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D E C I S I O N
of 6 May 2004

Case Number: T 0063/00 - 3.3.7

Application Number: 92103901.2

Publication Number: 0503507

IPC: A61K 7/06

Language of the proceedings: EN

Title of invention:
Dye composition for keratinous fibers

Patentee:
Kao Corporation

Opponent:
Henkel Kommanditgesellschaft auf Aktien

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56
EPC R. 67

Keyword:
"Novelty: yes (all requests)"
"Inventive step: no (all requests)"
"Further request proposed at the end of the debate: not admitted"
"Reimbursement of appeal fee: no"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0063/00 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 6 May 2004

Appellant: (Opponent)
Henkel
Kommanditgesellschaft auf Aktien
TFP / Patentabteilung
D-40191 Düsseldorf (DE)

Representative:
-

Respondent: (Proprietor of the patent)
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Tokyo (JP)

Representative:
Wächtershäuser, Günter, Prof. Dr.
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 20 December 1999 rejecting the opposition filed against European patent No. 0503507 pursuant to Article 102(2) EPC.

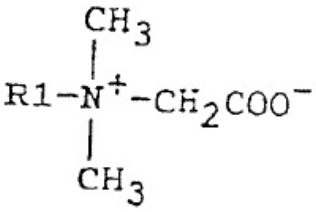
Composition of the Board:

Chairman: R. E. Teschemacher
Members: P. A. Gryczka
B. J. M. Struif

Summary of Facts and Submissions

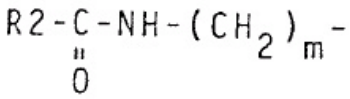
I. The mention of the grant of European patent 0 503 507 in respect of European patent application No. 92103901.2, filed on 6 March 1992 and claiming the priority date of 8 March 1991 from JP 43782/91, was published on 23 July 1997. The patent was granted on the basis of a single claim which reads as follows:

"1. A dye composition for keratinous fibers comprising:
(a) a direct dye selected from the group consisting of nitro dye, basic dye, disperse dye, and mixtures thereof,
(b) a polymer or copolymer of diallyl quaternary ammonium salt,
(c) a betaine-type surfactant selected from:
(1) a carbobetaine-type surfactant represented by formula (I)

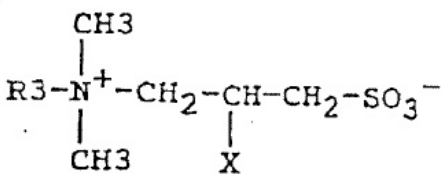


(I)

wherein R1 denotes a C10-24 straight or branched alkyl, or

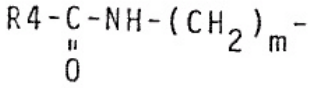


(wherein R2 is a C9-23 straight or branched alkyl, m denotes an integer of 1-5) or;
(2) a sulfobetaine-type surfactant represented by formula (II):



(II)

wherein R3 denotes a C10-24 straight or branched alkyl, or,



(wherein R4 denotes a C9-23 straight or branched alkyl, m denotes an integer of 1-5), X denotes hydrogen atom or hydroxyl, and,
(d) an organic solvent."

II. A notice of opposition was filed on 21 April 1998 in which revocation of the patent in its entirety was requested on the grounds of lack of novelty and inventive step (Article 100(a) EPC).

Of the documents cited during the opposition proceedings the following remain relevant to the present decision:

D1: EP-A-0 470 381

D2: EP-A-0 089 749

D3: EP-A-0 137 178

D4: US-A-3 986 825

III. In a decision issued in writing on 20 December 1999, the opposition division rejected the opposition.

In its decision the opposition division held that:

(a) D1, which was prior art according to Article 54(3) EPC, and D3, disclosed specific examples which were close to the claimed invention but did not fall within the scope of contested claim 1. There was also no teaching in these documents, in which direction certain components of the exemplified compositions should be changed. The claimed subject-matter was therefore novel.

(b) D3 was not the closest prior art, as it did not address the problem of imparting a conditioning effect to dye compositions. D2 did not disclose the betaines and the polymers of diallyl quaternary ammonium salts according to the opposed patent. D4 disclosed polymers of diallyl quaternary ammonium salts in order to improve the surface characteristics of the hair, but without using betaine surfactants. There was no incentive for the skilled person to combine D2 with D4 or D2 with D3. Therefore, neither D2 nor D4, alone or in combination with D3, could lead the skilled person to the claimed subject-matter which consequently involved an inventive step.

IV. On 19 January 2000 the Opponent (Appellant) filed a notice of appeal against the above decision and paid the corresponding fee on the same day. The statement setting out the grounds of appeal was filed on 28 April 2000.

V. In a letter dated 27 September 2000, the Respondent (Proprietor) referred to the document:

D5: Ullmann's Encyclopedia of Industrial Chemistry", 5th Edition, Volume A 12, page 571.

VI. Oral proceedings took place on 6 May 2004.

During the oral proceedings the Respondent filed as an auxiliary request and as a second auxiliary request, two sets of claims, in which claim 1 as granted had been amended.

Claim 1 of the auxiliary request was supplemented at the end of granted claim 1 as follows:

"wherein the amount of components (c) in the composition is 0.1-0.5%."

Claim 1 of the second auxiliary request was supplemented at the end of granted claim 1 as follows:

"optionally used as a mixture with water, and (e) optionally thickeners, oil components, perfumes, preservatives, UV absorbers, or antiseptics, wherein the amount of components (c) in the composition is 0.1-0.5%.".

VII. The Appellant's arguments can be summarised as follows:

(a) According to the case law the examination of novelty should not be confined merely to a comparison of the claimed subject-matter with the examples of a citation, but had to extend to all the information contained in a prior art document.

(b) Example 6 of D1 differed from the claimed dye composition only by the type of betaine (Softazoline CL). Betaines corresponding to those of the claimed compositions (Softazoline LPB) were not only disclosed in other examples of D1 but were also described as preferred surfactants in the description. Thus, the disclosure of D1 unambiguously disclosed Softazoline LPB as an alternative to Softazoline CL in the composition of Example 6. In addition, the examples in the original patent application showed that the nature of the polymer had no importance for achieving the conditioning effects. From D1 it was also apparent that the nature of the surfactant did not influence the conditioning effects. Consequently, the skilled person was aware that an exchange of these components in the exemplified compositions was possible.

(c) Examples 1 and 3 of D3 differed from the claimed compositions only by the absence of a polymer or copolymer of a diallyl quaternary ammonium salt. However, claim 3 of D3 unambiguously disclosed that the preferred embodiments comprised a mixture of cationic and betaine surfactants. Furthermore,

the description disclosed as surfactants homo polymers of dimethyl diallyl ammonium chloride.

Therefore, the claimed subject-matter was not novel.

(d) Considering inventive step, D3 was the closest prior art. Examples 1 and 3 related to compositions for colouring hair which only lacked component b) of the claimed compositions. The purpose of this component was an improvement of the conditioning effect. The problem to be solved was consequently to improve the conditioning effect of the compositions disclosed in D3. It was however known from D4 that the addition of polymers of diallyl dimethyl ammonium chloride to hair colouring compositions improved the surface characteristics of the hair.

Therefore, the subject-matter according to claim 1 of the main request did not involve an inventive step.

(e) The limitation of the amount of betaine in the claims of the auxiliary requests did not change the assessment of the inventive activity, as D3 already disclosed amounts as low as 0.1% by weight of betaine surfactants. In addition, none of the examples in the patent in suit fell under the amended claims, as the amounts of betaine exemplified were less than 0.1% by weight. Since there was no restriction in the claims of the auxiliary requests as to the presence of higher amounts of anionic surfactants, the anionic

shampoos disclosed in D3 were also relevant for the subject-matter of the auxiliary requests.

Therefore, the subject-matter according to claim 1 of the auxiliary requests did not involve an inventive step.

(f) It was common practice when assessing inventive step to define the technical problem objectively with regard to the closest prior art, and not to stick to the subjective problem mentioned in the patent in suit. In this respect the appealed decision was in contradiction to the principles of the EPO. Hence, the possibility of reimbursement of the appeal fee should be examined.

VIII. The Respondent's arguments can be summarised as follows:

(a) Example 6 of D1 disclosed a specific composition comprising nine components defined by type and amount. This represented a combination of 18 parameters. To specifically select Softazoline CL from that example and to replace it by Softazoline LPB taken from a different example did not form part of the content of Example 6 or of the whole content of D1. A combination of Example 6 with the description was not novelty destroying, as the description of D1 provided a generic disclosure of the betaines, which according to well established practice could not be prejudicial to the novelty of a more specific disclosure. If the combination of the examples of D1 made by the appellant would be novelty destroying, then it should be possible to claim or "disclaim" in the patent in suit such

a combination, without adding subject-matter extending beyond the original content of the application as filed. However, in view of the practice at the EPO, this would not be admissible.

(b) The examples of D3 were limited to the use of a single auxiliary surfactant. The skilled person was not given any specific instruction on how to choose the mixtures envisaged in claim 3 of D3. A selection from multiple lists was necessary to arrive at the combination of components (b) and (c) of the opposed patent.

The claimed subject matter was thus novel.

(c) As to inventive step, the invention related to dye compositions providing conditioning effects to the hair. Therefore, the claimed compositions combined the properties of two general types of hair preparations identified in D5, namely hair care preparations and hair colouring preparations. The examples and comparative examples in the patent in suit demonstrated that a surprising effect could be achieved by combining, even at a low concentration, specific polymers with specific surfactants. D3 could be chosen as a possible starting point for the analysis of inventive step, as in any case the claimed subject-matter had to be inventive also when starting from that prior art document. Although formulation 1 of D3 only lacked the presence of a cationic polymer, there was no suggestion in D3 to modify formulation 1 by adding such a polymer. From the teaching of D3 only the modification of the betaine could be

envisaged. In addition, the effects achieved by such a modification were not derivable from the teaching of D3. Although D4 disclosed the combination of cationic polymers with betaines, the polymers were said to be equally effective whatever the nature of surfactant was. Thus, the claimed combination of specific cationic polymers with surfactants, and the surprising effect linked to it could not be derived from D4.

Therefore, the subject-matter according to claim 1 of the main request involved an inventive step.

(d) The amendments in claim 1 of the auxiliary requests were only clarifications of the subject-matter already claimed according to the main request. The examples in patent in suit were carried out with betaine amounts of 0.1% by weight and were thus in conformity with the requirements of claim 1 of the auxiliary requests. As to inventive step, there was no teaching in the prior art for lowering the amount of betaine surfactant. Furthermore, it could not be expected that outside the low amounts specified in the claims no surprising effect could be achieved. In addition, D3 disclosed compositions with a major part of anionic surfactants. This was not envisaged by the claimed compositions.

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

X. The Respondent requested that the appeal be dismissed and the patent be maintained as granted, alternatively

on the basis of the auxiliary request or the second auxiliary request, both as submitted at the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. Novelty

2.1 Example 6 of D1 has been cited by the appellant against the novelty of the claimed subject-matter. This example discloses a hair dye formulation comprising the following components:

Merquat 100
Softazoline CL
Ethanol
2-benzyloxyethanol
Hydroxyethylcellulose
Ammonium chloride
Monoethanolamine
2,5-diaminonitrobenzene
Water

2.2 It is undisputed that the composition of that example contains all ingredients required by the claimed compositions, in particular the polymer of diallyl quaternary ammonium salt Merquat 100, with the exception of the specific betaine of the opposed patent. In fact, the structure of Softazoline CL of that

composition contains an imidazolinium ring, which is not a possible group in formulae (I) and (II) of the betaines according to claim 1 of the patent in suit (for the formula of Softazoline CL, see D1, note 4) on page 17).

Example 8 of D1 discloses a hair dye formulation comprising the following components:

Polymer JR-400
Softazoline LPB
Ethanol
2-benzyloxyethanol
Hydroxyethylcellulose
Ammonium chloride
Diethanolamine
Aqueous ammonia
2-amino-5-β-hydroxyethyl-aminonitrobenzene
Water

Although the composition according to Example 8 of D1 contains a betaine also envisaged in the compositions of the opposed patent, namely Softazoline LPB, it does not comprise a polymer or copolymer of diallyl quaternary ammonium salt, but uses a cationized cellulose with the denomination Polymer JR-400 (for the formula of Softazoline LPB, see D1, note 5) on page 17); for Polymer JR-400, see D1, note 1) on page 17).

2.3 The Appellant objected to novelty of the claimed composition arguing that the nature of the betaines had no influence on the effects achieved by the compositions, so that the betaines were interchangeable. Thus, it was within the disclosure of D1 that

Softazoline LPB of Example 8 could be incorporated in the composition of Example 6 replacing Softazoline CL.

2.3.1 A prior art document is not confined to its examples and the whole disclosure must be considered. However, in the present case, in order to prejudice the novelty of the claimed compositions, the examples would have to be modified in a specific way. As a first step one would have to select between the nine components of the composition of example 6, specifically the betaine surfactant and none of the other components and to replace it. In a second step, a specific betaine must be selected from the different surfactants envisaged in D1. There is however no disclosure in D1 which would directly and unambiguously lead to these precise selections.

2.3.2 According to the description of D1, different types of surfactants can be incorporated in the compositions so that Softazoline CL could be replaced by another surfactant. However, with regard to the nature of these surfactants the description only refers to generic families of components, such as cationic surfactants, amphoteric surfactants, betaine surfactants or anionic surfactants, which in addition can be used alone or combination (page 10, lines 20 to 23). Although D1 mentions that betaine-type surfactants, carbobetaine-type surfactants, sulfobetaine-type surfactants and amidobetaine-type surfactants are preferable, this preference still covers betaines which are not envisaged by the formulae (I) and (II) of the claimed compositions.

2.3.3 Therefore, the replacement of Softazoline CL of Example 6, by the specific betaine Softazoline LPB, only disclosed in another exemplified composition, is not directly and unambiguously disclosed in D1.

For theses reasons, D1 is not prejudicial to the novelty of the claimed compositions.

2.4 In the written proceedings the appellant had objected also to the novelty of the claimed compositions with regard to D3.

It is undisputed that the example and the formulations 1 and 3 of D3 contain the ingredients of the claimed compositions, in particular a coco amido propyl betaine surfactant, with the exception of a polymer or copolymer of diallyl quaternary ammonium salt (page 6, lines 6 to 15,; pages 7 and 8). The Appellant argued that, according to claim 3 of D3, the auxiliary surfactant could be a mixture of a cationic and betaine surfactant and that homopolymers of dimethyl diallyl ammonium chloride were mentioned as suitable cationic surfactants in the description of D3, so that the compositions according to the opposed patent were anticipated by that prior art document.

According to claim 3 of D3 the auxiliary surfactant is a cationic or betaine surfactant, or is a mixture of such surfactants, which definition thus represents three alternatives. In order to arrive at a novelty destroying composition, the example and formulations 1 and 3 have to be modified by making selections and combinations within the disclosure of D3. A first selection concerns the choice of a mixture of betaine

and cationic surfactants, as surfactant. In this respect D3, leaves open the possibility of using a betaine alone, a cationic surfactant alone or a mixture thereof (page 2, lines 15 and 16; claims 3 and 4). Furthermore, as D3 discloses a longer list of cationic surfactants, a second selection has to be made within the different cationic surfactants envisaged in D3 (page 3, lines 18 to 25). Thus, in order to arrive at the combination of betaine and diallyl polymer according to the patent in suit, a selection within two lists of alternatives disclosed in D3 has to be made.

Therefore, the claimed compositions are not directly and unambiguously disclosed in D3.

2.5 Consequently, the subject-matter of claim 1 of the main request is novel.

3. *Inventive step*

3.1 In their arguments on inventive step, both parties considered D3 as an appropriate starting point.

D3 relates to a dye composition for treating hair, comprising an anionic shampoo base, auxiliary surfactant, and a direct dye (claim 1).

The auxiliary surfactant is a cationic or betaine surfactant or is a mixture of such surfactants (page 2, third paragraph). Preferably, the betaine surfactant is a cocamido alkyl betaine such as cocamido propyl betaine (page 3, lines 27 to 28).

The anionic shampoo bases comprise a major proportion

of an anionic surfactant (primary surfactant) and may optionally include additional surfactants (secondary surfactants) which may be anionic, non-ionic, or cationic to modify the cleaning, foaming and conditioning properties of the shampoo base (page 2, second paragraph).

Suitable cationic secondary or auxiliary surfactants include polyethoxylated quaternary ammonium compounds, quaternised guar gum derivatives, quaternised cellulose derivatives, synthetic polymers formed by the condensation of polyglycols with polyamines, also polymers formed by combining vinyl pyrrolidone units with dimethylamine ethyl methacrylate units and homo polymers of dimethyl diallyl ammonium chloride (page 3, lines 18 to 25).

As already mentioned above (point 2.4), the example and the formulations 1 and 3 according to D3 contain a direct nitro dye (2-nitro-p-phenylene diamine alone or in a mixture with 4-nitro-o-phenylene diamine), the preferred carbobetaine type surfactant (cocamido propyl betaine) and, an organic solvent, i.e. glycerin. The compositions according to claim 1 of the patent in suit differ from the exemplified compositions of D3 only in that they comprise a polymer or copolymer of diallyl quaternary ammonium salt.

According to D3, the colour intensity of direct dyes deposited from shampoo-based compositions can be increased by the use of auxiliary surfactants, the auxiliary surfactant facilitating higher deposition of the dye onto the substrate (page 1, third paragraph).

3.2 Problem and solution

It has been undisputed that the problem underlying the opposed patent with regard to the formulations disclosed in D3, is to provide a dye composition which imparts to keratinous fibers improved long-lasting conditioning effects, in particular in terms of smoothness, feel of combing and touch, said effects being not lost by shampooing (opposed patent, page 2, lines 39 to 41).

The examples in the opposed patent show that this problem is effectively solved by the dye compositions according to claim 1 (Examples 1 and 2 in table 1-1 on page 7; table 1-2 on page 8; Examples 3 and 4, pages 8 and 9). This has not been contested by the Appellant.

3.3 Obviousness

It remains to be decided whether the claimed subject-matter is obvious with regard to the documents on file.

3.3.1 According to the patent in suit the long-lasting conditioning effects are achieved by the presence in the claimed compositions of a combination of a specific betaine-type surfactant and a polymer or copolymer of diallyl quaternary ammonium salt, both components forming a complex which is dissolved in the organic solvent and deposits on the hair when the hair is rinsed (page 2, lines 42 to 44; page 5, lines 46 and 47).

According to D3 cationic surfactants can be added to the formulations in order to modify the conditioning

properties (page 2, second paragraph). Among the cationic surfactants envisaged in D3, homo polymers of dimethyl diallyl ammonium chloride are specifically cited (page 3, lines 18 to 25). Thus, the skilled person is already taught by D3, that conditioning properties of the dye formulations can be improved by the addition of cationic polymers including those as specified in the opposed patent.

According to D4, which relates, as does the opposed patent, to hair dying compositions, and mentions that the surface characteristics of the hair can be modified and its conditioning improved by applying a composition containing water soluble polymers containing secondary, tertiary or quaternary ammonium groups (column 2, lines 30 to 35). Among the polymers envisaged in D4 for that purpose, a polymer of diallyl dimethyl ammonium salt is particularly preferred, and present in a majority of the exemplified compositions (column 7, lines 14 to 18, Examples 1, 2, 5 to 18)). In addition, D4 explicitly indicates that the conditioning effects produced by incorporating these polymers in hair treating compositions is remarkably durable, persisting in many cases through successive washings, even in the case of hair colouring compositions which contain soap or a detergent (column 3, lines 3 to 17). According to Example 1, the improvement of the conditioning effects was still apparent after four weeks and several intervening shampoos (column 7, lines 48 to 53). Therefore, the skilled person can derive from the teaching of D4, that polymers of diallyl quaternary ammonium salts not only improve the conditioning effects but in addition impart a long-lasting effect.

3.3.2 The Respondent argued that, as shown by the examples and comparative examples in the opposed patent, only the specific combination of a betaine and a polymer of diallyl quaternary ammonium salt could impart the long-lasting conditioning effects and this specific combination could not be deduced from D3.

Whereas D3 gives in relation to the surfactants modifying the conditioning properties several alternatives, the formulations 1 and 3 already contain the required betaine surfactant. Therefore, one of the two elements of the claimed combination necessary to provide the long lasting conditioning effect is already present in the closest prior art composition. Since D4 gives a clear incentive to the skilled person to use particularly polymers of diallyl quaternary ammonium salts for imparting long-lasting conditioning effects, the use of the specific polymers of diallyl quaternary ammonium salts mentioned in D3 in relation with conditioning effects, is an obvious choice.

3.3.3 The Respondent's argument that D3 concerned primarily the problem of facilitating a higher deposition of dye onto the hair (page 1, second paragraph), but did not refer explicitly to long-lasting conditioning effects is not convincing.

D3, as the opposed patent, relates to dying compositions and also addresses conditioning effects, even if the achievement of such effects is not the main purpose addressed in that document (page 2, second paragraph). However, when the skilled person is confronted with the improvement of conditioning effects, he gets an incentive from the teaching of D3, which is

strongly confirmed by D4, to add a polymer of a diallyl quaternary ammonium salt to the formulation, even if that formulation additionally enhances the dye deposition. Thus, the skilled person necessarily arrives at the combination according to the opposed patent, which combination inherently provides the long-lasting conditioning effects.

3.3.4 It can therefore be concluded that the solution proposed by the opposed patent for imparting long-lasting conditioning effects to dying compositions is obvious to the skilled person from the teaching of D3 in combination with D4.

Thus, the subject-matter of claim 1 of the main request does not involve an inventive step.

First auxiliary request

4. Claim 1 of the first auxiliary request differs from claim 1 of the main request only by the fact that the amount of the betaine-type surfactant in the composition is 0.1 to 0.5%.

4.1 The Respondent argued that this additional characteristic introduced a further distinction in the claimed compositions from the formulations 1 and 3 of D3 where the amount of betaine was 4.0%. In addition, the opposed patent mentioned that outside the range introduced in the claim the surprising effects could not be obtained.

4.2 Whereas the conclusion of the Respondent with respect to the formulations exemplified in D3 can be followed,

the general disclosure of D3 nevertheless also envisages amounts of betaines as low as 0.1% (page 4, line 27; claim 4). Thus, the amount of betaine introduced in claim 1 of the first auxiliary request does not introduce a further distinction over the disclosure of D3 and D4, so that the subject-matter of this claim lacks inventive step for the same reasons as the main request (point 3).

Second auxiliary request

5. When compared to claim 1 of the first auxiliary request, claim 1 of the second auxiliary request only recites optional features of the dye compositions, namely optional further components and the optional possibility of using the organic solvent as a mixture with water.

5.1 This addition of optional features does not introduce any further distinction from the disclosure of D3 and D4. In particular, it does not exclude from the claimed subject-matter, shampoo based compositions with a major part of anionic surfactants as disclosed in D3.

5.2 Consequently, the subject-matter of that request lacks inventive step for the same reasons as the main request (point 3).

Further auxiliary request

6. During the oral proceedings, at the end of the discussion on the second auxiliary request, the Respondent offered to introduce a further auxiliary request in which, in claim 1 of the second auxiliary

request, the word "comprising" was replaced by "consisting essentially of".

The modification proposed would have modified substantially the nature of the debate on inventive step, in comparison with the submissions of the parties during the first instance proceedings and before the Board. Furthermore, this new request was proposed at a very late stage of the proceedings, in fact just before the Chairman of the Board intended to close the debate although the parties had been invited in the communication accompanying the summons to the oral proceedings that any further submissions should be filed no later than one month before the oral proceedings. In addition, the request was not presented in response to new facts or to a new line of argumentation against the patentability of the claimed subject-matter. For these reasons the presentation of this further request amounts to an abuse of the procedure and therefore, the further request was not admitted (Case Law of the Boards of Appeal of the EPO, 4th. Edition 2001, VII, D.14.1).

7. With respect to the reimbursement of the appeal fee, the Appellant's arguments refer to an alleged error of judgement by the department of first instance, namely when defining the technical problem to be solved.

According to the well established case law in this respect, an error of judgment on a substantive issue does not constitute a substantial procedural violation (Case Law, *supra*, VII.D.15.4.5). Therefore, the precondition for the reimbursement of the appeal fee, as set out in Rule 67 EPC, is not fulfilled.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

C. Eickhoff R. Teschemacher