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D E C I S I O N
of 10 January 2006

Case Number: T 1309/05 - 3.4.02

Application Number: 99309126.3

Publication Number: 1004878

IPC: G01N 30/72

Language of the proceedings: EN

Title of invention:

Mass spectrometer method and apparatus for analyzing a sample
in a solution

Applicant:

Amirav, Aviv

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 113(1)

EPC R. 68(2)

Keyword:

"Decision "on the file as it stands"

Decisions cited:

T 0071/99, T 0508/01, T 0861/01

Catchword:

A decision referred to in Rule 68(2) EPC should in principle
be complete and self-contained (point 3.5 of the Reasons).

By requesting a decision "on the file as it stands" an
applicant does not waive its rights as defined in
Article 113(1) EPC (point 3.7 of the Reasons).



Case Number: T 1309/05 - 3.4.02

D E C I S I O N
of the Technical Board of Appeal 3.4.02
of 10 January 2006

Appellant: Amirav, Aviv
5 HaYaar Alley
Hod Hasharon 45269 (IL)

Representative: Fairbairn, Angus Chisholm
Marks & Clerk
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 May 2005
refusing European application No. 99309126.3
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. Klein
Members: A. Maaswinkel
C. Rennie-Smith

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dispatched on 9 May 2005, refusing the European patent application 99309126.3.

II. The grounds for the decision of the examining division read:

"In the communication(s) dated 27.10.2004, 29.03.2005 the applicant was informed that the application does not meet the requirements of the European Patent Convention. The applicant was also informed of the reasons therein.

The applicant filed no comments or amendments in reply to the latest communication but requested a decision according to the state of the file by a letter received in due time on 05.04.2005.

The application must therefore be refused."

III. In its first communication dated 7 February 2003, the examining division had objected that the wording of the independent claims then on file was so broad that their subject-matter lacked novelty (Article 54 EPC) over the disclosure in document D1 (EP-A-0 408 487). With respect to the dependent claims it was added that their subject-matter did not involve an inventive step (Article 56 EPC) over the disclosure in D2 (US-A-4 977 785) since according to the communication "D2 discloses an interface between a liquid stream and a mass spectrometer comprising a supersonic nozzle (column 3, line 66 - column 4, line 3; column 6, line 54 -

- column 7, line 33) and hints already to a variety of analytical devices".
- IV. In its response of 8 May 2003 to this communication, the applicant argued that D2 was irrelevant to the invention because it dealt with a supersonic particle beam and not with "the ionization of vibrationally cold sample molecules while contained in the supersonic molecular beam" as defined in the independent claims. Also D2 disclosed electron ionization of the sample compounds that were vaporized inside the electron ionization ion source and were in thermal equilibrium with the ion source temperature, this being in contrast with the invention which called for ionization of vibrationally cold molecules.
- V. In the subsequent communication of 30 July 2003 an objection under Article 123(2) EPC was raised. The objection under Article 54 EPC based on D1 was repeated. With respect to D2 the division stated in point 4 of this communication that the applicant's statement that D2 was irrelevant could not be accepted, since this document "...clearly [disclosed] aerosol generation which is assisted by the pneumatic nebulization produced by the expanding supercritical or gas stream often leading to smaller particle sizes and the associated benefits (column 2, line 44 - 61)".
- VI. With its reply of 2 December 2003, pages 2 and 3, the applicant filed a new set of claims amended to overcome the objection under Article 123(2) EPC. It was pointed out that D2 was based on the formation of a particle beam of the sample compounds and that in that apparatus

the sample was ionized after the scattering (emphasis added).

VII. In a further communication annexed to a summons to attend oral proceedings of 27 October 2004 the examining division raised an objection of lack of novelty of the independent claims now on file based on the disclosure in document D2. According to the communication, "In D2, the embodiment of figure 5 discloses that solute particles and vapour components of the aerosol are accelerated through nozzle (42) forming a high velocity beam along a longitudinal axis between nozzle (42) and skimmer (43) (see also column 9, line 60 - 63). This feature can be read as the vaporization of said directed flow of solution containing sample compounds is effected prior to its expansion from said supersonic nozzle. Furthermore D2 discloses an arrangement of tubes which is adjusted to the desired properties which includes the vaporization of aerosols (column 10, lines 59 - 68). Consequently, D2 discloses all method steps of present claim 1 and all clear structural features of apparatus claim 14. Applicant's arguments concerning the relevance of D2 have been taken into consideration and were discussed in paragraph 4 of the second communication dated 30.7.2003" (*see point V supra*).

VIII. With its letter of 1 February 2005 the applicant filed an amended set of claims. According to the applicant, claims 1 and 14 had been revised to emphasise further the major differences between the invention and D2. In support of the patentability of these claims the applicant discussed over two pages in detail the differences between the invention as defined in

independent claims 1 and 14 and the disclosure in D2. The applicant summarised the major differences in the following four points:

- 1) **"The vaporization of said directed flow of solution containing sample compounds is effected prior to its expansion from said supersonic nozzle."** In contrast, in D2, the vaporization of sample compounds is effected after its expansion from the supersonic nozzle and it is performed inside the ion source.
- 2) **"Cooling said vaporized sample compounds through its expansion from said supersonic nozzle."** In D2, the sample compounds are not cooled, since they are transported to the ion source in a particle beam.
- 3) **"The formation of a supersonic molecular beam of both vaporized sample compounds subsequent their internal vibrational cooling and vaporized solvent molecules."** In contrast, in D2, there is only a particle beam and not a supersonic molecular beam of sample compounds.
- 4) **"The ionization of said sample compounds performed while it is contained in said supersonic molecular beam."** This is an important difference between the method of the present invention, which is based on the ionization of vibrationally cold sample compounds and the method of D2, which is based on the ionization of sample compounds after their vaporization inside the ion source while they are at the ion source temperature."

Furthermore, an affidavit by Dr Ross C. Willoughby, the co-inventor of D2, was also filed with this letter. In points 4 and 5 of this affidavit Dr Willoughby pointed to essential differences between the disclosure in D2 and the invention as defined in independent claims 1 and 14.

IX. The independent claims 1 and 14 of this request are reproduced below (new features underlined), also showing the amendments to the previous set of claims (wording of the claims of 2 December 2003, deleted features crossed out):

"1. A mass spectrometric method for analyzing a sample in a solution, comprising the steps of:

- directing a flow of a solution containing sample compounds to be analyzed towards a supersonic nozzle;
- vaporizing the solution containing sample compounds;
- ~~allowing expansion of~~ expanding the vaporized sample from said supersonic nozzle into a vacuum system, forming a supersonic molecular beam;
- ionizing with electrons the vaporized sample compounds;
- mass analyzing the ions formed from said sample compounds;
- detecting said ions formed from said sample compounds after mass analysis, and
- processing the data obtained from the resulting mass spectral information, for identifying and/or quantifying the chemical content of said sample, characterized in

that the flow of said solution is a liquid flow;

- that the vaporization of said directed flow of a solution containing sample compounds is effected prior to its expansion from said supersonic nozzle;
- ~~the expansion and subsequent internal vibrational cooling of~~ said vaporized sample compounds through its expansion from said supersonic nozzle;
- ~~the formation of~~ forming a supersonic molecular beam of both, vaporized sample compounds subsequent

their internal vibrational cooling and vaporized solvent molecules, and

~~the ionization of~~ ionizing said sample compounds while contained in said supersonic molecular beam".

"14. A mass spectrometer apparatus for analyzing a sample in a solution, comprising:

means (3) for directing a flow of a solution containing sample compounds to be analyzed towards a supersonic nozzle (12);

means for vaporizing said solution containing sample compounds;

said supersonic nozzle (12) enabling expansion of said vaporized sample compounds into a vacuum system (15), forming a supersonic molecular beam;

electron ionization ion source means (20) for ionizing said vaporized sample compounds;

mass analyzer means (22) for the mass analysis of the ions formed from said sample compounds;

an ion detector (23) for detecting said ions formed from said sample compounds after mass analysis, and

means (24) for data processing of the mass spectral information obtained for identifying and/or quantifying the chemical content of said sample,

characterized by

that means (3) for directing a flow of a solution ~~is adopted to direct liquid flow~~ includes a tubular liquid transfer line;

thermal vaporization means (13) for vaporizing said directed flow of solution and sample compounds prior to its expansion from said supersonic nozzle (12);

that said supersonic nozzle (12) ~~enables the expansion and~~ expands said vaporized sample compounds with subsequent internal vibrational cooling ~~of said vaporized sample compounds~~;

that said supersonic nozzle (12) and vacuum system (15) ~~is capable of forming~~ form a supersonic molecular beam of both vaporized solvent and cool sample compounds, and

that said electron ionization ion source means (20) is located downstream of said supersonic nozzle 12 and is a fly-through ion source for the ionization of said adapted to ionize sample compounds while contained in said supersonic molecular beam subsequent their internal vibrational cooling".

- X. On 17 March 2005 a telephone consultation between the first examiner and the representative took place. The note of this consultation as forwarded to the representative on 29 March 2005 reads:

"The applicant was informed that a grant of a patent cannot be expected on the basis of the documents filed with letter dated 1.2.2005 because the examining division is of the provisional opinion and [sic] that the newly filed claims do not remove the objections raised in previous communications and the summons to the oral proceedings. The oral proceedings scheduled on 11.4.2005 will be held as foreseen".

- XI. After a request for postponement of the oral proceedings and the setting of a new date the applicant, in its letter of 5 April 2005, withdrew its request for oral proceedings and instead requested a "Decision on the basis of the file as it stands, i.e. taking into

consideration our written submissions and amendments dated 1 February 2005".

- XII. In an official letter of 9 May 2005 the patent application was refused (*see point II supra*).
- XIII. The appeal against this decision was lodged on 5 July 2005. The appeal fee was received on 4 July 2005. The statement setting out the grounds of appeal was received on 2 September 2005.
- XIV. With the statement of appeal the appellant filed new sets of claims comprising a main and a first auxiliary request and furthermore an auxiliary request for oral proceedings.
- XV. In this statement of appeal the appellant summarised the file history. Particularly relevant for the present decision are the submissions in points A6 and A7.

In point A6 the appellant submitted "To the Applicant's dismay, on 17 March 2005, the Examiner conducted a courtesy call with Applicant's EP attorney, informing him that after considering the final submissions, he remained of the opinion that the claims were not acceptable. No specific explanation was given, and indeed the Result of Consultation of 29 March 2005 merely states..." (*for its contents, see point X supra*).

In point A7 the appellant explained the reasons for filing its auxiliary request. In this point it is stated "In the absence of reasons from the Examiner as to why the distinguishing comments submitted by way of an Affidavit and detailed explanation were not found

convincing to overcome the sole cited reference, i.e. D2, and which phrases, if any, of the amended claims were still not regarded clear, we are therefore filing amended claims according to the 1st Auxiliary Request, with the following detailed explanation as to why the Applicant believes that these claims address the Examiner's objections as set out in the communication dated 27 October 2004".

XVI. In a telephone consultation on 24 November 2005 with the representative of the appellant the rapporteur observed that it appeared questionable whether the decision under appeal met the requirements of Rule 68(2) EPC and whether the provisions of Article 113(1) EPC had been respected. Since these defects involved a substantial procedural violation the appellant was informed that a remittal of the case with reimbursement of the appeal fee under Rule 67 EPC was envisaged. The representative was asked whether under such circumstances the auxiliary request for oral proceedings was maintained.

In reply the representative withdrew the request for oral proceedings. Furthermore in the telephone consultation he pointed to the procedural difficulties in past communication with the examining division in the present patent application and asked the board whether it might suggest a change in composition of the examining division upon remittal.

Reasons for the Decision

1. The appeal is admissible.

2. *Article 113(1) EPC*

2.1 Article 113(1) EPC states that the decisions of the European Patent Office may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments.

2.2 In the present case the decision refers to the communications of 27 October 2004 and 29 March 2005.

2.2.1 In the communication of 27 October 2004, addressing the set of claims of 2 December 2003, an objection under Article 54 EPC with respect to document D2 was raised for the first time (*point VII supra*). Reference was also made to the communication of 30 July 2003.

2.2.2 However, with the letter of 1 February 2005 the applicant filed a new set of claims, revised to "further emphasise the major difference between the invention and D2" (*point VIII supra*). Without going into the merits of a detailed comparison of the features of the previous set of claims and those filed with the letter of 1 February 2005 (which is not appropriate for the purpose of the present decision), it is apparent even at a first glance that the characterising portion of method claim 1 had been drafted in a more restrictive way, and that apparatus claim 14 even included technical features not present in the former claim ("tubular liquid transfer line", "fly-through ion source").

2.2.3 Moreover, this letter contained a quite substantial argumentation by the applicant and an affidavit of the co-inventor of document D2.

2.2.4 It is established jurisprudence of the boards of appeal, that the opportunity to present comments and arguments guaranteed by Article 113(1) EPC is a fundamental value of the examination, opposition and appeal procedures. As pointed out in the decision T 508/01 of 9 October 2001, point 4, this is not just a right to present comments but also to have those comments duly considered.

2.2.5 The written file does not contain any reasoning from the examining division why the objection pertaining to lack of novelty against the former set of claims would still apply to the new set of claims, nor why the new evidence submitted by the applicant was not persuasive.

2.3 The only information which can be drawn from the telephone consultation on 17 March 2005 (*point X supra*) is that the first examiner was at least aware of the existence of the documents filed with the letter of 1 February 2005. That the mere statement in the note of this consultation that "the newly filed claims do not remove the objections raised in previous communications and the summons to the oral proceedings" cannot form a "Basis of decisions" as required by Article 113(1) EPC needs no further explanation.

2.4 Therefore, the issuing of a decision refusing the set of claims filed with the letter of 1 February 2005 without having provided the grounds and evidence to the applicant is in breach of the provisions of

Article 113(1) EPC, which amounts to a substantial procedural violation (Rule 67 EPC). For this reason alone, the decision must be quashed.

3. *Rule 68(2) EPC*

3.1 Rule 68(2) EPC stipulates that decisions of the European Patent Office which are open to appeal shall be reasoned. The criteria for the "reasoning" are, for instance, elaborated in the Guidelines, Part E, Chapter X-5, the first four paragraphs of which are reproduced below (numbering added by the board):

"i) The reasoning must contain, in logical sequence, those arguments which justify the order. It should be complete and independently comprehensible, i.e. generally without references. If, however, a question has already been raised in detail in a particular communication contained in the file, the reasoning of the decision may be summarised accordingly and reference may be made to the relevant communication for the details.

ii) The conclusions drawn from the facts and evidence, e.g. publications, must be made clear. The parts of a publication which are important for the decision must be cited in such a way that those conclusions can be checked without difficulty. It is not sufficient, for example, merely to assert that the cited publications show that the subject of a claim is known or obvious, or, conversely, do not cast doubt on its patentability; instead, reference should be made to each particular passage in the publications to show why this is the case.

iii) It is particularly important that special attention should be paid to important facts and arguments which may speak against the decision made. If not, the impression might be given that such points have been overlooked. Documents which cover the same facts or arguments may be treated in summary form, in order to avoid unnecessarily long reasonings.

iv) The need for complete and detailed reasoning is especially great when dealing with contentious points which are important for the decision; on the other hand, no unnecessary details or additional reasons should be given which are intended to provide further proof of what has already been proven."

3.2 In the present case the decision itself of 9 May 2005 did not contain any grounds or reasoning. It does not even specify the particular legal provision of the Convention (Article(s) or Rule(s)) under which the decision to refuse the application was taken. Furthermore, considering that the note dated 29 March 2005 did not contain any reasoning whatsoever, the latest substantive communication was that of 27 October 2004. The statement in the decision that the "applicant filed no comments or amendments in reply to the latest communication" is thus obviously erroneous, since comments and amendments had been filed with the letter of 1 February 2005.

3.3 But even if it is assumed that it had escaped the attention of the examining division that this set of claims differed from the previous one (which in any case should have been readily visible from the marked-

up copy included by the applicant), the simple referral to the communication of 27 October 2004 would not have amounted to a "reasoning" as required in Rule 68(2) EPC and further explained in the Guidelines for the following reasons.

3.3.1 In that communication, an objection pertaining to lack of novelty (Article 54 EPC) over the disclosure in D2 had been put forward. The support for this is indicated in the embodiment of figure 5 and four lines in the description (column 9, lines 60 - 63). The argument for the anticipation is the following "this feature can be read (underlined by board) as the vaporization of said directed flow of solution containing sample compounds is effected prior to its expansion from said supersonic nozzle. Furthermore D2 discloses an arrangement of tubes which is adjusted to the desired properties which includes the vaporization of aerosols (column 10, lines 59 - 68)".

3.3.2 It appears that the examining division identifies one feature (from the embodiment in figure 5 and cited text passage) as anticipating one or more features from the independent method claim. Furthermore it makes reference to a different embodiment in column 10 of D2, from which it concludes that "D2 discloses all method steps of present claim 1". It may be doubted whether an objection of lack of novelty can be validly based on a combination of features from two separate embodiments, but in any case the reasoning does not contain, in logical sense, those arguments which justify the order as elaborated in the Guidelines. In fact, method claim 1 defined seven method steps in its preamble (which may have their counterpart in D2) and five more

steps in its characterising portion, none of which were individually addressed in the above communication.

3.3.3 With respect to the independent apparatus claim 14 the examining division did not address its features, other than referring to the same passages in D2 as for claim 1, and declared "D2 discloses all clear structural features of claim 14" (underlining by the board). It is not comprehensible whether the term "clear" alludes to an implicit (further) objection under Article 84 EPC, but in any case the communication does not give any grounds or reasoning in this respect (apart to a referral to a previous communication, which however did not address such objections).

3.4 Therefore even if the "state of the file" were to mean its state after the communication of 27 October 2004, it would not have been readily possible to identify the grounds leading to a negative decision. This assessment is corroborated by the submissions of the appellant in points A6 and A7 of the statement of appeal (see *point XV supra*).

3.5 In this respect, reference is also made to the paragraphs iii) and iv) from the Guidelines reproduced in point 3.1 supra: the requirement in Rule 68(2) EPC for a "reasoned decision" is not only motivated by the basic legal principle that a party should be informed of the detailed grounds of a negative decision, but that such reasoning and grounds should be comprehensible to those conducting a later judicial review (Rule 68(2) EPC: "Decisions ..which are open to appeal"). It should not be necessary for a board of appeal to have to reconstruct or even speculate as to

the possible reasons for a negative decision in the first instance proceedings. In principle a decision referred to in Rule 68(2) EPC should be complete and self-contained.

3.6 One more point of interest to be addressed is the applicant's request in the letter of 5 April 2005 for a "decision on the file as it stands", which led the examining division to issue a decision "according to the state of the file" as referred to in the Guidelines Part E, Chapter X-4.4 In this Chapter it is explained that such a decision may be of a "standard form, simply referring to the previous communication(s) for its grounds and to the request of the applicant for such a decision".

3.7 Indeed, it may be tempting for an examining division after such a request from an applicant to follow this suggested procedure. However, it should be clear at all times that even in such a case the provisions of Rule 68(2) EPC must be met, and, furthermore, that by requesting a decision on the file as it stands the applicant does not waive its rights as defined in Article 113(1) EPC, i.e. the right to be heard must be respected at all times (see also T 861/01 of 25 June 2004, point 5 of the Reasons). It should be added that in the present case the request of the applicant was for a decision on the file as it actually stood, i.e. "taking into consideration our written submissions and amendments dated 1 February 2005". Therefore, although the expression in the applicant's request "decision on the basis of the file as it stands" may appear somewhat unfortunate and a request for a "fully argued decision" might have avoided the present decision, that does not

alter the board's conclusion that the decision does not conform to Rule 68(2) EPC.

4. *Further prosecution*

4.1 The decision under appeal is defective in that Article 113(1) and Rule 68(2) EPC have not been respected, amounting to a substantial procedural violation. It is therefore considered appropriate to remit the case to the first instance to resume the examining procedure. Furthermore, since the appeal is allowable the appeal fee shall be reimbursed (Rule 67 EPC).

4.2 With respect to the question by the appellant's representative that the board might suggest a change in composition of the examining division (*see point XVI supra*) the board makes reference to decision T 71/99 of 20 June 2001 from the same board but in a different composition. In point 4 of the Reasons of that decision it was observed that it follows from Article 10(2) a) and i) EPC that the organisation of (examining and opposition) divisions is under the responsibility of the President, who in practice delegates this power to the director via the responsible vice-president and principal director. Therefore, it is the appropriate director who should consider whether a party's request for a change in composition appears to be justified. It may be that, in view of the procedural history of the present case (*see points II to XII supra*), a change of composition of the examining division, if formally requested by the applicant, might indeed be seen as ensuring the fair conduct of the further proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.
3. The appeal fee shall be reimbursed.

The Registrar:

The Chairman:

P. Martorana

A. Klein