Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 9 August 2024

Case Number:	T 2028/22 - 3.3.09
Application Number:	14789352.3
Publication Number:	2996485
IPC:	A23F5/40, A23F5/24, A23F5/34, B65D85/804, A47J31/40
Language of the proceedings:	EN

Title of invention:
COFFEE PRODUCT

Patent Proprietor:
Koninklijke Douwe Egberts B.V.

Opponent:
Société des Produits Nestlé S.A.

Headword:
Coffee Product/DOUWE EGBERTS

Relevant legal provisions:
EPC Art. 56, 83, 123(2)
RPBA 2020 Art. 12(4), 12(6)

Keyword:

Amendments - added subject-matter (no)
Sufficiency of disclosure - main request (yes)
Inventive step - main request (yes)
Amendment to case - admitted (no)

Decisions cited:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 2028/22 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 9 August 2024

Appellant: (Opponent)	Société des Produits Nestlé S.A. Entre-deux-Villes 1800 Vevey (CH)
Representative:	D Young & Co LLP 3 Noble Street London EC2V 7BQ (GB)
Respondent: (Patent Proprietor)	Koninklijke Douwe Egberts B.V. Vleutensevaart 35 3532 AD Utrecht (NL)
Representative:	Boult Wade Tennant LLP Salisbury Square House 8 Salisbury Square London EC4Y 8AP (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 30 May 2022 concerning maintenance of the European Patent No. 2996485 in amended form.**

Composition of the Board:

Chairman	A. Haderlein
Members:	C. Meiners
	A. Jimenez

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent (appellant) against the opposition division's interlocutory decision finding that, on the basis of the then first auxiliary request, the patent met the requirements of the EPC.

II. In its decision, the opposition division decided, *inter alia*, that the subject-matter of claim 1 of what was then the main request did not extend beyond the content of the application as filed (Article 123(2) EPC). Moreover, the patent, on the basis of this request, disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC). However, the subject-matter of product claim 11 lacked novelty in view of document D10. By contrast, claim 1 of what was then auxiliary request 1 was novel over document D10 and inventive starting from D10 as the closest prior art.

III. In its notice of opposition, the opponent had requested revocation of the patent on the basis of, *inter alia*, Article 100(a) EPC for lack of inventive step, Article 100(b) EPC for lack of sufficiency of disclosure and Article 100(c) EPC for added matter.

IV. The following documents, filed in the opposition and appeal proceedings, are relevant to this decision:

D1 EP2491797 A1
D2 US3652292 A
D3 WO03011041 A1

D4 US3700463 A
D5 WO2009040249 A1
D6b Coffee: Volume 2 Technology, 142-3
D6c Coffee: Volume 2 Technology, 175-9
D7 Wikipedia article for the entry "instant coffee" dated 11 May 2013
D10 WO2013064893 A1
D13 US3821434 A

V. The board issued a communication pursuant to Article 15(1) RPBA (the communication).

VI. In response to the board's communication, the patent proprietor (now respondent) withdrew its appeal and requested as its main request that the appeal be dismissed, i.e. that the patent be maintained in the form held allowable by the opposition division.

VII. Claim 1 of the main request reads:

"A method for producing an instant coffee, the method comprising:
providing a finely ground roasted coffee material;
providing an aqueous coffee extract;
mixing the finely ground roasted coffee material with the aqueous coffee extract to form a first mixture; and
drying the first mixture,
wherein, before drying, the finely ground roasted coffee material:
is heated to a temperature of from 70 to 100˚C in an aqueous environment for a duration of from 1 minute to 3 hours,
wherein the step of drying the first mixture is a step of spray-drying the first mixture."

VIII. The appellant's arguments relevant to the present decision can be summarised as follows.

(a) Document D6c had been filed in direct reaction to the opposition division's decision and was relevant for inventive step. The opposition division had obliged the appellant to start only from document D10 as the closest prior art at the oral proceedings. By contrast, a lot of the opponent's arguments were based on D2. Hence, D6c should be admitted.

(b) The opposition division had erred in finding that claim 1 of the main request had a basis in claims 1, 4 and 9 and page 9 of the application as filed. Thus, the main request did not comply with the requirement of Article 123(2) EPC.

(c) As to sufficiency of disclosure, the examples of the patent did not provide sufficient guidance on the temperature, the duration of extraction and the method in general. Furthermore, the very broad range of different grinds encompassed by the term "finely ground" could not be used to carry out the invention.

(d) Claim 1 of the main request lacked inventive step in view of each of documents D1 to D3 and D10.

No technical effect had been achieved across the full scope claimed.

In view of document D2 as the closest prior art, the distinguishing features were the duration of 1 minute to 3 hours of the heating and that the step of drying is a step of spray drying. The objective

technical problem resulting was the provision of an alternative method for producing an instant coffee. However, extraction temperatures and duration were conventional in coffee extraction processes, as was spray drying. Thus, the subject-matter of claim 1 was obvious in view of D2.

Likewise, the subject-matter of claim 1 lacked an inventive step over D10 as an alternative closest prior art. Again, the objective technical problem credibly solved across the full area claimed could only be seen in the provision of an alternative method for producing an instant coffee. The solution was obvious in view of D10 in combination with any of documents D1 to D3.

Claim 1 of the main request included non-foaming instant coffee. Hence, also documents D1 and D3 represented suitable starting points for arriving at the claimed subject-matter in an obvious way.

IX. The patent proprietor's (respondent's) arguments relevant to the present decision can be summarised as follows.

(a) Document D6c was late filed and *prima facie* not relevant. Hence, it should not be admitted into the appeal proceedings.

(b) The subject-matter of claim 1 of the main request did not add new subject-matter that was not contained in the application as filed. Hence, the requirement of Article 123(2) EPC was complied with.

(c) The invention claimed was also sufficiently disclosed. Consequently, the requirement of Article 83 EPC was met by the claimed subject-matter.

(d) As to inventive step, the claimed subject-matter of all requests was inventive, regardless of the starting point. Document D10, however, represented the closest prior art.

None of documents D1 to D3 were concerned with the foam formed on reconstitution of spray-dried coffee. They were, thus, not promising starting points for the assessment of inventive step.

Document D2 was concerned with freeze-dried soluble coffee powders and not with spray-dried soluble coffee. Due to the open pore structure of the former, the problem with foam staining did not arise. Further differences over D2 besides spray drying were the mixing of finely ground roasted coffee material with an aqueous coffee extract and the temperature and duration in the claimed ranges.

Documents D1 and D3 did not constitute suitable starting points for the assessment of inventive step. Document D1 was not concerned with foam discolouration but addressed the lack of sediment in an instant Turkish coffee product. The product was a dry mix of *steam-treated* roasted coffee and optionally e.g. *pre-formed* soluble coffee. Document D3 did not teach or suggest including pre-extracted coffee grounds in a soluble coffee product, let alone a spray-dried one. By contrast, they were employed as a re-usable component in the manufacture of a soluble coffee with an improved flavour.

The claimed subject-matter differed from the teaching of D10 in that the temperature range of 70 to 100°C and a holding step after addition of the roasted ground coffee to an aqueous environment was not disclosed in D10. The whole purpose of D10 was to minimise the time between the addition of the roasted coffee and "fixing" the product by drying. Hence, D10 taught away from the claimed subject-matter.

X. Final requests

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

The respondent requested as its main request that the appeal be dismissed. As an auxiliary measure, it requested that the patent be maintained on the basis of one of auxiliary requests 1 to 4 filed as auxiliary requests 5, 6, 8 and 10 with the reply to the opponent's appeal.

Reasons for the Decision

1. Amendments - main request

The board agrees with the opposition division that the subject-matter of claim 1 is directly and unambiguously derivable from claim 1 (alternative i) in combination with claims 4 and 9 as originally filed. The limitations in claim 9 as filed specify the duration of the heating step (i) rather than requiring an additional heating operation. In the same way, page 8,

lines 16 to 18 of the application as filed discloses the time period from 1 minute to 3 hours for the heating step. The subject-matter of claim 1 thus meets the requirement of Article 123(2) EPC.

2. Sufficiency of disclosure - main request

2.1 To meet the requirement of sufficiency of disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by a skilled person without undue burden on the basis of the information provided in the patent specification and, possibly, common general knowledge.

2.2 An objection of insufficient disclosure cannot legitimately be based on an argument that the application or the patent would not enable a skilled person to achieve a non-claimed technical effect (Case Law of the Boards of Appeal, tenth edn., 2022, II.C. 3.2). In claim 1, no technical effect is claimed. Consequently, any potential lack of enabling disclosure in the patent as to the achievement of e.g. certain organoleptic and/or optical properties of the compositions obtainable by the claimed method across the whole scope of claim 1 would not give rise to insufficiency of disclosure.

2.3 The appellant, however, has not adduced any verifiable facts that raised serious doubts that a skilled person using common general knowledge would not be able to reduce the subject-matter of the method of claim 1 to practice over the whole area claimed without undue burden and without needing inventive skills.

2.4 Hence, the board endorses the opposition division's positive assessment of sufficiency of disclosure for

the reasons set out in point 2.4.2 of its decision. There, it is held that the patent provides guidance on the temperature and duration of heating the finely ground roasted coffee material in an aqueous environment, the method (for producing an instant coffee) in general, and the particle size of the ground coffee material. As to the latter point, the board finds convincing the argument of the patent proprietor that it was well within the knowledge of a skilled person to determine whether a ground coffee is sufficiently fine for inclusion with a spray-dried coffee powder.

3. Inventive step - main request

3.1 The patent

The patent is directed towards a method of producing an instant coffee which provides a full-flavoured beverage with a light coloured crema. The inclusion of roast and ground coffee material, added to more closely simulate the taste of a beverage freshly prepared from coffee beans, can lead to an overly dark appearance of the final beverage or a dark foam (see paragraphs [0001] - [0003] of the patent).

3.2 Closest prior art

3.2.1 It is established case law of the boards that the closest prior art for assessing inventive step is normally a prior-art document that discloses subject-matter conceived for the same purpose or aiming at the same objective as the claimed invention and having the most relevant technical features in common. A further criterion for the selection of the most promising starting point is the similarity of the technical

problem. As the closest prior art, a "bridgehead" position should be selected, which the skilled person would *realistically* have taken under the circumstances of the claimed invention. Among these circumstances, aspects such as the designation of the subject-matter of the invention, the formulation of the original problem and the intended use, and the effects to be obtained should generally be given more weight than the maximum number of identical technical features (see Case Law of the Boards of Appeal, tenth edn., 2022, I.D.3.1).

3.2.2 The board agrees that document D10 also addresses the problem of foam discolouration upon reconstitution of spray-dried instant coffee that comprises a finely ground roasted coffee material. Hence, D10 is directed to the same purpose as the patent and thus undoubtedly qualifies as a suitable starting point for the assessment of inventive step.

3.2.3 Likewise, the board considers D2 a suitable starting point for assessing inventive step. According to D2, "[t]he desired product should be as similar as possible to freshly brewed coffee not only in odor and fullness of aroma but also in external appearance" (see column 1, lines 49 to 55).

3.2.4 However, the board holds that documents D1 or D3 were more remote from the invention claimed. Neither document is concerned with the aforementioned problem of foam colouration/staining.

Instead, D1 addresses the lack of sediment in an instant Turkish coffee product. The product is a *dry* mix of steam-treated roasted ground coffee and other ingredients such as *pre-formed* soluble coffee. Hence,

D1 does not suggest mixing ground coffee powder with an aqueous coffee extract, let alone spray drying the resulting mixture. The board agrees with the respondent that D3 focuses on the use of extracted/processed coffee grounds (PCGs) as an absorbent of off-flavours.

The respondent correctly stated that in D3, only contacting/treating coffee extracts with PCGs (in an extraction column) is reported on page 12 and examples 4 and 6. It is not disclosed that the PCGs would be present in the extract before (spray) drying to make a powder. Claim 8 disclosing a composition comprising roasted and ground coffee, PCGs, *and soluble coffee particles* does not change this conclusion. Neither claim 8 nor the passage on page 9, third paragraph also cited by the appellant discloses spray drying a mixture of PCGs and a coffee extract.

3.2.5 The appellant argued that D1 and D3 were alternative starting points for assessing inventive step. The reason was that the main request encompassed non-foaming instant coffee. This was derivable from paragraph [0012] of the patent.

The board does not agree. The respondent argued persuasively that spray-dried coffee extract has a closed cell pore structure that entraps air. Upon reconstitution of the coffee powder, the entrapped gas acts as a foaming agent which effects foam/crema formation.

Hence, the appellant's argument that the aforementioned problem of foam staining did not need to be considered for establishing a suitable starting point for the assessment of inventive step does not hold.

3.2.6 Therefore, the board concludes that documents D1 and D3 are not realistic stepping stones for arriving at the claimed subject-matter in an obvious way.

3.3 Document D2 as the starting point

3.3.1 Distinguishing features

It is common ground that the subject-matter of claim 1 differs from the disclosure of D2 and in particular examples 1, 3 and 4 in that no explicit citation of a duration of heat treatment from 1 minute to 3 hours is disclosed in that document. Moreover, the absence of an explicit disclosure of a spray-drying step in e.g. claim 19 of D2 establishes a second distinguishing feature. The board agrees that at least these two distinguishing features can be acknowledged.

3.3.2 Technical effect and objective technical problem

The appellant took the view that the reduction of colouration of a foam formed upon reconstitution of the instant coffee claimed had not been substantiated for all embodiments claimed. The objective technical problem underlying claim 1 was thus merely to provide an arbitrary alternative method for producing an instant coffee. Paragraph [0035] of the patent itself set out that extracting the finely ground roasted coffee material in water at 70°C resulted in unduly long processing times. Far longer processing times than 1 minute applied for such low heating temperatures. Likewise, the extraction experiments described in paragraph [0058] of the patent and in annex 1 to the proprietor's statement of grounds of appeal did not reflect these process conditions at short extraction times and low temperature. In addition, it followed

from paragraph [0012] of the patent that the instant coffees in accordance with claim 1 were not restricted to foaming instant coffees. Hence, no effect of reduced foam/crema colouration could be observed for such variants of claim 1 either.

The board does not agree for the following reasons. The respondent persuasively argued that spray drying a coffee extract is associated with the entrapment of gas in the closed pores of the dried product, unlike for freeze-dried coffee, which has an open pore structure. The respondent referred to paragraph [0013] of the patent and document D5. The portion of the coffee particles entrained in the crema/foam are then considered to be at least partially extracted by the moisture present in the crema and to cause staining of the crema to an undesirably dark colour. The possible formation of some crema also in freeze-dried coffee as disclosed in D2 is not at odds with the above conclusions.

Moreover, paragraph [0032] of the patent sets out that exposing the ground coffee component to high temperatures before drying "mitigates the dark colour problem when the final product is made up with hot water in-cup". It is hypothesised that this is because the heat treatment is at approximately the temperature typically encountered in a cup (when preparing the instant coffee using hot water).

A comparison between Figures 3 and 4 of Annex 1 to the proprietor's statement of grounds of appeal demonstrates the effect of reduced foam/crema colouration for an extraction of the finely ground roasted coffee material for 1 or 2 hours at 90°C before spray drying.

However, it is credible that also at lower temperatures, such as 70°C, extraction of soluble components takes place. The respondent convincingly argued that paragraph [0062] of the patent describes an effect of extracting a ground roasted coffee material at *room temperature*. This is demonstrated by the change in UV absorbance as a function of extraction time in Figures 2A and 2B, which mirror the results described in [0062] even for extraction times of e.g. 1 minute. The extraction of water-soluble solids even at room temperature at such short extraction times is credibly postulated in [0062]. These solids are considered to settle out of the cold water over time in paragraph [0062]. The appellants assertion that the temperature of 70°C is associated in paragraph [0035] with unduly long extraction times is thus not reflected by the examples.

Paragraph [0009] of the patent sets out that for water of a temperature of less than 70°C, no noticeable dark colour problem exists when reconstituting instant coffee comprising finely ground roasted coffee particles in a cup. *Above this temperature*, however, increasingly dark foam colours are reported to result. Hence, this paragraph (to which the appellant referred) does not seem to undermine the conclusion that the extraction conditions chosen in claim 1 bring about the effect but support it.

In view of the above considerations, the appellant's argument that the lowest extraction temperature of 70°C in claim 1 overlapped with the indication of that temperature in paragraph [0035] for unduly long extraction times needed does not change the picture.

Likewise, the board considers that it is credible that also coarser particles present in a grind considered by a skilled person as "finely ground roasted coffee material" will undergo extraction of water-soluble components, albeit to a lesser extent. Such coarser particles have a lower specific surface area for leaching/extraction and are said to generally settle in the cup in paragraph [0021] of the patent.

Furthermore, the appellant's argument that it was not credible that a technical effect would be achieved using outside the range of from 5 to 25 wt% microground coffee solids (in the mixture) in view of paragraph [0025] of the patent is not persuasive either. In the board's view, this does not mean that the darkening problem would not be improved outside this range at least to some extent using the pre-extracted finely ground roasted coffee material.

For these reasons, the *objective technical problem* credibly solved is to provide a spray-dried instant coffee comprising finely ground roasted coffee having *reduced foam colouration/lighter foam* upon reconstitution in hot water.

3.3.3 Obviousness

The line of argument presented by the appellant is based on the premise of the provision of an *alternative* as the objective technical problem to be solved rather than an improvement as the board does. The board does not see why it was obvious to arrive at the claimed subject-matter in view of this more ambitious problem without hindsight.

D2 does not mention the problem of foam colouration of spray-dried instant coffee products upon reconstitution. Likewise, D2 does not advocate or mention spray drying of the extracts prepared but prefers to dry roast coffee extracts under conditions which do not damage the aroma, for example by freeze drying (see column 7, to which the appellant referred in this context, lines 16 to 19). This drying technique is also applied in the examples of D2, from which the appellant departs for the assessment of inventive step in its statement of grounds of appeal.

For these reasons, it was not obvious to apply spray drying and the extraction conditions, including the extraction duration in claim 1, to solve the problem set out above in view of D2, which even teaches away from spray drying the coffee extracts.

The fact that the distinguishing features, i.e. spray drying and the extraction times (as taught in D4, D6b or D13), are known in the prior art does not change this conclusion. The appellant also stressed that it was already known from D7 that freeze drying of coffee extracts generally results in a higher-quality product but that spray drying was in some cases preferred because of its economy (see page 3 in D7). It is also not derivable from the secondary documents adduced by the appellant that the feature combination of claim 1 solves the aforementioned problem.

Consequently, the subject-matter of claim 1 involves an inventive step in view of D2 as the closest prior art and meets the requirement of Article 56 EPC.

3.4 D10 as the starting point

3.4.1 Distinguishing feature

The subject-matter of claim 1 differs from the disclosure of D10 and in particular claim 9 as a starting point selected by the appellant in the pre-extraction step. This corresponds to the feature "before drying, the finely ground roasted coffee material: is heated to a temperature of from 70 to 100°C in an aqueous environment for a duration of from 1 minute to 3 hours".

3.4.2 Technical effect and objective technical problem

According to the appellant, the objective technical problem was merely to provide an alternative method for the preparation of instant coffee comprising roast and ground coffee particles since the alleged technical effect was not observed across the full scope of the claims.

The board agrees with the appellant only in so far as no improvement can be acknowledged in the absence of comparative examples over embodiments of D10. However, for the reasons indicated above in point 3.3.2, the board does not agree that the problem to be solved is a mere alternative method. Rather, the objective technical problem can at least be formulated as to provide an alternative method for producing a spray-dried instant coffee *with a light foam colour*. This corresponds to the objective technical problem as identified by the opposition division. The respondent also argued in the oral proceedings before the board that, even if the objective technical problem were to

be formulated as the opposition division did, the subject-matter of claim 1 was still not obvious.

3.4.3 Obviousness

The board concurs with the respondent that the solutions proposed in D10 and claim 1 are mutually exclusive. D10 stipulates to keep the contact time for the finely ground coffee in the aqueous phase containing the coffee extract as short as possible (see page 4, lines 1 to 10). By contrast, claim 1 requires leaching such coffee particles at elevated temperatures for a significant time from 1 minute to 3 hours at elevated temperatures. Moreover, given that the problem to be solved is not to provide any alternative spray-dried instant coffee but one which also has a light foam/crema colour, the argument that no motivation was needed to seek an alternative is not persuasive.

It follows that a skilled person would thus have had no motivation to seek secondary information sources to depart towards something that would be expected to increase foam staining, namely enforced leaching of the finely ground coffee powder prior to spray drying. None of documents D1 to D3 addresses the problem of foam colouration of spray-dried instant coffee comprising finely ground roasted coffee particles. Applying a heating and holding step of the aqueous mixture comprising ground coffee particles prior to spray drying in D10 would in view of the above go against the teaching of D10 to minimise extraction. For these reasons alone, the subject-matter of claim 1 involves an inventive step in view of D10. In addition, as outlined above, D1 and D3 are remote from the teaching of D10. Similarly, taking the colloidal milling of ground coffee particles in D2 out of the complete

process disclosed in that document and including the pre-extracted colloidal particles in the process of D10, teaching to avoid extraction/leaching, would be tainted by hindsight. The board agrees with this line of argument of the respondent and that the processes of D2 and D10 are mutually incompatible. The fact that the roasted coffee may be subjected to onward processing steps in D10 (see page 2, lines 2 to 9) is not at odds with this conclusion.

Consequently, the subject-matter of claim 1 involves an inventive step in view of D10 as the closest prior art and meets the requirement of Article 56 EPC.

4. Admittance of document D6c

4.1 Document D6c was filed for the first time in the appeal proceedings with the statement of grounds of appeal and thus constitutes an amendment within the meaning of Article 12(4) RPBA.

4.2 This document is not *prima facie* relevant. As correctly stated by the respondent, D6c is concerned with the spray drying of a coffee extract and not with a pre-drying treatment of a coffee extract containing finely ground coffee material in a holding step under suitable temperature and duration prior to spray drying.

4.3 Consequently, the board did not take document D6c into account (Article 12(4) and (6) RPBA).

Order

For these reasons it is decided that:

The appeal dismissed.

The Registrar: The Chairman:

A. Pinna A. Haderlein

Decision electronically authenticated