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

Case Number: T 0720/97 - 3.3.2

Application Number: 92301815.4

Publication Number: 0502697

IPC: A23G 1/00

Language of the proceedings: EN

Title of invention:

Chocolate and chocolate-utilizing food

Patentee:

FUJI OIL COMPANY, LIMITED

Opponent:

UNILEVER N.V.

Headword:

Chocolate/FUJI OIL COMPANY

Relevant legal provisions:

EPC Art. 56, 84, 113(1)

EPC R. 57a

Keyword:

"Amended claims: clarity (yes), novelty (yes), inventive step (yes)"

Decisions cited:

T 0002/80, T 0013/83

Catchword:

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Case Number: T 0720/97 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 13 November 2002

Appellant: FUJI OIL COMPANY, LIMITED
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Respondent: UNILEVER N.V.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 6 May 1997 revoking
European patent No. 0 502 697 pursuant to
Article 102(1) EPC.

Composition of the Board:

Chairman: P. A. M. Lançon
Members: G. F. E. Rampold
W. U. Hoffmann

Summary of Facts and Submissions

I. The appellant is proprietor of European patent No. 0 502 697 which was granted with 10 claims in response to European patent application No. 92 301 815.4. Claims 1, 2 and 4 of the application as originally filed and the patent as granted were worded as follows:

- "1. A chocolate the oil ingredient of which comprises 10-80 wt% of di-saturated mono-unsaturated glycerides and 20-90 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, at least 35 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate.
2. A chocolate as claimed in claim 1 wherein the oil ingredient comprises 30-80 wt% of di-saturated mono-unsaturated glycerides, 20-70 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 0-6 wt% of tri-saturated glycerides, at least 35 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate.
4. A chocolate as claimed in claim 1 wherein the oil ingredient comprises 10-70 wt% of di-saturated mono-unsaturated glycerides, 30-90 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 40 wt% or less of tri-saturated glycerides, at least 35 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate, the softening or melting point of the chocolate oily components being 27°C

or lower."

II. The respondent filed notice of opposition requesting revocation in full of the European patent pursuant to Article 100(a) EPC on the grounds of lack of novelty and inventive step. These grounds for opposition were supported by the following citations:

(1) N.V. Lovegren, M.S. Gray, R.O. Feuge, "Sharp-Melting Fat Fractions from Cottonseed Oil", J. of the American Oil Chemists' Society, vol. 50, May 1973, pp. 129-131;

(2) US-A-3 431 116.

III. In addition to the above citations submitted by the respondent, the appellant relied in the course of the opposition and subsequent appeal proceedings on the following publication:

(3) R.O. Feuge, Betty B. Gajee, N.V. Lovegren, "Cocoa Butter-like Fats from Fractionated Cottonseed Oil: I. Preparation", J. of the American Oil Chemists' Society, vol. 50, February 1973, pp. 50-52.

IV. The opposition division revoked the European patent under Article 102(1) EPC for lack of inventive step.

There was, in the opinion of the opposition division, only a minor difference between the lower limit of 20 wt% of SU_2 plus U_3 in the oil ingredient of the chocolate claimed in claim 1 of the patent in suit in comparison with the calculated proportion of 19.1% SU_2 in the stearine fraction designated as fat C-S in (1). With reference to this minor difference in the

composition of the oil ingredients and the suggestion in (1) of using the stearine fraction, ie fat C-S, for enrobing frozen confections due to its satisfactory flexing characteristics, the opposition division considered that the chocolate according to claim 1 merely represented an obvious alternative to the cited state of the art.

V. The appellant lodged an appeal against the decision of the opposition division. In the statement setting out the grounds of appeal it requested unconditionally that the patent be maintained in amended form on the basis of an amended set of claims 1 to 8 and a consequentially amended description, both submitted together with the statement setting out the grounds of appeal. The amended claims read as follows:

- "1. "A chocolate the oil ingredient of which comprises 40-80 wt% of di-saturated mono-unsaturated glycerides and 20-60 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 1-4 wt% of trisaturated glycerides, at least 40 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate.
2. Use of a chocolate as claimed in claim 1 for moulding at room temperature.
3. A chocolate the oil ingredient of which comprises 10-70 wt% of di-saturated mono-unsaturated glycerides, 30-90 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 40 wt% or less of trisaturated glycerides, at least 35 wt% of said di-saturated

mono-unsaturated glycerides being di-saturated mono-linoleate, the softening or melting point of the chocolate oily components being 27°C or lower.

4. Use of a chocolate as claimed in claim 3 in frozen desserts.
 5. A chocolate as claimed in claim 1 which has a sheet-like shape.
 6. A method for the production of a chocolate-utilizing food comprising the steps of supplying a chocolate according to claim 1 together with an internal food material to an encrusting machine and thereby wrapping up the internal food material in the chocolate.
 7. A frozen dessert having a surface which is coated with a chocolate as claimed in claim 3.
 8. A frozen dessert comprising a chocolate as claimed in claim 3 as a center piece."
- VI. In the appeal statement, the appellant submitted that the patent in suit as amended presented two independent claims, namely claims 1 and 3, which reflected the two aspects of the invention which were already clearly described and explained in the description of the application as originally filed and the patent as granted. Specifically, the first aspect of the invention which was now defined in claim 1 provided a solution to the problem of obtaining a chocolate having suitable moulding properties, with flexibility and shape retention at around room temperature together with a satisfactory mouth feel. The problem of the

prior art which was solved by the second aspect of the invention, was that of providing a chocolate which was suitable for making frozen desserts and which had nevertheless both a satisfactory short cooling (drying) time together with satisfactory mouth feel and appropriate softening or melting point.

The Examples and Comparative Examples which were identified in the decision under appeal as being unsuitable for solving the problems posed fell now without exception outside the scope of the amended claims presently on file.

The appellant further contended that in the decision under appeal the opposition division only considered claim 1 as it then stood, but did not consider claims 2 and 4, the subject-matter of which was now presented in independent claims 1 and 3 respectively. Citation (1) addressed neither of the particular sets of problems in the prior art to be solved by the claimed invention and gave no teaching or guidance to the skilled person which would lead either to claim 1 or claim 3 as now presented.

- VII. In its reply to the statement setting out the grounds of appeal, the respondent objected that the chocolate composition of Comparative Example 5(b) was still covered by claim 3 as now on file. It essentially argued that, as the data given in Table 2 had shown, the composition of Comparative Example 5(b) did not solidify and that such a non-crystallising composition could not reasonably solve the problems as indicated in Table 4. The respondent concluded therefrom that claim 3 as amended still covered chocolate compositions which did not solve the problems as indicated to be

solved by these compositions and that the subject-matter of claim 3 was accordingly still not inventive.

- VIII. In its reply to the respondent's objection, the appellant submitted in its letter dated 5 May 1998 that Table 2 of the patent specification illustrated and supported the scope of claim 1. Although the respondent had argued that the composition of Comparative Example 5(b) did not solidify, Table 2 illustrated whether the composition solidified as chocolate upon cooling to 5°C or not. On the other hand, Table 4 of the specification illustrated and supported the scope of claim 3. The chocolate compositions shown in Table 4 were used as the coating of ice cream and the drying time was measured. Since ice cream was frozen, the composition of Comparative Example 5(b), which was covered by present claim 3, was cooled to a much lower temperature than 5°C and was thus solidified. The appellant concluded therefrom that the respondent had overlooked this difference in cooling temperature.
- IX. A copy of the appellant's letter mentioned above was sent to the respondent by registered letter posted on 13 May 1998. No reply or comments to the appellant's submissions mentioned above were received from the respondent.
- X. By a board's communication dated 15 April 2002, the rapporteur drew the appellant's attention to the fact that the amendments effected to the claims after grant emphasised a problem of clarity, since the proportions given for the individual components of the oil ingredients of the chocolate products claimed in claims 1 and 3 as amended added up to a total of more than 100%. The applicant was further informed that,

according to the consistent case law of the Boards of Appeal (see eg T 2/80, OJ EPO 1981, 431; T 13/83, OJ EPO 1984, 428) a claim for a mixture consisting of at least two components or for a composition containing such a mixture does not satisfy the requirements laid down in Article 84 EPC if the proportions given for the components do not add up to the requisite total (100% in the case of percentages) for each mixture claimed.

XI. With its reply to the board's communication, filed by faxed letter on 17 June 2002, the appellant submitted an amended set of claims 1 to 8. Current independent claims 1 and 3 read as follows:

- "1. "A chocolate the oil ingredient of which comprises at least 40 wt% of di-saturated mono-unsaturated glycerides at least 20 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 1-4 wt% of trisaturated glycerides, at least 40 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate.

3. A chocolate the oil ingredient of which comprises at least 10 wt% of di-saturated mono-unsaturated glycerides, at least 30 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 40 wt% or less of trisaturated glycerides, at least 35 wt% of said di-saturated mono-unsaturated glycerides being di-saturated mono-linoleate, the softening or melting point of the chocolate oily components being 27°C or lower."

Claims 2, 4, 5 and 6 to 8 in the current set of

claims are identical with the corresponding claims filed together with the statement setting out the grounds of appeal (see paragraph V above).

- XII. A copy of the appellant's reply filed on 17 June 2002 to the board's communication of 15 April 2002 was sent by the appellant on 17 June 2002 directly to the respondent and by the EPO by registered letter posted on 27 June 2002. No reply or comments were received from the respondent either to the board's communication mentioned above or to the reply of the appellant to this communication.

- XIII. The appellant requested that the decision under Appeal be set aside and that the patent be maintained in amended form on the basis of claims 1 to 8 filed on 17 June 2002 and the description as filed with the statement of the grounds of appeal.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

- 1. The appeal is admissible.

- 2. The current version of the claims is supported by the application as originally filed as follows:
 - 2.1 Present claim 1 is basically derived from originally filed claim 1 in combination with dependent claim 2 (see paragraph I above), but is now restricted to the particular chocolate composition which is disclosed on page 9 of the original description at lines 12 to 16; such a claim would contain 40-80 wt% of di-saturated

mono-unsaturated glycerides, 20-60 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 1-4 wt% of trisaturated glycerides (see paragraph V above). A person skilled in the art reading this part of the description would realise that the individual glyceride components should be selected from the defined ranges so that the total amount of the glyceride components adds up to 100%. Thus, the upper limits of di-saturated mono-unsaturated glycerides and di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides are redundant, since they are inherently defined by the respective lower limit of each of these components.

2.2 Present independent claim 3 basically results from a combination of originally filed claim 1 and dependent claim 4 (see paragraph I above); such a claim would contain 10-70 wt% of di-saturated mono-unsaturated glycerides, 30-90 wt% of di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides, and 40 wt% or less of trisaturated glycerides (see paragraph V above). For the reasons given in point 2.1 above in respect of claim 1, the upper limits of di-saturated mono-unsaturated glycerides and di-unsaturated mono-saturated glycerides plus tri-unsaturated glycerides are redundant as they are inherent from the lower limits of the ranges of these components.

2.3 The other claims are based on the original ones in the following order:

present claims: 2, 4, 5, 6, 7, 8;

original claims: 3, 5, 6, 8, 9, 10.

- 2.4 The claims under consideration in the present decision are therefore acceptable as being supported by the disclosure of the application as filed and complying in this formal respect with the provisions of Articles 84 and 123(2) EPC. Moreover, the present claims do not extend the protection conferred when compared to the claims as granted and are therefore also acceptable under the terms of Article 123(3) EPC.
- 2.5 The consequential amendments to the description and the designation of former Examples 5 and 6 in Table 2 on page 7 of the amended specification as Comparative Examples 5(a) and 6(a) respectively, are also acceptable under the terms of Article 123(2) EPC.
- 2.6 The proposed amendments can fairly be said to be occasioned by grounds for opposition specified in Article 100(a) EPC and are therefore admissible under the terms of Rule 57a EPC.
3. None of the citations available in the proceedings before the board discloses a chocolate composition containing an oil or fat ingredient corresponding to that of the chocolates defined in either claim 1 or claim 3. The board therefore sees no reason to depart from the finding of the opposition division in the impugned decision that the claimed subject-matter in the patent in suit is novel within the meaning of Article 54(1) EPC. Since novelty was no longer contested in appeal proceedings, no detailed reasoning in this respect is required.
4. All three prior art documents (1) to (3) on file in the present proceedings stem from substantially the same team of authors and all three relate, *inter alia*, to

the isolation and characteristics of the by-product or high-melting point stearine fraction obtained in the winterization of cottonseed oil. Citations (2) and (3) are principally concerned with the complete and selective hydrogenation of the above-mentioned stearine fraction to obtain cocoa butter-like confectionery fats rich in disaturated mono-linoleate ("SLS") or so called "hard butters".

On the other hand, citation (1) refers to three different samples of the above-mentioned stearine fraction. Each sample was obtained from a different commercial processor and a different section of the country. Each of these three samples was subjected to further fractionation to obtain a semi-solid fat and then to filtration to remove the liquid phase. The products recovered from the filter cake are identified in (1) as fats A-S(olid), B-S and C-S respectively, and those recovered from the filtrate as A-L(iquid), B-L and C-L.

On the basis of a combination of various selected data obtained from all three citations (1) to (3), fat C-S could roughly be calculated to contain from 16.1 wt% to 19.1 wt% SU_2 plus U_3 (fraction A-S: 5 wt%, fraction B-S: 13% wt%) and accordingly, from 79.9 wt% to 83.9 wt% of di-saturated mono-unsaturated glycerides (hereinafter referred to as " S_2U "). The S_2L (di-saturated mono-linoleate, eg 2-linoleodipalmitin) content of the S_2U triglycerides in fat C-S has been calculated to be about 80 wt% (see for these calculations: points 2.1 to 2.6 of the notice of opposition and the appellant's reply dated 17 July 1996, especially points 2.1 to 2.3).

Citation (1) indicates that samples of each of the stearins A-S, B-S and C-S, when stored at room temperatures and then placed in the mouth, melted with a pleasing, cooling sensation and suggests their potential utility in the formulation of special food products, for example, in formulations for enrobing frozen confections. Citation (1) further discloses that stearine fraction C-S displayed a better performance in semiquantitative measurements of brittleness made at -22°C than fat B-S, fat A-S and coconut oil in that order (see page 131, left-hand column, first full paragraph to end of right-hand column).

4.1 On the basis of the above observations stearine fraction C-S disclosed in (1) is considered to be the closest state of the art with regard to structure and application available in the present proceedings. Given this closest state of the art the technical problem underlying claim 1 - in line with the description of the application as filed and the patent in suit as amended (see especially page 5, lines 8 to 9 and 13 to 16; page 6, lines 1 to 16; Examples 1 to 4 and 7 to 10) - is to provide a chocolate having suitable moulding properties, good flexibility characteristics and shape retention at around room temperature together with a satisfactory mouth feel. The solution of the problem is the provision of the chocolate comprising the particular oil ingredients in the specific proportions specified in claim 1.

4.2 In view of the test results given in Table 2 for the chocolates of Examples 1 to 4 in conjunction with the additional results reported in Examples 7 to 10 and in the absence of any evidence to the contrary, the board is satisfied that the technical problem as defined

above has been plausibly solved by the chocolate composition as defined in claim 1.

On the other hand, as can be seen from Comparative Examples 1 and 2 in Table 2, chocolates containing too high a content of S_2U (ie 89.1 wt% and 88.1 wt% respectively) and too low a content of SU_2 plus U_3 (ie 8.0 wt% and 9.0 wt% respectively) in the oil ingredients [both the values of S_2U and SU_2 plus U_3 are outside the possible ranges claimed in claim 1] were easily broken in the test for flexing characteristics.

Comparative Example 3 demonstrates that a chocolate having too low a proportion of S_2L (31.5 wt%) in S_2U similarly shows unsatisfactory flexing characteristics.

Amounts of S_2U (39.5 wt%) below the lower limit specified in claim 1 are shown in Comparative Example 5(a) to degrade the shape retention of the chocolate at 25°C. The same is true if the chocolate contains S_2U in an amount of only 16.3 wt% (lower limit in claim 1 is 40 wt%) but 81.7 wt% SU_2 plus U_3 [see Comparative Example 5(b)]. In this extreme case it was impossible to obtain a solidified chocolate at 5°C.

Finally, amounts of trisaturated glycerides (hereinafter referred to as " S_3 ") below the lower limit specified in claim 1 are shown in Comparative Example 6(a) to degrade the shape retention, whereas too large amounts of S_3 exceeding the upper limit specified in claim 1 are shown in Example 6(b) to give poor flexing characteristics.

4.3 There is nothing whatever in the cited state of the art to suggest to a person skilled in the art that the

technical problem set out above be solved by the provision of a chocolate, the oil ingredient of which comes close with respect to its composition to that specified in claim 1. Apart from the fact that citation (1) does not relate to chocolate or food products containing chocolate, this closest prior art is not concerned with compositions that can readily be deformed into any shape at room temperature.

Moreover, as can be seen from the comparative data provided in the patent in suit (see point 5.2 above), not only the proportions of SU_2 plus U_3 and of S_2U in the oil ingredients but also that of S_2L in S_2U and that of S_3 in the oil ingredients play an important role in the successful solution of the problem posed. The state of the art contains nothing that could suggest to the skilled person that adherence to the particular proportions of S_2L in S_2U and of S_3 specified in claim 1 was important for the adequate solution of the technical problem. The board is thus of the opinion that the subject-matter of present claim 1 involves an inventive step within the meaning of Article 56 EPC.

The non-obviousness of the chocolate according to claim 1 also imparts an inventive step to the other claimed subject-matters relating to the particular use of such chocolate (see claims 2 and 6) and its provision in a specific shape (see dependent claim 5).

- 4.4 Starting from stearine fraction C-S disclosed in (1) as the closest prior art, the technical problem underlying claim 3 - in line with the description of the application as filed and the patent in suit as amended [see especially page 5, lines 17 to 24; page 6, lines 17 to 28; Examples 11 to 18, Comparative

Example 5(b)] - is to provide a chocolate which is useful for making frozen desserts and which has both a satisfactory short cooling (drying) time together with satisfactory mouth feel and softening or melting point. The solution to the problem is the provision of the chocolate comprising the particular oil ingredients in the specific proportions specified in claim 3.

- 4.5 On the basis of the test results given for the chocolates according to Examples 11 to 18 and in the absence of any evidence to the contrary, the board is satisfied that the technical problem defined above has been plausibly solved by the chocolate composition as defined in claim 3. As the appellant has correctly stated in its letter dated 5 May 1998, the chocolate of Comparative Example 5(b) falls within, and supports, the scope of claim 3, as this type of chocolate is useful in the preparation of frozen desserts. The board therefore considers the respondent's objections raised in its reply to the appeal statement in connection with Comparative Example 5(b) as entirely unfounded.

On the other hand, as can be seen from the results obtained in Comparative Examples 11 and 14 in Table 4, chocolates containing too low a content of S₂U in the oil ingredients (ie 6.7 wt%, see Comp. Ex. 11) or too low a content of S₂L in S₂U (ie 22.3 wt%, see Comp. Ex. 14) exhibit an extremely long drying period and are therefore unsatisfactory.

Comparative Example 12 demonstrates that a chocolate, which contains

- S₂U in an amount of 73.4 wt% [ie an amount which exceeds the possible upper limit in claim 3 but

which is still **smaller than the amount of 79.9 wt% to 83.9 wt% S₂U calculated for fat C-S disclosed in (1), see point 5 above]** and

- SU₂ plus U₃ in an amount of 25.8 wt% [ie an amount which is below the lower limit of 30 wt% specified in claim 3 but which **considerably exceeds the amount of from 16.1 wt% to 19.1 wt% SU₂ plus U₃ calculated for fat C-S disclosed in (1), see point 5 above]**,

has a high melting point of more than 30°C. Such a high melting point has the disadvantage of degrading the property and capability of the chocolate of melting in the mouth and, accordingly, its usefulness for frozen desserts.

Finally, as can be seen from the results in Comparative Examples 13 and 15 chocolates, which contain

- SU₂ plus U₃ in amounts of 28.1 wt% and 29.4 wt% respectively [ie amounts which are both smaller than that of 30 wt% minimum SU₂ plus U₃ claimed in claim 3 but which nevertheless considerably **exceed the amount of from 16.1 wt% to 19.1 wt% SU₂ plus U₃ calculated for fat C-S disclosed in (1) - see point 5 above]** and
- S₂L in S₂U in an amount of 13.6 wt% and 10.4 wt% respectively [both these values are below the limit of 35 wt% specified in claim 3],

fail to give a soft mouth feel.

4.6 The comparative data referred to above provide

appropriate evidence that the use of fat C-S disclosed in (1) in chocolate compositions would not solve the technical problem set out above. Moreover, as can be inferred from the comparative data, the solution proposed in claim 3 offers certain unexpected advantages and improvements and is therefore more than a mere alternative to the closest state of the art according to citation (1). There was no indication or hint in any of the cited documents that the specific balance between the proportions of all the components in the oil ingredients specified in claim 3, ie SU_2 plus U_3 , S_2U , S_2L in S_2U and S_3 , would be the key criterion for the successful solution of the problem posed. For these reasons the board is of the opinion that there is nothing in the cited state of the art that could lead the skilled man to modify the teaching of citation (1) in such a way that it fell within the terms of present claim 3. The board is thus of the opinion that also the subject-matter of present claim 3 involves an inventive step.

The non-obviousness of the chocolate according to claim 3 also imparts an inventive step to the other claimed subject-matters relating to its use (claim 4) and to frozen desserts comprising such chocolate (claims 6 and 7).

5. In the present case the respondent was informed of the grounds for appeal by registered letter posted on 29 September 1997 and filed its observations on 14 January 1998. Neither of the parties requested oral proceedings.

The present decision is based on the facts, grounds and evidence brought to the respondent's attention in the

statement setting out the grounds of appeal. The board is satisfied that the respondent's sole remaining objection in its reply to the appeal statement concerning the patentability of claim 3 has been overcome by the arguments presented in the appellant's letter of 5 May 1998 (see for the reasons first paragraph of point 5.5 above).

In the present decision, the board adopted these arguments which had been known to the respondent since end of May 1998 (see paragraphs VII and VIII above). Consequently, the board's decision to maintain the patent in amended form does not contravene the respondent's procedural rights as laid down in Article 113(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in an amended form on the basis of claims 1 to 8 filed on 17 June 2002 and the description filed on 15 September 1997 together with the statement of the grounds of appeal.

The Registrar:

The Chairman:

A. Townend

P. A. M. Lançon