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**Datasheet for the decision
of 26 May 2023**

Case Number: T 1419/21 - 3.2.04

Application Number: 07847879.9

Publication Number: 2091393

IPC: A47J31/40

Language of the proceedings: EN

Title of invention:

DEVICE AND METHOD FOR PRODUCING A FROTHED LIQUID FROM SOLUBLE
INGREDIENTS AND DILUENT

Patent Proprietor:

Société des Produits Nestlé S.A.

Opponent:

Jordá Petersen, Santiago

Headword:

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step - (no)

Decisions cited:

G 0009/92

Catchword:



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Case Number: T 1419/21 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 26 May 2023

Appellant: Société des Produits Nestlé S.A.
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Appellant: Jordá Petersen, Santiago
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
1 July 2021 concerning maintenance of the
European Patent No. 2091393 in amended form.

Composition of the Board:

Chairman A. de Vries
Members: G. Martin Gonzalez
T. Bokor

Summary of Facts and Submissions

- I. This is the second appeal in the opposition proceedings against the patent. In a first appeal **T 2313/15** the Board (in the same composition) held that granted claim 15 was new (the only ground on which the opposition division had decided that case) and remitted the case.
- II. In the present appeal, the proprietor and the opponent appeal the interlocutory decision of the opposition division to maintain the patent in amended form according to an auxiliary request 2 which included only the granted method claims.

The opposition division held *inter alia* that claim 1 of the upheld request (corresponding to granted claim 15) involved an inventive step.

The proprietor withdrew their appeal with letter of 3 February 2023.

- III. Upon filing their appeal the proprietor requested cancellation of the impugned decision and maintenance of the patent as granted, auxiliarily that the patent be maintained on the basis of the first or second auxiliary request, filed with the grounds of appeal on 10 November 2021, corresponding to auxiliary requests 1 and 2 (as upheld) before the opposition division. As they subsequently withdrew their appeal they are now respondent but did not formally change their requests.

The appellant opponent requests that the decision under appeal be set aside and the patent revoked.

- IV. In preparation for oral proceedings the Board issued a communication, dated 30 November 2022, setting out its provisional opinion on the relevant issues.

Oral proceedings before the Board were held by videoconference on 26 May 2023 in the absence of the respondent proprietor, as they had announced with letter of 19 April 2023.

- V. Claim 1 of auxiliary request 2 corresponds to independent method claim 15 as granted and reads as follows:

"Method for producing a frothed liquid in a beverage production apparatus comprising:

- providing a chamber(13) with a transverse bottom wall (14) and a longitudinal upward wall (15),
- dosing the chamber (13) with soluble ingredient,
- feeding a diluent through a diluent inlet (18) to create a jet of diluent in the chamber (13) and mix the diluent with said soluble ingredient to dissolve it into a liquid,
- controlling the liquid flow delivered out of the chamber in such a manner that the liquid can rise up a certain level along the side of the upward wall when diluent is fed in the chamber and for the liquid to form a sheared surface of liquid which is energetically impacted, as a result of the direction and dimension of the diluent inlet in the chamber, by the jet of diluent,
- stopping the diluent intake inside the chamber and draining the frothed liquid from the chamber at least one outlet."

VI. In the present decision, reference is made to the following document:

(D2) US 3,212,757

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

Claim 1 as upheld (auxiliary request 2) does not involve an inventive step in the light of D2 in combination with common general knowledge.

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

Claim 1 of auxiliary request 2 involves an inventive step over the cited prior art.

Reasons for the Decision

1. The appeal is admissible.

2. Background

The invention is concerned with the production of frothed liquid from the combination of a diluent and a soluble ingredient using a mixing chamber, see specification paragraph [0009]. A soluble ingredient (powder or liquid concentrate) is dosed into the mixing chamber. The force of a continuous jet of diluent injected into the mixing chamber is used to form a swirling layer of liquid along an internal wall of the chamber, the jet being so sized and oriented that the formed layer of liquid is also impacted on its surface by the incoming jet. As a result the powder or

concentrate is dissolved and froth is produced. The frothed liquid flows out of the chamber through a bottom outlet, see paragraphs [0010]-[0013] and [0051] of the specification.

3. Main request and first auxiliary request - Reformatio in peius.

The proprietor withdrew their appeal. The opponent is thus now sole appellant. According to the principle of prohibition of reformatio in peius, the patentee as respondent is primarily restricted to defending the patent as maintained by the opposition division, cf. **G 9/92** (OJ 1994, 875); and Case Law of the Boards of Appeal, 10th edition 2022, V.A.3.1. The respondent proprietor's main request and first auxiliary request include device claims that were not present in the version of the claims as upheld. The upheld claims only contain method claims.

Therefore the scope of the main request and the first auxiliary request go beyond the scope of protection of the upheld claims. They violate the principle of prohibition of reformatio in peius. For this reason, they are not admissible.

4. Second auxiliary request (claims as upheld) - Inventive step
 - 4.1 With their grounds of appeal, the opponent contests the division's finding of inventive step starting from D2 in combination with common general knowledge, cf. section 26.3 of the decision. This is discussed in section 1. of their grounds (headed "D2 as starting point") up to and including the penultimate paragraph, where the solution of the problem of providing an

alternative chamber geometry is seen to fall within the routine practice of the skilled person.

- 4.2 As held by the Board in the previous appeal, document D2 describes a method for producing a frothed beverage comprising the following features of contested claim 1: providing a mixing chamber, dosing the chamber with soluble ingredient, feeding a jet of diluent into the chamber and controlling the liquid outflow to form a whirl with a sheared surface which is energetically impacted by the jet, cf. **T 2313/15**, reasons 3.1.1-3.1.2.

"3.1.1 It is undisputed that document D2 discloses a mixing chamber 12 fed through an inlet 23 with powder or liquid concentrate; and that a jet 28a of diluent is injected through port 28 to create an upward swirl of mixed fluid along arcuate wall 11 toward the end 11a, see column 3, lines 19-25. When the layer of liquid leaves the end of surface 11a, it forms a freely falling sheet or curtain.

3.1.2 D2 states that the force of the jet 28a causes some of the liquid to make several circuits, see column 3, lines 61-64. In the Board's understanding this implies that the jet impacts the liquid swirling along the arcuate wall 11 with sufficient energy to maintain it in swirling motion. As the chamber is oriented vertically and the liquid is also made to swirl in a vertical plane, it necessarily rises up to form a "sheared" surface of liquid which is energetically impacted by the jet of diluent, as also held by the impugned decision, see reasons point 2.1. Here, "sheared" surface is understood as denoting a liquid surface

or surface layer that is subjected to shear forces, cf. paragraphs [0010] and [0016] of the patent specification. Due to the impact of the injected liquid and its angle, which is such as to maintain the swirling action, high shear forces are necessarily at work also in D2 in the liquid as it rises."

- 4.3 The Board also concluded that D2 did not disclose the longitudinal upward wall required by claim 1 so that its subject-matter was new, cf. **T 2313/15**, reasons 3.1.3-3.1.4:

"3.1.3 The Opposition Division further held that the arcuate wall 11 embodies both the transverse bottom wall and the longitudinal upward wall in the sense of granted claim 15, see point 2.3 of the impugned decision. According to the Division, the lower section of wall 11 anticipates the claimed transverse bottom wall while the lateral upward section of arcuate wall 11 embodies the claimed longitudinal upward wall.

3.1.4 However claim 15 also requires the upward wall to be longitudinal. In the Board's understanding, "longitudinal" calls for a wall that is placed lengthwise or is otherwise related to the length of the object, the length of an object being its longest dimension. Thus the Board holds that granted claim 15 requires an upward wall that is placed along or related to the longest dimension of the chamber. However, document D2 discloses a disc shaped chamber 12, where a longest dimension cannot clearly and unambiguously be identified by the skilled person. Therefore, in the Board's understanding, the skilled person would not derive

from D2 as a matter of direct and unambiguous disclosure that the chamber has a longitudinal upward wall."

It is true that these sections which focused only on the argument of the previous appealed decision do not expressly state whether or not D2 also discloses a transverse bottom wall. In the broadest meaning of the term *transverse*: "lying across; situated or lying crosswise or athwart" (OED) this feature can be identified with the lower, bottom section of the arcuate surface 11 of chamber 12.

Alternatively, because "transverse" appears in the claim in conjunction with and in opposition to "longitudinal" it may be read in the more specific sense of "esp. situated or extending across the length of something, spec. at right angles (opposed to longitudinal)" (OED). In that case, as the disk has no longitudinal axis, the lower, bottom section of wall 11 cannot be transverse thereto. Because this feature is intricately tied to that of the longitudinal wall, inventive step here also stands or falls with that latter feature. Thus, in a chamber as in D2 that is modified to have a longitudinal axis or longitudinal walls, the bottom section of wall 11 will as a consequence become transverse in opposition thereto.

In either case, inventive step depends solely on the difference of the longitudinal wall.

- 4.4 Applying the problem-solution approach, the next step is to identify the technical effect achieved by a longitudinal wall, and to formulate the corresponding objective technical problem on the basis of that effect.

As variously stated in case law, it is important that the objective technical problem is formulated neither too narrowly nor too broadly. In most cases, the objective technical problem can be formulated as how to achieve the technical effect, cf. Case Law of the Boards of Appeal, 10th edition 2022 (CLBA), I.D.4.2.

4.4.1 The appellant opponent argues that the upward wall being longitudinal does not provide a technical effect. Neither the appealed decision nor the respondent proprietor in response to the appeal indeed identify any associated technical effect. In this regard the Board agrees with the appellant opponent's view that this feature alone does not prevent overflow, cf. patent specification paragraph 0022, as this requires the presence of a central opening at the top of chamber, which is however not claimed. Where there is an upper baffle, cf. specification paragraph 0026, it is the baffle and not the longitudinal extension of the wall that prevents overflow. The respondent proprietor has also not responded to this argument.

4.4.2 Otherwise this feature is seen to represent an alternative chamber geometry to that depicted in fig. 1 of D2.

It therefore seems reasonable, in particular in view of the absence of any other identifiable effect, to formulate the technical problem accordingly as how to provide an alternative chamber geometry.

4.4.3 The respondent's only argument is that this problem contains pointers to the solution. As stated they themselves fail to offer an alternative. Absent any other effect or problem, it seems quite reasonable to

base the problem on an easily observable consequence - a changed geometry - of this differing feature.

- 4.5 In the Board's view the skilled person, an engineer involved in the design and development of beverage making machines, in realizing a mixing chamber as taught by D2 would as a matter of routine design effort consider alternative geometries to that shown in the drawings of D2. As explained by the appellant during the oral proceedings, the invention of D2 is not predicated on a geometrically exact or precise shape. The disclosure of D2 leaves open to the skilled person the possibility to modify the chamber geometry without departing from the principles of the known invention, cf. col. 2, ln. 11-19 referring to fig. 1: "The arcuate surface gives to the periphery of chamber 12 a generally volute configuration although it is not necessary that the surface of the wall 10 be a geometrically correct spiral. Broadly speaking, the arcuate surface 1 is characterized by a change in radius of curvature with the minimum radius at one end 11a and the maximum radius at the other or inlet end 11b, the intervening change in radius occurring progressively or in steps." This passage makes clear, if not already apparent from the figures themselves, that these are of schematic nature and are not meant to show the exact, actual shape of the mixing chamber, but rather to illustrate its general features, namely the arcuate wall 11 of changing curvature set between the pair of flat parallel side walls 14,15 (where the plane of curvature may be vertical - as shown - but also horizontal), as apparent from the text, see col.2, ln. 6 to 44.

The actual shape that chamber will take will depend on various factors, for example how much space and in what form/shape is available for the chamber, depending on the design of the housing of the dispensing machine. The shape of the chamber may further depend on the velocity and angle of injection of the jet of water 28a entering at port 28, the rate at which (premixed) powder enters the chamber. As the opponent convincingly argued during the oral proceedings, it is easily conceivable that while taking these various factors into account the skilled person by routine design effort that may involve routine trial and error would arrive at a chamber shape that is more elongate or higher than shown in figure 1, i.e. with a shape that is stretched in the vertical direction with respect to the shape shown in that figure. Such a modified geometry would have a definite longest dimension with the flat pair of plates 12 forming upward longitudinal wall sections, to which the bottom section of arcuate wall 11 would then be transverse, i.e. form a transverse bottom wall section. The skilled person would thus arrive at a method for producing a frothed liquid in a whirl chamber with all claimed features without inventive skill.

- 4.6 In this regard the Board is not convinced by the appealed decision's argument repeated by the respondent that the skilled person would be prevented from increasing the chamber height because such modification would interfere with the dynamics of the swirl. Rather, they would simply choose an injection velocity and speed to match the height of the chamber. The Board is further unable to understand, why the resultant oval chamber shape "would thus not have two distinct walls" as reasoned in the final sentence of reasons 26.3.1 of

the decision under appeal: the two distinct walls are the flat, parallel walls 14,15 which because of their oval shape are now longitudinal in shape. If what is here meant by the division is that there is no sharp edge or corner that clearly delimit the different claimed walls, this is also not convincing. Claim 1 does not require any sharp transition between longitudinal and transverse walls. Arcuate transitions between walls also fall under the scope of the claim.

- 4.7 For the above reasons, and contrary to the conclusions of the opposition division, the Board considers that claim 1 as maintained lacks an inventive step in the sense of Article 56 EPC.

5. In the light of the above conclusion, the decision must be put aside. The respondent has not filed any further request with amended claims. The Board thus finds that taking into consideration the amendments made by the proprietor, the patent and the invention to which it relates do not meet the requirement of the Convention and the patent must be revoked pursuant to Article 101(3)(b) EPC.

Order

For these reasons it is decided that:

1. **The decision under appeal is set aside.**
2. **The patent is revoked.**

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated