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D E C I S I O N
of 31 July 2002

Case Number: T 0082/98 - 3.3.7

Application Number: 92902428.9

Publication Number: WO 92/10162

IPC: A61K 7/06

Language of the proceedings: EN

Title of invention:

Shampoo compositions with silicone and cationic organic polymeric conditioning agents

Patentee:

THE PROCTER & GAMBLE COMPANY

Opponents:

- (01) Goldwell GmbH
(02) Henkel Kommanditgesellschaft auf Aktien

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (no) - closest prior art - problem and solution - obvious combination of known features"

Decisions cited:

-

Catchword:

-



Case Number: T 0082/98 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 31 July 2002

Appellant: Goldwell GmbH
(Opponent 01) D-64280 Darmstadt (DE)

Representative: -

Party as of right: Henkel
(Opponent 02) Kommanditgesellschaft auf Aktien
D-40191 Düsseldorf (DE)

Representative: -

Respondent: THE PROCTER & GAMBLE COMPANY
(Proprietor of the patent) One Procter & Gamble Plaza
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 23 December
1997 concerning maintenance of European patent
No. 0 560 919 in amended form.

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. 0 560 919 in respect of European patent application No. 92 902 428.9 was published on 21 September 1994.

Claim 1 read as follows:

"A liquid hair conditioning shampoo composition characterized in that it comprises:

(a) from 5% to 50%, by weight, of an anionic surfactant component;

(b) from 0.1% to 10%, preferably from 0.5% to 10%, by weight, of a dispersed, insoluble, nonvolatile, nonionic silicone hair conditioning agent;

(c) from 0.05% to 10%, by weight, of soluble, organic, polymeric cationic hair conditioning agent, said polymeric, cationic hair conditioning agent consisting essentially of one or more cationic, hair conditioning polymers, said cationic hair conditioning polymers having quaternary ammonium or cationic amino moieties, or a mixture thereof, an open chain backbone, and a charge density of +3.0 meq/gram or less; and

(d) an aqueous carrier."

Claims 2 to 10 were dependent claims directed to elaborations of the composition of claim 1. The further independent claim 11 read as follows:

"A method for cleaning and conditioning the hair comprising applying an effective amount of the composition of Claim 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 to the hair and then rinsing said composition from the hair."

II. Two notices of opposition were filed on 30 May 1995

(opponent 01) and 21 June 1995 (opponent 02), respectively, on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC). The opposition of opponent 02 was also based on insufficiency of disclosure (Article 100(b) EPC). The oppositions were supported *inter alia* by the following documents:

D1a: JP-A-56/720 95 (English translation)

D2a: JP-A-55/388 13 (English translation)

D11: EP-A-0 400 976

D16: H.P. Fiedler, Lexikon der Hilfsstoffe für Pharmazie, Kosmetik und angrenzende Gebiete, 3rd edition (1989), p. 760

D17: K. Schrader, Grundlagen und Rezepturen der Kosmetika, 2nd edition (1989), p. 190

III. By a decision announced at the oral proceedings held on 11 December 1997 and issued in writing on 23 December 1997, the opposition division maintained the patent in amended form.

The decision was based on a set of claims 1 to 11 as the sole request. Granted claim 1 had been amended in that the term "quaternary ammonium or cationic amino moieties, or a mixture thereof," was replaced by the term "vinyl quaternary ammonium moieties, having cyclic cationic nitrogen-containing rings,".

The decision was based on the following reasons:

- (a) The main request was considered to meet the requirements of Article 123(2) and (3) EPC.
- (b) Regarding insufficiency, "charge density" had been mentioned in prepublished documents and could be controlled and adjusted in accordance with techniques known in the art so that the invention of the patent in suit was considered to be sufficiently disclosed.
- (c) As regards clarity, the term "open chain backbone" of granted claim 1 was not open to an objection under Article 84 EPC in opposition proceedings.
- (d) Novelty of the amended claims had no longer been contested.
- (e) Regarding inventive step, D2 was considered to be the closest prior art document. The problem to be solved over D2 was to provide shampoo compositions which provided excellent cleaning performance and excellent overall hair conditioning for damaged and undamaged hair. That problem had been solved by using polymers having quaternary nitrogen atoms in the cyclic ring in combination with non-ionic polysiloxanes. This solution was not made obvious by the cited prior art.

IV. On 21 January 1998, a notice of appeal against the above decision was filed by opponent 01 (appellant), the prescribed fee being paid on the same day. In the statement of grounds of appeal filed on 20 February 1998, the appellant argued in substance as follows:

- (a) As to insufficiency, the patent in suit did not

disclose any method for determining the charge density, nor had the proprietor (respondent) demonstrated that such a method was within the general technical knowledge.

- (b) Regarding clarity, the term "an open chain backbone" was objected to as not being clear and not sufficiently supported within its whole range by the description.
- (c) Novelty was contested in view of D11.
- (d) As to inventive step, D1 could be regarded as the closest prior art document. The claimed subject-matter differed from D1 only in that a specific cationic polymer was used. Since no improved conditioning effect over D1 had been shown for the cationic polymer now being selected, the problem was to provide an alternative shampoo. In this respect, the partial problem concerning damaged hair had no relevance, as a shampoo of D1 would be used for undamaged hair as well. Any beneficial effect in this respect had to be seen as a bonus effect. As the granted patent covered the cationic polymers of D1 (Gafquat 755), it was obvious to replace these cationic polymers by equivalent alternatives known from D16 or D17. This kind of argument also applied when starting from D2 which aimed at preventing damaged hair.

V. In a letter of 3 September 1998, the respondent submitted the following arguments:

- (a) As to insufficiency, determining the charge density formed part of general technical

knowledge.

- (b) Regarding clarity, the term "an open chain backbone" was clear and supported by the description.

- (c) As to inventive step, D2 mentioned the conditioning of damaged hair and was considered to represent the closest state of the art. The problem to be solved was to provide shampoo compositions that exhibited excellent cleaning performance and overall hair conditioning for both damaged and undamaged hair types. This problem was solved by the specific combination of vinyl polymers having quaternary nitrogen atoms in the cyclic ring, an anionic surfactant and a non-ionic polysiloxane. As the conditioning efficiency depended on the type of hair, D2 did not suggest the claimed composition.

D1 concerned a problem different from that of the patent in suit and provided no motivation to substitute the cationic polymers of D1 by a polymer according to D16 or D17.

- VI. In a communication issued on 19 April 2002, the board pointed out the items to be discussed regarding sufficiency, clarity, novelty and inventive step.

- VII. In reply, all parties to the proceedings announced that they would not be attending the oral proceedings, which were held on 31 July 2002 in the absence of the parties, according to Rule 71(2) EPC.

- VIII. The appellant had requested in writing that the

decision under appeal be set aside and that the patent be revoked.

The respondent had requested in writing that the appeal be dismissed.

The party as of right (opponent 02) abstained from submitting a request.

Reasons for the Decision

1. The appeal is admissible

Amendments

2. The finding in the decision under appeal that the amended claims met the requirements of Article 123(2) and (3) EPC, has not been challenged by the appellant and the board sees no reason to take a different position.

Clarity, Insufficiency and Novelty

3. The questions regarding clarity, insufficiency and novelty can be left unanswered since, in view of the reasons given below, the board has come to the conclusion that, irrespective of how these questions would be answered, the claimed subject-matter does not involve an inventive step.

Inventive step

Closest prior art document

4. The patent in suit concerns shampoo compositions containing silicone and cationic polymeric conditioning agents. Such compositions are known from D1, which the appellant regarded as the closest prior art document and from D2, which was the starting point for the opposition division and the respondent.

4.1 D1 discloses a shampoo composition containing (A) 5 to 30% by weight of an anionic surface-active agent; (B) 0.1% to 5% by weight of a cationic polymer; and (C) 0.1% to 10% by weight of a silicone derivative as essential components (claim 1). The cationic polymer includes quaternary polyvinyl pyrrolidone derivatives of a specific formula, in particular a quaternized copolymer of vinyl pyrrolidone with diethylaminoethyl acrylate, commercially available under the name Gafquat 755, which is also used in the examples (page 8, formula 6 and page 18, point 4). The amount of cationic nitrogen derived from the cationic polymer contained in the above vinyl polymer is 0.004 to 0.2% by weight based on the vinyl polymer (page 9, lines 6 to 9).

In D1, all silicone derivatives mentioned in the description are nonvolatile, nonionic silicones (pages 12 to 14). According to example 8, the shampoo composition comprises 20% by weight of Na POE (polyoxyethylene)(3) laurylsulfate, 1% by weight of Gafquat 755 and 1% by weight of a polyether-modified silicone, in addition to 2% by weight of lauric acid diethanolamine, some perfume and water. Present claim 1 differs from that example by the use of another type of cationic polymer instead of Gafquat 755.

D1 aims at a conditioning shampoo composition having an excellent rinsing effect after washing and an excellent

conditioning effect with brushing ability without hair flying due to the generation of static electricity upon drying the hair (page 2, third paragraph).

The tests described in D1 show that the shampoo compositions provide an improved combing force and no hair flying in comparison to shampoo compositions not containing the three essential components (A) to (C) in the necessary amounts thereof (table 1). From example 3 it can be concluded that the conditioning effect is not restricted to any specific hair type but is of general applicability.

4.2 D2 describes a shampoo composition comprising from 3 to 40% by weight of one or more substance(s) selected from an anionic surface active agent, an amphoteric surface-active agent or an alkylamine oxide; 0.1% to 5% by weight of a water soluble polymer containing quaternary nitrogens with a degree of cationization of 0.0005 to 0.005, and 0.1% to 5% by weight of an oily additive (claim 1). Suitable water soluble polymers are *inter alia* vinyl pyrrolidone copolymers containing quaternary nitrogen atoms (page 5, second paragraph from the bottom). The degree of cationization is defined as the ratio of the numbers of quaternary nitrogen atoms per molecular weight of water-soluble polymer containing quaternary nitrogen atoms (page 5, third paragraph). As an oily additive, a nonvolatile, nonionic polysiloxane hair conditioning agent is mentioned (page 8, first paragraph). In the examples, however, no such polysiloxane is used.

D2 describes how under the severe conditions of the wide-spread use of permanent wave, hair curlers, hot curlers and hair dryers, hair is damaged and is apt to

lose its vividness and luster and instead take on a rough feel and touch (paragraph bridging pages 1 and 2). Furthermore, if an oily substance is applied, it is not possible to obtain a natural luster (page 2, lines 19 to 12). D2 aims at a shampoo composition which exhibits an excellent hair conditioning effect and gives natural luster to the hair, in particular to so called damaged hair (page 2, last paragraph).

According to established case-law, the closest prior art for the purpose of assessing inventive step is generally that which corresponds to a purpose or technical effect similar to the invention requiring the minimum of structural and functional modifications (Case Law of the Boards of Appeal of the European Patent Office, 4th Edition 2001, I.D.3.1).

The patent in suit aims at shampoo compositions that provide excellent cleaning performance and excellent overall hair conditioning for hair damaged by permanent wave treatments (i.e., "perms"), colour treatments, and bleach treatments, applied either at hair salons or at home, as well as for hair not subjected to such treatments ("undamaged hair") (page 2, lines 42 to 50).

D1 and D2 both concern a shampoo composition providing a conditioning effect to the hair. However, although D2 mentions a conditioning effect with respect to damaged hair, the shampoo composition of D1 exhibits an excellent conditioning and rinsing effect without any restriction in respect of the type of hair and also requires less modifications compared with the claimed composition in D2. For these reasons, D1 is regarded as the most suitable starting point for evaluating inventive step.

Problem and solution

5. From D1 a shampoo composition is known which already provides an excellent cleaning and conditioning performance for the hair. The patent in suit aims at providing an improved anionic surfactant-containing shampoo exhibiting excellent cleaning performance and conditioning performance for both damaged and undamaged hair types, such that the shampooed hair will have desirable levels of manageability, combability and softness and low or reduced levels of dryness (page 2, lines 54 to 57).

5.1 In order to solve that problem, the patent in suit proposes the use of a nonionic silicone in combination with a specific cationic conditioning polymer having vinyl quaternary ammonium moieties having cyclic cationic nitrogen-containing rings, an open backbone and a charge density of 3.0 meq/gram or less, as defined in claim 1.

5.1.1 According to the patent in suit, the cationic organic polymers, when combined with the nonionic silicone conditioning agents, can provide surprisingly good hair conditioning benefits for permed or other damaged hair having an increased anionic character, such as bleached hair and colour treated hair. These performance benefits are said to be especially important, because merely increasing the level of silicone conditioning agent in a particular shampoo, in order to improve the conditioning of damaged hair, can result in too high a level of silicone deposition. This can impart an undesirable greasy feel. On the other hand, the cationic organic polymer, by itself, does not provide an efficient conditioning of undamaged hair (page 3,

lines 23 to 40).

- 5.1.2 However, no experimental evidence is provided for these hair conditioning benefits. In particular, it has not been shown that the selected cationic polymer having cyclic cationic nitrogen-containing rings in combination with the nonionic polysiloxane provides any improved conditioning effects for damaged and undamaged hair vis-à-vis the closest state of the art (D1, example 8). In fact, the compositions of examples I, III, IV and V of the patent in suit provide the same satisfactory cleaning and conditioning for both damaged and normal hair types as the composition of original example II which includes ammonium lauryl sulfate, Gafquat 755N and dimethylsiloxane, and which composition is comparable to a shampoo composition of example 8 according to D1.

Although examples I and III to V disclose formulations of shampoo compositions as claimed which are said to provide excellent in-use cleaning and conditioning for both damaged and undamaged or normal hair types (e.g. page 13, table and lines 48 and 49), no comparison is made with any prior art product.

Hence, the technical effects shown in the patent in suit only justify the formulation of a technical problem in relation to D1 which is less ambitious. The problem to be solved may therefore be seen in providing a further shampoo composition having good cleaning performance and overall hair conditioning for damaged and undamaged hair (page 2, lines 51 to 54).

- 5.2 From the examples discussed above, it can be seen that that problem is effectively solved by the claimed

compositions.

Obviousness

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

6.1 From D1 the combination of a cationic polymer and a nonionic silicone for providing a good conditioning effect is known. D1 itself does not mention a cationic polymer having vinyl quaternary ammonium moieties having cyclic cationic nitrogen-containing rings, an open backbone and a charge density of 3.0 meq/gram or less.

In D16 and D17 Luviquat FC 370 is recommended as a hair conditioning agent, in particular for shampoos (D17), which is also used in examples I and III to V of the patent in suit. The skilled person, looking for an alternative shampoo composition to that of D1 would therefore expect that the use, in the shampoo of D1, of the conditioning agent mentioned in D16 and 17 would result in a shampoo having the desired properties. Thus, the replacement of the cationic conditioning agent according to D1 by the conditioning agents mentioned in D16 and D17 is obvious.

7. Starting from D2 as the closest prior art document, no other conclusion would be reached. In that case, the problem to be solved may be seen in providing a shampoo composition having a good cleaning and conditioning performance not only with respect to damaged but also to undamaged hair. Since the same considerations as mentioned above apply, it is obvious to solve that

problem by combining the teaching of D2 with that of D16 or D17 in view of D1 (see point 6.1 above).

8. From the above it follows that the claimed subject-matter lacks an inventive step.

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