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**Datasheet for the decision
of 3 May 2023**

Case Number: T 1256/21 - 3.2.04

Application Number: 05826001.9

Publication Number: 1838185

IPC: A47J31/44

Language of the proceedings: EN

Title of invention:

SYSTEM AND METHOD FOR PRODUCING FOAMED AND STEAMED MILK FROM
MILK CONCENTRATE

Patent Proprietor:

The Coca-Cola Company

Opponent:

Koninklijke Douwe Egberts BV

Headword:

Relevant legal provisions:

EPC Art. 83, 54(2), 56

Keyword:

Sufficiency of disclosure - (yes)

Novelty - (yes)

Inventive step - (yes)

Decisions cited:

Catchword:



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Case Number: T 1256/21 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 3 May 2023

Appellant: Koninklijke Douwe Egberts BV
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
18 June 2021 concerning maintenance of the
European Patent No. 1838185 in amended form.**

Composition of the Board:

Chairman A. de Vries
Members: G. Martin Gonzalez
C. Heath

Summary of Facts and Submissions

- I. This is the second appeal in the opposition proceedings against the patent. In a first appeal **T 1238/16** the Board (in the same composition) held that the main request before it (filed as auxiliary request 4 on 03.10.2019) was compliant with Article 123(2) EPC and remitted the case.
- II. In the present appeal, the opponent appeals the interlocutory decision of the opposition division to maintain the patent in amended form according to a main request filed on 21 September 2020, which corresponds to the main request of **T 1238/16**.
- III. The opposition division held inter alia that the invention was sufficiently disclosed, and claim 1 was new over D2 and involved an inventive step having regard to D1, D5, D6 and common general knowledge.
- IV. The appellant opponent requests that the decision under appeal be set aside and that the patent be revoked.

The respondent proprietor requests that the appeal be dismissed, in the alternative that the decision under appeal be set aside and the patent be maintained on the basis of one of auxiliary requests 1 - 5, all auxiliary requests filed on 2 May 2023.
- V. In preparation for oral proceedings, the board issued a written communication setting out its provisional opinion on the relevant issues.

Oral proceedings were held by videoconference before the Board on 3 May 2023.

VI. Claim 1 of the main request reads as follows:

"A condensed milk system (600) for creating foamed milk from a source of condensed milk, a source of water, and a source of pressurized air, comprising:
a pressurized air inlet system (160) for providing the pressurized air;
a mixing area (310) for mixing the condensed milk, the water, and the pressurized air;
a pump (130) to pump the condensed milk to the mixing area;
a flow meter (720) to measure a flow of the water to the mixing area; and
a ratio control system (700) in communication with said pump (130) and said flow meter (720) to provide a predetermined ratio of condensed milk and water to said mixing area (310)."

VII. In the present decision, reference is made to the following documents:

- (D1) WO 2004/004523 A1
- (D2) US 2004/0247757 A1
- (D5) US 5,842,603
- (D6) US 4,901,886

VIII. The appellant's arguments can be summarised as follows:

The claimed invention is not sufficiently disclosed. The subject-matter of claim 1 is not new over D2. Its subject-matter lacks an inventive step starting from D1 or in combination with common general knowledge, D5 or D6.

IX. The respondent's arguments can be summarised as follows:

The patent disclosure contains sufficient information for carrying out the invention. Claim 1 is new over D2. Its subject-matter involves an inventive step over the cited combinations starting from D1.

Reasons for the Decision

1. The appeal is admissible.
2. The invention is concerned with a beverage system for producing foamed milk from a source of condensed milk, see paragraphs [0001] and [0008]. To that end the system supplies condensed milk, water and pressurized air into a mixing area. The flow of the condensed milk and the water is measured and fed to a control system to provide a predetermined ratio of condensed milk and water to the mixing area. The mixing area provides turbulent mixing of the condensed milk, water and air for producing the foamed milk, see paragraph [0006].
3. Main request - Sufficiency.
 - 3.1 In their statement of grounds the appellant opponent contests the opposition division's positive finding of sufficiency of disclosure. The appellant, during the oral proceedings before the Board, merely referred to their written submissions.
 - 3.2 As noted by the Board in its written communication:

"9. The appellant's insufficiency objections do not appear convincing.

As held by the opposition division, see the impugned decision, reasons section 1, patent specification paragraph [0042] indicates how to control water flow with a valve and obtain the claimed predetermined ratio of condensed milk and water. The Board is unable to see how this may be incompatible with also providing a closed loop control to the condensed milk supply as described in the last two sentences of paragraph [0042].

The appellant also objects that a lack of disclosure over the whole range claimed arises because the description only offers an embodiment of the water supply control system (an on/off valve) that can achieve a predetermined ratio of water to condensed milk, as claimed. This appears to arise from an incorrect interpretation of the present claim scope and also to be a misapplication of case law developed in the field of chemistry, where a claimed invention resides in a claimed compositional range or similar. The present claim does not define any composition or parameter range of values. It captures the essence of a mechanical structure in terms of its functional terms, a functional feature, and limits the claim scope accordingly. An embodiment that does not meet the functional feature is not part of the claimed invention and cannot therefore give rise to a lack of sufficiency of the invention. The contested claim requires that the system must provide a given ratio of condensed milk and water, which implies being able to control the amount of water fed to the system. A water supply structure that does not meet this functional limitation is not part of the claimed subject-matter. Arguing a lack of sufficiency because the skilled person may devise a mechanical structure that does not meet this functional

feature required by the claim, which in substance is the appellant's objection, fails. The skilled person immediately understands that those structures are not part of the claimed invention."

- 3.3 The appellant refrained from comment after issuance of the communication. Absent any further submissions, the Board sees no reason to change its point of view. It thus holds that the invention as claimed is sufficiently disclosed, Art 83 EPC.
4. Main request - Novelty.
- 4.1 The appellant challenges the division's conclusion that claim 1 is novel over D2, cf. impugned decision, section 2.
- 4.2 The Board is not convinced by the appellant's arguments as regards the disclosure of a flow meter by D2. The skilled person understands the terms of a claim in its usual sense in the relevant field of technology. In mechanical engineering, a flow meter in its usual meaning is a sensor that measures - thus determines - the flow rate and provides an indication of the measured value , see also OED: "flow-meter n. an instrument for measuring rate of flow". Indeed, this is what the claimed feature specifies: a flow meter to measure a flow of the water. It also follows from the above that the feature of a ratio control system in communication with said flow meter implies communication of the measured flow rate.
- 4.3 In D2, the control device 16 stops the water pump 14 and closes valve 18 after a predetermined time to dose a certain amount of water, cf. paras [0048], [0049]. This, however, does not meet the limitations of a flow

meter. Otherwise, it is common ground that there is no express mention of measurement or determination of the water flow rate, much less of a flow meter for that purpose.

- 4.4 The appellant alternatively argues that controllable pumps, such as pump 14 of D2, need an encoder to control the rpm of the pump rotor. An encoder is therefore implicitly disclosed in D2. The rotation speed of the pump rotor corresponds to the flow rate through the pump. The encoder output thus provides a measure of the flow rate through the pump and can be considered a flow meter.

The Board is not convinced by this argument. Firstly, D2 does not specify the type of pump 14. Not all controllable pumps have an encoder; it suffices that a pump can be controlled in on and off states. A pump can also be open loop controlled, without any rotor rpm feed-back. Moreover, a pump encoder output such as pump rpm (e.g. in centrifugal pumps) or pump count (as in peristaltic pumps) is not the same as flow rate, which can be derived from rpm or count and knowledge of other pump or system parameters. For example, in a centrifugal pump at the same number of rotor revolutions the pump can deliver different water flow rates, depending on the hydraulic circuit connected to the pump, i.e. type of valve or valves, of piping or water level in the reservoir 12. Finally, the Board adds that even if pump 14 were to have an encoder and that encoder could be used to calculate flow rate, the fact that it then could function as or equivalent to a flow meter, does not make it a flow meter as the skilled person would understand that term.

- 4.5 The opposition division was thus correct in concluding that there is no direct and unambiguous disclosure in D2 of a flow meter.
- 4.6 Document D2 also fails to disclose a pressurized air inlet system for providing pressurized air, as claimed. In the Board's view the formulation of this feature is such that it must be configured to provide pressurized air. It is qualified as a *pressurized air inlet system* (emphasis added), that is as something more than a mere inlet, and its function is stated, namely *for providing pressurized air*. Consequently, this claim feature must be adapted to carry out that function, that is it must provide pressurized air. An inlet of itself does not provide pressurized air, i.e. cannot carry out that function. That function requires at least the presence of a source of pressurized air. D2 undoubtedly does not use pressurized air but supplies ambient air via an aeration valve 22, paragraph [0041].
- 4.7 The Board confirms the conclusion of the opposition division that claim 1 is new over D2.
5. Main request - Inventive step.
- 5.1 The appellant contests the division's positive inventive step conclusions starting from D1.

D1 describes a system for producing foamed milk using mixing area 310. Many of its features correspond to those of the claimed system, cf. figure 1 of D1 which is identical to figure 1 of the patent. However, as in figure 1 of the patent (which is not covered by the claims of the present patent) foamed milk is formed

from a milk supplied from a milk supply 120, see paragraph 0019, rather than from condensed milk.

5.2 It is common ground that the system of D1 does not disclose a source of water, a flow meter to measure water flow, and a ratio control system in communication with the pump and the flow meter to provide a predetermined ratio of milk and water.

5.3 These differing features can be seen to constitute a closed loop feedback supply control using a flow meter and the pump to control the ratio in which the two are supplied to the mixing area. They can be seen to modify the system of D1 so that it can be used with condensed milk. It is common ground that the correct formulation of the problem, without pointers to the solution, is how to produce foamed milk of high quality in a more efficient manner, see impugned decision section 3.3.3, and patent specification para [0004].

5.4 The Board does not doubt that the skilled person would consider the possibility to use condensed milk as a matter of obviousness, for example in the light of D2 in the same field.

The Board is however unconvinced that it would then be common general knowledge to use a water flow meter and a ratio control system connected to the pump and to the flow meter to dilute the condensed milk and water in the right amounts. The appellant has provided no evidence to substantiate this allegation. The allegation that it would be common general knowledge that there are only two ways of effecting controlled dilution, either by forward control or feedback control, the latter necessarily requiring a flow meter, is equally unsubstantiated and fails to convince.

Nor can it be inferred from D1 or D2 that these features might be known or obvious in another context. D1 provides limited information on how milk, air and steam are mixed in the right quantities. Milk is metered, e.g. using a peristaltic pump 130, paragraph [0021], but for the pressurized air and the steam the text is silent; most likely this is via valve control either at one of check valves 550 or at hose connector 185, which may be a 3 way valve, paragraph [0023].

D2 teaches a similar control using signals \hat{S} of dosing devices 6 and 8 (which may be a pump 14) and valve 18 for supplying water and concentrate in the right quantity, cf. paragraphs [0042], [0048] and [0049]. In this regard D2 already teaches a way of diluting concentrate, which may be condensed milk, with water that is different from that claimed. Thus, if the skilled person wishes to use condensed milk diluted with water to produce foamed milk more efficiently, they would as a matter of obviousness do so as taught by D2.

- 5.5 The appellant also submits that the use of a flow meter system as claimed would be obvious in the light of D5 and D6 once the skilled person as a matter of obviousness uses condensed milk diluted with water to replace the supply of milk in the D1 device.

As stated earlier, it may be obvious in the light of D2 to use condensed milk, but D2 itself already suggests a different way of diluting it with water than that claimed. Even so, the Board is unconvinced that the skilled person, designing devices for producing foamed beverages such as D1 and D2, would look towards juice dispensers as disclosed in D5 and D6 for alternative

ways to dilute condensed milk. Foaming requires a specific and particular mixing and heating process of the components, such as milk and air, to form a proper and stable foam. It goes without saying that the qualities of juice are rather different. In this regard it is worth noting that the IPC classifications are rather different, A47J for D1 and B67D for D5 and D6.

Nor does the Board believe it would be within routine skills of the skilled person to abstract from D5 or D6 the way dilution is controlled to apply it in a different context.

- 5.6 Therefore, the Board is not convinced that the modification to the system of D1 to use a water flow meter and ratio control system as claimed, connected to the flow meter and a condensed pump milk, is rendered obvious by the teachings of the cited prior art.

6. For the above reasons, the Board confirms the conclusions of the decision under appeal as regards sufficiency, novelty and inventive step of the main request. All objections raised by the appellant fail to convince the Board otherwise. Consequently, the appeal fails.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated