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D E C I S I O N
of 13 February 2002

Case Number: T 1039/97 - 3.3.7

Application Number: 90911720.2

Publication Number: 0493392

IPC: A61K 7/135

Language of the proceedings: EN

Title of invention:

Method of bleaching and conditioning hair, bleach packet and bleaching solutions

Patentee:

GIJJ, Inc.

Opponent:

Henkel Kommanditgesellschaft auf Aktien

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (no) - closest prior art - problem and solution - bonus effect"

Decisions cited:

-

Catchword:

-



Case Number: T 1039/97 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 13 February 2002

Appellant: GIJJ, Inc.
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Respondent: Henkel
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 12 August 1997
revoking European patent No. 0 493 392 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: R. E. Teschemacher
Members: B. J. M. Struif
B. L. ter Laan

Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 493 392 in respect of European patent application No. 90 911 720.2, filed on 17 July 1990 as international application No. PCT/US90/04056 and published under No. WO91/01127, was published on 6 March 1996. The independent claims read as follows:

"1. A method of bleaching hair comprising:

(a) providing a bleach packet comprising a predetermined effective amount of bleach composition to bleach a person's hair, enclosed in a water soluble enclosure;

(b) providing an activator solution comprising water and an effective amount of activator to activate the bleach;

(c) contacting the bleach packet with the activator solution to thereby dissolve the water soluble enclosure and activate the bleach to form a bleach solution;

(d) applying the bleach solution to the hair to thereby bleach the hair."

"15. A hair bleach packet, comprising a predetermined effective amount of a bleach composition to bleach a person's hair, enclosed in a water-soluble polymer comprising an effective amount of a polyvinyl alcohol to condition the hair."

"18. A container comprising a plurality of the packets

of claim 15 enclosed therein, said container being air and water impervious."

II. A notice of opposition was filed against the granted patent, in which the revocation of the patent in its entirety was requested on the grounds of Article 100(a) and (b) EPC with respect to lack of inventive step and insufficient disclosure, respectively. The opposition was *inter alia* supported by the following documents:

D1: US-A-3 892 905

D4: DE-A-1 053 739

D6: F. Krainer (Hrg.), *Chemische Technologie der Kunststoffe*, 1. Band: Polyvinylalkohole, Ferdinand Enke Verlag Stuttgart, 1949, pages 243-244.

III. The opposition division decided to revoke the patent. That decision was based on the granted version as the sole request. It can be summarized as follows:

(a) The invention was considered to be sufficiently disclosed in the patent in suit and to meet the requirements of Article 83 EPC.

(b) As to inventive step, D1 was considered to be the nearest prior art document. It disclosed packages made from films of water-soluble polyvinyl alcohol (PVA) containing pulverulent chemicals such as household bleaches. D1 aimed at avoiding irritating air-borne dust and improving the accuracy of measurement. Claim 1 differed from D1 only in that the procedure described in D1 was now applied to a hair bleach composition. It was

obvious to apply the packages of D1 in order to solve the same problem occurring during hair bleaching. Moreover, D4 already described hair wash compositions enclosed in a PVA film and in D6 PVA was used as a hair conditioner. Therefore, the subject matter of claim 1 was not inventive. Similar arguments applied with regard to product claim 15.

IV. On 10 October 1997, the patentee (appellant) filed a notice of appeal against the above decision with simultaneous payment of the prescribed fee. The statement of grounds of appeal was filed on 11 December 1997. By letter of 14 January 2002, the appellant filed amended claims 1 to 11 as main request as well as four auxiliary requests replacing the previous requests. Furthermore, a test report (declaration of the inventor, Mr G. Brooks) was submitted.

i. Claim 1 of the main request reads as follows:

"A method of bleaching hair, comprising:

(a) providing a bleach packet comprising a predetermined effective amount of **powdered hair** bleach composition to bleach a person's hair, enclosed in a water soluble enclosure;

(b) providing an activator solution comprising water and an effective amount of activator to activate the bleach;

(c) contacting the bleach packet with the activator solution to thereby dissolve the water soluble enclosure and activate the bleach to form

a bleach solution;

(d) applying the bleach solution to the hair to thereby bleach the hair;

wherein the water soluble enclosure is formed from a water soluble polymer which comprises polyvinyl alcohol; and wherein there is a sufficient amount of dissolved polyvinyl alcohol in the bleach solution to condition the hair; whereby the bleach solution containing the polyvinyl alcohol simultaneously bleaches and conditions the hair."

(emphasis added on the differences from claim 1 as granted).

Claims 2 to 4 and claims 5 and 6 correspond to claims 4 to 6 and claims 8 and 9 as granted, respectively.

Claim 7 of the main request corresponds to product claim 15 as granted with the difference that the term "powdered hair" is added before the feature "bleach composition".

Claims 8 to 11 correspond to claims 16 to 19 as granted.

- ii. Auxiliary request 1 is restricted to the method claims 1 to 6 of the main request.
- iii. Auxiliary request 2 corresponds to the first auxiliary request with the difference that the following feature is added in claim 1 after the term "to condition the hair;":

"and wherein the amount of polyvinyl alcohol in the bleach solution is about 0.25% to 7 % of the total weight of the bleach solution;".

- iv. Auxiliary request 3 corresponds to auxiliary request 1 with the difference that at the end of claim 1 the following feature is added:

-, thereby to improve the feel and appearance of the hair".

- v. Auxiliary request 4 comprises five claims, claim 1 reading as follows:

"A method of bleaching hair, comprising:

(a) providing **an air-and-water-impervious enclosure;**

(b) **providing a sealed bleach packet within said air-and-water-impervious enclosure; said bleach packet comprising a predetermined effective amount of powdered hair bleach composition to bleach a person's hair, enclosed in a water soluble enclosure;**

(c) providing an activator solution comprising water and an effective amount of activator to activate the bleach;

(d) **removing the bleach packet from the air-and-water-impervious enclosure;**

(e) contacting the **sealed** bleach packet with the

activator solution to thereby dissolve the water soluble enclosure and activate the bleach to form a bleach solution;

(f) applying the bleach solution to the hair to thereby bleach the hair;

wherein the water soluble enclosure is formed from a water soluble polymer which comprises polyvinyl alcohol; and wherein there is a sufficient amount of dissolved polyvinyl alcohol in the bleach solution to condition the hair; whereby the bleach solution containing the polyvinyl alcohol simultaneously bleaches and conditions the hair." (emphasis added on the differences from claim 1 of the main request).

Claims 2 to 5 correspond to claims 2 to 5 of the main request.

V. The arguments of the appellant, given in writing and at the oral proceedings held on 13 February 2002, can be summarized as follows:

i. The patent in suit was directed to bleaching of the hair, which caused it to lose its normal resilience and made it stringy and frizzy. The problem to be solved according to the patent in suit was to prevent and rectify said damages. The claims now on file did not relate to any one of the further problems described in the patent in suit concerning dust fumes and accurate measurement of bleaching powders.

None of the cited documents concerned rectifying

the damages caused by bleaching the hair, so that these could not be used as a proper starting point. In particular, D1 was directed to household cleaners which were quite different from hair bleach compositions. D4 mentioned liquid body shampoos but not the conditioning of hair that had been damaged by bleaching. In D6, PVA, which formed a film on the hair, was only used as a hair styling product, which was not the same as conditioning the hair.

The proper starting point for evaluating inventive step was described in the patent in suit itself, according to which it had been known to enclose powdered bleaches in pouch packages consisting of sandwiches of various plastics around aluminum and paper film, in order to provide a barrier function, which packages were cut open and the contents mixed with an activator solution.

When using PVA, an advantageous hair conditioning effect was provided at the same time as the bleaching occurred. Although PVA had been known to be useful in hair compositions for more than 40 years before the priority date, there had been no incentive to use it as a conditioning agent for restoring damaged hair during the bleaching process.

- ii. Regarding auxiliary request 2, the amount of PVA in claim 1 was narrowly defined and there was no incentive in the prior art to use such an amount for obtaining the conditioning effect.

VI. The arguments of the respondent (opponent), given in

writing and at the oral proceedings, can be summarized as follows:

- i. D1 was regarded to be the nearest prior art document, since it referred to the problem of exposure of the users to the chemical dust and fumes of powdered bleaches and to the problem of accurate measurement of these chemicals. Since D1 already disclosed a water soluble PVA enclosure, the only difference to D1 was the selection of a hair bleach composition for its contents. The use of PVA in a hair bleach composition was however known from D6. The conditioning effect of the PVA, which was not contested by the respondent, was considered to be a "bonus effect" and could not contribute to inventive step.
 - ii. Regarding auxiliary request 2, the claimed amount was within the range typically used for a hair conditioning agent. Since there was no evidence on file that the limits of the claimed amounts were critical and since D6 used similar amounts of PVA, auxiliary request 2 did not involve an inventive step.
- VII. The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the main request, or, alternatively, on the basis of one of the four auxiliary requests, all filed in the letter dated 14 January 2002.
- VIII. The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Novelty

2. No objections in respect of novelty have been raised by the respondent and the Board sees no reason to take a different view.

Closest state of the art

3. The patent in suit concerns a method of bleaching and conditioning hair, bleach packet and bleaching solutions.

Packets containing bleach compositions have been described in D1 as well as indicated in the patent in suit as belonging to the state of the art. The respondent and the opposition division referred to the former as the closest document, whilst the appellant started from the latter.

- 3.1 A proper starting point for assessing inventive step should correspond to a purpose or technical effect similar to the patent in suit requiring the minimum of structural and functional modifications, in agreement with established jurisprudence (Case Law of the Boards of Appeal of the European Patent Office, 3rd Edition 1998, I.D.3.1).

The patent in suit aims at a method of bleaching hair which eliminates dust fumes generated when producing a bleaching solution, which also conditions the hair

during its bleaching or colouring, ie, prevents the frizziness associated with the use of bleaching solutions (page 3, lines 56 to page 4 line 19).

- 3.1.1 D1 discloses a 0.0005 to 0.010 inch thick, cold water-soluble self-supporting film consisting essentially of of from 10 to 75 parts by weight of a polymer having a weight average molecular weight greater than about 120,000 selected from the group consisting of polyvinyl alcohol which is 87 to 99 mol percent hydrolyzed polyvinyl acetate and polyvinyl pyrrolidone and from 90 to 25 parts by weight of a polymer having a weight average molecular weight of less than about 90,000 selected from the group consisting of polyvinyl alcohol which is 87 to 99 mol percent hydrolyzed polyvinyl acetate and polyvinyl pyrrolidone, provided that if the first polymer is polyvinyl alcohol, the second polymer cannot be polyvinyl alcohol, and if the first polymer is polyvinyl pyrrolidone the second polymer cannot be polyvinyl pyrrolidone (claim 1). The films are made into packages for pulverulent materials (column 1, lines 53 to 55). The package can contain premeasured portions of pulverulent, dusty, noxious, irritating and/or toxic materials such as bleaches and laundry detergents which must be dispersed, slurried, suspended or dissolved in water (column 5, line 64 to column 6, line 12).

According to D1, a first problem associated with such pulverulent products is the exposure of the user to the chemical. Opening a package of finely ground material, measuring an amount from the package and transferring the measured amount from the package to the equipment where the material is contacted with water can generate

airborne dust which contacts the user and contaminates the area (column 1, lines 24 to 31). A further problem when using common pulverulent chemicals is the lack of accuracy of measurement (column 1, lines 37 to 38). D1 aims at the solution of these problems.

- 3.1.2 According to the patent in suit, it belonged to the prior art to use powdered hair bleach compositions in the hair colouring art, which compositions, when mixed with a developer or activator such as hydrogen peroxide, could be applied to the hair in order to lighten its color. Typically, these bleach products were sold in large containers and comprised an alkaline bleaching powder which was scooped out using a plastic scoop or measuring device and stirred into a water solution of the activator, e.g. hydrogen peroxide. A reaction occurred between the powdered bleach, which comprised a powerful oxidizing agent, and the activator to liberate free oxygen which bleached the hair (page 2, lines 19 to 26).

Because of the instability of aqueous alkaline peroxide solutions and because of the possible interaction of hydrogen peroxide with other ingredients in most of these bleaching compositions, the compositions used to be packaged in two containers, separating the aqueous acidic hydrogen peroxide from the powdered bleaching composition (page 2, lines 27 to 32). For effective separation of these reactive products, the compositions had to be packaged in rigid airtight and watertight packages, such as glass, plastic coated metal or a rigid high density plastic (e.g. polyethylene, polypropylene, polyvinyl chloride, etc.) with extra thick walls (page 2, lines 33 to 38).

Although no document had been presented describing the state of the art mentioned in the patent in suit, both parties agreed that the usual handling of powdered hair bleach compositions for the bleaching of hair in barber shops and beauty salons was correctly described and the board sees no reason to take a different view in this respect.

- 3.2 As can be seen from the above, D1 mentions the problems of air-borne dust and accuracy of measurement associated with the use of pulverulent bleaches, but it does not deal with hair bleach compositions and the damage associated with the bleaching of hair. On the other hand, the powdered hair bleach compositions described as prior art in the patent in suit concern the same technical field as the patent in suit and also refer to hair damage as a consequence of bleaching. For these reasons, the board sees no reason to choose a different starting point than indicated in the patent in suit. Therefore, the powdered hair bleaches and their use in providing hair bleaching solutions described as prior art in the patent in suit are considered to represent a proper starting point for assessing the presence of an inventive step.

Main request and auxiliary request 1

Problem and solution

4. Since the main request and auxiliary request 1 include the same method claim 1, both requests can be dealt with together.
- 4.1 The bleach compositions according to the prior art described in the patent in suit were sold in large

containers and scooped out for use, which caused problems with dust and fumes during preparation of the bleach solutions, as well as inaccurate measuring. In particular, the air-borne dust and fumes originating from the contacting and mixing of the the bleach material with water and activator, are offensive to the salon operator and customers and may be irritating to the eyes and mucous membranes of the nose and throat of the user (page 2, lines 39 to 44). Another problem when using the prior art hair bleaches is the accuracy of measurement, rendering it difficult to avoid overuse of bleach or to use a too weak or too strong bleaching solution (page 2, lines 45 to 49). Furthermore, hair bleaching tends to damage the hair and makes it more "porous" since hair bleaching changes the chemical nature of the hair and may seriously weaken or embrittle the hair, causing it to lose its normal resilience when highly bleached and reducing the ability of the hair to take up color in the normal manner (page 3, lines 1 to 15).

4.1.1 Thus, the problems described in the patent in suit concern two main aspects: first, the handling of a pulverulent toxic hair bleach composition and secondly, damaging of the hair during bleaching. The appellant argued that these two problems should be considered as completely separate problems and that only the problem of hair damaging should be considered for evaluating inventive step.

4.1.2 However, the patent in suit contains no indication that the problem of dust fumes and accurate portioning on the one hand and the damage to hair caused by bleaching on the other should be seen separately, nor that it was only the latter problem that the patent sought to

solve. On the contrary, Examples 6 and 7 describe the positive conditioning effect of mixing PVA with a powdered bleach and then solving it, in the usual manner, in the activator solution. Although a conditioning effect was established, intense dust fumes are reported.

4.1.3 Although the definition of the problem to be solved as described in the patent in suit - which is the normal starting point for the definition of the problem to be solved - may be modified in the light of the prior art and the effective solution of the problem (see Case Law of the Boards of Appeal, *supra*, I.D.4.2), it is not permissible to pick and choose at random from several problems addressed in the patent in suit, in an attempt to formulate a problem in such a way as to arrive at a certain desired result.

4.1.4 Therefore, on the basis of the patent specification itself, the board sees no reason to assess the presence of inventive step on the basis of a problem related to the conditioning aspect only as suggested by the appellant. Consequently, the board sees no reason to depart from the formulation of the problem as described in the patent specification on the basis of the prior art (see the whole of point 3 above).

4.2 Thus, the problem underlying the patent in suit may be seen in providing a method of bleaching hair which eliminates irritating dust fumes generated when producing a bleaching solution and provides an accurate amount of the hair bleach and which can be used to conveniently and safely produce a bleaching solution which prevents frizziness associated with the use of bleaching solutions (page 3, lines 56 to page 4

line 8).

- 4.3 The solution proposed by the patent in suit is a method of bleaching hair comprising the steps (a) to (d) which makes use of a hair bleach packet comprising a powdered hair bleach composition enclosed in a water-soluble polymer comprising polyvinyl alcohol in an amount effective to simultaneously condition a person's hair during the bleaching, as defined in claim 1.
- 4.4 As shown by the examples of the patent in suit, the claimed hair bleach packet does not produce air-borne dust fumes when dissolved in the activator solution (page 8, lines 38 and 39). Furthermore, when the solution is applied to the hair, a conditioning effect to the hair with respect to feel and appearance is obtained (page 9, lines 13 to 15). The occurrence of a conditioning effect is further supported by additional evidence (declaration of the inventor page 5, table III, (c): summation of conditioning evaluation scores and page 6, table IV: total of the salon results, submitted by the appellant by letter of 14 January 2002). These effects were not contested by the respondent.
- 4.5 For these reasons, the board comes to the conclusion that the above-defined problem is effectively solved by the claimed features. Therefore, a reformulation of the problem underlying the patent in suit is not necessary (see point 4.1 above).

Inventive step

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

file.

- 5.1 The packaged bleach compositions according to the closest prior art as described in the patent in suit are said to have the disadvantages of problems with dust and fumes, as well as inaccurate measuring. The description of that art does not suggest any solution to those problems. Therefore, the known packages by themselves do not render obvious the subject-matter now being claimed.
- 5.2 The general teaching of D1 is to use water-soluble PVA containing packets for any pulverulent irritating material, including in general bleaches, which must be dispersed and dissolved in water, in order to eliminate dust fumes and for accuracy of measurement (column 2, lines 25 to 49). Hence, when starting from the known powdered hair bleach compositions and confronted with the problem of avoiding dust fumes and accurate measuring, the person skilled in the art will get the information that this problem can effectively be solved by using a PVA containing enclosure. The board takes the view that the problems for the consumer arising from the use of pulverulent irritating material are rather similar, whether the material is used for bleaches as cleaning products or bleaches for hair. Therefore, a known solution for bleaches as cleaning products would not be disregarded by the person skilled in the art when looking for a solution in the field of preventing irritation by hair bleaches.

Therefore, it was obvious to apply the teaching of D1 to the powdered hair bleach compositions of the closest prior art.

5.3 The appellant's argument that D1 was no relevant prior art document for the claims on file is not in line with the statement of the patent in suit itself which describes D1 under "relevant references .. relating to this invention" (page 3, line 16, 48 and 49) and mentions the problem associated with air borne dust fumes and accuracy of measurement as a primary problem.

5.4 Furthermore, in D4, water-soluble packets made of PVA are used for enclosing liquid hair wash compositions (claim 2, Examples 1 and 3) to better control and portion the amount of liquid wash lotion (column 1, line 49 to column 2, line 22). The packets are used directly on the wetted hair (Examples).

In addition, D6 describes hair treatment agents, including bleaching agents, which may contain polyvinyl alcohols (page 244, first paragraph) which, after evaporation of the water, form a homogeneous film that fixes the individual hairs and gives them the desired shape and which can be washed out by cold water.

5.5 From the disclosure of D4 and D6 it follows that there was no prejudice in the prior art to use PVA in combination with hair bleach compositions, as argued by the appellant.

5.6 Consequently, the subject-matter of claim 1 of both the main as well as the first auxiliary request is not inventive.

5.7 The appellant argued that the invention resided in the finding that PVA provided an additional conditioning effect to the hair which rendered the claimed subject-matter inventive.

5.7.1 In this respect, the normal use of a hair bleach composition is to be dissolved or dispersed in aqueous hydrogen peroxide to form a bleach solution which is then applied to the hair. Since the use of a PVA enclosure for a powdered hair composition is obvious, the simultaneous conditioning of the hair during bleaching is achieved by the skilled person as an inevitable result of this obvious use in the normal preparation and application of a bleach solution. Thus, the conditioning effect is obtained without any inventive effort by the skilled person so that it amounts to the simple discovery of a collateral advantage of applying the claimed method, which can be regarded as a "bonus effect" (see Case Law of the Boards of Appeal, *supra*, I.D.7.7.1).

5.7.2 Therefore, even if the additional conditioning effect could be distinguished from the known fixing properties of PVA as described in D6 and if that effect was surprising, as argued by the appellant, this could not substantiate an inventive step.

5.8 Because the obviousness of the claimed subject matter is based on a combination of the prior art described in the patent in suit and D1, the appellant's arguments with respect to the age of documents D4 and D6 (more than 40 years before the priority date of the patent in suit) must also fail.

5.9 In view of the above, the claimed subject-matter of the main request and that of auxiliary request 1 do not involve an inventive step.

6. No other conclusion would have been reached if D1 had been used as the closest prior art, since, according to

the teaching of D1, any pulverulent, dusty, noxious, irritating and/or toxic materials such as bleaches and laundry detergents which must be dispersed, slurried or dissolved in water can be enclosed by films containing PVA. Therefore, to replace the bleach generically disclosed by D1 by the hair bleach compositions of the patent in suit would have been obvious to the skilled person. The added hair conditioning effect would, for the same reasons as given under point 5.7, not contribute to the presence of an inventive step.

Auxiliary requests 2 to 4

7. Auxiliary request 2 differs from the main request by the amount of PVA (0.25% to 7% of the total weight of the bleach solution).

Auxiliary request 3 differs from the main request in that claim 1 includes the additional definition: "thereby to improve the feel and appearance of the hair".

Claim 1 of auxiliary request 4, although the process steps have been considerably reformulated, essentially concerns a combination of claim 1 of the main request and granted claim 9. Thus, it additionally specifies that the sealed bleach packet is enclosed in an air- and-water-impervious enclosure.

- 7.1 As can be seen from the above, claims 1 of auxiliary requests 2 to 4 differ from claim 1 of the main request in that more detailed requirements have been added. However, the mere addition of features to a claim, even if these have not been disclosed in prior art documents, does not automatically render it inventive.

If the added features do not contribute to the solution of the problem described in the patent specification, they are normally not relevant for assessing the inventive step (see Case Law of the Boards of Appeal, *supra*, I.D.6.5).

In the present case, there is no indication in the patent in suit, nor has the appellant brought forward anything in this respect, that the features added in auxiliary requests 2 to 4 contribute to avoiding irritating dust fumes and providing an accurate amount of the hair bleach as well as preventing frizziness of the hair. Therefore, they cannot confer inventiveness to the subject-matter claimed in auxiliary requests 2 to 4.

Consequently, these requests cannot be allowed either.

8. In view of the above, the claimed subject-matter of all of the requests is obvious, so that none of them involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

C. Eickhoff

R. Teschemacher