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**Datasheet for the decision
of 16 January 2018**

Case Number: T 0172/15 - 3.3.09

Application Number: 05077655.8

Publication Number: 1661465

IPC: A23C9/154, A23G3/00, A23D9/007,
A23L1/236

Language of the proceedings: EN

Title of invention:
Fat-based confections comprising flavour components

Patent Proprietor:
Mars Incorporated

Opponent:
Nestec S.A.

Headword:

Relevant legal provisions:
EPC Art. 76(1), 84, 83, 56

Keyword:

Amendments - added subject-matter (no)

Claims - clarity (yes)

Sufficiency of disclosure (yes)

Inventive step (yes)

Decisions cited:

Catchword:



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Case Number: T 0172/15 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 16 January 2018

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
14 October 2014 maintaining European patent
No. 1661465 in amended form**

Composition of the Board:

Chairman W. Sieber
Members: J. Jardón Álvarez
E. Kossonakou

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent against the interlocutory decision of the opposition division that European patent No. 1 661 465 as amended met the requirements of the EPC. The patent had been granted on a divisional application of the earlier European patent application No. 02752459.4.

II. The opponent had requested revocation of the patent in its entirety on the grounds of Article 100(a) (lack of novelty and inventive step), (b) and (c) EPC. The documents cited during the opposition proceedings included:

D24: "Food Flavors and Chemistry: Advances of the New Millennium"; The Royal Society of Chemistry 2001, four pages numbered 1 to 4, pages 3 and 4 also numbered, in part, as 72 and 73;

D38: Nestlé Research, "GC-MS Analysis of UK Cadbury Dairy Milk Chocolate", GC-MS data acquired on 15 October 2001 and re-examined on 25 May 2011, 14 pages;

D40: US 3 054 805 A;

D41: Declaration of Angela Ryan dated 26 June 2013 (signed 3 July 2013), 2 pages;

D42: T. Gagliardi - Nestlé Product Technology Centre, York, "Preparation of unflavoured Raw Confection and associated spiked samples for internal sensory analysis", 3 July 2014, 1 page;

D43: T. Gagliardi - Nestlé Product Technology Centre, York, "Sensory report on unflavoured Raw Confection and associated spiked samples for internal sensory analysis", 11 June 2014, 3 pages; and

D44: Declaration of Laura Denise Lukasewycz Overton dated 8 July 2014, 1 page.

III. The opposition division maintained the patent on the basis of the third auxiliary request, claim 1 of which read as follows:

"1. A fat-based confection comprising a fat continuous phase in which material components are dispersed, and the following flavor components: 2-hydroxy-3-methyl-2-cyclopenten-1-one, 2-acetyl furan, 2-acetyl-3-hydroxyfuran, methyl furanoate, 2,5-dimethyl-4-hydroxy-3-(2H) furanone, 3-hydroxy-2-methyl-pyran-4-one, 2-furfural, 2-(5H)furanone, 2-furfuryl alcohol, dihydro hydroxy maltol and 5-hydroxymethyl furfural."

Claims 2 to 6 were dependent claims.

IV. The opposition division's decision may be summarised as follows:

- The subject-matter of claim 1 of the main request and of auxiliary requests 1 and 2 extended beyond the content of the parent application as filed. As a consequence, none of those requests complied with Articles 76(1)/123(2) EPC.
- Claims 1 to 6 of the then pending third auxiliary request fulfilled the requirements of the EPC. In particular, the opposition division held that:

- the subject-matter of claim 1 was clear and supported by the parent application as filed;
- the invention was sufficiently disclosed; and
- the claimed subject-matter involved an inventive step starting from D38 or D24 as closest prior art.

V. The opponent (in the following: the appellant) filed notice of appeal, requesting that the opposition division's decision be set aside and that the patent be revoked in its entirety. The statement setting out the grounds of appeal filed on 24 February 2015 included the following documents:

D46: D. Festring - Nestlé Product Technology Centre, York, "Critical review on flavour compounds - Comments in respect of EP 1 661 465 B1", 24 February 2015 (7 pages);

D47: G.A. Burdock, Fenaroli's Handbook of Flavor Ingredients, Fourth Edition, CRC Press LLC 2002; pages 22, 23, 814 to 817, 636 to 639, 994, 995, 1108, 1109 and 1122 to 1125;

D48: J.C. Leffingwell *et al.*, "GRAS Flavor Chemicals-Detection Thresholds", Perfumer & Flavorist, 1991, Vol. 16, pages 2 to 19;

D49: M. Rychlik *et al.*, "Compilation of Odor Thresholds, Odor Qualities and Retention Indices of Key Food Odorants", Deutsche Forschungsanstalt für Lebensmittelchemie and Institut für Lebensmittelchemie der Technische Universität München,

Garching, Germany, 1998, pages 1, 26, 27, 30, 31, and 54 to 63; and

D50: D. Saison *et al.*, "Contribution of staling compounds to the aged flavour of lager beer by studying their flavour thresholds", Food Chemistry, 114, 2009, pages 1206 to 1215.

- VI. With letter of 13 July 2015 the patent proprietor (in the following: the respondent) disputed the arguments submitted by the appellant and requested that the appeal be dismissed (main request) or, alternatively, that the patent be maintained in amended form on the basis of the claims according to auxiliary requests 1 to 3 submitted therewith.
- VII. In a communication dated 31 July 2017 the board indicated the points to be discussed during the oral proceedings. It also expressed its preliminary opinion that the amendments to claim 1 were allowable and that the requirement of sufficiency of disclosure was met.
- VIII. On 16 January 2018 oral proceedings were held before the board.
- IX. The appellant's relevant arguments may be summarised as follows:
- The earlier application as filed referred to material components such as milk proteins and sugars being dispersed in the fat continuous phase. The wording "such as milk proteins and sugars" was omitted in claim 1. Since, however, this wording limited the material components, its deletion violated Article 76(1) EPC.

- The term "material components" did not have a generally acknowledged meaning in the art, leaving the skilled person in doubt about which components might be covered by the claim.
- The patent failed to disclose the invention in a manner sufficiently clear and complete to allow the skilled person to carry it out throughout the scope of the claim. The patent repeatedly emphasised that very low moisture contents were essential for the fat-based confection, thereby distinguishing it from traditional dulce de leche compositions. However, claim 1 did not include this essential feature and thus included non-workable embodiments.
- The claimed subject-matter lacked inventive step starting from D38 as the closest prior-art document. D38 disclosed a Cadbury chocolate containing all flavour components specified in claim 1 except 2-acetyl-3-hydroxyfuran (isomaltol). There was no experimental evidence on file that the addition of isomaltol to the fat-based composition of D38 in any amount would result in a composition having dulce de leche flavour. Therefore the problem to be solved was merely the provision of a fat-based confection with an alternative composition of flavour ingredients. The addition of isomaltol to the composition of D38 would be obvious for the skilled person in view of D40, which disclosed that isomaltol possessed a caramel-like, somewhat fruity flavour very similar to that of maltol.

X. The respondent's arguments may be summarised as follows:

- The finding in the appealed decision that the requirements of Articles 76(1), 84 and 83 EPC were met was correct.

- The evidence in the patent convincingly showed that the eleven flavour compounds identified in the claimed fat-based confection were correlated with the dulce de leche flavour profile as determined by sensory testing. This finding could not be questioned by the evidence provided by the appellant. In particular, D42 and D43 did not relate to compositions falling within the scope of claim 1. Furthermore, the sensory tests were fundamentally flawed, as they had been made using a form of "degree of difference" testing that only achieved statistical significance when used with a high number of testers. On the other hand, D46 presented assertions unsubstantiated by concrete evidence.

Starting from D38 as closest prior art, the objective technical problem to be solved by the patent was the provision of a fat-based confection having dulce de leche flavour. The claimed solution was not obvious because there was no hint in the prior art at the addition of 2-acetyl-3-hydroxyfuran to the composition of D38 to obtain a dulce de leche flavour. On the contrary, the traditional water-based dulce de leche compositions did not contain 2-acetyl-3-hydroxyfuran and would discourage the skilled person from adding this flavour.

XI. The appellant requested that the decision under appeal be set aside and that European patent No. 1 661 465 be revoked in its entirety.

The respondent requested that the appeal be dismissed (main request) or, subsidiarily, that the patent be maintained on the basis of auxiliary requests 1 to 3 filed on 13 July 2015.

Reasons for the Decision

MAIN REQUEST

1. Amendments (Articles 76(1)/100(c) EPC)

1.1 Claim 1 is based on claim 38 of the parent application as filed, relating to a fat-based confection. During examination the wording "fat-based confection" was amended to "fat-based confection comprising a fat continuous phase in which material components are dispersed".

1.2 Support for this amendment is found on page 7, lines 4 to 6, of the parent application as filed, where it is stated:

"As used herein, "fat-based" refers to a material having a fat/lipid continuous phase in which material components such as milk proteins and sugars are dispersed".

1.3 The appellant objected to the amendment because claim 1 lacked the reference to "such as milk proteins and sugars" present in the above paragraph. In its view this omission amounted to a generalisation of the term "material components".

1.4 The board notes, however, that the expression "such as milk proteins and sugars" in the above sentence has no limiting effect, the use of milk proteins and sugars being merely optional in this context (see also Guidelines for Examination in the EPO, Chapter F-IV, 4.9, concerning the interpretation of expressions like "preferably", "for example", "such as", etc.). The deletion of these optional features does not create new material components covered by the amended claim which were not covered by the parent application as filed.

1.5 For these reasons the board is satisfied that the amendment is not open to objection under Articles 76(1)/100(c) EPC.

2. *Amendments (Article 84 EPC)*

2.1 The appellant objected to the term "material components" as being unclear because it would leave the skilled reader in doubt about which kind of components might be covered by claim 1.

2.2 The board disagrees. The term "material components" is a straightforward expression with a common sense interpretation. As stated in the appealed decision, the skilled person is well aware which material components can be included in a fat-based confection. The specification itself discloses that milk proteins and sugars are suitable material components (see paragraph [0023]) and that further ingredients would include, without limitation, emulsifiers such as mono and diglycerides, salt and stabilisers such as disodium phosphate (see paragraph [0031]).

2.3 The term "material components" is admittedly quite broad, but the broadness of the term does not result in

a lack of clarity. In any case, the appellant has not provided any example of a possible ingredient for which it would not be clear whether or not its use would be embraced by the claim.

2.4 For these reasons the board concludes that the subject-matter of claim 1 is clear.

3. *Sufficiency of disclosure*

3.1 The invention is directed to a fat-based confection comprising a fat continuous phase in which material components and eleven specific flavour components are dispersed. The patent specification gives information as to how to prepare the fat-based confection (see paragraphs [0021] to [0034]) and includes two working examples of how to prepare a fat-based confection as claimed (examples 1 and 2).

3.2 The appellant has not shown that the examples of the patent could not be reproduced or that an embodiment of the invention could not be carried out. There is no evidence on file that a fat-based confection according to claim 1 could not be prepared by the skilled person. On the contrary, the appellant filed an experimental report on preparing an unflavoured raw confection following the teaching of example 1 of the patent (cf. D42).

3.3 In these circumstances, the board is satisfied that the requirement of sufficiency of disclosure is met.

3.4 The appellant further argued in respect of sufficiency of disclosure that claim 1 did not refer to the requirement of a low moisture content, even though this was an essential feature.

However, lack of an essential feature in an independent claim is normally to be dealt with under clarity and support requirements, that is to say under Article 84 EPC (see Case Law of the Boards of Appeal of the EPO, 8th edition 2016, Section II.A.3.2), rather than under sufficiency of disclosure. This objection of the appellant can therefore not question the finding above that the invention is sufficiently disclosed.

4. *Inventive step*

4.1 The invention relates to a fat-based confection having a smooth and creamy mouthfeel and a thermally generated dulce de leche flavour. According to the specification, the high water content of known water-based dulce de leche compositions imposes limits on the types and quality of the products which can be made by using them. Normally they are difficult to process.

The invention aims to overcome these drawbacks of water-based dulce de leche compositions by providing a fat-based confection having the same rich dairy flavour as a water-based dulce de leche, but offering a much greater degree of product design freedom, improved shelf life, better texture and simple processing (see paragraph [0008] of the specification).

4.2 Closest prior art

4.2.1 As the closest prior art the appellant relied only on D38, which is a commercially available chocolate bar.

4.2.2 D38 shows the GC-MS analysis of Cadbury Dairy Milk Chocolate purchased in a supermarket in York, UK, in

October 2001, which was carried out by members of the Nestlé R&D Centre in York on 15 October 2001.

It was undisputed that the Cadbury's chocolate contains all the flavour components specified in claim 1 (see D38, page 3) except for 2-acetyl-3-hydroxyfuran.

4.2.3 As to its flavour profile, the Cadbury's product has a chocolate essence aroma that is not characteristic of dulce de leche. According to declaration D44, "[it] exhibits a flavour profile which is entirely different to the characteristic flavour profile of dulce de leche" (point 2, last sentence).

4.3 Problem and solution

4.3.1 According to the respondent, the technical problem underlying the patent in suit in view of D38 is the provision of a fat-based confection having a dulce de leche flavour (see page 8 of the reply to the statement setting out the grounds of appeal, point 6.35).

4.3.2 This problem is solved by the fat-based confection of claim 1 which, in addition to the ten flavour compounds present in D38, contains 2-acetyl-3-hydroxyfuran.

4.3.3 As evidence that the problem has indeed been solved, the respondent relied on the information provided in the patent itself. Example 1 provides a dulce de leche flavoured fat-based confection having the same flavour profile as a water-based dulce de leche composition (see paragraph [0063] in the "Sensory Testing" section). The fat-based confection of example 1 was also analysed by GC-MS and found to contain the eleven flavour ingredients of claim 1 (see table 4 of the patent in the "Analytical Testing" section).

- 4.3.4 It follows from these results that the eleven flavour compounds in this combination yield a dulce de leche flavour when present in a fat-based matrix.
- 4.3.5 The appellant disputed that the problem identified above was credibly solved. It essentially argued that it had not been demonstrated that the addition of 2-acetyl-3-hydroxyfuran in any concentration would change the flavour of the chocolate analysed in D38 at all. It further argued that there was no experimental evidence that the use of the claimed flavour ingredients in any concentration or in isolation from the dulce de leche-like preparation manufactured according to the procedure in example 1 would provide the desired dulce de leche flavour. It relied on experimental evidence D42 and D43, filed during the opposition proceedings, and on the newly filed D46 to support its arguments.
- 4.3.6 The board is not persuaded. First of all, it is noted that there is no experimental evidence on file showing that an embodiment according to the invention does not have the required dulce de leche flavour. The evidence relied on by the appellant may be summarised as follows:
- D42 and D43 describe the production and taste testing of a fat-based confection containing only four of the eleven flavour compounds required by claim 1. D43 concludes that:

"The overall conclusion of the tasting is that the 4 molecules added in an unflavoured base at either the minimum or maximum levels stated by the patent do not bring a characteristic dulce de leche flavour attribute; at minimum levels, the molecule

addition is not clearly perceived and at maximum levels, only a faint caramel flavour is detected while a predominant burnt/bitter note is present" (page 3, under "Conclusion").

- D46 is a critical review of flavour compounds and comments in respect of the patent made by an employee of the appellant. It gives information on aroma thresholds of most of the components of claim 1 (see pages 2 and 3) and concludes that, even taking into account that the evaluation of odour thresholds was performed in water,

"the high discrepancy between concentrations and threshold values implies that an effect of these molecules on the flavour of the finished product is highly questionable." (page 4, fourth paragraph).

Given that the compositions tested in D42 and D43 are not compositions falling within the scope of claim 1 (which contain a further seven flavour compounds), they are not relevant when assessing inventive step for the subject-matter of claim 1. They cannot provide any information as to whether the compositions of claim 1 solve the problem of the invention or not.

Similar considerations apply to D46, which merely summarises the doubts of an employee of the appellant that all the embodiments covered by the claim would solve the problem of the invention. It cannot provide evidence for the appellant's objection raised during the oral proceedings that it was not credible that the addition of 2-acetyl-3-hydroxyfuran to the composition of D38 in an amount below its detection threshold would provide a dulce de leche flavour.

In this context it is noted that, in the field of the invention, it is generally known that the perception of a certain flavour is dependent not only on the individual compound but on the combination and amount of all the compounds present in the composition. Results obtained with four flavour compounds as in D42/D43 cannot provide usable information about the flavour of the claimed combination of eleven flavour compounds.

4.3.7 To summarise, the fat-based composition of example 1 of the patent containing the eleven flavour compounds recited in claim 1 has a dulce de leche flavour profile. In the absence of experimental evidence to the contrary, the board is satisfied that the above problem of providing a fat-based confection having a dulce de leche flavour has indeed been credibly solved over the whole scope of claim 1. Therefore this problem constitutes the objective technical problem.

4.4 Obviousness

4.4.1 It remains to be decided whether, in view of the available prior art, it would have been obvious for the skilled person to solve the technical problem as defined above by the means claimed.

4.4.2 In this context the appellant relied on D40, which discloses that 2-acetyl-3-hydroxyfuran has "a caramel-like, somewhat fruity flavor very similar to that of maltol" (see column 1, lines 34 to 36). In its view, the skilled person would be motivated to additionally include 2-acetyl-3-hydroxyfuran in the Cadbury Dairy Milk Chocolate of D38 in order to provide an alternative composition.

- 4.4.3 The board, however, disagrees. As pointed out above, the objective technical problem is not to provide some kind of alternative to the composition of D38 but to provide a fat-based confection having a dulce de leche flavour. The skilled person would not have been motivated at all by D40 to modify the Cadbury Dairy Milk Chocolate of D38 to provide a composition having a dulce de leche flavour. D40 does not contain any teaching regarding dulce de leche flavour that could provide a hint at such use. Moreover, as pointed out by the respondent, 2-acetyl-3-hydroxyfuran is not present at all in the traditional water-based dulce de leche composition (see table on page 9 of the reply to the grounds of appeal).
- 4.4.4 It is indeed surprising that, in order to obtain the dulce de leche flavour in a fat-based composition, the skilled person needs to add a compound that is not present in the water-based dulce de leche composition itself, and needs to do so in combination with the other ten components recited in claim 1.
- 4.4.5 For these reasons, the subject-matter of claim 1 and, by the same token, of dependent claims 2 to 6 involves an inventive step.

AUXILIARY REQUESTS 1 TO 3

5. Since the main request is allowable, there is no need for the board to deal with these requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



M. Cañueto Carbajo

W. Sieber

Decision electronically authenticated