

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

**Datasheet for the decision
of 28 September 2006**

Case Number: T 0507/99 - 3.3.05

Application Number: 92116446.3

Publication Number: 0536607

IPC: C03C 17/36

Language of the proceedings: EN

Title of invention:

Heat processable metallic appearing coatings

Patentee:

PPG Industries Ohio, Inc.

Opponent:

SAINT-GOBAIN GLASS FRANCE

Headword:

Coatings II/PPG

Relevant legal provisions:

EPC Art. 123(2)(3), 54(3), 54, 56

Keyword:

"Allowability of disclaimers: no - main request,
yes - auxiliary request"

Decisions cited:

G 0001/03

Catchword:

-



Case Number: T 0507/99 - 3.3.05

D E C I S I O N
of the Technical Board of Appeal 3.3.05
of 28 September 2006

Appellant 1: SAINT-GOBAIN GLASS FRANCE
(Opponent) 18, avenue d'Alsace
F-92400 COURBEVOIE (FR)

Representative: Renous Chan, Véronique
Saint-Gobain Recherche
39, Quai Lucien Lefranc
F-93300 Aubervilliers (FR)

Appellant 2: PPG Industries Ohio, Inc.
(Patent Proprietor) 3800 West 143rd Street
Cleveland, OH 44111 (US)

Representative: Sternagel, Fleischer, Godemeyer & Partner
Braunsberger Feld 29
D-51429 Bergisch Gladbach (DE)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
11 March 1999 concerning maintenance of the
European patent No. 0536607 in amended form.

Composition of the Board:

Chairman: M. Eberhard
Members: B. Czech
M. Günzel

Summary of Facts and Submissions

- I. The appeal is from the decision of the opposition division concerning the maintenance of European patent No. 0 536 607 in amended form, on the basis of amended sets of claims filed on 4 February 1999.
- II. In the appeal proceedings, during the oral proceedings on 12 June 2002, appellant 2 (proprietor of the patent) filed as a new main request two sets of claims for the contracting states A (DE, FR, GB and IT) and B (CH, ES, LI, LU and SE), respectively. These claims contained disclaimers. In view of decision T 323/97 (OJ 2002, 476) which at the time was about to be published, the present board (in a different composition) decided that it would refer a question of law concerning the allowability of disclaimers under Article 123(2) EPC to the Enlarged Board of Appeal. In view of the disclaimers present in the said claims, the board gave the interlocutory decision T 0507/99 dated 28 August 2002, wherein it did not decide the question of whether or not the claims met the requirements of Article 123(2) EPC. The board however indicated that it had no objections under Articles 123(2) and (3) EPC to the other amendments introduced in the claims after grant. Moreover, the subject-matter of the said claims for the contracting states A and B was found to be novel and inventive, in particular over documents

D1: EP-A-0 546 302 (published 16.06.1993) and

A8: US-A-4 900 630.

Specific questions concerning disclaimers were referred to the Enlarged Board of Appeal by the board's decision T 0507/99 dated 20 December 2002. These questions were dealt with by the Enlarged Board of Appeal in decision G 0001/03 (OJ 2004, 413).

The independent claims of the two sets of claims according to the main request filed on 12 June 2002 (22 claims for set A and 21 claims for set B) and underlying the board's interlocutory decision of 28 August 2002 read as follows:

i) For the contracting states A (DE, FR, GB and IT)

"1. A heat processable, metallic appearing coated article comprising:

- (a) a transparent glass substrate;
 - (b) a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium nitride, hafnium nitride, tantalum nitride, niobium nitride; and
 - (c) a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon-metal alloys with the exception of silicon-zirconium nitride and silicon-tin nitride,
- with the proviso that if the metal compound film is titanium nitride the protective layer is not chromium."

"8. A heat processable, metallic appearing coated article comprising:

- (a) a transparent glass substrate;
- (b) a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium nitride, hafnium nitride, tantalum nitride, niobium nitride;
and
- (c) a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon and silicon-metal alloys;

wherein a stabilizing layer selected from the group consisting of silicon, titanium, zirconium, tantalum, chromium, niobium, silicon alloys, nickel-chromium alloys and aluminum nitride is deposited between said glass substrate and said metal compound film."

"17. A method of making a heat processed metallic appearing article comprising the steps of:

- (a) depositing on a surface of a glass substrate a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium nitride, hafnium nitride, tantalum nitride, niobium nitride; and
- (b) depositing a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and

is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon-metal alloys with the exception of silicon-zirconium nitride and silicon-tin nitride; and
(c) heating the glass substrate on which are deposited said metal compound film and protective layer to a temperature sufficient to bend the glass."

"19. A method of making a heat processed metallic appearing article comprising the steps of:

- (a) depositing on a surface of a glass substrate a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium nitride, hafnium nitride, tantalum nitride, niobium nitride;
- (b) depositing a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon and silicon-metal alloys;
- (b)[sic!] heating the glass substrate on which are deposited said metal compound film and protective layer to a temperature sufficient to bend the glass,

further comprising the step of depositing a stabilizing layer selected from the group consisting of silicon, titanium, zirconium, tantalum, chromium, niobium, silicon alloys, nickel-chromium alloys and aluminum nitride, between said glass substrate and said metal compound film."

"22. A heat processable, metallic appearing coated article comprising

- (a) a transparent glass substrate
- (b) a metal compound film with metallic properties which is titanium nitride
- (c) a protective layer which is silicon nitride."

ii) For the contracting states B (CH, ES, LI, LU and SE)

"1. A heat processable, metallic appearing coated article comprising:

- (a) a transparent glass substrate;
- (b) a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium nitride, hafnium nitride, tantalum nitride, niobium nitride; and
- (c) a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon and silicon-metal alloys,

with the proviso that if the metal compound film is titanium nitride the protective layer is not chromium."

"17. A method of making a heat processed metallic appearing article comprising the steps of:

- (a) depositing on a surface of a glass substrate a metal compound film with metallic properties selected from the group consisting of metal borides, metal carbides, metal oxynitrides, chromium nitride, titanium nitride, zirconium

nitride, hafnium nitride, tantalum nitride, niobium nitride; and

- (b) depositing a protective layer comprising a different metal from the metal compound film which minimizes oxidation of the metal compound film and is selected from the group consisting of chromium, titanium, and nitrides and oxynitrides of silicon and silicon-metal alloys; and
- (c) heating the glass substrate on which are deposited said metal compound film and protective layer to a temperature sufficient to bend the glass."

III. Subsequently to the issue of decision G 0001/03, the present board (in the present composition) invited the parties to present their arguments concerning the allowability of the disclaimers in the claims on file in view of decision G 0001/03 and to state their requests.

IV. With its reply dated 24 January 2005, appellant 2 filed new main and auxiliary requests each consisting of two sets of claims for the contracting states A and B, respectively.

The claims according to the new main request are identical to the ones upon which interlocutory decision T 0507/99 of 28 August 2002 was based, except for the amended back-references in two dependent claims (claim 20 for contracting states A; claim 16 for contracting states B).

Compared to the main request, the two sets of claims according to the auxiliary request each comprise an additional independent claim 2 and additional dependent

claims dependent on claim 1 or claim 2. The total number of claims is increased to 25 for the contracting states A and to 24 for the contracting states B.

The new independent claims 1 for both groups of contracting states A and B have the same wording as the two claims 1 according to the main request, except that "*titanium nitride*" is deleted from part (b) in the new independent claims 1, and that the phrase "*with the proviso that if the metal compound film is titanium nitride the protective layer is not chromium*" is no longer present. The new independent claims 2 for both groups of contracting states differ from the two claims 1 according to the main request by the deletion of "*chromium*" from part (c) of the claims and the removal of the said phrase. The other independent claims have the same wording as according to the main request, except for being re-numbered.

V. In its communication dated 23 December 2005, the board gave its provisional opinion concerning the allowability of the disclaimers still contained in the claims and of the other amendments carried out in the claims. It also indicated that a likely outcome of the proceedings was the maintenance of the patent on the basis of the claims according to the auxiliary request. In this communication, appellant 2 was invited to file description pages adapted to these claims.

VI. With its letter dated 14 February 2006, appellant 2 filed amended description pages and requested oral proceedings in case the board would not maintain the patent in amended form in accordance with the auxiliary request. In an annex to the summons to oral proceedings

and in a further communication, the board raised objections under Rules 27(1) b) and c) EPC to the amended description. In reply thereto the appellant filed further amended description pages on 2 May 2006 and 1 June 2006. It considered that oral proceedings were not necessary for the sole reason that the specification was not adapted appropriately.

VII. Appellant 1 has neither taken position on the claims filed with letter of 24 January 2005 dated, nor has it submitted any request since the first communication of the board in its present composition. With its letter dated 23 June 2006, appellant 1 merely indicated that in view of the latest amendments filed it had no objections against the adaptation of the description as carried out by appellant 2. It also considered that oral proceedings were no longer necessary.

VIII. Appellant 2 requested the maintenance of the patent on the basis of the claims filed as main request with its letter dated 24 January 2005 or, in the alternative, on the basis of the claims filed as auxiliary request with the same letter.

Reasons for the Decision

Main request

1. The independent claims and all dependent claims except dependent claim 20 for the group A of contracting states and dependent claim 16 for the group B of contracting states, are identical with the ones underlying the previous interlocutory decision of

28 August 2002. The board in its present composition also considers that, leaving aside the issue of the allowability of the disclaimers, the amendments in the claims made after grant are not objectionable under Articles 123(2) and (3) EPC (see also Reasons point 3. of the interlocutory decision). The allowability of the amendments in the back-references of the said two dependent claims was not disputed. Neither has the board a reason to question it.

2. Disclaimer concerning D1

2.1 Claims 1 and 17 for the states A contain the phrase "*with the exception of silicon-zirconium nitride and silicon-tin nitride*". This "negative" technical feature constitutes a disclaimer which is not disclosed in the application as filed. This disclaimer was introduced by appellant 2 in order to delimit the subject-matter of these claims from the disclosure of D1, thereby restoring novelty. In its previous interlocutory decision T 0507/99 of 28 August 2002, the present board (in a different composition) already concluded that D1 constitutes prior art pursuant to Article 54(3) and (4) EPC for some of the alternatives covered by claims 1 and 17 for the contracting states A in their present wording, see Reasons 5. and 5.1.

2.2 The board considers that the criteria recited under point 2. of the order of G 0001/03 are fulfilled, and thus that the disclaimer concerning D1 is allowable. This was not disputed by appellant 1.

3. Disclaimer concerning A8

3.1 The respective claims 1 for the contracting states A and B both contain the phrase "*with the proviso that if the metal compound film is titanium nitride the protective layer is not chromium*". This "negative" technical feature which is also not disclosed in the application as filed is a disclaimer that appellant 2 introduced in order to delimit the subject-matter of claim 1 from the disclosure of A8, a document belonging to the prior art pursuant to Article 54(2) EPC.

3.2 According to G 0001/03, the disclosure of a document pertaining to the prior art according to Article 54(2) EPC may only be disclaimed provided that certain criteria are met. In particular, it is specifically indicated in the order of G 0001/03 that a disclaimer not disclosed in the application as filed may be allowable in order to "*restore novelty by delimiting a claim against an accidental anticipation under Article 54(2) EPC; an anticipation is accidental if it is so unrelated to and remote from the claimed invention that the person skilled in the art would never have taken it into consideration when making the invention*" (see point 2.1 of the order).

Concerning the concept of accidental disclosure, the following is also stated in G 0001/03 (reasons point 2.2.2, 1st paragraph, and point 2.3.4, last two sentences):

"What counts is that from a technical point of view, the disclosure in question must be so unrelated and remote that the person skilled in the art would never

have taken it into consideration when working on the invention";

"This should be ascertained without looking at the available further state of the art because a related document does not become an accidental anticipation merely because there are other disclosures which are even more closely related. In particular, the fact that a document is not considered to be the closest prior art is not sufficient to accept an accidental anticipation."; and

"When an anticipation is taken as accidental, this means that it appears from the outset that the anticipation has nothing to do with the invention. Only if this is established, can the disclaimer be allowable.".

3.3 Document A8 relates to a transparent or semitransparent glass plate having on one side thereof a multilayer coating which gives a golden appearance by reflection. The glass is coated with a layer of TiN, and a layer of Ti or Cr is overlying the TiN-layer. The coated glass plate is useful, for example, as a building material or an ornamental material. The glass plates are coated by means of vacuum sputtering. See in particular column 1, lines 6 to 12 and lines 51 to 55, examples 1 and 2, and claim 1.

3.4 Quoting from the interlocutory decision T 0507/99 of 28 August 2002 (see Reasons, point 6.7) given by the present board in a different composition, appellant 2 has emphasised that *"The coated glass plates disclosed in A8 are useful as a building material or ornamental*

material [...] The coated plate assumes a golden appearance when viewed from the uncoated side [...] This document does not address the problem of avoiding degradation of the optical properties when the coated glass plate is exposed to high temperatures during a bending process. It does not contain information suggesting that the deposition of a protective layer of chromium onto a TiN layer might solve the said technical problem."

Appellant 2 additionally argued that the disclosure of A8 was "directed to building or ornamental materials" and was "not related to optical properties when a coated glass plate is exposed to high temperatures during a bending process". It concluded that "a person skilled in the art would never have taken A8 into consideration". Therefore, A8 was to be considered as an accidental anticipation and the disclaimer in question should be allowed.

3.5 The board does not share this view for the following reasons:

3.5.1 The authors of A8 paid particular attention to the factors affecting certain optical and mechanical properties of the coated glass. Whereas the hue and colour tone are essentially affected by the thickness of a TiN layer deposited on the glass plate and affording the metallic appearance (column 3, lines 19 to 23), the desired adhesion strength, durability and wear resistance of the multilayer coating are afforded by a top layer of Ti or Cr (column 2, lines 2 to 5). The Ti or Cr layer thus acts as a protective layer for the underlying TiN layer.

3.5.2 A8 and the patent in suit both concern metallic-appearing coated articles comprising a transparent glass substrate covered by a layer of a metal compound with metallic properties, and by a further protective layer coated thereon, the multi-layer coating being obtainable by vacuum sputtering. Although the coated articles of A8 are useful for example as a building material whereas those of the patent in suit are suitable for example for solar control glazing in automobiles, the optical properties and adhesion of the multilayer coating are of importance in both cases and are accordingly considered in both documents. A8 and the patent in suit in any case belong to very closely related technical fields, if not the same. As A8 is expressly concerned with the quality of the coating and the stability of its properties over time, and in particular with its optical properties, adhesion, durability and wear resistance, the board is convinced that the skilled person would have considered A8 when making the invention, i.e. when looking for a solution to the stated technical problem (see point 3.4 above). A8 does not provide specific information concerning the stability of the coating during heat processing, and thus contains no pointer towards the claimed solution of the stated technical problem. However, this does not mean that the skilled person, searching for this kind of information, would never have considered it from the outset.

3.5.3 This view is in line with the following reasoning in G 0001/03, point 2.2.2, 1st paragraph: *"The fact that the technical field is remote or non-related may be important but is not decisive because there are situations in which the skilled person would also*

consult documents in a remote field. Even less decisive, as an isolated element, is the lack of a common problem, since the more advanced a technology is, the more the problem may be formulated specifically for an invention in the field. Indeed, one and the same product may have to fulfil many requirements in order to have balanced properties which make it an industrially interesting product. Correspondingly, many problems related to different properties of the product may be defined for its further development. When looking specifically at improving one property, the person skilled in the art cannot ignore other well-known requirements. Therefore, a "different problem" may not yet be a problem in a different technical field."

3.6 In the board's view, A8 can thus not be considered as an "accidental" disclosure in the sense of G 0001/03. Consequently, the disclaimer intended to exclude the disclosure of A8 does not fulfil the second criterion recited under point 2.1 of the order of G 0001/03 and is, therefore, not allowable.

4. Since the amendments consisting in the incorporation of the disclaimer in question into the respective claims 1 do not meet the requirements of Article 123(2) EPC, the appellant's main request cannot be granted.

Auxiliary request

5. Allowability

5.1 Amendments in comparison to the claims according to the main request

5.1.1 In the two sets of claims for the groups of contracting states A and B, respectively, the respective independent claims 1 according to the main request are replaced by two independent claims 1 and 2, which do not contain the disclaimer concerning A8 but which also do not cover the combination of titanium nitride as the metal compound film with a protective layer of chromium. Compared to the respective claims 1 according to the main request, this is achieved by the deletion of titanium nitride from the list of possible metal compound films in claim 1 and the deletion of chromium from the list of possible protective layers in claim 2. These deletions are not objectionable under Article 123(2) and (3) EPC. No other changes were carried out in the new independent claims 1 and 2 for both groups of contracting states compared to the wordings of the respective claims 1 according to the main request.

The amendments being occasioned by a ground of opposition, the board has no objection to the filing of a further independent claim.

5.1.2 The respective new claims 3 to 6 depending on either claim 1 or claim 2 correspond to the respective dependent claims 2 and 3 according to the main request. The wordings of these amended dependent claims reflect the splitting of the previously single independent claim 1 of the main request into two.

5.1.3 Claims 7 to 25 of the auxiliary request for the contracting states A correspond to claims 4 to 22, respectively, of the main request for these contracting states. Claims 7 to 24 of the auxiliary request for the contracting states B correspond to claims 4 to 21,

respectively, of the main request for these contracting states. The numbering and the dependencies of claims 7 to 25 and 7 to 24, respectively, have been adapted in view of the amendments referred to above.

- 5.1.4 Appellant 1 did not object to the allowability under Article 123(2) and (3) EPC of the amendments referred to herein above. Neither does the board see a reason for raising such objections.

- 5.2 Present independent claims 1, 2 and 20 for the contracting states A also contain the disclaimer concerning D1, the allowability of which has already been addressed under point 2. herein above. Said present claim 20 is identical with claim 17 for these contracting states according to the main request. The splitting of claim 1 of the main request into two independent claims 1 and 2 with deletion of the disclaimer concerning A8 does not affect the allowability of the disclaimer concerning D1 in present claims 1, 2 and 20 for the contracting states A. This was not disputed.

- 5.3 The board thus concludes that the claims according to the auxiliary request meet the requirements of Articles 123(2) and (3) EPC.

6. As appears from the above, compared to the claims upon which the interlocutory decision of 28 August 2002 was based, the present claims are not broadened by virtue of the amendments carried out therein. Since the subject-matter of the former claims was already found to be novel and inventive in the previous interlocutory decision T 0507/99 of 28 August 2002, see Reasons,

points 5. to 7. and Order, the same is true for the present claims.

7. Appellant 2 has submitted description pages adapted to the claims according to its auxiliary request. Appellant 1 has explicitly confirmed that it had no objections concerning this adaptation of the description. The board also sees no reason to raise further objections against the present version of the description.
8. Both parties have been given the opportunity to comment on the considerations and arguments of the board on which the present decision is based. The parties expressly agreed that the holding of oral proceedings was no longer necessary. The present decision was thus taken in writing in compliance with Articles 113(1) and 116 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent on the basis of the following documents:
 - claims 1 to 25 for the contracting states DE, FR, GB and IT according to the auxiliary request filed with letter dated 24 January 2005;

- claims 1 to 24 for the contracting states CH, ES, LI, LU and SE according to the auxiliary request filed with letter dated 24 January 2005;
- description pages 3, 4, 6, 7 and 8 as filed with letter dated 14 February 2006 (for all contracting states);
- description pages 2, 2a, 2b and 2c as filed with letter dated 2 May 2006 (for all contracting states)
- description page 5 as filed with letter dated 1 June 2006 (for all contracting states)
- Figures 1 to 4 of the patent as granted (for all contracting states).

The registrar

The chairman

C. Vodz

M. Eberhard