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D E C I S I O N
of 9 September 1997

Case Number: T 0049/93 - 3.3.4

Application Number: 87201828.8

Publication Number: 0264149

IPC: A23D 7/00

Language of the proceedings: EN

Title of invention:
Edible fat product and a process for preparing such product

Patentee:
Unilever N.V., et al

Opponent:
Krayer, Warner Dirk

Headword:
Edible fat product/UNILEVER

Relevant legal provisions:
EPC Art. 54, 56, 83, 84

Keyword:
"Sufficiency of disclosure (yes)"
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
T 0154/90

Catchword:
-

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Case Number: T 0049/93 - 3.3.4

D E C I S I O N
of the Technical Board of Appeal 3.3.4
of 9 September 1997

Appellant: (Opponent)
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Respondent: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 5 November 1992 rejecting the opposition filed against European patent No. 0 264 149 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: U. M. Kinkeldey
Members: R. E. Gramaglia
J. Saisset

Summary of Facts and Submissions

I. European Patent No. 0 264 149 with the title "Edible fat product and a process for preparing such product" was granted for eleven Contracting States with 14 claims and for Austria with 10 claims based on patent application No. 87 201 828.8.

Claim 1 in the granted version for all Contracting States except Austria (non-AT) was as follows:

"1. Edible fat product comprising a fat-continuous phase and an aqueous phase, dispersed in said fat phase, characterized by at least one DSC-peak above 36°C, one or more other DSC-peaks between 20 and 36°C, which have a total surface area between the base line and the line generated by the differential scanning calorimeter at least equal to the peak above 36°C, and the presence of crystallized fat, having a melting point above 36°C, at least 20 wt.% of said crystallized fat being present in the form of fat globules, having a size between 1 and 20 micrometers".

Claims 2 to 4 related to specific embodiments of the fat product of claim 1. Claim 5 was directed to a process for preparing the fat product of claim 1. Claims 6 to 14 were directed to specific embodiments of the process of claim 5.

The claims for Austria (AT) were worded as corresponding process claims.

II. Notice of opposition was filed by the opponent (appellant) requesting the revocation of the patent in accordance to Articles 100(a) and (b) on the grounds of lack of novelty (Article 54 EPC), lack of inventive step (Article 56 EPC) and of lack of sufficiency of disclosure (Article 83 EPC), having regard to the following documents:

(1) DE-A-1 492 955;

(2) H. Mulder and P. Walstra "The milk fat globule. Emulsion science as applied to milk products and comparable foods", Commonwealth Agricultural Bureaux, Farnham, England, page 251 (1974);

(3) English translation of a declaration from "Remia" dated 21 January 1990;

(4) Test report from the NIZO (Nederlands Instituut voor Zuivelonderzoek).

Further documents cited in the present decision are:

(5) A.J. Haigton, Fette, Seifen, Anstrichmittel, volume 65, pages 479 to 482 (1963)

(6) P. Walstra, "Fat Crystallization" in "Food Structure and Behaviour", Academic Press, London, pages 67 to 85 (1987).

III. By its decision issued in writing on 5 November 1992, the opposition division rejected the opposition. As far as novelty was concerned, the opposition division decided that the subject-matter of the claims met the requirements of Article 54 EPC because none of the prior art compositions of documents (1) to (3) exhibited **all** the technical features recited in claim 1. Also inventive step was acknowledged because

the prior art documents, including document (1) representing the closest prior art, neither mentioned the specific problem the patent in suit purported to solve, namely obtaining a product having improved thermostability, improved cycle stability and good oral response, nor contained any hint to the solution of this problem by selecting the technical features of claim 1.

IV. The appellant (opponent) filed a notice of appeal against this decision, paid the fee and filed a statement of grounds of appeal. The respondents (proprietors of the patent in suit) filed counterarguments.

V. The appellant essentially argued as follows:

Sufficiency of disclosure (Article 83 EPC)

- The skilled person would have been unable to obtain the "globules" of fat with the melting point (m.p.) higher than 36°C recited in claim 1 because these "globules" were in fact "porcupine-shaped crystals (dendrites) which were part of a network", as admitted by the respondents.

- The requirements of Article 83 EPC were also not fulfilled because the measuring method recited in claim 1 was so inaccurate that it was impossible to determine with certainty which material came within the claim. Claim 1 prescribed in its second part that at least 20 wt.% of crystallized fat having a m.p. > 36°C should have been present in form of fat globules having a size between 1 and 20 micrometers. However, the size and hence the percentage of the fat crystals having a m.p. > 36°C depended on the temperature and claim 1 did **not** specify the temperature at which the skilled

person should perform the measurement of that percentage. The parameter recited in claim 1 that at least 20% of the fat with a m.p. > 36°C should be crystallized was fulfilled by any fat mixture comprising a higher and lower melting fat, provided the appropriate temperature was selected. Moreover, there was also no information in the patent in suit as to how to count the fat crystals. In other words, owing to these deficiencies, the method for measuring the percentage of fat crystals having a m.p. > 36°C was not sufficiently reliable for an unequivocal determination of the parameter. Therefore, since the skilled person could not determine which product satisfied the claims, there existed a fundamental impossibility to carry out the invention. In support of the above line of argument, a declaration of Prof. Walstra relying on documents (5) and (6) was provided. This declaration from the appellant's expert is dealt with in more detail in point 7 of the "reasons".

Novelty and inventive step (Articles 54 and 56 EPC)

- The appellant stated that the objections under Articles 54 and 56 EPC as submitted at the opposition stage were maintained, however, without submitting any reasoned statement at the appeal proceedings. The objections under Articles 54 and 56 EPC raised before the opposition division can be summarized as follows:

- Differential scanning calorimetry (DSC) analysis performed by the NIZO (see document (4)) on the product of Example 5 of document (1) and on "Vicking", a fat product which had been marketed by Remia before the priority date of the patent in

suit (see document (3)), showed that these products satisfied the requirements of claim 1. Thus, the claimed product was not novel and/or not inventive over the known products.

VI. The respondents essentially argued as follows:

Sufficiency of disclosure (Article 83 EPC)

- The improved properties of the claimed product were due to a unique spatial distribution of the higher and lower melting fats within the product. By following the process of claim 5, this unique spatial distribution of the components could easily be achieved and measured by conventional techniques by carrying out DSC and determining the percentage by weight and the size of the "globules" on a microphotograph.

Novelty and inventive step

- Even by assuming that the DSC curves of the products cited by the appellant ("Vicking" of Remia and Example 5 of document (1)) satisfy the requirement of claim 1, it was impossible to conclude that these products also satisfied the remaining parameter of claim 1 relating to the spatial distribution of the crystallized fat components responsible for the advantageous properties such as good thermal and cycle stability.

VII. The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondents (patentees) requested that the appeal be dismissed.

Reasons for the Decision

Sufficiency of disclosure (Article 83 EPC)

1. The appellant's first objection based on Article 83 EPC arises from the use in claim 1 of the patent in suit of the term "globules" for characterising the crystals of the fat with the higher melting point (m.p. > 36°C) within the fat product instead of the definition as "porcupine-shaped crystals (dendrites) which are part of a network" the respondents admitted to be more correct. Insufficiency of disclosure follows, in the appellant's view, from the skilled person's impossibility to obtain the globules as recited in claim 1.

2. It is not always necessary to identify technical features in a claim in detail. The function of a claim should be distinguished from the requirement that a specification of a European patent must disclose the invention in such a way that it enables a skilled person to carry out the invention. This requirement relates to Article 83 EPC and is not necessarily connected with the requirements of Article 84 EPC. The unfeasibility of the "globules" pointed out by the appellant is at most a case of lack of clarity in the sense of Article 84 EPC (which is no ground for an opposition), because it would mean that the "subject-matter for which protection is sought" is not clearly defined, not that it cannot be arrived at. In fact, as shown below (see point 13 infra), a product according to claim 1 can be arrived at by a skilled person.

3. Nevertheless, a claim must comprise the essential features of the invention. These serve to distinguish the invention from the closest prior art. However imprecise the term "globules" in claim 1 of the patent in suit might be, it is the board's view that it achieves this function for the following reasons:

4. It has not been disputed by anybody that there is a correlation between the spatial arrangement of the fats present in the product of claim 1 and the advantageous properties of this product (see page 4, lines 63 to 65 and page 5, lines 1 to 5). A skilled person must be able to distinguish a product according to claim 1 of the patent in suit having this unique spatial arrangement of the fats and advantageous properties, from a product of the prior art not having them. For doing so, it is proposed in claim 1 of the patent in suit to carry out DSC and determining the percentage by weight and the size of the "globules". It does not matter whether the fat with a m.p. > 36°C crystallizes under the form of globules, porcupine-shaped crystals being part of a network or anything else. The most important criterion is that the percentage by weight and size of the globules, of the porcupine-shaped crystals or of whatever else these particles might be, can be **measured**. Thus, no obligation is placed on the skilled person to further investigate the crystalline structure or the true nature of these "white particles" referred to on page 8, line 18 of the patent in suit, as long as, for the purpose of distinguishing the claimed product from a prior art product, the percentage by weight and the size of these "white particles" can be measured. This can be done. On page 4, lines 33 to 34 of the patent in suit, it is stated that "the size and distribution of the fat globules may be determined by conventional light microscopy techniques". An example of this technique is illustrated for the product of Example 5 (see page 8,

lines 17 to 20) by Figure 8 which is a microscopic photographic picture of the claimed product wherein 1 mm of this picture corresponds to 10 µm in the products. Thus, it is possible to realize that the crystals of Figure 8 have a diameter from about 1 to about 3 µm as required by claim 1 of the patent in suit and hence it is possible to calculate their average volume, which multiplied by the average number of globules per ml yields the wt.% of this form of crystallized fat with a m.p. > 36°C, after corrections involving the densities. The average number of globules per ml can be deduced from Figure 8 as has been done for Figure 13.3 and Table 13.2 of the prior art document (2). In conclusion, the appellant's objection based on the term "globules" is not convincing.

5. The second objection of insufficiency of disclosure (Article 83 EPC) was raised in view of the fact that the measuring method of one parameter recited in claim 1 was flawed: the claim did not specify the temperature at which the skilled person should perform the measurement of the percentage of the fat crystals having a m.p.> 36°C and moreover there was also no information in the patent in suit as to how to count the fat crystals. The latter objection has been found by the Board to not to be convincing (see point 4 supra). Thus, only the appellant's objection relating to lack of the indication of temperature at which the skilled person should perform the measurement will henceforwards be dealt with. It is the appellant's point that, owing to this deficiency, a critical parameter used in claim 1 to define the product is unreliable. As a consequence, the skilled person cannot determine which product satisfies claim 1, hence a fundamental impossibility to carry out the invention because the skilled person wishing to reproduce the

invention is prevented from doing so by the impossibility of establishing which product falls under and which product falls outside the scope of the claim 1.

6. In summary, the board is faced with evaluating the measurability of one parameter and its effect on sufficiency of disclosure. It has to be noted that the appellant admitted at the oral proceedings that the process of claim 5 was "operable". Thus, insufficiency of disclosure in the present case does not derive from the skilled person's impossibility to put into practice the method of claim 5 but rather from the impossibility of establishing which product is obtained.

7. That claim 1 has to specify the temperature at which the skilled person should perform the measurement of size and hence the percentage by weight of the fat crystals (m.p. > 36°C) is fundamental because, according to the appellant's expert, Prof. Walstra, it is true that the crystals of the fat with a m.p. > 36°C do not melt between 5°C and ambient temperature (20°C). However they will act as crystallization centres for the lower melting fats and thus the size and hence the weight percent of the globules will grow during cooling and decrease during warming up, thus depending on the temperature at which the measurement is made. The DSC curves of the patent in suit show considerable fat crystallization within the range between 5°C and ambient temperature (20°C).

8. The respondents' answer to this is that the lower melting fat components crystallize completely separated from higher melting fat components and thus the size

and hence the weight percent of the globules would not depend on the temperature at which the measurement is made. This separate crystallization of higher and lower melting fats could be deduced from the DSC curves of the patent in suit.

9. In deciding the issue of which of the two possibilities above is the correct one, the appellant's (higher melting fats act as crystallization centres for the lower melting fats, thus the size of the globules depends on the temperature) or the respondents' (lower melting fat components crystallize completely separated from higher melting fat components, thus the size of the globules does not depend on the temperature), the Board observes the following:

10. It is common general knowledge that DSC curves show that crystals form and/or are disrupted, independently of their location within a product, be these crystals isolated or grafted onto other crystals. Therefore any argument from the parties relying on DSC curves is of no help to the board in deciding this issue.

11. Prof. Walstra cites documents (5) and (6) en bloc, without citing precise passages. In fact, in spite of a careful scrutiny, the board is not able to find any passage in this literature which supports Prof. Walstra's proposition.

12. For these reasons, the evidence adduced by the appellant is not such that the Board considers the contention of the appellant to be more likely to occur than that of the respondents, according to which the size of the globules does not depend on the temperature. Consequently, the Board has to conclude that the objection of insufficiency of disclosure (Article 83 EPC) is not convincing.

13. In the grounds for appeal there was a statement by the appellant that the objections under Articles 54 and 56 EPC as formulated at the opposition stage were maintained, however, without submitting any reasoned statement at the appeal proceedings.

Novelty

14. The appellant has not submitted in writing any further reasons for lack of novelty and thus the Board did not allow under Article 114(2) EPC and in accordance with the established case law of the board of appeal (see e.g. T 154/90, OJ EPO 1993, 505) to plead to novelty during oral proceedings. On the basis of the written submissions before the opposition division, however, the board agrees to the conclusion arrived at by the opposition division (see section III supra).

Inventive step (Article 56 EPC)

The appellant has also not submitted any further reasons for lack of inventive step. On the basis of the written submissions the board comes to the following conclusion:

Closest prior art and problem to be solved

15. The parties agreed, and the board agrees as well, that the closest prior art underlying the fat composition of claim 1 is represented by the composition disclosed by Example 5 of document (1), having regard to the fact that it comprises two fats, one of which has a melting temperature higher than 36°C. The prior art preparations exhibited a thermostability, cycle stability and oral response which were not satisfying, inter alia because the water droplets were surrounded by a shell of high melting triglycerides. The invention thus purports to overcome these drawbacks by providing

a process according to claim 5 and a fat product according to claim 1 of the patent in suit. According to the examples, it is plausible that the problem has been solved.

16. The board has to decide whether the skilled person would have arrived at the claimed fat compositions without exerting inventive skill. The specific problem which the present invention intend to solve is mentioned neither in document (1) nor in any other prior art document. There is also no hint to the solution to this specific problem by selecting the technical features of claim 1. The board agrees to the reasons given by the opposition division (see section III supra). Therefore, also as regards the inventive step, the board comes to the conclusion that the subject-matter of the claims satisfies the requirement of Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

D. Spigarelli U. M. Kinkeldey