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**D E C I S I O N**  
**of 21 June 2006**

**Case Number:** T 0364/05 - 3.2.07

**Application Number:** 97203159.5

**Publication Number:** 0842863

**IPC:** B65D 43/16

**Language of the proceedings:** EN

**Title of invention:**

Box provided with a lid hingedly connected thereto

**Patentee:**

Impress Metal Packaging B.V.

**Opponent:**

C.M. Packaging B.V.

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56, 123(2)

**Keyword:**

"Inventive step (main request - no)"

"Extension of subject-matter beyond content of application as  
filed (auxiliary request - yes)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 0364/05 - 3.2.07

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.07  
of 21 June 2006

**Appellant:** Impress Metal Packaging B.V.  
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**Respondent:** C.M. Packaging B.V.  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 8 February 2005  
revoking European patent No. 0842863 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** C. Holtz  
**Members:** H. Hahn  
P. O'Reilly

## Summary of Facts and Submissions

I. The proprietor lodged an appeal against the decision of the Opposition Division to revoke European patent No. 0 842 863.

II. An opposition had been filed against the patent as a whole and was based on Article 100(a) EPC (i.e. lack of novelty and lack of inventive step) and Article 100(b) EPC (i.e. the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art).

The Opposition Division held that clarity of a claim as granted does not form an opposition ground and that the patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Furthermore, claim 1 according to the main request, i.e. claim 1 as granted, and claim 1 of each of the first to third auxiliary requests as filed with letter dated 25 November 2004 were considered to lack an inventive step with respect to the hinge lid box according to D1 (NL-A-7 411 771) and the general knowledge of the skilled person.

III. With a communication dated 11 April 2006 and annexed to the summons to oral proceedings the Board presented its preliminary opinion with respect to D1 - which was considered to represent the closest prior art document - and the Opposition Division's decision. The purpose and the extent of the inward bending according to D1 as well as the problem underlying the patent in suit should be discussed as well as the common general knowledge in combination with D1. The ground under

Article 100(b) EPC did not prejudice the maintenance of the patent so that the respondent should clearly state which features allegedly cannot be performed without undue burden. Furthermore, taking account of the appellant's corresponding auxiliary request, which had not been objected to by the respondent, the Board considered that it would be appropriate to remit the case to the opposition division for further prosecution of the alleged public prior use in case that the subject-matter of claim 1 should be considered as involving an inventive step over D1.

IV. Oral proceedings before the Board were held on 21 June 2006.

(a) The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted (main request), or alternatively be maintained in accordance with the auxiliary request I filed with letter of 19 May 2006.

(b) The respondent (opponent) requested that the appeal be dismissed.

(c) Only documents D1 and D2 (GB-A-550 677) were discussed.

V. Claim 1 as granted according to the main request reads as follows:

"1. Box (7;23;19), comprising:  
a container which is provided on one side with at least one outwardly forced first hinge part (2,3;14);

a sheet-metal lid (4;16;21) which is provided with a corresponding number of lips (5,6;15) which each form a second hinge part and are curved inward; which first (2,3;14) and second (5,6;15) hinge parts form part of a hinge; which lid (4;16) in the closed situation of the box has an edge (9) engaging over the rim of the container, which edge remote from the or each hinge (2,5;3,6;14,15) is a first curled edge (10;18) such that the free, sharp end edge of the sheet-metal lid is received in the curled edge (10) such that contact with a user is prevented, characterized in that said edge (9;17;20) is bent inward in the zone (13,14,15) adjoining a hinge (2,5;3,6) such as to prevent a user making contact with the free, sharp end edge (12;18) of the sheet-metal lid (4) in this zone (13,14,15)."

VI. Claim 1 according to auxiliary request I differs from claim 1 as granted in that the additional feature "**and wherein the first curled edge directly abuts the zone adjoining the hinge**" (emphasis added by the Board) has been incorporated at the end of its characterizing portion.

VII. The appellant argued essentially as follows:

The preamble of claim 1 as granted represents a fair disclosure of the technical teaching of D1 while the characterizing portion defines in a functional language the particular purpose of the inward bending of the edge adjoining the hinge or hinges. D1 is silent with respect to any injury to the user of the box caused by

the sharpness of said edge. D1 only mentions damage to the clothing of the user (see page 1, lines 18 to 21). D1 aims to solve a different problem to that of the patent in suit, namely the filling of the box with some products such as cigars (see page 2, lines 1 to 3). D1 proposes that the lower free edge 4 is slightly obliquely bent inwardly and that it cannot be provided with a curl but by said measure of the slightly inwardly bent edge it is in a better finished state (see page 3, lines 18 to 24). The skilled person has no incentive to modify the box of D1 in the claimed manner, such incentive would come from tackling the same problem but D1 only mentions a) avoiding damage to the clothing, and b) filling in an automatic filling machine. The difference between claim 1 as granted and the box according to D1 resides in the fact that according to claim 1 the edge is bent inward with the further functional definition of preventing the user from making contact with the free sharp edge of the sheet-metal lid. The purpose of this difference is to improve the safe handling of the box for the user, i.e. to avoid injury to the user. The solution to this problem is to bend inwardly the sharp edge as defined in claim 1 as granted. The inward bending is not the only possible solution since a) plastic caps could be used, b) a protective coating could be applied, or c) this edge could be better finished to remove its sharpness.

Furthermore, the long period between publication of D1 and the filing of the patent in suit supports an inventive step in the patent in suit. Although the solution according to claim 1 is simple there is no suggestion in D1 to do this. Actually D1 does not

represent the closest prior art with respect to the problem to be solved. No document for proving the common general knowledge concerning the bending of edges adjoining the hinges to remove their sharpness has been submitted. It is admitted that the curl 5 or 9 according to D1 is, amongst other reasons made so as to remove the sharp edge of the sheet-metal in order to avoid not only damage to clothes but also injury to the user. The curl is also made to compensate deviations from the correct length of the sheet-metal part. Furthermore, taking account of the embodiments of figures 3 and 4 of D1 it is admitted that the scope of claim 1 may allow the filling function of the box according to D1 to be fulfilled. The bending of the edge of D1 is done for a particular purpose and if said edge 4 is bent more than for this purpose then it may lose its function for the intended purpose of filling. Claim 1 does not require any curl but would include being bent back on itself. Therefore claim 1 as granted involves an inventive step.

The amendments of claim 1 of the auxiliary request are based on figure 5 of the application as originally filed, in combination with the problem underlying the patent in suit (see patent, paragraphs [0004]). The reason for not incorporating all the other features shown in the embodiment according to figure 5 is that the skilled person would appreciate that these measures are not technically related with the inward bending so that the feature added to claim 1 can be taken in isolation. Thus the requirements of Article 123(2) EPC are met.

This further feature of directly abutting the zone adjoining the hinge improves the effect obtained by the inward bending although there may be some sharpness at the zones where the sheet-metal has been cut. Therefore claim 1 of the auxiliary request involves an inventive step.

VIII. The respondent argued essentially as follows:

The application as originally filed mentions the drawbacks of the D1 (see page 1, lines 17 to 22) but this does not represent a correct assessment of D1 since it also discloses a box having a modelled sheet having a modelled edge at the back side (see page 3, lines 24 to 25). Consequently, the alleged advantages cannot be easily derived when comparing the invention with this embodiment of D1. D1 aims to provide a box for automatic filling (see page 1, line 35 to page 2, line 3). D1 does not present any restriction with respect to the extent of the inward bending. It has not been made plausible that a modelled sheet may also cause injury to the user of the box so that there exists no problem to be solved with respect to the box of D1. The functional definition of claim 1 "is bent inward ... such as to prevent a user making contact with the free sharp end edge of the sheet metal lid in this zone" creates - likewise as in the case of overlapping percentage ranges in the field of chemistry - artificial novelty, but there exists no description as to how this bending should be carried out to obtain this result. Particularly, none of the figures of the patent in suit shows the extent of the necessary inward bending. It was known to bend the edges of the lid inwardly from D1. Claim 1 does not require any curl but



only to be bent inwardly. D1 discloses, besides making a curl of the sharp end edges of the sheet-metal, also the simple bending (compare the reference signs 9 and 10 in figures 3 and 4, respectively). Although the bending of D1 is done for a particular purpose, namely that of avoiding damage to the clothes and allowing automatic filling in filling machines, curling of said sharp edges does not necessarily obviate the function of the box according to D1. Furthermore, even if D1 does not mention any injury to the user it represents a reasonable starting point since the problem arises with the user and will be recognized during the use of the box of D1. The fact that the publication date of D1 is about 20 years before the filing date of the patent in suit does not play any role. The common general knowledge of preventing the user from being hurt by curling the sharp edges is acknowledged in the introductory portion of claim 1. It is clear for the skilled person that the bending or curling of the sharp edges of the sheet metal, which is shown for all other sharp edges of the box of D1, represents the simplest measure. It neither requires a further process step (such as a coating step or sharpness reducing treatment step) nor does it need additional material such as a plastic cap. There exists no plausible reason as to why the remaining sharp edge according to D1 should not be bent in order to solve the problem of preventing injury to the user. Therefore claim 1 as granted lacks an inventive step.

The feature "directly abuts" of claim 1 of the auxiliary request could not be found in the application as originally filed and the figures do not support this feature either, particularly figures 1 and 3. Figure 5

corresponds to the so-called third embodiment. Claim 1 as filed was directed to a box having only the functional definition whereas dependent claim 2 was directed to the inwardly bent embodiments while dependent claim 3 was directed to the curled edge embodiment corresponding to figure 5. Both claims 2 and 3 only referred back to claim 1 so that by combining these two embodiments according to claim 1 of the auxiliary request new subject-matter was created contrarily to Article 123(2) EPC. The description is silent that the edge zones between the curl 22 and the hinge 5, between hinge 5 and curl 24, between curl 24 and hinge 6, and between hinge 6 and curl 23 (see figure 5) are bent inward. With regard to inventive step, it is not apparent as to why curling of zone 24 should be inventive if combined with adjoining edges between curl 22 and hinge 5 and hinge 6 and curl 23, respectively. Why are now two measures necessary to prevent the user from being hurt? Therefore claim 1 of the auxiliary request likewise lacks an inventive step.

## **Reasons for the Decision**

### Main request

#### 1. *Novelty (Article 54 EPC)*

Novelty of the subject-matter of product claim 1 of the main request was not disputed by the respondent. The Board is satisfied that neither D1 nor D2 discloses a box having all the features of claim 1 (compare paragraph 2, below).

The Board therefore concludes that the subject-matter of claim 1 of the main request is novel with respect to these documents.

2. *Inventive step (Article 56 EPC)*

2.1 Document D1 discloses a box made from sheet metal comprising a container 2 which is provided on one side with at least one outwardly forced first hinge part 3, a sheet-metal lid 1 which is provided with a corresponding number of lips which each form a second hinge part 6 and which are curved inward, said first and second hinge parts form part of a hinge. Said lid 1 has an edge 11 which in the closed position of the box engages over the rim 9 of said container. The edge 11 remote from the or each hinge has a first curled edge 5 which is bent such that the free, sharp edge of the sheet-metal lid 11 is received in the curled edge (see figures 1 and 2). The rim of the container 2 may be formed by a curl 9 or by a bent part 10 (see figures 3 and 4). The sharp edge 4 adjoining the hinge is somewhat obliquely bent inward (see page 3, lines 18 to 20). D1 further mentions that said edge 4 cannot be provided with a curl but nevertheless due to said bending is in a better finished condition (see page 3, lines 23 and 24). D1 further states that the known boxes had lips which were outwardly formed (see page 1, lines 7 to 11) so that the known boxes inevitably had sharp hinge parts which caused damage to clothing (see page 1, lines 18 to 21).

D1 aims to solve two problems, namely

- a) to avoid damage to clothing, and
- b) to be suitable for filling the box with some products such as cigars in an automatic filling machine (see page 1, line 35 to page 2, line 3).

To solve these problems D1 proposes that the lower free end of edge 4 is slightly obliquely bent inward (see page 3, lines 18 to 24). The difference between claim 1 as granted and the box according to D1 resides in the fact that the sharp edge adjoining the hinge according to claim 1 is bent inward with the further functional definition of preventing the user from making contact with the free sharp edge of the sheet-metal lid. The purpose of this difference is to improve the safe handling of the box for the user, i.e. to avoid injury to the user.

- 2.2 Taking account of paragraph 2.1 above document D1 is considered to represent the closest prior art for claim 1.
  - 2.2.1 D1 is additionally considered to meet all criteria for determining the closest prior art as set out in the existing case law of the Boards of Appeal (see Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, sections I.D.3.1 to I.D.3.5).
  - 2.2.2 This is because the box according to D1 has most of the relevant features in common with product claim 1 and thus requires a minimum of structural modifications. Last but not least, D1 is considered to represent the "most promising springboard" towards the subject-matter of product claim 1 which was available to the skilled

person although it does not mention any avoidance of injury to the user of the box.

Although D1 does not mention any injury to the user it represents a reasonable starting point since the problem inevitably arises for the user and will be recognized during the use of the box of D1.

2.2.3 This is also supported by the fact that D1 was cited as the closest prior art in the description of the application as originally filed (see page 1, lines 15 to 16).

2.2.4 Therefore, the appellant's arguments that D1 should not be considered to represent the closest prior art because it does not mention injury to the user cannot be accepted.

### 2.3 *Problem to be solved*

2.3.1 The box according to claim 1 therefore only comprises the following feature which is not present in D1 (the edge 4 of D1 is also bent inward in the zone adjoining a hinge):

said edge is bent inward **such as to prevent a user making contact with the free, sharp end edge of the sheet-metal lid in this zone** (emphasis added by the Board).

2.3.2 The objective technical problem to be solved with respect to the box of D1 is thus the provision of a box which can be handled by the user without injuring his fingers or any other body parts on sharp edges (compare

patent in suit, paragraph [0004] in combination with paragraphs [0002] and [0003]).

2.4 *Solution to the problem*

The problem as defined in paragraph 2.3.2 above is solved by a box as defined in claim 1 of the main request.

It is credible that the claimed measure provide a solution to the technical problem (see embodiments according to figures 1, 3 and 5 of the patent in suit).

2.5 The Board considers, however, that the subject-matter of claim 1 of the main request is obvious to the person skilled in the art for the following reasons:

2.5.1 The preamble of claim 1 contains the definition "a first curled edge (10;18) such that the free, sharp end edge of the sheet-metal lid is received in the curled edge (10) such that contact with a user is prevented". It is therefore acknowledged by the patent proprietor that making a curl from a sharp end edge of a sheet-metal, which prevents the user of the box from being injured, is known to the skilled person. In this context the appellant admitted during the oral proceedings before the Board that the curled parts 5 and 9 of the box according to D1 are amongst other reasons made in order to remove the sharp end edge of the sheet-metal to avoid damage to clothes and injury to the user. A curl has a specific shape and represents a particular embodiment which is obtained by bending a sheet-metal part.

2.5.2 Furthermore, if clothes can be damaged by such a sharp edge of a sheet-metal part it is clear to the skilled person that a user may likewise be "damaged", i.e. he may be injured. The Board considers that in this specific case no evidence is necessary to prove that the bending of sharp end edges of sheet-metal actually belongs to the common general knowledge. In the view of the Board every do-it-yourselfer must have known this possibility for obviating sharp edges of sheet-metal already before the priority date.

2.5.3 Furthermore, it is considered that the skilled person when confronted with the technical problem as defined in point 2.3.2 above would not look for other solutions mentioned by the appellant such as applying a plastic cap or making an additional finishing step for removing the sharpness from said sharp edge adjoining the hinge because of the cost for a low value product. This holds even more true when considering that all the other sharp end edges of the box according to D1 are either formed into a curl, i.e. a specific form of bending, or are simply bent over 180° as shown in figure 4 of D1. Any additional processing step or the addition of any further material inevitably would increase the costs of the product and would complicate the manufacturing process thereby further increasing its costs. Consequently, the skilled person would go for the simplest solution to solve his problem, i.e. the well known bending of the sharp end edge. Thereby the skilled person would arrive at the solution as defined in claim 1 of the main request without any inventive effort.

2.5.4 The slight obliquely inward bending of the edge 4 according to D1 is made for a specific purpose, namely to allow the automatic filling of the manufactured boxes with e.g. cigars. This does not, however, imply that boxes - with edge 4 bent 180° back on itself are no longer suitable for this purpose. When account is taken of the embodiments according to figures 3 and 4 of D1 it was admitted by the appellant during the oral proceedings that the scope of claim 1 may include arrangements wherein the filling function of the box according to D1 is maintained.

2.5.5 Furthermore, although it is stated in D1 that a curl cannot be made at the edge 4 (see page 3, lines 23 and 24) the Board cannot see any reason or any prejudice which would prevent the skilled person from bending said end edge over 180° in accordance with figure 4 of D1.

The fact that there was a period of about 20 years between filing of the patent in suit and the publication date of D1 does not play any role since it has not been proven that a prejudice against the teaching of the document has arisen in this period. A finding of obviousness, based on an objective evaluation of the state of the art, cannot be affected by the mere fact that the skilled person had not published a combination of common general knowledge with a document for a considerable period of time (compare Case Law of the Boards of Appeal of the European Patent Office, 4th edition, 2001, chapters I.D.7.3 and I.D.7.4).



2.6 The Board therefore concludes that the subject-matter of claim 1 of the main request lacks an inventive step (Article 56 EPC).

The main request is thus not allowable.

#### Auxiliary request I

3. *Allowability of the amendment (Articles 123(2) and (3) EPC)*

The additional feature "**, and wherein the first curled edge directly abuts the zone adjoining the hinge**"

(emphasis added by the Board) has been incorporated into claim 1 of auxiliary request I at the end of its characterizing portion.

3.1 The appellant argued that this amendment is based on figure 5 of the application as originally filed. The reason for not incorporating the inward bending shown in the embodiment according to figure 5 was that the skilled person would appreciate that this measure is not technically related with this inward bending so that this feature can be taken isolated so that the requirements of Article 123(2) EPC would be met.

3.2 These arguments cannot be accepted for the following reasons:

3.2.1 First of all, the written description of the application as originally filed is silent with respect to the feature "**the first curled edge directly abuts the zone adjoining the hinge**".

3.2.2 Secondly, figure 5 corresponds to the third embodiment which in the application as originally filed is described as having "the special feature that said edge in said zone is a second curled edge" (see page 1, lines 33 and 34; page 2, lines 28 and 29). This means that the sharp edge in the zone adjoining the or each hinge (i.e. "said edge in said zone") according to this embodiment **is a second curled edge** which through this definition excludes that some part of this edge can be bent inwardly as argued by the appellant.

Furthermore, the description does not disclose that the edge zones between the curl 22 and the hinge 5, between hinge 5 and curl 24, between curl 24 and hinge 6, and between hinge 6 and curl 23 (see page 3, lines 31 to page 4, line 2; and figures 5 and 6) are bent inward.

3.2.3 Thirdly, even if there would be a basis for the combination of an inwardly bent edge and a curl, claim 1 of auxiliary request I has not included all the features of the specific embodiment depicted in figure 5 so that claim 1 in any case represents a generalization of the embodiment shown in figure 5. Particularly it cannot be accepted that the skilled person would appreciate that this measure ("... directly abuts ...") is not technically related with the inward bending such that this feature can be taken isolatedly since it is clearly stated in the application as originally filed that the diverse curled edge parts 22, 23, 24 cause that the sharp end edge 20 is made inaccessible (see page 3, line 31 to page 4, line 2). Claim 1, however, does not specify these curled parts.

3.3 Therefore claim 1 of auxiliary request I does not meet the requirement of Article 123(2) EPC.

Auxiliary request I is therefore not allowable.

3.4 The Board thus considers that neither of the appellant's requests is allowable.

### **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairwoman:

G. Nachtigall

C. Holtz