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D E C I S I O N
of 9 December 1999

Case Number: T 0465/96 - 3.3.6

Application Number: 88307644.0

Publication Number: 0304297

IPC: G03C 7/26

Language of the proceedings: EN

Title of invention:
Colour photographic element

Patentee:
Eastman Kodak Company (a New Jersey corporation)

Opponent:
Fuji Photo Film Co., Ltd.

Headword:
Colour photographic element/EASTMAN KODAK

Relevant legal provisions:
EPC Art. 54(2), (3), 56, 84, 123

Keyword:
"Clarity (main request - no)"
"Novelty (auxiliary request - yes)"
"Inventive step (auxiliary request - yes)"

Decisions cited:

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Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0465/96 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 9 December 1999

Appellant: Eastman Kodak Company
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 21 March 1996
revoking European patent No. 0 304 297 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Krasa
Members: G. N. C. Raths

J. P. B. Seitz

Summary of Facts and Submissions

I. This appeal lies from the Opposition Division's decision revoking under Article 102(1) EPC the patent EP-A-0 304 297 on the grounds that the then pending claim 1 was not new in view of the subject-matter disclosed in document
(2) JP-A-61-91657 (English translation)
submitted, inter alia, together with document
(3) EP-A-0 251 042.

II. An appeal was lodged against this decision by the Appellant (Patent Proprietor) who filed a main and an auxiliary request during oral proceedings which took place before the Board of Appeal on 9 December 1999.

Claim 1 for all designated contracting states of the main request read as follows:

"A colour photographic element comprising:

a reflective support,
a yellow-dye-image forming silver halide emulsion layer having its principal sensitivity in the blue region of the spectrum,
a magenta-dye-image forming silver halide emulsion layer having its principal sensitivity in the green region of the spectrum,
a cyan-dye-image-forming silver halide emulsion layer having its principal sensitivity in the red region of the spectrum,

characterized in that:

the emulsion layers are silver chloride emulsion layers,

at least one of the magenta-dye-image forming

silver halide emulsion layer and the cyan-dye-image forming emulsion layer is a silver chloride emulsion layer having a secondary sensitivity in the region of the spectrum where the other of the layers has its principal sensitivity, and

there is a speed separation between the two emulsion layers in the region of common sensitivity of between 0.85 and 2.0 log E, such that images formed in the high density shadow region of said at least one dye-image forming layer have detail."

The subject-matter of Claim 1 of the auxiliary request differs from that of the main request in that the lower limit "0.85" of the speed separation was replaced by "1.3" and that the passage "such that images formed in the high density shadow region of said at least one dye-image forming layer have detail" has been deleted.

- III. The Appellant submitted that the claimed subject-matter was neither anticipated nor rendered obvious by the citations and requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the main request or of the auxiliary request.
- IV. The Respondent, who was not represented at the oral proceedings before the Board as indicated in his letter of 1 December 1999, requested that the appeal be dismissed. He argued in writing that the subject-matter of the patent in suit did not meet the requirements of Articles 52(1), 54(1),(2) and 56 EPC.
- V. At the end of the oral proceedings, the Chairman

announced the decision of the Board.

Reasons for the Decision

1. *Main request*

1.1 Articles 123 and 84 EPC

1.1.1 Claim 1 of the main request differs, apart from editorial amendments, in essence from Claim 6 of the application as originally filed by the incorporation of the expressions "reflective", "having its principal sensitivity", "having a secondary sensitivity", by the replacement of "silver halogenide" by "silver chloride" where appropriate and by the addition of the passage "there is a speed separation between the two emulsion layers in the region of common sensitivity of between 0.85 and 2.0 log E, such that images formed in the high density shadow region of said at least one dye-image forming layer have detail".

The amendment "reflective" is supported by the original Claim 1 filed for BE, DK, FR and GB and by the expression "paper prints for viewing by reflection" on original page 6, line 34 of the application as filed.

The amendments "having its principal sensitivity", "silver chloride", "there is a speed separation between the two emulsion layers in the region of common sensitivity of between 0.85 and 2.0 log E" are supported by the application as originally filed (see

page 4, lines 1 to 9, page 5, line 21, and examples 1 and 2, page 3, lines 16 to 18, respectively), as is the addition of "such that images formed in the high density shadow region of said at least one dye-image forming layer have detail" (see page 4, lines 1 to 9, page 5, line 21, page 3, lines 6 to 16, respectively).

The amendments do not extend beyond the contents of the application as originally filed.

Therefore, the subject-matter of Claim 1 satisfies the requirements of Article 123 EPC.

- 1.1.2 However, the passage introduced by "such that.." is ambiguous as it seems to imply that particular conditions have to be respected or particular measures have to be taken for obtaining images having detail without, however, specifying these conditions or measures. The Appellant submitted during oral proceedings that **all** the embodiments of the subject-matter of Claim 1 having the **physical** technical features as defined would produce images having detail when formed in the high density shadow region of at least one dye-image forming layer. This would mean that, hence, this effect is necessarily obtained by the said **physical** technical features; consequently, the **functionally** defined feature relating to a layer "having detail" would not be distinguishing and, therefore, it would be redundant.

It follows that Claim 1 as amended is neither clear nor concise, and, hence, does not comply with the requirements of Article 84 EPC, so that the set of

Claims 1 to 8 of the main request is not admissible.

2. *Auxiliary request*

2.1 Articles 123 and 84 EPC

The amendment directed to "1.3" as the lower limit of the speed separation is based on original page 3, line 17. The Board is satisfied that all the other amendments are also supported by the application as filed (see above No. 1.1.1). Claim 1 does no longer contain the passage introduced by "such that".

Therefore, no objections are to be raised under Articles 123 and 84 EPC.

2.2 Novelty

2.2.1 Article 54(3) EPC

Document (3), which is state of the art according to Article 54(3) EPC, discloses a colour photographic recording material having blue, red and green sensitive layers comprising each the respective complementary dye couplers whereby a red sensitivity is produced in the green sensitive layer and in the blue sensitive layer. The examples refer to a colour negative film composite having an antihalo layer.

The feature referring to speed separation of between 1.3 and 2.0 log E in the region of common sensitivity is missing in document (3).

The Board is satisfied that Claim 1 for **all** the

designated contracting States is not anticipated by document (3) which was not contested during the appeal procedure.

2.2.2 Article 54(1),(2) EPC

Whereas document (2) refers generically to silver halide layers (e.g. the paragraph bridging pages 8 and 9) all the examples of document (2) disclose silver chlorobromide or iodobromide layers. The subject-matter of Claim 1 of the emulsion layers of the patent in suit which only allows for silver chloride emulsion layers differs from document (2) and all the other cited documents in that it gives the speed separation between the two emulsion layers of common sensitivity which is missing from the citations.

Therefore the subject-matter of Claim 1 is novel (Articles 52(1), 54(1),(2) EPC).

2.2.3 Inventive step (Article 56 EPC)

2.2.3.1 The goal of the patent in suit was to extend the exposure latitude of colour positive photographic materials in order to provide good reproduction of detail in the high-density regions of print material (page 2, lines 25 to 27).

2.2.3.2 The problem of good colour reproducibility, good tone in a high density region and excellent reproduction of shade in a high density region was also addressed in document (2)(paragraph bridging pages 8 and 9) which the Board takes as a starting point for

evaluating inventive step.

According to document (2) at least one dye, "which provides a hue taking substantially no part in the formation of a colour hue of a specific image, is added to provide gradation to the specific image region in which at least one of said imaging dyes has an image density over the definite value between 1.2 to 2.5" (page 9, lines 10 to 17). The addition of the complementary colours appears to be very effective because the "gradation-vanishing phenomenon" can be eliminated without impairing the chroma (page 10, lines 15 to 19). Above a density of 1.2 to 2.5, i.e. in the mid to high density region, additional colouration is provided. As a possible silver halide for use in the photographic emulsion layers concerned also silver chloride is mentioned (page 26, lines 7 to 11).

- 2.2.3.3 The patent in suit comprises comparative examples. The colour photographic material according to the invention, which was additionally sensitized with 33 mg/Ag mole of the green sensitizing dye, developed 15 visible steps whereas the control material produced only 11 visible steps without this sensitization; more than 15 visible steps could be seen in the colour photographic material according to the invention when the green exposure was increased; all steps above D_{min} were visible.

Document (2) does not disclose the number of visible gradation steps and speed separation values; therefore a direct comparison between document (2) and the patent in suit is not possible.

- 2.2.3.4 The problem underlying the patent in suit with respect to document (2) is, therefore, to offer a further photographic element having good reproduction of detail in the high-density regions of print materials.
- 2.2.3.5 The colour photographic material claimed as solution to the said technical problem requires the following mandatory features: the emulsion layers are silver chloride emulsion layers and the **speed separation** between the two emulsion layers in the region of common sensitivity is between 1.3 and 2.0 log E.
- 2.2.3.6 In view of all the examples of the patent in suit, the Board is satisfied that the problem underlying the patent in suit has been solved by the claimed colour photographic element.
- 2.2.3.7 The question remains whether these colour photographic elements involve an inventive step.

With respect to example 1 of document (2), the Respondent submitted experimental data in his letters dated 4 July 1994 and 19 May 1995: the speed separation indicated by log E in the region of common sensitivity, i.e. the green sensitive region, was 0.70 for sample D (15 distinguishable gradation steps), 0.82 for sample C (17 distinguishable gradation steps) and 1.30 for sample B (15 distinguishable gradation steps); the Appellant accepted these results; the image quality indicated on page 57 of document (2) was described as follows: for sample C the chroma was high and the shade was clearly distinguishable, whereas for sample B the

chroma was high and the shade difficult to distinguish, and for sample D, the chroma low and the shade clear.

While document (2) suggests as one of several possibilities to use silver chloride in the emulsion layers, it is silent on the speed separation between two layers in the region of common sensitivity.

2.2.3.8 In all the samples A to D of example 1 of document (2) silver chlorobromide has been used; the skilled person is aware that the replacement of chlorobromide by chloride has an impact on the colouring effect. In particular, a loss of red detail has to be accepted, since there is no native blue sensitivity to develop whereas the silver chlorobromides of samples A to D of example 1 of document (2) are naturally blue sensitive.

2.2.3.9 The compensation of the loss in red detail is accomplished by false sensitization i.e. by adding to a light sensitive emulsion, which has a principal sensitivity in one region of the spectrum, a limited amount of sensitization in a second region of the spectrum, in which another emulsion layer in the element has its principal sensitivity.

Two declarations 1 and 1A, bearing the reference docket 53047PAb, both signed 4 November 1999 were filed with the letter dated 8 November 1999; the samples 102 and 103 having a red-green speed separation of 1.73 and 1.48 log E, respectively, have more visible distinguishable gradation steps than the comparative samples 106 and 107, which illustrate the

state of the art represented by document (2) and have a red-green speed separation of 0.82 and 0.78 log E, respectively (declaration 1, table 2 and page 7, lines 2 to 7); the samples 202 and 203 having a red-green speed separation of 1.76 and 1.49 log E, respectively, have more visible distinguishable gradation steps than comparative sample 206 which illustrates the state of the art represented by document (2) and has a red-green separation of 0.82 log E (declaration 1A, table 2A and page 7, lines 14 to 17)

Thus, it has been proved that the photographic material according to Claim 1 having silver chloride emulsions and operating in a speed separation area of 1.3 to 2.0 log E records improved detail in the high density (shadow) region of the images.

Therefore, the speed separation of 1.3 to 2.0 log E is an essential feature of the invention.

The skilled person could derive from document (2) the principle of false sensitization and try the replacement of the silver chlorobromide by silver chloride. However, he could not have derived the relevance of the speed separation between the two layers in the common region of sensitization nor the critical range of 1.3 and 2.0 log E which reflects the extent to which sensitization should take place when silver chloride is used.

2.2.3.10 For these reasons, the Board concludes that the subject-matter of Claim 1 involves an inventive step and, therefore, meets the requirements of

Articles 52(1), 56 EPC.

2.2.3.11 Claims 2 to 8 are dependent on Claim 1 and derive their patentability from that latter claim.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in amended form on the basis of the following documents:

Claims 1 to 8 of the auxiliary request filed during the oral proceedings;

Description to be adapted.

The Registrar:

The Chairman:

G. Rauh

P. Krasa