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Datasheet for the decision of 13 May 2009

Case Number: T 0557/07 - 3.2.02

Application Number: 03075717.3

Publication Number: 1364632

IPC: A61F 9/01

Language of the proceedings: EN

Title of invention:
Cornea contact system for laser surgery

Applicant:
Technolas Perfect Vision GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
EPC Art. 52(1), 56

Keyword:
"Inventive step (yes, after amendments)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0557/07 - 3.2.02

D E C I S I O N
of the Technical Board of Appeal 3.2.02
of 13 May 2009

Appellant: Technolas Perfect Vision GmbH
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 13 November 2006 refusing European application No. 03075717.3 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: S. Chowdhury
Members: C. Körber
M. J. Vogel

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dated 13 November 2006 to refuse European patent application No. 03 075 717.3.

The grounds for the refusal were that the subject-matter of claim 1 did not meet the requirements of Articles 52(1) and 56 EPC 1973 for lack of inventive step, having regard to the following prior art documents:

D1: WO-A-94/09 849
D2: US-A-6 099 522
D3: US-A-5 984 916
D4: EP-A-0 910 984.

With respect to the distinguishing features over the prior art, the question as to whether these are to be regarded as technical under Rule 29(1) EPC 1973 was raised.

II. On 1 December 2006 the appellant lodged an appeal against the decision and paid the prescribed fee. On 13 March 2007 a statement setting out the grounds of appeal was filed, together with an amended set of claims.

On 4 May 2009 new sets of claims were filed under a main request and three auxiliary requests, of which only the second auxiliary request was subsequently maintained.

III. The appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of:

Claims 1 to 12 of Auxiliary Request 2 filed by telefax dated 4 May 2009,

Drawing sheets 1/2 to 2/2 as originally filed,

Description pages 1, 3, 4, 4a, 5 and 6 filed by telefax dated 6 May 2009, and

Description pages 2 and 7 to 17 as originally filed.

IV. The independent claim of Auxiliary Request 2, now the main request, reads as follows:

"1. A system (10) for moving the focal point (44) of a laser beam along a predetermined path (42) within the cornea (18) of an eye (14), wherein the cornea (18) has an anterior surface (40) and the eye (14) defines an optical axis (16), said system (10) comprising:

a contact lens (28) formed with an anterior surface (32) and a posterior surface (30) with said posterior surface (30) having a radius of curvature, R, said contact lens (28) being engageable with the cornea (18) to conform the anterior surface (40) thereof with said posterior surface (30) of said contact lens (28);

a laser source (12) for generating the laser beam, said laser source (12) being oriented to direct the laser beam through said contact lens (28) and having a means

for focusing the laser beam to a focal point (44) at a predetermined depth within the cornea (18);

a processor (26) for receiving input data including the geometry of said contact lens (28), the location of said laser source (12), a mapping of the density of the cornea (18) and the angle of tilt of the laser beam relative to the optical axis (16) for at least one laser source location, said laser source location being distanced from said optical axis (16), said processor (26) operating on said input data to calculate laser source (12) movements perpendicular and parallel to said optical axis (16) required to maintain the depth of the focal point (44) from the anterior surface (40) of the cornea (18) as said focal point (44) advances along the predetermined path (42); and

means (20) responsive to said processor (26) for moving the laser source (12) relative to said contact lens (28) to move the focal point (44) of the laser beam along the predetermined path (42)."

Claims 2 to 12 are dependent claims.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

Claim 1 of the main request is based on claims 1, 3 and 7 as originally filed. The amendments made to the description are aimed at adapting the introductory part

of the description to the amended claims and acknowledging the relevant prior art documents. Therefore, the amendments are allowable under Article 123(2) EPC.

3. *Novelty*

None of the cited documents discloses in combination all the features of claim 1. In particular, these documents are silent with respect to a processor for receiving input data including the angle of tilt of the laser beam relative to the optical axis for at least one laser source location, said laser source location being distanced from said optical axis, said processor operating on said input data to calculate the movements of the laser source. Consequently, the subject-matter of claim 1 is new.

4. *Inventive step*

4.1 Document D1 can be regarded as the closest prior art. It discloses a system for moving the focal point of a laser beam along a predetermined path within the cornea of an eye. The system comprises a contact lens being engageable with the cornea to conform the anterior surface thereof with the posterior surface of said contact lens. The system further comprises a laser source for generating the laser beam, said laser source having a means for focusing the laser beam to a focal point at a predetermined depth within the cornea. The system further comprises a processor operating on input data to calculate laser beam movements to maintain the depth of the focal point from the anterior surface of the cornea as said focal point advances along the

predetermined path and means responsive to said processor for moving the laser source relative to said contact lens to move the focal point of the laser beam along the predetermined path.

The subject-matter of claim 1 is distinguished over the disclosure of D1 by the processor for receiving input data including a mapping of the density of the cornea and the angle of tilt of the laser beam relative to the optical axis for at least one laser source location, said laser source location being distanced from said optical axis, and said processor operating on these input data to calculate the movements of the laser source.

D2, which addresses the possibility of including a mapping of the refractive power of the cornea in a diagnostics module (column 33, lines 22 to 25), is considered to be more remote than D1 since the contact lens (28) disclosed therein is only used for working at image planes located posterior to the cornea (column 24, lines 11 to 14). D3 is also not closer to the invention than D1. D4 is no longer relevant with respect to amended claim 1 as it merely relates to an apparatus for mapping the birefringent properties of the cornea.

4.2 The Board has no doubt that the features distinguishing the subject-matter of claim 1 over the disclosure of D1 are of a technical nature.

4.3 With respect to D1 as closest prior art, the objective problem underlying the invention can be defined as increasing the accuracy of guiding the laser focal point along the predetermined path. This problem can be

deduced from column 4, lines 13 to 18 of the patent application as published, and represents a constant endeavour for the skilled person, so that its formulation does not by itself contribute towards inventive step.

4.4 The solution according the invention resides in the input data including the angle of tilt of the laser beam relative to the optical axis for at least one laser source location, and the processor operating on these input data to calculate the movements of the laser source. This permits a correction of the predetermined path as described in column 12, lines 12 to 22 of the application as published. None of the cited prior art documents gives a hint towards such a correction based on the angle of tilt of the laser beam.

4.5 For these reasons, the subject-matter of claim 1 according to the main request involves an inventive step within the meaning of Article 56 EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of the first instance with the order to grant a patent on the basis of the following documents:

   Description:
   pages 1, 3, 4, 4a, 5 and 6 filed with telefax dated 6 May 2009,
   pages 2 and 7 to 17 as originally filed;

   Claims:
   1 to 12 according to the request denoted as "Auxiliary Request 2" filed with telefax dated 4 May 2009;

   Drawings:
   sheets 1/2 to 2/2 as originally filed.

The Registrar: The Chairman

D. Sauter S. Chowdhury