefor. The sheet material may comprise one or more layers of different material, e.g. aluminium, plastics and/or paper.

3.3 Document P3 concerns a container body formed by drawing, preferably deep drawing, a laminated sheet of aluminium foil and a plastic film. The aluminium foil has a thickness of 0.04 to 0.30 mm and the plastic film may comprise PVC. The cover of the container may also be formed of a laminate of aluminium foil and PVC film, in which case the PVC layers of the container body and cover can be heat-sealed together.

3.4 The prior art documents mentioned by the Board in its communication, see Section V above, are all concerned in various ways with containers of which the container body has folds or wrinkles in its side wall portions. In particular, GA-A-2 123 786 shows a container body in the form of a tray preferably made of a pressed board material coated with polyester. The Board is stated to be pressed by a known process which produces corrugations at the corners of the tray; US-A-4 130 236 and US-A-3 038 634 both concern the formation of a tray-like container body from a flat blank of for example paper board or aluminium foil in which the corner regions of the side walls are formed by folding the blank into a pleated configuration; DE-C-33 414 relates to the formation of a container body from a flat blank of paperboard by pressing it into a female mould which is provided with vertical grooves to prevent sideways movement of the paperboard so as to avoid the creation of large irregular folds.

4. *Novelty and inventive step*

4.1 *Main request*

According to the introductory description of the patent specification it is known to fabricate a container from a multi-layer sheet composed of a metal foil and plastics films. It is stated that for some purposes a higher mechanical stiffness of the container is desired. The claimed invention proposes a solution to this problem. The novelty of the subject-matter of Claim 1 is clearly given (see point 3 above) and has not been in dispute during the opposition or appeal proceedings. It is therefore not necessary to substantiate this issue in more detail.

In respect of inventive step the Board is of the opinion that the most relevant state of the art is represented by document P2. As indicated at page 3, lines 105 to 116, of that document it is possible by using an appropriate impermeable sheet material to produce a container which fulfils all reasonable requirements and which has a supporting plastics portion and a sealing inner portion formed by the sheet material. Document P2, although suggesting in general terms a multi-layer sheet material comprising for example aluminium and plastics, does not specifically disclose a sheet material composed of at least one metal foil layer and a hot-melt resin layer formed on at least one side of the metal foil layer as defined in Claim 1 of the main request. However such sheet material was well known in the packaging art, see document P3, and its use in the method of document P2 would be an obvious choice for the man skilled in the art, as would its use for forming a cover

for the container such that the cover can be readily heat-sealed to the corresponding hot-melt resin layer of the sheet material of the container, as is also proposed in document P3.

Furthermore, the Board can see no reason why the sheet material proposed in document P2, once it has been formed by the appropriate shape in the injection mould, does not constitute a "container body" within the terms of Claim 1, and that likewise the injection moulded supporting plastics portion for the sheet material does not constitute a "tray" as referred to in the claim. In this context the argument of the Respondents that the term "container body" inherently implies that the sheet material of which it has been formed has necessarily been pre-formed into an element which is self-supporting and capable of being used in its own right as a container finds no support in the wording of the claim.

Accordingly, the one remaining distinction between the subject-matter of Claim 1 and the container disclosed in document P2 is the requirement of the claim that the container body contains folds in its side wall portions. In contrast the blank of sheet material used in the method of document P2 has radial cuts such that when pushed into the cavity of the mould the sheet material can adopt the desired shape of the container body, whereby it can be assumed that in order to provide a complete impermeable layer the radially extending leaves of the blank forming the side wall portions of the container body will overlap somewhat. The man skilled in the art is however aware that overlapping is inferior in this respect to arrangements in which the side wall portions are continuous, with folded areas being provided to take up the excess material. The provision of fold lines in the blank of sheet material to achieve

this effect, such as proposed in US-A-4 130 236 or US-A-3 038 634, see point 3.4 above, is a measure which does not go beyond the routine considerations of the man skilled in the art.

Accordingly, the Board comes to the conclusion that the subject-matter of Claim 1 does not involve an inventive step. The main request of the Respondents must therefore be rejected.

4.2 *Auxiliary request*

According to the relevant steps of the method defined in the single claim of the auxiliary request the container body is formed from a blank sheet comprising a metal foil layer of a thickness not more than 40 μm and a hot-melt resin layer formed on at least one side of this metal foil layer by pressing the blank between moulds. The female mould has grooves in its side wall portions whereby the container body is formed with corresponding wrinkles in its side wall portions.

Such a method of forming a container body from a blank sheet of the type defined is not disclosed in any of the prior art documents cited in the proceedings, so that for this reason alone the subject-matter of the claim is novel. Since this has not been disputed further elucidations are unnecessary.

Furthermore, since sheet material of the type defined in the claim is capable of being deep drawn, see document P3, and it is possible by deep drawing to produce container bodies with smooth side walls, which for aesthetic and hygienic reasons would generally be thought of as preferable to wrinkled side walls, the Board is not convinced that the man skilled in the art would adopt the method of forming the container body as

referred to above as a matter of course. As argued by the Respondents, however, these wrinkles have the advantage of improving the bond between the container body and the support tray directly injection moulded around it. Although this effect is not mentioned in the patent specification it indeed seems plausible, given the extra bonding area provided by the wrinkles, and is not contradicted by the statement page 3, lines 60 and 61 of the description that the vertical wrinkles of the container (body) are smoothed by the resin pressure of the injection moulding, since such smoothing does not preclude a better interlocking between the tray and the container body. Taking into account further the fact that it is an essential feature of the method proposed in document P2 that the blank sheet is first deformed as it is pushed into the injection mould, i.e. is not first formed in a separate step and then transferred to the mould, the Board comes to the conclusion that the method according to the claim of the auxiliary request cannot be seen as being derivable in an obvious manner from the state of the art.

This claim together with the amended description submitted at the oral proceedings and the drawings as granted therefore form a suitable basis for maintenance of the patent in amended form.

5. *Reimbursement of the appeal fee*

The central argument on which the contested decision was based was that particularly firm cohesion between the tray and the container body results from inter-engagement between the molten resin and the folds or wrinkles in the container side wall and that no equivalent teaching could be found in the state of the art. That viewpoint had however not been advanced by either the Respondents or the Opposition Division before

the decision was issued, nor is it mentioned in the patent specification so that the Appellants had had no opportunity to comment on it. The decision therefore failed to conform with the requirements of Article 113(1) EPC and the request of the Appellants for reimbursement of the appeal fee is accordingly justified.

Order

For these reasons it is decided that:

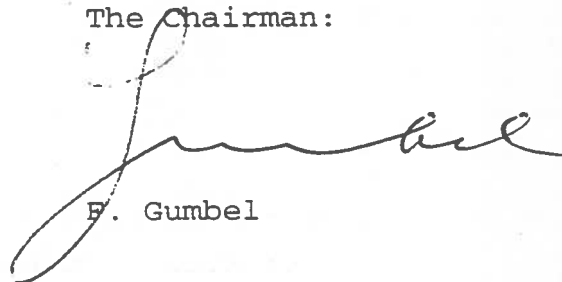
1. The decision under appeal is set aside.
2. The main request of the Respondents is rejected.
3. The case is remitted to the first instance with the order to maintain the patent on the basis of the single claim and description submitted as auxiliary request at the oral proceedings, together with the drawings as granted.
4. The request for reimbursement of the appeal fee is allowed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

