Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 26 January 2023

Case Number: T 1241/19 - 3.2.08

Application Number: 13173306.5

Publication Number: 2649971

IPC: A61F2/16, A61B3/10, A61F9/008, A61F9/009, A61F9/007

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)

Europäisches Patentamt
European Patent Office
Office européen des brevets

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 1241/19 - 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 21 February 2019 revoking European patent No. 2649971 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 21 February 2019 the opposition division revoked European patent No. 2 649 971. The opposition division found that all requests treated during the opposition proceedings contravened Article 123(2) or (3) 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 3 February 2020, or one of the 1st to 12th auxiliary requests filed with the statement of grounds of appeal dated 2 July 2019, or one of auxiliary requests 1a-12a filed with letter dated 3 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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea 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 patterns within the cornea, the limbus and/or the sclera to create incisions therein;

d.

a delivery system for delivering the laser beam to the target tissue;

e.

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

characterised in that

~~a delivery system for delivering the first treatment pattern to the target tissue~~ the controller is configured to control the scanner to adjust the position of the laser beam
based upon the signals from the OCT device

in a first pattern to form ~~to create~~ a cataract incision (402) ~~therein that provides access to an eye chamber of the patient's eye~~ in the cornea, the limbus or the sclera, and

~~the delivery system also for delivering the second treatment pattern to the target tissue to form a~~ in a second pattern to create one or more relaxation incisions (402) ~~along or near limbus tissue or along corneal tissue anterior to the limbus tissue of the patient's eye~~ in the cornea, the limbus or the sclera, ~~to reduce astigmatism thereof~~

wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness."

VI. Auxiliary requests

Claim 1 of **auxiliary request 1m** is identical to claim 1 of the main request.

FIRST AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient;

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

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

e. a controller (300) operatively coupled to the laser source (4) and the scanner (40,50), characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

SECOND AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient;

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

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

e. a controller (300) operatively coupled to the laser source (4) and the scanner (40,50), characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness, and wherein the cataract incision is a fully penetrating incision.~~,~~

THIRD AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient;

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

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

e. a controller (300) operatively coupled to the laser source (4) and the scanner (40,50), characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness, wherein the cataract incision is a fully penetrating incision and the OCT beams of the OCT device pass through the delivery system.~~.~~

FOURTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals for an OCT image used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient;

c. a scanner (40, 50) configured to focus and direct the laser beam in patterns within the cornea, the limbus and/or the sclera to create incisions therein so as to enable movement of a focus position in the target tissue;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, so as to provide access for lens removal instrumentation, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

FIFTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of the optical scattering differences between them;

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

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

SIXTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of the optical scattering differences between them;

c. a scanner (40, 50) configured to focus and direct the laser beam in patterns within the cornea, the limbus and/or the sclera to create incisions therein, wherein the scanner (40, 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

SEVENTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. 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 patterns within the cornea, the limbus and/or the sclera to create incisions;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

EIGHTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. 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 patterns within the cornea, the limbus and/or the sclera 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness.

NINETH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. 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 patterns within the cornea, the limbus and/or the sclera 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness,

wherein the laser beam and the OCT beam follow the same optical path through the X-Y scan device (50) and the delivery system.

TENTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. 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 patterns within the cornea, the limbus and/or the sclera 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness,

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 the delivery system.

ELEVENTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. a scanner comprising a Z-scan device (40) configured to focus and a X-Y scan device so that the scanner directs the laser beam in patterns within the cornea, the limbus and/or the sclera 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a partially penetrating incision that leaves an un-incised tissue thickness,

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 the delivery system.

TWELFTH AUXILIARY REQUEST

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) imaging device (100) configured to generate signals used to discern a limbus and a sclera of the eye of the patient relative to a cornea of the eye of the patient by virtue of optical scattering differences between them;

c. a scanner configured to focus and direct the laser beam in patterns within the cornea, the limbus and/or the sclera to create incisions therein, wherein the scanner includes an X-Y scan device (50) and a Z-scan device (40), the Z-scan device being operable to move a focal spot of the laser beam along a z-axis that is substantially aligned with the laser beam, the X-Y scan device being operable to move the focus position laterally to the z-axis, wherein the laser beam propagates through the Z-scan device prior to propagating through the X-Y scan device, and 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;

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

e. a controller (300) operatively coupled to the laser source (4), the OCT device (100) and the scanner (40,50), and configured to determine the location of the limbus based on the optical scattering differences of the cornea and sclera, characterized 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 in a first pattern to form a cataract incision in the cornea, the limbus or the sclera, and in a second pattern to create one or more relaxation incisions (402) in the cornea, the limbus or the sclera, so as to reduce astigmatism, wherein each of the relaxation incisions is a

partially penetrating incision that leaves an un-incised tissue thickness,

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 the delivery system.

Claim 1 of **auxiliary requests 1a-12a** is identical to claim 1 of the first to twelfth auxiliary request.

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

Main request and auxiliary request 1m - 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. The final focusing was provided by the delivery system of Feature d).

1st to 6th, 11th and 12th auxiliary request, and auxiliary requests 1a-6a, 11a and 12a - Article 76(1) EPC

The amendments made in the 1st to 6th auxiliary request and auxiliary requests 1a-6a 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.

7th to 10th auxiliary request and auxiliary requests 7a-10a - Article 123(3) EPC

The amendments made in the 7th to 10th auxiliary request and auxiliary requests 7a-10a 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 and auxiliary request 1m - 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.

1st to 6th, 11th and 12th auxiliary request, and auxiliary requests 1a-6a, 11a and 12a - Article 76(1) EPC

Claim 1 of the 1st to 6th, 11th and 12th auxiliary request, and auxiliary requests 1a-6a, 11a and 12a contravened Article 76(1) EPC because the scanner included the same focusing function as in claim 1 of the main request.

7th to 10th auxiliary request and auxiliary requests 7a-10a - Article 123(3) EPC

Claim 1 of the 7th to 10th auxiliary request and auxiliary requests 7a-10a contravened Article 123(3) EPC. 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, a delivery system and a controller. According to Feature c), "a scanner (40, 50) [is] configured to focus and direct the laser beam in patterns within the cornea, the limbus and/or the sclera 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 of the description and figuresof 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, which

has a diameter of about 10 micrometers and is able to create incisions in the eye tissue.

With regard to the focusing and scanning functions of the system, 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 patterns within the cornea, the limbus and/or the sclera to create incisions therein". This is the only place in the claim which defines by which means the incisions are created in the eye. 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 presence of the delivery system in Feature d) 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 no focusing function of the delivery system is specified in the claim, there is no reason to assume that the delivery system provides the main focusing of the laser beam instead of the scanner.

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

Claim 1 of auxiliary request 1m is identical to claim 1 of the main request.

Therefore, also claim 1 of auxiliary request 1m contravenes Article 76(1) EPC.

3. 1st to 6th auxiliary request and auxiliary requests 1a-6a

In the 1st to 6th auxiliary request and auxiliary requests 1a-6a, the delivery system additionally comprises an objective lens (58) through which the laser beam is delivered to the target tissue. Since the focusing function of the objective lens is not specified in the claim, there is no reason to assume that the objective lens, instead of the scanner, provides the main focusing of the laser beam.

In Feature c) of the 4th auxiliary request, it was further added that the scanner functions "so as to enable movement of a focus position in the target tissue". This feature is an addition to the Feature c) as granted, i.e. in addition to the scanner being configured to focus ... to create incisions. Therefore, also in the 4th auxiliary request, the scanner has the function which was not disclosed in the parent application.

Therefore, claim 1 of the 1st to 6th auxiliary request and of auxiliary requests 1a-6a contravenes Article 76(1) EPC.

4. 7th to 10th auxiliary request and auxiliary requests 7a-10a

Feature c) of 7th to 10th auxiliary request and of auxiliary requests 7a-10a 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

patterns within the cornea, the limbus and/or the sclera to create incisions" (in some requests followed by additional features regarding an OCT beam).

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" differs between claim 1 as granted and claim 1 of the 7th to 10th auxiliary request and of auxiliary requests 7a-10a, 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 7th to 10th auxiliary request and auxiliary requests 7a-10a 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.

Therefore, claim 1 of the 7th to 10th auxiliary request and of auxiliary requests 7a-10a contravenes Article 123(3) EPC.

5. 11th auxiliary request and auxiliary request 11a

Feature c) of the 11th auxiliary request reads: "a scanner comprising a Z-scan device (40) configured to focus and a X-Y scan device so that the scanner directs the laser beam in patterns within the cornea, the limbus and/or the sclera to create incisions therein" (followed by an additional feature regarding an OCT beam).

This wording attributes the focusing function to the Z-scan device. But still the focusing has the purpose of creating incisions in the tissue. Therefore, the arguments regarding the main request apply.

Therefore, claim 1 of the 11th auxiliary request and of auxiliary request 11a contravenes Article 76(1) EPC.

6. 12th auxiliary request and auxiliary request 12a

Claim 1 of these requests comprises the Feature c) as granted, followed by the addition of particular functions of a Z-scan device and a X-Y scan device. Since the added functions do not change the meaning of Feature c) as granted, the arguments regarding the main request apply.

Therefore, claim 1 of the 12th auxiliary request and of auxiliary request 12a contravenes Article 76(1) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

C. Moser P. Acton

Decision electronically authenticated