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Case Number: T 1089/10 - 3.3.10

Application Number: 00976913.4

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Language of the proceedings: EN

Title of invention:
FRAGRANCE COMPOSITIONS

Patent Proprietor:
THE PROCTER & GAMBLE COMPANY

Opponent:
Henkel AG & Co. KGaA

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no) obvious alternative

Decisions cited:
T 0249/88, T 1053/93

Catchword:

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Case Number: T 1089/10 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 12 December 2013

Appellant: (Opponent)	Henkel AG & Co. KGaA Henkelstrasse 67 40589 Düsseldorf (DE)
Correspondence address:	Henkel AG & Co. KGaA VTP Patente 40191 Düsseldorf (DE)
Respondent: (Patent Proprietor)	THE PROCTER & GAMBLE COMPANY One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	Simpson, Tobias Rutger Mathys & Squire LLP The Shard 32 London Bridge Street London SE1 9SG (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 25 March 2010 rejecting the opposition filed against European patent No. 1330234 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairwoman: C. Komenda
Members: J. Mercey
F. Blumer

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition against European patent No. 1 330 234. Claim 1 of the granted patent read as follows:

"A composition comprising:

(a) from 1% to 40% by weight of the composition of a fragrance oil wherein the fragrance oil comprises:

(i) from 20% to 99% by weight of the fragrance oil of one or more perfume raw materials with a high odour impact which have an odour detection threshold of less than, or equal to 50 parts per billion
(ii) less than 5%, by weight of the fragrance oil, of top note perfume raw materials where in the top note perfume raw materials have a boiling point of less than 250°C at 101.3 kPa (1 atmosphere pressure)

(b) from 2% to 8% by weight of the composition of an entrapment material which is selected from the group consisting of polymers: capsules, microcapsules, and nanocapsules; liposomes; film formers; absorbents; cyclic oligosaccharides and mixtures thereof;

volatile solvent wherein the perfume raw material and the entrapment material exist in an associated form on the substrate and wherein the weight ratio of high odour impact perfume raw materials which have an odour detection threshold of less than, or equal to, about 50 parts per billion to entrapment material within the associated form falls in the range of 1:20 to 20:1."

II. Notice of Opposition had been filed by the Appellant requesting revocation of the patent in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC), insufficiency of disclosure (Article 100(b) EPC) and extending the subject-matter of the patent in suit beyond the content of the application as filed (Article 100(c) EPC).

III. The Opposition Division held that the subject-matter of the claims as granted did not extend beyond the content of the application as filed, that the invention was sufficiently disclosed, was novel, and involved an inventive step, closest prior art being document (5):

(5) US-A-6 013 618.

IV. With letter dated 12 November 2013, the Respondent (Proprietor of the patent) submitted auxiliary requests 1 to 4.

Claim 1 of auxiliary request 1 differs from claim 1 as granted in that the composition comprises from 1% to 25% by weight of the composition of a fragrance oil.

Claim 1 of auxiliary request 2 differs from claim 1 of auxiliary request 1 in that the one or more perfume raw materials with a high odour impact which have an odour detection threshold of less than, or equal to 50 parts per billion are selected from ethyl methyl phenyl glycidate, ethyl vanillin, heliotropin, indol, methyl anthranilate, vanillin, amyl salicylate and coumarin.

Claim 1 of each of auxiliary requests 3 and 4 differs from claim 1 of auxiliary requests 1 and 2, respectively, in that the entrapment material is selected from cyclic oligosaccharides.

V. The Appellant argued that the fragrance compositions of claim 1 of all requests was not inventive and that document (8):

(8) JP-A-08/176587 (computer translation into English)

was the closest prior art, since it taught the use of cyclodextrins to improve the durability of fragrances. Starting however from document (5), the claimed compositions were not inventive in the light of the teaching of document (8). No other effect apart from longevity of the fragrance had been shown, the Respondent's arguments that in particular the initial fragrance character was retained, not having been demonstrated experimentally. Nor had it been shown that larger amounts of perfume raw materials with a high odour impact could be included in the claimed compositions *vis-à-vis* those of document (5).

The Appellant further argued that the subject-matter of claim 1 of all requests extended beyond the content of the application as filed and that the invention was not sufficiently disclosed.

VI. The Respondent argued that the subject-matter of claim 1 of all requests was inventive. Starting from document (5) as closest prior art, the objective technical problem underlying the patent in suit was the provision of a further fragrance composition having prolonged fragrance character and which retained its initial character. Said problem was solved by a fragrance composition comprising entrapment materials, such as cyclic oligosaccharides, in combination with an amount of high odour impact perfume raw materials of from 20%

to 99% by weight of the fragrance oil. The presence of an entrapment material allowed the use of a greater level of perfume raw materials with a high odour impact than was traditionally used in perfume compositions, such high amounts normally resulting in a short-lived overwhelming scent which would be unacceptable to the consumer. Document (5) solved the problem of extending the fragrance character using a completely different concept, namely by the use of perfume pro-accords, which were chemically modified fragrances, whereas entrapment materials such as cyclic oligosaccharides bound the perfume physically. Document (5) also did not teach perfume compositions comprising such high amounts of high odour impact perfume raw materials. Document (8) was merely concerned with the durability of fragrances and not with retaining the initial fragrance character. Nor did it disclose any specific fragrance components, let alone any perfume raw materials with a high odour impact.

The Respondent submitted that the subject-matter of claim 1 of the main request was disclosed in the application as filed and that the invention was sufficiently disclosed.

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

The Respondent requested that the appeal be dismissed or, subsidiarily, that the patent be maintained on the basis of any of auxiliary requests 1 to 4 filed with letter dated 12 November 2013.

VIII. At the end of the oral proceedings held on 12 December 2013, the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request and auxiliary requests 1 to 4

2. Independent claim 1 of auxiliary request 4 is directed to an embodiment of the main request, namely to the embodiment wherein the composition comprises from 1% to 25% by weight of the composition of a fragrance oil, the one or more perfume raw materials with a high odour impact which have an odour detection threshold of less than, or equal to 50 parts per billion are selected from ethyl methyl phenyl glycidate, ethyl vanillin, heliotropin, indol, methyl anthranilate, vanillin, amyl salicylate and coumarin, and the entrapment material is selected from cyclic oligosaccharides. In case this embodiment according to auxiliary request 4 lacked inventive step, such a line of requests would mandatorily result in the conclusion that the subject-matter of the main request and of auxiliary requests 1 to 3, which embrace this obvious embodiment, cannot involve an inventive step either. For this reason, in the present case it is appropriate that the subject-matter of claim 1 of auxiliary request 4 is examined first as to inventive step.

3. *Inventive step*

3.1 The patent in suit is directed to perfume compositions having a long lasting fragrance character profile which has prolonged and noticeable distinct characters (see page 3, lines 31 to 32 of the specification of the patent in suit). Perfume compositions having enduring fragrance levels and sustained fragrance balance

already belong to the state of the art, namely to the disclosure of document (5) (see col. 2, lines 52 to 56). More particularly, document (5) discloses perfume compositions comprising (A) a pro-accord component and (B) a fragrance raw material component comprising one or more top or middle note fragrances and a carrier (see claim 1), wherein said carrier is usually volatile, such as ethanol (see col. 5, lines 26 to 29). Examples of fragrances released by the pro-accords are heliotropin, vanillin, ethyl vanillin and n-pentyl salicylate (see col. 18, lines 57 to 59 and col. 20, line 59), which are all high odour impact perfume raw materials having an odour detection threshold of less than, or equal to, 50 parts per billion according to the present invention (see page 5, lines 47 to 49 of the patent in suit) and isoamyl acetate, hexyl acetate, geranyl acetate, citronellyl acetate, cis-3-hexenyl acetate, benzyl acetate, linalyl acetate and bornyl acetate (see col. 12, lines 3 to 6, 11, 13 and 15), which are all top note perfume raw materials according to the present invention (see page 6, lines 13 to 21 of the patent in suit). Example 11 discloses a composition comprising less than 13% by weight of the composition of a fragrance oil.

3.1.1 The Appellant argued that not document (5), but rather document (8), was the closest state of the art, since document (8) was cited in the patent in suit, was in the same technical field as the claimed invention, was also concerned with improving the durability of fragrances, and disclosed perfume compositions containing an entrapment material, namely a cyclodextrin.

However, document (5) is also cited in the patent in suit (as WO 98/47478 on page 3, line 1) and is in the

same technical field, namely that of perfume compositions. In addition, as argued by the Respondent, the technical problem addressed by document (5) is closer to that addressed by the patent in suit, since it is concerned with the **character** of the fragrance over time, including maintaining the initial perfume characteristics for extended periods (see document (5), col. 1, lines 11 to 22). Although it does not disclose a cyclic oligosaccharide entrapment material, it does, however, disclose specific perfume raw materials having a high odour impact.

3.1.2 Thus, the Board sees no reason to deviate from the finding of the Opposition Division, which was supported by the Respondent, that the fragrance compositions of document (5) represent the closest state of the art and, hence, takes this document as the starting point when assessing inventive step.

3.2 In view of this state of the art, the problem underlying the patent in suit as formulated by the Respondent was the provision of further fragrance compositions having prolonged fragrance character whilst retaining their initial character.

3.3 As the solution to this problem, the patent in suit proposes the compositions as defined in claim 1 of auxiliary request 4 comprising a fragrance oil which comprises from 20% to 99% by weight of one or more perfume raw materials with a high odour impact selected from ethyl methyl phenyl glycidate, ethyl vanillin, heliotropin, indol, methyl anthranilate, vanillin, amyl salicylate and coumarin, and from 2% to 8% by weight of the composition of a cyclic oligosaccharide, and wherein the weight ratio of high odour impact perfume

raw materials to entrapment material falls in the range of 1:20 to 20:1.

3.3.1 The Respondent never submitted that the feature that the fragrance oil comprised less than 5% by weight of top note perfume raw materials contributed towards solving the problem underlying the invention of providing further fragrance compositions having prolonged fragrance character whilst retaining their initial character, with the consequence that it is to be discarded when assessing obviousness.

3.4 To demonstrate that the fragrance compositions have prolonged fragrance character whilst retaining their initial character, the Respondent relied on *inter alia* Examples VI to X and XVI to XVIII of the patent in suit, which show that when a composition according to the invention is applied to a substrate, the fragrance characters could still be determined for 3 to 6 hours after application, whereas the same long lasting effect is not achieved when control compositions comprising the same fragrance oil but without the entrapment material, namely a cyclic oligosaccharide, are applied to the substrate. In view of said data, the Board is satisfied that the problem underlying the patent in suit has been successfully solved.

3.5 Finally, it remains to be decided whether or not the proposed solution to the objective problem underlying the patent in suit is obvious in view of the state of the art.

3.5.1 When starting from the fragrance compositions of document (5), it is a matter of course that the person skilled in the art seeking to provide further fragrance compositions having prolonged fragrance character

whilst retaining their initial character, would turn his attention to that prior art addressing other long-lasting fragrance compositions, for example, document (8). Document (8) specifically teaches fragrance products comprising 1 to 30% by weight of a perfume, which may be natural or synthetic, 0.1 to 10% by weight of an oligosaccharide such as a (hydroxyalkylated) cyclodextrin, and ethanol (see paragraphs [0005], [0007] and Examples). Said document is referred to in paragraph [0007] of the patent in suit as disclosing the use of hydroxyalkylated cyclodextrins within cosmetic compositions to sustain the effect of the fragrance, the complexation of perfume raw materials being presented as a well-known alternative to the pro-perfume approach discussed in the previous paragraph [0006] for improving the overall longevity of a fragrance.

It is thus within the ambit of the skilled person, seeking to solve the objective problem underlying the patent in suit of providing merely further fragrance compositions having prolonged fragrance character whilst retaining their initial character, to complex the perfume raw materials with a cyclic oligosaccharide in an amount of 2% to 8% by weight of the composition instead of chemically modifying the perfume raw materials to a pro-perfume compound.

3.5.2 Neither the amount of high odour impact perfume raw materials of 20% to 99% by weight of the fragrance oil, nor the weight ratio of these materials to the entrapment material of 1:20 to 20:1, are critical or purposive choices for solving the objective problem underlying the patent in suit, since no unexpected effect has been shown to be associated with these particular ranges. Neither document (5), nor document

(8), differentiates between high and low odour impact perfume raw materials, such that the act of picking out at random a range for the amount of high odour impact perfume raw materials and a weight ratio of these materials to the entrapment material is within the routine activity of the skilled person faced with the mere problem of providing further fragrance compositions having prolonged fragrance character whilst retaining their initial character. Therefore, the arbitrary choice of an amount of high odour impact perfume raw materials of 20% to 99% by weight in the fragrance oil and a weight ratio of these materials to the entrapment material of 1:20 to 20:1 in the composition cannot provide the claimed process with any inventive ingenuity.

For these reasons, the subject-matter of claim 1 is obvious.

3.6 For the following reasons the Board cannot accept the Respondent's arguments designed for supporting inventive step.

3.6.1 The Respondent argued that the presence of a cyclic oligosaccharide entrapment material allowed the use of a greater level of high odour impact perfume raw materials than was traditionally used in perfume compositions, such high amounts normally resulting in a short-lived overwhelming scent which would not be acceptable for the consumer.

However, the Respondent has not shown (see point 3.5.2 above) that the compositions according to the invention may contain larger amounts of high odour impact perfume raw materials than the compositions of document (5), document (5) not teaching an upper limit for the amount

of any of the fragrances disclosed therein, let alone for any of the high impact perfume raw materials specifically disclosed. Nor has the Board any reason to hold that fragrance compositions according to document (5) containing large amounts of high odour impact perfume raw materials would have a short-lived overwhelming scent, since the pro-perfumes are not volatile themselves, but are only released after the chemical modification is reversed upon hydrolysis on the substrate, the release rate of the perfume raw materials thus being controlled by the reaction rate of the pro-perfume to perfume raw material transformation (see paragraph [0006] of the patent in suit). Thus, the Respondent's argument does not convince the Board.

3.6.2 The Respondent further argued that the skilled person would not have looked to document (8) when seeking to solve the objective technical problem underlying the invention, since said document was concerned only with the durability of the fragrance and made no reference the character of the fragrance over time. Nor did it teach the use of perfume raw materials with a high odour impact.

However, when assessing inventive step it is not necessary to establish that the success of an envisaged solution of a technical problem was predictable with certainty. In order to render a solution obvious it is sufficient to establish that the skilled person would have followed the teaching of the prior art with a reasonable expectation of success (see decisions T 249/88, point 8 of the reasons; T 1053/93, point 5.14 of the reasons; neither published in OJ EPO).
In the present case, the Board cannot agree with the Respondent's argument that due to some purported uncertainty about the predictability of success, the

skilled person would not have contemplated combining perfume raw materials known from document (5) with the cyclic oligosaccharides of document (8) in order to provide a further fragrance composition having prolonged fragrance character whilst retaining its initial character. The skilled person has a clear incentive from document (8) to do so (see point 3.5.1 above). It was only necessary for him to confirm experimentally by routine work that combining perfume raw materials with a cyclic oligosaccharide known from document (8) to increase the durability of the fragrance, results in a long-lasting fragrance composition which also retains its initial character, thus arriving at the claimed invention without exercising inventive skill.

With regard to the type of perfume raw materials disclosed, document (8) does indeed refer only to natural or synthetic perfumes in general and does not specifically mention raw materials with a high odour impact. However, by the very nature of the classification, all perfume raw materials have either low or high odour impact, the Respondent having provided no arguments from which the Board could reasonably conclude that the fragrance prolonging effect described in document (8) should not work for high odour impact perfume raw materials. Hence these arguments of the Respondent are devoid of merit.

3.6.3 Finally, the Respondent submitted that the invention of document (5) was self-contained, the skilled person having no incentive to move away from the successful pro-accord concept used in the compositions disclosed therein.

However, when the problem underlying the invention is to provide a mere alternative, the skilled person would consider routinely any modification of the closest prior art composition which promises success. There can indeed be many good reasons for providing merely an alternative: in the present case, for example, the pro-perfume approach of document (5) being limited by those chemical modifications that could suitably be made to the perfume raw materials.

3.7 For these reasons, the subject-matter of claim 1 of auxiliary request 4 is not allowable for lack of inventive step pursuant to Article 56 EPC.

3.8 In these circumstances, since the composition of claim 1 of auxiliary request 4 is encompassed by claim 1 of the main request and of auxiliary requests 1 to 3 (see point 2 above), the main request and auxiliary requests 1 to 3 share the fate of auxiliary request 4 in that they too are not allowable for lack of inventive step pursuant to Article 56 EPC.

4. *Other issues*

The Appellant also submitted that the invention was insufficiently disclosed and that the subject-matter of all requests extended beyond the content of the application as filed.

In view of the negative conclusion in respect of inventive step for the subject-matter of all requests as set out in point 3 above, a decision of the Board on these issues is unnecessary.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairwoman:

C. Rodríguez Rodríguez C. Komenda

Decision electronically authenticated