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D E C I S I O N
of 14 October 2004

Case Number: W 0020/04 - 3.4.3

Application Number: PCT/JP 03/13073

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Title of invention:
Sensor

Applicant:
CANON KABUSHIKI KAISHA

Opponent:
-

Headword:
-

Relevant legal provisions:
PCT Art. 17(3)(a)
PCT R. 13.2, 40.1, 40.2

Keyword:
"Invitation to pay additional fees - sufficiently reasoned
(no)"
"Common general concept - broad formulation not justified"

Decisions cited:
W 0005/94, W 0012/93

Catchword:
-



Case Number: W 0020/04 - 3.4.3

International Application No. PCT/JP 03/13073

D E C I S I O N
of the Technical Board of Appeal 3.4.3
of 14 October 2004

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Decision under appeal: Protest according to Rule 40.2(c) of the Patent Cooperation Treaty made by the applicants against the invitation (payment of additional fees) of the European Patent Office (International Searching Authority) dated 19 February 2004.

Composition of the Board:

Chairman: R. K. Shukla
Members: V. L. P. Frank
B. Günzel

Summary of Facts and Submissions

- I. On 19 February 2004 the European Patent Office acting in its capacity as International Searching Authority (ISA) in respect of international patent application PCT/JP 03/13073 informed the applicant that the ISA had carried out a partial international search in respect of claims 1 to 17, since it considered that there were three inventions claimed in the international application. It invited the applicant to pay two additional search fees according to Article 17(3) (a) PCT, in respect of two groups of inventions as claimed respectively in claims 18 to 20 and 21 to 22.

The ISA stated in the invitation to pay additional fees that:

"The single general concept of independent Claims 1, 18 and 21 is the following:

A sensor comprising a micro-optical cavity being suitable to determine certain parameters.

This concept is not new; see e.g. US-A-5 754 333.

Consequently, this concept is not new or inventive.

It should be noted that according to Claim 1 the "active layer", to Claim 18 the "two supporting substances ... supported on a peripheral portion of the micro-optical cavity" and to Claim 21 "a probe for generating mechanical deformation" are essential. Thus, no common inventive object of these concepts could be seen.

Therefore, these concepts lack unity."

- II. The applicant paid the additional fees under protest according to Rule 40.2(c) PCT on 26 March 2004 and

argued that the ISA was incorrect, since the present invention related to a laser with which an environmental condition in the neighbourhood of a microcavity is detected. He explained that the general concept was expressed in claim 1. This claim is directed to a sensor in which the condition of a microcavity laser changes in accordance to the environmental condition to be determined. Claims 18 to 20 refer to a change in the specific binding of a substance to a substrate. This change is also a change in the environmental condition in which the substance exists in the neighbourhood of the microcavity laser. Finally, in claims 20 to 21 (sic) the change in the environmental condition is produced by a force acting on a feeler or antenna which is integrated to the microcavity. The three groups of claims shared, therefore, the same inventive concept.

III. The protest was reviewed in accordance with Rule 40.2(e) PCT by a review panel of the European Patent Office, which on 17 May 2004 held that the invitation to pay the additional search fees was justified and invited the applicant to pay a protest fee in order that the protest be examined by the special instance specified in Rule 40.2(c) PCT.

IV. The applicant duly paid the protest fee on 7 June 2004 without adding any further comments.

V. Independent claim 1 reads as follows:

"1. A sensor for detecting information and outputting light according to the information, the sensor wherein it comprises:

a micro-optical cavity for changing a degree of selection of a photoelectromagnetic field mode according to an environmental condition of the cavity; and an active layer in which light emission is limited by the influence of the selection of a photoelectromagnetic field mode, wherein the light emission is changed according to a change in the environmental condition."

Independent claim 18 reads as follows:

"18. A sensor using a microcavity laser, wherein one of two supporting substances capable of making specific binding with a substance to be detected is supported on a peripheral portion of the micro-optical cavity, and a specific binding state of the substance to be detected with the supporting substance is detected based on information about laser oscillation state of detected laser."

Independent claim 21 reads as follows:

"21. A sensor comprising a micro-optical cavity of a microcavity laser and a probe for generating mechanical deformation on the micro-optical cavity, wherein a state of mechanical deformation is detected by measuring a change in laser oscillation state, the change being caused by deformation of the micro-optical cavity through the probe."

Reasons for the Decision

1. According to Article 154(3) EPC the Boards of Appeal of the EPO are competent to decide upon the present protest.
2. The protest complies with the requirements of Rule 40.2(c) and (e) PCT and is therefore admissible.
3. In its invitation to pay additional fees the ISA argued that the single general concept linking the groups of inventions claimed in the independent claims 1, 18 and 21 was "a sensor comprising a micro-optical cavity being suitable to determine certain parameters", but that this object was already known from the prior art, eg document D1 = US-A-5 754 333. No text passages of this document were, however, specified in the ISA's invitation.
4. Under Rule 40.1 PCT the invitation to pay additional fees shall specify the reasons for which the application does not comply with the requirement of unity of invention. A lack of sufficient reasoning in this invitation cannot, however, be corrected by reasons provided by the review panel in their findings, because any such reasons could not have been considered by the applicant in his protest. Moreover, the Board when examining the protest should not consider the new reasons brought forward by the ISA's review, since according to Rule 40.2(c) PCT it is limited to the examination of "the protest" having regard to the reasoning in the invitation and not in view of the subsequent reasoning of the review panel (cf. W 5/94 and W 12/93).

5. The invitation of the ISA does not cite the text passages of document D1 in which the single general concept identified by the ISA is disclosed. The objection of lack of unity of invention raised by the ISA would have been sufficiently reasoned in the sense of Rule 40.1 PCT if the single general concept of claims 1, 18 and 21 as identified by the ISA was immediately recognizable in the disclosure of document D1. This is, however, not the case, since neither the abstract nor the introductory, general part of document D1 makes reference to a sensor. The invitation to pay additional fees was thus not sufficiently reasoned in respect of the finding that the common general concept of the three inventions was not new.

6. The applicant, moreover, pointed out in his protest that the invention is directed to the detection of an environmental condition in the neighbourhood of the microcavity of a laser. The detection of a change in the environment is expressed in general terms in claim 1, whereby claims 18 and 21 are directed to the detection of a change in the specific binding of a substance to a substrate and to the detection of the mechanical deformation of a probe, respectively. Claims 18 and 21 should, in consequence, be regarded as claims dependent on claim 1 and share, therefore, the same inventive concept, although having been cast as independent claims.

7. According to claim 1, the sensor comprises a micro-optical cavity and an active layer, whereby **the light emitted by the active layer changes according to changes in the environment of the cavity**. According to

claim 18, a substrate is attached to the micro-optical cavity for measuring the specific binding of a substance to the substrate, whereby **the specific binding affects the laser's oscillation state, ie its light emission**. According to claim 21, a probe is attached to the micro-optical cavity for measuring its mechanical deformation, whereby this change also **modifies the light emitted by the cavity**.

For these reasons, the Board agrees with the applicant that the single general concept between the subject-matter of claims 1, 18 and 21 is "a sensor with a micro-optical cavity for determining an environmental condition, whereby the light emitted by the cavity depends on the environmental condition within the cavity ". This concept, however, is more specific than the single general concept identified by the ISA, as in this later concept no reference to a change in the cavity's light emission is made. The common general concept identified by the ISA was, therefore, formulated in a too broad manner, since it does not take due account of the subject-matter shared by all the claims.

For the foregoing reasons, the invitation to pay additional fees was not justified.

Order

For these reasons it is decided that:

The additional search fees and the protest fee shall be refunded.

The Registrar:

The Chairman:

C. Eickhoff

R. K. Shukla