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**Datasheet for the decision
of 7 June 2019**

Case Number: T 1607/14 - 3.4.02

Application Number: 08011345.9

Publication Number: 1978351

IPC: G01N21/64, G01N21/03, B01L7/00

Language of the proceedings: EN

Title of invention:

Instrument for monitoring polymerase chain reaction of DNA

Patent Proprietor:

Life Technologies Corporation

Relevant legal provisions:

EPC Art. 52(1), 54, 56, 76(1), 83, 100(a), 100(b), 100(c),
123(2), 123(3)
EPC R. 42(1)(c)

Keyword:

Subject-matter extending beyond the earlier application as
filed (no, after amendment)
Sufficiency of disclosure (yes)
Novelty and inventive step (yes)



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
Fax +49 (0)89 2399-4465

Case Number: T 1607/14 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 7 June 2019

Appellant: Life Technologies Corporation
(Patent Proprietor) 5823 Newton Drive
Carlsbad, CA 92008 (US)

Representative: Hoffmann Eitle
Patent- und Rechtsanwälte PartmbB
Arabellastraße 30
81925 München (DE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 19 May 2014
revoking European patent No. 1978351 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairwoman T. Karamanli
Members: F. J. Narganes-Quijano
H. von Gronau

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the opposition division revoking European patent No. 1 978 351. The patent was granted on the basis of a divisional application of the earlier European patent application No. 99 924 365.2, published with the international publication number WO 99/60 381 A1.

The opposition filed by the then opponent against the patent as a whole was based on the grounds for opposition of

- added subject-matter in respect of the earlier application as filed (Article 100(c) EPC),
- lack of sufficiency of disclosure of the claimed invention (Article 100(b) EPC), and
- lack of inventive step (Article 100(a) together with Article 56 EPC).

II. In its decision the opposition division held in respect of the requests then on file *inter alia* that

- the subject-matter of claim 1 of the patent as granted (main request) extended beyond the content of the earlier application as filed (Article 100(c) EPC), and
- the subject-matter of claim 1 of auxiliary requests 1 to 11 then on file extended beyond the content of the application as originally filed (Article 123(2) EPC).

In an *obiter dictum* of the decision the opposition division expressed its opinion that the ground for opposition under Article 100(b) EPC did not prejudice the maintenance of the patent, and that the subject-

matter of claim 1 as granted involved an inventive step over the prior art considered during the proceedings (Article 100(a) together with Article 56 EPC).

- III. With the statement setting out the grounds of appeal the appellant submitted sets of claims according to a main request and auxiliary requests 1 to 15. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request), or maintained on the basis of the patent as granted with the granted claims replaced by the set of claims of one of auxiliary requests 1 to 15.
- IV. By letter dated 4 May 2016, the appellant filed claims of a main request and of auxiliary requests 1 to 15 replacing the claims of the previous requests, and subsequently the appellant replaced these claims by the claims of a main request and of auxiliary requests 1 to 15 filed by letter dated 9 May 2016.
- V. By letter dated 19 April 2017, the opponent (respondent) withdrew its opposition.
- VI. The board issued a summons to oral proceedings. In a communication under Article 15(1) RPBA (Rules of Procedure of the Boards of Appeal, OJ EPO 2007, 536), annexed to the summons, the board gave its provisional opinion.
- VII. In its reply dated 27 March 2019, the appellant filed paragraphs [0011], [0013], [0021] and [0029] of the description. By the same letter the appellant requested as its new main request that the patent be maintained as amended on the basis of the claims of auxiliary request 7 filed by letter dated 9 May 2016, together

with the replacement paragraphs [0011], [0013], [0021] and [0029] of the description.

VIII. The oral proceedings appointed for 14 May 2019 were cancelled.

IX. Claims 1, 2 and 10 of the main request of the appellant read as follows:

"1. An optical instrument (A) suitable for monitoring polymerase chain reaction replication of DNA in a reaction apparatus (B), the reaction apparatus (B) including a thermal cycler block for holding a plurality of vials containing a suspension of ingredients for the reaction, the ingredients including a fluorescent primary dye that fluoresces proportionately in presence of DNA, the optical instrument (A) comprising:

a light source (11) for providing a source beam (20) having at least a primary excitation frequency that causes the primary dye to fluoresce at an emission frequency;

first means (6, 7) disposed to be receptive of the source beam (20) to effect an excitation beam (22) having the excitation frequency;

focusing means (3) disposed in use to focus the excitation beam (22) simultaneously into each suspension such that the primary dye emits an emission beam (26) having an emission frequency, the emission beams (26) having an intensity representative of concentration of DNA in each suspension, the focusing means (3) being simultaneously receptive of and passing the respective emission beams (26);

second means (6, 8) disposed to be receptive of the emission beams (26) from the focusing means (3) so as

to further pass the emission beams (26) at the emission frequency;

a detector (10) disposed to be receptive of the emission beams (26) such that the emission beams (26) are focused onto the detector (10), the detector (10) generating primary data signals representative of each emission beam (26) and thereby a corresponding concentration of DNA in each vial; and

processing means (14) receptive of the primary data signals for computing primary signal data and the corresponding concentration of DNA;

wherein the focusing means consist only of an objective lens in a field lens position to focus the individual emission beams (26) onto the detector (10)."

"2. The instrument of claim 1, further comprising a detector lens (9) disposed along the beam path between the lens (3) and the detector (10)."

"10. A system (A & B) for replication of DNA and monitoring thereof, said system comprising a reaction apparatus (B) for polymerase chain reaction replication of DNA, and an optical instrument (A) for monitoring presence of DNA during such replication according to any one of the preceding claims, wherein the reaction apparatus (B) comprises a thermal cycler block (1) for holding the plurality of vials (1b) containing a suspension of ingredients for the reaction, the ingredients including a fluorescent dye that fluoresces proportionately in presence of DNA, and further comprises means (1c) for thermal cycling the block (1) and thereby the suspension so as to effect the polymerase chain reaction."

The set of claims of the appellant's main request also include dependent claims 3 to 9 and 11 referring back to claims 1 and 10, respectively.

Reasons for the Decision

1. The appeal is admissible.

The sole opponent (respondent) withdrew its opposition during the appeal proceedings (cf. point V above). As no question of apportionment of costs was at issue, the present appeal proceedings were subsequently continued with the appellant as the sole party.

2. *Main request - Amendments to the granted patent*

When compared with claim 1 of the patent specification, claim 1 of the present main request has been amended by replacing the expression "focusing means (3) disposed in use to direct the excitation beam" by the expression "focusing means (3) disposed in use to focus the excitation beam". This replacement is based on the fourth paragraph of the clause numbered "1" on pages 19 and 20 of the application as originally filed and, therefore, the requirements of Article 123(2) EPC are met and, the text of this clause being identical to that of claim 1 of the earlier application as filed, the requirements of Article 76(1) EPC are also met. In addition, as a consequence of the replacement of the term "to direct" by "to focus" the claimed subject-matter of present claim 1 is more restricted than that of claim 1 as granted. Thus amended claim 1 complies with Article 123(3) EPC.

The remaining claims 2 to 11 of the present main request correspond to the respective claims 2 to 11 as granted.

The amendments to the description of the patent specification relate to the adaptation of its content to the invention as defined in the present claims (Rule 42(1)(c) EPC).

The board is therefore satisfied that the amendments to the patent as granted according to the appellant's main request comply with the requirements of Rule 42(1)(c) and Articles 76(1) and 123(2), (3) EPC.

3. *Main request - Objections of added subject-matter raised under Article 100(c) EPC in respect of the patent as granted*
- 3.1 As far as added subject-matter is concerned, the opposition division held that, in so far as the patent or the amended patent met respectively the requirements of Article 100(c)/Article 123(2) EPC with respect to the parent application, it necessarily met the same requirements with respect to the application as originally filed because the text of the description of the application as originally filed contained the text of the description and of the claims of the parent application, and the drawings of the application as originally filed and of the parent application were identical to each other (see point 9 of the appealed decision).
- 3.2 In its decision the opposition division found that, while the earlier application as filed required that the focusing means referred to in claim 1 of the patent

as granted were disposed to focus the excitation beam into each suspension (see for instance claim 1 of the earlier application as filed), claim 1 as granted only required "focusing means (3) disposed in use to direct the excitation beam [...] into each suspension". The opposition division concluded that the subject-matter of claim 1 of the patent as granted extended beyond the content of the earlier application as filed and that, therefore, the ground for opposition under Article 100(c) EPC prejudiced the maintenance of the patent as granted.

Claim 1 of the present main request has been amended by replacement of the term "to direct" by "to focus" (see point 2 above, first paragraph). Consequently, claim 1 of the present main request overcomes the objection raised in respect of the ground for opposition under Article 100(c) EPC mentioned above.

- 3.3 In the decision under appeal the opposition division objected in respect of auxiliary requests 7 to 11 then on file that the combination of the features of dependent claim 2 with the last feature of claim 1 of these auxiliary requests constituted added subject-matter contrary to Article 123(2) / Article 100(c) EPC (cf. point 3.1 above). This combination of features is identical to the combination of the features of dependent claim 2 as granted with the last feature of claim 1 as granted, and - as acknowledged by the appellant during the appeal proceedings - the same issue already arose in respect of the patent as granted. During the appeal proceedings the appellant did not dispute the consideration of this issue as an objection with respect to the ground for opposition under Article 100(c) EPC as regards the content of the earlier application as filed.

The aforementioned objection related to the combination of the last feature of claim 1 as granted reading "the focussing means consists only of an objective lens [...] to focus the individual emission beams (26) onto the detector" with the feature of dependent claim 2 as granted reading "[...] further comprising a detector lens (9) disposed along the beam path between the lens (3) and the detector". The opposition division held essentially that, while these two features were respectively based on the passages on page 8, lines 17 to 19, and on page 11, lines 5 to 22 of the earlier application as filed, the first of these two features excluded the presence of an additional lens between the objective lens and the detector such as the detector lens defined in claim 2, and that for this reason there was no basis in the earlier application as filed for the combination of these two features. This objection was based on an interpretation of the claimed focusing means as constituting means ensuring, they alone, the focusing of the emission beams onto the detector.

While this objection might have been justified in respect of claim 1 as granted, which only required that the focusing means were "disposed in use to direct the excitation beam [...] into each suspension" and they were defined as means for focusing the emission beams onto the detector, in the board's opinion this objection does not apply to claim 1 of the present main request, in which the focusing means are defined to be "disposed in use to focus the excitation beam [...] into each suspension [...]". In particular, the skilled person would not construe the last feature of present claim 1 reading "the focusing means consists only of an objective lens [...] to focus the individual emission beams (26) onto the detector" in the context of the

claimed subject-matter as requiring that the mentioned focusing means alone would ensure the function of focusing the emission beams onto the detector - and thus excluding, as maintained by the opposition division in respect of auxiliary requests 7 to 11 then on file, any other optical element contributing to focusing and positioned between the mentioned focusing means and the detector. The skilled person would construe this feature rather in the sense that the focusing means, which are previously defined in present claim 1 as the means for focusing the excitation beam into each suspension, would contribute to also focusing the emission beams from the suspensions onto the detector, without however excluding additional optical elements further contributing to focusing the emission beams onto the detector, but not operating on the excitation beam. In addition, this construction of the claimed focusing means is supported by the earlier application as filed in which the claimed focusing means were consistently disclosed as "primary focusing means [...] to focus the excitation beam into each suspension" (see claim 1, and page 2 of the description, lines 28 to 31), these focusing means being distinct from - but possibly being included in - "emission focusing means" (claim 1) or "another focusing means that focuses the emission beam onto a detector" (page 2, line 31, to page 3, line 3).

Accordingly, as submitted by the appellant, present claim 1 does not exclude additional optical elements, such as the detector lens defined in dependent claim 2, that contribute to further focusing the emission beams onto the detector but which do not constitute part of the claimed focusing means, and the same applies to the corresponding disclosure of the earlier application as filed (page 8, lines 5 to 19, in particular the last of

the variants at lines 17 to 19, and page 9, lines 1 to 11, together with Fig. 1; see also page 11, lines 5 to 9). Therefore, the combination of the features of dependent claim 2 with the last feature of claim 1 does not go beyond the content of the earlier application as filed.

For these reasons, the objection under consideration cannot, under a proper construction of the claimed subject-matter, be followed in respect of claims 1 and 2 of the present main request.

4. *Main request - Sufficiency of disclosure, novelty and inventive step*

4.1 In an *obiter dictum* of the decision, the opposition division expressed its view that the ground for opposition under Article 100(b) EPC did not prejudice the maintenance of the patent as granted. Nor the ground for opposition under Article 100(a) together with Article 54(1) or Article 56 EPC, since the subject-matter of claim 1 as granted was new and involved an inventive step over the prior art considered during the proceedings.

The board has no reason to deviate from these opinions of the opposition division and, in addition, in the board's opinion the replacement in claim 1 as granted of the expression "to direct the excitation beam" by the more restrictive expression "to focus the excitation beam" not only does not affect, but reinforces the mentioned conclusions of the opposition division. Furthermore, the remaining claims 2 to 11 refer back to the optical instrument defined in claim 1, and the above-mentioned view also applies to these claims.

Therefore, the board concludes that the disclosure of the claimed invention is sufficient within the meaning of Article 83 EPC, and that the claimed subject-matter is new and involves an inventive step (Articles 52(1), 54 and 56 EPC).

5. In view of the above considerations, the board concludes that the case is to be remitted to the department of first instance with the order to maintain the patent as amended according to the appellant's present main request (Article 101(3)(a) EPC).

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 with the order to maintain the patent as amended in the following version:
 - Claims: Nos. 1 to 11 of the main request filed as "Auxiliary request 7" by letter dated 9 May 2016.
 - Description: Paragraphs [0001] to [0010], [0012], [0014] to [0020], [0022] to [0028] and [0030] to [0051] of the description of the patent specification, and paragraphs [0011], [0013], [0021] and [0029] filed by letter dated 27 March 2019.
 - Drawings: Fig. 1 to 9 of the patent specification.

The Registrar:

The Chairwoman:



M. Kiehl

T. Karamanli

Decision electronically authenticated