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Datasheet for the decision of 14 January 2015

Case Number: T 2502/12 - 3.2.08

Application Number: 08161475.2

Publication Number: 2020214

IPC: A61F9/008

Language of the proceedings: EN

Title of invention:
Eye surgical unit and eye surgical instrument

Applicant:
D.O.R.C. Dutch Ophthalmic Research Center (International) B.V.

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

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Case Number: T 2502/12 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 14 January 2015

Appellant: (Applicant)	D.O.R.C. Dutch Ophthalmic Research Center (International) B.V. Scheijdelveweg 2 3214 VN Zuidland (NL)
Representative:	Hatzmann, Martin V.O. Johan de Wittlaan 7 2517 JR Den Haag (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 20 July 2012 refusing European patent application No. 08161475.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	T. Kriner
Members:	C. Herberhold
	D. T. Keeling

Summary of Facts and Submissions

I. By its decision posted on 20 July 2012 the examining division refused European Patent application No. 08 161 475.2.

II. Regarding the grounds for the decision, the Examining Division referred to its communications dated 22 May 2012 and 28 December 2011, in which the applicant had been informed that the subject-matter of claim 1 lacked an inventive step over - among others - a combination of document D1 with document D3.

III. The appellant (applicant) lodged an appeal against that decision in the prescribed form and within the prescribed time limit.

The appellant requested

- that the Board set aside the decision of the Examining Division and grant the application with claims 1-8 currently on file (claims 1-8 as filed on 17 November 2009 and underlying the impugned decision), or in the alternative,

- that the Board remits the case to the Examining Division or writes a communication, or holds an interview, preferably by telephone in the event that the Board decided to set aside the decision of the Examining Division but was of the opinion that the application did not entirely meet the provisions of the EPC.

IV. The Board issued a summons for oral proceedings. In the accompanying communication pursuant to Article 15(1) RPBA dated 30 April 2014 the Board provided reasons why

the subject-matter of claims 1 and 8 did not appear to be inventive with respect to

D1: US-A-2005/0265667 and
D3: EP-A-0 856 757.

V. With letter dated 9 December 2014 the appellant withdrew the request for oral proceedings and requested a decision to be taken on the state of the file.

VI. Independent claims 1 and 8 read as follows:

Claim 1:
"An eye surgical unit (1), comprising a connecting module (4) to align, upon coupling of the connecting module (4) to a connecting module (8) of an eye surgical instrument (5), an end of a light guide (6) which is included in the connecting module (8) of the eye surgical instrument (5) on one hand with respect to the connecting module (4) of the eye surgical unit (1) on the other hand, wherein during coupling the connecting modules (4, 8) of the eye surgical unit (1) and the eye surgical instrument (5) mutually cooperate, and wherein the mutual cooperation of the connecting modules (4, 8) is realized through a multiple-thread screw connection of which corresponding screw connection elements (11, 13), upon coupling of the connecting modules (4, 8) through mutual rotation of the connecting modules (4, 8), mutually engage substantially simultaneously."

Claim 8:
"An eye surgical instrument (5), comprising a light guide (6) and a connecting module (8) in which an end of the light guide (6) is included in order to, upon coupling of the connecting module (8) to a connecting

module (4) of an eye surgical instrument (1), align the light guide (6) on one hand with respect to the connecting module (4) of the eye surgical unit (1) on the other hand, wherein during coupling the connecting modules (4, 8) of the eye surgical unit (5) and the eye surgical instrument (1) mutually cooperate and wherein the mutual cooperation of the connecting modules (4, 8) is realized by a multiple-thread screw connection of which corresponding screw connection elements (11, 13), upon coupling of the connecting modules (4, 8) through mutual rotation of the connecting modules (4, 8), mutually engage substantially simultaneously."

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

Inventive step

In its decision the Examining Division had stated that the subject-matter of independent claim 1 lacked an inventive step in view of - among others - document D1 in combination with document D3. However, the Examining Division's argumentation was not convincing for the following reasons:

Firstly, the Examining Division's formulation of the problem to be solved included the aim of reducing the required turning angle for a safe connection. However, incorporating said aim into the formulation of the problem implied hindsight reasoning, since the person skilled in the art would not realise that - in the context of the surgical setting - a reduction in turning would be an option. Therefore a more suitable formulation of the objective technical problem was how to realise an eye surgical unit according to the preamble of claim 1 that enables a connection to a

single light guide surgical instrument, wherein the connection is both quick and safe.

Secondly, when trying to solve the objective technical problem, the person skilled in the art would not at all find document D3, which - as can be seen from column 1, lines 3 to 5 of said document - was in the field of telecommunications and not in the field of single light guide connectors for eye surgical devices.

Thirdly, the person skilled in the art would expect the multiple-thread connection disclosed in D3 to be less stable and more easily broken - e.g. due to vibrations -, since the friction surface was generally reduced. With vibrations being a common occurrence during surgery activities, the D3 multiple-thread connection could not be considered a quick and safe connection in the context of the surgical setting and thus did not provide a solution to the problem when correctly worded without hindsight elements. Even if the person skilled in the art considered the teaching of D3, he/she would realise that the multi-fibre connectors disclosed therein were incompatible with the single light guide BNC or SMA type connectors of the D1 eye surgical instrument.

Therefore, having regard to the state of the art, the invention was not obvious to the person skilled in the art and the impugned decision was to be set aside.

Reasons for the Decision

1. The appeal is admissible.

2. Article 56 EPC

2.1 Closest prior art

Document D1 uncontestedly forms the closest prior art.

This document discloses:

An eye surgical unit (D1, paragraph [0004]: instrument for delivering light for illumination as well as laser light for use in surgery including the respective light source), comprising a connecting module (Figure 1, 2, "SMA connector") to align, upon coupling of the connecting module (Figure 2) to a connecting module of an eye surgical instrument (Figure 1), an end of a light guide which is included in the connecting module of the eye surgical instrument on one hand with respect to the connecting module of the eye surgical unit on the other hand (paragraph [0006]), wherein during coupling the connecting modules of the eye surgical unit and the eye surgical instrument mutually cooperate (paragraphs [0007],[0008]).

The coupling of the cooperation modules is realised by a single thread screw connection (inner thread No. 30 of cable nut No. 26 screws onto exterior thread No. 22 of the female connector).

2.2 The subject-matter of claim 1 - also uncontestedly - differs from said disclosure by the following technical features:

"The mutual cooperation of the connecting modules is realized through a multiple-thread screw connection of which corresponding screw connection elements, upon coupling of the connecting modules through mutual

rotation of the connecting modules, mutually engage substantially simultaneously."

Claim 8 is directed to the surgical instrument only, the differing feature thus being limited to the connecting module of the instrument.

2.3 The objective technical problem

2.3.1 The examining division has established the following technical problem:

"Reducing the required turning angle for a safe connection."

2.3.2 The appellant has suggested a different formulation of the objective technical problem:

"How to realise an eye surgical unit according to the preamble of claim 1 that enables a connection to a single light guide surgical instrument, wherein the connection is both quick and safe."

In particular, the appellant was of the opinion that the incorporation of the reduction of the required turning angle into the formulation of the technical problem implied hindsight reasoning as the person skilled in the art would not realise that a reduction in turning would be an option.

2.3.3 According to D1, paragraph [0009] the prior art connectors shown in Figure 1 and 2 have been found to be inconvenient in that it is necessary to completely unscrew the cable nut of the male connector from the external screw threading of the female connector. To overcome said inconvenience, D1 explicitly states that

it would be more convenient, i.e. desirable, if "the male connector could be quickly connected with and disconnected from the female connector without requiring repeated rotations of a cable nut in connecting and disconnecting the two connectors". Thus, the very problem D1 aims to solve is formulated as "enabling a quick and safe connection to a single light guide surgical instrument without requiring repeated rotations of a cable nut in connecting and disconnecting the two connectors". Consequently, the problem to avoid repeated rotations (and thus to reduce the required turning angle) is derivable directly from prior art D1, without any hindsight knowledge.

Also when discussing the prior art SMA connectors in the application (see paragraph [0004]), the appellant himself states that a "due amount of time and due discipline" was required to uncouple the connecting modules by rotating the modules back relative to each other a plurality of times. It thus has to be concluded that also according to the application, the general problem to provide a quick connection (as set out by the appellant) in the context of the SMA prior art connectors is in fact equivalent to the more specific problem of avoiding repeated rotations. The inconvenience of repeated rotations and the wish to avoid this inconvenience is derivable directly from the use of the prior art SMA connectors, without any knowledge of the solution proposed in the application, i.e. without any knowledge of the idea to employ a multiple-thread screw connection.

Consequently the objective technical problem when starting from the surgical console using the prior art SMA connectors as disclosed in D1 is to provide an eye surgical unit with a connector which enables a

connection to a single light guide surgical instrument wherein the connection is safe and does not require repeated rotations in connecting and disconnecting the connectors.

It is noted that D1 proposes as a solution to said problem the use of an adaptor in order to connect the BNC (bayonet type connector) to the threaded SMA type bushing.

One may either argue that said solution does not solve the above problem because the BNC type connection may "uncouple relatively easily" and thus is not safe (see paragraph [0005] of the application). Or, alternatively, one may put forward that the BNC type connector indeed solves the problem posed above, thus requiring a less ambitious reformulation of the problem as being "to provide an alternative connection which is safe and does not require repeated rotations in connecting and disconnecting the connectors".

Either way, avoiding multiple rotations remains part of the technical problem.

2.4 Combination with document D3

2.4.1 The disclosure of document D3 explicitly (see column 1, lines 51-54) relates to an optical connector which does not require repeated rotations in connecting and disconnecting the connectors ("Um die Zahl der Schraubdrehungen klein zu halten") and suggests the use of a multiple-thread screw connection ("...können der Aussengewindeabschnitt und entsprechend das Innengewinde des Schraubüberwurfes mindestens zweigängig sein"). The teaching of document D3 thus

directly points to the use of a multiple-thread screw connection as a solution to the problem posed.

Consequently the person skilled in the art would have replaced the single thread connection (D1, Figures 1, 2, No. 30) with a multiple-thread connection as taught in D3. This results in an eye surgical unit according to claim 1 and in an eye surgical instrument according to claim 8.

2.4.2 The appellant argued that the person skilled in the art would not find D3 because this publication was not in the field of single light guide connectors for eye surgical devices.

However, it is well established in the case law of the Boards of Appeal that the person skilled in the art would also look for suggestions in neighbouring or broader general technical fields if the same or a similar problem arose and if he/she could be expected to be aware of such general fields (Case Law of the Boards of Appeal, seventh edition 2013, I.D.8.2).

In this context the technical field of fibre optic connectors in general is considered to be a broader general technical field in which the same or similar problem arises. D1 as well as D3 show inter-engaging male and female optic fibre connectors, with coaxially aligned centre axes, wherein the inner thread of a rotatable nut provided on the male connector inter-engages with an outer thread provided on the female connector. Therefore, the inconvenience caused by the requirement of repeated rotations of the nut arises in the specific as well as in the more general technical field.

Consequently, the person skilled in the art would consider document D3 when looking for a solution to the objective technical problem.

2.4.3 The appellant has further argued that the multi-fibre connector of D3 was incompatible with the BNC / SMA type connector of D1 and that the person skilled in the art would not apply the D3 teaching to the D1 connection because it was less stable.

However, D3 explicitly discloses that its teaching may be applied to single light guide connectors (column 1, lines 38-42). There is thus no reason for the person skilled in the art to assume that the multiple-thread connection would be less stable in the case of a single light guide connector. On the contrary, multiple-thread screws are known to combine much of the holding power of a screw with a small pitch and the relatively rapid advance of a screw with a large pitch (see e.g. the passage from "HowStuffWorks.com" annexed to the Article 15(1) RPBA communication).

2.5 To conclude, in order to solve the technical problem posed, the person skilled in the art would combine the teaching of documents D1 and D3 and thus arrive at the subject-matter of claims 1 and 8. The subject-matter of these claims is thus not inventive and the Examining Division was correct to refuse the application for lack of inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

V. Commare T. Kriner

Decision electronically authenticated