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Datasheet for the decision of 14 September 2011

Case Number: T 1380/09 - 3.3.06

Application Number: 02776237.6

Publication Number: 1436373

IPC: C11D 3/50

Language of the proceedings: EN

Title of invention:
Controlled benefit agent delivery system

Patentee:
THE PROCTER & GAMBLE COMPANY

Opponent:
Henkel AG & Co. KGaA

Headword:
Benefit agent delivery system/PROCTER & GAMBLE

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
EPC Art. 56, 83

Keyword:
"Sufficiency of disclosure: yes"
"Added subject-matter: no"
"Inventive step: no - comparative tests not with respect to the closest prior art"

Decisions cited:
T 0197/86

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1380/09 **-** 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 14 September 2011

Appellant: (Patent Proprietor)	THE PROCTER & GAMBLE COMPANY One Procter & Gamble Plaza Cincinnati Ohio 45202 (US)
Representative:	Howard, Phillip Jan Procter & Gamble Technical Centres Limited Whitley Road Longbenton Newcastle upon Tyne NE12 9TS (GB)
Respondent: (Opponent)	Henkel AG & Co. KGaA VTP Patente D-40191 Düsseldorf (DE)
Representative:	-
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 29 April 2009 revoking European patent No. 1436373 pursuant to Article 101(3)b EPC.**

Composition of the Board:

Chairman: P.-P. Bracke
Members: L. Li Voti
J. Geschwind

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to revoke the European patent no. 1 436 373 concerning a benefit agent delivery system.

II. In its notice of opposition the Opponent sought revocation of the patent on the grounds of Articles 100(a) and (b) EPC 1973.

The Opponent referred during the opposition proceedings *inter alia* to the following document:

(1): WO 00/02991.

III. The Opposition Division found in its decision that

- the claimed invention was sufficiently disclosed;

- claim 1 as granted lacked novelty *inter alia* over the disclosure of document (1);

- each claim 1 according to the then pending first and second auxiliary requests complied with the requirements of Article 123(2) EPC, was novel over the cited prior art but lacked an inventive step in the light of the teaching of document (1).

IV. An appeal was filed against this decision by the Patent Proprietor (Appellant).

The Appellant submitted with the grounds of appeal of 9 September 2009 an experimental datasheet and a set of amended claims according to the main request.

Oral proceedings were held before the Board on 14 September 2011.

V. The set of claims according to the **main request** consists of 3 claims, the independent claim 1 of which reads as follows:

"1. A benefit agent delivery system suitable for delivering a benefit agent to a substrate, wherein the benefit agent delivery system comprises a benefit agent in the form of an aldehyde or ketone and an amine comprising a primary and/or secondary amine moiety, such that when said amine and said benefit agent are directly applied to a substrate, the benefit agent provides a benefit to the substrate for a longer period of time than when said amine is not present, wherein the amine comprises, based on the total number of amine moieties in the amine, from 15% to 100% primary amine moieties, and wherein the amine comprises a hydroxy moiety, the benefit agent delivery system comprising one or more containers and wherein the benefit agent and amine are

a.) present in a single container in physical contact with each other; or separated from each other in a single container sufficiently such that said benefit agent and said amine are not in physical contact; or

b.) present in separate discrete containers,

and wherein each container comprises at least one spray dispenser, said spray dispenser being capable of dispensing said benefit agent and amine:

a.) together; or

b.) separately

and wherein on a weight basis, the ratio of amine to benefit agent is such that there is an excess of amine."

The remaining dependent claims relate to particular embodiments of the claimed benefit agent delivery system.

VI. The Appellant submitted in writing and orally that

- the invention was sufficiently disclosed;

- the claims according to the main request complied with the requirements of Article 123(2) EPC;

- the claimed invention concerned a product destined to be dispensed directly onto a substrate by spraying; because of such a direct application the benefit to be provided to the substrate, for example a fragrance, was available from the beginning of the application and lasted upon time;

- as shown in the experimental datasheet submitted with the grounds of appeal, the use of an excess of amine with respect to the aldehyde or ketone benefit agent enabled the adaptation of the perfume release profile and, in particular, of the initial benefit to the desired intensity by varying the ratio of amine to aldehyde and ketone and assured a long-lasting effect; therefore, the claimed benefit delivery system showed improved flexibility;

- document (1) and, in particular, its examples 1D and 1F, concerned the **indirect** application of an imine, a reaction product of a primary amine with an aldehyde, to a substrate without the use of a spray dispenser; in these examples the imine was dispensed to the substrate from a softening composition and the benefit agent was delivered to the substrate upon time after decomposition of the imine; therefore, the skilled person would not have started from these compositions in order to provide a product suitable for a direct application;

- moreover, an excess of amine could not be present in the compositions used according to document (1) even if part of the reaction product would have decomposed in the used aqueous medium, since the formulation encompassed further perfume components, which included usually ketones and aldehydes;

- a more reasonable starting point for the evaluation of inventive step was example 6 of document (1), which related to a spray-on application; however, this example concerned the use of imines formed from an amine different from that used according to the patent in suit and did not disclose the use of an excess of amine;

- therefore, even though the skilled person could have tried to use a reaction product of document (1) by spraying, he would not have used an excess of amine since he would have added further perfume components and in any case he would not have done it with the expectation of achieving the technical effect shown for the products claimed in the patent in suit;

- therefore, the claimed subject-matter involved an inventive step.

VII. The Respondent (Opponent) submitted in writing and orally that

- the invention was not sufficiently disclosed since the test protocol mentioned in claim 2 and disclosed in the patent in suit did not specify what was meant by the term "ambient conditions";

- claim 1 would contravene the requirements of Article 123(2) EPC since the original application documents would not contain support for the use, on a weight basis, of an excess of amine with respect to the aldehyde or ketone benefit agent;

- examples 1D and 1F of document (1) related to the use of imines prepared by a well known reaction; moreover, it was well known that such imines were present in aqueous solution in equilibrium with the starting amine and aldehyde reactants; furthermore, the free amine in equilibrium with the imine ARP4 of example 1 of document (1) was present, on a weight basis, in excess to the aldehyde because of its molecular weight;

- therefore, the only difference of the product disclosed in document (1) with respect to the claimed subject-matter consisted in the use of a spray dispenser;

- the experimental datasheet submitted by the Appellant with the grounds of appeal did not contain a comparison

based on such a distinguishing technical feature with respect to the closest prior art; therefore, it could not prove the existence of an unexpected technical effect throughout the claimed subject-matter (see T 197/86);

- document (1) taught explicitly that liquid compositions containing the disclosed imines were also suitable for being dispensed by spraying, i.e. for a direct application;

- therefore, the claimed subject-matter lacked an inventive step.

VIII. The Appellant requests that the decision under appeal be set aside and that the patent be maintained on the basis of the claims 1 to 3 according to the main request submitted with letter of 9 September 2009.

IX. The Respondent requests that the appeal be dismissed.

Reasons for the Decision

1. Main request

1.1 Article 83 EPC 1973

Claim 2 refers in its wording to the Applicants' Test Protocol 1.1.
This Test Protocol is the Longevity Test reported in detail in paragraphs 17 to 27 of the patent in suit.

Even though according to the Longevity Test the gathering of the data for a given test solution encompasses the step of leaving the cloth treated with such a test solution open to atmosphere under ambient conditions (see paragraph 25) and the description does not indicate precisely what is meant by "ambient conditions" in terms of temperature and humidity, it is clear from paragraph 26 that in each case two sets of data are compared, which data are obtained by analysis under identical conditions.

Since each sample is tested under the same conditions, the Board thus agrees with the decision under appeal (point 2.2.1(b) of the reasons) that the use of one or another temperature or humidity falling within any possible definition of "ambient conditions" will have no influence on the results of the Longevity Test. The Appellant did not bring any evidence of the contrary.

Therefore, the Board concludes that a skilled person would be able to follow the instruction given in the patent in suit for performing the Longevity Test.

Consequently, the claimed invention is sufficiently disclosed.

1.2 Article 123(2) EPC

Claim 1 according to the main request requires that, on a weight basis, the ratio of amine to aldehyde or ketone benefit agent is such that there is an excess of amine.

The first paragraph on page 23 of the original application documents discloses that, on a weight basis, the ratio of amine to ketone or aldehyde benefit agent can vary widely and can be, for example, greater than about 1:5 or from about 1000:1 to about 1:1; moreover, it specifies at the end of the paragraph that, in general, an excess of amine is desirable.

Therefore, it is clear, in the Board's view, that the reference at the end of the paragraph to an excess of amine regards the weight ratios indicated beforehand in the same paragraph, which could encompass indeed both an excess of amine or of benefit agent.

The Board thus concludes that the original documents of the application disclose explicitly that, on a weight basis, the ratio of amine to aldehyde or ketone benefit agent can be such that there is an excess of amine.

The Board thus finds that claim 1 of the main request complies with the requirements of Article 123(2) EPC.

1.3 Inventive step

1.3.1 The invention of claim 1 relates to a benefit agent delivery system that, when directly applied to a substrate, provides a longer benefit term than the benefit agent alone (paragraph 1 of the patent in suit).

As explained in the description of the patent in suit, it was well known to treat the surfaces of a variety of substrates, for example fabrics, with benefit agents such as perfumes, flavours, pharmaceuticals and/or biocontrol agents with the objective of leaving

deposited on the surfaces of the substrates enough benefit agent for imparting a residual benefit to the substrate surface (paragraph 2).

For example, in the context of fabric treatment, such as fabric laundering, a variety of products had been used to form benefit imparting aqueous washing liquors or rinse baths. However, there remained a continuing need for benefit agent delivery systems that were especially effective for **directly** delivering residual and long-lasting benefit to substrates (paragraphs 3 and 5).

The technical problem underlying the invention thus is formulated in the patent in suit as the provision of a benefit agent delivery system able to deliver directly residual and improved long-lasting benefit to substrates, which system shows improved flexibility insofar as the desired release profile in terms of initial and ongoing benefit can be adjusted according to the needs (paragraphs 8 and 9).

1.3.2 Both parties as well as the opposition division in its decision chose document (1) as the closest prior art.

The Board has no reason to depart from this finding and takes also document (1) as the most suitable starting point for the evaluation of inventive step.

1.3.3 Document (1) concerns the provision of a benefit agent delivery system in the form of a reaction product of an amine and a ketone or aldehyde which provides improved long-lasting benefit (for example a fragrance) to the treated substrate which benefit is greater than that

obtained by using the ketone or aldehyde alone (page 2, lines 13 to 24 of document (1)). Moreover, the description of document (1) teaches explicitly that such a benefit agent delivery system can be applied in liquid form **directly** onto a substrate (page 67, lines 5 to 6). Furthermore, the composition containing the benefit agent delivery system can comprise additional components such as perfumes (page 67, lines 5 to 6). Therefore, such compositions show necessarily improved flexibility insofar as the desired release profile in terms of initial benefit resulting from the used additional perfume components and ongoing benefit resulting from the used reaction product can be adjusted according to the needs.

Therefore, the Board finds that document (1) dealt with and solved the same technical problem addressed to in the patent in suit.

1.3.4 The Appellant submitted with the grounds of appeal an experimental datasheet in order to show that the use of an excess of amine, on a weight basis, with respect to ketone or aldehyde would result in an improved technical effect in terms of flexibility over the closest prior art.
The Board remarks that the patent in suit did not indicate such a weight excess of amine to be responsible for any additional technical effect.

According to the established jurisprudence of the Boards of Appeal of the EPO, if evidence that an alleged technical improvement has been effectively realized with respect to the closest prior art is demonstrated by means of comparative tests, the nature

of the comparison with respect to the closest prior art must be able to show that the alleged technical effect has its origin in the distinguishing technical features of the claimed invention (see T 197/86, OJ 1989, 371, headnote).

Document (1) concerns the use as benefit agent delivery system of an imine prepared by means of a well known reaction of a primary amine with an aldehyde or ketone (see last 5 lines of page 4; last full paragraph of page 34 to first two lines of page 36 of document (1)); as recognised by the opposition division in its decision, it was known that imines exist, especially in aqueous medium, in equilibrium with the starting reactants (see page 35 of document (1) and point 2.2.2(b) of the decision under appeal). Therefore, a liquid composition of document (1), which contains water as primary liquid carrier and can be directly sprayed onto a substrate (page 66, first three lines of paragraph (K); page 67, lines 5 to 6) contains necessarily a certain amount of the starting reactants, i.e. the primary amine and the aldehyde.
No evidence was submitted by the Appellant that the liquid compositions of document (1) would not exist in equilibrium with the starting reactants. Therefore, the Board is convinced that such an aqueous liquid composition of document (1) contains also a certain amount of primary amine and aldehyde.

The compositions compared in the Appellant's experimental datasheet are a composition A containing anisic aldehyde in ethanol, a composition B containing a mixture of anisic aldehyde and hydroxyethoxyethylamine (HEEA) in ethanol wherein, on a

weight basis, the anisic aldehyde is in excess of the amine, and a composition C (according to claim 1 of the main request) containing a mixture of anisic aldehyde and HEEA in ethanol wherein, on a weight basis, the amine is in excess of the aldehyde.
However, composition A, which contains an aldehyde but not an amine, is not a composition according to document (1). Moreover, composition B, though containing an aldehyde and an amine, does not relate to a composition of the type disclosed in document (1), which requires the presence of a reaction product of the amine and aldehyde in equilibrium with its reactants.

Therefore, said experimental datasheet does not contain any comparison with respect to a composition in accordance with the teaching of document (1) and cannot prove that the alleged additional technical improvement in terms of flexibility has its origin in the distinguishing technical features of the claimed invention and has been effectively realized with respect to the closest prior art.

The Board thus concludes that, in the light of the teaching of document (1), the technical problem underlying the invention can only be formulated as the provision of an alternative benefit agent delivery system which provides similar technical advantages.

The Board is convinced that the subject-matter of claim 1 solved this technical problem.

1.3.5 Document (1) discloses as specific example of benefit agent delivery system a reaction product of a D-glucamine, a primary amine containing a hydroxy group, and an aldehyde like citronellal (page 70, II-Synthesis), which is the product ARP4 used in examples 1D and 1F (see page 69, lines 9 to 10), discussed by the Respondent.

As already explained above, document (1) explicitly teaches that the disclosed imines can be used in a liquid composition containing water as primary liquid carrier for a direct application by means of known spraying means.

Therefore, it would have been obvious for the skilled person, by following the teaching of document (1), to use an aqueous liquid composition containing the imine mentioned above in a direct spray-on application.

Moreover, as explained beforehand, such a liquid composition would necessarily contain a certain amount of the starting reactant primary amine and aldehyde components. Furthermore, since the molecular weight of D-glucamine is greater than that of citronellal, the amount by weight of the amine in equilibrium with the imine will be necessarily greater than that of the aldehyde.

The Appellant's argument that such a composition would necessarily comprise other perfuming components such as aldehydes or ketones and could not comprise an excess of amine was based on the disclosure of an unspecified perfume contained in examples 1D and 1F and of the perfume composition used in example 6, which regards a

spray-on application with different imines. However, the Board remarks that the general teaching of document (1) includes a very large number of optional perfume components, which are not aldehydes or ketones (see pages 61 and 62). Therefore, the teaching of document (1) encompasses the use of an imine as disclosed above, which contains an excess, on a weight basis of amine, in combination with other perfume components which are not aldehydes and ketones.

Consequently, in the Board's view, it would have been obvious for the skilled person, by considering the whole teaching of document (1), to use a liquid composition containing the imine mentioned above as well as its starting reactants without additional aldehydes and ketones in a spray-on application and to expect the benefits already taught or suggested in document (1). Such a liquid composition falls within the extent of claim 1 of the main request which does not exclude the presence of imines or of additional ingredients.

Furthermore, it would have been obvious for the skilled person to use as spraying means any conventional means, such as a single container with one chamber containing said liquid composition wherein the primary amine and the aldehyde are necessarily in contact with each other, which container is provided with spraying means for applying the liquid composition as it is onto a substrate, i.e. spraying means according to claim 1 of the main request.

The Board thus concludes that it would have been obvious for the skilled person, by following the teaching of document (1), to use a benefit agent delivery system falling within the extent of claim 1 according to the main request.

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

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano P.-P. Bracke