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# Datasheet for the decision of 26 October 2010

**Case Number:** T 0271/09 - 3.3.09

**Application Number:** 01970734.8

**Publication Number:** 1328162

**IPC:** A23G 9/04

**Language of the proceedings:** EN

**Title of invention:**
Carbon dioxide-hydrate product and method of manufacture thereof

**Applicant:**
The Coca-Cola Company

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 56

**Relevant legal provisions (EPC 1973):**
-

**Keyword:**
"Main request: inventive step (yes)"

**Decisions cited:**
-

**Catchword:**
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

**Case Number:** T 0271/09 - 3.3.09

# D E C I S I O N
**of the Technical Board of Appeal 3.3.09**
**of 26 October 2010**

**Appellant**: (Applicant)
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**Decision under appeal:**
**Decision of the Examining Division of the European Patent Office announced orally on 24 June 2008 and posted on 24 July 2008 refusing European patent application No. 01970734.8 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman:** W. Sieber
**Members:** N. Perakis
F. Blumer

## Summary of Facts and Submissions

I. European patent application No. 01970734.8 was filed in the name of The Coca Cola Company as PCT/US01/28245, claiming priority from US application No. 09/696,508 of 25 October 2000, and was published as WO 02/34065. The application was refused by a decision of the examining division announced orally on 24 June 2008 and issued in writing on 24 July 2008.

II. The decision was based on three sets of claims filed during the oral proceedings before the examining division, which corresponded to a main and two auxiliary requests. The examining division considered that the subject-matter of all three requests did not meet the requirements of Article 56 EPC. It argued that the claimed subject-matter was obvious in view of the disclosure of D1: US-A-4 738 862, considered to represent the closest state of the art, when taking into account the common general background knowledge of the person skilled in the art.

III. On 30 September 2008 the applicant lodged an appeal against the decision of the examining division, paying the appeal fee on the same day.

IV. Together with the statement setting out the grounds of appeal filed on 3 December 2008 the applicant/appellant submitted new requests, namely a main and seven auxiliary requests. It requested that the decision of the examining division be set aside and that a patent be granted on the basis of one of these requests. The applicant further requested the reimbursement of the appeal fee on the ground that the examining division

had committed a substantial procedural error by refusing to consider at the oral proceedings the fourth and fifth auxiliary requests which had been filed in the written procedure but withdrawn following a telephone conversation with the primary examiner.

V. In a communication dated 30 September 2010 the board indicated that the subject-matter of all requests on file appeared to lack inventive step.

VI. Oral proceedings were held before the board on 26 October 2010. During the oral proceedings the appellant filed as a new main and sole request a set of 31 claims and an accordingly adapted description. It withdrew all other requests, including the request for reimbursement of the appeal fee. Claim 1 of the new main request reads as follows:

"A method for preparing a frozen carbonated product comprising the steps of:

(a) contacting $CO_2$ under pressure with an aqueous liquid in a chilled reaction vessel;

(b) agitating said aqueous liquid and $CO_2$ in said reaction vessel to promote a reaction between said $CO_2$ and aqueous liquid, thereby forming a $CO_2$-hydrate containing product;

(c) cooling said $CO_2$-hydrate containing product to promote freezing thereof in said reaction vessel and form a solid $CO_2$-hydrate containing product;

(d) in said reaction vessel, grinding said solid $CO_2$-hydrate containing product to form solid $CO_2$-hydrate containing particles and

(e) forming said solid $CO_2$-hydrate containing particles into a frozen carbonated product by compacting the solid $CO_2$-hydrate containing particles."

Claims 2-31 depend directly or indirectly on Claim 1.

VII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request (description pages 1, 2, 2a, 3-10; Claims 1-31) as filed during the oral proceedings before the board.

VIII. The relevant arguments presented by the appellant in its written submissions and at the oral proceedings may be summarised as follows:

- The subject-matter of the new main request fulfilled the requirements of Article 123(2) EPC. It was essentially based on the third auxiliary request filed with the statement setting out the grounds of appeal.
- The claimed subject-matter was also clear. In particular, in step (d) of Claim 1 the qualification of the solid $CO_2$-hydrate containing particles as "having the consistency of fine powder" had been deleted, this feature having been added during prosecution of the application before the examining division.
- The claimed subject-matter was novel over the cited state of the art.
- The claimed subject-matter also involved an inventive step. D1 was considered to represent the most appropriate starting point for the assessment of inventive step. The technical problem solved by

the claimed invention was the provision of a method which produced an alternative type of confectionary product to that of D1. The product of D1 was a water-ice confection or ice-cream which would have a desired consistency because it was typically served or eaten with a spoon, whereas the product of the claimed invention was a solid carbonated ice product and thus had a different appearance and texture.

– D1, in particular, did not motivate the skilled person to compact the ground particles since this would adversely affect the consistency of the final product, by making it undesirably hard. Thus the skilled person starting from D1 and aiming at formulating an alternative type of confectionary products would not have arrived at the claimed subject-matter without using hindsight.

## Reasons for the Decision

1. The appeal is admissible.

2. Admissibility of the main request

The new main (sole) request is based on the third auxiliary request filed by the appellant with the statement setting out the grounds of appeal. That request was amended during the oral proceedings held before the board in order to overcome objections raised under Articles 84 and 123(2) EPC during the oral proceedings. The nature of the amendments was such that they did not prevent the board from reaching a final decision and thus the new main request was admitted under Article 13 RPBA.

3. Clarity under Article 84 EPC

The claims are clear and concise and are supported by the description. In particular, step (d) of Claim 1 no longer requires the solid $CO_2$-hydrate containing particles to have the consistency of "fine powder", a feature which had been introduced during prosecution of the application before the examining division.

4. Amendments under Article 123(2) EPC

4.1 The subject-matter of Claim 1 results from the originally filed Claim 1 into which further limiting features have been inserted:

- The feature that steps (a) to (d) are carried out in the same reaction vessel finds support on page 8, lines 5-7, which discloses a batchwise process.
- The feature that cooling leads to the formation of a solid $CO_2$-hydrate containing product is disclosed on page 5, lines 22-23.
- Lastly, the feature of compacting the solid $CO_2$-hydrate containing particles is disclosed on page 7, lines 8-10 and originally filed claim 18.

The combination of the above cited disclosures is allowable since it is supported by the originally filed application:

- The reaction vessel is one of the two alternative apparatus configurations for carrying out the preparation method, which is not disclosed to have any effect on the claimed method.
- The formation of a solid product is the direct result of freezing.

– The compaction of the product during formation is one of the two originally disclosed alternatives.

4.2 Dependent Claims 2-5, 8-31 correspond to originally filed Claims 2-17, 19, 22-25, 28-33 and 40, respectively. Dependent Claims 6 and 7 are disclosed in the description (page 4, lines 11-16 and page 6, lines 8-10, respectively).

4.3 Thus the claimed subject-matter 1 fulfils the requirements of Article 123(2) EPC.

5. Novelty under Article 54 EPC

6. The subject-matter of the new main request is a limitation of the main request refused by the examining division whose novelty was not an issue in the appealed decision. Furthermore, the board considers that none of the documents cited in this decision discloses step (e) of the method of Claim 1, namely "forming said solid $CO_2$-hydrate containing particles into a frozen carbonated product by compacting the solid $CO_2$-hydrate containing particles". Consequently the board acknowledges the novelty of the subject-matter of the new main request.

7. Inventive step under Article 56 EPC

7.1 The amended application is directed to a method for producing a compacted frozen carbonated product, such as, for example, an ice pop on a stick or in a container (page 7, 2nd full paragraph of the application as filed).

7.2 Closest state of the art

7.2.1 The board has no reason to disagree with the position of the examining division and the appellant that D1 should be considered to represent the closest state of the art. D1 (column 1, lines 6-10; Example I; Claim 1) discloses a method for preparing a carbonated ice confection product comprising the steps of:
- preparing a flavoured ice confection fluid phase,
- cooling the fluid phase such that a partially frozen slurry is obtained,
- contacting $CO_2$ with water under pressure at a cooling temperature such that a solid $CO_2$ clathrate-ice composite forms,
- grinding the solid clathrate-ice composite to obtain $CO_2$ clathrate-ice composite particles,
- exposing the $CO_2$ clathrate-ice composite particles to $CO_2$, moisture, temperature and pressure conditions for a period of time sufficient to allow a protective coating to form on the surface of the clathrate particles which prevents loss of $CO_2$ from the clathrate particles,
- mixing the partially frozen slurry and the coated clathrate particles, and
- further freezing the mixture to form a carbonated ice confection product.

Thus, D1 belongs to the same technical field and has the most technical features in common with the claimed method. Hence it constitutes the most promising springboard document towards the claimed invention.

7.2.2 As correctly pointed out by the appellant, the subject-matter of Claim 1 differs from the disclosure of D1 in that:

(i) steps (a) to (d) of Claim 1 are carried out in the same reaction vessel,

(ii) the contact of $CO_2$ with the aqueous liquid is followed by an agitation step (b) to promote the reaction between $CO_2$ and the aqueous liquid, and

(iii) the forming of the solid $CO_2$-hydrate containing particles into a frozen carbonated product is carried out by compacting the solid $CO_2$-hydrate containing particles.

7.2.3 It might be worth pointing out at this juncture that the board concurs with the appellant regarding the meaning of the term "compacting", which has to be understood as concerning the reduction in size by exercising pressure (page 7, lines 8-11 of the application as filed).

7.3 The technical problem to be solved

7.3.1 Having regard to the closest prior art, the objective technical problem has to be seen in the provision of a method for the preparation of an alternative frozen carbonated product.

7.3.2 The solution to this problem proposed by the application is the method according to Claim 1.

7.3.3 The examples in the application as filed do not illustrate the solution since the exemplified methods do not comprise step (e), namely the compacting step. Despite this deficiency, the board has no doubt that the claimed method solves the technical problem defined above, in particular because the application as filed

discloses on page 7, lines 8-11 that compression (*ie* the compaction) may be achieved using known methods.

7.4 The question of obviousness

7.4.1 The question which remains to be answered is whether the skilled person starting from D1 and aiming at providing a method for the preparation of an alternative frozen carbonated product would find in the state of the art the motivation to modify the method disclosed in D1 by the distinguishing features of the claimed method.

7.4.2 The modifications relating to (i) carrying out steps (a) to (d) in the same reaction vessel and (ii) using agitation in step (b) have not been demonstrated to contribute to the solution of the technical problem. In the board's view, these modifications over the process of D1 constitute obvious alternatives within the general background knowledge of the person skilled in the art. In particular with regard to modification (ii) it is obvious that agitation provides better mixing of the reactants, thereby improving the reaction between the reactants.

7.4.3 However, regarding the compacting of the solid $CO_2$-hydrate when carrying out forming in step (e), the board considers that the state of the art contains no hint which would motivate the skilled person to compact the product of D1. As convincingly argued by the appellant, D1 relates to the production of a water-ice confection or ice-cream, which will have a certain desired consistency. Such products are typically served or eaten with a spoon. Example I of D1 produces a

"slush" product, in Example II the clathrate-ice particles are mixed with an aerated creamy fluid. Thus, "soft" texture and air content are essential features of the product of D1. In contrast to this, the method of Claim 1 aims to produce a solid, *ie* compacted, carbonated ice product. Such a product may be added to water in order to introduce carbonation and optionally flavours, to thereby create a carbonated beverage as the frozen carbonated ice melts. The skilled person would not consider the compaction of the ground particles of D1, as this would adversely affect the rather "soft" consistency of the final product of D1, by making it undesirably hard. In fact, the skilled person starting from D1 and aiming at formulating an alternative type of confectionary product would not have arrived at the claimed subject-matter without using hindsight.

Thus, even if an agitation step was added to D1 and the reaction was carried out in one vessel the skilled person could not have arrived at the subject-matter of Claim 1 in an obvious way.

7.5 The subject-matter of dependent Claims 2 to 31 corresponds to preferred embodiments of that of independent Claim 1 and thus *mutatis mutandis* also involves an inventive step.

8. On the basis of the above considerations the board has come to the conclusion that the subject-matter of the main request fulfils the requirements of the EPC.

9. Lastly, the board is also satisfied that the description (pages 1 to 10) has been brought into conformity with the patentable set of claims.

## Order

## For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of the following documents:
   - Claims 1-31 as filed during the oral proceedings before the board
   - Description pages 1, 2, 2a, 3-10 as filed during the oral proceedings before the board
   - Sheet 1/1 as published.

The Registrar: The Chairman:

C. Eickhoff W. Sieber