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D E C I S I O N
of 24 May 1995

Case Number: T 293/94 - 3.2.1

Application Number: 88200135.7

Publication Number: 0276893

IPC: B65D 5/40, B65D 5/06

Language of the proceedings: EN

Title of invention:
Blank for rectangular parallelepipedal sealed containers made of paper-base laminate

Patentee:
Shikoku Kakoki Co. Ltd.

Opponent:
PKL Verpackungssysteme GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 293/94 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 24 May 1995

Appellant: (Opponent)
PKL Verpackungssysteme GmbH
Rurstr. 58
D-52441 Linnich (DE)

Representative:
Cohausz & Florack
Patentanwälte
Postfach 33 02 29
D-40435 Düsseldorf (DE)

Respondent: (Proprietor of the patent)
Shikoku Kakoki Co. Ltd.
10-1, Nishinokawa, Tarohachizu
Kitajima-cho, Itano-gun
Tokushima (JP)

Representative:
Vollebregt, Cornelius Jacobus
Algemeen Octrooibureau
P.O. Box 645
NL-5600 AP Eindhoven (NL)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office given on 13 January 1994 and issued in writing on 4 Febuary 1994 rejecting the opposition filed against European patent No. 0 276 893 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: F. Gumbel
Members: S. Crane
B. Schachenmann

Summary of Facts and Submissions

I. European patent No. 0 276 893 was granted on 15 January 1992 on the basis of European patent application No. 88 200 135.7. Claim 1 of the granted patent reads as follows:

"A blank for a rectangular parallelepipedal sealed container (11) made of paper-base laminate and having a container main body including two opposed side walls (16, 17), and two triangular ears (12, 13) integral with the upper ends of the respective side walls and each attached to the side wall, each of the triangular ears being downwardly folded over the side wall from a horizontally projecting initial position, characterized in that the blank comprises a single downwardly bulging arcuate fold-forming score (35, 36) at the boundary between the portion providing each of the side walls (16, 17) and the portion (21) forming the triangular ear (12, 13)."

Claim 2 relates to a preferred embodiment of the blank according to Claim 1.

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).

The following documents were relied upon by the Appellants:

(D1) WO-A-86/00 865
(D2) EP-B-0 089 501
(D3) US-A-4 362 245

III. By its decision given at oral proceedings on 13 January 1994 and issued in written form on 4 February 1994 the Opposition Division rejected the opposition.

IV. An appeal against this decision was filed on 7 April 1994 and the appeal fee paid at the same time.

The Appellants requested that the decision under appeal be set aside and the patent revoked in its entirety. Oral proceedings were requested as an auxiliary measure.

The Statement of Grounds of Appeal was filed on 6 June 1994.

V. The arguments put forward by the Appellants in support of their appeal were substantially as follows:

The Opposition Division had failed to attach proper significance to the teachings of Figure 4 of document D2. The skilled person would clearly understand the purpose of the diverging fold lines shown there as being to produce a single V-shaped fold line on the inside of each triangular ear at the bottom of the container, thus enabling the ears to be more readily folded over to lie flat against the bottom panel. It was obvious for him that an equivalent V-shaped fold line between the triangular ears at the top of the container and respective side walls would have the same effect and facilitate folding down of the ears onto the side walls. The desirability of this was known from document D3.

VI. The Respondents (Proprietors of the patent) contested the arguments of the Appellants and requested dismissal of the appeal .

VII. In a communication dated 21 February 1995 pursuant to Article 11(2) RPBA the Board indicated that since document D2 did not disclose the purpose of the particular fold lines on which the Appellants principally relied it intended to refer in this respect to EP-A-0 011 348 (D4), which was originally cited in the search report and was specifically directed to the configuration of fold lines involved.

VIII. With letter 21 April 1995 the Appellants withdrew their request for oral proceedings and requested that a decision be based on the state of the file.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC.

2. *Interpretation of Claim 1*

In the characterising clause of Claim 1 it is stated that the blank comprises "a single downwardly bulging arcuate fold-forming score..." Such a score is shown in Figures 1 and 2 of the patent specification. It is however stated in column 3, lines 8 to 10, of the patent specification that "the score, which is in the form of a smooth curve as stated above, may alternatively be V-shaped as shown in Figure 3." The term "arcuate" as used in Claim 1 is therefore to be interpreted accordingly.

3. *State of the art*

3.1 Rectangular parallelepipedal containers of the form set out in the preamble of Claim 1 are well known. The blank for making such a container is provided with a predetermined pattern of fold-forming score lines to facilitate the process of forming the blank into a container of the desired shape. By virtue of the folding process outwardly extending triangular ears are formed at the respective junctions of top and bottom walls with the side walls of the container. These ears are then bent to lie either against the side walls or against the top or bottom wall as the case may be.

3.2 Document D1 relates to the situation in which the triangular ears are bent over 180° to lie against the top or bottom wall of the container. When doing so it is also necessary to fold in the additional layers of laminate created by the transverse sealing fin of the container, thus causing stretching of the outermost layers of laminate, which can lead to cracking. It is therefore proposed to provide supplementary score lines in the blank which combine to form for each ear a V-shaped folding line extending across the respective top or bottom wall adjacent that ear. When the ear is then bent inwardly bending then occurs about the conventional transverse score lines at the base of the ear and the additional V-shaped line so that effectively two 90° bends are produced and stretching of the laminate is reduced.

3.3 Document D2 is specifically concerned with means facilitating the opening of a sealed container by including lines of weakness in the sealing fin at the top of the container. In the top half of Figure 4 a pattern of score lines for forming the bottom of the container is illustrated which pattern is substantially identical to that disclosed in document D4. That

document is concerned with a similar problem to that addressed in document D1, namely the fact that the sealing fin across the bottom of the containers makes it difficult to fold the triangular ears such that they lie flat against it. Accordingly, it is proposed to provide score lines in the blank on formation of the bottom of the container which combine to create a substantially V-shaped folding line for the ear. This line runs from one corner of the ear to the other and crosses the sealing fin at a small distance spaced inwardly from the "natural" folding line across the base of the ear. This has the effect that on bending in of the ear the bottom wall of the container is pushed initially somewhat inwardly thus allowing the bending to be completed without obstruction.

3.4 Document D3 proposes the formation of an additional elongate intermediate panel, defined by upper and lower arcuate score lines, between the outer surface of each triangular ear at the top of the container and the respective side wall. The purpose of this configuration is to lower the stress in the outside layers of the laminate disposed in the sealing fin when the ear is bent down to lie adjacent the side wall. On bending of the ear the intermediate panel rotates into a position generally parallel with the top wall of the container but lower in its middle region than at its ends thus lowering the effective hinge line in the centre of the top wall where the sealing fin must negotiate the bend. It is stated in column 10, lines 14 to 24, that the intermediate panel results in a greater resisting force movement of the ear into its final folded position, the reason for this being unclear.

4. *Novelty and inventive step*

As can be seen from the above none of the cited prior art documents discloses a blank for forming a container as defined in the preamble of Claim 1 wherein, as required by the characterising clause of the claim, the blank comprises a single downwardly bulging arcuate fold-forming score at the boundary between the portion providing each of the side walls and the portion forming the triangular ear.The subject-matter of Claim 1 is therefore novel. Since novelty has not been at issue during the proceedings further detailed elucidations are unnecessary.

The technical problem addressed by the claimed invention is to minimize the springback force of the triangular ears as these are folded down over the side walls and thereby reduce the force required to bring the ears flat against the main container body, see column 1, lines 23 to 28, of the patent specification.

With respect to document D2 the Appellants have argued that it was known to the skilled person that the configuration of score lines at the bottom of the blank was intended to solve in relation to the ears at the bottom of the container the same technical problem as that indicated above. That argument is not however supported by document D4 in which the purpose of the score line configuration involved is explained, see point 3.3 above. Instead, it is clear that the problem addressed is specifically associated with the fact that there the ear is folded onto the bottom wall of the container, with the additional layers of the sealing fin disposed therebetween. It is in fact made clear in paragraph 4, page 10, of document D4 why a V-shaped folding line is not required for the top ears which are folded down over the sides of the container. Thus, the Board cannot accept the contention of the Appellants that in the light of document D2 it was obvious for the

skilled person to provide a single arcuate folding line between the ear and the side wall at the top of the container to solve the problem identified above.

Document D1 and D3 are also not persuasive in this context. Both of these documents are concerned with folding line configurations intended to reduce the stress in the outermost layer of laminate material in the region of the bend. According to document D1 the ear is folded onto the top or bottom wall of the container and not the side wall as in the claimed invention, and two fold-forming score lines are provided, instead of one. Document D3 does indeed relate to the folding of the ear against the side wall but here again two fold-forming score lines are provided and as stated in the document, see point 3.4 above, the effect is to increase the force required to fold the ear flat against the side wall, and not to decrease it as sought by the invention. Thus there is nothing here which could lead the skilled person to the invention claimed.

The Board therefore comes to the conclusion that the subject-matter of Claim 1 cannot be derived in an obvious manner form the state of the art and accordingly involves an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

S. Fabiani F. Gumbel