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**Datasheet for the decision
of 3 June 2019**

Case Number: T 0726/15 - 3.4.02

Application Number: 08860464.0

Publication Number: 2232253

IPC: G01N30/82, G01N30/62

Language of the proceedings: EN

Title of invention:

METHODS AND APPARATUS FOR ANALYZING SAMPLES AND COLLECTING
SAMPLE FRACTIONS

Applicant:

Büchi Labortechnik AG

Headword:

Relevant legal provisions:

EPC Art. 56
RPBA Art. 12(4)

Keyword:

Inventive step - main request (no)
Late-filed auxiliary requests - admitted (no) - could have been
filed in first instance proceedings

Decisions cited:

Catchword:



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Case Number: T 0726/15 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 3 June 2019

Appellant: Büchi Labortechnik AG
(appellant) Meierseggstrasse 40
9230 Flawil (CH)

Representative: Müller, Christoph Emanuel
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 31 October 2014
refusing European patent application No.
08860464.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Bekkering
Members: C. Kallinger
B. Müller

Summary of Facts and Submissions

- I. The applicant appealed against the decision of the examining division refusing European patent application No. 08860464.0 on the basis of Article 56 EPC.
- II. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request or the first or second auxiliary request, all filed with the statement of grounds of appeal dated 26 February 2015. As a precaution, the appellant requested oral proceedings.
- III. Together with the summons to oral proceedings the board issued a communication pursuant to Article 15(1) RPBA. Therein the board informed the appellant about its preliminary opinion according to which, inter alia, the subject-matter of claim 1 did not involve an inventive step within the meaning of Article 56 EPC.
- IV. With a letter of 11 April 2019 the appellant withdrew its request for oral proceedings. The appellant did not file any comments concerning the board's preliminary opinion as annexed to the summons.
- V. Following the applicant's letter of 11 April 2019, the oral proceedings were cancelled.
- VI. The present decision refers to the following documents:

D1: EP 1 380 329 A1
D3: US 2007/0181505 A1 .

VII. Claim 1 of the main request reads as follows:

"1. A method of analyzing and collecting one or more sample components within a fluid sample stream in a chromatography system, said method comprising the step of:

- (a) generating a composite signal from two or more detectors in a chromatography system, said chromatography system using a liquid as mobile phase and comprising at least one destructive detector, and at least one non-destructive detector observing the sample at two or more specific optical wavelengths so as to produce detector responses at each of the observed specific optical wavelengths, the composite signal comprising a detection response component from each detector wherein the detection response component from the non-destructive detector comprises the detector responses at each of the observed specific optical wavelengths; and*
- (b) collecting a new sample fraction in a fraction collector in response to a change in the composite signal."*

Claim 1 of to the first auxiliary request differs from claim 1 of the main request in that it comprises the following additional features:

"and further comprising

- (c) actively controlling fluid flow to at least one detector in the chromatography system via a splitter pump or a shuttle valve positioned in fluid communication with the at least one detector."*

Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that it comprises the following additional features:

"wherein the time delay between (i) a detection response from any detector and (ii) the step of collecting the sample fraction in response to the change in the composite signal is less than 2.0 seconds."

Reasons for the Decision

1. Main request - Inventive Step

The subject-matter of claim 1 does not involve an inventive step (Articles 52(1) and 56 EPC).

1.1 Closest prior art

Document D1 is considered as closest prior art. It discloses a method of analyzing and collecting one or more sample components within a fluid sample stream in a chromatography system (see paragraph [0001]), said method comprising the steps of (see abstract, paragraphs [0017] to [0026] and figures 1 to 3):

- (a) generating a composite signal from two or more detectors in a chromatography system, said chromatography system using a liquid as mobile phase and comprising at least one destructive detector (ELSD 12 or mass spectrometer 9), and at least one non-destructive detector (UV detector 5), the composite signal comprising a detection response component from each detector (paragraphs [0024] to [0026]) and

(b) collecting a new sample fraction in a fraction collector in response to a change in the composite signal (said change corresponding to a transition from "0" to "1" in said composite signal).

Composite signal

The board is of the opinion that the signal (e) disclosed in figure 2 of D1 is derived from a combination of binary signals (b) and (d) which in turn are derived from the respective detector responses (a) and (c). Signal (e) thus falls within the definition of the composite signal as formulated in claim 1.

The appellant argued that the "AND" or "OR" comparison of the detector responses disclosed in D1 (see figures 2 and 3) was a "*binary operation*" and would thus not result in a composite signal as claimed because the claimed "*composite signal*" was a mathematical correlation of the detector responses.

This argument is not convincing because claim 1 does not contain any such restriction. The board notes in this respect that only dependent claims 2 and 3 define different options for a mathematical correlation. However, in the board's view, even the logical combination of the detector responses disclosed in D1 falls under the very general term "*mathematically correlating*" as used in dependent claim 2.

Separate chromatographic runs

The appellant argued that D1 disclosed two separate runs, a preparatory run for determining the timing and a "proper" run for sample collection based on the previously determined timing. In contrast to this, the

invention comprised, within one single chromatographic run, the generation of the composite signal and the collection of the sample fractions.

The board is not convinced by this argument and agrees with the examining division's reasoning that claim 1 fails to define that steps (a) and (b) have to be performed during the same run. The board notes that this restriction is only present in dependent claim 11, which explicitly defines that *"steps (a) and (b) are conducted in the same chromatographic run."*

Furthermore, in a second embodiment (see figure 4), D1 discloses that the generation of the composite signal (in logical calculator 23) takes place during the *"proper separation operation"* (see paragraph [0029]). Thus, in this embodiment D1 discloses that steps (a) and (b) are performed in the same run.

1.2 Difference

D1 fails to disclose that the sample is observed by the non-destructive detector at two or more specific optical wavelengths so as to produce detector responses at each of the observed specific optical wavelengths and that, as a consequence, the detection response component from the non-destructive detector comprises the detector responses at each of the observed specific optical wavelengths.

1.3 Problem to be solved

Based on the sole difference that two or more wavelengths are observed by the non-destructive detector, the problem to be solved is to increase the accuracy of the collection process.

1.4 Combination of D1 and D3

The examining division reasoned in its decision that D3, in paragraph [0044], disclosed the observation of the sample at two different wavelengths in a similar context. It would be obvious for the skilled person to also use two or more wavelengths in the UV detector described in D1.

The appellant argued that D3 did not contain an invitation for the skilled person to choose from the range of electromagnetic detectors disclosed in D3 just a detector observing the sample at two or more different wavelengths. Moreover, there was no particular pointer to observe the sample at two different wavelengths.

The board is not convinced by the appellant's argument. D3 relates to a chromatographic system intended to analyze and collect fractions of samples (see paragraph [0002]). D3 describes the use of a radiation absorbing detector 122 in order to distinguish fractions from one another (see paragraph [0040]). It explicitly teaches that this detector 122, as an example a UV detector is mentioned, can use dual or multiple wavelengths to detect fractions of the sample (see paragraph [0044], first and third sentences). The skilled person therefore receives the explicit teaching to modify the UV detector of D1 such that two or more wavelengths are used.

The appellant's argument that D3 fails to disclose the combination of two detector outputs into a unitary composite signal is not convincing because the board sees this feature already disclosed in D1 (see section 1.1 under heading "Composite signal" above).

The board therefore comes to the conclusion that the skilled person, by combining the teachings of D1 and D3, would arrive at the subject-matter of claim 1 without inventive effort. As a consequence, the subject-matter of claim 1 does not involve an inventive step (Articles 52(1) and 56 EPC).

The same reasoning applies to corresponding independent apparatus claim 8.

2. First auxiliary request - Admissibility

The first auxiliary request is not admitted into the appeal proceedings.

2.1 The patent proprietor filed the first auxiliary request for the first time together with its statement of grounds of appeal. In comparison with claim 1 of the main request, claim 1 of the first auxiliary request has the additional feature of "*actively controlling fluid flow to at least one detector in the chromatography system via a splitter pump or a shuttle valve positioned in fluid communication with the at least one detector*".

2.2 The features relating to the active control of the fluid flow via a splitter pump relate to subject-matter which was present in dependent claims of the originally filed application documents. During the examination proceedings, these features have been deleted from the claims but were re-introduced in a dependent claim with amendments received in preparation of the oral proceedings. In a communication issued shortly before the oral proceedings, the examining division cited two documents and indicated a possible lack of inventive

step with respect to the features of then dependent claim 18 relating to the active control via a splitter pump. During the oral proceedings, the examining division came to the conclusion that the main request was not allowable and did not admit an auxiliary request because it was late filed and the subject-matter of claim 1 was prima facie not inventive. At that stage, the appellant was given the opportunity to present further requests, but decided not to do so (see page 4 of the minutes of the oral proceedings).

- 2.3 The board therefore comes to the conclusion that the subject-matter of the currently presented first auxiliary request could have been presented already during the examination proceedings because the appellant was well aware of the fall-back position involving features of then dependent claim 18 relating to the active control via a splitter pump.

Furthermore, an independent claim directed at this subject-matter should have been filed before the department of first instance in order to give the examining division the opportunity to decide on it, allowing the board to review this decision.

For these reasons, the board exercises its discretion under Article 12(4) RPBA in not admitting the first auxiliary request into the appeal proceedings.

3. Second auxiliary request - Admissibility

The second auxiliary request is not admitted into the appeal proceedings.

- 3.1 The patent proprietor filed the second auxiliary request for the first time together with its statement

of grounds of appeal. In comparison with claim 1 of the first auxiliary request, claim 1 of the second auxiliary request has the additional restriction that *"the time delay between (i) a detection response from any detector and (ii) the step of collecting the sample fraction in response to the change in the composite signal is less than 2.0 seconds."*

3.2 The features relating to the maximum time delay relate to subject-matter originally disclosed in the description. In reply to the summons to oral proceedings before the examination division, the appellant introduced these features in the form of newly added dependent claim 17. In a communication issued shortly before the oral proceedings the examining division indicated a possible lack of inventive step in respect of this claim. As set out above (at point 2.2 *in fine*), during the oral proceedings, the examining division came to the conclusion that the main request was not allowable and did not admit an auxiliary request. The appellant was then given the opportunity to present further requests, but decided not to do so (see page 4 of the minutes of the oral proceedings).

3.3 Similar to the findings relating to the first auxiliary request, the board therefore comes to the conclusion that a request directed at subject-matter defining a maximum time delay could already have been presented during the examination proceedings. This is because the appellant was well aware of the fall-back position involving features of then dependent claim 17 relating to the maximum time delay.

Furthermore, an independent claim directed at this subject-matter should have been filed before the

department of first instance in order to give the examining division the opportunity to decide on it, allowing the board to review this decision.

For these reasons, the board exercises its discretion under Article 12(4) RPBA in not admitting the second auxiliary request into the appeal proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



M. Kiehl

R. Bekkering

Decision electronically authenticated