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**Datasheet for the decision
of 12 October 2006**

Case Number: T 0108/04 - 3.3.01

Application Number: 95937209.5

Publication Number: 0792325

IPC: C09D 5/03

Language of the proceedings: EN

Title of invention:

Process for coating a substrate with a powder paint composition

Applicant:

Koninklijke DSM N.V., et al

Opponent:

HUNTER DOUGLAS Industries B.V.

Headword:

Powder paint/DSM

Relevant legal provisions:

EPC Art. 100(b), 100(a), 84
EPC R. 88

Keyword:

"Clarity of the claims - no ground for opposition unless arising from amendments made during opposition or appeal proceedings"

"Sufficiency of disclosure (yes) - no evidence to the contrary submitted"

"Novelty (yes)"

"Inventive step (yes) - non-obvious solution"

Decisions cited:

T 0301/87, T 0014/83

Catchword:

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Case Number: T 0108/04 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 12 October 2006

Appellant: HUNTER DOUGLAS Industries B.V.
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
25 November 2003 concerning maintenance of
European patent No. 0792325 in amended form.

Composition of the Board:

Chairman: A. J. Nuss
Members: S. M. Radke
D. S. Rogers

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal on 23 January 2004 against the decision of the opposition division posted on 25 November 2003 which stated that European patent no. 0 792 325 as amended according to the Main Request met the requirements of the EPC. On 25 March 2004 he filed a written statement setting out the grounds for appeal.

II. The decision under appeal was based on claims 1 to 13 of the Main Request filed during the oral proceedings of 4 November 2003. The independent claims 1 and 13 of this set of claims read as follows:

"1. A process for coating a metal substrate with a powder paint composition, characterized in that powder paint particles are first charged by friction or induction in the presence of magnetic or non-magnetic particles, are next transported and are then applied to a transfer medium by means of an electric field between the transfer medium and the means of transport, and subsequently transferred and applied to the substrate, whereafter the powder paint composition is cured or fused to form a coating.

13. Use of a process according to any one of claims 1-12 in a coil-coating process or in a sheet-coating process."

III. Inter alia the following documents were cited during opposition and/or appeal proceedings:

- (D1) English translation of JP-A-47 021 712
- (D2) US-A-2 990 278
- (D3) US-A-5 243 392
- (D4) US-A-3 957 367
- (D5) US-A-3 893 761
- (D7) US-A-4 460 266
- (D10) EP-A-0 354 530
- (D11) M. Huijben, "Océ's unique copier and printer technology: ...", Proceedings of IS&T's 7th Int. Congress on Advances in Non-Impact Printing, vol. II, 1991, pages 453-462
- (D12) G. C. Simmons, "Coil coatings - strategies in change", Polymers Paint Colour Journal, 1993, pages 372 and 373
- (D21) US-A-5 065 183.

IV. The Opposition Division argued that grounds for opposition under Article 100(b) EPC did not apply, as suitable transfer media were disclosed in examples VII and XVII, and the charging of the powder paint articles and suitable particle sizes were disclosed in the description of the patent in suit.

The Opposition Division deemed the subject-matter claimed to be novel as none of the documents (D1) to (D5) disclosed a final coating covering more than 90% of the surface of the metal substrate as required according to paragraph [0009] of the patent in suit.

Finally, the Opposition Division was of the opinion that the subject-matter claimed was based on an

inventive step. Document (D12) was deemed to be the closest prior art. This document, however, did not suggest the use of a transfer medium and the advantages obtainable therewith. The teaching of the remaining documents was considered to be remote from the subject-matter claimed and thus was not discussed in detail.

- V. Oral proceedings before the Board were held on 12 October 2006.

The claims of the Main Request considered by the Board were claims 1 to 13 as maintained by the Opposition Division (see point II above), with however the wording of claim 7 corrected under Rule 88 EPC by the addition of a terminal "s" to the word "particle".

Moreover, the Respondents submitted a description adapted to these claims during the oral proceedings.

The claims of the Auxiliary Request were claims 1 to 12 as filed with the letter dated 11 September 2006.

- VI. The Appellant argued that the patent in suit did not describe in a manner sufficiently clear and complete the steps in which the powder paint particles were charged, next transported and then applied to a transfer medium. As to the means for charging the powder paint particles, paragraph [0049] of the patent in suit referred to document (D7) disclosing application of the toner near the bottom of the transfer medium, which would cause problems due to the toner falling down.

Only examples XVII and XVIII, so he added, employed a transfer medium. Paragraphs [0053] and [0054] of the patent in suit referred to documents (D10) and (D11) as far as the transport medium was concerned. Neither examples XVII and XVIII nor (D10) or (D11) described a transfer medium to which the particles adhered electrostatically as required by the claims of the patent in suit.

Furthermore the Appellant deemed the subject-matter of the claims to lack novelty in view of the disclosure of any of the documents (D2) to (D5) and (D21).

Moreover, the Appellant argued that the subject-matter of the claims of the patent in suit was not based on an inventive step in view of document (D1) if combined with the teaching of (D2) or (D21).

Document (D1), which the Appellant considered to represent the closest prior art, disclosed a powder coating process which differed from the one claimed in the patent in suit in that (D1) neither described the transfer medium nor the coating of metal. Documents (D2) and (D21) disclosed to use a transfer medium where (D2) mentioned that the transfer medium allowed for extreme rapidity, little heat transfer and the possibility to coat rigid materials, such as aluminium lithographic plates (see column 5, lines 38-47).

Finally the Appellant deemed the claims to lack of clarity. As claim 1 required to be interpreted according to Article 69 in the light of the description, it could not be clear.

VII. The Respondents (Proprietors of the patent) referred to their answers given during the opposition procedure as far as grounds under Article 100(b) EPC were concerned.

They argued that the claimed subject-matter was novel as none of the documents (D2)-(D5) and (D21) disclosed the coating of a metal substrate with a powder coating.

The Respondents considered document (D12) to be the closest prior art. The problem to be solved in view of (D12) was to achieve high coil line speeds while applying a coating of the desired thickness and good and homogeneous quality. Documents (D1) to (D8), (D10), (D11) and (D21), so they argued, did not refer to this problem and were in a different field, namely in electrography. The skilled person thus would not have consulted these documents.

VIII. The Appellant requested that the decision under appeal be set aside and the patent be revoked.

The Respondents requested that the decision under appeal be set side and the patent be maintained on the basis of the Main Request submitted during oral proceedings before the Board, or on the basis of claims 1-12 or the Auxiliary Request filed with the letter dated 11 September 2006.

IX. At the end of the oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main Request

2. Articles 123 and 84 EPC and Rule 88 EPC
 - 2.1 The Appellant neither raised any objection under any of the Articles 123 and 100(c) EPC nor objected to the correction under Rule 88 EPC requested by the Respondents (see point V above).
 - 2.2 Correction of claim 7 under Rule 88 EPC

Claim 7 as maintained by the Opposition division reads as follows:

"7. A process according to any one of claims 1-6, characterized in that the carrier particle have a ratio $X_{75.3}:X_{25.3}<2$."

The correction requested consisted in the addition of a plural "s" to the word "particle".

Rule 88 EPC requires that a correction of errors in the claims "must be obvious in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction."

First of all it is evident that an error existed in this claim as the noun "particle" is in the singular, whereas the corresponding verb "have" is in the plural form.

Secondly, the application as originally filed discloses that the ratio $X_{75.3}:X_{25.3}$ is to describe a particle size distribution (see page 6, lines 2-5; see also page 5, lines 9-24).

A particle size distribution can only be defined for a plurality of particles; a single particle has a distinct particle size.

Therefore, it is not only evident that there is an error, but also that the error is to be corrected by replacing the word "particle" by its plural form, i.e. by "particles".

Consequently, the request for correction of claim 7 under Rule 88 EPC is allowed.

2.3 Article 123 EPC

2.3.1 Article 123(2) EPC

Claim 1 of the Main Request which is now restricted to a process for coating a metal substrate with a powder paint composition, has its basis in claims 1 and 3 and page 2, lines 13-19 of the application as filed.

Claims 2 to 13 correspond to the renumbered claims 3 to 14 as granted and have their basis in claims 1, 5 to 14 and 23 as originally filed.

The amendments in the description only delete embodiments no longer falling under the scope of the present claims. In particular, the description of the patent as granted was amended as follows:

The substrate of the coating has been restricted to a metal substrate

- by inserting "metal" on page 2, lines 3 and 16,
- by deleting the expression "and wherein the substrate is metal, textile, plastic or wood" on page 2, lines 22-23, and
- by reformulating paragraph [0051] on page 4.

The use of a transfer medium has been acknowledged as a mandatory feature by

- deleting the term "If a transfer medium is used" on page 2, line 24,
- deleting the expression "According to a preferred embodiment of the invention" on page 2, line 36,
- deleting page 3, lines 44-46,
- deleting the term "In case of use of a transfer medium" on page 3, line 47,
- deleting the word "If" and making a full stop after the word "substrate" on page 3, line 42,
- reformulating paragraphs [0061] and [0064] on page 4,
- and denoting examples VII to XI, XIII and XVI as being comparative.

The Appellant had no objections to the amended description provided during the oral proceedings before the Board. Nor does the Board see a reason to object to it as the amendments therein merely serve to adapt the description to the amended claims.

All the amendments in the claims and the description thus are directly and unambiguously derivable from the application as originally filed.

2.3.2 Article 123(3) EPC

The claims have been amended with respect to their version as granted in that

- in claim 1 the substrate to be coated has been restricted to a metal substrate,
- claim 2 has been deleted and the remaining claims and references have been renumbered accordingly, and in that
- in claim 7 the correction under Rule 88 EPC mentioned in point 2.2 has been performed.

These amendments thus limit the scope of the claims with respect to the claims as granted.

2.3.3 Consequently, the amendments are admissible under both Article 123(2) and (3) EPC.

3. Clarity of the claims

The Opposition Division had interpreted the terms "substrate" and "coating" in claim 1 in the light of the description, in particular in view of paragraphs [0006] and [0009], to mean the final substrate and a coating substantially fully covering the substrate, respectively (see point 3 of the reasons of the decision under appeal).

As these terms require interpretation, so the Appellant argued, the claims lack clarity (see point 8 of the Appellant's letter dated 25 March 2004).

However, lack of clarity of the claims does not belong to the grounds for opposition under Article 100 EPC. Hence the Board may only consider this issue if the lack of clarity is caused by amendments made during opposition or appeal (see T 301/87, OJ EPO 1990, 335, in particular points 3.4 and 3.5 of the reasons).

This does not apply to the present case as the terms "substrate" and "coating" were already present in the same context in the claims as granted (see points II and 2.3.2 above).

4. Grounds under Article 100(b) EPC
- 4.1 Grounds under Article 100(b) EPC apply if "the European 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."
- 4.2 The Appellant argued that the patent did not describe the steps in which the powder paint particles are charged, next transported and then applied to a transfer medium in a manner sufficiently clear and complete.
- 4.3 This argument is at variance with the facts and in particular not convincing for the following reasons:

4.3.1 It is established jurisprudence of the boards of appeal that sufficiency of disclosure within the meaning of Article 100(b) EPC must be assessed on the basis of the patent as a whole - including the description and the claims - and not of the claims alone (see, for example, T 14/83, published in the OJ EPO 1984, 105, particularly point 3 of the reasons).

In that respect, examples XVII and XVIII on page 8 of the patent in suit are relevant in that they give information on how to carry out the invention as defined in the claims. Example XVII describes how to yield a powder paint coating by heat transfer on a ferrous substrate. Example XVIII describes how to apply a powder paint coating by electrostatic transfer to a ferrous substrate.

According to example XVIII, in particular, the powder paint particles

- are produced according to example XV,
- are charged in a magnetic brush,
- are then transferred to a rotating drum (i.e. of the transfer medium as defined in claims 1 and 12 of the Main Request),
- and finally transferred to an iron foil.

This example indicates

- the compositions of the two coatings of the rotating drum,
- the rotational speeds of the magnetic brush and the rotating drum,
- the voltage applied for transferring the coating from the rotating drum to the iron foil,

- the curing temperature of the powder coating, and refers to example VII for all other parameters (see page 8, lines 31-38).

These other parameters are

- the distance between the magnetic brush and the rotating drum,
- the adjustment of the magnetic pole, and
- the voltage applied between the magnetic brush and the rotating drum in order to allow the powder paint particles to transfer to the rotating drum (see page 6, lines 41-47).

In paragraph [0049], the patent in suit makes reference to document (D7) as far as the magnetic brush is concerned, and mentions moreover alternative ways of charging the powder paint particles.

Apart from that, the general part of the description contains much more information either directly disclosed (e.g. the indication of suitable magnetic and non-magnetic carrier particles in paragraphs [0026] to [0029]) or incorporated by reference. For example, in paragraph [0054] it is stated that as a transfer medium between the transport means and the substrate, any suitable transfer medium like metallic drums, dielectric drums, foil from metals or polymers like silicone rubber belts, as described in document (D11), or composite materials can be used.

The Appellant argued that documents (D10) and (D11) did not disclose the transport of the powder paint particles to the transfer medium by means of an electric field (see point 3 of his letter dated 25 March 2004). As far as document (D11) is concerned, this argument is at variance with the facts. Said

document describes the transfer of toner particles from a magnetic roller to a photoconductor by means of an electric field (see chapter D and Figure 5, both on page 456). Hence, document (D11) gives to the person skilled in the art all the information necessary in order to transport charged powder paint particles to a transfer medium by means of an electric field between the means of transport (i.e. the magnetic roller) and the transfer medium (i.e. the photoconductor). The fact that document (D11) also discloses the subsequent transfer of the toner particles to a silicone belt by means of adhesive forces (see chapter E on page 458) is not relevant in this respect.

4.3.2 The Appellant did not provide any evidence in order to show that all this information provided in the patent in suit did not enable the person skilled in the art to carry out the invention claimed. In particular, he did not furnish any experimental evidence in support of his assertion that the magnetic brush disclosed in document (D7) was inoperative in the process claimed. The Appellant's objection of insufficiency of disclosure thus is not substantiated by verifiable facts.

4.3.3 The Board observes that in opposition and opposition appeal proceedings, each party has the burden of proof for any fact it alleges (see T 270/90, published in the OJ EPO 1993, 725, point 2.1 of the reasons).

Hence, in the present case, it is the Appellant who based his appeal on grounds under Article 100(b) EPC that had to prove that such grounds applied in the present case, which he did not.

Taking into account the comprehensive information provided in the patent on the details of the process claimed (see point 4.3.1 above), the Board comes to the conclusion that no grounds under Article 100(b) EPC prejudice the maintenance of the patent in the form according to the Main Request.

5. Novelty

The Appellant submitted that the subject-matter of the claims lacked novelty in view of the disclosure of any of the documents (D2) to (D5) and (D21).

5.1 Document (D2)

Document (D2) relates to a method comprising forming an image of fusible powder on a first substrate, transferring said powder image to a sheet material, heating the sheet material until the powder image is fused, pressing said heated sheet against another unheated substrate, and separating the surfaces as to leave the image on the unheated substrate, which preferably is a metal substrate (see claim 7 and column 3, lines 23-27; column 1, lines 28-37).

Claim 1 of the patent in suit requires something different, namely that the powder coating is cured or fused after it has been transferred to the metal substrate. Document (D2) does not disclose this mandatory feature, as the process disclosed there requires to fuse the powder image before (and not after) it is transferred to the metal surface.

Consequently, document (D2) does not destroy the novelty of the subject-matter of present claim 1.

5.2 Any of the documents (D3), (D4) or (D5)

Claim 1 of the patent in suit relates to a process for coating a metal substrate. That means that the final product or object of the process is a coated "metal substrate". The final products disclosed in any of the documents (D3) to (D5) are, however, no coated metal substrates in that sense (see (D3), column 7, lines 24-26; (D4) does not disclose the nature of the material the "support 42" is to be made of; see (D5), column 3, line 67 to column 4, line 1).

The Appellant argued that the processes described in (D3), (D4) and (D5) involved the coating of intermediate metallic rolls or belts within the apparatus, so that said disclosures deprived the subject-matter claimed in the patent in suit of novelty.

The Board does not share this view as these intermediate metallic rolls or belts are not part of any product or object to be coated but part of the apparatus by which a coating is to be applied. Any citation must read in a way that a technical term used therein is given a meaning that makes sense to a person skilled in the art, and not in such a way that the result is something which is technically absurd.

Hence, documents (D3), (D4) and (D5) are also not detrimental to the novelty of the subject-matter of present claim 1.

5.3 Document (D21)

This document relates to a method for printing on a container where this method is illustrated in Figure 1. The Appellant remarked that document (D21) taught to heat the metal container 51 by means of the heating devices 52 in order to fuse thereon the material transferred from the flexible belt 1 (see column 10, lines 55-66).

Claim 1 of the patent in suit requires that the material transferred to the substrate is in the form of particles ("... characterized in that powder paint particles are ... transferred and applied to the substrate, ...").

The process described in document (D21) does not meet this requirement in that the image has been fused on the belt 1 by means of the heating device 8 prior to its transfer to the metal container. So, document (D21) teaches to transfer a fused image to the metal container, whereas the patent in suit requires the transfer of powder paint particles.

Therefore, also document (D21) is not destroying the novelty of the subject-matter of the present claims.

5.4 Hence, the disclosure of none of the documents (D2) to (D5) and (D21) deprives the subject-matter of the present claim 1 of novelty.

5.5 The Appellant did not base his objections as to novelty on any other documents, nor is the Board aware of a document the teaching of which might deprive the subject-matter of claim 1 of novelty.

Therefore, the subject-matter of claim 1 is novel. The same applies to the subject-matter of dependent claims 2 to 12 which are directed to preferred embodiments of claim 1, and to the subject-matter of independent claim 13 which concerns the use of the process as claimed in any of the claims 1 to 12 in a coil-coating or sheet-coating process.

Consequently, the subject-matter of all the claims of the Main Request is novel.

6. Inventive step

6.1 The Appellant considered document (D1) as the closest prior art because it taught to coat substrates such as tissue or paper using common photocopier technology.

The Board does not share this view for the following reasons:

The claims of the patent in suit relate to a process for coating a metal substrate with a powder paint composition (see present claim 1). The surfaces of metal substrates are different from those of paper or tissues in that the metal is less hydrophilic. For this reason, the person skilled in the art would rather have considered a document disclosing the coating of a metal substrate as the proper starting point.

Document (D12) relates to coil coating of metals by means of powder coating technology. Therefore, (D12) and not (D1) is to be considered as the closest prior art.

6.2 Now the problem has to be determined which is to be solved in view of the closest prior art, i.e. in view of document (D12).

According to the patent in suit, the problem to be solved was "to provide an improved process for coating a powder paint on a substrate, at rapid rates ... while yielding a high quality coating." (see paragraph [0005]).

In the judgement of the Board, it is, however, not credible that this problem is actually solved. Indeed, a comparison between example XVII or XVIII and the comparative example XVI shows that the processes described in these three examples yield coatings with a film thicknesses of 7 μm , 7.5 μm and 8 μm , all at a coating speed of 30 m/min. The evaluation given in the patent in suit for the coatings obtained in comparative example XVI ("high gloss, closed film") and for those obtained as products of examples XVII and XVIII ("homogeneous powder coating film") cannot lead to the conclusion that the three coatings differ in quality. Therefore, the comparison of the coatings obtained in examples XVI, XVII and XVIII reveals no apparent improvement in coating speed or quality of the coatings obtained as a result of the process claimed.

Hence, the objective problem to be solved in view of document (D12) was to provide an alternative process for coating a metal substrate with a powder paint.

This problem is solved by the subject-matter of claim 1 of the patent in suit in that it requires the powder paint particles to be transferred to a transfer medium prior to their application to the substrate to be coated.

In view of the description, particularly of examples XVII and XVIII and paragraphs [0053] and [0054], the Board is satisfied that this problem is indeed solved for all what is claimed.

6.3 When trying to find an alternative process for coating a powder paint on a metal substrate, it is clear that the person skilled in the art would consider prior art documents relating to powder paint coating on metal surfaces. That means that he would consult document (D21) dealing with printing on metal containers; he would tend to disregard documents relating to photocopying (such as (D2) and (D4)).

In order to provide an alternative to the process disclosed in (D12) he would have considered to modify said process in accordance with the teaching of document (D21) by transferring the powder paint particles to a transfer medium before applying them to the substrate. Such a transfer medium is the flexible belt denoted by the reference sign 1 in Figure 1 of (D21).

When doing this, the person skilled in the art would also fuse the coating on the transfer medium by means of the heating element bearing the reference sign 8 in Figure 1 of (D21). This is so since (D21) does not disclose that the coating could be transferred from the transfer element to the containers to be coated in any other form than in that of a heated and thus fused image (see column 8, lines 49-63).

The person skilled in the art would thus end up with a process that is at variance with the requirement of the present claims that powder paint particles (and not a fused image) are to be transferred from the transfer medium to the metal substrate (see point 5.3 above).

This means that the modification of the process disclosed in document (D12) by means of the stated additional features disclosed in (D21) will not yield a process as claimed in claim 1 of the patent in suit.

6.4 This does not change when considering the further documents mentioned by the Appellant in his argumentation on novelty and inventive step.

Document (D1) does not deal with the coating of metal (as documents (D12) and (D21) both do) but with that of tissues and paper; moreover, (D1) does not disclose a process using a transfer medium between the charged particles and the substrate to be coated. Hence, document (D1) is even less relevant than any of the documents (D12) and (D21) discussed under points 6.1 to 6.3 above.

Documents (D2) to (D5) deal with electrostatographic (in particular electrophotographic) copying and printing processes (see the titles of (D2), (D4) and (D5); see (D3), column 6, lines 38-44). So, documents (D2) to (D5) are clearly so little related to the technology of the powder coating of metal substrates that the person skilled in the art would not have consulted their teaching when trying to solve the problem posed.

6.5 Hence, the subject-matter of claim 1 is based on an inventive step.

6.6 The same applies to dependent claims 2 to 12 relating to particular embodiments of said claim 1. Independent claim 13 relating to the use of the process according to any of the claims 1 to 12 in a coil-coating or sheet-coating process, is based on the same inventive concept as claim 1 so that its subject-matter is also deemed to be inventive.

6.7 Consequently, the subject-matter of the claims of the Main Request is based on an inventive step.

7. In view of the above, the Board comes to the conclusion that no grounds under Article 100 EPC prejudice the maintenance the patent based on the Main Request.

Auxiliary Request

8. Since the Board considered the claims of the Main Request to meet the requirements of the EPC, there is no need to deal with the Auxiliary Request.

Order

For these reasons it is decided that:

1. The correction under Rule 88 EPC is accepted.
2. The decision under appeal is set aside.
3. The case is remitted to the department of first instance with the order to maintain the patent as amended in the following version:

Description: As filed at the oral proceedings before the Board;

Claims: Nos. 1-13 as maintained by the department of first instance, with claim 7 corrected.

The Registrar:

The Chairman:

A. Townend

A. J. Nuss