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Datasheet for the decision of 26 January 2023

Case Number: T 0547/19 - 3.2.08

Application Number: 13173305.7

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Language of the proceedings: EN

Title of invention:
Apparatus for creating ocular surgical and relaxing incisions

Patent Proprietor:
Optimedica Corporation

Opponent:
Carl Zeiss Meditec AG

Relevant legal provisions:
EPC Art. 76(1), 123(3)

Keyword:
Divisional application - added subject-matter (yes)
Amendments - inescapable trap (yes)

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Case Number: T 0547/19 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 26 January 2023

Appellant: (Patent Proprietor)	Optimedica Corporation 1310 Moffett Park Drive Sunnyvale, CA 94089 (US)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Respondent: (Opponent)	Carl Zeiss Meditec AG Göschwitzer Strasse 51-52 07745 Jena (DE)
Representative:	Patentanwälte Geyer, Fehners & Partner mbB Perhamerstrasse 31 80687 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 5 December 2018 revoking European patent No. 2664308 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairwoman	P. Acton
Members:	G. Buchmann
	Y. Podbielski

Summary of Facts and Submissions

I. With the decision posted on 5 December 2018 the opposition division revoked European patent No. 2 664 308. The opposition division found that all requests treated during the opposition proceedings contravened Article 123(2) EPC.

II. The patent proprietor filed an appeal against that decision.

III. Oral proceedings took place before the Board on 26 January 2023.

IV. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted or, as an auxiliary measure, that the patent be maintained on the basis of auxiliary request 1m filed with letter dated 24 February 2020, or one of auxiliary requests 1A-1D, 2A-2D, 3A-3D, 4A-4D, 5A-5D and 6-10 filed with the statement of grounds of appeal on 15 April 2019, or one of auxiliary requests 1E-10E filed with letter dated 24 February 2020.

The respondent (opponent) requested that the appeal be dismissed.

V. Subject-matter of the patent - Main request

Claim 1 of the main request reads as follows.

The passages which were deleted from claim 1 as filed with the parent application have been ~~crossed out~~ and the passages which were added before grant have been

underlined. The remaining text is identical for claim 1 of the parent application and claim 1 of the main request.

"A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a.

an ~~light~~ ultrafast laser source (4) ~~for generating a light beam~~ configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b.

an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c.

a scanner (40, 50) ~~for deflecting the light beam to form first and second treatment patterns of the light beam~~ configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; and

d.

~~under the control of~~ a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that

the controller is configured to control the scanner to adjust the position of the laser beam

based upon the signals from the OCT device

~~a delivery system for delivering the first treatment pattern to the target tissue~~ to create a cataract incision (402) ~~therein that provides access to an eye chamber~~ in the cornea or limbus of the patient's eye,

~~the delivery system also for delivering the second treatment pattern to the target tissue to form a~~ and further one or more partially penetrating relaxation incisions ~~along or near limbus tissue or along corneal tissue anterior to the limbus tissue of the patient's eye~~ in the cornea or limbus ~~to reduce astigmatism thereof~~ to be made starting from the inside and proceeding outwards."

VI. Auxiliary requests

Claim 1 of **auxiliary request 1m** is identical to claim 1 of the main request. Dependent claims 2, 3 and 6 were deleted.

Auxiliary Request 1A

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; and

d. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism to be made starting from the inside and proceeding outwards.

Auxiliary Request 1B

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system configured for delivering the scanned laser beam to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary Request 1C

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system comprising an objective lens (58) and configured for delivering the scanned laser beam through the objective lens (58) to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary Request 1D

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; ~~and~~

d. a delivery system comprising an objective lens (58) and configured for delivering the scanned laser beam through the objective lens (58) to the target tissue; and

~~d~~e. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye to provide access to a crystalline lens (412) of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary Request 2A

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea, ~~and~~ limbus and sclera of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; and

d. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and scanner (40, 50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera imaged using the OCT device,

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the determined location of the limbus obtained from the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary requests 2B-2D are based on auxiliary request 2A and contain the same amendments as auxiliary requests 1B-1D compared to auxiliary request 1A.

Auxiliary Request 3A

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea, ~~and~~ limbus and sclera of the eye of the patient;

c. a scanner comprising a Z-scan device (40~~, 50~~) configured to focus so as to enable movement of a focus position of the laser beam along the z-axis in the target tissue and a X-Y scan device to direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; and

d. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and scanner (40, 50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera imaged using the OCT device,

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the determined location of the limbus obtained from the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary requests 3B-3D are based on auxiliary request 3A and contain the same amendments as auxiliary requests 1B-1D compared to auxiliary request 1A.

Auxiliary Request 4A

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea, ~~and~~ limbus and sclera of the eye of the patient;

c. a scanner comprising a Z-scan device (40, ~~50~~) configured to focus so as to enable movement of a focus position of the laser beam along the z-axis in the target tissue and a X-Y scan device to direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein, wherein the X-Y scan device (50) is further configured to scan an OCT beam of the OCT device in the target tissue and to receive the return back reflections from the target tissue; and

d. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and scanner (40, 50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera imaged using the OCT device,

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the determined location of the limbus obtained from the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism.

Auxiliary requests 4B-4D are based on auxiliary request 4A and contain the same amendments as auxiliary requests 1B-1D compared to auxiliary request 1A.

Auxiliary Request 5A

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea, ~~and~~ limbus and sclera of the eye of the patient;

c. a scanner comprising a Z-scan device (40~~, 50~~) configured to focus so as to enable movement of a focus position of the laser beam along the z-axis in the target tissue and a X-Y scan device to direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein, wherein the X-Y scan device (50) is futher configured to scan an OCT beam of the OCT device in the target tissue and to receive the return back reflections from the target tissue; and

d. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and scanner (40, 50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera imaged using the OCT device,

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the determined location of the limbus obtained from the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to be made starting from the inside and proceeding outwards so as to reduce astigmatism,

wherein a beam combiner (34, 152) is provided in the scanning system to combine the laser beam and the OCT beam so that both beams follow the same optical path through the X-Y scan device (50), and

wherein the controller (300) is operatively coupled to the OCT device (100) via an IO bus (302).

Auxiliary requests 5B-5D are based on auxiliary request 5A and contain the same amendments as auxiliary requests 1B-1D compared to auxiliary request 1A.

Auxiliary Request 6

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system comprising an objective lens (58) and configured to deliver the laser beam from the scanner (40, 50) through the objective lens (58) to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye to provide access to a crystalline lens (412) of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism to be made starting from the inside and proceeding outwards so as to preserve the structural integrity of the target tissue and limit the risk of tearing and infection.

Auxiliary Request 7

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system comprising an objective lens (58) and configured to deliver the laser beam from the scanner (40, 50) through the objective lens (58) to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye to provide access to a crystalline lens (412) of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism to be made starting from the inside and proceeding outwards to the anterior surface of the cornea or limbus without penetrating said anterior surface so as to preserve the structural integrity of the target tissue and limit the risk of tearing and infection.

Auxiliary Request 8

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system comprising an objective lens (58) and configured to deliver the laser beam from the scanner (40, 50) through the objective lens (58) to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye to provide access to a crystalline lens (412) of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism and leaving at least 200 µm of tissue thickness to be made starting from the inside and proceeding outwards to the anterior surface of the cornea or limbus without penetrating said anterior surface so as to preserve the structural integrity of the target tissue and limit the risk of tearing and infection.

Auxiliary Request 9

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient and configured to discern the limbus and sclera relative to the cornea;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein;

d. a delivery system comprising an objective lens (58) and configured to deliver the laser beam from the scanner (40, 50) through the objective lens (58) to the target tissue; and

ed. a controller (300) operatively coupled to the laser source (4) and scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye to provide access to a crystalline lens (412) of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism to be made starting from the inside and proceeding outwards to the anterior surface of the cornea or limbus without penetrating said anterior surface so as to preserve the structural integrity of the target tissue and limit the risk of tearing and infection.

Auxiliary Request 10

Claims

1. A scanning system (2) for treating target tissue in a patient's eye (68), comprising:

a. an ultrafast laser source (4) configured to deliver a laser beam (6) comprising a plurality of laser pulses;

b. an integrated Optical Coherence Tomography (OCT) device (100) configured to generate signals which may be used to create an image of the cornea and limbus of the eye of the patient and configured to discern the limbus and sclera relative to the cornea;

c. a scanner (40, 50) configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein; and

d. a controller (300) operatively coupled to the ultrafast laser source (4), the integrated OCT device (100) and the scanner (40, 50)

characterised in that the controller is configured to control the scanner to adjust the position of the laser beam based upon the signals from the OCT device to create a cataract incision (402) in the cornea or limbus of the patient's eye, and further one or more partially penetrating relaxation incisions in the cornea or limbus to correct astigmatism to be made starting from the inside and proceeding outwards.

Claim 1 of **auxiliary requests 1E-5E** is identical to claim 1 of auxiliary request 1D-5D.

Claim 1 of **auxiliary requests 6E-10E** is identical to claim 1 of auxiliary request 6-10. Dependent claims 2, 3 and 6 were deleted.

VII. The arguments of the appellant can be summarised as follows:

Main request - Article 76(1) EPC

The meaning of the term "to focus" in Feature c) of claim 1 as granted was that the convergence/divergence of the laser beam was varied in order to adjust the position of the focus spot in the patient's eye along the Z-axis. The scanner did not produce the focus spot with a diameter of 10 micrometers. This was disclosed in paragraph [0029] of the description of the parent application. Therefore, the subject-matter of claim 1 fulfilled Article 76(1) EPC.

Not only the scanner but all components of the system were configured to create incisions in the target tissue. The contribution of the scanner included a variation of the divergence of the beam, i.e. a focusing/defocusing function. This resulted in a three dimensional scanning which was needed to create two dimensional incisions. The term "to focus and direct" referred to this three dimensional scanning and not to the main focusing function which results in the focus spot.

Auxiliary requests 1m, 1A-1D, 2A-2D, 6-10, 1E, 2E and 6E-10E - Article 76(1) EPC

The amendments made in auxiliary requests *1m, 1A-1D, 2A-2D, 6-10, 1E, 2E* further clarified the function of the scanner and of the delivery system. The claim had been formulated more narrowly, so that Feature c) now was in accordance with the system described in the parent application.

Auxiliary requests 3A-3D, 4A-4D, 5A-5D and 3E-5E - Article 123(3) EPC

The amendments made in auxiliary requests 3A-3D, 4A-4D, 5A-5D and 3E-5E further clarified the function of the scanner and of the delivery system. If the claim as granted could be construed broadly, it now had been restricted to the functions as described in the parent application. No broadening of the scope of the claim had taken place.

VIII. The arguments of the respondents can be summarised as follows:

Main request - Article 76(1) EPC

From Feature c) it was clear that the scanner had the function of focusing the laser beam to a small spot in order to create incisions in the target tissue. The scanner was the only component which was specified as having the function "to create incisions". In contrast, the parent application disclosed that the scanner was used to move the focus spot which was produced by the delivery system which had an objective lens. Therefore, the subject-matter of claim 1 contravened Article 76(1) EPC.

Auxiliary requests 1m, 1A-1D, 2A-2D, 6-10, 1E, 2E and 6E-10E - Article 76(1) EPC

Claim 1 of auxiliary requests 1m, 1A-1D, 2A-2D, 6-10, 1E, 2E and 6E-10E contravened Article 76(1) EPC because the scanner included the same focusing function as in claim 1 of the main request.

Auxiliary requests 3A-3D, 4A-4D, 5A-5D and 3E-5E -

Article 123(3) EPC

Claim 1 of auxiliary requests 3A-3D, 4A-4D, 5A-5D and 3E-5E contravened Article 123(3) EPC because the amendments had shifted the main focusing function from the scanner to the delivery system. The scope of the claim had therefore been changed in a way that it covered different subject-matter (aliud) which contravened Article 123(3) EPC.

Reasons for the Decision

1. Main Request

Claim 1 refers to a system for treating target tissue in a patient’s eye. The components of the claimed system are a laser, a scanner, an OCT device and a controller. According to Feature c), "a scanner (40, 50) [is] configured to focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein".

The wording of this feature is not present in the parent application. Therefore, for the assessment under Article 76(1) EPC, it has to be decided, whether Feature c) (in combination with the other features of claim 1) can be directly and unambiguously derived from the technical context ofthe description and figures of the parent application (WO 2008/112292 A1).

According to the description (in particular paragraphs [0029]-[0030]), the light beam produced by the laser enters a Z scan device 40 which is used to adjust the position of the focus spot in the patient's eye along the Z-axis. The Z scan device is formed by a Galilean telescope. The movement of one of its lenses results in a corresponding movement of the focus spot. At the same time, the Z scan device expands the beam by 2 times (page 6, line 27). The expanded beam enters a x-y scan device 50 which adjusts the position of the focus spot in the x-y plane. Finally, the beam (having for example a diameter of 15 mm; page 7, line 15) is focused by a delivery device which includes an objective lens 58 for this purpose (paragraph [0030]). This focusing results in the focus spot in the patient's eye tissue, having a diameter of about 10 micrometers and is able to create

incisions in the eye tissue.

With regard to the focusing and scanning functions, nothing is disclosed in the parent application which differs from this general arrangement.

In contrast to this arrangement, Feature c) specifies the scanner to "focus and direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein". This is the only place in the claim which defines by which means the incisions are created in the eye tissue. The remaining features of claim 1 may contribute to the overall treatment but the creation of incisions per se is explicitly and exclusively specified as a result of the functioning of the scanner. Therefore, the wording of Feature c) must be understood such that the scanner provides a focusing which results in the focus spot having a diameter of about 10 micrometers.

The appellant argued that during the adjustment - or scanning - of the Z position of the focus spot, the Z-scan device varied the divergence/convergence of the beam, which meant that it was focusing the beam, in accordance with claim 1. The appellant correctly described the function of the Z-scan device as it is specified in the description. However, a slight variation of the divergence/convergence of the beam cannot be regarded as "focusing to create incisions", as required by Feature c). Since the claim is clear with regard to the meaning of the term "to focus" it should not be construed differently by using the description.

Moreover, according to the description, the Z-scan device 40 expands the beam instead of providing a focus

spot (paragraph [0029]). This cannot be regarded as "focusing ... to create incisions". Further, according to the description, the focusing to create the incisions is performed by the delivery system which includes the objective lens 58 (paragraph [0030]), not by the scanner. The appellant's argument that the delivery system formed part of the claimed scanner is not correct because the description clearly distinguishes between the scanner and "all the optical elements downstream of the scanner" which form the delivery system (paragraph [0061]).

Consequently, Feature c) must be construed in a way that the scanner provides the focusing of the (large) laser beam down to the focus spot which is capable of creating incisions in the eye tissue. This is not disclosed in the parent application as originally filed and contravenes Article 76(1) EPC.

2. Auxiliary requests 1m, 1A, 2A and 10

Claim 1 of auxiliary requests 1m, 1A, 2A and 10 comprises Feature c) of the main request. No amendments were made with regard to the scanner or the delivery system.

Therefore, claim 1 of auxiliary requests 1m, 1A, 2A and 10 contravenes Article 76(1) EPC for the same reasons as claim 1 of the main request.

3. Auxiliary requests 1B-1D, 2B-2D and 6-9

In auxiliary requests 1B-1D, 2B-2D and 6-9, a delivery system has been added (Feature d)) "for delivering the scanned laser beam to the target tissue". In auxiliary requests 1C, 1D, 2C, 2D and 6-9, the delivery system

additionally comprises an objective lens (58) through which the laser beam is delivered to the target tissue.

The presence of the delivery system does not alter the meaning of Feature c). The fact that the scanner is configured to focus and direct the laser beam to create incisions, is still present. Since the focusing function of the objective lens is not specified in the claim, there is no reason to assume that the objective lens provides the main focusing of the laser beam instead of the scanner.

Therefore, claim 1 of auxiliary requests 1B-1D, 2B-2D and 6-9 contravenes Article 76(1) EPC.

4. Auxiliary requests 3A-3D, 4A-4D and 5A-5D

Feature c) of auxiliary requests 3A, 4A and 5A reads: "a scanner comprising a Z-scan device (40) configured to focus so as to enable movement of a focus position of the laser beam along the Z-axis in the target tissue and a X-Y scan device to direct the laser beam in a pattern within the cornea (406) or limbus (408) to create incisions therein".

In these requests the function of the scanner has become twofold: there is a “focusing” function which relates to the movement of the focus along the z-axis. In addition to this the scanner has a “directing” function which provides a pattern to create incision.

The now claimed “focusing” function provides the movement of a focus position (e.g. by slightly changing the convergence/divergence of the beam). This is, however, fundamentally different from a scanner which focuses the beam to create incisions in the tissue. The

first is the function described in the parent application, paragraphs [0029] and [0030]. The second is not disclosed in the parent application, but is present in claim 1 as granted (see the discussion of the main request).

Since the meaning of the term "to focus" is completely different in claim 1 as granted and claim 1 of auxiliary requests 3A, 4A and 5A, the scope of the claim has shifted (aliud) and contravenes Article 123(3) EPC.

The appellant argued that claim 1 as granted had encompassed, in addition to the main focusing function, also the meaning of "positioning the focus spot along the Z-axis" and that auxiliary request 3A, 4A and 5A restricted Feature c) to this meaning only. Therefore, the scope of the claim had only been restricted by the amendment.

However, claim 1 as granted did not encompass a focusing in the meaning of "positioning the focus spot along the Z-axis" (see the discussion of the main request). Therefore, claim 1 could not be restricted to this meaning.

In auxiliary requests 3B-3D, 4B-4D and 5B-5D as a further amendment, a delivery system (comprising an objective lens) has been added to the claimed system. This delivery system has undisputedly no influence on the assessment under Article 123(3) EPC.

Therefore, claim 1 of auxiliary requests 3A-3D, 4A-4D and 5A-5D contravenes Article 123(3) EPC.

5. Auxiliary requests 1E-10E

Claim 1 of the auxiliary requests 1E-10E corresponds to claim 1 of auxiliary requests 1D-5D and 6-10, respectively.

Therefore, claim 1 of auxiliary requests 1E-10E also contravenes Articles 76(1) EPC or 123(3) EPC, respectively.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

C. Moser P. Acton

Decision electronically authenticated