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**Datasheet for the decision
of 12 July 2019**

Case Number: T 2327/16 - 3.3.09

Application Number: 08846680.0

Publication Number: 2217086

IPC: A23F5/38

Language of the proceedings: EN

Title of invention:

INSTANT BEVERAGE PRODUCT

Patent Proprietor:

Société des Produits Nestlé S.A.

Opponent:

Mondelez Global LLC

Headword:

Relevant legal provisions:

EPC Art. 54(2), 84

RPBA Art. 13(1)

Keyword:

Main request: novelty (no)

Auxiliary requests 1-5: clarity (no)

Auxiliary request 6: admissibility (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Case Number: T 2327/16 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 12 July 2019

Appellant: Société des Produits Nestlé S.A.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
2 August 2016 concerning maintenance of the
European Patent No. 2217086 in amended form.**

Composition of the Board:

Chairman W. Sieber
Members: N. Perakis
D. Rogers

Summary of Facts and Submissions

I. This decision concerns the appeals filed by the patent proprietor and the opponent against the opposition division's interlocutory decision that European patent No. 2 217 086 as amended meets the requirements of the EPC.

II. In its notice of opposition the opponent raised objections under Article 100(a) (lack of novelty and lack of inventive step) and 100(b) EPC.

The documents filed during opposition proceedings included:

D1: WO 2009/040249 A1; and

D12: US 4 840 809 A.

III. The opposition division decided that:

- the subject-matter of claim 10 of the main request (a product-by-process claim) lacked novelty in view of D12; and
- the subject-matter of the claims of auxiliary request 1 met the requirements of the EPC.

Independent claims 1 and 10 of the main request (both before the opposition division and the Board) read as follows (the amendments over claims as granted are underlined):

"1. Method for the manufacture of an instant beverage powder comprising the steps of:

- a. Providing a porous particulate base powder
- b. Sintering said powder at 40-90°C to form an agglomerate cake and
- c. texturising the agglomerated cake to obtain an instant beverage powder,

wherein the porous base powder is characterised in that it has a particle porosity of at least 45%, wherein the pores have a D₅₀ diameter of less than 80 micrometres and has a pore diameter distribution span of less than 4, and wherein the sintering is carried out under a humid atmosphere having a moisture content of 20 to 80%."

"10. Instant beverage powder obtainable by a method according to claims 1 to 9."

Claim 1 of auxiliary request 1 differed from claim 1 of the main request in that it was restricted to an instant coffee (instead of a beverage) powder, and in that the following features were added at the end of the claim:

"wherein the instant coffee powder has a foaming porosity of at least 35%, an open pore volume of less than 3 ml/g, a closed pore average diameter D₅₀ of less than 80 micrometers, and wherein the instant coffee powder has a crema of at least 3 ml when 5g powder is reconstituted in 200 mL deionised water at 85°C".

Claim 9 of auxiliary request 1 referred to an instant coffee powder obtainable by a method according to claims 1 to 8.

IV. **The patent proprietor** requested that the opposition division's decision be set aside and that the patent be maintained on the basis of the claims of the main request, or alternatively, on the basis of any of auxiliary requests 1 to 5, all requests submitted with the statement setting out the grounds of appeal dated 9 December 2016.

Claims 1 and 10 of the **main request** are identical to the respective claims of the main request of the appealed decision.

Claim 1 of **auxiliary request 1** derives from claim 1 of the main request with the addition of the following feature:

"wherein the instant beverage powder has a crema of at least 3 ml when 5g powder is reconstituted in 200 mL deionised water at 85°C".

Claim 1 of **auxiliary request 2** differs from claim 1 of auxiliary request 1 only in that it is restricted to "an instant coffee powder".

Claim 1 of **auxiliary request 3** is identical to claim 1 of auxiliary request 1 of the appealed decision (point III).

Claim 1 of **auxiliary request 4** differs from claim 1 of auxiliary request 3 in that the sintering is carried out under a humid atmosphere having a moisture content of 60 to 80% (it was 20 to 80%).

Claim 1 of **auxiliary request 5** is further limited in that the sintering of the powder is carried out at 40-70°C (it was 40-90°C) to form an agglomerated cake.

- V. **The opponent** requested that the decision under appeal be set aside and that the patent be revoked in its entirety.
- VI. As both the proprietor and the opponent are appellants in these proceedings, for simplicity the board will continue to refer to them as the proprietor and the opponent.
- VII. By letter dated 26 April 2017, the patent proprietor filed observations on the opponent's appeal.
- VIII. By letter dated 26 April 2017, the opponent filed observation on the patent proprietor's appeal and requested that auxiliary requests 1, 4 and 5 not be admitted into the proceedings.
- IX. On 3 June 2019, the board issued a communication in preparation for oral proceedings.
- X. By letter dated 21 June 2019, the opponent filed observations on the board's preliminary opinion.
- XI. On 12 July 2019, oral proceedings were held before the board. Towards the end of the oral proceedings the patent proprietor, after having heard the conclusion of the board on auxiliary request 5, submitted auxiliary request 6 and requested that it be admitted into the proceedings.

Claim 1 of auxiliary request 6 derives from claim 1 of the auxiliary request 3 with the deletion of the feature:

"wherein the instant coffee powder has crema of at least 3mL when 5 h powder is reconstituted in 200 mL deionised water at 85°C".

XII. The arguments put forward by the **patent proprietor** in its written submissions and during the oral proceedings that are relevant to the present decision may be summarised as follows:

Main request

- Claim 10 of the main request was novel over D12, which did not disclose the internal structure of the precursor particles of the agglomerate. In view of the disclosure of D12, this internal structure did not change. Thus, irrespective of the effect of sintering on the internal structure of the particles of claim 10 (see figure 3 of the patent in suit), they were necessarily different from those of the agglomerate of D12. Furthermore, it was not correct that the internal structure of the particle collapsed as shown in the right part of figure 3 of the patent in suit. This was not the meaning of paragraph [0023] of the patent in suit. Anyway, the opponent had not put forward any evidence to prove its assertion.
- The reason why claim 1 did not mention any sintering time was that the parameters of sintering were interrelated and that time depended on the applied temperature and the moisture content.
- Thus, the claimed instant beverage was not directly and unambiguously derivable from the disclosure of D12.

Auxiliary request 1

- Claim 1 of auxiliary request 1 fulfilled the requirements of Article 123(2) EPC. Its subject-matter derived from the combination of claim 18 as filed with claims 22 and 23 as filed and the disclosure concerning the "crema" from the application as filed (page 12, lines 21-24). The disclosure of the "crema" was general and concerned any instant beverage powder.
- The subject-matter of claim 1 was also clear. A method for measuring the volume of the "crema" was disclosed in the patent in suit (page 12, lines 24-34). Contrary to the assertions of the respondent, the skilled person would measure the volume of the "crema" by using a normal coffee cup or mug.

Auxiliary requests 2 to 5

- The subject-matter of claim 1 of auxiliary requests 2 to 5 was also clear for the reasons given for claim 1 of auxiliary request 1.

Auxiliary request 6

- Auxiliary request 6 should be admitted into the proceedings. Claim 1 corresponded to claim 1 of auxiliary request 3 from the subject-matter of which the feature relating to the "crema" had been deleted. The subject-matter of claim 1 was easy to understand and the amendment overcame the objection raised against claim 1 of the hierarchically higher ranked auxiliary requests. The core of the case

remained the same and did not change the arguments of the parties on inventive step.

XIII. The arguments put forward by the **opponent** in its written submissions and during the oral proceedings that are relevant to the present decision may be summarised as follows:

Main request

- The subject-matter of claim 10 of the main request, a product obtainable from the method of claim 1, lacked novelty over the disclosure of D12. The powder particles of claim 10, which resulted from the texturising of the agglomerated cake previously obtained by sintering precursor powder particles, did not have any more the structural properties of the precursor powder particles. In fact, as acknowledged in the patent in suit (paragraph [0023]), it was physically impossible to avoid the modification of the particle internal structure during sintering. Therefore, the method of claim 1, which was very broadly defined, provided an instant beverage powder according to claim 10, which could not be differentiated from the instant beverage powder disclosed in D12.

Auxiliary request 1

- The subject-matter of claim 1 of auxiliary request 1 did not fulfil the requirements of Article 123(2) EPC. The feature "a crema of at least 3 ml when 5 g powder is reconstituted in 200 mL deionised water at 85°C" was disclosed on page 12, lines 21-24, in relation to the instant beverage powder of claim 1 as filed (a first

product) and not in relation to the instant beverage powder obtained by the method of claim 18 as filed (a second product). The skilled person would not find any incentive in the application as filed to combine this feature with the subject-matter of claims 18, 22 and 23 as filed.

- Furthermore, the subject-matter of this claim lacked clarity since the feature relating to "crema" defined the result to be achieved and the claim did not contain the method of measuring the volume of the "crema". With regard to the method cited in the patent in suit (paragraph [0053]), it was incomplete in view of D1 (figure 5; page 4, lines 7-12).

Auxiliary requests 2 to 5

- The subject-matter of claim 1 of auxiliary requests 2 to 5 lacked clarity for the reasons provided for claim 1 of auxiliary request 1.

Auxiliary request 6

- Auxiliary request 6 should not be admitted into the proceedings in view of Article 13 RPBA. This request was filed at a very late stage, after the deliberation of the board on auxiliary request 5. However the objection of lack of clarity had been raised with the opponent's grounds of appeal and thus the patent proprietor could and should have filed this request much earlier. Additionally, the subject-matter of claim 1 was divergent from and broader than the subject-matter of claim 1 of the hierarchically higher ranked auxiliary requests.

XIV. The patent proprietor requested that the decision under appeal be set aside and that the patent be maintained upon the basis of the main request, or upon the basis of one of auxiliary requests 1 to 6. The main request and auxiliary requests 1 to 5 were filed under cover of a letter dated 9 December 2016, auxiliary request 6 was filed at the oral proceedings on 12 July 2019.

XV. The opponent requested that the decision under appeal be set aside and that the patent be revoked.

Reasons for the Decision

1. Main request

1.1 Claim 10 of the main request concerns an instant beverage powder which is obtainable by the method according to claims 1 to 9 (it is a product-by-process claim). The broadest definition of the method is provided in claim 1, according to which the manufacture of an instant beverage powder comprises the steps of:

- providing a porous particulate base powder which has a particle porosity of at least 45%, wherein the pores have a D₅₀ diameter of less than 80 micrometers and has a pore diameter distribution span of less than 4;
- sintering said powder at 40-90°C to form an agglomerated cake, wherein the sintering is carried out under humid atmosphere having a moisture content of 20 to 80%; and

- texturising the agglomerated cake to obtain an instant beverage powder.

It is noted that the claimed method is not limited with respect to the treatment time of sintering and that neither the method claim nor the product-by-process claim include any explicit definition of the product structure. Only the precursor powder is defined by means of physical parameters.

- 1.2 The opposition division had raised a lack of novelty objection of its own motion based on D12, which was reiterated by the opponent in the appeal proceedings. D12 discloses an agglomeration process of a pulverulent water-soluble particulate material such as soluble coffee (abstract; column 1, lines 5-11).

The agglomerates have a freeze-dried look-alike appearance and texture (column 2, lines 49-51) and are instant beverage powders such as those of claim 10 of the main request.

The method disclosed in example 1 of D12 involves the agglomeration of pulverulent spray-dried coffee (column 13, lines 30-31) at 88°C under a humid atmosphere having a moisture content of 32% (column 13, lines 53-56). Thus D12 discloses the claimed sintering step of claim 1 of the main request.

Example 1 further discloses that the agglomerate is charged into a subdivider and sized with screens (column 13, lines 66-67). Thus D12 discloses the claimed texturising of step of claim 1 too.

However, D12 does not disclose the physical parameters of the porous particulate base powder (the precursor particles) which is submitted to sintering.

- 1.3 In view of the disclosure of D12, the novelty issue boils down as to whether the internal structure of the porous particulate base powder provided in step a. of claim 1, i.e. the precursor material, is maintained in the final instant beverage powder of claim 10, and whether this constitutes a distinguishing feature in comparison to the particles of the powder of example 1 of D12.
- 1.4 It may well be that under certain sintering conditions the internal structure of the porous particulate base powder is maintained in the final powder. However, the claimed method does not impose any limit on the sintering time and extent thereof, so that the physical properties of the precursor particles are not necessarily maintained in final powder particles. On this basis, the physical properties of the precursor particles are not suitable to always and unequivocally distinguish the sintered powder particles of claim 10 from the sintered powder particles of example 1 of D12.

The fact that the internal structure does change depending on the sintering residence time can be seen from figure 3 of the patent in suit, which shows SEM images comparing the microstructure of final product granules with different sintering residence time and the impact of the microstructure on the foam quality. Paragraphs [0075] and [0076] of the patent in suit describe this experiment in more detail:

"[0075] The sintering must be carried out during a period of time which enables the correct degree of

fusing of the particles without causing undesirable changes to the internal structure of the particles. As can be seen in Figure 3, the sintering residence time will influence the microstructure of the precursor particles. An increasing sintering time will result in an increased fusion between the particle. This will influence the foaming properties of the sintered product (as shown in Fig. 3)."

"[0076] Figure 3 represents on the left hand-side a beverage with an excellent foamed upper surface according to the present invention, whereas on the right hand-side is shown a beverage with substantially no foam."

It is obvious from these paragraphs that the sintering residence time will have an influence on the degree of fusing of the particles and their internal structure. However, the claimed method does not define the sintering time and thus it does not contain any limit with respect to the changes to the internal structure of the precursor particles as a result of sintering.

Paragraph [0023] makes these changes of the internal structure even clearer:

"[0023] Thus, agglomeration using a sintering process is known to cause the partial or complete collapse of the microstructure (pore) in the product within which gas would be held."

Thus, the patent proprietor itself acknowledges in the patent in suit that sintering may cause the partial or complete collapse of the microstructure in the product. Nevertheless, the process conditions of claim 1 are not limited in this respect. Consequently, the

microstructure of the precursor particles is not necessarily maintained in the texturised agglomerate particles of claim 10 and the latter cannot be always and unequivocally differentiated from the texturised agglomerate particles of D12, which are obtained from sintering and necessarily have an at least partially collapsed microstructure.

- 1.5 The patent proprietor argued during the oral proceedings before the board that the internal structure of the precursor powder particles of D12 did not change during sintering, because D12 only disclosed that sintering was carried out for a time sufficient for fusing particles of the material at micropores formed at points of contact between the surface of the particles by reason of capillary action for fusing particles while substantially avoiding condensation of moisture in voids between the surfaces of the particles (column 2, lines 62-68; column 3, lines 8-12; column 4, lines 4-8). The patent proprietor concluded that the powder particles of example 1 of D12 were different from those of claim 10 of the main request, irrespective of the effect of sintering on the internal structure of the precursor powder particles of claim 1.

The board does not agree. There is no disclosure in D12 that sintering has no impact on the internal structure of the precursor powder particles. On the contrary, D12 encompasses embodiments of significant sintering (corresponding to the right-hand structure shown in figure 3 of the patent in suit, which is considered over-sintered) since it discloses agglomerates which are "sponge like" or having the texture of "freeze-dried granules" (column 2, lines 44-51). Furthermore, on the basis of opponent's technical explanations and the disclosure of paragraph [0023] of the patent in

suit, the sintering step changes at least partially the internal structure of the precursor particles. Thus this argument of the patent proprietor must fail.

- 1.6 Based on figure 3 of the patent, the patent proprietor developed three scenarios of sintering: (1) sintering which does not change the internal structure of the precursor particles (mild sintering), (2) sintering according to which the precursor particles only fuse at their points of contact with no change to their internal structure (desired sintering (according to the patent)), and (3) sintering leading to collapse of the internal structure of the precursor particles. According to the patent proprietor, for all three scenarios the product of claim 10 would be different from the powder of D12.

The board is not convinced. As set out above, the internal structure of base powder (precursor particles) changes to an undefined degree due to the breadth of the method claim. It is therefore impossible to always and unequivocally distinguish the product of claim 10 from the prior art product of D12.

- 1.7 In view of the above, no difference between the powder particles of claim 10 and those of example 1 of D12 can be established with the consequence that the subject-matter of claim 10 of the main request lacks novelty and that this request is not allowable.

2. Auxiliary request 1

- 2.1 The subject-matter of claim 1 of auxiliary request 1 differs from the subject-matter of claim 1 of the main request in that it contains the additional feature:

"wherein the instant beverage powder has a crema of at least 3 ml when 5 g powder is reconstituted in 200 ml deionised water at 85°C".

This feature is disclosed in the description of the patent in suit (column 7, lines 8-11) and the application as filed (page 12, lines 21-24).

2.2 This feature lacks clarity essentially because it fails to describe the measurement method. The opposition division held that it did not matter which method the skilled person would use. However, as the respondent explained, this reasoning is not tenable from a physical point of view. The board accepts that the surface area of the air-liquid interface is decisive in this context. Crema bubbles are not static and the bubbles collapse and/or coalesce over time depending on the environment to which each bubble was exposed. The greater the surface area that is exposed to air, the greater the rate of bubble collapse. Thus, different results will be obtained depending on whether a narrow tube or shallow bath is used as a container for the measurement. The dimensions of the container are therefore critical for consistent and reliable measurement of the volume of the crema.

2.3 Figure 6 of the patent in suit discloses a simple device for measuring the amount of crema produced. The device is rather generally described in paragraph [0053] without giving any details as to the actual dimensions of the device. In this context the board notes that D1 (also stemming from the patent proprietor) discloses a rather similar device for measuring crema (figure 5). However, in contrast to the patent in suit, D1 gives detailed dimensions for the device on page 4, lines 7-12:

"Figure 5 is a drawing of a device for measuring the amount of crema formed upon reconstitution of a beverage powder. The inner diameter of the reconstitution vessel is 71 mm, the inner height 77.5 mm, the height of the lid is 65 mm",

and page 7, lines 21-33 of D1 describes in detail how to operate the device.

Thus, it is evident that elements concerning the measuring method/device are missing from the patent in suit. In the board's view, D1 can also not be used to supplement the disclosure of the patent in this respect. D1 is a patent document and certainly does not represent common general knowledge.

Lastly, the method for measuring the crema as disclosed in the patent in suit is incomplete because it does not specify at which point in time the volume of crema is to be measured. In fact, crema bubbles are not static and the volume of the crema naturally diminishes over time owing to bubble coalescence and bubble collapse. The opposition division assumed that one would measure "immediately after preparation of the instant beverage". This is, however, neither mentioned in the claim nor in the description.

2.4 It is thus concluded that the subject-matter of claim 1 of auxiliary request 1 lacks clarity.

2.5 The respondent raised an objection under Article 123(2) EPC against claim 1 of this request, which the board did not accept. Since, however, this claim is found to lack clarity, any elaboration on this issue is superfluous.

2.6 In summary auxiliary request 1 is not allowable.

3. Auxiliary requests 2 to 5

3.1 Claim 1 of auxiliary requests 2 to 5 have been further limited, *inter alia* to instant coffee powder, but still contain the feature:

"wherein the instant coffee powder has a crema of at least 3 ml when 5 g powder is reconstituted in 200 ml deionised water at 85°C",

3.2 Thus, the issue of clarity with regard to the method of measurement of the "crema" parameter remains the same as set out above for auxiliary request 1, and for the same reasons claim 1 of these auxiliary requests lacks clarity too.

3.3 In summary, auxiliary requests 2 to 5 are not allowable.

4. Auxiliary request 6

4.1 Auxiliary request 6 was filed during the oral proceedings only after the board had announced its opinions as to the patentability of auxiliary requests 2 to 5. The respondent requested that the new auxiliary request not be admitted into the proceedings.

4.2 Indeed, this request was filed at a very late stage of the proceedings although the respondent had raised the clarity objection with regard to the "crema" parameter already in its statement setting out the grounds of appeal dated 12 December 2016. Thus, this request should clearly have been filed much earlier. It is not

an appropriate behaviour of a patent proprietor to await the board's conclusion on a particular issue, which was present from the beginning of the appeal, and only then file an auxiliary request addressing the issue. Furthermore, the subject-matter of claim 1 of auxiliary request 6 is broader and diverging from the hierarchically higher ranked auxiliary requests. Therefore, in exercising its discretion under Article 13(1) RPBA the board did not admit this request into the proceedings.

5. As none of the requests is allowable, the patent has to be revoked.

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:



M. Canueto Carbajo

W. Sieber

Decision electronically authenticated