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**Datasheet for the decision
of 6 September 2022**

Case Number: T 0627/19 - 3.4.02

Application Number: 07009329.9

Publication Number: 1857538

IPC: C12M1/34

Language of the proceedings: EN

Title of invention:

Microscope apparatus and cell observation method

Patent Proprietor:

Olympus Corporation

Opponent:

Carl Zeiss Microscopy GmbH

Headword:

Relevant legal provisions:

EPC 1973 Art. 100(a), 54

EPC Art. 123(2)

Keyword:

Decision handed down in written procedure (yes)

Novelty (no) - main request, first and second auxiliary request

Amendments - added subject-matter (yes) - third and fourth auxiliary request

Decisions cited:

Catchword:



Beschwerdekammern

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Case Number: T 0627/19 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 6 September 2022

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 4 January 2019
rejecting the opposition filed against European
patent No. 1857538 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman R. Bekkering
Members: A. Hornung
C. Almberg

Summary of Facts and Submissions

- I. The opponent appealed against the decision of the opposition division rejecting the opposition against the European patent No. 1857538.

The opposition had been filed against the patent as a whole and was based on the grounds for opposition of Article 100(a) EPC 1973, together with Articles 54 and 56 EPC 1973, and on the ground for opposition of Article 100(b) EPC 1973.

The opposition division had rejected the opposition, i.e. found that the grounds for opposition set out in Articles 100(a) and (b) EPC 1973 did not prevent the patent from being maintained in unamended form.

- II. The opponent (appellant) requested that the decision under appeal be set aside and that the patent be revoked, and, if the Board considered not to follow said request, that oral proceedings be held.
- III. The patentee (respondent) requested, as a main request, that the appeal be dismissed, i.e. that the patent be maintained as granted. Alternatively, it requested that the decision under appeal be set aside and that a patent be maintained in amended form on the basis of the claims of one of auxiliary requests 1 to 4 filed with the reply to the appeal. As a further auxiliary request, it requested that oral proceedings be held.
- IV. In a communication annexed to the summons to oral proceedings, the board informed the parties about its preliminary and non-binding views according to which, *inter*

alia, the subject-matter of claim 1 of the main request was not novel with respect to document D1 (US 6,534,308 B1).

Reference was made to the numbering of the features 1A to 1G of claim 1 of the patent as granted, as used in the appealed decision. This numbering is maintained in the present decision.

The opponent's written submissions are henceforth designated as follows:

O1: statement of grounds of appeal dated 6 May 2019,

O2: letter dated 28 April 2020.

Similarly, the patentee's written submissions are designated as follows:

P1: reply to appeal dated 3 September 2019,

P2: letter dated 13 April 2022.

- V. The board's preliminary view as to novelty of the subject-matter of claim 1 of the main request was formulated as follows in the board's communication, point **7.2**:

"7.2 Novelty with respect to D1

It would appear that the subject-matter of claims 1 and 4 is anticipated by the disclosure of D1.

7.2.1 The board tends to agree with the opinion expressed in the appealed decision according to which features 1A to 1C of claim 1 and features 4A to 4C of claim 4 are disclosed in D1. This does not seem to be disputed by the patentee (see P1, point V.1, pages 17 to 22).

7.2.2 Moreover, D1 appears to disclose features 1D to 1G of claim 1 for the following reasons:

- Feature 1D:

- (a) The position of each targeted cell is stored in D1. Indeed, as explained by the opponent (O1, page 22, last line, to page 23, second paragraph), D1, column 14, lines 55 to 64, discloses an "image analysis algorithm (...) [which] calculates the two-dimensional coordinates of all target locations". See also D1, column 11, lines 50 to 53, and column 16, lines 17 to 20. It appears to the board, therefore, that these coordinates of the target locations must be stored in the computer in order to be able to have "the galvanometer controlled mirrors to point to the location of the first targeted cell" (D1, column 15, lines 6 to 10).

- (b) Moreover, it would appear that the cell phase of the cells whose position were stored in the computer of D1 is inherently stored, too. Indeed, the embodiment of D1 deals specifically with "a cell mixture that is comprised of the first population of cells and a second population of cells" (D1, column 6, lines 63 to 67). A label is chosen that identifies and distinguishes the first population of cells from the second population of cells (D1, column 7, lines 1 to 3), wherein the two cell populations correspond to two cell phases of a cell cycle (D1, column 7, lines 24 to 28, disclosing feature 1A of claim 1). As explained above, the targeted cells, whose positions were stored in the computer, have a first - known - cell phase. By storing the cell positions of the targeted cells, the cell phase of these cells appears to be inherently stored, too.

- Feature 1E

- (c) The opponent submits that feature 1E was a non-technical feature (O1, page 32, third paragraph to page 33, last paragraph; page 35, fourth paragraph; O2, page 17, third paragraph).
- (d) The patentee submits that feature 1E is novel over D1 because, "according to D1, the cells of the first population are not selected by means of such an inputting step but rather by choosing an appropriate marker (or label), which has to be manually applied to the cells" (P1, page 21, third paragraph).
- (e) It appears to the board that feature 1E, in its broadest meaning, could be carried out as a purely mental act, for instance, by deciding mentally at a certain point in time during the cell observation method to apply the optical stimulation to a certain cell phase. In this sense, it seems that the step referred to by the patentee as being "choosing an appropriate marker (or label), which has to be manually applied to the cells" falls under the wording of feature 1E.

- Feature 1F

The opponent refers to D1, column 19, starting at line 23, disclosing that the positions of the targeted cells are identified for allowing the subsequent optical stimulation. See also, for instance, D1, column 16, lines 17 to 20, disclosing identifying positions of the cells in the cell phase previously specified by using the previously stored coordinates of the cell positions.

- Feature 1G

See the same passages of D1 as referred to above with respect to feature 1F."

VI. The board's provisional opinion as to the patentee's counter-arguments in favour of novelty of feature 1D of claim 1 of the main request was formulated as follows in the board's communication, point **7.2.3**:

- "Feature 1D

(a) Concerning feature 1D, the patentee argues that "[i]n case D1 should disclose a step of storing information regarding the cells (which is hereby not acknowledged), (...) only a position of the cells of the first population would be saved without saving any information regarding the second population and without saving any information regarding a cell phase of each cell" (see P1, page 18, fourth paragraph).

The board is currently not convinced by this argument because the actual wording of feature 1D does not require storing information about a plurality of different cell types having different cell phases. A storing step storing information about a single cell type with a single cell phase would appear to fall under the wording of feature 1D. Moreover, as explained in point 7.2.2 (b) above, it would appear that in the embodiment of D1, which comprises a mixture of two cell populations or cell phases, the step of storing the location of the targeted cells inherently includes storing the information about the cell phase of the cells whose location was stored.

(b) The patentee further submits that the passage in D1, column 7, lines 25 to 45, mentioning *inter alia* that a "cell cycle status could be assessed" (P1, page 19,

first sentence), cannot prove the existence of any storage step. Moreover, "no further details regarding the assessment of cell cycle status is given by D1" (P1, page 19, first paragraph).

While the board acknowledges that D1 does not provide details about how cell phases are exactly assessed, it would appear to the board that the general reference to assessing the cell cycle status (D1, column 7, lines 24 to 28) is sufficient for anticipating the general cell-phase identifying step defined in feature 1A, thereby providing also a basis for the cell phase mentioned in feature 1D. This appears to have been discussed during the first-instance opposition proceedings and agreed to by the patentee (see appealed decision, page 8, table showing the features disclosed in D1 and paragraph below that table).

- (c) Still further, the patentee puts forward the opinion according to which the expression "x-y centroid coordinates" in D1, column 14, line 58 means "coordinates of a centroid of a group of cells, namely all targeted cells" (P1, page 21, second paragraph).

The board is not convinced by the patentee's submission. It appears that a skilled person would interpret the three sentences in D1, column 14, line 57 to 64, to mean that x-y coordinates of each individual cell are referred to. If not, it would not be possible that the computer "positions the galvanometer-controlled mirrors to point to *the location of the first target* in the first frame of cells".

VII. With P2 the patentee informed the board that it would "not file a substantive response to the Summons" and that "the

Patentee will not attend the Oral Proceedings scheduled for 7 December 2022".

VIII. The oral proceedings, scheduled for 7 December 2022, were then cancelled.

IX. Independent claim 1 according to the main request reads as follows (the features of claim 1 are preceded by the numbering 1A to 1G added by the board):

1A "A cell observation method comprising: a cell-phase identifying step of identifying cell phases of cells (SA1);

1B an optical stimulation step of applying an optical stimulus to the cells (SA4);

1C an observed-image acquisition step of acquiring an observed image of the cells (SA5; SB1);

1D a storing step of storing a position of each cell and the cell phase thereof in association with each other;

1E an inputting step for specifying a target cell phase for the optical stimulation; and

1F a cell identifying step of identifying positions of the cells in the specified cell phase using information stored in the storing step (SB4),

1G wherein, in the optical stimulation step, the optical stimulation is performed at the identified positions (SB3)".

Independent claim 1 according to the first auxiliary request reads as follows:

"A cell observation method comprising:

a cell-phase identifying step of identifying cell phases of cells (SA1);

a storing step of storing a position of each cell and the cell phase thereof in association with each other;

an inputting step for specifying a target cell phase for the optical stimulation;
a cell identifying step of identifying positions of the cells in the specified cell phase using information stored in the storing step;
an optical stimulation step of applying an optical stimulus to the cells (SA4), wherein the optical stimulation is performed at the identified positions; and
an observed-image acquisition step of acquiring an observed image of the cells (SA5)".

Independent claim 1 according to the second auxiliary request reads as follows:

"A cell observation method comprising:
a cell-phase identifying step of identifying cell phases of each of a plurality of cells (SA1);
a storing step of storing a position of each cell of the plurality of cells and the cell phase thereof in association with each other;
an inputting step for specifying a target cell phase for the optical stimulation;
a cell identifying step of identifying positions of the cells in the specified cell phase using information stored in the storing step; and
an optical stimulation step of applying an optical stimulus to the cells in the specified cell phase (SA4), wherein the optical stimulation is performed at the identified positions; and
an observed-image acquisition step of acquiring an observed image of the plurality of cells (SA5)".

Independent claim 1 according to the third auxiliary request reads as follows:

"A cell observation method comprising:

- a) a cell-phase identifying step of identifying cell phases of each of a plurality of cells (SA1);
- b) a storing step of storing a position of each cell of the plurality of cells and the cell phase thereof in association with each other;
- c) an inputting step for specifying a target cell phase for the optical stimulation;
- d) a cell identifying step of identifying positions of the cells in the specified cell phase using information stored in the storing step; and
- e) an optical stimulation step of applying an optical stimulus to the cells in the specified cell phase (SA4), wherein the optical stimulation is performed at the identified positions; and
- f) an observed-image acquisition step of acquiring an observed image of the plurality of cells (SA5), wherein the method is performed in the order a), b), c), d), e), f) or c), a), b), d), e), f)".

Independent claim 1 according to the fourth auxiliary request reads as follows:

"A cell observation method comprising:

- a) a cell-phase identifying step of identifying cell phases of each of a plurality of cells (SA1), wherein a cell phase is assigned to each of the plurality of cells, the cell phases being selected from the group of M final phase, G1 phase, M phase, G2 phase, and S phase;
- b) a storing step of storing a position of each cell of the plurality of cells and the cell phase thereof in association with each other;
- c) an inputting step for specifying a target cell phase for the optical stimulation;
- d) a cell identifying step of identifying positions of the cells in the specified cell phase using information stored in the storing step; and

e) an optical stimulation step of applying an optical stimulus to the cells in the specified cell phase (SA4), wherein the optical stimulation is performed at the identified positions; and

f) an observed-image acquisition step of acquiring an observed image of the plurality of cells (SA5), wherein the method is performed in the order a), b), c), d), e), f) or c), a), b), d), e), f)".

Reasons for the Decision

1. Deciding the case without holding oral proceedings
- 1.1 In the communication annexed to the summons, the board raised in its preliminary and non-binding views at least one objection against each of the sets of claims according to the patentee's main request and auxiliary requests 1 to 4. Nothing substantive has been argued by the parties thereafter, and the board upholds its preliminary views. Hence, the case is materially ripe for deciding.
- 1.2 Subject to Articles 113 and 116 EPC, the board may decide the case at any time after the filing of the statement of grounds of appeal or, in cases where there is more than one party, after four months have passed from notification of the statement of grounds of appeal (Article 12(1)(c) and (8) RPBA 2020). According to Articles 113 and 116 EPC, in relevant parts, the board's decision may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments - and oral proceedings shall take place either at the instance of the board if it considers it expedient or at the request of a party to the proceedings.

1.3 In the present case, such a notification occurred almost three years ago. Both parties have also had an opportunity to comment not only on each other's submissions (i.e. on O1 and O2, and on P1 and P2) but also on the board's preliminary views issued in February this year. In effect, oral proceedings are not requested by a party, and the board does not find their holding expedient; in this regard, the board notes that the opponent's request is conditional and does not apply as the board intends to revoke the patent (see below), and that the patentee has announced its intention not to attend the scheduled oral proceedings, an act which, under settled case law, means the previous request for oral proceedings is withdrawn (Case Law of the Boards of Appeal, 9th ed. 2019, III.C. 4.3.2). Hence, also the procedural conditions for taking a decision are met.

1.4 As a consequence, the oral proceedings scheduled for 7 December 2022 may be cancelled and a final decision be handed down in writing.

2. Main request

2.1 In the communication annexed to the summons, the board expressed its preliminary and non-binding view, along with the underlying reasons (see point V.), that the subject-matter of claim 1 of the main request was anticipated by the disclosure of D1 and that the patentee's counter-arguments in favour of novelty of feature 1D of claim 1 were found not convincing (see point VI.). The patentee did not attempt to rebut the board's preliminary opinion. The board sees no reason to deviate from its preliminary opinion regarding novelty of the subject-matter of claim 1.

2.2 The patentee's counter-argument in favour of novelty of features 1E to 1G are also found not convincing by the board for the following reasons:

- Feature 1E: see sub-points (d) and (e) in point V. above.
- Features 1F and 1G: According to the patentee (P1, page 21, two last paragraphs), a "step of identifying cells in the specified cell phase is neither necessary nor possible" because "the cells of the first population are predefined by the used marker" and, therefore, "it is clear that an optical simulation cannot be performed at the identified positions, because these identified positions do not exist within the teaching of D1".

The board is not convinced by the patentee's arguments since the wording of features 1F and 1G has a broader meaning than assumed in the patentee's reasoning. As explained by the opponent (O1, page 23, last paragraph, to page 24, first paragraph), D1, column 19, lines 23 to 29, discloses using information stored in a storing step to identify positions of the cells. Such a step falls under the broad wording of feature 1F. Moreover, the cells in D1 (see column 19, lines 23 to 29) are identified so as to be stimulated, thereby anticipating feature 1G. A similar disclosure can be found in D1, column 16, lines 17 to 20.

2.3 It follows that the subject-matter of claim 1 of the main request is anticipated by the disclosure of D1 and, therefore, the ground for opposition under Article 100(a) EPC 1973 in combination with Article 54(1) EPC 1973 prejudices the maintenance of the patent as granted.

3. First auxiliary request

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that two method steps of claim 1 have been displaced within the claim wording. As explained in the communication annexed to the summons to oral proceedings (point 8), this amendment is of a purely formal nature not changing the scope of the claim.

Therefore, the subject-matter of claim 1 of the first auxiliary request lacks novelty over D1 for essentially the same reasons as given for the main request (Article 54(1) EPC 1973).

4. Second auxiliary request

Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that it has been stated that "each of a plurality of cells" is identified and that the position of each cell "of the plurality of cells" is stored. As explained in the communication annexed to the summons to oral proceedings (point 9), this amendment is of a purely formal nature not changing the scope of the claim.

Therefore, the subject-matter of claim 1 of the second auxiliary request lacks novelty over D1 for essentially the same reasons as given for the main request (Article 54(1) EPC 1973).

5. Third auxiliary request

Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request in that the order of the method steps is indicated at the end of the claim.

As objected by the opponent (O2, pages 21 and 22, point B. 3.1) and noted in the communication annexed to the summons to oral proceedings (point 10), claim 1 cannot unambiguously be deduced from the application as originally filed. In particular, according to figure 2 of the patent application as originally filed, the inputting step c) of claim 1 for specifying a target cell phase for the optical stimulation is the second step, whereas one of the alternatives defined in claim 1 defines the inputting step c) as being the first step of the claimed cell observation method. As a further basis for the amendment of claim 1, the patentee recited several passages of the description of the patent application as originally filed, namely "page 8, line 25 to page 20, line 14" and "page 20, lines 15 to 25 and page 21, line 14 to page 22, line 5" . These cited passages extend over more than 12 pages without showing any concrete passages that clearly indicate the claimed sequence of procedural steps.

Therefore, the board concurs with the opponent that claim 1 of the third auxiliary request introduces subject-matter extending beyond the content of the application as filed (Article 123(2) EPC).

6. Fourth auxiliary request

Claim 1 of the fourth auxiliary request differs from claim 1 of the third auxiliary request in that five cell phases have been explicitly defined in the method step 1A of identifying cell phases of a cell.

Since claim 1 defines the same order of the method steps as claim 1 of the third auxiliary request, it also introduces subject-matter extending beyond the content of the application as filed (Article 123(2) EPC).

7. For the above reasons the board comes to the conclusion that none of the patentee's requests is allowable and that the appealed decision, therefore, must be set aside and the patent revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



L. Gabor

R. Bekkering

Decision electronically authenticated