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D E C I S I O N
of 22 July 2003

Case Number: T 0863/00 - 3.2.5

Application Number: 90902374.9

Publication Number: 0407615

IPC: B42D 15/10

Language of the proceedings: EN

Title of invention:
Thermal transfer recording medium

Patentee:
DAI NIPPON INSATSU KABUSHIKI KAISHA

Opponents:
Leonhard Kurz GmbH & Co.
Giesecke & Devrient GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 84, 123

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

Decisions cited:
-

Catchword:
-



Case Number: T 0863/00 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 22 July 2003

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 13 June 2000
revoking European patent No. 0407615 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: W. Moser
Members: H. M. Schram
W. Widmeier

Summary of Facts and Submissions

I. The appellant (patentee) lodged an appeal against the decision of the Opposition Division revoking the European patent No. 0 407 615 on the grounds that the subject-matter of independent product claims 1, 2, 7, 9 and 10 of the patent in suit lacked an inventive step, Article 56 EPC.

Opposition was filed against the patent as a whole based on Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC).

II. The following documents were *inter alia* referred to in the appeal proceedings:

D1: EP-A 0 273 347

D3: EP-A 0 201 323

D8: DE-A 3 634 865

D9: AU 83/17932

D10: GB-A- 2 129 739

III. Oral proceedings were held before the Board of Appeal on 22 July 2003.

IV. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the following documents:

- (a) main request: claims 1 to 12 as granted; or
- (b) first auxiliary request: claims 1 to 3 filed as first auxiliary request on 23 June 2003; or
- (c) second auxiliary request: claims 1 to 4 filed as second auxiliary request on 23 June 2003.

The respondents I and II (opponents 01 and 02) requested that the appeal be dismissed. Furthermore, respondent II requested that the claims according to the second auxiliary request of the appellant be refused for not having been filed in time, or that oral proceedings be postponed because of the presence of new features in these claims which had not been searched properly.

- V. Independent claim 10 according to the main request reads as follows:

"1. A heat transfer recording medium in which a substrate carries on its surface some items of information such as an image and characters printed by a heat transfer technique and a transparent protective layer is provided on at least a part of the surface of the thus recorded information optionally through an adhesive layer whereby said protective layer and/or adhesive layer function(s) to provide security against counterfeiting characterized in that said protective layer is provided thereon or therein with a design which does not substantially conceal said recorded information and said protective layer is formed of a film having a hologram on at least a part thereof."

Independent claims 1 to 3 according to the first auxiliary request differ from independent claim 10 according to the main request in that the expression "said protective layer is formed of a film having a hologram on at least a part thereof" at the end of the claim is replaced:

in independent claim 1 by: "said protective layer is formed of an uneven layer comprising an uneven gloss in which a surface glossiness luster varies incrementally";

in independent claim 2 by: "said protective layer is formed of an uneven layer comprising an uneven profile being notched along its profile";

in independent claim 3 by: "said protective layer is formed of an uneven layer comprising an uneven thickness in which a plurality of protective layers varying in area is formed to vary their total thickness in section, each protective layer having incorporated fluorescent brighteners, ultraviolet absorbers or infrared absorbers for being distinguishable under black light or with an infrared detector".

VI. The appellant argued essentially as follows:

The subject-matter of independent claim 10 according to the main request was novel with respect to document D3, since this document was silent about the heat transfer technique. Document D1, which was cited at page 2, lines 24 to 26, of the patent in suit disclosed a heat transfer recording medium which comprised a substrate, items of information thereon, an adhesive layer, and a

transparent protective layer thereon, wherein the adhesive/protective layer(s) provide(s) security against counterfeiting. The person skilled in the art would not consider to include the hologram layer known from document D3 as an additional security feature, because the adhesive force of the adhesive layer of document D1 was designed to destroy the dye image under a forced peel. The subject-matter of independent claim 10 thus also involved an inventive step.

The subject-matter of independent claims 1 to 3 of the auxiliary request was clear and supported by the description of the patent in suit, in accordance with Article 84 EPC.

The characterizing features of said claims were not known from the prior art, so that the subject-matter of these claims likewise involved an inventive step, Article 56 EPC.

VII. Respondents I and II argued essentially as follows:

Document D3 represented the closest state of the art. This document disclosed a heat transfer recording medium with all the features of independent claims 1, 2 and 10 of the main request. In particular, the list of printing techniques at page 6, lines 16 to 30, included physical heat-sensitive recording, which fell within the notion "heat transfer technique". In any way, no positive contribution to inventive step could be seen in choosing a heat transfer technique for printing the information, since this technique was well-known in the art, see for example document D1. It was not correct to

start from document D1 as the appellant did in assessing inventive step.

The subject-matter of independent claims 1 and 2 of the first auxiliary request was not supported by the description, since there was no disclosure of an uneven protective layer, meaning a non-flat layer, having a variation in glossiness or a notched profile. The expression "profile being notched along its profile" in independent claim 2 of the first auxiliary request was unclear. The term "black light" in independent claim 3 of the first auxiliary request was also not clear. Independent claim 3 of the first auxiliary request recited five parameters, but neither that claim nor the description contained an instruction as to how to achieve distinguishing the individual layers.

The description was silent about the advantages or purpose of the characterizing features recited in independent claims 1 to 3 of the first auxiliary request. These features merely related to the physical appearance of the protection layer, but no technical effect could be discerned. The characterizing features of independent claims 1 and 2 of the first auxiliary request were already known from documents D8 and D10, respectively. It was common general knowledge to incorporate detectable materials in layers with a view of distinguishing said layers, cf. independent claim 3. It followed that the subject-matter of independent claims 1 to 3 of the first auxiliary request lacked an inventive step.

Reasons for the Decision

Main request

1. *Novelty (Article 54 EPC)*

Document D3 discloses a recording medium in which a substrate 70 carrying on its surface some printed items of information (display portion 5), is provided with a laminate of a transparent protective layer 34 and an adhesive layer 32, which covers at least a part of the surface of the thus recorded information, which laminate 34, 2, 4, 32 comprises a transparent-type hologram consisting of a hologram forming layer 2 and a holographic effect-enhancing layer 4, thus providing security against counterfeiting, see page 4, lines 25 to 34, page 5, lines 29 to 31, page 6, lines 1 to 15, and lines 31 to 33, page 35, line 21, to page 36, line 28, and Figure 15.

It is evident to the person skilled in the art that the laminate should not be easily removable from the substrate, for otherwise the items of information could be tampered with.

In the judgement of the Board, document D3 does not disclose that the medium is a heat transfer recording medium and that the display portion is printed by a heat transfer technique.

Respondents I and II have argued that one of the means for forming the display portion mentioned on page 6, lines 16 to 30, of document D3, viz. physical heat-sensitive recording, fell under the notion "heat

transfer technique", so that the subject-matter of claim 1 was not novel with respect to document D3.

This cannot be accepted. The term "heat transfer technique" has a precise meaning in the art. According to this technique, an image is transferred by applying heat to a dye, cf. page 2, lines 15 to 23, of the patent in suit. Physical heat-sensitive recording is a **different** printing technique, since heat is applied to the print medium.

It follows that the subject-matter of claim 1 is novel with respect to document D3.

None of the other cited documents discloses a heat transfer recording medium with all the features of claim 1. Since this was not disputed, there is no need for further substantiation of this matter.

The subject-matter of claim 1 is therefore novel within the meaning of Article 54 EPC.

2. *Inventive step (Article 56 EPC)*

Document D3 is considered the closest state of the art and discloses several different ways for forming the items of information on the substrate, see page 6, lines 16 to 30. It may be noted that 26 different ways for forming the display portion are listed, followed by the word "etc".

Hence, it is not critical for the security function of the laminate of protective layer 34, adhesive layer 32 and hologram layer 4, known from document D3, by which means the items of information are formed.

Forming items of information on a substrate by a heat transfer technique using a heat-transferable dye is another well-known technique in the art for forming items of information on the substrate, see e.g. document D1, page 3, lines 43 to 45, and Example 2.

In the judgement of the Board, it is obvious to the person skilled in the art to employ the heat transfer technique for forming the information of the substrate of the recording medium known from document D3 and thus to arrive at the subject-matter of independent claim 10.

Consequently, the subject-matter of independent claim 10 lacks an inventive step within the meaning of Article 56 EPC.

First auxiliary request

3. *Admissibility of the amendments (Article 123 EPC)*

Independent claims 1 and 2 are identical to the alternatives labelled (a) and (b) reiterated in independent claim 9 of the patent in suit as granted (apart from the expression "being notched" in independent claim 2 of the first auxiliary request rather than "is notched" in independent claim 9 as granted). Independent claim 3 is based on the alternative labelled (c) in independent claim 9 as

granted, with the additional feature "(thickness) in section, each protective layer having incorporated fluorescent brighteners, ultraviolet absorbers or infrared absorbers for being distinguishable under black light or with an infrared detector". A basis for this amendment is page 17, lines 27 to 33, of the application as filed (published version). It may be noted that the expression "in section", which is not disclosed *expressis verbis* in the application as filed, merely clarifies that the thickness of the plurality of layers varies from one area to the next, depending on which (cross)section is taken, cf. Figure 13.

The Board is thus satisfied that the subject-matter of independent claims 1, 2 and 3 is disclosed as a whole in the application as filed, Article 123(2) EPC. The description and the drawings have been brought into conformity with the claims and likewise meet the requirements of Article 123(2) EPC. Since the scope of protection conferred by the claims is not extended, the claims meet the requirements of Article 123(3) EPC as well. It may be noted that no objections were raised by respondents I and II under Article 123 EPC.

4. *Admissibility of the amendments (Article 84 EPC)*

Independent claims 1 to 3 relate to three preferred embodiments of the protective layer of the heat transfer recording medium shown in Figures 11 to 13, respectively, and described at page 6, line 48, to page 7, line 14, of the patent in suit.

In these claims the protective layer is specified as an "uneven" layer, wherein the unevenness can be in the surface glossiness luster, the profile, or the thickness of the layer. Respondents I and II have raised several clarity objections against the claims, the first being that there was no support in the description for an "uneven layer", which literally meant that the surface of the layer was not level or flat, which layer also had the property of having an uneven gloss or profile, cf. independent claims 1 and 2.

In the judgement of the Board, the feature "said protective layer is formed of an uneven layer comprising an uneven gloss in which a surface glossiness luster varies incrementally" in claim 1 simply means that the protective layer is "a layer in which the surface glossiness luster varies incrementally". It may be noted in this respect that the expression "varies incrementally" implies a steady increase or decrease in a *series* of steps, i.e. at least two steps. Likewise, the feature "said protective layer is formed of an uneven layer comprising an uneven profile being notched along its profile" means that the protective layer has a notched profile. The objection of respondents I and II that the expression "profile being notched along its profile" was not clear, cannot be accepted by the Board. The second occurrence of the word profile refers to the outline or circumference of the layer seen from above, as depicted in Figure 12 of the patent in suit.

A further clarity objection was raised by respondents I and II against the term "black light" in independent claim 3. In the opinion of the Board, the term "black light" has a well-defined meaning in the art, denoting the for the human eye invisible electromagnetic radiation in the ultraviolet and infrared regions of the spectrum. Respondents I and II also submitted that a person skilled in the art would not know how to distinguish the various protective layers by using fluorescent brighteners, ultraviolet absorbers or infrared absorbers, since neither the claim nor the description taught in which layer(s), and which of the three detectable materials should be incorporated, and which of the two detectors recited in the claim had to be used, contrary to Article 84 EPC. Although this appears to be an objection under Article 83 EPC rather than Article 84 EPC, in the judgement of the Board, the skilled person would not have any difficulty to understand the claim: by applying a plurality of layers having different sizes onto the substrate, the total thickness of the layers can be varied; by incorporating a detectable material in the nth layer, for example a fluorescent brightener, said layer can be detected by black light.

To sum up, the subject-matter of independent claims 1 to 3 is clear and supported by the description of the patent in suit, Article 84 EPC.

5. *Inventive step (Article 56 EPC)*

The present invention relates to a heat transfer recording medium. The object of the invention is to provide a heat transfer recording medium best-suited

for making identification cards, etc., to which greater security against counterfeiting and falsifying is imparted. The protection sought by the appellant has been restricted to the first three alternatives listed in independent claim 9 as granted, which all concern embodiments of the protective layer and which differ in the nature of the "unevenness".

Respondents I and II have submitted that providing a protective layer in which the glossiness or thickness varies, or providing a protective layer having a notched profile were measures that concerned the **physical appearance** of the heat transfer recording medium. The advantages of the technical features recited in independent claims 1 to 3 were not mentioned in the description and seemed unrelated to the function and the effect of the invention as described and claimed in the patent in suit as granted.

The Board disagrees. The unevenness of the protective layer of the heat transfer recording medium according to independent claims 1 to 3 enhances the security of said medium against counterfeiting and falsifying.

The feature "said protective layer is formed of an uneven layer comprising an uneven gloss in which a surface glossiness luster varies incrementally" of independent claim 1, hereinafter feature (i), is not known from, nor suggested by the prior art. Respondents I and II have argued that document D8 disclosed a recording medium, wherein the surface glossiness of the lenticular screen 8 embedded in the transparent layer 7 differed from the surface glossiness of the remaining part of the transparent layer 7, see Figure 1. The

glossiness of a surface having two areas with a different surface glossiness could be said to vary incrementally.

In the judgement of the Board, document D8 does not disclose feature (i). The lenticular screen 8 is shown as an island in the transparent layer 7, which has a flat surface. Along a line crossing the lenticular screen the glossiness changes twice: from the transparent layer 7 to the lenticular screen 8 and from the lenticular screen 8 to the transparent layer 7. This variation is not incremental, since it is not steadily increasing or decreasing. If, for the sake of argument, the lenticular screen 8 were at the edge of the transparent layer 7, there would be only one step in glossiness, not a series of steps, cf. point 4 above.

The feature "said protective layer is formed of an uneven layer comprising an uneven profile being notched along its profile" of independent claim 2, hereinafter feature (ii), is also not known from, nor suggested by the prior art. Respondents I and II have argued that document D10 disclosed a layer with a notched profile, see Figure 1. However, the notched profile shown in Figure 1 is an image of a hologram, it is not the profile of a layer.

The feature "said protective layer is formed of an uneven layer comprising an uneven thickness in which a plurality of protective layers varying in area is formed to vary their total thickness in section, each protective layer having incorporated fluorescent brighteners, ultraviolet absorbers or infrared

absorbers for being distinguishable under black light or with an infrared detector" of independent claim 3, hereinafter feature (iii), is also not known from, nor suggested by, the prior art. Respondents I and II have submitted that incorporating detectable materials in layers with a view of distinguishing them was known in the art per se. The Board comments that a heat transfer recording medium having a protective layer formed of a plurality of protective layers varying in area (cf. the first part of feature (iii)) is not known from, nor suggested by the prior art.

Since neither the prior art, nor the common general knowledge of the skilled person, give an example, hint, or suggestion to the latter to provide a heat transfer recording medium having the feature (i), (ii) or (iii), the subject-matter of independent claims 1 to 3 must be considered to involve an inventive step within the meaning of Article 56 EPC.

Therefore, the patent in suit may be maintained on the basis of the documents filed as first auxiliary request by the appellant.

6. It follows that, under the circumstances, there is no need to consider the second auxiliary request of the appellant, and/or the objections raised by respondent II against said request.

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 on the basis of the following documents:
 - (a) claims 1 to 3 filed as first auxiliary request on 23 June 2003; and
 - (b) description: pages 2, 5 to 7, 12, 16 to 19 submitted during oral proceedings; and
 - (c) drawings: Figures 10 to 13 and 15 as granted.

The Registrar:

The Chairman:

N. Maslin

W. Moser