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Case Number: T 0588/18 - 3.3.02

Application Number: 11177753.8

Publication Number: 2390291

IPC: C09D11/00

Language of the proceedings: EN

Title of invention:
Ink set, ink container, inkjet recording method, recording device, and recorded matter

Patent Proprietor:
Seiko Epson Corporation

Opponent:
ECKART GmbH

Headword:

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments - intermediate generalisation

Decisions cited:
T 0500/11

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 0588/18 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 5 October 2020

Appellant: (Patent Proprietor)	Seiko Epson Corporation 4-1, Nishishinjuku 2-chome, Shinjuku-ku Tokyo 163-0811 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Respondent: (Opponent)	ECKART GmbH Güntersthal 4 91235 Hartenstein (DE)
Representative:	Louis Pöhlau Lohrentz Patentanwälte Postfach 30 55 90014 Nürnberg (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 22 December 2017 revoking European patent No. 2390291 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	M. O. Müller
Members:	S. Bertrand
	R. Romandini

Summary of Facts and Submissions

I. The appeal lodged by the patent proprietor ("appellant") lies from the opposition division's interlocutory decision to revoke European Patent n°2 390 291 on the ground that none of the requests then on file met the requirements of Article 123(2) EPC.

II. The main request contained a set of 14 claims, independent claim 1 of which read as follows:

"*An inkjet recording method comprising ejecting droplets of ink composition and causing the droplets to adhere to a recording medium, an image being formed using an ink set comprising:*

an oil based ink composition containing a metallic pigment; and
a chromatic color ink composition which is an oil based ink composition and which contains a chromatic color pigment, wherein the chromatic color ink composition comprises a yellow pigment ink, a cyan pigment ink, a magenta pigment ink, a light cyan pigment ink and a light magenta pigment ink;
wherein the method comprises forming an image on the recording medium using the oil based ink composition containing a metallic pigment, and then ejecting the chromatic color ink composition onto said image to form a colored image."

III. The opposition division concluded, *inter alia*, that claim 1 of each of the main request and auxiliary

requests 1 to 3 did not fulfill the requirements of Article 123(2) EPC.

IV. In its statement setting out the grounds of appeal, the appellant contested the opposition division's decision and submitted sets of claims according to the main request and the first to sixth auxiliary requests.

V. In its reply to the grounds of appeal, the opponent ("respondent") requested that the appeal be dismissed. It rebutted the appellant's arguments and submitted that the claims of the main request and the auxiliary requests did not comply with Article 123(2) EPC.

VI. In a further letter, the appellant submitted sets of claims according to auxiliary requests 2* to 6* and further arguments regarding the compliance of the claims of the requests with Article 123(2) EPC.

VII. In its preliminary opinion, the board informed the parties that claim 1 of the main request did not fulfill the requirements of Article 123(2) EPC.

VIII. Oral proceedings before the board were held on 5 October 2020. During the oral proceedings, the appellant withdrew all of its auxiliary requests.

IX. The parties' final requests were as follows:

- The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed with the statement of grounds of appeal.

- The respondent requested that the appeal be dismissed, implying that the opposition division's decision to revoke the patent be upheld.

X. The appellant's case, where relevant to the present decision, may be summarised as follows.

- The chromatic color ink composition which was an oil-based ink composition and which contained a chromatic color pigment, the chromatic color ink composition comprising a yellow pigment ink, a cyan pigment ink, a magenta pigment ink, a light cyan pigment ink and a light magenta pigment ink was disclosed in table 6 including its back-reference to table 4 and related paragraph [0124] of the application as filed.

- The extended chromatic color ink comprising a yellow pigment ink, a cyan pigment ink, a magenta pigment ink, a light cyan pigment ink and a light magenta pigment ink in claim 1 of the main request was the preferred ink set component used in the examples, since it led to the best results in terms of metallic gloss.

- The type of metallic pigment used in the metallic ink only had an impact on the metallic finish and there was no link between the extended chromatic color ink recited in claim 1 and the metallic pigment. The generalisation in claim 1 to any metallic pigment was thus allowable. This was in line with T 500/11.

XI. The respondent's case, where relevant to the present decision, may be summarised as follows.

- The specific pigments referred to in claim 1 were to be selected from the examples, in particular ink sets A and B of table 6 in conjunction with table 4 and related paragraph [0124] of the application as filed.

- The metallic pigment in claim 1 of the main request represented an inadmissible generalisation of ink sets A and B in table 6. In order to get a glossy colored surface, the skilled person would not only select the specific combination of colors as claimed and disclosed in these ink sets, but also the specific metallic pigment, namely pigment S2, of these ink sets. The intermediate generalisation was not allowable, in line with T 500/11.

- The application as filed (paragraphs [0007] and [0112]) required a metallic pigment that resulted in metallic gloss, but this requirement was missing in claim 1. A metallic gloss depended on the size and the form of the metallic pigment, and could not be provided by just any metallic pigment. Paragraphs [0014]-[0016] of the application as filed taught that the average particle diameter was of importance for achieving the metallic gloss. Furthermore, the form of the pigment could not be spherical or irregular, otherwise the pigments would scatter incident light in all directions leading to a dull appearance.

- If the skilled person generalised specific embodiments of the examples, in term of additional components, they would contemplate the presence of further, water-insoluble chromatic pigments, as taught by paragraph [0078] of the application as filed; this was contrary to claim 1, which covered the presence of any additional colored pigments.

Reasons for the Decision

Main request

1. The claims of the main request filed with the statement of grounds of appeal correspond to the claims of the main request considered by the opposition division in its decision.

2. Article 123(2) - claim 1

2.1 Claim 1 (II, *supra*) relates to an inkjet recording method involving *inter alia* an extended chromatic color ink composition comprising **a yellow pigment ink, a cyan pigment ink, a magenta pigment ink, a light cyan pigment ink and a light magenta pigment ink.**

2.2 It was a matter of dispute between the parties whether the combination of color pigment inks was disclosed in the application as filed. The appellant argued that table 6 of the application as filed provided a basis for the combination.

By way of back-reference to table 4 of the application as filed (see paragraph [0124]), table 6 refers *inter alia* to ink sets A and B. Both sets consist of colored inks and a metallic ink S1 or S2. The extended chromatic color ink composition for sets A and B consists of Y1 (yellow pigment ink), M2 (magenta pigment ink), LM3 (light magenta pigment ink), C4 (cyan pigment ink), LC5 (light cyan pigment ink). In table 6, LC6 for ink set B is a typographical error and should read LC5. The extended chromatic color ink composition of ink sets A and B is thus as required by claim 1. Metallic inks S1 and S2 (table 2) comprise a metallic pigment dispersion (1) or (2), respectively. Pigment

dispersions (1) and (2) are dispersions of specific aluminium pigments, namely pigments containing a resin film on a PET film (paragraphs [0113] and [0115]) on which an aluminium vapor deposition layer was formed (paragraph [0114]).

In order to arrive at the combination of the yellow pigment ink, the cyan pigment ink, the magenta pigment ink, the light cyan pigment ink and the light magenta pigment ink of the extended chromatic color ink composition in claim 1 of the main request, ink set A or B of table 6, comprising the combination of the specific colored pigment inks according to claim 1 of the main request has been extracted out of the ink sets disclosed in table 6. Secondly, the specific aluminium pigments of inks S1 and S2 have been generalised to **any** metallic pigment in claim 1. Thirdly, unlike ink sets A and B, which do not contain any additional colored pigment, the use in claim 1 of "comprising" ("... *wherein the chromatic color ink composition* ***comprises***..."; emphasis added) allows for the presence of any unspecified further colored pigment.

Thus, the level of generality in claim 1 is higher than in ink sets A and B and lower than in the general disclosure (any colored pigment and any metallic pigment) of the application as filed. The ink set of claim 1 thus represents an intermediate generalisation of ink sets A and B of table 6 of the application as filed. This was common ground between the parties. It was, however, a matter of dispute whether the skilled person would have directly and unambiguously derived from the application as filed that ink sets A and B could be generalised in this way.

2.2.1 Table 8 of the application as filed shows that the obtained gloss depends on both the metallic pigment and the extended chromatic color ink composition.

Embodiment 1 of table 8 uses ink set A including the extended chromatic color ink required by claim 1 and a metallic ink S1 (see above). Embodiment 2 of table 8 uses ink set B including the same extended chromatic color ink composition as embodiment 1 but a metallic ink S2. Table 8 shows that embodiment 1 using ink set A (i.e. with metallic ink S1) exhibits a metallic finish gloss "A", i.e. a metallic finish gloss where a reflected object could barely be identified, while embodiment 2 using ink set B (i.e. with metallic ink S2) leads to a metallic finish gloss "AA", i.e. a metallic finish gloss where a reflected object could clearly be identified. Table 9 of the application as filed also shows that embodiment 9, using ink set B with metallic ink S2 and leading to a metallic gloss "AA", performs better than embodiment 8, using ink set A with metallic ink S1 and exhibiting a metallic gloss "A". Thus, the metallic gloss obtained depends on the specific aluminium pigments of ink S1 or S2.

The extended chromatic color ink composition also has an impact on metallic gloss, as evidenced by embodiments 5 and 7 in table 8. Embodiment 5 comprises ink set E and embodiment 7 comprises ink set G (table 8). According to table 6, both ink sets E and G comprise the same metallic ink S2, the same black ink B6 and the same white ink W8. However, ink set E (embodiment 5) comprises an extended chromatic color ink composition comprising colored pigment ink compositions Y1, M2, LM3, C4 and LC5 as required by claim 1. Ink set G (embodiment 7) comprises a chromatic color ink composition consisting only of colored ink compositions Y1, M2 and C4. In table 8, embodiment 5,

which corresponds to the extended chromatic color ink composition as required by claim 1, shows a superior metallic gloss for printing pattern 2 (AA) in comparison with embodiment 7 (A).

The board acknowledges that, in order to get the highest metallic gloss, the skilled person might have selected the combination of color pigment inks of embodiment 5, which corresponds to the combination as required by claim 1. Following this logic, however, they would also have considered the preferred metallic pigment, namely the metallic pigment of ink S2, which is a pigment that provides an improved glossy metallic surface. They would thereby not have arrived at the subject-matter of claim 1.

2.2.2 This is not at variance with T 500/11. First of all, that decision is about a very specific technical subject-matter, namely a method for the production of trichlorosilane, which is completely different from the present one. Secondly, that decision found that certain features (e.g. particle size, pressure, temperature and contact time in the reactor) did not have an impact on a particular effect (selectivity to trichlorosilane) to be achieved in that case. This is different from the present case in hand since, as set out above, there is no doubt that not only does the combination of chromatic color inks have an influence on the metallic finish, but so too does the type of metallic pigment.

The appellant also relied on paragraphs [0018] and [0047] of the application as filed, arguing that ink sets A and B in table 6 of the application as filed could be generalised in such a way as to arrive at the subject-matter of claim 1.
The board notes that the aforementioned paragraphs of the application as filed both confirm that various

metallic pigments may be used. However, paragraph [0018] teaches that the metallic pigment should have metallic gloss, meaning that not every metallic pigment achieves a metallic gloss. This actually confirms that it is not possible to choose any metallic pigment. And as set out above, if it were to be accepted that the skilled person would indeed have selected the specific combination of colored pigment inks as required by claim 1, then it would logically follow that they would have selected the specific metallic pigment of ink S2 rather than metallic pigments in general.

2.3 Even if the idea that the skilled person would have selected the specific metallic pigment of ink S2 were disregarded, it would still not follow that the skilled person would have selected **any** metallic pigment as required by claim 1. The application as filed requires a metallic pigment that results in metallic gloss, as taught by the examples of the application as filed. As set out above, a metallic gloss is obtained with embodiments 2 and 9. The application as filed also refers to a metallic gloss; see e.g. paragraphs [0007] and [0112] of the application as filed, which disclose a coating film "*with a* ***metallic gloss of any color*** *[...] the ink set of ink compositions which have* ***high metallic mirror surface gloss***" and an "*image with a* ***metallic finish*** *in any arbitrary color*", respectively (emphasis added).

The metallic gloss is not obtained with just any metallic pigment. The properties of the metallic pigment, such as the size and the form, are relevant, as explained in paragraphs [0014]-[0016] of the application as filed, which teach that the average particle diameter is of importance for, *inter alia*, the metallic gloss to be achieved. In particular, paragraph

[0016] states that "*The 50% average particle diameter R50...is preferably between 0.5 and 3 µm, and more preferably between 0.75 and 2 µm, from the* ***perspective of metallic gloss*** *and printing stability*" (emphasis added by the board). The metallic gloss property also implies limitation to the form of the metallic pigment, which cannot have a spherical or irregular form, as submitted by the respondent. Pigments in these forms would scatter incident light in all directions leading to a dull appearance, which is not a metallic gloss. In the absence of the term "metallic gloss", claim 1 generalises the image to any finish and generalises the metallic pigment with specific properties for achieving the metallic gloss to any metallic pigment.

By contrast, claim 1 of the main request encompasses any metallic pigment. Thus, claim 1 of the main request contravenes Article 123(2) EPC for that reason too.

2.4 Lastly, if the skilled person generalised the example as regards any additional colored pigments that may be present, they would include chromatic pigments which are water-insoluble, as taught by paragraph [0078] of the application as filed: "...*even pigments which are not shown in the color index can be used as long as the pigment is water insoluble*". Claim 1 of the main request has been generalised to the extent that any additional chromatic pigments can be present, contrary to the teaching of paragraph [0078].

For that reason too, the intermediate generalisation in claim 1 of the main request is not allowable.

2.5 Therefore, the intermediate generalisation in claim 1 of the main request introduces subject-matter beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC.

3. The board concludes that the sole request on file is not allowable.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin M. O. Müller

Decision electronically authenticated