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Datasheet for the decision of 21 April 2015

Case Number: T 1314/11 - 3.3.09

Application Number: 01111963.3

Publication Number: 1157829

IPC: B41C1/10, B41M5/36

Language of the proceedings: EN

Title of invention:
Photosensitive composition, original plate using the same for lithographic printing, and method for producing images on original plate

Patent Proprietors:
DAINIPPON INK AND CHEMICALS, INC.
Eastman Kodak Company

Opponent:
Agfa Graphics NV

Headword:

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

Keyword:
Sufficiency of disclosure - (yes)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 1314/11 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 21 April 2015

Appellant: (Opponent)	Agfa Graphics NV Septestraat 27 2640 Mortsel (BE)
Respondent: (Patent Proprietor 1)	DAINIPPON INK AND CHEMICALS, INC. 35-58, Sakashita 3-chome Itabashi-ku Tokyo (JP)
Respondent: (Patent Proprietor 2)	Eastman Kodak Company 343 State Street Rochester, NY 14650-2201 (US)
Representative:	Beckmann, Claus Kraus & Weisert Patentanwälte PartGmbB Thomas-Wimmer-Ring 15 80539 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 19 April 2011 rejecting the opposition filed against European patent No. 1157829 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman W. Sieber
Members: J. Jardón Álvarez
E. Kossonakou

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent against the decision of the opposition division to reject the opposition filed against European patent No. 1 157 829 granted to DAINIPPON INK AND CHEMICALS, INC. and Kodak Polychrome Graphics, LLC (now Eastman Kodak Company).

II. The granted patent contained 10 claims, independent claims 1, 8 and 9 reading as follows:

"1. A photosensitive composition comprising:

an aqueous resin composition including fine particles (a) of a resin having at least one neutralized anionic group and having a heat fusion property, and a water soluble resin (b) having at least one neutralized anionic group, wherein the water soluble resin (b) is included in a range of 1 to 30% by weight, relative to the total weight of the aqueous resin composition; and a substance (c) which absorbs light and generates thermal energy;

wherein the content of the water soluble resin (b) is calculated in accordance with the following formula:

the content of the water soluble resin (% by weight) = dry solids ratio of the supernatant/dry solids ratio of the aqueous solution of the aqueous resin composition x 100."

"8. An original plate for lithographic printing comprising:

a support having a hydrophilic surface; and
a photosensitive layer which includes a photosensitive composition according to claim 1 and is disposed on the hydrophilic surface."

"9. An image-producing method comprising the steps of:

inscribing images by using a laser beam on the original plate for lithographic printing according to claim 8; and
developing the images by using a basic aqueous solution or water."

Claims 2 to 7 and 10 were dependent claims.

III. The opponent, Agfa Graphics NV, had requested revocation of the patent in its entirety on the grounds that the claimed subject-matter was neither novel nor inventive (Article 100(a) EPC), and that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

The documents cited during the opposition proceedings included:

D2: EP 0 945 281 B1; this document was published after the filing date of the patent in suit and is therefore not part of the state of the art. However, the passages referred to in this decision are also to be found in the underlying application which is pre-published (EP 0 945 281 A2). For simplicity, the board will follow the parties and refer to the granted European patent;

D3: JP 9-127683 A (English translation);

D4: JP 11-348446 A (English translation);

D5: EP 0 514 145 A1;

D6: EP 0 599 510 B1;

D7: EP 0 981 442 B1; and

D8: EP 0 931 647 B1.

IV. The opposition division's decision, issued in writing on 19 April 2011, can be summarised as follows:

- The requirements of sufficiency of disclosure were fulfilled because: (i) the skilled person would know how to control the particle size distribution when preparing fine particles such as those contained in the aqueous resin composition of the patent; (ii) it was clear that the dry solids ratio referred to the total amount of dry solids, i.e. particles and water-soluble resin, contained in the respective resin compositions; (iii) the person skilled in the art could with some standard experiments determine the correct content of the water-soluble resin in the supernatant solution; and (iv) the results of comparative example 2 of the patent could not give rise to a valid lack of sufficiency objection.

- The subject-matter of claim 1 of the patent was novel over the disclosures of D2 to D7. Concerning D2, the opposition division observed that the experimental test carried out by the opponent did not exactly correspond to reference example 1 of D2 because after removal of the organic solvent

from the aqueous dispersion the dry solids ratio was not the same as in D2. Thus, the subject-matter of claim 1 differed from the composition in reference example 1 of D2 in that it comprised a substance (c) and a water-soluble resin (b) in an amount of 1 to 30% by weight.

- Lastly, starting from D8 as the closest prior-art document, the opposition division saw the problem to be solved by the patent in suit as being the provision of a photosensitive composition that had an improved development property which led to reduced blurs in the non-image areas, had a high sensitivity, and had development properties which did not decrease during storage under high temperature and high humidity. The opposition division acknowledged an inventive step because in its view the solution according to claim 1 was not disclosed or suggested in the prior art.

V. On 16 June 2011 the opponent (in the following: the appellant) filed an appeal and on the same day paid the prescribed fee. The statement setting out the grounds of appeal was filed on 5 August 2011. The appellant requested that the decision under appeal be set aside and that the patent be revoked in its entirety. The statement of grounds included the following further evidence:

D4b: Human translation of D4 into English;

D12: EP 1 038 667 A2; and

D13: Experimental report signed by Mr Van Aert and Mr Vangaever on 4 August 2011 (5 pages).

VI. In their reply filed on 22 December 2011 the patent proprietors (in the following: the respondents) disputed the arguments submitted by the appellant and requested that the appeal be dismissed. They also filed the following further document:

D14: Manufacturer's Product catalog for NIKALAC resin products, SANWA CHEMICAL CO., LTD, two pages, undated.

VII. On 5 November 2014 the board issued a summons to oral proceedings together with a communication indicating the points to be discussed at the proceedings.

VIII. On 21 April 2015 oral proceedings were held before the board in the absence of the appellant. It had informed the board by letter dated 14 April 2015 that it would not be attending the oral proceedings.

IX. The written arguments of the appellant may be summarised as follows:

- The patent lacked information as to how the content of the water-soluble resin was to be measured. It indicated that a centrifugation experiment had to be used, but two relevant parameters, namely the concentration of the resin dispersion to be centrifugated and the acceleration value to be used in the centrifuge, were not sufficiently defined.

- The subject-matter of claim 1 lacked novelty in view of the general description and example 1 of D2 and in view of the general description and the examples of newly filed document D12. The reproduction of the examples of D2 and D12 in the

experimental report D13 showed that the concentration of the water-soluble resin in the the prior-art documents was the same as the concentration required by claim 1.

- The claimed subject-mater lacked inventive step in view of D4b alone. Moreover, the claimed subject-matter lacked inventive because the technical problem was not solved by all the embodiments embraced by claim 1.

X. The arguments of the respondents may be summarised as follows:

- The patent was sufficiently disclosed. In the description of the patent the conditions of centrifugal separation were specified. Moreover, a product name and a company manufacturing the centrifuge used in the examples were also disclosed. The skilled person would have had no difficulty in conducting centrifugal separation.

- The novelty objections of the appellant were based on a wrong interpretation of the subject-matter of claim 1. The amount of water-soluble resin in claim 1 was the amount in the photosensitive composition, not in the aqueous resin composition used for its preparation. In the examples in the patent in suit, the amount of water-soluble resin was measured before the addition of carbon black because it would not change before and after carbon black was added. However, in the examples of the prior art repeated by the appellant, the addition of carbon black was made either together with ammonia (in D2) or with a cross-linking agent (in D12) with the consequence that the content of

the water-soluble resin in the final composition would be different.

- Lastly, starting from D4b as closest prior-art document, the objective technical problem to be solved by the patent was to provide an improved photosensitive composition in which the development property was not reduced even when the photosensitive composition was stored under high temperature and high humidity conditions. This problem was solved by the distinguishing feature of the claims, namely a content of water-soluble resin of 1 to 30 wt%. There was no hint in either D4b itself or in the other prior art cited as to the criticality of this feature. The lack of inventive step argument of the appellant was made with the knowledge of the invention in mind.

XI. The appellant requested that the decision under appeal be set aside and that European patent No. 1 157 829 be revoked.

The respondents requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. Interpretation of claim 1

2.1 Claim 1 reads, following the feature analysis of the appellant, as follows:

F1: "A photosensitive composition comprising:

F2: an aqueous resin composition

F3: including fine particles (a) of a resin

F4: having at least one neutralized anionic group and

F5: having a heat fusion property, and

F6: a water-soluble resin (b)

F7: having at least one neutralized anionic group,

F8: wherein the water soluble resin (b) is included in a range of 1 to 30% by weight, relative to the total weight of the aqueous resin composition; and

F9: a substance (c) which absorbs light and generates thermal energy;

(F10:) wherein the content of the water-soluble resin (b) is calculated in accordance with the following formula: the content of the water-soluble resin (%by weight) = dry solids ratio of the supernatant/dry solids ratio of the aqueous solution of the aqueous resin composition x 100"

2.2 Features F3 to F5 define the first resin used (the resin having fine particles), features F6 and F7 define the second resin (the water-soluble resin), feature F8 defines the amount (content) of the water-soluble resin and feature F9 defines the third component of the composition, namely a substance which absorbs light and generates thermal energy. Lastly, feature F10 defines how feature F8 is to be calculated.

2.3 Concerning the interpretation of feature F8 the following contradictory views were maintained by the parties:

2.3.1 The appellant was of the opinion that this feature characterizes the resin composition before it is mixed with substance (c) because there is a semicolon in claim 1 after feature F8, and because values of F8 are reported in the patent specification before mixing with the substance (c).

2.3.2 On the other hand, the respondents maintained that F8 characterizes the amount of water-soluble resin composition in the final composition and that it has to be measured after substance (c) is added to form the photosensitive composition. Only if the amount of water-soluble resin did not change before and after substance (c) is added, as in the examples of the patent in suit, could the amount of water-soluble resin in the photosensitive composition be measured before the addition of substance (c).

2.4 The board agrees with the understanding of the claim proposed by the respondents, namely that the photosensitive composition comprises 1 to 30% by weight, relative to the total weight of the (final) aqueous resin composition.

2.4.1 This is in fact the only sensible interpretation of the claim. Claim 1 is drafted as a photosensitive composition "comprising" the components therein defined. This wording implies that these components have to be present in the given amounts in the final composition.

2.4.2 The interpretation proposed by the appellant would only be correct for claims drafted as a composition "obtainable from" or a similar wording. In such a case the composition would be defined by the starting materials that can then interact/react and may not be present in the initial form in the final composition. The semicolon used after feature F8 is grammatically correct for both interpretations of the claim and cannot be used to support the arguments of the appellant.

3. Sufficiency of disclosure

3.1 The objection of insufficiency of disclosure raised in the appeal is directed exclusively against the parameters needed for the centrifugation experiment for the measurement of the amount of water-soluble resin, namely the concentration of the resin to be centrifuged and the acceleration value to be used in the centrifuge.

3.2 The patent specification discloses in paragraphs [0046] and [0091] the conditions to be used during centrifugation, namely 2 hours at 100,000 revolutions per minute (3,330,000 m/s^2, 340,000 G) by means of a centrifuge (trade name of "Optima TLX" manufactured by Beckman Coulter, Inc.) and the formula to calculate the content of the water-soluble resin (b).

With this information, the skilled person would have no difficulty understanding the teaching of the patent and conducting centrifugal separation. Moreover, it is noted that centrifugal separation is a widely used method of separating by sedimentation of a liquid and a solid and is well known to the skilled person. If a given sample has a high concentration, the skilled

person would know how to modify the method to obtain a correct measurement. In fact, the appellant itself had no problem in calculating the content of the water-soluble resin in the experiments submitted with its notice of opposition. In the further experiments filed with the grounds of appeal using a higher concentration that hindered precipitation, the appellant modified the measurement and switched to a higher rotation speed and took a sample close to the liquid surface in order to avoid extraction of the milky precipitate.

3.3 For these reasons the board is satisfied that the requirements of sufficiency of disclosure are satisfied.

4. Novelty

4.1 The novelty of claim 1 is contested by the appellant in view of the disclosure of documents D2 and D12.

4.2 It is common ground that both documents D2 and D12 disclose closely-related photosensitive compositions comprising an aqueous resin composition including fine particles (a) of a resin having at least one neutralized anionic group (features F2 to F5 of claim 1), a water-soluble resin (b) (features F6 and F7) and a substance (c) which absorbs light and generates thermal energy (feature F9). It is also undisputed that neither D2 nor D12 explicitly discloses feature F8, the amount of the water-soluble resin.

4.3 It is therefore to be elucidated whether feature F8 is inherent in the compositions of D2 and/or D12 as maintained by the appellant.

4.4 The general disclosure of D2 and D12 gives no information about the content of the water-soluble resin in the resin composition. Although the resin compositions are prepared in D2, D12 and the patent in suit by a similar method, namely by neutralization of the fine particles of the resin with a basic compound, the content of the water-soluble resin in the composition depends on the kind and quantity of the basic compound used.

4.5 In order to show that the compositions of D2 and D12 do indeed have the required content of water-soluble resin of 1 to 30%, the appellant repeated reference example 1 of D2 and synthesis examples 3 and 4 of D12 (see experimental report D13).

According to the appellant the results in D13 show that the content of water-soluble resin of the composition of reference example 1 of D2 is 6.4% and the content of the water-soluble resin of synthesis examples 3 and 4 of D12 is 12.5% and 20.3%, respectively, would be within the range required by claim 1.

4.6 The board notes that this novelty objection relies on a wrong interpretation of the subject-matter covered by claim 1. As explained in point 2.4 above, the subject-matter of claim 1 does not relate to a composition obtainable by mixing the different components therein disclosed, but to a composition comprising components (a), (b) and (c) in given amounts.

4.6.1 The content of the water-soluble resin in the aqueous resin composition used for the preparation of the photosensitive composition in D2 and D12 does not necessarily represent the content of the water-soluble resin in the final photosensitive composition.

4.6.2 In fact, the initial content of the water-soluble material changes due to the specific preparation conditions used in D2 and D12 for the following reasons:

- As explained by the respondents in their reply to the grounds of appeal, the preparation process described in example 1 of D2 involves a step wherein additional ammonia is added when carbon black is dispersed to form the photosensitive composition. Due to the further addition of ammonia, the content of the water-soluble resin in the final photosensitive composition obtained in example 1 of D2 is greater than the content of water-soluble resin in the composition in reference example 1 (i.e. the starting material). The actual value in the final composition is disclosed neither in D2 nor in D13, with the consequence that it is not possible to establish whether example 1 of D2 discloses a photosensitive composition with a content of water-soluble resin as required by claim 1.

- Analogous considerations apply to the disclosure of D12, wherein in examples 1 to 4 the photosensitive composition is formed by the addition of a cross-linking agent and carbon black. As submitted by the respondents, the cross-linking agent would modify the content of the water-soluble resin in the final composition of examples 1 to 4 of D13, again with the result that it can also not be established whether the content of water-soluble resin in D13 falls within the scope of claim 1 of the patent in suit.

4.6.3 The experiments of D13 are thus insufficient to compare the subject-matter of claim 1 with the disclosure of D2 and D12. Also, the argument of the appellant that in the examples of the patent the amount of the water-soluble resin is also measured before carbon black is added to the composition cannot alter the board's finding on novelty. In contrast to D2 and D12, the amount of the water-soluble resin in the examples of the patent does not change after the addition of carbon black, because no basic compound or cross-linking agent is added together with the carbon black.

4.7 For these reasons the board concludes that the subject-matter of claim 1 is novel over D2 and D12.

5. *Inventive step*

5.1 The present invention relates to a lithographic plate used in the field of offset printing, and more particularly to an original plate for lithographic printing which can be used in a computer-to-plate method (see paragraph [0001] of the patent specification).

5.2 Closest prior art

The only inventive step attack in the appeal proceedings is based on the disclosure of D4b as the closest prior art. As for D2 and D12, it was common ground that D4b discloses all features of claim 1, except F8 (see D4b, paragraphs (0018), (0011) and (0035)).

5.3 Problem to be solved and its solution

5.3.1 According to the respondents, the objective technical problem to be solved by the patent is to be seen in the provision of a photosensitive composition with improved printing and storage properties.

5.3.2 As a solution to this problem, the patent in suit proposes the compositions according to claim 1, which differ from the compositions of D4b in that the amount of water-soluble resin is in the range of 1 to 30 wt%.

5.3.3 The examples and comparative examples in the patent show convincingly that by regulating the quantity of the water-soluble resin added in the photosensitive composition the storage stability under high temperature and high humidity conditions is improved. Thus, in examples 1 to 5 a lithographic printing plate prepared using a composition according to claim 1 was heated at 60°C and 75% humidity for 15 hours, and no change was observed in the development property. On the other hand, in the comparative examples with an amount of water-soluble resin outside the claimed range, a worse storage stability was achieved (see Tables 1 and 2).

5.3.4 The appellant did not contest the results in the examples of the patent, but argued that the technical problem was not solved by all embodiments embraced by claim 1 because: (i) feature F8 would change when the resin is mixed with ingredients containing an acid or a base, and (ii) it was not credible that resins containing a single anionic group provided for instance by using a polymerization initiator with an anionic group would provide the claimed technical effect.

5.3.5 These objections of the appellant are based on a wrong interpretation of the subject-matter of claim 1. Concerning (i) it has already been explained above (see point 2.4) that feature F8 has to be measured in the final composition, i.e. after the addition of any acid or basic compound. Concerning (ii) the skilled person would understand the claim as relating to a resin prepared using a comonomer having an anionic group and not as embracing resins comprising just a single anionic group.

5.3.6 Thus, in view of the results in the patent in suit and the absence of experimental evidence to the contrary, the board is satisfied that the above-mentioned technical problem has been credibly solved by the photosensitive compositions of claim 1.

5.4 Obviousness

5.4.1 It remains to be decided whether the above solution is obvious in view of the cited prior art.

5.4.2 D4b itself is silent about this feature and can therefore give no indication as to the regulation of the quantity of water-soluble resin in the photosensitive composition. There is no suggestion in D4b as to the use of a water-soluble resin in the claimed range to improve the storage stability of the composition.

5.4.3 There is also no hint in the other documents in the proceedings, which are also silent about any possible influence of the amount of water-soluble resin on the storage stability of the claimed compositions.

5.4.4 The argument of the appellant that determining the optimal amount of water-soluble resin is just a matter of routine optimization is made with the knowledge of the invention. As explained above, this parameter was not measured in any of the documents in the proceedings. There is simply no hint in the prior art that this parameter is relevant for obtaining a better storage stability.

5.5 For these reasons the subject-matter of claim 1 of the patent and, by the same token, that of claims 2 to 10, which are directly or indirectly dependent on claim 1, involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Cañueto Carbajo W. Sieber

Decision electronically authenticated