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**D E C I S I O N**  
of 6 September 2005

**Case Number:** T 0840/02 - 3.3.09

**Application Number:** 92921216.5

**Publication Number:** 0605632

**IPC:** A23G 3/30

**Language of the proceedings:** EN

**Title of invention:**

Chewing gum and other comestibles containing indigestible dextrin

**Patentee:**

WM. Wrigley Jr. Company

**Opponent:**

Racheli & C

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56  
EPC R. 55(c)

**Keyword:**

"Admissibility of opposition (yes)"  
"Main request and first auxiliary request - inventive step (no)  
- obvious combination of known feature"  
"Second auxiliary request - inventive step (yes) - exclusion  
of hindsight"

**Decisions cited:**

T 0204/91, G 0009/91

**Catchword:**

-



Case Number: T 0840/02 - 3.3.09

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.09  
of 6 September 2005

**Appellant:**  
(Opponent)

Racheli & C  
V.les. M del Carso 4  
I-20144 Milano (IT)

**Representative:**

PetruzzIELLO, Aldo  
Racheli & C. S.p.A.  
Viale San Michele del Carso, 4  
I-20144 Milano (IT)

**Respondent:**  
(Proprietor of the patent)

WM. Wrigley Jr. Company  
410 North Michigan Avenue  
Chicago, IL 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  
28 June 2002 concerning maintenance of European  
patent No. 0605632 in amended form.

**Composition of the Board:**

**Chairman:** P. Kitzmantel  
**Members:** A. T. Liu  
M.-B. Tardo-Dino

## Summary of Facts and Submissions

I. European patent No. 605 632 was granted with a set of 45 claims, including independent Claims 1, 23, 30, 31, 32 and 39. Notice of opposition against this patent was filed on the ground of Article 100(a) EPC.

II. Of the 7 prior art documents cited in support of the opposition, reference will be made to the following in the present decision:

D1: EP-A-0 368 451

D4: US-A-4 631 195

D6: US-A-4 931 294

III. During the oral proceedings before the Opposition Division on 26 March 2002, the Patentee submitted a set of 38 claims as a basis for its first auxiliary request. The independent claims of this request read as follows:

"1. A chewing gum comprising:

- a) from 5% to 95% gum base;
- b) from 0.1% to 10% of a flavoring agent;
- c) from 1% to 95% bulking agent, the bulking agent comprising at least in part indigestible dextrin; and
- d) sweetening amounts of aspartame.

25. A method of making a coated chewing gum product comprising the steps of:

providing a gum pellet;

applying a liquid coating syrup to the surface of the gum pellet, the coating syrup comprising indigestible dextrin that is substantially free of fermentable components, such that the indigestible dextrin does not contribute to dental caries, and solidifying the coating syrup.

32. A method of making a non-cariogenic chewing gum composition comprising the steps of:

- a) providing from 5% to 95% of a gum base;
- b) providing from 1% to 95% of a bulking agent comprising at least in part indigestible dextrin that is substantially free of fermentable components, such that the indigestible dextrin does not contribute to dental caries;
- c) providing from 0.1% to 10% flavour; and
- d) mixing the gum base, bulking agent and flavour to make a chewing gum composition."

IV. Appeal was lodged on 8 August 2002 by the Opponent against the interlocutory decision of the Opposition Division dated 2 April 2002, maintaining the patent on the basis of Claims 1 to 38 of the afore-mentioned first auxiliary request. In the Statement of the grounds of Appeal filed on 4 November 2002, the Appellant made reference to the following document:

D9: Pamphlet from Matsutano Chemical Industry Co., Ltd.  
concerning FIBERSOL-2

V. By letter dated 15 May 2003, the Respondent indicated that the set of claims found allowable by the Opposition Division should serve as the basis for its

main request. In addition, a set of 37 claims was filed as the basis for a first auxiliary request and a set of 24 claims for a second auxiliary request. The latter was subsequently amended at the oral proceedings which took place before the Board on 6 September 2005.

- VI. The set of Claims 1 to 37 for the first auxiliary request was identical to the set of claims according to the main request, except that Claim 25 further comprised the feature of the dependent Claim 29 of the main request, namely that the "coated chewing gum" was "non-cariogenic", with the consequential deletion of this claim and renumbering of the subsequent remaining claims.

Claims 1 to 24 of the second auxiliary request corresponded to Claims 1 to 24 of the main request.

- VII. The Appellant requested that the interlocutory decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed and that the patent be maintained as amended before the opposition division or, alternatively, on the basis of claims 1 to 37 of the first auxiliary request filed with letter of 15 May 2003 (not 2005 as was erroneously indicated in the minutes of the oral proceedings on 6 September 2005) or on the basis of claims 1 to 24 of the second auxiliary request filed during the oral proceedings. It also requested that the appeal (and the original opposition) be declared inadmissible insofar as it related to independent Claims 25 and 32 of the

main request corresponding to Claims 32 and 39 of the granted patent.

VIII. The arguments of the Appellant can be summarised as follows:

- The opposition concerned the entire patent and revocation was requested in respect of the patent in its entirety.
- The grounds of opposition in respect of original Claims 32 and 39 might have been reasoned badly but they were sufficient to comply with Rule 55 EPC.
- Since the Respondent did not appeal against the interlocutory decision, it was no longer entitled to raise objections against the admissibility of the opposition, or of the subsequent appeal in respect of these claims.
- With respect to the closest prior art, namely D6, one technical problem to be solved by the patent in suit was the provision of a method for making a non-cariogenic chewing gum composition which did not cause gastrointestinal disturbances.
- The patent in suit proposed a method involving the use of indigestible dextrin substantially free of fermentable compounds as part of the bulking agent.
- The proposed solution was obvious in view of D1, which disclosed that indigestible dextrin was a dietary fibre which became difficult to ferment

after purification and that it contributed to the relief of constipation.

- D1 was relevant to the subject-matter of the patent since it taught the incorporation of indigestible dextrine into foodstuffs, such as candies.
- Regarding Claim 1, the problem to be solved with respect to D6 was the stabilisation of aspartame in chewing gum against moisture.
- D4 taught that the degradation of aspartame caused by heat would be prevented by the incorporation of polydextrose. It was further common knowledge that the mechanism of degradation of aspartame was the same whether this degradation was caused by heat or humidity.
- As shown in D9, dextrine had a chemical structure close to that of polydextrose. The skilled person would therefore have assumed that dextrine would provide the same aspartame stabilising effect and could be used in its place.
- The solution proposed in Claim 1 was therefore obvious in view of D4.

IX. The arguments of the Respondent can be summarised as follows:

- The opposition statement commented in detail on granted independent Claims 1, 23, 30 and 21 and a number of dependent claims but only summarily

stated that the other claims which had not been explicitly mentioned lacked novelty and/or inventive step in view of the teaching of D1 to D3 and the knowledge of a person skilled in the art.

- The opposition brief thus did not contain a properly reasoned set of arguments against the patentability of granted Claims 32 and 39, as required by Rule 55 EPC and also by Decision G9/91.
  
- The facts of the current case differed from those underlying case G9/91 insofar as the patent in suit contained several independent claims directed to products, methods of preparation and uses of the products. The opposition therefore had to be reasoned for each of these.
  
- Starting from D6, the skilled person did not have any motivation for replacing xylitol with indigestible dextrin as bulking agent.
  
- Furthermore, the indigestible dextrin disclosed in D1 still contained fermentable components, which contributed to causing dental caries. Therefore, even if the skilled person would have combined the teaching of D1 with that of D6, he would not have arrived at the method of Claim 32.
  
- D4 only taught the stabilisation of aspartame at high temperatures when goods were baked. There was no appreciation in D4 of the problem concerning the stabilisation of chewing gums containing aspartame over time, thus improving the shelf-life of the chewing gum.



- Indigestible dextrin was different from polydextrose in many aspects. It was therefore hindsight to suggest that the skilled person would expect indigestible dextrin, with the structure as known from D9, to be an obvious substitute for the polymaltose or polyglucose disclosed in D4.
  
- The skilled person would not have been motivated to add the polydextrose disclosed in D4 to a chewing gum containing aspartame, let alone to modify the teaching of D4 and use dextrin in place of polydextrose with the aim of stabilising aspartame against its degradation by moisture.

## **Reasons for the Decision**

### 1. *Admissibility*

- 1.1 The Board notes that the Opponent lodged its appeal in due time and in due form. This is not in dispute. The appeal is therefore admissible.
  
- 1.2 At the oral proceedings, however, the Respondent contested the admissibility of the opposition, albeit only insofar as it concerned granted Claims 32 and 39. It was submitted that, as a consequence, the appeal against the interlocutory decision maintaining these claims in the form of Claims 25 and 32 according to the present main request was not admissible. On the other hand, the Appellant argued that, since the Respondent had not appealed against the interlocutory decision of the Opposition Division, it was barred from raising an

objection against the admissibility of the opposition against these granted claims as well as, in respect of these claims, against the Appellant's subsequent appeal.

In view of the above submissions by the Parties, the Board has first to decide whether the Respondent is entitled to raise its objection at the present stage of the proceedings. If the answer is positive, then the question ensues whether the Board agrees with the finding of the Opposition Division.

- 1.3 As pointed out at the oral proceedings before the Board, the admissibility of the opposition against granted independent Claims 32 and 39 had already been challenged in the Respondent's letter dated 29 May 2001 (page 5, first paragraph). Thus, this objection is not raised for the first time on appeal and therefore does not constitute a fresh case on appeal.

Having taken the above objection into consideration, the Opposition Division found, on the one hand, that the opposition against granted Claims 32 and 39 was admissible but, on the other hand, that it was not successful, i.e. that these claims were allowable (see decision under appeal, page 3, item 2; page 4, item 4.1; and page 5, item 4.2). It follows that the Respondent was not adversely affected by the decision of the Opposition Division, despite its finding that the opposition against the claims at issue was admissible. It follows further, that the Respondent was not in a position to lodge an appeal merely directed against this aspect of the decision. However, since the Appellant has maintained its attack against the claims "properly" opposed and further pursues its opposition

now in the appeal stage, the Respondent is entitled to counter these attacks.

As a consequence, the Board has the power to consider the arguments advanced by the Respondent in respect of the admissibility of the opposition in question and to re-examine this issue.

- 1.4 Insofar as the notice of opposition is concerned, it is clearly stated that the patent is opposed in its entirety. As for the substantiation of the opposition against granted Claims 32 and 39, the Board considers that the statement on page 6 of the opposition brief, namely that *"The other claims which have not been explicitly mentioned lack novelty and or inventive step in view of the teaching of D1 to D3 and the knowledge of a person skilled in the art"*, in the present context, is sufficient to fulfil the requirements of Rule 55(c) EPC (translation from the French original text). The reasons are as follows.

According to the established case law under Rule 55(c) EPC, the notice of opposition must contain an indication of the facts, evidence and arguments presented in support of the grounds of opposition in such detail as to enable the patent proprietor to properly understand what kind of attack is launched against its patent and what evidential support is to be expected so that he can properly prepare its defence (see for example the unpublished decision T 204/91). Compliance with this requirement is to be assessed in the framework of each case, account being taken *inter alia* of the level of complexity. In the present case the reasoning presented by the opponent with respect to

the features of other claims covers the subject-matter of independent Claims 32 and 39 because the only essential feature contained in these granted Claims 32 and 39 is the presence of dextrin substantially free of fermentable components, i.e. the same feature as is present in Claim 23 (cf. Opponent's submission dated 22 February 2002, page 4). The opposition against this feature has however been sufficiently substantiated in the context of granted Claim 23 (cf. page 23 of opposition brief).

The facts of the case are thus outside the scope of the decision G 9/91 (published in OJ EPO 1993,408), since the independent claims are also included in the opposition.

Consequently, the Board considers that the Appellant and the Opposition Division were in a position to clearly understand the nature of the objection, as well as the evidence and arguments in its support. In agreement with the Opposition Division, the Board therefore holds that the opposition was substantiated against the patent in its entirety and, specifically, that the opposition against the granted independent Claims 32 and 39 complied with the requirements of Rule 55(c) EPC and was therefore admissible.

### *Main Request*

#### *2. Inventive step*

- 2.1 Claim 32 of this request is essentially directed to a method of making a chewing composition comprising the step of mixing a gum base, a bulking agent and flavours.

- 2.2 It is undisputed that the claimed method of making a chewing gum is essentially common in the art, for example as described in D6 (column 2, lines 43 to 50). In this document, which is considered to represent the closest state of the art, the chewing gum is made with xylitol as the bulking agent (column 2, lines 51 to 53).
- 2.3 As stated in the patent in suit, non-sugar polyols such as xylitol have the advantage of not contributing to dental caries of consumers but the disadvantage of causing gastrointestinal disturbances if consumed in too great of a quantity. In view of this common general knowledge, the Board concurs with the parties that, with respect to D6, the technical problem to be solved is to provide a carbohydrate or carbohydrate-like food ingredient for chewing gum that would act as a bulking agent but would not contribute to dental caries nor cause gastrointestinal disturbances (see patent in suit, page 2, paragraph [004]).
- 2.4 To solve the indicated technical problem, the patent in suit proposes, in present Claim 32, providing a bulking agent comprising at least in part indigestible dextrin that is substantially free of fermentable components, such that the indigestible dextrin does not contribute to dental caries (see paragraph III: Claim 32, step b)).
- 2.5 It is undisputed that the indicated technical problem is solved by the claimed method. The Board, however, is of the view that the proposed solution is obvious with respect to the available prior art, for the reasons which follow.

2.6 D1 is directed to the manufacture of an indigestible dextrin which is useful as dietary fibre (page 2, lines 18 to 19). This dextrin, after purification, can be hydrogenated, which makes it difficult to ferment and also makes it free from the attack by lactic acid bacteria (see page 3, lines 13 to 16). The product, used in a variety of foods, is also known to be effective for remedying constipation, which is undoubtedly a gastrointestinal disturbance (page 4, lines 36 to 37 and Example 8).

When looking for a bulking agent to replace (at least in part) xylitol in chewing gum, the skilled person would thus consider the use of D1's hydrogenated dextrin, because as a dietary fibre it has the function of a bulking agent which, after ingestion with the food, is excreted by the body essentially undigested and because it is difficult to ferment (including fermentation by enzymes contained in saliva), thus suggesting that it will not contribute to dental caries. Therefore, the skilled person starting from the disclosure of document D6 has a strong incentive for seeking the solution to its problem in D1. As a consequence, the subject-matter of present Claim 32 is obvious over the combined disclosure of these documents.

2.7 The Board cannot accept the Respondent's argument that the wording of D6 would not allow for another bulking agent, such as indigestible dextrin, to be used alone or in addition to xylitol because Claim 1 of D6 is directed to a chewing gum composition "consisting essentially" of the ingredients as listed (Claim 1, line 3). This argument is beside the point as it contradicts the well established method for assessing

the obviousness of a claimed subject-matter, which requires modification of the prior art in the light of the technical problem which, having regard to it, exists.

- 2.8 Nor can the Board accept the Respondent's argument that chewing gum is not to be considered as food, in the sense of D1, whose consumption involves - and requires - a significant intake of materials, with the consequence that D1 would not be considered relevant for the assessment of inventive step in the present case.

Contrary to the Respondent's assertion, according to D6 a chewing gum contains up to 94.9 percent of xylitol, which is clearly part of the soluble materials ingested when the chewing gum is consumed. This is not disputed by the Respondent who, at the oral proceedings, confirmed that, generally, about 50% of the materials in a chewing gum are ingested. This view is also consistent with the description of the patent in suit, which refers to the avoidance of the problem of gastrointestinal disturbances caused by the ingestion of xylitol in chewing gum (see item 2.3 above).

Moreover, no essential difference with regard to their function as food is to be seen between chewing gum and candies, which according to D1 are to be considered as food (page 4, lines 36 to 37; Examples 2 and 3), the only possible difference regarding their formulation and/or consumption being a matter of degree and not of kind.

Lastly, the Board does not share the Respondent's view that a combination of the teaching of D1 with that of

D6 would not have led to the method of Claim 32 because the hydrogenated indigestible dextrin of D1 was not sufficiently free of fermentable components as required by present Claim 32 so as to prevent dental caries. D1 (page 3, lines 13 to 16) only states that this dextrin "becomes difficult to ferment, for example, free from attack by lactic acid bacteria".

The Board accepts that the hydrogenated dextrin of D1, while difficult to ferment, may still contain some fermentable compounds. However, the Board also notes that Claim 32 does not require an indigestible dextrin "completely free of fermentable components" but only that it be "substantially free of fermentable components". As already indicated in the decision under appeal, the latter expression also allows for fermentable components to be present in the indigestible dextrin to some undefined extent (see page 3, paragraph 3.1 of the decision).

The Respondent furthermore pointed out that the indigestible dextrin disclosed in D1 corresponds to the commercial product Fibersol 2, which is unfit for the method of Claim 32 because it contains a significant proportion of components which contribute to dental caries (see letter dated 15 May 2002, page 3, second paragraph and patent in suit, paragraph [002]). However, the Respondent has not argued, let alone submitted proof, that the tradename Fibersol 2 also covered the hydrogenated dextrin of D1. In these circumstances it is immaterial that the disclosure of D1 indeed comprises types of indigestible dextrin, which may contain fermentable material, including glucose, which would contribute to dental caries (D1, page 3, lines 57



to 58). Since the problem to be solved is the provision of a bulking agent which does not contribute to dental caries, it is self-evident that the skilled person seeking a solution to the existing technical problem would not have used a dextrin which expressly contains glucose, but would have selected the hydrogenated indigestible dextrin disclosed in D1 to be difficult to ferment.

*First auxiliary request*

3. Claim 31 of this request is identical to Claim 32 of the main request. The reasoning concerning the latter therefore applies here *mutatis mutandis*.

As a consequence, the first auxiliary request is also not allowable because the subject-matter of the independent Claim 31 lacks an inventive step in view of the teaching of D1 in combination with that of D6.

*Second Auxiliary request*

4. *Amendments*

Claims 1 to 24 of the present request essentially correspond to Claims 1 to 22, 28 and 29 of the patent in suit. The compliance of the granted claims with the requirements of Article 123(2) is not in dispute. In addition, present Claims 23 and 24 have only been amended with respect to granted Claims 28 and 29 in that they no longer also claim protection for a comestible (in addition to chewing gum). The deletion of this alternative clearly restricts the scope of the

claims concerned. The requirements of Article 123(3) are therefore also met.

5. *Novelty*

The novelty of the independent Claim 1 has never been queried. The reason for this will be apparent from the following reasoning concerning the question of inventive step.

6. *Inventive step*

6.1 Claim 1 of the second auxiliary request is directed to a chewing gum comprising, apart from the usual components (gum base and flavouring agent), a bulking agent comprising at least in part indigestible dextrin and sweetening amounts of aspartame (see item III above).

6.2 The Board accepts the Appellant's submission that D6 can be considered to comprise the closest prior art teaching.

6.3 In view of D6, the technical problem to be solved can be seen in the provision of a chewing gum in which the aspartame is stabilised during storage against degradation by moisture. The Appellant contested the existence of such a technical problem with the argument that the presence of moisture is not reflected in the wording of Claim 1. This argument, however, is invalidated by the fact that D6 clearly shows the chewing gum to absorb water from the environment after a certain period of time, which is the reason for afore-mentioned problem that the patent in suit seeks

to solve (see D6, column 6, lines 44 to 47 and Figure; patent specification, page 2, lines 47 to 49).

- 6.4 The solution proposed in Claim 1 is to incorporate an effective amount of indigestible dextrin into the chewing gum composition (see also patent in suit, page 2, lines 45 to 59 and paragraph [0031], page 5).
- 6.5 The effect of indigestible dextrin on the stabilisation of aspartame is described in the patent in suit (paragraphs [0130] and [0132]), and illustrated in Figures 1 to 3. The Board therefore holds that the technical problem posed is effectively solved by the composition according to present Claim 1.
- 6.6 The Board does not concur with the Appellant's submission that the stabilisation of aspartame with indigestible dextrin was obvious in view of D4 and D9.
- 6.6.1 It is undisputed that D4 is directed to a composition and method for stabilizing a dipeptide sweetener (in particular aspartame) using a polydextrose. However, the problem addressed in D4 is the thermal degradation of aspartame when used for cooking or baking (column 1, lines 32 to 41). In contrast, the patent in suit is concerned with the stabilisation of aspartame against moisture over time, without any heating involved. The Appellant has not submitted any evidence in support of the allegation that the degradation of aspartame by moisture follows the same mechanism as indicated in D4 with respect to the thermal decomposition (column 5, lines 3 to 7).

6.6.2 The Board further notes that polydextrose and indigestible dextrin are similar only in that both contain glucose units. As put forward by the Respondent and not refuted by the Appellant, polydextrose is built up from the glucose, with predominantly 1-6 bonding and some sorbitol end group and monoester bonds with citric acid (see D4, column 4, lines 20 to 25). In contrast, indigestible dextrin is obtained by breaking down starch molecules and roasting the resulting product. The roasting process leads to a recombination of the molecules in which 1-6 linkages are not predominant (see for example patent in suit, page 3, lines 26 to 30 and D9, page 2: "3. Chemical structure"). Furthermore, neither the formula nor the description of dextrin given in D9 indicates that this compound contains monoester bonds with citric acid.

6.6.3 In D4, the stabilisation of aspartame is tentatively explained by the hypothesis that aspartame may bond to the citric acid portion of the polydextrose, which makes its cyclisation and therefore its degradation more difficult (column 5, lines 6 to 10). Since dextrin is not known to possess a citric acid portion, such bonding is not possible.

Another hypothesis advanced in D4 is that the branched structure of polydextrose forms pockets, thus providing sites for the encapsulation and therefore protection of aspartame (column 5, lines 10 to 23). However, since dextrin and polydextrose have different modes of bonding, they do not necessarily have a similar macrostructure, so that the skilled person had no reason to expect dextrin to provide sites for the encapsulation of aspartame in a similar way as

polydextrose. Therefore, without the benefit of hindsight, the skilled person would not have substituted polydextrose with dextrin with the aim of stabilising aspartame against moisture-caused degradation.

- 6.7 In conclusion, the Appellant has not submitted any convincing argument, let alone evidence, to show that the degradation of aspartame due to moisture follows the same mechanism as its thermal decomposition. As a consequence, the Board considers that the skilled person would not have turned to D4 for solving the technical problem posed. Moreover, polydextrose and indigestible dextrin differ in their chemical composition and in their structure. Thus, even if the skilled person did apply the teaching of D4 with the aim of stabilising aspartame against moisture, he would not have had any motivation for additionally changing the teaching of D4 by replacing polydextrose with indigestible dextrin.
- 6.8 The Appellant has not cited any other document to show that the solution as proposed in Claim 1 is obvious for solving the technical problem posed. The Board therefore considers that chewing gum according to Claim 1 involves an inventive step with respect to the available prior art (Article 56 EPC).
7. The dependent Claims 2 to 24 are directed to preferred embodiments of the chewing gum of Claim 1. Their subject-matter is therefore also new and inventive.

**Order**

**For these reasons it is decided that:**

1. The appeal against claims 32 and 39 is admissible.
  
2. The decision under appeal is set aside and the case remitted to the Opposition Division with the order to maintain the patent on the basis of claims 1 to 24 of the second auxiliary request filed during the oral proceedings after any necessary consequential amendments of the description and drawings.

The Registrar:

The Chairman:

G. Röhn

P. Kitzmantel