BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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File Number: T 461/89 - 3.3.1

Application No.: 83 300 976.4

Publication No.: 0 087 930

Title of invention: Light-sensitive silver halide color photographic material

Classification: G03C 7/34

D E C I S I O N
of 11 April 1991

Proprietor of the patent: KONICA CORPORATION

Opponent: Agfa-Gevaert AG, Leverkusen

Headword: Photographic material/KONICA

EPC Articles 54(1), 56

Keyword: "Novelty - main request no, first auxiliary request, yes" - "Inventive step, first auxiliary request, yes - non-obvious alternative"

Headnote

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 461/89 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 11 April 1991

Appellant : (Opponent)
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Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 13 March 1989, with written reasons posted on 9 June 1989, rejecting the opposition filed against European patent No. 0 087 930 pursuant to Article 102(2) EPC.

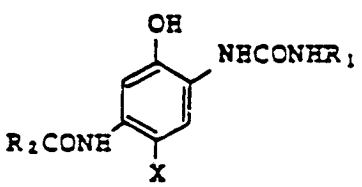
Composition of the Board :

Chairman : R. Spangenberg
Members : P. Krasa
J.A. Stephens-Ofner

Summary of Facts and Submissions

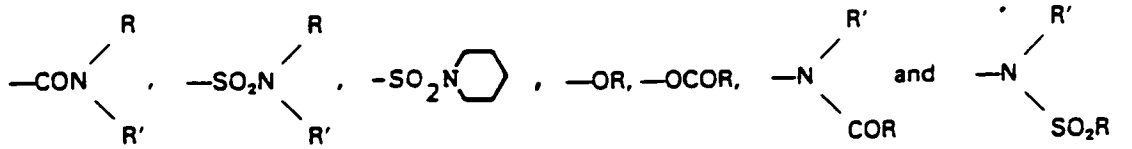
I. This appeal lies from the decision of the Opposition Division of the EPO dated 13 March 1989, with written reasons posted on 9 June 1989, rejecting an opposition against the subject-matter of Claims 1, 3-5, 8-10, 12 and 13 of European patent No. 87 930, designating AT, BE, CH, DE, FR, GB, IT, LI, NL and SE, granted in response to European patent application No. 83 300 976.4, filed 24 February 1983 and claiming priority of 25 February 1982 from an earlier application in Japan. The decision under appeal was based upon the patent as granted, comprising 14 claims, the only independent Claim 1 reading as follows:

"A light-sensitive silver halide color photographic material having on a support at least one light-sensitive silver halide emulsion layer containing a cyan coupler and said light-sensitive silver halide emulsion layer and/or a layer contiguous to said light-sensitive silver halide emulsion layer containing a colored cyan coupler characterised in that the cyan coupler is of formula (I):

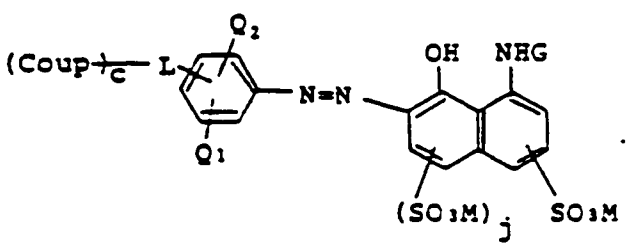


(I)

wherein X represents hydrogen or a group or atom eliminable on coupling with an oxidation product of an aromatic primary amine color developing agent; R_1 represents a substituted or unsubstituted naphthyl group or a substituted or unsubstituted heterocyclic group provided that a carbon atom thereof is bonded to the adjacent nitrogen atom of the ureido group, or a phenyl group having at least one substituent which is a trifluoromethyl nitro, cyano, -COR, -COOR, $-SO_2R$, $-SO_2OR$,



(where R represents an aliphatic group or an aromatic group, and R' represents a hydrogen atom, an aliphatic group or an aromatic group) with the proviso that, when said substituent is cyano in the p-position relative to the ureido group, the four remaining positions are not all unsubstituted; and R_2 represents an aliphatic group or an aromatic group necessary for imparting diffusion resistance to the said cyan coupler or a cyan dye formed therefrom; and the colored cyan coupler is of formula (II):



(II)

wherein $(Coup-)_c$ represents a cyan coupler residue which is attached at its coupling position to L; L represents a divalent linking group; Q_1 and Q_2 each represent a photographically inactive mono-valent group; M represents a cation or hydrogen; j is 0 or 1; and G represents an acyl group or an alkyl sulfonyl group having 1 to 8 carbon atoms or an arylsulfonyl group having 6 to 8 carbon atoms."

The Opposition Division considered 5 documents, in particular:

(1) DE-A-2 538 323 (published 28 August 1975)
(3) EP-A-0 084 100 (published 27 July 1983 designating DE, FR, GB and claiming priority of 7 December 1981)
(4) "Photo-contact" 3/82, pages 10-16 reporting a press conference of 3 February 1982 concerning the KODACOLOR HR disc film
(5) EP-A-0 028 099 (published 6 May 1981)

and held, for the reasons set out below, that the subject-matter of the patent in suit was novel. Document (3), cited under Article 54(3) EPC, did not unambiguously disclose the claimed subject-matter even taking into account the reference to the Japanese equivalent of document (1) contained therein, since four steps of selection were necessary to arrive at subject-matter falling within the scope of the contested Claim 1. The closest prior art within the meaning of Article 54(2) EPC was seen in the film disclosed in document (4) which differed from the subject-matter of the patent in suit only by virtue of the nature of the colourless coupler of formula I. In document (4) this coupler contained the 4-cyanophenyl substituent R_2 expressly excluded from the scope of the patent in suit by the proviso in Claim 1. The technical problem which was effectively solved by the patent in suit was to provide a photographic material containing alternative colourless cyan couplers. The solution of this problem was not obvious, since the couplers of similar structure employed in the patent in suit were not available to the public at the priority date of the patent.

II. The appeal was filed on 21 July 1989 and the appropriate fee was paid at the same date. A statement of grounds of appeal was received on 30 September 1989.

Oral proceedings took place on 11 April 1991, in the course of which the Respondent submitted three further sets of claims as auxiliary requests Nos 1 to 3. In Claim 1 according to auxiliary request No 1 the proviso did not only exclude the p-cyanophenyl substituent of document (5) but also the p-SO_2R-substituent of document (3) from the subject-matter of Claim 1. Claims 2 to 14 of this request corresponded to the claims as granted. Claims 1 of auxiliary requests Nos 2 and 3 combined the subject-matter of Claims 1 and 2 as granted, and Claims 1 and 2 of the first auxiliary request, respectively.

III. The Appellant submitted that the decision under appeal did not take full account of the general disclosure in document (3). No steps of selection were necessary in order to arrive at the general disclosure of the contested Claim 1 if the whole content of document (3), including by reference that of document (1), would be considered. In his opinion it was not significant that the reference to document (1) in document (3) did not specify the particular coloured couplers used according to the patent in suit. The combination of all more specific embodiments disclosed in document (1) with the phenolic couplers of document (3) was also included by reference in the disclosure of document (3) and could, therefore, not be protected again.

With regard to inventive step he maintained that the KODACOLOR HR disc film mentioned in document (4) was the closest prior art. The only unconventional feature of this film with respect to other commercially available colour negative films was the new colourless cyan coupler patented in document (5). Therefore, a skilled person having analysed the new film would have focussed his interest on that coupler. Slight structural modifications in order to produce a film with substantially the same advantageous properties but not falling within the scope

of document (5) were matters of routine and did not involve any inventive step. Since the definitions of the other variable substituents in the general formula of document (5) were so broad that they covered all practically useful variations, the only remaining possibility was to introduce minor structural modifications in the p-cyanophenyl group. The structural modifications according to the patent in suit did not produce a surprising effect, since the comparison of Control Sample No. 6 with Sample No. 8 according to the patent made in the patent specification (see Table 2 on page 20) did not show any significant improvement. All other comparisons contained in the patent specification were meaningless since a two-equivalent coupler was compared with a four-equivalent coupler.

Moreover, it was admitted in the patent in suit that suitable phenol-type colourless couplers already belonged to the state of the art. Since suitable coloured couplers were also available from document (1), and since the combined use of these couplers did not produce an unexpected result, the patent in suit according to the main request as well as the first auxiliary request did not relate to more than an obvious mixture of known components.

No objections were raised against the subject-matter of auxiliary requests Nos 2 and 3.

IV. The Respondent entirely agreed with the statements in the decision under appeal with respect to novelty. Regarding inventive step, he contested that a person skilled in the art would have been induced by document (5) to look for alternative couplers outside the range indicated in that document since the clear teaching of this document was that the 4-cyanophenyl group R_2 was an essential feature

of couplers with the desirable properties mentioned therein. Thus there was no incentive, when looking for other couplers at all, to modify just this particular part of the molecule. On the contrary, if one would have tried to modify the known structure, one would also have considered replacing the amido group in position 5 of the phenol ring by another ballasted substituent or made other minor structural modifications by further substituting that ring. Thus, the subject-matter of the patent in suit as well as that of the claims according to all auxiliary requests was unobvious even in the absence of any surprising effect. No further incentive for such a modification could be obtained either from document (4) or the analysis of the KODACOLOR HR disc film. Nothing in that document pointed towards the possibility that this film overcame the disadvantage of the conventional films containing other phenolic cyan couplers, caused by the undesired absorption of these couplers in the green region of the spectrum. Nor would there have been any possibility to correlate this property, if it would have been identified by an appropriate test, to the presence of the specific combination of the new phenol-type colourless coupler with the particular type of conventional couloured cyan coupler used in that film, in particular having regard to the short period of time between the date of availability of that film and the priority date of the patent in suit.

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

The Respondent requested that the appeal be dismissed and the patent maintained as granted (main request), or upon the bases of one of the auxiliary requests filed in the course of the oral proceedings.

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

Reasons for the decision

1. Having regard to the facts stated in paragraphs I and II above the appeal is admissible.

2. Main request

2.1 Novelty:

Novelty was only contested on the basis of document (3), which forms part of the state of the art pursuant to Article 54(3) and (4) EPC for the Designated States DE, FR and GB. This document discloses the use of colourless phenolic couplers of formula I of the patent in suit wherein the substituent R_1 is a phenyl ring bearing an SO_2-R group in 4-position as the only substituent, R being a substituted or unsubstituted alkyl or aryl group (see Claim 1), together with the coloured couplers disclosed in document (1) (see page 11, lines 15 to 25, especially lines 23 to 25 together with page 13, lines 5 to 18, especially lines 16 and 17 where reference is made to the Japanese patent application No. 26034/76 which corresponds to document (1)). The Respondent did not dispute that the technical content of document (1) was identical with that of the corresponding Japanese patent application mentioned in document (3). Document (1) relates to a group of coloured couplers which comprises the group of couplers to be used according to the patent in suit. More specifically, on page 26 (formulas IIa and IIIa) a particular subgroup of suitable couplers is disclosed as a preferred alternative, and this subgroup corresponds to the group of coloured couplers to be used according to the

patent in suit. Moreover, 14 of the 36 specific examples of such couplers described on pages 37 to 40 fall within the definition of the coloured couplers of the patent in suit, as has been clearly acknowledged by the Respondent during the opposition proceedings.

2.2 In the Board's judgment, this disclosure in document (3) makes available to the public any combination of the whole group of colourless couplers of Claim 1 with all specified subgroups or examples of coloured couplers disclosed in document (1). Furthermore the mere indication of one from several alternatives disclosed in a document belonging to the state of the art is no more than a repetition of what already belongs to the state of the art and not a true selection which adds to a broad technical disclosure a new element (see Decision T 12/90 of 23 August 1990, paragraph 2.6 of the reasons). It cannot, therefore, be patented again (see Decision T 124/87, OJ EPO 1989, 491, paragraph 3.2 of the reasons). Claim 1 as granted, however, does not require any new feature in addition to those already disclosed in the same combination as one of a number of alternatives in document (3) including the content of document (1).

2.3 Article 54(1) EPC does not require that a technical teaching must be disclosed in detail, e.g. by working examples. Thus, the presence or absence of such more detailed information does not influence the answer to the question whether or not the relevant disclosure in document (3) belongs to the state of the art. Therefore, Claim 1 as granted does not relate to novel subject-matter as far as the Designated States DE, FR and GB are concerned. The patent cannot, therefore, be maintained unamended, and thus the main request must fail.

3. First Auxiliary Request

3.1 Claim 1 of this request amends Claim 1 as granted by extending the proviso excluding the p-cyanophenyl substituent R_1 from the scope of formula I to comprise also the p-RSO_2-phenyl substituent disclosed in document (3).

The subject-matter of this disclaimer was disclosed as a specific embodiment by Claim 1 as filed and granted in combination with e.g. couplers Nos. C-22, C-37 and C-46. Such subject-matter can be excluded from protection even if - as it is the case here - the state of the art would only have required to exclude it for three of the Designated States (see e.g. T 4/80, OJ EPO 1982, 149, item 3 of the reasons). Hence the introduction of this disclaimer does not add a new element of selection to the subject-matter as originally disclosed, so that the amended claim meets the requirements of Article 123(2) EPC.

3.2 Novelty

It follows from the summary of the content of document (3) in paragraph 2.1 and the disclaimer indicated in paragraph 3.1 above that the content of document (3) is not covered by the subject-matter of the present Claim 1. The Board is also satisfied that none of the other cited documents diclose such subject-matter and, since this is not in dispute, it does not require any detailed explanation.

Thus, Claim 1 of this request relates to novel subject-matter.

3.3 Inventive Step

3.3.1 When considering the question of inventive step, document (3) must not be taken into account, since it belongs to the state of the art according to Article 54(3) EPC (see Article 56 EPC, second sentence). Therefore, the Board cannot accept the Appellant's submission that both the couplers of formula I and formula II of Claim 1, taken separately, belong to the state of the art and that, consequently, the consideration of inventive step should be limited to the question of whether or not a surprising effect arises from the combination of these two couplers. On the contrary, since none of the documents belonging to the state of the art according to Article 54(2) EPC disclose couplers of formula I, their existence at the priority date of the patent in suit is of no relevance to the question of inventive step.

3.3.2 According to the patent in suit, page 2, lines 8 to 38 it is highly desirable in the field of colour photography to have photographic materials of high sensitivity and excellent image quality. It is further stated that this goal is particularly difficult to achieve with cyan image forming layers since such contain couplers which have an undesired broad side absorption in the region of green light. Conventionally coloured couplers were used to mask this undesired side absorption, however, the conventional combinations of colourless and coloured cyan couplers were not satisfactory.

The technical problem of the undesired side absorption is also adressed in document (5), the corresponding Japanese patent application of which is mentioned in the patent in suit on page 4, line 59. In this document this problem is solved by providing the p-cyanophenyl substituted colourless couplers excluded from the scope of formula I of the patent in suit by way of disclaimer.

With respect to this document, which in the Board's judgment represents the closest state of the art, the technical problem underlying the patent in suit can therefore be seen in providing an alternative possibility to improve the performance of cyan image forming photographic materials.

According to the patent in suit it is proposed to solve this problem by using the specific colourless couplers of formula I in combination with the known coloured couplers of formula II in the same or an adjacent layer of the photographic material.

It is demonstrated by the result of a comparative test contained in the patent specification (Example 1, page 17 to 20, in particular Table 2 on page 20, Samples Nos. 6 and 8), that with a coupler combination according to the patent in suit a photographic material is obtained which has equally good sensitivity, fog maximum density and equally low or even slightly lower secondary absorption as does a material containing a coupler according to document (5), both materials containing the same coloured coupler. Thus, the Board accepts that the above-defined technical problem has been effectively solved.

3.3.3 It now has to be decided whether the state of the art provided an incentive to solve the existing technical problem by the measures described and claimed in the patent in suit.

As already stated in paragraph 3.3.2 above, document (5) proposes to use certain colourless cyan couplers which are structurally very similar to those used according to the patent in suit in order to reduce the undesired side absorption in the green region of the spectrum. In the Appellant's submission, the further substituion of the

cyanophenyl group of these couplers by e.g. a methyl group was obvious since it was common general knowledge that such insignificant structural modifications would not change the spectral properties of the coupler molecule. The existence of such common general knowledge was contested by the Respondent, and the Appellant has not provided any evidence in support of his submission. On the contrary - as the Respondent has rightly pointed out - this submission is not in agreement with the fact that the presence of just this p-cyanophenyl substituent without further substitution is clearly an essential feature of the couplers of document (5). The authors of that document, which is a patent application, work for one of the most important companies engaged in the field of photography and are therefore presumably persons of more than average skill in this technical field. Nevertheless, even they have not considered any further substitution of the phenyl ring. Thus, while it may well be that a person skilled in the art could see that such modified compounds would also be cyan couplers, the Board is not convinced that it was common general knowledge that such modification would not significantly increase the side absorption in the green region of the spectrum. This view is further supported by document (3), published after the priority date of the patent in suit, which also regards a para-substituent in the otherwise unsubstituted phenyl ring as being essential. Thus, the authors of this document, being also inventor-employees of another important manufaturer of photographic materials, did not consider it appropriate either to introduce further substituents in that phenyl ring.

For these reasons, the Board finds that neither document (5) nor the KODACOLOR HR disc film together with the content of document (4), which only contained a commercially oriented praise of the unique properties of

this film, without going into its improved colour reproducibility, let alone suggesting that the specific combination of colourless and coloured cyan couplers might be responsible for this improvement, would have induced a person of average skill in the art, to modify the cyan couplers of document (5), one of them being used in the KODACOLOR HR disc film together with a coupler of formula II, in the way indicated in the patent in suit.

Thus, since document (1) only relates to couplers of formula II and cannot, therefore, suggest any modification of the couplers of formula I either, Claim 1 under consideration relates to non-obvious subject-matter.

3.4 Since Claims 2 to 8 are dependent on Claim 1 they derive their patentability from that claim. Consequently, the patent in suit can be maintained on the basis of this set of claims. There is, therefore, no need to consider auxiliary requests Nos. 2 and 3.

3.5 The description is not yet in conformity with the amended set of claims. It follows from the statements in paragraph 3.1 that major amendments will have to be effected. The Board has therefore decided to use its power under Article 111(1) EPC and to remit the case to the Opposition Division in order to give the parties sufficient opportunity to deal with that matter.

4. Since the first auxiliary request can be allowed, there is no need to consider the second and third auxiliary request.

Order

For these reasons, it is decided that:

1. The decision of the Opposition Division is set aside.

2. The case is remitted to the Opposition Division with the order to maintain the patent on the basis of auxiliary request No. 1 with any necessary consequential amendments to the description.

The Registrar

E. Görgmaier

The Chairman

R. Spangenberg