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Datasheet for the decision of 7 May 2009

Case Number: T 0197/07 - 3.3.09

Application Number: 95920643.4

Publication Number: 0763980

IPC: A23G 3/30

Language of the proceedings: EN

Title of invention:
Use of medium chain triglycerides to improve properties of chewing gum

Patentee:
WM. WRIGLEY JR. COMPANY

Opponent:
Cadbury Schweppes Plc

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty - yes)"
"Inventive step - no (all requests)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0197/07 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 7 May 2009

Appellant: (Opponent)
Cadbury Schweppes Plc
25 Berkeley Square
London W1J 6HB (GB)

Representative:
Quest, Barry
Wilson Gunn
Charles House
148/9 Great Charles Street
Birmingham B3 3HT (GB)

Appellant: (Patent Proprietor)
WM WRIGLEY JR. COMPANY
410 North Michigan Avenue
Chicago, Illinois 60611 (US)

Representative:
Hayes, Adrian Chetwynd
Boult Wade Tennant
Verulam Gardens
70 Gray's Inn Road
London WC1X 8BT (GB)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 27 November 2006 concerning maintenance of European patent No. 0763980 in amended form.

Composition of the Board:

Chairman: P. Kitzmantel
Members: J. Jardón Álvarez
M-B. Tardo-Dino

Summary of Facts and Submissions

I. The grant of European patent No. 0 763 980 in respect of European patent application No. 95920643.4 in the name of WM. WRIGLEY JR. COMPANY, which had been filed on 24 May 1995, as International application PCT/US95/06579 (WO - 95/32635), was announced on 31 March 2004 (Bulletin 2004/14) on the basis of 16 claims. Independent Claims 1 and 14 read as follows:

"1. Use of medium chain triglycerides in a chewing gum formulation to reduce the stickiness of a chewing gum product.

14. Use of at least 0.01% by weight medium chain triglycerides in a chewing gum formulation to improve the shelf life of flavour that is contained in the chewing gum product."

II. Notice of Opposition requesting the revocation of the patent in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC), was filed by Cadbury Schweppes Plc on 31 December 2004.

The opposition was supported by the following documents:

D1: US - 4 378 374; and

D2: Ch. J. Megremis, "Medium-Chain Triglycerides: A Nonconventional Fat", FOOD TECHNOLOGY, February 1991, pages 108, 110 and 114.

III. By its interlocutory decision announced orally on 20 October 2006 and issued in writing on 27 November

2006 the Opposition Division found that the patent as amended in accordance with the claims of auxiliary request I filed by the Patent Proprietor with letter of 17 August 2006 met the requirements of the EPC.

Claim 1 of the auxiliary request 1 as maintained by the Opposition Division read as follows:

"1. Use of medium chain triglycerides in a chewing gum formulation to reduce the stickiness of a chewing gum product, wherein the chewing gum product comprises an insoluble gum base, a water soluble portion and a flavour, and the medium chain triglyceride is thoroughly mixed with the gum base."

Claims 2 to 16 were identical to the claims of the main request (granted version).

The Opposition Division in its decision acknowledged the novelty of the subject-matter of Claim 1 of the main request with respect to D1, because (i) in order to arrive at the claimed use the skilled person would have to make a selection from a host of possible softeners and further from within the selected class of medium chain triglycerides, and (ii) because the purpose of reducing the stickiness related to a specific use within the generic disclosure of D1.

However, in the Opposition Division's opinion the subject-matter of Claim 1 of the main request lacked an inventive step over D2 when read in the light of the general common knowledge of a person skilled in the art, because Claim 1 was not limited to the reduction of stickiness during manufacturing but extended to the

reduction of the product's surface stickiness, and because for that reason it was obvious to transfer the anti-sticking medium chain triglyceride coating of the "gummi-type" candies of D2 to chewing gums.

On the other hand, the Opposition acknowledged an inventive step of the subject-matter of Claim 1 of auxiliary request I, because neither D2 nor D1 suggested that by incorporating medium chain triglycerides into the gum base, an anti-sticking effect would be obtained.

Similarly, the subject-matter of Claim 14 was considered inventive because D2 failed to suggest the use of medium chain triglycerides for the reduction of flavour oxidation in chewing gum on storage.

IV. On 30 January 2007 the Patent Proprietor filed an appeal against the decision of the Opposition Division and paid the appeal fee on the same day.

In the Statement of Grounds of Appeal filed on 27 February 2007, the Patent Proprietor requested that the decision under appeal be set aside and that the patent be maintained with the claims as granted (main request, see point I above), or with the claims allowed by the Opposition Division (auxiliary request I, see point III above).

V. On 1 February 2007, the Opponent also filed an appeal against the decision of the Opposition Division and paid the appeal fee on the same day.

In the Statement of Grounds of Appeal filed on 3 April 2007, the Opponent requested the revocation of the patent in its entirety on the grounds of lack of novelty (Article 54 EPC), inventive step (Article 56 EPC) and added subject-matter (Article 123(2) EPC).

During the appeal proceedings the Opponent also filed, with two letters both dated 24 September 2007, the following further documents:

D3: "The Chewing Gum Book" by Robert Young, Dillon Press, INC., published in 1989, two pages not numbered;

D4: EP - A - 0 272 878; and

D5: US - 5 066 509

VI. In response to the Board's communication, issued on 18 November 2008 in preparation for the oral proceedings, the Patent Proprietor filed, with a letter dated 2 April 2009, two further auxiliary requests, namely auxiliary requests II and III. These requests are respectively identical to the main request and auxiliary request I except that in both requests Claims 14 to 16 are deleted.

VII. The arguments presented by the Opponent in its written submissions and at the oral proceedings held on 7 May 2009 may be summarized as follows:

– The Opponent maintained that Claim 1 of the main request lacked novelty and, in the alternative, inventive step over the disclosure of D1. The

novelty attack was based on the assumption that stickiness was a property not different from the properties of softness and processability referred to in D1. To reinforce this position the Opponent argued on the one hand that this interpretation was in line with the definition of stickiness according to the patent in suit, and on the other hand drew attention to the new document D3 in order to establish that anti-sticking coatings for chewing gum were known in the art.

– As to inventive step of the subject-matter of Claim 1, the Opponent argued starting from D2 as closest prior art that the objective problem to be solved by the patent in suit was undoubtedly to reduce stickiness in general and not only specifically during the manufacturing process. The teaching of D2 clearly indicated this use of medium chain triglycerides. Moreover, there was no prejudice against its use as they were already known as components of chewing gums from D1.

– Concerning the subject-matter of Claim 14 the Opponent drew an analogous conclusion because D2 already disclosed the oxidative stability of medium chain triglycerides and their use as flavour carriers able to provide stable flavours. In its view there was no difference between flavour shelf life and flavour stability, as was confirmed by the newly cited documents D4 and D5.

VIII. The arguments of the Patent Proprietor may be summarized as follows:

– There was no direct and unambiguous teaching in D1 of the use of medium chain triglycerides for the reduction of stickiness of a chewing gum as required by Claim 1 of the patent in suit. In order to arrive at the claimed subject-matter it would be necessary first to select medium chain triglycerides from several possibilities in D1 and then to equate processability to stickiness. However the properties of softness and processability as described in D1 could not be equated with the property stickiness; on the contrary, stickiness was a subset of processability.

– Concerning inventive step, the Patent Proprietor starting from the prior art acknowledged in the patent in suit, that is to say, from standard chewing gums, saw the problem underlying the invention as being to reduce the risk of chewing gum sheets, sticks or pellets sticking together during manufacturing, i.e. prior to distribution to retailers. The claimed solution to this problem, i.e. the use of medium chain triglycerides, was not suggested in the cited prior art; in particular D2 was silent about chewing gums and D2's reference to the prevention of stickiness was directed to confections having a glossy outer surface, quite different from chewing gum.

– Concerning auxiliary request I, the Patent Proprietor argued that the claimed mixing of the medium chain triglycerides into the chewing gum composition was quite different from the coating disclosed in D2. It was emphasized that it could

not be predicted how the mixing of the medium chain triglycerides would affect the chewing gum base, and that it was possible that this would result in a more sticky dough.

– Finally, the subject-matter of Claim 14 of the patent as granted also involved inventive subject-matter. The claimed use for improving the oxidation stability of the flavour itself was not suggested in D2, which merely indicated its use as flavour carrier.

IX. The Patent Proprietor and Appellant requested that the decision under appeal be set aside and the patent be maintained in the form as granted (main request), or alternatively in the form as maintained by the Opposition Division (auxiliary request I), or alternatively on the basis of the claims of auxiliary requests II or III, both filed with the letter dated 2 April 2009.

The Appellant (Opponent) requested that the decision under appeal be set aside and that the European patent No. 0 763 980 be revoked.

Reasons for the Decision

1. The appeal is admissible.

MAIN REQUEST

2. *Novelty (Article 54 EPC).*

2.1 Claim 1 of the main request is directed to the use of medium chain triglycerides in a chewing gum formulation to reduce the stickiness of the chewing product.

2.2 The novelty of this claim was contested by the Opponent having regard to the disclosure of D1.

2.3 D1 discloses a chewing gum having improved processability and softness. The improved properties are achieved through the use of a softener selected from the group consisting of fatty acids, including *inter alia* caprylic acid and capric acid, esters of these fatty acids, as well as their mono, di-, tri- and polyglycerol esters (see Claim 1; see also column 6, lines 13 - 14).

There is however no mention in D1 that medium chain triglycerides are used to reduce the stickiness of the chewing gum product.

2.4 The Opponent admits that there is in D1 no explicit disclosure of the use of medium chain triglycerides to reduce stickiness but argues that the skilled person would interpret the term processability in D1 as relating to stickiness.

2.5 In the Board's judgement, however, the term processability as used in D1 cannot be equated with stickiness. As pointed out by the Patent Proprietor, processability of a chewing gum is governed by a number

of factors and not necessarily only by stickiness, stickiness being a subset of processability. Improved processability may also be obtained, for instance, by providing a more rigid chewing gum mass, without a reduction in stickiness. Furthermore, an important aspect of processability concerns the rheological properties of the mass. The use of the medium chain triglycerides to improve softness and ease of processability as disclosed in D1 is therefore not a clear and unambiguous teaching of their use to reduce stickiness according to Claim 1 of the patent in suit.

2.6 For these reasons the subject-matter of Claim 1 of the main request is novel.

3. *Inventive step (Article 56 EPC).*

3.1 Closest prior art.

3.1.1 According to the established practice of the Boards of Appeal, the determination of the objective technical problem to be solved should normally take account of the problem acknowledged in the contested patent.

3.1.2 The patent specification in its discussion of the relevant prior art starts from conventional chewing gum which contains a water insoluble gum base which may comprise elastomers, resins, fats and oils, softeners and inorganic fillers; a water soluble portion which can include bulk sweeteners, high intensity sweeteners, flavouring agents, softeners, emulsifiers, colours, acidulants, and other components that provide desirable attributes (see also paragraphs [0002] to [0006] of the specification).

In a typical manufacturing process, chewing gum sheets are formed which are usually stacked one on top of another. These sheets are then e.g. cut into sticks; pellets may also be formed.

3.1.3 A drawback of conventional chewing gum compositions is that during the manufacturing steps the sheets can stick together making them difficult to pull apart. The same applies to sticks and pellets that are made from such chewing gum compositions. The stickiness of chewing gum can also be an issue in the packaging or wrapping of the chewing gum ([0006])

3.1.4 The patent in suit relates to improved formulations for chewing gums aimed *inter alia* at preventing the problems resulting from this undesired stickiness by providing chewing gum compositions having reduced stickiness (see also [0011] and [0061]).

3.1.5 Thus, the Board regards the standard processes for the preparation of chewing gum as acknowledged in the introductory part of the patent specification as the closest prior art, this process being also the state of the art from which D1 departs.

3.1.6 Contrary to this, the Opponent relied on D2 as the closest prior art, essentially because it teaches that medium chain triglycerides may be used in food applications, including confections to prevent sticking.

3.1.7 In the Board's judgement the disclosure of D2 does not represent a suitable starting point for the assessment

of inventive step, essentially because it does not relate to the preparation of chewing gum.

3.2 Problem to be solved and its solution.

3.2.1 The technical problem to be solved by the patent in suit in relation to the prior art can thus be formulated as to prevent chewing gum from sticking during its manufacture.

3.2.2 The solution to this problem is provided by adding medium chain triglycerides into the chewing gum formulations.

3.2.3 Experiments No. 1 and 2 ([0074] - [0079]) in the patent in suit show that the above mentioned problem has been credibly solved. This was not challenged by the Opponent.

3.3 Obviousness.

3.3.1 The question which remains to be decided is whether this solution involves an inventive step.

3.3.2 Document D2 is a scientific article directed to the properties and applications of medium chain triglycerides. According to D2 their chemical structure affords them unique properties over regular vegetable oils and other food-grade solvents in many food applications. They are liquids at room temperature, possess low viscosity, have bland odour and taste, are colourless, and extremely stable to oxidation due to the saturation of the fatty acids (see page 108, left column, first paragraph after "Properties"). Several

applications of medium chain triglycerides are described in D2 (page 108, right column, line 3 to page 114). They include the use in confections to provide gloss and prevent sticking, an example of an application of this type being their use as non-viscous coatings in "gummi"-type candies (page 108, right column, lines 21 - 26).

3.3.3 It was thus known from D2 that medium chain triglycerides could be used to prevent sticking in confectionery compositions. This information would provide the skilled person with the incentive to try the medium chain triglycerides in other confections such as chewing gums in order to prevent sticking, thus arriving at the subject-matter of Claim 1 of the main request.

3.3.4 It was argued by the Patent Proprietor that the skilled person would not look into D2 to solve the above mentioned problem essentially because:

(i) chewing gums are not mentioned in D2 and

(ii) in the context of D2 medium chain triglycerides were used only in a very specific manner, namely as oily coatings to provide both gloss and prevent sticking. The skilled person in the field of chewing gum would disregard the teaching of D2 in chewing gums because chewing gums are not oil coated.

3.3.5 The Board finds these arguments unconvincing. Concerning (i) it is correct that chewing gums are not specifically mentioned in D2 but it relates to confectionery products and it is not disputed that

chewing gums are a type of confectionery. There would have been no reason for the skilled person to think that medium chain triglycerides in that respect would behave differently in chewing gums than in e.g. candies since the stickiness-reducing effect they provide is a characteristic property which they exhibit in similar way in similar environments (here confectionaries). Furthermore, the compatibility of medium chain triglycerides with chewing gum compositions was known, as acknowledged by the Patent Proprietor during the oral proceedings and as is known from D1. There would have been no reason for the skilled person to think that unexpected interactions would occur, interfering with the desired stickiness-reducing property.

Concerning (ii), the Board cannot subscribe to the very restrictive interpretation of the teaching of D2 by the Patent Proprietor. There is a clear teaching in D2 of the use of medium chain triglycerides to prevent sticking in confections (page 108, right column, last paragraph). Furthermore, the skilled person has no reason to interpret the teaching of this document as limited to the use only for confections having oily coatings. Moreover, from the statement in D2 that if the medium chain triglyceride soaks into the candy the desired anti-sticking effect will be jeopardised one can clearly infer that this effect is due to medium chain triglycerides and not to the beeswax with which it may be mixed.

3.3.6 For these reasons, the subject-matter of Claim 1 of the main request lacks an inventive step.

AUXILIARY REQUEST I.

4. *Inventive step (Article 56 EPC).*

4.1 Claim 1 of auxiliary request I differs from Claim 1 of the main request in that it specifies that the medium chain triglyceride is thoroughly mixed with the gum base.

4.2 By this amendment, which is supported by page 14, lines 18 to 21 of the application as originally filed, the subject-matter of the claims no longer embraces the possibility of using the medium chain triglycerides as a coating (as they are used according to D2).

4.3 The Patent Proprietor justified the existence of an inventive step of the subject-matter of Claim 1 of auxiliary request I essentially by arguing that mixing the medium chain triglyceride thoroughly with the gum base led to a non-sticky dough. In other words the medium chain triglycerides were used in a different way, namely as modifiers of the properties of the dough from which chewing gum was made, not as surface-modifying agents in coatings. The Patent Proprietor concluded then that it could not have been predicted that by mixing the medium chain triglycerides into the gum base they would prevent sticking in the same way as when they were applied as a coating.

4.4 The Board cannot accept this argument of the Patent Proprietor. As pointed out under point 3.3.2 above, D2 discloses that medium chain triglycerides when used as non-viscous coatings in "gummi"-type candies prevent sticking (page 108, right column, lines 21 - 26). The

fact that this effect is maintained when they are thoroughly mixed with the gum base cannot justify an inventive step. No evidence has been provided to establish that their mixing with the chewing gum composition generates any effect other than their distribution within the mass and a consequential lower surface concentration. This is what the skilled person would expect and this is indeed confirmed by the experiments in the patent in suit that show that when too low an amount of medium chain triglycerides is used the chewing gums pull apart less easily (see Experiment No. 2, compare sample 6B with 0.25% medium chain triglycerides with samples 7B and 8B having 0.75% and 1.5% respectively). These experiments establish that a certain amount of the medium chain triglyceride is needed to prevent surface stickiness and that increasing the amount of medium chain triglyceride mixed into the gum base leads to the expected result. It is thus evident that the anti-sticking property of medium chain triglycerides is not affected by the manner in which they are brought onto the surface, whether by coating or mixing into the mass.

4.5 Consequently the reasoning given for Claim 1 of the main request also applies for the subject-matter of Claim 1 of auxiliary request I, which thus also lacks inventive step.

AUXILIARY REQUESTS II AND III

5. *Inventive step (Article 56 EPC).*

5.1 Claim 1 of auxiliary request II is identical to Claim 1 of the main request and Claim 1 of auxiliary request III is identical to Claim 1 of auxiliary request I.

5.2 The subject-matter of these claims lacks inventive step for the reasons already given for these claims when dealing with the main request and auxiliary request I.

FURTHER REQUESTS

6. During the oral proceedings held on 7 May 2007 the Patent Proprietor asked the Board to admit a further request based on independent Claim 14 of the main request. In accordance with the discretion granted to the boards of appeal by Article 13 RPBA, one of the criteria to be met for the admittance of such a late-filed request is whether it overcomes the deficiencies of the higher ranking requests. In the present case the most critical issue in this respect is whether this amendment would result in non-obvious subject-matter.

7. *Inventive step of the subject-matter of Claim 14 of the main request (Article 56 EPC).*

7.1 Claim 14 of the main request (corresponding to the granted version of the claims) is directed to the use of at least 0.01% by weight of medium chain triglycerides in a chewing gum formulation to improve the shelf life of the flavour that is contained in the chewing gum product.

7.2 D2 discloses the use of medium chain triglycerides as "a solvent, carrier or diluents to cut concentrated essential oils and flavours when high stability, low viscosity, and blandness are desired" (page 108, right column, lines 6 - 10). They are said to provide the flavorist with an alternative to some of the harsh-tasting, solvents "to produce 'clean-tasting' yet stable flavors" (page 108, right column, lines 15 - 18).

7.3 Thus D2 also teaches the use of medium chain triglycerides as flavour carriers. It would then be obvious for the skilled person to apply this teaching of D2 and use the medium chain triglycerides as carriers for the flavours of chewing gums and thus arrive at the subject-matter of Claim 14 of the patent as granted. By using the medium chain triglycerides to produce stable flavours the shelf life of the flavour is automatically improved.

7.4 The Patent Proprietor recognized that D2 suggested the use of medium chain triglycerides as flavour carriers but pointed out that the improvement of shelf life according to Claim 14 was due to a different property. It was admitted that there was no experimental evidence to this effect in the patent in suit but, in the absence of any objective standard over which this "improvement" should be measured, it was stated that this effect was due to the ability of the medium chain triglycerides to reduce flavour oxidation (see [0057] - [0058]) and that there was no suggestion of this property in D2.

7.5 The Board cannot accept this argument. As pointed out under point 7.2 above, D2 discloses the use of medium chain triglycerides to produce "'clean-tasting' yet stable" flavours. This information is considered equivalent to an "improved shelf life" according to the language used by the patent. Whether or not this effect is caused by the alleged anti-oxidative property of medium chain triglycerides is not decisive in this context because this argument only relates to an alleged mechanism behind the claimed effect; it is moreover well known that oxidation is the main cause of deterioration of flavours in food applications. No difference can thus be seen between the use described in D2 and the use according to Claim 14 of the patent as granted apart from the fact that the disclosure of D2 is not concerned with chewing gum products. There is however no reason to assume - and no argument in this respect was advanced - that the flavour stability provided in confectionaries in general would not apply to chewing gum. The use of medium chain triglycerides for that purpose in chewing gum products is therefore obvious.

7.6 As the subject-matter of Claim 14 of the patent as granted lacked inventive step in view of the teaching of D2 the requirement that a request filed at a very late stage of the oral proceedings must be clearly allowable is not met. The issue of the possible admittance of a new request based solely on Claim 14 of the patent in suit thus became nugatory.

8. In summary, none of the requests of the Patent Proprietor relates to patentable subject-matter.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar The Chairman

G. Röhn P. Kitzmantel