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**Datasheet for the decision
of 21 September 2012**

Case Number: T 0476/09 - 3.3.09
Application Number: 03014697.1
Publication Number: 1376248
IPC: G03G 9/08, G03G 9/087
Language of the proceedings: EN

Title of invention:

Toner for developing latent electrostatic image, container having the same, developer using the same, process for developing using the same, image-forming process using the same, image-forming apparatus using the same, and image-forming process cartridge using the same

Patentee:

Ricoh Company, Ltd.

Opponent:

Canon Kabushiki Kaisha

Headword:

-

Relevant legal provisions:

EPC Art. 87, 54, 56
EPC R. 106
RPBA Art. 12(1), 13(1)

Keyword:

"Admissibility of requests filed with grounds of appeal - yes"

"Admissibility of fresh documents - yes"

"Remittal - no"

"Priority - no, all requests"

"Main request and auxiliary requests 1 and 2 - novelty - yes;
inventive step - no"

"Auxiliary request 3 - inventive step - yes"

"Objection under Rule 106 EPC - dismissed"

Decisions cited:

G 0002/98, T 0407/02, T 0386/04, T 0441/93, T 0665/00,

T 1877/08

Catchword:

-



Case Number: T 0476/09 - 3.3.09

DECISION
of the Technical Board of Appeal 3.3.09
of 21 September 2012

Appellant: Ricoh Company, Ltd.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 15 December 2008
revoking European patent No. 1376248 pursuant
to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: M. O. Müller
Members: J. Jardón Álvarez
R. Menapace

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 1 376 248 in the name of Ricoh Company, Ltd., in respect of European patent application No. 03014697.1 filed on 27 June 2003, and claiming a first priority date of 28 June 2002 from JP 2002190465 and a second priority date of 17 September 2002 from JP 2002269845 was published on 26 April 2006 (Bulletin 2006/17). The patent contained 26 claims, claim 1 reading as follows:

"1. A toner for developing a latent electrostatic image comprising:

a base of toner particle which comprises a binder resin and a coloring agent; and
an external additive,

wherein a plurality of the base of toner particle has a volume average particle diameter (D_v) of $3\mu\text{m}$ to $7\mu\text{m}$, a ratio (D_v/D_n) of the volume average particle diameter (D_v) to a number average particle diameter (D_n) is 1.01 to 1.25, a plurality of the base of toner particle comprises 15% by number or less of the base of toner particle having a particle diameter of $0.6\mu\text{m}$ to $2.0\mu\text{m}$, a plurality of the base of toner particle has a circularity of 0.930 to 0.990 on average, the binder resin comprises a modified polyester resin, and the toner comprises 0.3 parts by weight to 5.0 parts by weight of the external additive, relative to 100 parts by weight of the base of toner particle."

Claims 2 to 26 were directly or indirectly dependent on claim 1.

II. A notice of opposition was filed by Canon Kabushiki Kaisha on 25 January 2007 requesting revocation of the patent in its entirety. The opponent invoked the grounds of opposition pursuant to Article 100(a) EPC (lack of novelty, lack of inventive step) and Article 100(b) EPC (insufficiency of disclosure).

The documents cited in support of the opposition included the following:

D1: EP 1 026 554 A1;

D2: JP 2001-318477 A and its English translation, D2';

D6: EP 1 296 194 A2;

D7: JP 2002-190465 and its English translation, D7';
and

D8: JP 2002-269845 and its English translation, D8'.

III. By its decision announced orally on 4 November 2008 and issued in writing on 15 December 2008, the opposition division revoked the patent because the claimed subject-matter lacked inventive step.

The decision was based on the main (and sole) request filed by the patent proprietor with letter of 12 July 2008. Claim 1 of this request was based on claim 1 of the patent as granted wherein it was specified that the external additive was an additive "which includes hydrophobic titanium oxide and hydrophobic silica".

The opposition division acknowledged novelty of the subject-matter of claim 1 over documents D1 and D6 but denied an inventive step in view of the disclosure of D6 alone. The opposition division saw the technical problem to be solved over the disclosure of D6 in the provision of a toner with reduced film forming on the developing roller. The opposition division was of the opinion that the skilled person striving for optimizing the toner properties would, starting from the teaching of D6 arrive at the subject-matter of claim 1 by routine experiments, in particular due to the fact that D6 already advised the skilled person to avoid toner particles smaller than 3µm in an amount of 10% by number or more.

IV. On 10 February 2009 the patent proprietor (in the following: the appellant) lodged an appeal against the decision of the opposition division and paid the appeal fee on the same day. On 15 April 2009 the appellant filed the statement setting out the grounds of appeal and requested that the decision under appeal be set aside and the patent be maintained as granted (main request); or, alternatively, that the patent be maintained in amended form with the claims according to auxiliary requests 1 to 3 therein filed. Claim 1 of auxiliary request 3 resulted from the combination of granted claims 1 and 12 and further defined the methods for determining the particle diameters. The appellant also filed an experimental report in support of its arguments:

D10: Figure 3, including pictures A and B.

V. With its reply dated 4 September 2009, the opponent (in the following: the respondent) disputed all the arguments of the appellant, maintained that the subject-matter of all the requests of the appellant lacked novelty and inventive step and requested that the appeal be dismissed.

VI. On 16 May 2012 the board dispatched a summons to oral proceedings to be held on 21 September 2012. In a communication dated 16 July 2012, the board outlined the points to be discussed during the oral proceedings, namely novelty and inventive step of the main request and auxiliary requests 1 to 3 and whether a valid priority could be acknowledged.

VII. On 20 August 2012 the respondent filed further submissions and the following fresh citations:

D11: US 2002/0001766 A1;

D12: EP 0 869 399 A2;

D13: EP 1 211 566 A2; and

D14: JP 2002040681 A and its English translation, D14a.

VIII. On 21 August 2012 the appellant filed further submissions. It also filed sets of claims for two further auxiliary requests, auxiliary requests 4 and 5.

IX. Oral proceedings were held before the board on 21 September 2012. During the oral proceedings, the appellant withdrew its auxiliary requests 4 and 5. It further filed an amended version of auxiliary request 3

wherein in claim 1 the introduced methods for determining particle diameters were deleted and the definition of the wax distribution in this claim was editorially amended so that it matched with granted claim 12.

The claims of the main request are the claims as granted (see point I above).

Claim 1 of auxiliary request 1 is based on claim 1 of the main request and further specifying that the volume average particle diameter and the number average particle diameter were measured using a Coulter counter and the circularity was measured using a flow-type particle image analyzer.

Claim 1 of auxiliary request 2 is based on claim 1 of auxiliary request 1 wherein it is further specified that the external additive comprises silica and titanium oxide.

Claim 1 of auxiliary request 3 results from the combination of granted claims 1 and 12. It read as follows:

"1. A toner for developing a latent electrostatic image comprising:

a base of toner particle which comprises a binder resin and a coloring agent; and
an external additive,

wherein a plurality of the base of toner particle has a volume average particle diameter (Dv) of 3µm to 7µm, a

ratio (D_v/D_n) of the volume average particle diameter (D_v) to a number average particle diameter (D_n) is 1.01 to 1.25, a plurality of the base of toner particle comprises 15% by number or less of the base of toner particle having a particle diameter of 0.6 μ m to 2.0 μ m, a plurality of the base of toner particle has a circularity of 0.930 to 0.990 on average, the binder resin comprises a modified polyester resin, and the toner comprises 0.3 parts by weight to 5.0 parts by weight of the external additive, relative to 100 parts by weight of the base of toner particle,

wherein the base of toner particle further comprises wax, the wax is dispersed in the base of toner particle, and more of the wax is present in a vicinity of a surface of the base of toner particle rather than a center of the base of toner particle."

- X. The arguments presented by the appellant in its written submissions and during the oral proceedings, insofar as they are relevant for the present decision, may be summarized as follows:

Admissibility of the main request and auxiliary requests 1-3

According to established case law, a patent proprietor, who had only defended his patent in limited form before an opposition division was allowed on appeal to return to a broader version or even to the patent as granted. The appellant cited decisions T 407/02 and T 386/04 in support of its arguments.

Admissibility of D12 and D13

Documents D12 and D13 were clearly late filed and should not be admitted into the proceedings. There was no reason for admitting these documents filed five and half years after the notice of opposition. In the appellant's opinion they were no more relevant than other documents already on file and in any case, the appellant had no time to react to the disclosure of these documents, for instance by providing further experimental evidence or by filing further auxiliary requests.

In the event that the board should admit D12 and D13 into the proceedings, the appellant would auxiliarily request that the case should be remitted to the opposition division for further prosecution.

Priority

The patent was entitled to a priority date of 28 June 2002 for the circularity sub-range of 0.94 to 0.99 which was disclosed in the first priority document, D7. According to G 2/98 multiple priorities for one claim were allowed when two alternative features were claimed. This was confirmed by T 441/93 and T 665/00.

Main request

The subject-matter of the claims was novel because the average particle diameter, D_v , the ratio D_v/D_n and the amount of superfine particles (particles

having a diameter of 0.6 to 2.0 μ m) were not disclosed in D1 and because D6 did not disclose the claimed amount of superfine particles. The respondent's argument that the claimed subject-matter was implicitly disclosed in example I-3 of D1 was not correct as the process steps in this example were quite different from those in the opposed patent and no experimental evidence had been provided showing that the example according to D1 exhibited all features required by claim 1. As to D6, only the particles having a diameter from 2.00 μ m to 40.30 μ m were measured and there was no information about the amount of particles with a diameter below 2.00 μ m in this document.

The subject-matter of claim 1 of the main request involved an inventive step. Document D6, the closest prior art document, was not concerned at all with the superfine particle fraction. It could not give any hint to the unexpected finding that the claimed toner would cause less filming as demonstrated by the experimental evidence filed with the statement of grounds of appeal (D10) and comparative example A-4 of the opposed patent. The appellant admitted during the oral proceedings that document D13 came close to feature (f) of claim 1 but insisted that the claimed combination of features was not hinted at by the combination of documents D6 and D13. As could be seen in the examples of the opposed patent, selecting the claimed amount of superfine particles as such was not sufficient to reduce filming, what was in fact needed was an amount of superfine particles as

claimed, in combination with the further features of claim 1 and this was not disclosed in D6.

Auxiliary requests 1 and 2

During the oral proceedings, the appellant maintained these requests and did not comment on the fact that the finding of lack of inventive step of the main request equally applied to auxiliary requests 1 and 2.

Auxiliary request 3

The feature of claim 1 that more wax was present in the vicinity of the surface of the toner particles rather than the centre thereof had to be read such that more wax was present near the surface of each toner particle compared to the centre of each particle. This was confirmed by the description of the opposed patent on page 14, lines 43 to 45 where it was stated that "the wax is dispersed to 1µm or less in terms of the longer diameter".

The subject-matter of claim 1 of auxiliary request 3 involved an inventive step. D6 remained the closest prior art. The dispersing of the wax so that a large amount of the wax was near the surface resulted in a toner having good image-fixing release properties. The problem solved was thus the provision of toners with less filming and good mould release properties. This teaching was actually against the disclosure of D6 which required that the wax was finely dispersed within

the toner. The statement in D6 that more wax at the surface led to good release properties was not relevant in this respect as it was present in the prior art section of D6 only and the toners thus formed had at the same time several drawbacks.

The respondent's insufficiency objection should not be admitted as it was filed late and was too complex to be discussed during the oral proceedings.

- XI. The arguments presented by the respondent in its written submissions and at the oral proceedings may be summarized as follows:

Admissibility of the appellant's claim requests

The appellant had defended claims during the opposition proceedings that were more restricted than the claims of the present requests. More particularly, contrary to the claims before the opposition division, the claims of the present requests did not contain the restriction that the external additive comprised in the toner of claim 1 includes hydrophobic titanium oxide and hydrophobic silica. The appellant's claim requests should therefore not be admitted. The recurrence to the granted claims represented an abuse of procedure, since in the opposition proceedings the patent proprietor never defended the patent in the scope of the claims as granted.

Admissibility of D12 and D13

Documents D12 and D13 were filed as a direct reaction to the comments on point 6.4 of the preliminary opinion of the board. According to the board's preliminary opinion the discussion on inventive step would be mainly directed to clarify whether the use of toners wherein the superfine particle fraction was below 15% involved an inventive step or not. Documents D12 and D13 showed that this feature was a normal design option known in the art. D12 and D13 were therefore *prima facie* very pertinent and should be admitted into the proceedings.

Priority

The now claimed combination of technical features was not disclosed in any previous priority document. According to the decision G 2/98, multiple priorities cannot be claimed for so-called "and"-claims where distinct technical features were combined from different priority documents as in the present case. Moreover an arbitrary division of a numerical range such that a part of a claim was entitled with a certain priority date and another part was not entitled with the priority date was not allowable according to established practice at the EPO.

Main request

The subject-matter of claim 1 of the main request lacked novelty having regard to the disclosure of

documents D1 and D6. The features not explicitly disclosed in D1 were implicitly disclosed in example I-3 of D1 because the methods of preparation of the toner in this example of D1 and in the patent were nearly identical. Concerning D6, this document explicitly disclosed all features of claim 1 except for the amount of superfine particles (particles having a size of 0.6 to 2.0 μ m). As to this amount, D6 disclosed a weight fraction of particles having a diameter of not more than 3 μ m of below 10%. The amount of superfine particles had thus also been below 10%, *i.e.* as required in claim 1.

Claim 1 lacked inventive step in view of the disclosure of D6 alone or in combination with D2 or the newly filed documents D12 and/or D13. These three documents used the same measure, the reduction of the amount of superfine particles, in order to reduce filming. As to the appellant's argument that the claimed amount of superfine particles needed to be present in combination with the further features of claim 1, it was important that the combination of all further features of the claim was already disclosed in D6.

Auxiliary request 3

The term "vicinity" in claim 1 could be interpreted such that toner particles with a uniform wax distribution would also meet this requirement. More specifically, for any wax distribution, including a uniform one, the area covered by the "vicinity" could be chosen so large

that the amount of wax present in this area was larger than the amount of wax outside of this area. Hence, a toner particle with a uniform wax distribution met the requirement that more wax is present in the vicinity of the surface of the toner particle.

In any case, document D6 already indicated that the release agent could be present in the surface of the toner particles, and that its presence in the surface was advantageous as such particles could be easily removed. The subject-matter of claim 1 of auxiliary request 3 was therefore not inventive in view of D6 in combination with D13. Furthermore, D1 already disclosed the claimed wax distribution. Therefore, inventive step also had to be denied in view of a combination of D1 and D6.

Upon specific request of the board as to whether the respondent wanted to pursue any further inventive step attacks, e.g. on the basis of D14, the respondent answered in the negative.

Furthermore, auxiliary request 3 lacked sufficiency of disclosure. Not all preparation methods disclosed in the patent in suit, and in particular those that were as described in D6, led to the claimed wax distribution. The skilled person would therefore need some guidance as to which preparation methods to select in order to obtain the claimed wax distribution, and this guidance was missing in the patent in suit. Furthermore, the wording "modified polyester resin" and "a plurality of the base of toner

particle" in claim 1 of this request was unclear and this also had consequences for the sufficiency of disclosure. As to the admissibility of this objection, the respondent argued that it had assumed that D6 would be considered to disclose the claimed wax distribution. There was thus no need to raise this objection at an earlier stage which was why this objection should be admitted into the proceedings.

Finally, the respondent contended that a procedural error was made by the board which, in refusing to admit the objections concerning sufficiency of disclosure into the proceedings, had violated the respondent's right to be heard (Article 113 EPC). An objection pursuant to Rule 106 EPC was raised during the oral proceedings.

XII. During oral proceedings, the board made the following additional comments:

Regarding the admissibility of the respondent's insufficiency objection, this objection had been submitted for the first time during the oral proceedings before the board. In particular, the only insufficiency objection submitted during the present appeal proceedings was the one submitted with letter dated 20 August 2012, and this objection was different from the present objection in that it referred to D1 rather than to D6.

XIII. The appellant requested that the decision under appeal be set aside and the patent be maintained as granted (main request), or, on an auxiliary basis, that the

patent be maintained in amended form with the claims according to auxiliary requests 1 - 3, auxiliary requests 1 and 2 filed with letter of 15 April 2009 and auxiliary request 3 filed during the oral proceedings before the board.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of the appellant's main request and auxiliary requests 1-3*
 - 2.1 The appellant filed with its grounds of appeal (letter of 15 April 2009) a main request and three auxiliary requests. Auxiliary request 3 was amended during the oral proceedings (see point IX above).
 - 2.2 The respondent contested the admissibility of these requests essentially because the appellant had defended claims during the opposition proceedings that were more restricted than the claims of the present requests. The respondent in particular argued that contrary to the claims before the opposition division, the claims of the present requests did not contain the restriction that the external additive comprised in the toner of claim 1 includes hydrophobic titanium oxide and hydrophobic silica.
 - 2.3 According to EPO practice, in cases like the present one where the patent proprietor is appealing against

the revocation of its patent, the appellant-proprietor is entitled to seek the maintenance of the patent as granted even though its main request before the opposition division had only been the maintenance of the patent in more limited form. Only in exceptional circumstances, where it would amount to an abuse of procedure, it should not be allowed to revert to the granted claims (see Headnote of T 386/04 of 9 January 2007, not published in the OJ EPO).

- 2.4 In the present case the conduct of the appellant does not amount to an abuse of procedure.

It is true that the claims of the request before the opposition division were more restricted than the claims of the present requests submitted by the appellant with the statement of grounds of appeal in that the claims before the opposition division defined the external additive to include hydrophobic titanium oxide and hydrophobic silica. However, this definition of the external additive had no bearing on the opposition division's decision. Therefore, the fact that this definition is not contained in the claims of the present requests does not raise any new issues which have not yet been dealt with by the opposition division. Hence, the appellant did not leave the factual and legal scope of the first instance opposition proceedings with its new requests in appeal proceedings. The board therefore does not see any reason why by filing the main request and auxiliary request 1-3 with the statement of grounds of appeal, any abuse may have occurred.

The further amendment of claim 1 of auxiliary request 3 during the oral proceedings merely overcomes a clarity objection raised by the respondent and it does not introduce any new issue into the proceedings either.

2.5 For these reasons the board decided to admit the main request and auxiliary requests 1 to 3 into the proceedings.

3. *Admissibility of documents D11-D14 and D14a*

3.1 Documents D11-D14 and D14a were filed by the respondent nearly one month before the date of the scheduled oral proceedings (letter of 20 August 2012). The appellant for its part disputed the admissibility of these documents in the proceedings.

Documents D12 and D13 both deal with toners for forming images very similar to the claimed toners. They were filed as further proof that the reduction of the amount of superfine particles in a toner in order to avoid filming (toner particle deposition) was known before the relevant date of the patent in suit (see third and fourth paragraphs of page 5/8 of the respondent's letter of 20 August 2012).

3.2 D12 and D13 can be admitted into the proceedings for the following reasons:

- Firstly, the filing of these documents can be seen as a reaction to the comments in the board's communication, dated 16 July 2012, where it was stated that the discussion on inventive step would

mainly concern this feature, namely the amount of superfine particles in the toner.

- Secondly, as set out in point 7.6 below, the two documents are highly relevant to inventive step of the main request.

 - Finally, as explicitly acknowledged by the appellant during the oral proceedings, the pertinent disclosure of these two documents is not so complex that the time that remained prior to oral proceedings would be insufficient to deal with these documents. In fact, the appellant only stated during the oral proceedings in very general terms that it would have needed more time to carry out further experiments and/or to file further auxiliary requests. However, upon specific request from the board, the appellant could not give any reason, why (and which) experiments or new requests would have been necessary. In view of this, the board did not consider it credible that the time to react had been insufficient.
- 3.3 The board therefore decided to admit documents D12 and D13 into the proceedings (Article 13(1) RPBA).
- 3.4 Concerning the admissibility of documents D11, D14 and D14a, the respondent explicitly stated during the oral proceedings that it no longer relied on these documents. There was thus no need for the board to decide on the admissibility of these documents.

4. *Request for remittal*

The appellant requested that in the event that D12 and D13 were admitted into the proceedings, the case should be remitted to the first instance. However, there is no absolute right to two instances and in view of the fact that the appellant had sufficient time to deal with these documents (see point 3.2 above), the board decided not to remit the case to the first instance.

5. *Priority*

5.1 The patent in suit claims two priority dates, the first priority date being 28 June 2002 from D7 and the second priority being 17 September 2002 from D8.

5.2 D6 is an intermediate document having been published on 26 March 2003, after the two priority dates of the patent in suit and before the filing date thereof. In as far as the priorities of the patent in suit are valid, D6 is prior art under Article 54(3) EPC only and hence not relevant to inventive step. It therefore has to be decided whether the claims of the patent are entitled to the claimed priority right. In this respect, it has to be decided whether in the priority document(s) the same invention is disclosed as in the patent in suit (Article 87(1) EPC).

5.3 Each claim 1 of the main request and auxiliary requests 1 to 3 refers to a toner comprising a base of toner particles and contains the requirement that the average circularity of the base of toner particles is in the range of 0.930 to 0.990.

5.4 Priority document D8 discloses this circularity range but does not describe the remaining features of claim 1. It was therefore accepted by both parties that the patent in suit does not enjoy the priority of D8.

5.5 It was also common ground that priority document D7 discloses all features of claim 1 in combination, except for the circularity, which is defined in D7 in a narrower range of 0.94 to 0.99. It was a matter of dispute between the parties whether out of the range of 0.930 to 0.990 in claim 1 of the appellant's requests, the partial range of 0.94 to 0.99 enjoys the priority of D7.

5.6 In this respect, decision G 2/98 (OJ EPO 2001, 413-433) is relevant. In this decision the Enlarged Board of Appeal allowed the use of a generic term or formula in a claim for which multiple priorities were claimed, but that was made under the provision that such term "gives rise to the claiming of a limited number of clearly defined alternative subject-matters" (see point 6.7 of the Reasons). In the present case, however, the claimed range represents a continuum of a numerical range of values which does not correspond to distinctive alternative embodiments. Consequently, no separable alternative embodiments can be identified within this continuum which could enjoy the priority date of D7.

This is confirmed by the decision T 1877/08 of 23 February 2000 (not published in the OJ EPO). In this decision priority was denied for a composition that was characterised by ranges overlapping with the corresponding ranges disclosed in the priority document,

because no separable alternative embodiments could be identified in the ranges (see point 2.4 of the Reasons).

- 5.7 The appellant in this respect cited decisions T 441/93 of 27 March 1996 (not published in the OJ EPO) and T 665/00 of 13 April 2005 (not published in the OJ EPO) in support of its arguments.

In T 441/93 multiple priorities were allowed but, contrary to the present case, in a situation wherein clearly separable alternatives were present (embodiment directed to the transformation of protoplasts *versus* embodiment not directed to the transformation of protoplasts).

In T 665/00 the question arose whether one specific value out of a range present in a claim could enjoy priority. This is different however from the present case which concerns the priority of a partial range rather than of one individual value. The case in T 665/00 differs further from the present one in that the specific value had been disclosed specifically in the priority document by way of an example.

- 5.8 For these reasons no priority has been validly claimed for the subject-matter of claim 1 of the main request and auxiliary requests 1 to 3 with the consequence that document D6 is prior art pursuant to Article 54(2) EPC.

MAIN REQUEST (granted claims)

6. *Novelty*

6.1 Claim 1 of the main request is directed to a toner presenting the following features:

- (a) a toner for developing a latent electrostatic image comprising:
- (b) a base of toner particle which comprises a binder resin and a colouring agent; and
- (c) an external additive,
- (d) wherein a plurality of the base of toner particle has a volume average particle diameter (D_v) of $3\mu\text{m}$ to $7\mu\text{m}$,
- (e) the ratio (D_v/D_n) of the volume average particle diameter (D_v) to a number average particle diameter (D_n) is 1.01 to 1.25,
- (f) a plurality of the base of toner particle comprises 15% by number or less of the base of toner particle having a particle diameter of $0.6\mu\text{m}$ to $2.0\mu\text{m}$,
- (g) a plurality of the base of toner particle has a circularity of 0.930 to 0.990 on average,
- (h) the binder resin comprises a modified polyester resin, and
- (i) the toner comprises 0.3 parts by weight to 5.0 parts by weight of the external additive, relative to 100 parts by weight of the base of toner particle.

6.2 The respondent contested the novelty of claim 1 of the main request having regard to the disclosures of documents D1 and D6.

6.3 Document D1

6.3.1 Document D1 discloses a toner presenting undisputedly features (a)-(c) and (g)-(i) of claim 1. It was also not disputed that features (d), (e) and (f) are not explicitly disclosed by D1 but the respondent maintained that they are implicitly disclosed because example I-3 of D1 is almost literally identical to example A-1 of the patent.

6.3.2 In fact, however, the process steps in both examples are quite different:

Thus, in example I-3 of D1 the binder is prepared using 138 parts of terephthalic acid and 138 parts of isophthalic acid at 230°C for 6 hours and has a molecular weight of 2300 g/mol and a glass transition temperature of 52°C (D1, [0257]-[0259]). In Example A-1 of the patent, on the contrary, the binder is prepared using 276 parts of terephthalic acid at 230°C for 8 hours and has a molecular weight of 5000 g/mol and a glass transition temperature of 62°C ([0179]).

Moreover, the production of the toner is also different. In example I-3 of D1 cyanine blue is used as colouring agent and the solvent is removed by filtering, washing and drying in one step ([0260] with indirect reference to example I-1) while in example A-1 of the patent the colouring agent is carbon black and the solvent is removed in two steps ([0180]).

Finally, the toner prepared in example I.3 of D1 has a different value for the circularity (0.96), than the toner prepared in Example A-1 of the patent (0.948).

6.3.3 In view of these differences between both preparation processes, the different properties of the toners and in the absence of experimental evidence showing that an example according to D1 actually presents the values of features (d), (e) and (f) required by claim 1, the alleged similarity between the two preparation processes does not amount to a clear and unambiguous disclosure of a toner according to claim 1.

6.4 Document D6

6.4.1 Concerning D6, it was also undisputed by both parties that the toner disclosed therein presents all the features of claim 1 with the exception of feature (f), namely that the amount of toner particles having a particle diameter of 0.6 μ m to 2.0 μ m is less than 15%.

6.4.2 The respondent saw this feature implicitly disclosed in D6 wherein it is stated that "it is preferable that particles having a particle diameter not greater than 3 μ m are included in the toner in an amount of from 1 to 10%" (page 6, lines 52-53). The board acknowledges that taken literally, this indeed means that less than 10% of the particles have a diameter of 0.6-2.0 μ m as required by claim 1 (feature (f)). However, this passage must be read in the correct context of the disclosure of D6. In fact, in D6 only the particles having a diameter from 2.00 μ m to 40.30 μ m were measured (see page 8, line 49 and page 9, line 5).

6.4.3 There is therefore no information in D6 about the particles with a diameter below 2.00 μ m simply because these particles were not targeted when measuring the

particle diameter. Consequently, feature (f) and with it the subject-matter of claim 1 of the main request is not anticipated by D6.

6.5 For these reasons, the board concludes that the subject-matter of claim 1 of the main request, and by the same token of claims 2-26 which are directly or indirectly dependent on claim 1, is novel.

7. *Inventive step*

7.1 The invention concerns a toner for developing electrostatic images in electrophotography, electrostatic recording or electrostatic printing (page 1, lines 7 to 8 of the patent).

7.2 As the priority of the opposed patent is not valid (see point 5 above), D6 is prior art under Article 54(2) EPC and hence is citable against inventive step. In particular, as D6 is directed to the same object (page 2, lines 5 to 6), it undisputedly represents the closest prior art.

7.3 The problem underlying the patent in suit in the light of D6 is the provision of a toner that results in less filming of the toner on the developing roller, and on parts such as the blades (page 9, lines 13-14).

7.4 As a solution to this problem, the patent in suit proposes the toner of claim 1 characterised in that 15% by number or less of the base of toner particles have a particle diameter of 0.6 μ m to 2.0 μ m (in the following "superfine particles"), which is the distinguishing feature with regard to D6 (see point 6.4.1 above).

7.5 The appellant has provided experimental evidence D10 showing that in fact a toner manufactured by the process of D6 has a superfine particle content above 15% and that such a toner produces more filming than a toner according to claim 1 having a lower content of superfine particles. Furthermore, it follows from comparative example A-4 of the patent in suit that at an amount of superfine particles of 20.1 wt%, more filming occurs than at superfine particle contents as required by claim 1 (examples A-1 to A-7).

In view of these results, the technical problem of providing a toner with less filming has been credibly solved by the toner of claim 1 wherein the amount of superfine particles is kept below 15% by number.

7.6 Obviousness

7.6.1 It remains to be decided whether, in view of the available prior art documents, it would have been obvious for the skilled person to solve this problem by the means claimed.

7.6.2 D13 describes an image forming toner closely related to the toner of claim 1 of the patent (D13, claim 1 and examples). It also aims to improve problems associated with the irregularity of the image density due to the toner adhered to a developing sleeve (paragraph [0021]), that is to say, the same problem as the patent in suit. To solve this problem D13 suggests the use of a toner having a content of particles with a diameter of from 0.6 to 3µm of not greater than 25% by number, preferably not greater than 15% (page 4, lines 31

to 34). D13 thus provides the skilled person with a clear hint that reducing the amount of superfine particles would result in less filming.

7.6.3 In the board's judgement the skilled person would apply this teaching to the toner of D6 in order to solve the above mentioned technical problem. As a content of particles having a diameter of from 0.6 to 3µm not greater than 15% as taught by D13 implies an amount of particles having a diameter of from 0.6 to 2µm not greater than 15% (feature (f) of claim 1), the skilled person would thus arrive at the subject-matter of claim 1.

7.6.4 The appellant argued during the oral proceedings that an inventive step should nonetheless be acknowledged because filming could only be reduced if the claimed amount of superfine particles was present in combination with the further technical features of claim 1 while such a combination was not suggested by D6 and D13.

However, as set out by the respondent during the oral proceedings and not disputed by the appellant, except for the amount of superfine particles, D6 discloses all further features of claim 1 in combination. Reference can e.g. be made to example 3 of D6. This example discloses a toner for developing a latent electrostatic image (feature (a) of claim 1) comprising a base of toner particle which comprises a binder resin and a colouring agent (copper phthalocyanine blue pigment, back-reference to example 1) (feature (b) of claim 1) and hydrophobic silica (back-reference to example 1) (feature (c) of claim 1). As follows from table 2-1 of

D6, the toner particles of this example have a volume average particle diameter (D_v) of $6.5\mu\text{m}$ (feature (d) of claim 1), a ratio (D_v/D_n) of 1.06 (feature (e) of claim 1), and a circularity of 0.970 (feature (g) of claim 1). The binder resin comprises a urea-modified polyester resin (feature (h) of claim 1), and the toner comprises 0.5 parts of the hydrophobic silica (feature (i) of claim 1).

Consequently, the only distinguishing feature in view of D6 is the amount of superfine particles and, as set out above in points 7.6.2 and 7.6.3, this amount would be arrived at by the skilled person in a non-obvious manner.

7.6.5 Hence, the subject-matter of claim 1 of the main requests lacks inventive step in view of D6 in combination with D13.

7.6.6 The combination of documents D6 and D12 also appears to be highly relevant to inventive step as D12 teaches that ultrafine particles with a particle diameter of $1\mu\text{m}$ or less are easily deposited on a toner carrier surface or a latent image bearing member surface (page 3, lines 6 to 7). In view of the above finding that the claimed subject-matter already lacks inventive step in view of D6 in combination with D13, there is no need to decide on inventive step in view of D6 in combination with D12.

AUXILIARY REQUESTS 1 AND 2

8. *Inventive step*

8.1 The subject-matter of claim 1 of auxiliary request 1 includes the same features as the subject-matter of claim 1 of the main request and further contains the method for determining the particle diameters and the circularity. The specification of the measurement method has no influence on the subject-matter of the claim.

8.2 The subject-matter of claim 1 of auxiliary request 2 defines the external additive as comprising silica and titanium oxide. This feature is also disclosed in D6 (paragraph [0147]).

8.3 Under these circumstances, and as not disputed by the appellant, the reasoning in relation to the main request applies *mutatis mutandis* to the subject-matter of auxiliary requests 1 and 2, which therefore does not involve an inventive step (Article 56 EPC).

AUXILIARY REQUEST 3

9. *Amendments*

9.1 The claims of auxiliary request 3 differ from the granted claims in that:

- claim 1 includes the further feature that "the base of toner particle further comprises wax, the wax is dispersed in the base of toner particle, and more of the wax is present in a vicinity of a surface of the

base of toner particle rather than a center of the base of toner particle";

- granted claim 12 was deleted, and
- the numbering and dependencies of the remaining claims was adapted.

9.2 No objections were raised by the respondent under Articles 123(2) and (3) EPC.

The further feature of claim 1 is supported by claim 12 of the application as filed and its introduction into the claim limits the protection conferred. The requirements of Article 123(2) and (3) EPC are thus fulfilled by the claims of auxiliary request 3.

9.3 When discussing the sufficiency of disclosure, the respondent argued that it was not clear which types of wax distributions were covered by the above further feature.

An amendment cannot be objected under Article 84 EPC during opposition proceedings unless the objection arises from the amendment itself. As claim 1 results from the combination of granted claims 1 and 12, this is not the case here. Consequently, the amendment of claim 1 cannot be attacked under Article 84 EPC.

No further objections were raised by the respondent under Article 84 EPC against auxiliary request 3 and the board is satisfied that the requirements of this article, in as far as relevant in opposition appeal proceedings, are met.

10. *Claim interpretation*

10.1 It was a matter of dispute between the parties how the requirement in claim 1 that "more of the wax is present in a vicinity of a surface of the base of toner particle rather than a center of the base of toner particle" has to be interpreted.

10.2 The respondent was of the opinion that the term "vicinity" could be interpreted such that toner particles with a uniform wax distribution would also meet this requirement. The respondent in particular argued that for any wax distribution, including a uniform one, the area covered by the "vicinity" could be chosen so large that the amount of wax present in this area was larger than the amount of wax outside of this area. Hence, in the respondent's view, a toner particle with a uniform wax distribution met the requirement that more wax is present in the vicinity of the surface of the toner particle.

10.3 The board cannot follow this claim interpretation. To interpret the requirement in claim 1 such that wax is present in any portion of the particle in the same amount (*i.e.* uniformly distributed) is in direct contradiction to the literal meaning of the claim and in fact deprives it of any technical sense. Moreover, it follows from the description of the opposed patent (page 14, lines 43 to 45) that a large amount of the wax has to be present in the toner near the surface and in particular that "the wax is dispersed to 1µm or less in terms of the longer diameter". This can only imply

that the vicinity in claim 1 covers a region near, *i.e.* of up to 1µm from the surface of the toner particles.

11. *Novelty*

11.1 No objections were raised by the respondent.

11.2 At least for the same reasons as given above for the main request, novelty in view of D1 can be acknowledged.

11.3 Furthermore, in the same way as set out above for the main request, the subject-matter of claim 1 of auxiliary request 3 differs from D6 in terms of the amount of superfine particles. In addition, the subject-matter of claim 1 differs from D6 in terms of the wax distribution. More particularly, contrary to claim 1, where more wax must be present in the vicinity of the surface of the toner particles, the wax in D6 is finely and evenly dispersed in the toner particles (paragraph [0061]).

The subject-matter of claim 1, and, by the same token, the subject-matter of claims 2 to 25 which are directly or indirectly dependent on claim 1, thus is novel.

12. *Inventive step*

12.1 For the same reasons as given above with regard to the main request, D6 constitutes the closest prior art.

12.2 The appellant argued that the technical problem in the light of D6 is the provision of a toner having less filming and further having good mould release properties.

12.3 As a solution to this problem, the patent proposes the toner of claim 1 characterised in that the amount of superfine particles is kept below 15% by number (feature (f)) and in that more wax is present in the toner particles near its surface.

12.4 As already explained above for the main request, D10 as well as the examples in the patent in suit show that as a consequence of the amount of superfine particles being below 15% by number, the claimed toners have good anti-filming properties. Furthermore, as set out in paragraph [0110] of the patent, "as a result of studies performed by the inventors of the present invention, it has been discovered that ... if the wax is dispersed in the toner so that a large amount of the wax become [sic] present in the toner near the surface, good image-fixing mold release properties can be obtained."

The board is thus satisfied that the above problem has been credibly solved by the taken measures.

12.5 Obviousness

12.5.1 The toner disclosed in document D6 also includes a release agent (e.g. a wax). However, as has been set out above (point 11.3), contrary to the toner of auxiliary request 3, the release agent is finely and evenly distributed in the toner particles (D6, [0061]).

12.5.2 Document D6 thus actually teaches away from the subject-matter of claim 1 and does not contain any hint to a toner as now claimed with more of the wax near the surface.

12.5.3 The board acknowledges in this respect that the use of a release agent and its advantages when present in the surface of the toner to achieve easy release from fixing devices was already described in paragraph [0016] of D6.

However, this paragraph actually relates to the acknowledgement of the prior art in D6 and in the same paragraph it is further stated that "However, the toner has drawbacks in that the toner contaminates the developing rollers, photoreceptors and carriers used and thereby the reliability of the image forming apparatus deteriorates" (D6, page 3, paragraph [0016], lines 16 to 17). Consequently, the skilled person confronted with the above problem and wishing to reduce the contamination of the developing rollers (filming of the toner) would avoid the use of high amounts of the release agent near the surface of the toner as its presence is said to be disadvantageous in D6.

12.5.4 In other words, the combination of D6 and D13 which was the reason for the lack of inventive step of claim 1 of the main request and auxiliary requests 1 and 2 does not result in the subject-matter of claim 1 of auxiliary request 3. In order to arrive at the now claimed subject-matter, it would be necessary to combine D6 and D13 and then further to modify the obtained toner by adding a release agent in a way contrary to the explicit teaching of D6. Such a subject-matter is not derivable from the combination of D6 and D13.

12.5.5 The respondent did not attack inventive step of auxiliary request 3 on the basis of any further document during the oral proceedings before the board. In the written proceedings, the respondent argued that D1 disclosed the claimed wax distribution and that therefore the subject-matter of claim 1 was obvious in view of a combination of D1 and D6 (page 11/11 of the letter dated 4 September 2009). The disclosure of a certain claimed feature as such is however not a valid argument against inventive step and in fact D1 does not provide any incentive to apply the claimed measures in order to reduce filming and improve mould release properties.

12.5.6 Moreover, none of the further documents contain any indication that by the claimed measures, less filming and better mould release properties can be obtained.

12.6 For these reasons the board concludes that the subject-matter of claim 1 and, by the same token, the subject-matter of claims 2 to 25 which are directly or indirectly dependent on claim 1, involves an inventive step within the meaning of Article 56 EPC.

13. *Sufficiency of disclosure*

13.1 During the oral proceedings the respondent raised for the first time an objection of insufficiency of disclosure against auxiliary request 3, based on D6.

13.1.1 The respondent in particular argued that not all preparation methods disclosed in the patent in suit, and in particular those that were as described in D6, led to the claimed wax distribution. The skilled person

would therefore need some guidance as to which preparation methods to select in order to obtain the claimed wax distribution, and this guidance, in the respondent's view, was missing in the patent in suit.

13.1.2 The appellant for its part argued against consideration of the respondent's objections at this stage of the proceedings. In its opinion the objections were brought too late and they were too complex to be discussed during the oral proceedings.

13.2 Auxiliary request 3, although reworded during the oral proceedings, relates to the same subject-matter as auxiliary request 3 filed by the appellant with the statement of grounds of appeal (letter of 15 April 2009). No objection of lack of sufficiency was however raised by the respondent in its reply thereto (letter of 4 September 2009), although the opposition division had decided that the requirements of Article 83 EPC were met (see point 3 of the reasons for the decision, see also point 19 of the minutes of the oral proceedings).

Only with letter dated 20 August 2012, that is to say one month before the oral proceedings and roughly three years after its reply to the grounds of appeal, the respondent raised for the first time in appeal proceedings allegations with regard to insufficiency of disclosure of claim 1 of auxiliary request 3. More specifically, the respondent wrote in the third paragraph of page 8/8 that, in case the appellant were to argue that the toners of D1 did not inherently show the properties of the claimed toners, there would be a lack of sufficiency of disclosure. However, this

objection is different from the objection raised during the oral proceedings in that it was made in view of document D1 rather than D6. For the sake of completeness, it is also noted that the lack of sufficiency objection does not arise from the amendment made to claim 1 during the oral proceedings; it is directed to the subject-matter as already presented in the request filed with the statement of grounds of appeal.

- 13.3 The respondent argued during oral proceedings that it had assumed that D6 disclosed the claimed wax distribution and that it therefore could not foresee that there would be any need to raise the present insufficiency objection. The respondent's statement is however in contradiction with its own submissions with regard to auxiliary request 3 in its reply to the grounds of appeal (letter of 4 September 2009). More particularly, on page 11 of this reply, it is set out in detail that D1 (and not D6) discloses the claimed wax distribution and that therefore the subject-matter of claim 1 of auxiliary request 3 was obvious in view of a combination of D1 with D6. Also in its submission of 20 August 2012, the respondent again exclusively referred to D1 with regard to the disclosure of the claimed wax distribution. The respondent's written submissions thus clearly show that it had not considered D6 to disclose the claimed wax distribution. Hence, it can be of no surprise to the respondent that the board now shares exactly this consideration. The respondent's argument thus cannot substantiate any reason or change of circumstance that could have justified, as a legitimate reaction, raising an insufficiency objection at such late stage.

13.4 In view of the above, and since the case presented by the respondent in its reply to the grounds of appeal was confined to the issues of novelty and inventive step, the board considers that the new objection of lack of sufficiency is clearly filed late.

13.4.1 Furthermore, the respondent's objection is complex in that it raises numerous new issues.

To evaluate the relevance of the respondent's objection, it would first be required to compare the way the toners are prepared in the patent and in D6. Secondly, it would have to be examined whether, on the basis of this analysis, D6 can be considered to constitute sufficient proof that at least some of the preparation methods disclosed in the patent in suit do not lead to the claimed wax distribution. Finally, an analysis would be needed as to whether it would be part of the skilled person's common general knowledge or derivable from the patent in suit which preparation methods have to be selected to obtain the required wax distribution.

13.4.2 In view of the lateness and complexity of the respondent's objection, the board, without considering the potential relevance of the issues raised, decided during the oral proceedings not to admit this objection into the proceedings (Article 13(1) RPBA).

13.5 In addition to the above, the respondent argued that the wording "modified polyester resin" and "a plurality of the base of toner particle" in claim 1 of this request is unclear and that this also has consequences on the sufficiency of disclosure.

13.6 In the same way as for the previous objection, this objection has been raised in the present appeal proceedings for the first time during the oral proceedings before the board and thus is clearly filed late. Furthermore, this objection raises complex questions such as whether a lack of clarity is indeed present and if so, whether this lack of clarity can give rise to insufficiency of disclosure. Consequently, in view of Article 13(1) RPBA, the board used its discretion and did not admit this objection into the proceedings.

14. *Objection under Rule 106 EPC*

14.1 After the board's decision not to admit the respondent's objections with regard to sufficiency of disclosure (point 13 above), the respondent made an objection under Rule 106 EPC that its right to be heard with regard to its insufficiency objections had been violated. This objection fulfils the formal requirements of Rule 106 EPC; it was explicitly directed against an alleged fundamental violation of Article 113 EPC (cf. Article 112a(2)(c) EPC).

14.2 As explained above in point 13, the board has considered the respondent's objections with respect to lack of sufficiency of disclosure and the respondent was able to comment on these matters. The board however does not find that they necessitate the adoption of a different procedure by the board.

14.3 The board thus finds that the appellant's objection under Rule 106 EPC is unfounded. The Rules of Procedure

of the Boards of Appeal clearly reflect that the assessment of the admissibility of late-filed submissions lies within the board's discretionary power, after the relevant circumstances of the case have been examined and discussed with the parties. The board therefore dismissed the respondent's objection under Rule 106 EPC.

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 with the following claims:
Claims 1-25 of auxiliary request 3 filed during the oral proceedings before the board, and
a description to be adapted, if necessary.

The Registrar:

The Chairman:

D. Hampe

M. O. Müller