BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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

Datasheet for the decision of 3 November 2010

Case Number: T 0474/07 - 3.3.09

Application Number: 99908848.7

Publication Number: 1069830

IPC: A23F 5/48

Language of the proceedings: EN

Title of invention:
Process for producing an aromatised, soluble coffee powder

Patentee:
SOCIETE DES PRODUITS NESTLE S.A.

Opponent:
KRAFT FOODS HOLDINGS, INC.

Headword:
-

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Main request, auxiliary requests 1-3: inventive step (no)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0474/07 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 3 November 2010

Appellant: (Patent Proprietor)
SOCIETE DES PRODUITS NESTLE S.A.
Case postale 353
CH-1800 Vevey (CH)

Representative:
Stevens, Ian Edward
Potter Clarkson LLP
Park View House
58 The Ropewalk
Nottingham NG1 5DD (GB)

Respondent: (Opponent)
KRAFT FOODS HOLDINGS, INC.
Three Lakes Drive
Northfield, Illinois 60093 (US)

Representative:
Döring, Marc
Simmons & Simmons
CityPoint
One Ropemaker Street
London EC3Y 9SS (GB)

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 15 January 2007 revoking European patent No. 1069830 pursuant to Article 102(1) EPC 1973.

Composition of the Board:

Chairman: W. Sieber
Members: W. Ehrenreich
F. Blumer

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 1 069 830 in respect of European application No. 99 908 848.7, filed on 4 February 1999 as international application PCT/EP1999/000747 in the name of *Société des Produits Nestlé S.A.*, was published on 13 October 2004 in Bulletin 2004/42.

The patent was granted with seven claims, Claim 1 reading as follows:

"1. A process for producing an aromatised, soluble coffee powder comprising the steps of

- providing a slurry of roast coffee grounds in an aqueous liquid, the slurry having a solids content of 1% to 30% by weight,
- feeding said slurry to the top of a stripping column,
- stripping aroma components from the slurry by using gas in a substantially counter-current manner for providing an aromatised gas containing aroma compounds,
- collecting the aroma components from the aromatised gas;
- transporting the stripped slurry leaving the bottom of the stripping column to an extraction system;
- concentrating the coffee extract leaving the extraction system;
- combining the concentrated coffee extract and the collected aroma components for providing an aromatised extract; and
- drying the aromatised extract for providing the aromatised, soluble coffee powder."

Claims 2 to 7 were dependent claims.

II. An opposition against the patent was filed by *Kraft Foods Holdings, Inc.* on 11 July 2005.

The opposition was based on

- Article 100(a) EPC (lack of inventive step);
- Article 100(c) EPC (added subject-matter).

Revocation of the patent in its entirety was requested.

III. With its decision announced orally on 28 November 2006 and issued in writing on 15 January 2007, the opposition division revoked the patent.

The opposition division saw no non-compliance with Article 123(2) EPC but found that the claimed subject-matter lacked inventive step with regard to the documents

D9 Flavourtec Pty Itd's draft SCC Application Bulletin AB 8.0 entitled "Instant Coffee", July 1997;

D16 Statement of Anthony Wragg dated 26 September 2006 that slurries having a solids content of 1% to 30% by weight were conventional in the instant coffee process;

optionally taken in combination with

D2 Leo Pyle "Processed Foods with Natural Flavour: The Use of Novel Recovery Technology", Nutrition and Food Science, 1, 1994, 12-14.

D2 was cited in the notice of opposition; D9 and D16 were submitted with the opponent's letter dated 26 September 2006.

IV. Notice of appeal against the decision was filed by the patent proprietor (hereinafter: appellant) on 9 March 2007. The statement of the grounds of appeal was submitted on 16 May 2007. Enclosed were three sets of claims as bases for Auxiliary Requests 1 to 3.

V. In its letter of response to the grounds of appeal, dated 8 October 2007, the opponent (hereinafter: respondent) maintained its objections under Articles 100(a) and 100(c) EPC and filed further documents in support of its arguments as to lack of inventive step.

VI. The issues of added subject-matter (Article 123(2) EPC) and lack of inventive step (Article 56 EPC) were discussed in the oral proceedings before the board, which were held on 3 November 2010.

VII. The essential arguments of the respondent provided orally and in writing are summarised as follows:

(a) Article 100(c) - Article 123(2) EPC

The limitation in Claim 1 that the slurry of roast coffee grounds has *"a solids content of 1% to 30% by weight"* was not derivable as such from the

application as filed. The above range was disclosed in the original page 4 merely as an approximate range by way of two imprecise wordings, namely that the amount of aqueous liquid used to slurry the coffee "is not critical" and that the solids content of the resulting slurry is "about" 1% to "about" 30% by weight (emphasis by the board). Deletion of these two imprecise expressions in order to arrive at the precise range of from "1% to 30% by weight" in Claim 1 was therefore not in compliance with Article 123(2) EPC.

(b) Article 100(a) EPC - inventive step

According to paragraphs [0007], [0010] and [0012] of the patent specification, the problem to be solved by the invention was the provision of a better aroma recovery from ground and roast coffee.
When comparing original Claim 1 indicating only the three consecutive steps of:

- providing a slurry of coffee grounds;
- stripping aroma components from the slurry;
- collecting the aroma components

with granted Claim 1 indicating eight steps, it could be concluded that all additional steps in Claim 1 as granted were conventional ones and well-known in the prior art.
With regard to the declaration of Mr. Wragg (D16), this also applied to the feature concerning the solids content of 1% to 30% by weight for the slurry.

For the assessment of inventive step the only essential question therefore was whether it was obvious to provide the process step of stripping the aroma components before the slurry was fed to the extraction system.
In this context D9, in particular dealing with the use of the Spinning Cone Column (SCC) for aroma recovery in the instant coffee process, should be taken into account.
D9, which pointed to flavour loss at various stages in the instant coffee process, mentioned extraction in the first place (first page, left column). The further disclosure (second page, left column) that the SCC had *"solids handling capability"* and the subsequent passage that *"a slurry of the ground, roasted, coffee beans can be fed continuously through the SCC to recover an aroma with an even stronger fresh roasted character than from the extract ..."* clearly implied that aroma recovery before extraction was advantageous for the flavour of the resulting instant coffee.

The process of granted Claim 1 was therefore obvious from D9.

The limitations in Claims 1 of Auxiliary Requests 1 to 3, i.e. the temperature of above 90°C of the slurry (Auxiliary Request 1), the particle size of 1 to 3 mm of the coffee grounds (Auxiliary Request 2) or the stripping rate of 10 to 100% (Auxiliary Request 3) were normal optimization matters for a skilled person, for

which no surprising effect was demonstrated. They could not therefore contribute to inventive step.

VIII. The counter-arguments of the appellant are summarised as follows:

(a) Article 100(c) - Article 123(2) EPC

There was a clear and unambiguous disclosure on page 4, lines 10 to 13 of the application as filed that the range of 1% to 30% by weight for the solids content of the slurry was "suitably sufficient". The requirements of Article 123(2) EPC were therefore met.

(b) Article 100(a) EPC - inventive step

As could clearly be derived from the figure in D9, the document related to a conventional instant coffee process including:
feeding the roast and ground coffee to an extractor, thereafter removing flavour from the extract, feeding the extract to an evaporator and thereafter returning the flavour. This in particular emerged from the text above the figure: *"... traditional instant coffee process by taking the liquor after extraction and collecting ... the volatile flavour ... before the stripped coffee liquid is processed in an evaporator ..."* and the passage after the heading "solids handling capability":
"meaning extracts do not need to be clarified prior to aroma recovery". Therefore, D9 was concerned with aroma recovery after extraction.

Furthermore, it was known in the prior art that the aroma recovery was carried out from moistened ground coffee having a low water content. This, for instance, emerged from D8 (WO-A 97/10721) cited in the opposition proceedings and other documents cited by the respondent in the appeal proceedings.

In contrast thereto, the process of the invention required:

- that the aroma recovery step was performed prior to the extraction step and
- that the aroma recovery step was carried out with a slurry having a low solids content of 1 to 30% by weight and therefore a high water content which ensured flowability of the slurry through the stripping column.

These essential steps were responsible for the increased flavour and aroma strength in the instant coffee owing to the stripping of higher amounts of aroma components like diketones and furans which tended to have low solubility in water.

It should further be borne in mind that D9 was drafted by the company Flavourtech, which was the producer of the SCC column and had no expertise in producing instant coffee. A skilled person would therefore not consider D9 to be relevant for solving the problem of better aroma recovery in the instant coffee process.

IX. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or, subsidiarily, on the basis of any of the first, second or third auxiliary requests filed with letter dated 16 May 2007.

X. The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. Article 123(2) EPC

In the board's judgment, the amendment to Claims 1 of all requests that the slurry has a solids content of 1% to 30% by weight is in compliance with Article 123(2) EPC and can be derived from the application as filed (page 4, lines 10 to 13).
The same applies to the further amendments in Claims 1 of Auxiliary Requests 1 to 3.

Because this issue, however, was not relevant for the outcome of the decision, a comprehensive discussion of this matter is superfluous.

Novelty

Lack of novelty, which was not mentioned as an opposition ground under Article 100(a) EPC in the notice of opposition, is not an issue in the appeal proceedings.

Inventive step

3. The subject-matter of the patent in suit

3.1 The patent relates to a process for producing an aromatised soluble coffee powder by recovering coffee aromas which are given off during the instant coffee process, and by reincorporating these aromas into the concentrated coffee extract prior to drying (patent specification, paragraphs [0001] and [0002]). In particular, it is desired to strip significantly larger amounts of aroma components from the roast and ground coffee in order to provide a soluble coffee product which has increased and improved aroma and flavour (paragraph [0012]).

3.2 According to Claim 1 as granted, the process is characterised by the following eight steps (a) to (h):

(a) an aqueous slurry of roast coffee grounds is provided which has a solids content of 1 to 30% by weight;

(b) the slurry is fed to the top of a stripping column;

(c) the aroma components are stripped from the slurry by using gas in a counter-current manner for providing an aromatised gas containing aroma compounds;

(d) the aroma components are collected;

(e) the stripped slurry is fed to an extraction system;

(f) the coffee extract leaving the extraction system is concentrated;

(g) the concentrate and the collected aroma components are combined;

(h) the aromatised extract is dried.

3.3 According to Auxiliary Requests 1 to 3 the above process is modified as follows:

- according to Claim 1 of Auxiliary Request 1, step (b) is modified in that the slurry is fed at a temperature of above 90°C;
- according to Claim 1 of Auxiliary Request 2, step (a) is modified in that the coffee grounds have an average particle size of from about 1 mm to about 3 mm;
- according to Claim 1 of Auxiliary Request 3, step (c) is modified in that the stripping gas is steam and that the stripping rate is 10 to 100% by weight of steam to dry coffee.

3.4 The appellant itself admits that steps (a) to (h) are essentially conventional in the prior art, when taken per se, with the essential difference however that Claim 1 requires that:

- a slurry is provided in step (a) which has a low solids content of 1 to 30% by weight, which means that the water content is high;
- the aroma stripping step (c) is performed before the roast and ground coffee is extracted in the extraction system (e).

4. The closest prior art

D9 entitled "Instant Coffee" from the company Flavourtech, Australia, is a Spinning Cone Column (SCC) Application Bulletin dated "July '97". Its availability to the public before the effective priority date (09.04.1998) was no longer contested by the appellant.

D9 relates exclusively to the instant coffee process and in particular deals with the use of the SCC as an effective device for collecting volatile flavour compounds from roasted coffee.

The board notes that Flavourtech is a manufacturer of the SCC, a system which is not exclusively used for instant coffee processes but is also suitable for aroma recovery from fruit and vegetable juices (cf. D2). The board, however, is convinced that a brochure like D9, which exclusively relates to instant coffee, cannot be drafted without taking into account the expertise of coffee producers. D9 therefore does indeed contain relevant information about instant coffee processes which, contrary to the appellant's opinion, would be contemplated by a person skilled in the instant coffee process.

Thus the board considers D9 representative of the closest prior art.

D9 pertains to the use of the Spinning Cone Column (SCC) for aroma recovery in the instant coffee process and points out that the SCC is especially efficient at collecting volatile flavour compounds (right column at the first page under **"SCC in the instant coffee process"**).

The figure on the second page of D9 schematically shows a coffee process in which the roast and ground coffee is fed to an extractor from which the resulting extract is then fed to the SCC. The text above the figure in this context reads *"The SCC is normally incorporated in a traditional instant coffee process by taking the*

liquor after extraction and collecting, without damage, the volatile flavour (aroma) before the stripped coffee liquid is processed in an evaporator to make a concentrated extract" (emphasis by the board). Below the figure some advantages of the SCC system are indicated. Under the headword "**-solids handling capability**" inter alia the information: *"meaning extracts do not need to be clarified prior to aroma recovery;"* is given.
These text passages are corroboration that the figure depicts an instant coffee process in which the aroma recovery step takes place after the extraction of the roast and ground coffee, which represents a process which is denoted by the appellant as "conventional".

5. The problem to be solved

The process according to the claimed invention differs from the above process of D9 essentially in that the aroma recovery step is performed prior to the extraction step by feeding to the stripping column a slurry of roast coffee grounds having a solids content of 1% to 30% by weight.

The experimental evidence provided in the patent specification shows that aroma recovery prior to extraction leads to an instant coffee powder having an enhanced aroma count; cf in particular the data of examples 1, 4, 5, 7 and (comparative) example 3 depicted in the tables in paragraphs [0054], [0059], [0064] and [0070].

The problem to be solved is therefore seen in the provision of an instant coffee process which results in

a soluble coffee powder which has an improved aroma and flavour.

6. Obviousness

6.1 Main request (claims as granted)

The disclosure in D9, taken as a whole, implies that the SCC system is not limited to a "conventional" instant coffee process including aroma recovery after extraction.
The heading of D9 *"The Spinning Cone Column helps create high quality soluble coffee powders by retaining the precise level of fresh coffee flavour the consumer demands"* and the further passage that *"The SCC system has several unique features such as: **-flexibility;** allowing precise control over the flavour profile of the recovered aroma and therefore the final product"* (page 2, below the figure) incites the skilled person to handle the SCC system more flexibly with respect to the desired strength of the coffee flavour which depends on the respective demands of the customers.

As regards the problem of aroma loss during the instant coffee process, D9 mentions extraction in the first place (first page, line 2 from the bottom of the left column to line 4 of the right column). In this context, the skilled person would consider the passage under the reference ***"-solids handling capability;"***, namely: *"meaning a slurry of the ground, roasted, coffee beans can be fed continuously through the SCC to recover an aroma with an even stronger fresh roasted character than from the extract - a feature actively used by owners of the SCC who produce coffee flavours and*

speciality extracts". Contrary to the appellant's view, it is the board's position that this passage explains a further advantage of the SCC system besides the previous statement that "extracts do not need to be clarified prior to aroma recovery".
The skilled person would therefore consider the above passage to be a possible solution to the problem of aroma loss.

In the board's judgment, D9 therefore clearly implies that the SCC system allows deviation from the traditional instant coffee process (including aroma recovery after extraction as depicted in the figure) by its alternative use as stripping column which can be fed with a slurry of ground coffee beans prior to extraction, in particular when coffee flavours with a stronger aroma are desired.

Because the appellant has not shown that the specific solids content of 1% to 30% by weight in the slurry used in the process of the invention provides any surprising effect, adjustment of the solids content in a slurry is considered to be a routine optimisation for a skilled person. This all the more so as Mr. Wragg states in point 11 of his declaration D16 - which was not contested by the appellant - that slurries used in the field of coffee processing typically have solids content in the range of 1% to 30% by weight.

The process according to Claim 1 of the main request is therefore not based on an inventive step.

Consequently, the main request (claims as granted) is not allowable.

6.2 Auxiliary Requests 1 to 3

Adjustment of known common technical parameters belongs to normal routine operation for a skilled person as long as they do not cause a surprising, non-predictable technical effect.
The appellant has not demonstrated that the additional features introduced in Claims 1 of Auxiliary Requests 1 to 3, i.e.

- the slurry is fed to the top of a stripping column *at a temperature of above 90°C* (Auxiliary Request 1);
- the roast coffee grounds *have an average particle size in the range of about 1 mm to about 3 mm* (Auxiliary Request 2);
- the use of steam at a stripping rate of 10 to 100% by weight (Auxiliary Request 3)

are responsible for any such surprising technical effect. Therefore, they cannot contribute anything to an inventive step.

The subject-matter of Claims 1 according to Auxiliary Requests 1 to 3 is therefore not inventive, for reasons similar to those set out in points 4 to 6.1 above.

Consequently, the claims according to Auxiliary Requests 1 to 3 are not allowable either.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar The Chairman

T. Buschek W. Sieber