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D E C I S I O N
of 6 October 1998

Case Number: T 0476/94 - 3.2.5

Application Number: 87902757.1

Publication Number: 0270677

IPC: B41M 5/26

Language of the proceedings: EN

Title of invention:
Thermal transfer sheet for forming color image

Patentee:
Dai Nippon Insatsu Kabushiki Kaisha

Opponent:
Imperial Chemical Industries PLC

Headword:
-

Relevant legal provisions:
EPC Art. 54, 87(1)

Keyword:
"Right of priority (no)"
"Novelty (no)"

Decisions cited:
T 0188/83, T 0194/84, T 0290/86, T 0081/87, T 0212/88,
T 0508/91, T 0288/92,

Catchword:
-



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64

Case Number: T 0476/94 - 3.2.5

DECISION
of the Technical Board of Appeal 3.2.5
of 6 October 1998

Appellant:
(Proprietor of the patent) Dai Nippon Insatsu Kabushiki Kaisha
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Respondent:
(Opponent) Imperial Chemical Industries PLC
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 31 March 1994
revoking European patent No. 0 270 677 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: A. Burkhart
Members: S. Crane
C. Holtz

Summary of Facts and Submissions

I. European patent No. 0 270 677 was granted on 11 March 1992 on the basis of European patent application No. 87 902 757.1, filed on 30 April 1987, priority being claimed from three Japanese patent applications JP 97972/86, JP 97973/86 and JP 97974/86 all dated 30 April 1986.

II. The granted patent was opposed by the present respondents on the ground that its subject-matter lacked novelty and/or inventive step (Article 100(a) EPC).

The following documents were relied upon as representing the state of the art:

(D1) EP-A-0 141 678, published 15 May 1985

(D2) EP-A-0 194 106, published 10 September 1986

(D3) EP-A-0 217 036, published 8 April 1987

(D4) JP-A-62 64 595, published 23 March 1987

(D5) J.A.C. Yule "Principles of Color Reproduction", 1967, Wiley and Sons Inc., New York, pages 160 to 168.

III. With its decision posted on 31 March 1994 the Opposition Division revoked the patent in its entirety.

In the reasons given for the decision the Opposition Division held, *inter alia*, that the patent was not entitled to the claimed priority since the priority

documents were not the first applications for the relevant subject-matter. As a consequence all of documents D1 to D5 belonged to the state of the art according to Article 54(2) EPC and could therefore be taken into account for assessing both novelty and inventive step. The subject-matter of claim 1 lacked novelty with respect to both documents D2 and D3 and the subject-matter of various dependent claims lacked inventive step.

IV. An appeal against this decision was filed on 7 June 1994 and the fee for appeal paid at the same time. The statement of grounds of appeal was filed on 5 August 1994.

With the statement of grounds the appellants (proprietors of the patent) submitted an amended claim 1 which included a number of disclaimers of specific examples disclosed in documents D2 and D3. They argued that the subject-matter of claim 1 was entitled to the claimed priority so that documents D2 and D3, which belonged to the state of the art according to Article 54(3) EPC, could only be taken into account for evaluating novelty, which had been successfully established by means of the disclaimers.

V. In a communication dated 14 April 1998 pursuant to Article 11(2) RPBA the Board indicated its preliminary opinion that there was no identity between the subject-matter claimed in the patent and that of the priority documents. It also expressed its reservations as to the clarity of the disclaimers and whether merely disclaiming some of the specific examples disclosed in documents D2 and D3 could establish novelty with respect to the totality of the respective disclosures of those documents. Lastly, it called into question the novelty of the subject-matter of claim 1 with respect to document D1.

VI. With a letter dated 7 September 1998 the appellants submitted a new claim 1 from which the disclaimers relating to document D2 had been deleted and the disclaimer relating to document D3 clarified.

This claim reads as follows:

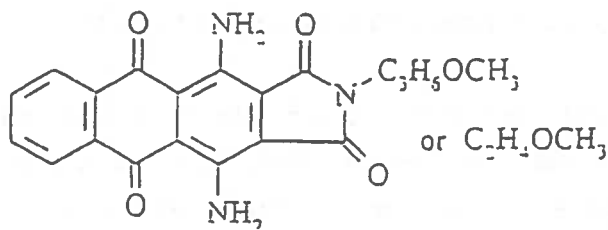
"1. A heat transfer sheet for color image formation comprising respective dye carrying layers containing dyes with respective hues of cyan, magenta and yellow formed on a substrate sheet, characterised in that said respective dye carrying layers each contain one kind or plural kinds of dyes, and the color characteristics of said respective dye carrying layers satisfy the following conditions as the color characteristics (based on GATF) in a state of having been transferred on an image receiving sheet:

Cyan: hue error is in the range of from 10% on the green side to 60% on the blue side, and turbidity is 35% or less in the range of hue error from 10% on the green side to 45% on the blue side and is 20% or less in the range of hue error from 45% to 60% on the blue side;

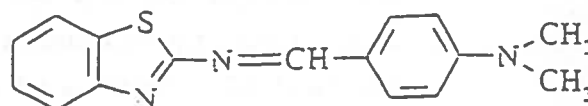
magenta: hue error is in the range of from 10% on the blue side to 50% on the red side, and turbidity is 25% or less in the range of hue error from 10% on the blue side to 35% on the red side and is 10% or less in the range of hue error from 35% to 60% on the red side;

yellow: hue error is in the range of from 10% on the red side to 10% on the green side, and turbidity in this range is 10% or less; with the proviso that the dye carrying layers do not consist of the dyes with the formulae as shown below:

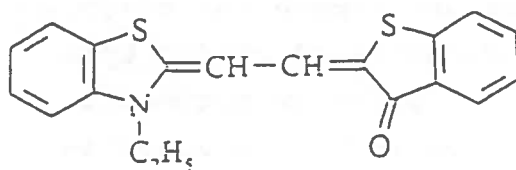
Kayaset B-776



GY-9



NK-1584



VII. Oral proceedings were held on 6 October 1998.

The appellants requested that the decision be set aside and the patent maintained in amended form on the basis of claim 1 submitted with the letter dated 7 September 1998 (main request) or an amended claim 1 submitted at the oral proceedings (auxiliary request).

In claim 1 according to the auxiliary request the preamble has been amended to read:

"A heat transfer sheet for color image formation consisting of respective dye carrying layers containing dyes with respective hues of cyan, magenta and yellow formed on one substrate sheet,"

The characterising clause of the claim remains unchanged.

The respondents requested that the appeal be dismissed and revocation of the patent in suit in its entirety confirmed.

VIII. The arguments put forward by the appellants in support of their requests can be summarised as follows:

A finding that the subject-matter of claim 1 was not entitled to priority on the basis that the claim did not relate to the same invention as that disclosed in the priority documents, which would no longer be contested, must lead automatically to the conclusion that document D2 could not anticipate the claim since the specific examples of document D2 relied upon corresponded to those of the priority documents. Furthermore, document D2 required as an essential feature of the heat transfer sheets disclosed there a heat-resistant slipping layer provided on the surface of the substrate sheet opposite to the dye carrying layers, which further layer was not present in the heat transfer sheet according to claim 1. This distinction was made clearer in claim 1 according to the auxiliary request.

As for document D3 it was conceded that this disclosed a specific example in which the dyes of the heat transfer sheet would meet the hue error and turbidity requirements set out in claim 1. That was however merely an isolated example which accidentally fell within the teaching of the invention and it was possible to establish novelty with respect to it by means of a suitable disclaimer, which is what had been done.

Document D1 did not disclose a heat transfer sheet having respective dye carrying layers containing cyan, magenta and yellow dyes. It was already apparent from the wording of claim 1 according to the main request that the three dye carrying layers had to be on a single substrate sheet; however to avoid any possible ambiguity in this respect this requirement was now specifically stated in claim 1 of the auxiliary

request. What was true of all of documents D1 to D3 was that none of them contained any discussion of the necessity of using dyes having any particular values of hue error and turbidity, let alone values falling within the ranges specified in claim 1. It was this teaching which was the core of the subject-matter of the claim and since there was no equivalent to it in the state of the art the claimed invention was clearly novel.

The respondents had only submitted a translation into English of the claims of document D4. It was possible to tell from this that the document related to a heat transfer sheet in which dyes having particular inorganicity/organicity ratios and molecular weights were used, but nothing more. There was certainly no recognisable teaching here of a combination of dyes meeting the respective hue error and turbidity requirements of claim 1.

IX. In reply the respondents argued substantially as follows:

There was nothing at all paradoxical in the fact that the subject-matter of a claim of broad ambit could on the one hand not derive priority from an isolated disclosure falling within that ambit but on the other hand lack novelty with respect to an equivalent disclosure of earlier date. Since the dyes used in Examples E1 to E3 of document D2 corresponded to the dyes proposed in Examples C1 to C3 of the patent specification and self-evidently therefore had respective values of hue error and turbidity falling within the ranges set out in claim 1 there could be no doubt that the claim was bad for lack of novelty.

Similar considerations applied with respect to the dyes of Examples 1, 6 and 7 of document D1. Although here separate heat transfer sheets for each colour were under discussion, the claimed invention was clearly intended to extend to this possibility as could be seen from the terms of dependent claim 5 and for example the statement at lines 44 to 46 of page 3 of the patent specification.

The relegation by the appellants of Example 2 of document D3 to an "accidental disclosure" which could be avoided by disclaimer was wholly inappropriate. Document D3 was directed to the same technical problem as the claimed invention, namely achieving excellent colour reproducibility, and contained rules governing the choice of the dyes to be used which, although not drafted in terms of hue error and turbidity as was claim 1, would lead to essentially the same result. The broad disclosure of document D3 could not therefore be avoided by disclaiming a single example.

Despite the fact that no translation of the body of document D4 had been filed there was nevertheless no difficulty in seeing from the chemical formulae involved in this document proposed the use of dyes for a heat transfer sheet which corresponded to dyes listed in the patent specification as being preferred embodiments of the claimed invention. Thus the subject-matter of claim 1 also lacked novelty with respect to this state of the art.

As for the limitation added to claim 1 of the auxiliary request that the heat transfer sheet "consisted of" the dye carrying layers and the substrate sheet, which was presumably intended to mean that no other layers were

present, this was also the situation in documents D1 and D3. The basis for this amendment was also questionable since the preferred embodiments of the claimed invention also included supplementary layers.

Reasons for the Decision

1. The appeal complies with the formal requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.

2. *Priority*

According to Article 87(1) EPC it is a basic requirement for a valid claim to priority that the priority document and the European application (or later granted patent) be in respect of the same invention, in other words that the essential features of the invention claimed in the application or patent be disclosed as a matter of substance in the priority document, see for example T 81/87 (OJ EPO 1990, 250) and T 212/88 (OJ EPO 1992, 28).

The present patent is concerned with a heat transfer sheet for colour image formation. In the use of such a transfer sheet it is placed on an image receiving sheet and heat energy is applied to transfer the dyes from heat transfer sheet to the image receiving sheet. To form a colour image dyes of the three primary colours cyan, magenta and yellow are combined to give intermediates in a manner well-known in principle. The patent is particularly directed to providing a heat transfer sheet of this type which gives excellent colour reproducibility comparable with that obtained by conventional printing techniques.

In its broadest terms, as set out in claim 1 of the main request, the technical problem indicated above is solved by using cyan, magenta and yellow dyes which when transferred to an image receiving sheet satisfy particular conditions as to "hue error" and "turbidity". These two parameters are known measures for defining the colour characteristics of a dye or pigment and may be obtained following the evaluation method of the Graphic Arts Technical Foundation (GATF) explained on page 4 of the patent specification and in document D5. The appellants have consistently maintained that the definition of the permissible ranges for hue error and turbidity of the three dyes constitutes the core of their invention. But each of the earlier Japanese applications from which priority is claimed is wholly silent in this respect. Instead, each of them relates to a particular respective combination of cyan, magenta and yellow dyes for the dye carrier layers of a heat transfer sheet. Now, it is not in dispute that those combinations of dyes do in fact fall within the ranges specified in present claim with respect to hue error and turbidity, indeed the respective specific examples of the priority documents are substantially identical with Examples C1 to C3 of the patent specification, but that is not the point. What is decisive is that the priority documents contain no disclosure which is even remotely comparable with the way the invention is defined in the claim.

As a consequence the subject-matter of claim 1 is not entitled to the claimed priority date of 30 April 1986 and each of the documents D1 to D5 accordingly belongs to the state of the art according to Article 54(2) EPC. In these circumstances there is no need for the Board to go on to consider in detail the question of whether the priority documents were the first applications for the relevant subject-matter, the objection on the basis of which the Opposition Division denied the right to

priority. For completeness the Board will however merely add that it in essence agrees with what the Opposition Division had to say on this point.

3. *Novelty (main request)*

Example E-1 of document D2 relates to a heat transfer sheet with respective cyan, magenta and yellow dye carrying layers in which the cyan dye is "Kayaset Blue 714", the magenta dye is a mixture of "MS Red G" and "Macrolex Red Violet" and the yellow dye is "Foron Brilliant Yellow S-6GL". Since these dyes, as well as the component proportions of the magenta dye, correspond to those used in Example C-1 of the patent specification, it is abundantly clear that the colour characteristics (hue error and turbidity) of the dye carrying layers fall within the respective ranges stated in claim 1. The appellants have never sought to contest this. Similar considerations apply between the Examples E2 and E3 of document D2 and Example C2 and C3 of the patent specification. (In comparing the cyan dyes of Example E2 and Example C2 it is to be noted that the relative proportions of "Kayaset Blue 714" and "Forum Brilliant Blue S-R" are reversed but since both of these components *per se* meet the hue error and turbidity requirements so must any mixture thereof, irrespective of the relative proportions. With respect to the comparison between Example E3 and Example C3 it is to be noted that the magenta dye "Sudan Red 7B" of Example E3 differs only in name from the magnetic dye "Ceres Red 7B" of Example C3.)

It is a basic principle of patent law that a specific disclosure will take away the novelty of a broad claim embracing that disclosure, see for example T 188/83 (OJ EPO 1984, 555) and T 508/91 (mentioned in the publication "Case Law of the Boards of Appeal of the EPO", page 53, point 2.5). The Board can find no support in the case law for the contention of the appellants that for a claim which defines a parameter in terms of a range of permissible values to be anticipated it is necessary that both the parameter as such as well as the range of values which it can take be explicitly addressed in the state of the art. The appellants, by means of their present claim 1, seek protection for a heat transfer sheet comprising dye carrying layers with specific colour characteristics. The dye carrying layers of the heat transfer sheets of Examples E1 to E3 of document D2 incontrovertibly exhibit those characteristics. The subject-matter of claim 1 therefore lacks novelty (Article 54(2) EPC).

In the circumstances of the present case the Board, in contrast to the appellants, can see no logical contradiction whatsoever between the finding, with respect to what is essentially the same technical disclosure, that there is no entitlement to priority on the one hand, and novelty-destroying anticipation on the other. It is true that in the "Guidelines for Examination in the EPO" the test for entitlement to priority is compared, via the test for addition of subject-matter contrary to Article 123(2) EPC, to the test for novelty (Section C-V, 2.4 in combination with C-VI, 5.4). What is meant by this, as indeed stated specifically in Section C-V, 2.4, is that for the priority date to be allowed the subject-matter of a claim under consideration must be derivable directly and unambiguously from the disclosure of the invention in the priority document. It is a long way from this to what the appellants seem to be contending, namely that

there is an entitlement to priority if the disclosure in the priority document would constitute a novelty-destroying anticipation of the subject-matter of the claim. That may indeed be a reasonable premise in straight-forward cases but is clearly inapplicable in situations where, as in the present case, the claim contains generalisations going beyond what is disclosed in the priority document. The difficulty of applying a "novelty test" to corresponding types of amendment of an application has long been recognised, see T 194/84 (OJ EPO 1990, 59) where a modified form of the test for such situations is proposed. Subsequent decisions, see in particular T 288/92 (mentioned in "Case Law of the Boards of Appeal of the EPO" at page 166) have in any case called the fundamental appropriateness of the "novelty test" to the issue of added subject-matter into question. Be that as it may, the present Board is convinced that if the "novelty test" were applied to the present set of circumstances then the result, namely that the subject-matter of claim 1 is not entitled to the claimed priority date, would be the same.

It must also be noted that document D2, since it has an earlier European filing date than the priority date claimed by the present patent, would in any case belong to the state of the art according to Article 54(3) EPC even if that priority date were recognised and accordingly would have to be taken into account for assessing novelty. The debate on the logical contradiction which the appellants seek to identify is therefore to all intents and purposes a diversion. Certainly, it is very difficult in the circumstances of the present case to see how the appellants should arrive in a better position vis-à-vis document D2 by not being entitled to the claimed priority.

Document D1 discloses in Examples 1, 6 and 7 single colour heat transfer sheets provided with a cyan, a yellow and a magenta dye carrying layer respectively. The cyan dye is "Kayaset Blue 714", the magenta dye "MS Red G" and the yellow dye "PTY-52". Each of these dyes is referred to in the present patent specification as being a preferred embodiment of a dye having colour characteristics as required by claim 1 (see for instance the Examples C1 to C3 of the patent specification discussed above). Now, although claim 1 is directed to "a" heat transfer sheet, it is when read in the light of the totality of the disclosure clearly not intended to be restricted to an arrangement where respective cyan, magenta and yellow dye carrying layers are provided on a single substrate. This is shown for example by the statement at lines 45 to 46 of page 3 that the "respective dye carrying layers may be formed separately on a plural number of sheets"; by the fact that Example B-1 relates to such separate single colour sheets; and the introduction first into dependent claims of the requirement that "the substrate sheet comprises one sheet". Taking into account the broad ambit which claim 1 is evidently intended to have its subject matter therefore also lacks novelty with respect to the disclosure of document D1.

Document D3 is specifically concerned with the same technical problem as that addressed by the contested patent, namely the provision of a heat transfer sheet giving excellent colour reproducibility and more particularly, the choice of cyan, magenta and yellow dyes for the respective dye carrying layers in order to achieve this end. According to the teachings of document D3 each of the dyes should have a reflection density of 1.3 after transfer onto an image receiving sheet and a wavelength dependent spectral reflectance lying within upper and lower limits determined by a pair of complex formulae for each colour. Figures 1 to

3 show the permitted reflectance/wavelength ranges plotted graphically for yellow, magenta and cyan respectively. On page 8 there is given a list of examples of dyes which may be used, followed by their chemical formulae. Two specific examples of heat transfer sheet are then discussed. In Example 2 the heat transfer sheet comprises a single substrate sheet with respective dye carrying layers containing "GY-9" as the yellow dye, "NK-1584" as the magenta dye and "Kayaset B-776" as the cyan dye. The chemical formulae for "Kayaset B-776" corresponds to formula No. 24 of one of the particularly preferred dyes referred to in the patent specification. According to the notice of opposition the respondents prepared the dyes "GY-9" and "NK-15845" according to their chemical formulae and determined for the yellow dye "GY-9" a hue error of 2% on the red side and turbidity of 6%, and for the magenta dye "NK-1584" a hue error of 13% on the red side and a turbidity of 8%. These findings have not been challenged by the appellants and it is not in dispute that Example 2 of document D3 is a heat transfer sheet meeting all the requirements of present claim 1.

Recognising this, the appellants have sought to establish the novelty of the subject-matter of claim 1 by including a disclaimer to Example 2 of document D3. In their view, that example was a mere incidental disclosure which has nothing to do with the basic core of their invention and a disclaimer was a recognised and appropriate tool for avoiding such "accidental anticipation". The Board cannot agree. The colour characteristics of hue error and turbidity used in the definition of the subject-matter of claim 1 are closely related to the reflectance/wavelength relationships according to which the dyes of document D3 are to be selected. As a consequence there can be no doubt that a large proportion, if not the substantial majority, of

dyes meeting the requirements of document D3, and not just those of Example 2, will also meet the requirements of present claim. Thus the disclaiming of that single example cannot eliminate the broad overlap with the teaching of this state of the art and does not render the subject-matter of the claim novel, see T 183/88 (supra) and T 290/86 (OJ EPO 1992, 414).

From the above it can be seen that the respondents succeed with their attack of lack of novelty with respect to each of the documents D1, D2 and D3. They also alleged lack of novelty with respect to document D4, relying on the translation of the claims into English they have filed and for the rest on the chemical formulae for dyes to be found in the untranslated description of the document. From these chemical formulae it is apparent that some of the dyes proposed in document D4 correspond to preferred examples of dyes set out in the present patent. On the basis of the information available it cannot however be satisfactorily determined whether document D4 unambiguously teaches a heat transfer sheet as presently claimed comprising respective cyan, magenta and yellow dye carrying layers, each of which has the respective colour characteristics set out in present claim 1. A finding of lack of novelty with respect to document D4 is not therefore possible.

4. *Auxiliary request*

In comparison with claim 1 of the main request it has been specified in claim 1 according to the auxiliary request that the heat transfer sheet consists of the respective dye carrying layers and one substrate sheet. The purpose of these restrictions is to make it clear that the heat transfer sheet is provided with each of the respective dye carrying layers, i.e. is not a

single colour sheet, and that the heat transfer sheet consists solely of the dye carrying layers and the substrate sheet, i.e. no other layers are involved. With respect to the latter requirement the respondents pointed to the fact that the preferred embodiments of the heat transfer sheet described in the patent specification comprise one or both of an addition heat resistant layer and a tack retentive layer. It is however clear from page 22, lines 29 to 3 and lines 40 and 41 of the patent specification that these additional layers can be dispensed with, so that a basis for the amended claim is present.

It can be left undecided whether the amendments made to claim 1 are sufficient to avoid anticipation by the state of the art according to documents D1 and D2 since with regard to document D3 this is certainly not the case. There, respective cyan, magenta and yellow dye carrying layers are coated onto a single polyethylene terephthalate sheet to form a heat transfer sheet, with no other layers being present, see Examples 1 and 2.

The subject-matter of claim 1 according to the auxiliary request therefore lacks novelty.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:



A. Townend

The Chairman:



A. Burkhardt