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Datasheet for the decision of 26 February 2013

Case Number: T 0398/11 - 3.3.09

Application Number: 00120151.6

Publication Number: 1086808

IPC: B32B 15/08, B65D 65/40, B32B 33/00

Language of the proceedings: EN

Title of invention:
Resin film laminated metal sheet for can and method for fabricating the same

Patent Proprietor:
JFE Steel Corporation

Opponent:
Tata Steel IJmuiden BV

Headword:
-

Relevant legal provisions:
EPC Art. 83, 84, 54, 56

Keyword:
"Clarity, sufficiency of disclosure (yes)"
"Novelty (yes) - no implicit disclosure of a feature of claim 1 in a document of the prior art"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0398/11 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 26 February 2013

Appellant: (Opponent)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 25 November 2010 concerning maintenance of European patent No. 1086808 in amended form.**

Composition of the Board:

Chairman: W. Sieber
Members: W. Ehrenreich
K. Garnett

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 1 086 808 in respect of European patent application No. 00 120 151.6, filed on 21 September 2000 in the name of *JFE Steel Corporation*, was announced on 7 November 2007 in Bulletin 2007/45.

II. The patent was granted with three claims, claim 1 reading as follows:

"1. A resin film laminated metal sheet, wherein the resin film has a main component of polyester, and said resin film to be on an inside of can after can-making contains a wax of 0.1 to 2.0%."

Claims 2 and 3 were dependent claims.

III. On 7 August 2008 an opposition was filed by:

Corus Staal BV (now *Tata Steel IJmuiden B.V.*).

The opponent requested revocation of the patent on the grounds of Article 100 (a) EPC (lack of novelty and lack of inventive step) and 100(b) EPC, and relied *inter alia* on the following document:

D10: US-A 4 861 647.

With letter dated 2 September 2010 the opponent filed further documents, including:

D11: EP-A 1 174 457.

IV. The proprietor requested that the opposition be rejected and filed 13 auxiliary requests during the opposition proceedings. It further requested that D11 be not admitted into the proceedings as being late-filed.

V. Oral proceedings before the opposition division were held on 5 October 2010 during which the proprietor renumbered its auxiliary requests. *Inter alia* the seventh auxiliary request became its first auxiliary request.

In the oral proceedings the opponent presented further documents, *inter alia*:

D19:Textbook *"Canmaking"*, 1st edition 1998, pages 1-13.

The opposition division admitted D11 and D19 into the proceedings as being *prima facie* relevant. In its view D11 constituted prior art according to Article 54(3) EPC because the patent did not enjoy the first priority from JP 26898999 dated 22 September 1999.

VI. With its interlocutory decision announced orally on 5 October 2010 and issued in writing on 25 November 2010 the opposition division maintained the patent in amended form on the basis of the first auxiliary request (previous seventh auxiliary request submitted with letter dated 30 September 2010).

Claim 1 according to the first auxiliary request differed from claim 1 as granted in that the following feature was incorporated at the end of the claim:

"…, wherein the metal sheet is a surface treated tin free steel sheet comprising a lower layer of metallic chrome and an upper layer of chrome hydroxide".

In the opposition division's view the amendment was allowable under Rule 80 EPC and complied with Articles 123(2) and (3) EPC. Furthermore it was held that the claimed invention was sufficiently disclosed and was novel and inventive over the cited prior art.

The main request (claims as granted) was not allowed because the subject-matter of claim 1 was held to be anticipated by the disclosure of D11.

VII. On 21 January 2011 the opponent (hereinafter: the appellant) filed a notice of appeal against the decision of the opposition division and paid the appeal fee on the same day. The grounds of appeal were received on 1 April 2011. Enclosed with the grounds of appeal were the following documents:

D19a: Textbook "The Book of Steel", English translation, page 1035, originally published as "Le livre de l'acier" by Technique et Documentation, 1994;
D19b: Textbook "Making Shaping and Treating of Steel", United States Steel, pages 1139/40;
D19c: Textbook *"Canmaking"*, 1st edition 1998, pages 124-129;
D20: US-A 5 705 240;
D21: US-A 4 777 094;
D22: US-A 5 137 762;
D23: US-A 5 144 824.

The appellant maintained its objection regarding lack of novelty in view of D11 read in context with D19 as establishing relevant common general knowledge and additionally made various inventive step attacks based on D20 to D23.

By letters dated 23 May 2011 and 21 December 2012 *inter alia*, the following further documents (renumbered by the board) were filed:

D11a:US-A 5 240 779;
D11b:US-A 5 384 354.
D24: WO-A 97/44394;

D11a and D11b are documents which are referred to in paragraph [0005] of D11.

VIII. With its letter dated 24 August 2011 the proprietor (hereinafter: the respondent) defended maintenance of the patent on the basis of the claims as allowed by the opposition division (main request) and filed further auxiliary requests.

With the letter dated 29 November 2012 all the above requests were replaced by an A-series (main A, auxiliary 1A to 7A) and a B-series of requests (main B, auxiliary 1B to 7B).

IX. On 18 December 2012 the board issued a communication wherein preliminary observations on essential points (amendments to the claims, sufficiency of disclosure, novelty and inventive step) were made. Under point 3 "Amendments" the board pointed out that the term "tin-free steel" (TFS) appeared to be a generally

accepted term in the prior art and that this term was inextricably linked with steel which is electrolytically plated with metallic chromium and chromium oxide/hydroxide. It was further stated that the term "tin-free steel" was missing in the claims of the A-series requests.

X. In its letter of response dated 25 January 2013 the respondent withdrew the A-series requests, maintained the B-series of requests except for auxiliary requests 3B and 7B and filed new third, seventh, eighth and ninth auxiliary requests.

XI. During the oral proceedings before the board held on 26 February 2013 the respondent withdrew all auxiliary requests on file and maintained only main request B consisting of 3 claims. Adapted description pages 2 and 4 were filed.

The claims of main request B read as follows:

"1. A resin film laminated metal sheet, wherein the resin film has a main component of polyester, and said resin film to be on an inside of can after can-making contains a wax of 0.1 to 2.0 %, wherein the metal sheet is a tin-free steel, which is a surface treated steel sheet formed with double layered films comprising a lower layer of metallic chrome and an upper layer of chrome hydroxide."

"2. The resin film laminated metal sheet according to claim 1, wherein carnauba wax or stearic acid ester is contained as the wax component."

"3. The resin film laminated metal sheet according to claim 1 or 2, wherein the resin film of polyester being a main component is a biaxial oriented polyester film where a relaxation time T1ρ of benzene ring carbon of 1,4 coordination measured by a solid high resolution NMR is 150 msec or more."

As regards the assessment of inventive step the appellant started from D24, example 41, as representing the closest prior art and withdrew its other arguments on inventive step concerning main request B.

XII. The arguments of the parties provided in writing and orally, as far as they are relevant to the main request B, are summarised in points XIII and XIV below.

XIII. Arguments of the appellant

(a) Clarity - Article 84 EPC

(i) The plural form "double layered films" used in claim 1 renders the scope of the claim unclear because it implies that the steel sheet is possibly coated with more than one (e.g. two) double layered films.

(ii) The expression "surface treated" in claim 1 has a wide meaning and it is not clear whether it only relates to the application of the chrome/chrome hydroxide layer onto the steel surface or to a different kind of surface treatment of the steel sheet.

(b) Sufficiency of disclosure - Article 83 EPC

(i) With regard to the expression "double layered films" in claim 1, meaning that more than one double layered film could be present on the steel surface, and the inconsistent references to chrome hydroxide and chrome oxide respectively, there seems to be no examples supporting the invention claimed.

(ii) Claim 3 requires that the biaxial oriented polyester film has a relaxation time T1ρ of 150 msec or more. There is no disclosure in the patent specification about how the relaxation time can be influenced. In particular, paragraph [0020] of the patent specification does not indicate how the relaxation time can be adjusted. Adjustment of the relaxation time cannot therefore be performed by skilled person without undue burden.

(c) Novelty

(i) D11, which constitutes prior art according to Article 54(3) EPC, does not expressly disclose tin-free steel. However, paragraph [0004] of D11 states that a metal sheet which is subjected "to a surface treatment like plating" is suitable as a can material. It is known in the prior art that tin-free steel is particularly suitable as a can material because of the excellent adherence of organic coatings onto its surface and thus became standard for the can-making process in the early 1990s. In addition, D11a and D11b, referred to in paragraph [0005] of D11, clarify that tin-free steel is the appropriate type of steel to be used

for can-making. The skilled person reading the passage in paragraph [0004] of D11 would therefore immediately realize that tin-free steel is meant. This is corroborated by the Ferrolite® process disclosed on page 126 of D19 which is well-known in the can-making industry and includes lamination of a polyester film onto the surface of electrolytically coated chromium steel (ECCS), which is tantamount to tin-free steel.

Thus, the use of tin-free steel as surface-treated metal sheet is an implicit disclosure in D11.

(ii) Example 41 of D24 discloses a can fabricated from a metal sheet which was extrusion coated with a film having polyester as the main component and including 2 wt% wax. It can be assumed that the coating is on the inside of the can because otherwise the various food tests illustrated in Table 7 would make no sense. On page 40 various metal sheets including tin-free steel are mentioned. Although there is no direct reference to tin-free steel in example 41, the disclosure on the pages following page 40 of D24 focuses on aluminium and tin-free steel as the can metals. There is thus an implicit disclosure in example 41 that the metal sheet is tin-free steel.

(iii) D10 discloses a pre-coated metal sheet for a two-piece can comprising a polymeric film coated on the inner side and the outer side of the can. The preferred metal sheet is a chromium-plated steel sheet, i.e. TFS (column 6, lines 21 to 24) and the coating material is a resin which can include a

polyester as a main component and which comprises wax as an internal lubricant in an amount of 0.1 to 30 weight parts per 100 parts per weight of the resin (column 4, lines 12 to 17 and lines 61 to 65). This wax range overlaps with the claimed range and has a common end point of 0.1 wt%.

(d) Inventive step

D24 represents the closest prior art because its teaching pertains to extrusion polyester coating compositions which are applied on the inside and the outside of metal cans. Although the extrusion coating can be applied to various metal substrates according to page 40, first paragraph, of D24, only two metal substrates are specifically dealt with, namely aluminium and tin-free steel. The skilled person would choose the coating material according to example 41 of D24 including as a main resin component a mixture of polyesters (including PET and PBT) and a wax in an amount of 2 wt%, because he learns from the passage on page 66 that blends of polyesters, like PET/PBT, give good film properties.

Thus, the only distinguishing feature of the claimed subject-matter over example 41 of D24 is the use of tin-free steel as metal substrate. The problem to be solved is therefore the provision of a suitable metal substrate for lamination with PET/PBT and wax. Because the skilled person was already aware of the excellent adhesion properties of polyester coatings to tin-free steel, it would have been obvious for him to select tin-free steel

as the suitable metal substrate for the extrusion coating composition according to example 41.

XIV. Arguments of the respondent

(a) Clarity - Article 84 EPC

(i) The expression "double layered films" has to be read in conjunction with the term "tin-free steel", which is a well-known technical term in the art and characterises a steel sheet coated with only one double layered film consisting one metallic chrome layer and one chrome oxide/hydroxide layer. Apart from that, the interpretation of the plural form "double layered films" as a coating with multiple double layers of chrome and chrome hydroxide would also not make technical sense because tin-free steel represents an electrolytically plated steel with metallic chrome adhering onto the steel surface and chrome hydroxide layer as the top layer. This electrically insulating top layer would not allow the deposition of a further metallic chromium layer.

(ii) The expression "surface-treated steel sheet" in claim 1 also has to be understood in the context of tin-free steel, and therefore implies that the surface treatment relates to the electrolytic deposition of the chrome/chrome hydroxide layer onto the steel surface.

Claim 1 is therefore clear

(b) Sufficiency of disclosure - Article 83 EPC

(i) With regard to the above interpretation, the skilled person immediately realises that all examples presented in table 3 of the patent specification represent PET-coated tin-free steel sheets with one double layer of chrome and chrome oxide/hydroxide and thus fall under the scope of the claim and illustrate the invention.

(ii) As regards the relaxation time T1ρ in claim 3, it should be noted that in paragraph [0020] of the patent specification two options are given for how the T1ρ can be adjusted.

The skilled person is therefore able to carry out the invention claimed in claims 1 and 3 without undue burden.

(c) Novelty

(i) The term "tin-free steel" is nowhere disclosed in D11. In so far as the appellant refers to the disclosure in paragraph [0004] relating to plated metal sheets, and argues that a skilled person would equate this term with tin-free steel because tin-free steel is the standard substrate for a can material, it should be noted that this part of the disclosure in D11 is given under the heading "Background Art" and thus does not belong to the actual technical teaching of D11. The same applies for the documents D11a and D11b referred to in paragraph [0005] of D11 under the heading "Background art".

Rather, the teaching in D11 focuses on a specific polyester film material as defined in claim 1, which can be applied to any metal sheet according to the embodiment of claim 8.

There is also no connection made in D11 to the Ferrolite® process disclosed in D19. Consideration of this process is therefore a matter of inventive step rather than of novelty.

(ii) In D24 there is no restriction to any specific metal sheet. Paragraph 1 on page 40 proposes various non-limiting metal substrates onto which the extrusion coating composition defined in D24 can be applied. There is no explicit or implicit disclosure in example 41 that the metal sheet is TFS. Moreover, according to D24, the coating composition is applied via extrusion coating. In contrast thereto, according to the teaching of the patent, the film is applied onto the metal sheet via lamination coating.

(iii) The overlapping wax range of from 0.1 to 30 wt.-% in the thermosetting coating composition disclosed in D10 cannot be considered in isolation. Various other selections have to be made in order to arrive at the claimed subject-matter, for example (a) the nature of the polymeric thermosetting resin (i.e. one containing polyester) from those disclosed in column 4, lines 58 to 65, and (b) tin-free steel as the metal sheet from the various metal sheets disclosed in column 6, lines 17 to 24.

(d) Inventive step

According to D24, wax is only used once in example 41. There is no disclosure in this document whether or not wax has an influence on the properties of the coating composition for a metal can.

In contrast thereto, the examples according to the claimed invention show in Table 3 an improvement of the take-out properties of stuffed food contents when the tin-free steel sheet is laminated on the inside of a can with a resin film having polyester as main a component and containing wax in the claimed range of from 0.1 to 2.0 %. There is no indication in D24 which would incite the skilled person to specifically select example 41, using a coating composition including wax, in order to improve the take-out properties of a can. This all the more so as Table 7 of D24 shows that the coating composition of the coated metal sheet according to example 24, which does not contain wax, nevertheless fulfils food-specific requirements (sterilization/blushing) which are as good as those of example 41.

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

XVI. The respondent requested that the decision under appeal be set aside and the patent be maintained on the basis of main request B as filed with the letter dated 29 November 2012.

Reasons for the Decision

1. The appeal is admissible.

2. Amendments - Article 123 EPC

Claim 1 of main request B differs from granted claim 1 by the incorporation of the feature that "the metal sheet is a tin-free steel which is a surface treated steel sheet formed with double layered films comprising a lower layer of metallic chrome and an upper layer chrome hydroxide". This amendment is supported by page 10, lines 6 to 9 of the application as filed. Since the amendment furthermore restricts the scope of granted claim 1, the requirements of Article 123(2) and (3) EPC are met. The appellant did not raise an objection in this context.

3. Clarity - Article 84

3.1 The appellant contends that the expression "formed with double layered films" (plural) implies that more than one double layered film of chrome/chrome hydroxide is applied onto the steel sheet. Since the description discloses only one double layered film comprising a lower layer of metallic chrome and an upper layer of chrome hydroxide, the amendment of claim 1 does not appear to be supported by the description in the sense of Article 84 EPC.

The board cannot accept this argument and notes, in agreement with the respondent, that this expression is unambiguously linked with the term "tin-free steel"

(TFS), which has a clear meaning in the prior art (see for instance D19, page 10; D19a, page 1035 and D19b, page 1139) and characterises a steel sheet which is electrolytically plated with a lower layer of metallic chrome and an upper layer of chrome hydroxide. Thus, the skilled person would unambiguously understand the expression "double layered films" in the sense that only one chrome/chrome hydroxide layer (i.e. one double layer) is present on the steel sheet surface.

As regards to the inconsistent reference to chrome hydroxide and chrome oxide, respectively, in claim 1 and various parts of the description, reference is made to point 4.1 below.

3.2 In a similar manner the skilled person would realise that the term "surface treated" is directly linked to the electrolytical plating of the surface of a steel sheet with chrome/chrome (oxide) hydroxide. Therefore the term "surface treated" in the context of the amendment does not give rise to an objection under Article 84 EPC.

3.3 As regards the objections of the appellant under Article 84 EPC to the features "inside of can" and "0.1 to 2.0%", the board notes that these expressions were already present in claim 1 as granted and are therefore not objectionable under this article in opposition appeal proceedings.

4. Sufficiency of disclosure - Article 83 EPC

4.1 Electrolytic chrome plating in the production of TFS is usually performed in an aqueous medium whereby chrome

oxide is deposited on top of the metallic chrome layer and, at the same time, some of the newly deposited chrome oxide is hydrated leading to an upper layer consisting of mixed chrome oxides and hydroxides, i.e. Cr_2O_3, CrO(OH) and $Cr(OH)_3$. In fact, this was not contested by the appellant any longer. It is thus the board's view that the term "chrome hydroxide" used in claim 1 and example 1 (paragraph [0041]) and the expression "Cr oxide" in tables 1 and 2 of the patent specification are tantamount to the above mixture of chrome oxides/hydroxides.

Furthermore, as set out in point 3.1 above, the skilled person knows that the expression "double layered films" in conjunction with the technically accepted term "tin-free steel" means only one double layer. Therefore, the appellant's objection that claim 1 covers embodiments with more than one double layer (for which there is no support in the description) is unfounded. The various films prepared in example 1 have such a single double layer (chrome/chrome (oxide) hydroxide) and represent the invention.

4.2 Claim 3 (point XI above) requires that the biaxial oriented polyester film has a relaxation time T1ρ of 150 msec or more. The appellant alleges that there is a clear violation of Article 83 EPC due to the alleged absence of any teaching as to how to reach the specified parameter. However, as correctly pointed out by the respondent, paragraph [0020] of the patent specification describes several ways of how to exceed a relaxation time T1ρ of 150 ms, one being the combination of a high temperature preheating method and a high temperature orienting method in the longitudinal

orienting procedure when the resin film is produced. Consequently this objection as to sufficiency of disclosure must also fail.

4.3 In summary, the requirements of Article 83 EPC are satisfied in respect of the invention as claimed in claim 1 and claim 3.

5. Novelty

5.1 Novelty of the claimed subject-matter was contested in view of the disclosure of D11 (in which respect the appellant also referred to D19), D24 (with particular reference to example 41) and D10.

5.2 D11 discloses a biaxially-oriented polyester film comprising a specified polyester and being defined by the melting point of the film, the angle of contact to water and the planar orientation coefficient (claim 1). In order for the contact angle to water [and the surface free energy] to fall within the required range, it is preferred that a wax component or a silicone compound be added, preferably 0.001 to 5 wt%, more preferably 0.1 to 2 wt% (paragraph [007]).

5.2.1 It is uncontested that D11 does not expressly disclose the term "tin-free steel" or "TFS". The relevant passage in paragraph [0004] of D1 reads as follows:

"As a method for resolving these properties, there is the method of laminating a film to the metal can material, namely steel of aluminium sheet or metal sheet obtained by subjecting such metal sheet to a surface treatment like plating."

It has thus to be considered whether or not this passage implicitly and unambiguously discloses tin-free steel.

In this connection the appellant argued that tin-free steel was standard material for cans in the 1990s and that the above expression in D11 would therefore mean nothing other than tin-free steel.

5.2.2 The board cannot accept this argument for two reasons. Firstly, plating is only mentioned once in D11, namely in paragraph [0004] of the description, which passage is directed to the background art and does not belong to the technical teaching of D11. Secondly there are, besides tin-free steel, a number of other plated metal sheets known in the prior art which are suitable as a can material, for example tin-plated steel, zinc-plated steel or aluminium-plated steel. Reference is made in this context to D24 (published before the filing date of D11), first paragraph on page 40.

Nor is the appellant's view that D11 implicitly discloses tin-free steel supported by the disclosure in D19. Tin-free steel is only mentioned there as one common alternative to tinplate (page 10, last paragraph) and not as the only possible metal sheet in can-making processes. In addition, other alternatives such as riverweld or aluminium are disclosed on page 11, last paragraph and page 12, first paragraph below Figure 1.4.

5.2.3 Thus it cannot be assumed that the teaching in D11, namely to provide a biaxially oriented polyester film, optionally containing wax, for lamination to metal

sheets, e.g. in order to preserve foods (D11, paragraphs [0006/0007] and [0044]), is implicitly and unambiguously related to the application of the polyester film onto tin-free steel.

5.3 D24 discloses an extrusion coating composition for the application onto the surface of a metal sheet such as a can. The composition comprises, as a main component, a thermoplastic polyester or a mixture of polyesters, and optionally a modifying resin, an inorganic filler, a flow control agent and other optional ingredients. A number of suitable metal substrates is disclosed on page 40, first paragraph, *inter alia* tin-free steel, which, however, is not given any preference:

"Nonlimiting examples of metal substrates are aluminium, tin-free steel, tinplate, steel, zinc-plated steel, zinc alloy-plated steel, lead-plated steel, lead alloy-plated steel, aluminium-plated steel or aluminium alloy-plated steel."

Wax is also not mentioned in the general part of the description as being one of the optional components.

In fact, wax is only mentioned in example 41 of D24, which discloses a pigmented extrusion coating containing various types of polyester and 5 wt% wax. It is however not stated onto which substrate the composition is coated. The appellant's argument that D24 focuses, on the pages subsequent to page 40, on aluminium or tin-free steel as metal sheets and that therefore there is an implicit disclosure for tin-free steel in example 41, is speculative. There is no unambiguous disclosure in D24 from which a conclusion

could be drawn that aluminium or TFS are more suitable than the other metals mentioned on page 40. It cannot therefore be assumed with certainty that example 41 implicitly relates to tin-free steel.

Consequently the subject-matter of claim 1 is novel over D24.

5.4 D10 relates to a precoating for a two-piece can comprising a thermosetting resin and an internal lubricant (see the abstract). From the disclosure of D10, a number of selections have to be made in order to arrive at the claimed subject-matter, namely:

- TFS, from the metal sheets disclosed in column 6, lines 17 to 25;
- the wax content of from 0.1 to 2.0%, from the broad range of from 0.1 to 30 wt.-% disclosed in column 4, lines 12 to 17; and
- a thermosetting coating composition mainly comprising polyester, from the compositions disclosed in column 4, lines 58 to 65.

There is, however, no pointer in D10 to the now-required combination of features. In fact, the only example where a electrolytic chromated steel sheet, i.e. TFS, is coated with a precoating comprising polyester as the main component is sample No. 5 in table 1 (columns 13 and 14). However the wax content of the precoating used ("Precoating No. 7" column 11) is 20 weight parts per 100 weight parts of the thermosetting coating and therefore well outside the claimed range.

Consequently, neither the general nor the specific disclosure of D10 anticipates the subject-matter of claim 1.

6. Inventive step

6.1 The claimed invention relates to a resin film laminated metal sheet for food-stuffed cans which provides excellent adhesion and formability, and superior taking-out properties of the stuffed food contents (paragraphs [0001] and [0006] of the patent specification).

6.2 The appellant considered D24 representative of the closest prior art. The board accepts that D24 is a suitable starting point for the assessment of inventive step.

As set out in point 5.3 above, document D24 discloses extrusion-coating compositions for metal substrates, such as metal cans, which provide excellent adhesion, weatherability, barrier properties and flexibility. In particular, the coating, when used for the interior of a container (e.g. a can), must be able to effectively inhibit the corrosion of the metal substrate and also should not adversely affect the product, i.e. food or beverage, that comes into contact with the coating composition (page 1, "Field of the Invention" and page 10, lines 6 to 26). The coating composition comprises, as a main component, a thermoplastic polyester or a blend of polyesters, and optionally a modifying resin, an inorganic filler, a flow control agent and other optional ingredients (page 8, line 15 to page 9, line 5, pages 28 and 29).

6.3 In the light of this closest prior art the respondent saw the problem underlying the invention in the provision of a resin film which, when applied on the inside of a metal can, provides superior taking-out properties of food contents.

6.4 As a solution to this problem claim 1 proposes a resin-film laminated metal sheet, wherein the metal sheet is a tin-free steel sheet and wherein the resin film is on the inside of the can and has a main component of a polyester and contains 0.1 to 2.0 % of a wax.

The experimental evidence presented in Table 3 of the patent specification shows improved take-out properties for PET resin films comprising wax in the claimed amounts (E1 to E16) when compared to PET resin films containing no wax (C1) or wax in an amount below the claimed range (C2, C3). The board is therefore satisfied that the above problem has plausibly been solved by the claimed invention.

6.5 It remains to be decided whether it was obvious in view of the prior art to apply a polyester resin film comprising 0.1 to 2.0 % of wax on the inside of a metal can in order to solve the above problem.

6.5.1 D24 proposes a polyester-based coating composition including optionally fillers, modifying resins or flow control agents for the application on the inside of containers such as metal cans. However, no disclosure is found in this document which deals with the influence of wax on the properties of the coating composition. By contrast, wax is only mentioned once in

example 41 as an ingredient of a specific polyester coating composition comprising a blend of four different polyester resins (including PET and PBT). Thus, a skilled person wishing to improve the take-out properties of stuffed food contents of a metal can coated on the inside with a polyester resin film would not be motivated by the disclosure of D24 to select specifically example 41 from the numerous wax-free examples disclosed in this document, and to place the wax-containing coating composition on the inside of the can, in order to solve the problem posed. Moreover, there is no indication in D24 that the coating should be done on tin-free steel.

6.5.2 Although D10 proposes wax as an internal lubricant for thermosetting coating compositions for metal sheets suitable for can-making, it proposes that such an internal lubricant should not be applied on the inner surface of the can (column 7, lines 5 to 14).

Thus, neither D24 alone nor a combination of D24 with D10 leads to the claimed invention.

6.6 For the above reasons, the subject-matter of claim 1 and dependent claims 2 and 3 of main request B is based on an inventive step.

7. An order can therefore be made for the maintenance of the patent on the basis of this request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of:

   (a) Claims 1 to 3 according to main request B filed with the letter dated 29 November 2012;
   (b) Pages numbered 2 and 4 of the amended description as filed during the oral proceedings of 26 February 2013 and pages numbered 3, and 5 to 11 of the description as granted;
   (c) Figures 1A, 1B, 2 and 3 as granted.

The Registrar The Chairman

M. Cañueto Carbajo W. Sieber