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**Datasheet for the decision  
of 14 September 2020**

**Case Number:** T 2727/16 - 3.3.09

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**Language of the proceedings:** EN

**Title of invention:**  
COFFEE PROCESS

**Patent Proprietor:**  
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Laux, Roland

**Opponent:**  
MACLEAN Mr. Martin

**Headword:**  
Coffee process/Zürcher Hochschule Für Angewandte  
Wissenschaften, Laux

**Relevant legal provisions:**  
EPC Art. 100(c), 123(2)  
RPBA 2020 Art. 13(1)

**Keyword:**

Grounds for opposition - extension of subject-matter (yes)

Amendments - added subject-matter (yes)

Late-filed request - request clearly allowable (no)



**Beschwerdekammern**

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Case Number: T 2727/16 - 3.3.09

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.09**  
**of 14 September 2020**

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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 10 November  
2016 revoking European patent No. 2378891  
pursuant to Article 101(3)(b) EPC.**

**Composition of the Board:**

**Chairman**           A. Haderlein  
**Members:**         F. Rinaldi  
                      F. Blumer

## Summary of Facts and Submissions

- I. This decision concerns the appeal filed by the patent proprietor (appellant) against the decision of the opposition division to revoke European patent No. EP 2 378 891.
- II. In the notice of opposition, the opponent (respondent) requested that the patent be revoked in its entirety based on Article 100(a), (b) and (c) EPC.
- III. In the decision under appeal, the opposition division decided, *inter alia*, that granted claim 1 encompassed added subject-matter.
- IV. Claim 1 as granted reads:

"A method of processing coffee beans comprising:  
selecting and blending whole, unroasted coffee beans;  
roasting the coffee beans;  
blending the coffee beans with water and heat, and  
breaking or cracking the coffee beans; or breaking or  
cracking the whole coffee beans, and adding water to  
said broken or cracked coffee beans to form a  
suspension or mixture;  
grinding or milling the cracked coffee beans;  
performing an extraction step on the ground or milled  
coffee beans with heat and under pressure;  
performing a first vacuum de-aeration or evaporation  
step on the extracted ground coffee beans;  
recovering aroma components contained in the expelled  
vapor of said first vacuum de-aeration or evaporation  
step in a rectification and/or absorption step;

separating in a decanting step the extracted ground coffee beans into solid material, and a liquid phase comprising fine particles, a water phase, and an oil phase;

separating in a separation step the liquid phase into solid material, an oil phase comprising lipids with hydrophobic aroma components and a water phase comprising hydrophilic aroma components and polyphenol components, representing a degreased coffee extract;

subjecting the degreased coffee extract to a second evaporation step, in which excessive water is evaporated;

recovering flavor compounds evaporated in said second evaporation step together with the water;

subjecting the coffee extraction product to a spray drying step and/or a lyophilization step;

adding to the product in an aroma reconstitution step the aroma components recovered in the first vacuum de-aeration or evaporation step, and/or the flavor compounds recovered in the second evaporation step;

obtaining one or more of the following products: coffee powder; coffee liquid; aromatics; polyphenols; and bio-actives."

The underlining above, added by the board, highlights the combination of features of granted claim 1 relevant to this decision.

- V. In its statement setting out the grounds of appeal, the appellant requested that the decision of the opposition division be set aside and that the patent be maintained as granted (main request) or on the basis of one of the first to fourth auxiliary requests filed with it.

The complete wording of these auxiliary requests is not relevant to this decision. In claim 1 of the second

auxiliary request, the first two lines of the underlined passage of granted claim 1 (see point IV above) remain unchanged, whereas in claim 1 of the first, third and fourth auxiliary requests the following amendments were made (amendments with respect to the main request underlined or struck through by the board):

First auxiliary request:

"performing a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans"

Third and fourth auxiliary requests:

"removing aroma components in ~~performing~~ a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans so as to remove approximately 20% v/v of steam and/or volatiles at a pressure of approximately 100 mbar"

The last three lines of the underlined passage of granted claim 1 (see point IV above) have been retained in all these requests.

- VI. The parties were summoned to oral proceedings. The board issued a communication in which it set out its preliminary, non-binding opinion.
- VII. By letter dated 14 August 2020, the appellant filed fifth and sixth auxiliary requests. In these requests, among other amendments which are not relevant to this decision, the underlined passage of granted claim 1 (see point IV above) has been amended as follows (amendments with respect to the main request underlined or struck through by the board):

Fifth auxiliary request:

"removing aroma components in performing a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans so as to remove approximately 20% v/v of steam and/or volatiles at a pressure of approximately 100 mbar;

recovering aroma components contained in the expelled vapor of said first vacuum de-aeration or evaporation step in a rectification ~~and/or~~ and optional absorption step"

Sixth auxiliary request:

"removing aroma components in performing a first vacuum de-aeration ~~or evaporation~~ step on the extracted ground coffee beans so as to remove approximately 20% v/v of steam and/or volatiles at a pressure of approximately 100 mbar;

recovering aroma components contained in the expelled vapor of said first vacuum de-aeration ~~or evaporation~~ step in a rectification ~~and/or~~ and optional absorption step"

VIII. Oral proceedings were held.

IX. The appellant's arguments relevant to the present decision may be summarised as follows:

- Granted claim 1 was based on figure 2 of the application as filed. The combination of features of a first vacuum de-aeration or evaporation step and recovering aroma components in a rectification and/or absorption step was also based on the description of the application as filed, in particular on page 11. The same reasoning applied to the first to fourth auxiliary requests as well.



- The fifth and sixth auxiliary requests had been filed to address objections in the board's communication, and should be admitted into the proceedings.

X. The respondent's arguments relevant to the present decision may be summarised as follows:

- Recovering aroma components in a rectification and/or absorption step and its combination with a preceding evaporation step were not derivable from the application as filed. The same objection applied to the first to fourth auxiliary requests.
- The fifth and sixth auxiliary requests had been filed late and should not be admitted.

XI. The appellant's final request was that the decision under appeal be set aside and that the patent be maintained as granted (main request) or on the basis of any one of

- the first to fourth auxiliary requests, filed with the statement setting out the grounds of appeal dated 17 March 2017, or
- the fifth or sixth auxiliary request, filed by letter dated 14 August 2020.

XII. The respondent's final request was that the appeal be dismissed.

## Reasons for the Decision

1. *Main request - Article 100(c) EPC*

1.1 In the decision under appeal, the opposition division identified several features in granted claim 1 which encompassed added subject-matter, *inter alia* the combination of features of claim 1 referred to in the underlined passage in point IV above (Reasons for the decision, points 2.1.3 and 2.1.4).

1.2 There is no explicit disclosure in the application as filed of the combination of features, i.e. the sequence of method steps, of

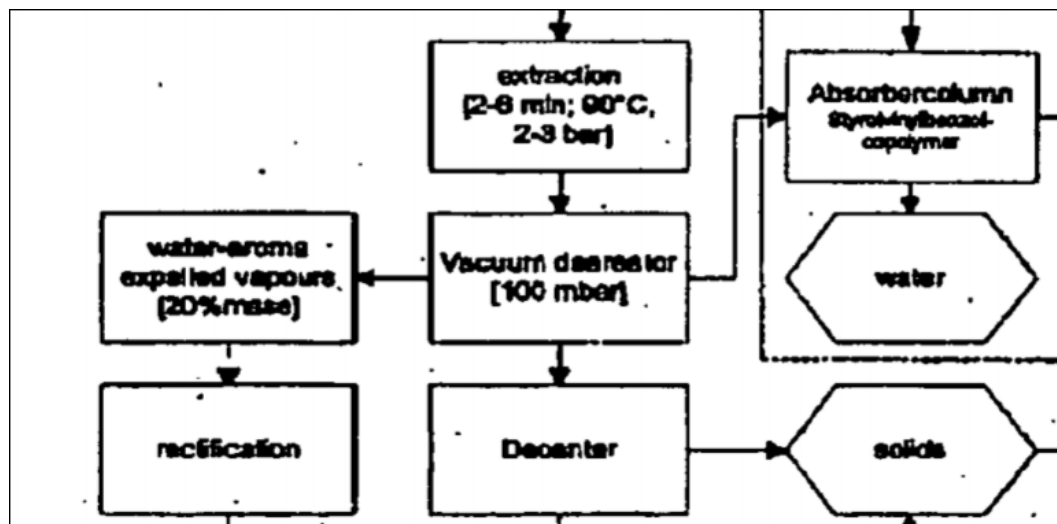
- performing a first vacuum de-aeration or evaporation step on the extracted ground coffee beans
- recovering aroma components ... in a rectification and/or absorption step

The question is whether the skilled person would nevertheless derive the sequence of process steps from the description, claims and figures of the application as filed.

1.3 The appellant considered figure 2 of the application as filed to be the basis for the amendments in granted claim 1, including the combination of features under examination.

1.3.1 This figure depicts a flow chart which illustrates a method, according to the invention of the application,

for processing coffee beans. The relevant section of the flow chart is the following:



1.3.2 What is directly derivable from figure 2 is that a vacuum de-aeration step [100 mbar] may be followed by a rectification step to which water-aroma expelled vapours [20% mass] are subjected (left arrow starting from the box "Vacuum deareator ..."). A step involving the use of an absorber column comprising a specific material, which follows the vacuum de-aeration step (right arrow starting from the box "Vacuum deareator ..."), is also derivable.

1.3.3 Therefore, no disclosure of:

- an unspecified absorption step and
- an evaporation step followed by a rectification step (to which water-aroma expelled vapours [20% mass] are subjected).

can be derived from figure 2.

1.4 The appellant argued that support for these two features was also found in the description of the

application as filed, in particular on page 11, third paragraph, which reads:

"Vacuum deaeration: In a deaeration step, a stripping of approximately 20% (m/m) of expelled vapour is performed to increase the yield of sensitive aroma components (e.g. sulphur containing aroma substances which are character impact components for fresh extracted coffee). Moreover, a rectification or optional absorption step is performed which leads to a decreased degradation of aroma components."

- 1.5 With regard to the disclosure of this paragraph in the context of the application as filed, it is observed as follows:
  - 1.5.1 The paragraph relates to and further describes a vacuum de-aeration step which calls for specific process conditions, namely stripping of approximately 20% (m/m) of expelled vapour. It does not provide support for an amendment in which an unspecified vacuum de-aeration step is carried out.
  - 1.5.2 Furthermore, the paragraph belongs to example 2 and to figures 3 to 6 of the application as filed, and is the only part of the description of the application as filed which mentions a rectification step. Instead, figure 2, which the appellant considered to be the basis for the amendments in granted claim 1, relates to example 1.

The appellant argued that figures 2 and 3 differed only in one aspect (second stage extraction step) and that examples 1 and 2 related to exemplary embodiments. Therefore, in its view, a certain degree of generalisation of the claimed features was permitted.

However, examples 1 and 2 are described as separate examples and do not refer to each other. In the application as filed, there is no support for combining the disclosure relating to these examples, as is explained below.

- 1.5.3 According to the introductory part of the application as filed, aroma components may be removed using vacuum de-aeration or evaporation as alternative process steps (page 3, line 7). An optional aroma recovering step is carried out using an absorber column, reverse osmosis techniques or the addition of ethanol (page 4, lines 10 to 12; page 6, lines 14 to 22). Example 1 of the application as filed describes the use of a vacuum evaporator (page 8, last two lines) and an optional aroma recovering step which again involves an absorber column, reverse osmosis techniques or the addition of ethanol (page 9, lines 13 to 15).

It follows from this that, according to the application as filed, an evaporation step or a vacuum evaporation step may be followed by an aroma recovering step which involves an absorber column, reverse osmosis techniques or the addition of ethanol.

As for the rectification step, it is manifest from the disclosure of the paragraph on page 11 of the application as filed that such a step is carried out only after a specified vacuum de-aeration step. Figures 2, 3 and 5 of the application as filed also confirm this.

Therefore it can be concluded that the application as filed does not disclose that the rectification step may be preceded by an evaporation step.

1.5.4 Finally, the phrase "rectification or optional absorption step" (paragraph on page 11 of the application as filed) does not have an unequivocal meaning. Two different technically reasonable ways of interpreting this phrase are possible.

For instance, one interpretation is that the rectification step and the absorption step are alternative steps, i.e. the step which is carried out is either a rectification step or an absorption step. In this interpretation, the term "optional" is ignored. This interpretation does not support the amendment in claim 1 referring to a rectification and/or absorption step.

A further interpretation is that a rectification step is carried out and, in addition, an absorption step may be carried out. This interpretation does not support the amendment in claim 1 referring to a rectification and/or absorption step.

Therefore this passage does not provide a direct and unambiguous basis for the amendment "rectification and/or absorption step".

1.6 On the basis of what is stated above alone, it can be concluded that claim 1 encompasses added subject-matter. The ground of Article 100(c) EPC prejudices maintenance of the patent.

1.7 Thus it is not necessary to discuss the respondent's further objections of added subject-matter.

2. *First to fourth auxiliary requests - Article 123(2) EPC*

2.1 Claim 1 of the first auxiliary request (for wording, see points IV and V above) encompasses the combination of features of:

- a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans, and
- recovering aroma components in a rectification and/or absorption step.

2.1.1 As explained above in point 1.5.3, there is no disclosure in the application as filed of an evaporation step which is followed by the step of recovering aroma components in a rectification step. The fact that in claim 1 of the first auxiliary request the evaporation step is specified to be a vacuum evaporation step does not change this assessment. In the application as filed, there is also no disclosure of a vacuum evaporation step followed by the step of recovering aroma components in a rectification step.

2.1.2 On this basis alone, claim 1 of the first auxiliary request encompasses added subject-matter.

2.2 In claim 1 of the second auxiliary request, the underlined passage of granted claim 1 (see point IV above) remains unchanged. Therefore, for the reasons discussed above with regard to the main request, claim 1 of the second auxiliary request encompasses added subject-matter.

2.3 Claim 1 of the third and fourth auxiliary requests (for wording, see points IV and V above) encompasses the combination of features of:

- a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans so as to remove approximately 20% v/v of steam and/or volatiles at a pressure of approximately 100 mbar, and
- recovering aroma components in a rectification and/or absorption step.

2.3.1 As explained above in points 1.5.3 and 2.1.1, there is no disclosure in the application as filed of a vacuum evaporation step which is followed by the step of recovering aroma components in a rectification step. The fact that the conditions for the vacuum evaporation step have been specified in claim 1 of the third and fourth auxiliary requests does not change this assessment. Such a combination of features is not derivable from the application as filed either.

2.3.2 On this basis alone, claim 1 of the third and fourth auxiliary requests encompasses added subject-matter.

2.4 Moreover, as regards the first, third and fourth auxiliary requests, it is observed that claim 1 of these requests includes the feature of recovering aroma components in a rectification and/or absorption step. For the same reasons explained above in point 1.5.4, these requests include added subject-matter.

2.5 Thus, none of the first to fourth auxiliary requests complies with the requirement of Article 123(2) EPC.

### 3. *Fifth and sixth auxiliary requests - admission*

3.1 These requests were filed only one month before the oral proceedings, and represent an amendment to the



appellant's case. They constitute an attempt to address the opposition division's objections set out in points 2.1.3 and 2.1.4 of the reasons for the decision and the comments in the board's communication dated 30 April 2020 by filing amendments rather than by providing arguments on the requests already pending.

3.2 However, the amendments in both requests are not *prima facie* allowable, i.e. the requirements set out in Article 13(1) RPBA 2020 are not complied with. Therefore the board decided not to admit these requests. The reasons are as follows:

3.3 Claim 1 of the fifth auxiliary request involves:

- a first vacuum de-aeration or vacuum evaporation step on the extracted ground coffee beans so as to remove approximately 20% v/v of steam and/or volatiles at a pressure of approximately 100 mbar, and
- recovering aroma components in a rectification and optional absorption step.

3.3.1 Thus, in claim 1 of the fifth auxiliary request, the first vacuum de-aeration or vacuum evaporation step and the corresponding conditions are defined as in claim 1 of the third and fourth auxiliary requests. Therefore the same objections as set out in point 2.3.1 apply.

3.3.2 Moreover, as discussed above in point 1.5.4, the phrase "rectification or optional absorption step" is not unequivocal. Therefore it cannot be concluded that the amendment relating to a rectification and optional absorption step is *prima facie* allowable.

3.4 As regards the sixth auxiliary request, claim 1 involves:

- a first vacuum de-aeration step on the extracted ground coffee beans, under specified conditions, and
- recovering aroma components in a rectification and optional absorption step.

3.4.1 Claim 1 of the sixth auxiliary request requires recovering aroma components in a rectification and optional absorption step, as does claim 1 of the fifth auxiliary request. However, the amendment relating to a rectification and optional absorption step is not *prima facie* allowable, as explained in point 3.3.2 above.

3.4.2 Furthermore, claim 1 of the sixth auxiliary request involves a first vacuum de-aeration step, under specified conditions, and no longer mentions the alternative relating to a (vacuum) evaporation step: the latter variant of the process has been deleted. Nevertheless, this claim contains some inconsistencies because, like granted claim 1, it still refers to a "second evaporation step" without there being an antecedent first evaporation step. In addition, it discloses the feature of adding, in an aroma reconstitution step, the aroma components recovered in the first vacuum de-aeration or vacuum evaporation step, although such an evaporation step is not carried out.

3.4.3 For these reasons too, claim 1 of the sixth auxiliary request is not *prima facie* allowable.

4. *Conclusion*

The appellant's main request and first to fourth auxiliary requests are not allowable, while the fifth and sixth auxiliary requests are not admissible.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



D. Grundner

A. Haderlein

Decision electronically authenticated