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D E C I S I O N
of 25 August 2000

Case Number: T 0573/93 - 3.3.4

Application Number: 83306018.9

Publication Number: 0106620

IPC: A23D 3/00

Language of the proceedings: EN

Title of invention:

Process for preparing a butter-like spread

Patentee:

Dairy Crest Limited

Opponent:

Irish Dairy Board Co-operative Limited
Unilever PLC / Unilever N.V.
Krayner, Warner Dirk

Headword:

Butter-like spread/DAIRY CREST

Relevant legal provisions:

EPC Art. 56, 123(2)

Keyword:

"Amendments - allowable"
"Inventive step - yes"

Decisions cited:

-

Catchword:

-



Case Number: T 0573/93 - 3.3.4

D E C I S I O N
of the Technical Board of Appeal 3.3.4
of 25 August 2000

Appellant I: Krayner, Warner Dirk
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 19 May 1993
concerning maintenance of European patent
No. 0 106 620 in amended form.

Composition of the Board:

Chairman: U. M. Kinkeldey
Members: D. D. Harkness
C. Holtz

Summary of Facts and Submissions

- I. European patent No. 0 106 620 having the title "Process for preparing a butter-like spread" was granted and opposed by three opponents. All the opponents appealed the decision of the opposition division to accept the first auxiliary request and maintain the patent in amended form.
- II. The Board issued a communication prior to arranging oral proceedings. On 24 and 25 November, respectively, opponent 01 withdrew its opposition and its appeal and opponent 02 withdrew its opposition. The oral proceedings, which had been appointed for 7 December 1999, were cancelled after appellant I (opponent 03) had indicated in writing that he would not attend, the respondent having only requested oral proceedings in case the board would not accept its request that the appeal be dismissed.
- III. The main claim as maintained by the opposition division reads as follows;

"A process for producing a butter-like spread by blending cream separated from cows milk with edible triglycerides of non-dairy origin, the blend being churned to form a butter-like spread which is separated from the resulting aqueous phase characterised in that the proportions of the cream and triglycerides of non-dairy origin are such that the triglycerides of non-dairy origin represent at least 35% by weight of the total fat content of the spread and wherein the solid fat content of the triglycerides of non-dairy origin is 15% to 35% by weight at 5°C and 7.5 to 25% by weight at 20°C and is such that the blend of cream and

triglycerides of non-dairy origin is suitable for churning at 5 to 10°C and further characterised in that the proportion of triglycerides of non-dairy origin and solid fat content thereof matches with the composition of the cream to afford a spread having a desired spreadability corresponding with a penetrometer load of less than 800 g when tested at 5°C by a constant speed penetrometer using a cone angle of 45°, a penetration depth of 7 mm and a rate of 1 mm/sec."

IV. The documents relevant to this decision are;

- (1) "Churning of Blends of Dairy Cream and Vegetable Oil" Leaflet published in 1977 by Ets. Simon Freres of Cherbourg, France.
- (2) "Information Concerning Production of Butter Blended with Vegetable Oils in the United States" Leaflet published in 1978 by Ets. Simon Freres of Cherbourg, France.
- (6) "Butterine Made From Rape Oil" by T. Alsafar, J. Inst. Can Sci. Technol. Aliment. Volume 7, No. 3 (1974), pages 220 to 225.
- (9) "Margarine and Other Food Fats - Their History, Production and Use" by M. K. Schwitzer, extracts from pages 235 to 252: published in 1956 by Interscience Publishers Inc., New York, U.S.A.
- (10) "Food Oils and Their Uses" pages 135 to 144, by T. J. Weiss: published in 1970 by the AVI Publishing Company Inc, Westport, Connecticut, U.S.A.

(18) NL-A-7 900 073 = GB-A-1 582 806.

(43) Food Engineering, February 1952, page 111 to 115

(50) AU-A-431 955

(54) Margarine, A. J. C. Andersen and P. N. Williams
second edition. Pergamon Press, 1965, pages 58 to
73.

V. The appellant argued essentially as follows;

Article 123 EPC

The only expressions relating to spreadability, which could be found in the application as originally filed, were "improved spreadability at 5 to 10°C (page 2, line 1) and "spreadability characteristics desired in the final product" (page 4, last line to page 5 first line). Thus no connection could be found between a "desired spreadability and a penetrometer load" let alone a "penetrometer load of less than 800 g". The only place in the original description where mention was made of a value "800" for a penetrometer load was on page 10, line 9. But that value had nothing to do with the spreads according to the proposal, because it related to normal butter. On the basis of this the incorporation of the expression "desired spreadability corresponding with a penetrometer load at 5°C of less than 800 g" into parameter 5 of the main claim, with the aim of "creating a particular meaning" did not meet the requirements of Article 123(2) EPC.

Inventive step

With respect to the solid-fat content of the vegetable oil the originally filed description of the patent in suit on page 4, lines 1 to 15 made it clear, that if the mixture of cream and vegetable oil contained a vegetable oil with the given solid fat content at the given temperatures, it would certainly be churnable at churning temperatures of 5 to 10°C. But the present claim 1 (compare parameter 3) was restricted to the use of a vegetable oil with that solid fat content, so that parameter 4 of that claim, namely,

"The solid fat content of the vegetable oil is such that the mixture of cream and vegetable oil can be churned at 5 to 10°C"

was redundant, added nothing with regard to inventive step, and should be removed.

Only 3 parameters should be taken into consideration for the judgement of inventive step of the subject-matter:

- (1) the preparation of a butter-like spread with improved spreadability at 5 to 10°C, by churning a mixture of cream and a vegetable oil;
- (2) in which spread the quantity of the vegetable oil is at least 35%;
- (3) the solid fat content of the vegetable oil is 15 to 35% at 5°C and 7.5 to 25% at 20°C.

Document (50) described a churned food product possessing at a given temperature a better spreadability and durability than butter and containing

a maximum 30% of the fat content of refined vegetable triglyceride oil.

Document (18) described the production of a butter-like fat product used in the same way as butter and was spreadable at refrigerator temperature, comprising a blend of cream and vegetable oil, which oil constituted 15 to 30% by weight of the total fat content.

Document (2) referred to a process of producing "Butterine" by churning a blend of dairy cream and 25 to 50% of vegetable oil at a temperature of 2°C.

Document (6) referred to a process of production of a similar product, utilizing rape seed oil.

It was known from documents (9) and (10) that the frigospreadability of the products depended largely upon the relative proportion of the liquid and solid glycerides and that it correlated well with SFI measurements of the oil from which it was made.

In document (9) it was stated, that:

The fat phase of a margarine consisted of a blend of fats.... As the margarine manufacturer had a wide range of fats to choose from, his choice depended on the ... type of margarine he wanted to produce.

In document (54), page 59 the expert would find that:

For a fat to be plastic it must consist of a solid and a liquid phase, and the ratio of the two phases and the crystalline character of the solid phase determined the consistency and firmness. As fats and blends of fats

and oils consisted of mixtures of a number of different glycerides with different melting points, the ratio of solid and liquid glycerides varied with the temperature.

The expert, preparing a butter-like product containing a vegetable oil and knowing that butter at refrigerator temperature was by itself relatively hard and thus less spreadable, and knowing also that the reason for this hardness is the relatively high solid fat content of butter (39% at 10°C) would have only one solution to solve this problem i.e. to use a vegetable oil with a solid fat content which was somewhat lower than that of butter at refrigerator temperature.

At 20°C butter was readily spreadable, thus the solid fat content of the vegetable oil used should not be much lower or higher than that of butter at the same temperature. Again, the expert would have had but one choice, which was a vegetable oil with a solid fat content which should be around the value (16%) of the solid fat content of butter at that temperature.

VI. The respondent's submissions are summarised as follows:

Article 123 EPC

It was submitted that the amendments to the patent in suit, in particular the claim of the main request, did not contravene the requirements of Article 123(2) or (3) EPC because the clause "and wherein the solid fat content... by weight at 20°C" corresponds exactly with original claim 5. The clause "and is such that the blend... suitable for churning at 5 to 10°C" was introduced on the basis of the disclosure at page 4,

lines 1 to 4 of the European patent application. In the light of the preceding sentence (page 3, line 24 to page 4, line 1), it was clear that "sufficiently high" referred to the solid fat content being adequate to permit churning of the blend as a whole. The definition of penetrometer load corresponded with the disclosure of the measurement of spreadability using a penetrometer at page 9, line 23 to page 10, line 3. The value of 800 g corresponded with the minimum value recorded for butter as discussed at page 10, lines 8 to 10 of the European patent application. This, taken together with the reference to "improved spreadability" at line 10 on page 2 clearly established the intention that the spreads disclosed in the said application should have a spreadability corresponding with a penetrometer load of less than the minimum recorded for butter, i.e. less than 800 g.

For the purpose of Article 123(2) EPC it was only necessary to enquire whether there was any new disclosure made as a result of introduction of the clause "and further characterised in that ... desired spreadability". The sentence bridging pages 4 and 5 referred to "the spreadability characteristics desired in the final product". It was submitted that this was a disclosure of the idea that there was a "desired spreadability". The early part of this sentence showed that the ingredients for the spread may be manipulated in order to achieve the spreadability characteristics desired in the final product. Variation in the proportion of triglycerides and the solid fat content of the triglycerides were both concepts well explored in this description as originally filed. The deliberate variation of these features and the matching thereof with the composition of the cream were ideas which were

clearly suggested in the sentence bridging pages 4 and 5 of the description which dealt with the particularly preferred embodiment where a hard stock was produced by hydrogenation. The extent of hydrogenation was chosen having regard to the extent and nature of the unsaturation in the non-dairy triglycerides to be used. Those skilled in the art would readily understand this requirement since the effect of hydrogenation was different on different oils and the degree of hydrogenation applied would have different effects on different raw materials.

To the appellant's objection to the inclusion in claim 1 of the feature:

"the solid fat content of the vegetable oil is such that the mixture of cream and vegetable can be churned at 5 to 10°C"

and suggestion to delete this feature it was said that this feature was one which had been present in the claim since before grant and deletion at this stage might lead to criticisms under Article 123(3) EPC.

Inventive step

Document (54) related to various properties of fats and oils. Figure 8 and Table X came from page 72 of this book as could be seen from the more extended extract. It had been argued that "a simple look at the graph and table" would provide teachings about solid fat content at 5°C. Firstly, neither the graph nor the table taught anything directly about solid fat content. Secondly, neither one of these could be confidently extrapolated below 10°C, as could readily be understood by

contemplating the curve for margarine 5 (solid line with solid dots). If one had data only for the temperature range above 25°C and extrapolated to below 25°C, the extrapolated curve would be very different to the real curve at the 20°C point, and by 15°C the extrapolation was completely meaningless. There was no information available from the figure as to whether there were similar discontinuities in the curves for these fat products immediately to the left of the 10°C limit of the data.

The curves for the six margarines shown in Figure 8, were fairly close to the curve for butter. This indicated that the margarines were all rather too hard for spreadability at refrigerator temperatures. The compositions of the margarine blends as shown below Table X tended to confirm this, they were conventional compositions for the hard margarines which were well known before soft "tub" margarines were introduced. The age of these products could be discerned for instance from the fact that almost all of them incorporated whale oil.

In practice, the art of producing blended spreads was one of balancing very many different facets, accepting less than ideal performance in all respects but generating a product which is as good as possible having regard to the current state of technology.

There was no suggestion in the prior art of (a) combining all the features of present claim 1 in order to formulate a process for producing low-temperature spreadable products and (b) that such products have surprising benefits which could not have been predicted from the prior art, so that the present claim 1

involves an inventive step.

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

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 *Amendments, Articles 123(2) and (3) EPC*

The appellant objected that the direct association of "desired spreadability" with the penetrometer load at 5°C of less than 800 g constituted added subject-matter not allowable under Article 123(2) EPC. In the board's judgement, however, this term does not contravene this article because it does not in itself disclose a technical feature not originally disclosed. All the examples take a penetrometer reading in grams as a subjective assessment of the spreadability of the product in each example to be compared with that of butter, thus this association was disclosed in the European patent application as filed. The figure of 800 g as disclosed in the application relates to the normal figure obtained for butter being of a lower spreadability than the products of the patent in suit. This figure in comparison with those obtained in the examples serves to indicate that the products of the invention are more spreadable than is butter, this spreadability being a particular aim of the process of

the patent in suit.

- 2.2 With regard to Article 123(3) EPC the subject-matter of the main claim represents a combination of subject-matter from claims 1 and 5 as granted which restricts the scope of protection.

3. *Sufficiency, Article 83 EPC*

The Board mentioned this point in its communication to the parties and is satisfied that the skilled person would be able without undue burden to prepare using known techniques, e.g. hydrogenation, an edible triglyceride oil having the required solid fat content at 5° and 20°C and to perform the matching process with the cream after having performed an analysis of the cream and edible triglyceride.

4. *Inventive step, Article 56 EPC*

Prior art

- 4.1 Document (1) describes the production of a butterine product prepared by churning cream with various percentages of vegetable oils. Butterine is a generic name used to identify a group of such products having a better spreadability than butter. The disclosure relates to a process for churning dairy cream and soya oil, in a fifty-fifty proportion to produce Butterine. This was done by preparing pasteurised 20% fat cream which was then blended with warm soya oil to give a mixture having a total of 40% fat (20% cream plus 20% soya oil). After homogenisation and crystallization the mixture was churned at 10°C. The aims of this process included the provision of a product having better

- spreadability straight from the fridge and a taste which was closer to butter than margarine.
- 4.2 Document (2) discloses that cream 50% and soya oil 50% have been blended using conventional churns to produce a butter-like spread also known under the trade name Butterine. The Butterine process involved blending "an oil with a melting point 38°C very close to the melting point of cream fat", the mixture was slightly homogenised and churned at a temperature 2°C lower than is used for standard cream.
- 4.3 According to document (6) at column 1 last paragraph, Butterine contained 40% butterfat plus 40% vegetable fat (rape seed oil). Butterine was also said to possess "the flavour and cooking qualities of butter and the economy and spreadability of margarine".
- 4.4 Documents (9) and (10) are publications which discuss in general the production of margarine.
- 4.5 Document (18) also relates to a spreadable (at 6 to 8°C) edible fat made by blending cream and vegetable oil (soya bean oil), the oil amounting to 15 to 30% of the total fat in the edible product.
- 4.6 The disclosure of document (43) relates to a churned margarine which has a texture and body characteristics like those of butter.
- 4.7 Document (50) discusses, at page 2 last paragraph, the spreadability of a blend of cream-vegetable triglyceride (soy bean oil) which triglyceride provides a maximum of 30% by weight of the fat of the product.

4.8 Document (54) in Figure 8 on page 72 shows a comparison of percentage of solid fat glycerides in butter and margarines.

Closest prior art

4.9 Document (2) is considered to be the closest prior art because it describes a process for making Butterine which product is spreadable although this feature is not discussed by document (2) and makes the statement that "it is very important to use an oil with a melting point very close to the melting point of cream fat". In examples 1 to 3 of the patent in suit the soya oil used had a melting point of 36 to 38°C, essentially the same as in document (2) which does not however describe or give details of the fat content profile at 5° and 20°C and does not say that the triglycerides contributed at least 35% by weight of the fat content of the final product. However, a matching at least as regards fat melting point was made between the triglyceride oil and cream components.

The problem to be solved

4.10 On the basis of the teaching of document (2) the problem to be solved can be seen as the provision of a method for the production of a butter-like spread by blending cream separated from cow's milk with edible triglycerides of non-dairy origin to yield a product of improved spreadability.

The solution to the problem

4.11 This problem was solved by the process of claim 1 of the main request.

Assessment of inventive step

- 4.12 The process of the patent in suit is differentiated from the process of the closest prior art document (2) by the ingredients used and triglyceride fat content of the product. The use of a triglyceride starting material which has been defined to contain specific quantities of solid fat, ie, 15% to 35% by weight at 5°C and 7,5% to 25% by weight at 20°C, in an amount which gives at least 35% by weight of the total fat content in the spread, was not derivable from the prior art nor would it be associated with an improved spreadability.
- 4.13 Since documents (2) and (6) both relate to the production of Butterine their combined disclosures concern a process of producing Butterine having over 35% by weight of fat derived from non-dairy triglycerides **but not one** which employs the non-dairy triglycerides as defined by the claim at issue.
- 4.14 It is the appellant's view that the manufacturer only has to choose appropriate ingredients to produce a product having the required characteristics, eg, summer margarines must have more solid body (hard fat) than winter margarines, but the board is convinced that the production process is complex and not predictable, especially in view of the teaching of document (9) at pages 240 and 242, that there is "a wide range of fats to choose from", and "It is clear that there is an almost infinite number of different fat blends possible." Thus the choice of a triglyceride as starting material with the particular features given in the claim at issue is not obvious. Also with regard to the properties of the product document (9) at page 240

states that "there is no simple way of forecasting exactly the behaviour of a fat blend in the finished margarine.", and therefore does not support the appellant's case.

4.15 Furthermore, it is not possible to obviously derive from the graph Figure 8 of document (54) the solid fat contents of triglycerides in margarines at 5°C and 20°C by extrapolation of the curves which in the graph do not go below 10°C and therefore there is no data at all in respect of 5°C, which data are features of the claim at issue. There is no reason why data for any one margarine would be chosen and extrapolation to obtain figures at 5°C is an ex post facto consideration. Thus the fat content profile of the starting edible triglyceride is not obviously derivable from the prior art and the solution to the above problem is inventive.

4.16 The requirements of Article 56 EPC are met by the subject-matter of claim 1 of the main request and also by that of the remaining claims which are all appendant to it.

5. *Procedure*

5.1 Since the respondent has only provisionally requested oral proceedings and this decision is in his favour, no oral proceedings are necessary.

5.2 The respondent requested amendment of the description which has to be dealt with by the opposition division.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairwoman:

M. Kiehl

U. Kinkeldey