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14

Aktenzeichen / Case Number / N<sup>o</sup> du recours : T 256/84

Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 80 301 999.1

Veröffentlichungs-Nr. / Publication No / N<sup>o</sup> de la publication : 21 749

Bezeichnung der Erfindung: Method of manufacture of flexible photographic  
Title of invention: materials having anticurl and antistatic layers  
Titre de l'invention :

Klassifikation / Classification / Classement : G03 C1

**ENTSCHEIDUNG / DECISION**

vom / of / du 11.09.86

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent / Eastman Kodak Co. (Respondent)  
Titulaire du brevet :

Felix Schöller jr. (Appellant)

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Art. 56

Kennwort / Keyword / Mot clé :

"Inventive step - choice from numerous known possibilities"

**Leitsatz / Headnote / Sommaire**

Europäisches  
Patentamt  
Beschwerdekammern

European Patent  
Office  
Boards of Appeal

Office européen  
des brevets  
Chambres de recours



Case Number : T 256 /84

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.1  
of 11.09.86

**Appellant :** Felix Schoeller jr. GmbH & Co. Ltd.  
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**Representative :** Dipl.-Chem. Wolfgang Rücker  
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**Respondent :** Eastman Kodak Company  
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**Decision under appeal :** Decision of Opposition Division of the  
European Patent Office dated of 18.07.84,  
posted on 20.09.84 rejecting the opposition  
filed against European patent No. 21 749  
pursuant to Article 102(2) EPC.

**Composition of the Board :**

**Chairman :** K. Jahn  
**Member :** J. Arbouw  
**Member :** G.D. Paterson

Summary of Facts and Submissions

- I. European patent No. 21 749 incorporating 10 claims was granted on 19.01.83 on the basis of European patent application No. 80 301 999.1, filed on 13.06.80 and claiming a US priority of 15.06.79.
- II. The Opponents filed a notice of opposition on 19.10.83, which stated the ground of obviousness based upon five prior documents (1) to (5). A later submission was filed on 22.06.84 which contained additional arguments inter alia on the basis of ten new documents. The Opponents requested that the patent be revoked in its entirety on the ground of lack of inventive step. Novelty of the claimed subject-matter was acknowledged.
- III. In its decision of 18.07.84, posted on 20.09.84 the Opposition Division refused to admit nine of the ten new documents into the proceedings (under Article 114(2) EPC) and based its decision on patentability on a consideration of the original documents (1) to (5) together with document (6) which was relied on by the Patentee. The patent was maintained with independent Claim 1 which reads as follows:

"A method for the manufacture of a photographic material comprising a flexible support coated on one side with at least one layer comprising a hydrophilic colloid and on the opposite side with separate contiguous anticurl and antistatic layers, characterized in that the anticurl and antistatic layers are coated on the support by a tandem gravure coating process in which the anticurl layer is formed by gravure coating of an anticurl coating composition comprising a hydrophilic colloid, the antistatic layer is formed by gravure coating of an antistatic coating composition comprising an antistatic agent and a diffusible

hardening agent that is capable of acting as a hardener for the hydrophilic colloid in the anticurl layer, and the diffusible hardening agent diffuses from the antistatic layer into the anticurl layer to harden the hydrophilic colloid."

IV. The decision to maintain the patent was based on the view that its subject-matter is inventive over the closest prior art (US-A-3 630 742 - Document (1)) in that it solves the technical problem of saving antistatic agent in a non-obvious manner. The Opposition Division considered that the skilled man

(i) had to combine at least three documents from the prior art to arrive at the method claimed in the patent-in-suit, and further

(ii) had to choose a coating method which was contrary to the general evolution in multiple coating technique, and finally

(iii) could not predict or expect the effect that is obtained by the claimed method.

V. A Notice of Appeal was filed by the Appellant against this decision on 02.11.84, and the appeal fee was also paid in due time. A Statement of Grounds was filed on 12.01.85. Additional arguments were filed on 18.01.85 and 30.07.85.

The argumentation submitted by the Appellant runs essentially as follows :

The subject-matter of the patent-in-suit is an obvious combination of three documents from the prior art, for instance the documents (1) US-A-3 630 742, (3) DE-A-2 532 916 and (6) DE-A-2 517 408. Document (1) discloses

a method in accordance with the preamble of Claim 1, and further implicitly discloses tandem coating, document (3) discloses gravure coating for photographic material, and document (6) discloses diffusion hardening.

Apart from documents (1) to (6) which were referred to in the opposition proceedings, the Appellant relied upon a further 14 documents in order to show that gravure coating, tandem coating and diffusion hardening were part of the common general knowledge. The Appellant further stated that the combination of the documents (1), (3) and (6) is allowable since all three documents relate to the same technical field, and that the advantages of the combination are predictable. The Appellant cited in this respect the decision T 21/81 of a Technical Board of Appeal and interprets the headnote in the sense that the man skilled in the art is aware of the totality of the prior art and may from that select and combine everything that appears suitable. On this basis the Appellant concludes that the particular combination of steps required by Claim 1 and the dependent subsidiary claims did not involve an inventive step.

VI. The Respondent filed a response to the Appellant's Statement in which he argued that the invention provides a method for the manufacture of flexible photographic material which is simple to carry out and which makes efficient use of both the hydrophilic colloid and the antistatic agent.

He further argued that, taking (1) as the closest prior art, it is necessary to make three major modifications to reach the present invention, namely,

- (a) to coat each of the anticurl and antistatic layers by a gravure coating process;

- (b) to carry out both gravure coating processes in tandem; and
- (c) to harden the anticurl layer by diffusion of a diffusible hardener that is contained in the antistatic layer.

The Respondent accepted that gravure coating was one of many known coating processes, that tandem coating was well known, and that the use of diffusible hardeners was well known. But he submitted that progress in the photographic coating art had been in the direction of increasing use of simultaneous multilayer coating methods, whereas the use of a gravure coating process in tandem in the claimed invention was against this trend.

The Respondent further stated that the subject-matter of the patent-in-suit can only be arrived at by non-permissible mosaicing of the cited prior art.

VII. In the oral proceedings on 11.09.86 it was not disputed between the parties that the subject-matter of the patent is novel over the cited documents. The Appellant re-stated his points as regards inventive step and based his arguments mainly on the documents:

- (1) US-A-3 630 742, (1a) DE-A-2 050 287;
- (2) US-A-3 508 947;
- (3) DE-A-2 532 916;
- (7) US-A-3 983 839;
- (8) DE-C-433 387;
- (16) Ullmann, 3rd Edition, Vol. 13, p. 641 (1962);
- (19) Neblett's Handbook of Photography and Reprography 7th Edition, pages 132-133 (1977);
- (20) US-A-2 582 407;

of which the documents (7), (8), (16), (19) and (20) were cited to demonstrate that tandem coating, gravure coating and diffusion hardening are well known methods.

The Appellant submitted that a simultaneous coating method as used in document (1) was known to cause the problem of interlayer mixing, and that it was therefore obvious to avoid this problem by choosing the claimed combination of process steps from the available prior art.

VIII. The Respondent admitted during oral proceedings that these methods are known per se and belong to the common general knowledge of the man skilled in the art. He again submitted, however, that the special choice of gravure coating for both layers together with both other features solved the technical problem of optimising both layers. He relied upon document (2) to show that the problem of interlayer mixing had already been solved by the simultaneous coating method known as curtain coating there disclosed, and he relied in particular upon document (19) to show that at the priority date simultaneous coating was preferred.

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

The Respondent on the other hand requested that the appeal be dismissed and that the patent be maintained.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. The closest prior art is represented by (1). This document is concerned with a process for the manufacture of a photographic material comprising a flexible support coated on one side with a photo-sensitive layer comprising a hydrophilic colloid and on the opposite side with separate contiguous anticurl and antistatic layers as set out in the preamble of Claim 1 of the patent-in-suit (see col. 2, lines 5-19 and the figure).
3. The process according to (1) differs from the method according to Claim 1 in that there is no disclosure that the anticurl and antistatic layer are applied consecutively by tandem gravure coating and that at least part of the hardening agent for the anticurl layer is a diffusible hardening agent which is supplied via the antistatic coating composition.

Even if it is accepted that (1) and particularly its German equivalent (1a) disclose that the anticurl and antistatic layer can be applied consecutively (see e.g. (1a) page 6, lines 2-5) the differences as indicated above by underlining still remain.

4. These differences are significant because they cause a reduction of the amount of antistatic agent required to obtain a particular surface resistivity. This can be deduced from the results of Example 2 of the patent specification. There it is demonstrated that in applying the claimed process in comparison with the process according to the state of the art a saving of about 50% of the quite



costly antistatic agent (copoly(N-vinylbenzyl-N,N,N-trimethylammonium chloride-co-ethylene glycol dimethacrylate) is achieved (see page 10, line 10 and 13, left in comparison with page 10, line 6 and 8 right).

5. With document (1) as the starting point, the technical problem underlying the invention is therefore to provide a process which makes optimum use of both anticurl and antistatic layers, thus saving chemicals required for such layers and providing a more economic process.

In order to solve this problem the Patentee proposed that the anticurl and antistatic layers are coated on the support by a tandem gravure coating process in which the anticurl layer is formed by gravure coating of an anticurl coating composition comprising a hydrophilic colloid, the antistatic layer is formed by gravure coating of an antistatic coating composition comprising an antistatic agent and a diffusible hardening agent that is capable of acting as a hardener for the hydrophilic colloid in the anticurl layer, and the diffusible hardening agent diffuses from the antistatic layer into the anticurl layer to harden the hydrophilic colloid.

This technical teaching is not disclosed anywhere in the above cited documents, and the claimed method is therefore novel. Since this judgement was undisputed it is deemed unnecessary to justify this conclusion here.

6. The question on this appeal is whether the requirement for inventive step is met by the subject-matter claimed. Since it was agreed between the parties that tandem coating, gravure coating and diffusion hardening are as such well known in the art and form part of the common general knowledge of the man skilled in the art, it is not

necessary to admit any of the new documents (7) to (20) into these proceedings except for document (19) which was relied on by the Respondent.

7. As already mentioned, in this case a large number of documents were cited by the Opponent in order to establish that certain process steps were per se part of the common general knowledge in the art. In the event, the Patentee was willing to admit, as set out above, that such process steps were part of the common general knowledge, and it was therefore unnecessary for either the parties or this Board to spend time giving the numerous documents individual consideration. This Board would point to the desirability that an opponent who wishes to contend that certain features were part of the common general knowledge, should make this contention quite clear in his Notice of Opposition, and should also make it clear (if such is the case) that he is only referring to such various prior documents in order to support such contention, and not because he is suggesting that any such prior documents may represent close prior art in relation to the inventive step claimed. If his contentions as to common general knowledge are accepted by the Patentee, there will then be no need to burden the proceedings further with such numerous prior documents.
  
8. The question to be answered in respect of inventive step is: was it obvious for the man skilled in the art, faced with the problem underlying the invention, to choose from the numerous well-known methods for coating photographic material,
  - (i) for both the anticurl and the antistatic layer the gravure coating technique;
  
  - (ii) in a tandem process;

(iii) and to use an antistatic coating composition which comprises a diffusible hardening agent that is also capable of acting as a hardener for the anticurl layer through diffusion?

9. It was in fact known from (1) and particularly from (1a) that the lowest level of static and curl propensity is not readily obtainable if a single gelatin layer containing the antistatic material is coated upon the flexible support (see (1) column 1, lines 69-75). Document (1) therefore proposes to coat the support material with separate contiguous anticurl and antistatic layers (cf. e.g. column 2, lines 1-6). Document (1) and particularly its German equivalent (1a) can be interpreted as disclosing consecutive coating (see (1a) page 6, line 4) as well as simultaneous coating (see (1), column 2, lines 14-19 and (1a), page 6, lines 19-23) of the anticurl and antistatic layers. However, both documents very clearly teach that optimum results are obtained by simultaneous coating (see (1), column 2, lines 14-19 and (1a), page 6, lines 19-23).

In applying the teaching from (1) that:

- (i) optimum results are obtained by simultaneous coating of contiguous anticurl and antistatic layers, and that
- (ii) the coaction of antistatic material with the gelatin reduces the anticurl properties thereof (see (1) column 1, lines 73-75),

the man skilled in the art faced with the technical problem of making an optimal use of anticurl and antistatic layers will primarily choose from the numerous known coating methods a simultaneous coating technique with minimal interlayer mixing.

Such a technique is for instance known from (2), which document describes a method for simultaneously coating a plurality of photographic layers by forming a stable multilayer free-falling vertical curtain. At column 3, lines 50-72 of (2) it is stated that with this method substantially no intermixing between adjacent layers occurs.

10. Document (3) (see Example 4, pages 23-24) describes the application of an antistatic layer on photographic material by means of gravure coating. However, this document does not suggest any special advantages in gravure coating for the application of an antistatic layer, nor does it disclose the application of an anticurl layer by gravure coating. It merely mentions the gravure coating for antistatic layers as one out of many possible coating methods for antistatic layers. This is particularly clear from page 13, second paragraph, where it is stated that the antistatic composition can be applied by any coating technique for aqueous coating compositions such as spraying, dipping, fluidised bed coating, extrusion, falling curtain, air-knife and other techniques.

Therefore this document cannot be interpreted as a suggestion to the man skilled in the art faced with the technical problem underlying the invention that gravure coating for contiguous anticurl and antistatic layers will provide an optimal use of both layers.

Document (19), which is a recent (1977) Handbook on Photography and Reprography, even points away from using consecutive coating in that it states that improvements are obtained by the coating of several layers simultaneously (see page 132, right col., last paragraph).

11. The Appellant argued that the idea of coating the anticurl and antistatic layer with gravure coating techniques was obvious since gravure coating is a well-known coating technique for photographic materials. This line of argument, besides disregarding the technical problem addressed, fails to take into account that once the person skilled in the art has decided to apply separate contiguous antistatic and anticurl layers, he has a great number of coating methods to choose from. The question then is whether the state of the art would suggest to the man skilled in the art to apply gravure coating for both layers. Having regard to the discussion of the prior art set out above, in the Board's view this is not the case.

The Board is bound to say that in seeking to analyse retrospectively how a skilled person might have been able to arrive at the concept of the invention by arbitrary selection of one out of many coating methods, the Appellant is adopting a typical ex post facto approach which fails to do justice to the objective standards by which inventive step is to be assessed. The consistent case law of the Board requires that the question of obviousness be considered from the viewpoint of the existing technical problem. The Appellant has not sought to argue from this viewpoint, nor is a technically sound line of reasoning evident to the Board from its own knowledge of the field that would enable a skilled person to solve the problem here being addressed of optimising the antistatic and anticurl layers.

12. The first question regarding inventive step, is in relation to the choice of the coating method to be used for applying the contiguous anticurl and antistatic layers. The proper question in this regard is not whether the skilled man could have made the choice of gravure coating for both layers in combination with the other claimed features, but whether, from the starting point of the closest prior

document, he would have done so in the expectation of solving the technical problem addressed to (see Decision T 2/83, "Simethicone Tablet/RIDER", O.J. 1984, 265, 271, para. 7).

13. From the decision T 21/81, "Electromagnetically operated switch", O.J. 1983, 15, nothing favourable to the Respondent can be deduced. Its headnote states:

"If, having regard to the state of the art, something falling within the terms of a claim would have been obvious to a person skilled in the art, because the combined teaching of the prior art documents could be expected to produce an advantageous effect, such claim lacks inventive step, regardless of the fact that an extra effect (possibly unforeseen) is obtained".

This is to be interpreted in the sense that, if having regard to the technical problem underlying the invention the claimed subject-matter is obvious to a person skilled in the art, the claimed subject-matter lacks inventive step notwithstanding that an extra effect is obtained by way of a bonus.

This is even more clearly expressed in the decision T 69/83 (Thermoplastic moulding compositions/BAYER, O.J. 7 (1984), pages 357-361). "Where, because of an essential part of the technical problem being addressed, the state of the art obliges a skilled person to adopt a certain solution, that solution is not automatically rendered inventive by the fact that it also unexpectedly solves part of the problem" (see Headnote II).

Thus, as a matter of law, the essential question that has to be decided is whether the solution to the technical problem addressed was obvious to the man skilled in the art.

14. Having regard to the considerations set out above, in the Board's view it is clear that gravure coating is just one out of many coating methods which the man skilled in the art could have used, but it was certainly not the primary choice, or even a likely choice, that he would have made in the light of the technical problem posed.
15. If the man skilled in the art did choose to use gravure coating for both layers it would immediately occur to him that this should be done in tandem, since this is the only feasible manner of gravure coating multiple layers.
16. During oral proceedings the Respondent admitted that it is common general knowledge that gravure coating of anticurl layers is feasible. It was however agreed between the parties that gravure coating of anticurl layers requires an additional step of hardening (e.g. by dipping) since addition of all hardening agents to the coating composition will have the adverse effect that the coating composition will develop pittedness and may pull from the gravure cell in filaments ("angel hair").

Therefore the application of diffusion hardening for the anticurl layer would also have been straight forward, since it was, as agreed between parties, common general knowledge that the addition of all hardening agent to the anticurl composition has adverse effects. Since for the application of the diffusion hardening agent only two possibilities are feasible, i.e. a separate application

between the two gravure coating stations or a simultaneous application with the antistatic layer, the choice of the latter possibility has no inventive merit per se.

17. For the reasons given above, in view of the problem underlying the claimed method, the Board considers that the prior art cited and the common general knowledge did not provide any indication that the choice of gravure coating from the numerous available coating methods, as the method for coating both contiguous anticurl and antistatic layers would provide the advantageous technical effect discussed above. Thus the method according to Claim 1 is considered by this Board to have involved an inventive step.

Claims 2-10 concern particular embodiments of the method according to Claim 1, and thus are supported by the patentability of that claim.

ORDER

For these reasons,  
it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

