BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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

D E C I S I O N
of 10 January 2002

Case Number: T 0455/99 - 3.2.2

Application Number: 91307399.5

Publication Number: 0471533

IPC: A61B 17/32

Language of the proceedings: EN

Title of invention:
Surgical device

Patentee:
SMITH & NEPHEW, INC.

Opponent:
Linvatec Corporation

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0455/99 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 10 January 2002

Appellant: (Proprietor of the patent)
SMITH & NEPHEW, INC.
1450 Brooks Road
Memphis, Tennessee 38116 (US)

Representative:
Gilholm, Stephen Philip
Corporate Patents Department
Smith & Nephew Group Research Centre
York Science Park
Heslington
York YO1 5DF (GB)

Respondent: (Opponent)
Linvatec Corporation
11311 Concept Boulevard
Largo, Florida 33773 (US)

Representative:
Kurig, Thomas, Dr.
Patentanwälte
Becker, Kurig, Straus
Bavariastrasse 7
D-80336 München (DE)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 5 March 1999 revoking European patent No. 0 471 533 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: W. D. Weiß
Members: D. Valle
R. T. Menapace

Summary of Facts and Submissions

I. The appellant (proprietor of the patent) filed an appeal against the decision of the opposition division to revoke the patent for lack of inventive step on the basis of the documents:

D6: US-A-4 274 414, and

D7: Standard handbook of Machine Design, Joseph E. Shigley and Charles R. Mischke, McGraw-Hill Book Company, 1986.

II. Following a request from both parties, oral proceedings were summoned for the 27 September 2001. With letter of 21 August 2001, however, the appellant withdrew its request for oral proceedings and requested a decision based on the written submissions to date. The Board then decided to cancel the oral proceedings.

III. The requests of the parties are the following:

- The appellant requested that the decision under appeal be set aside and the patent be maintained as granted.

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

IV. Claim 1 as granted reads as follows:

"A handpiece (10) for receiving and engaging a rotatable surgical tool (12), comprising a drive shaft (14) for engaging said surgical tool and a motor assembly (18) for rotating said drive shaft (14) about

its longitudinal axis (80), characterized in that the handpiece (10) further comprises a static seal element (46) sealed to motor assembly (18) and a dynamic seal element (48) sealed to said drive shaft, wherein said static seal element (46) and said dynamic seal element (48) have mating sealing portions which define a face seal in a surface which is transverse to the axis of rotation of said drive shaft (14)".

V. The appellant argued as follows:

The opposition division failed to prove that it was obvious for the skilled person in the field to combine the teaching of document D6 (corresponding to the preamble of claim 1) with the teaching of document D7.

A comparison of document D6 with the invention resulted in the following: The motor shaft (16) of the invention corresponded to the reference number (28) in Figure 1 of document D6; the drive shaft (14) of the invention corresponded to drive extension (26), the attachment (18), and the inner tube (10) of document D6.

The drive shaft of the invention was designed for engaging the surgical tool. In document D6 the surgical tool was represented by the cutting edge (54), Figure 5; see also description, column 2, lines 37 to 41. The unreferenced seals cited in the decision under appeal were on the motor shaft and not on the drive shaft.

The motor of document D6 was quite distinct from the packing shown to either side of the drive shaft and therefore such packing should not have been considered

the same as the motor assembly of the invention. In the absence of any basis to assume that such packing was part of the motor assembly, the Board should be bound to find for the patentee in this matter, see the decisions of the Board of Appeal T 219/83, T 293/87 and T 459/87.

To arrive to the invention starting from the teaching of document D6, the three following steps were necessary:

- replace the seals of document D6 with face seals,

- apply these seals to a different shaft (from the drive shaft to the end of the drive extension),

- put these seals not between packing and shaft but between motor and shaft.

There could not be a face seal between the drive shaft (drive extension 26) and motor assembly of document D6, because there was no interface between the two, being these separated by the packing elements. Even if one would consider the packing as part of the motor assembly, there was a significant gap between the packing elements and the end of the drive extension (26) due to the extension of the motor shaft (28).

VI. The respondent argued as follows:

Claim 1 simply required a static seal element (46) sealed to the motor assembly (18) and a dynamic seal element (48) sealed to the drive shaft. There was no mention in claim 1 of any packing, drive extension, inner tubes etc.

Claim 1 was directed to a surgical hand piece whatsoever, in which a face seal was provided between the rotating parts and the static parts. Document D6 showed a surgical hand piece having an O-ring seal in this functional position and document D7 showed that it was obvious to replace O-ring seals with face seals. Therefore the subject-matter of claim 1 did not involve an inventive activity.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty and inventive step*

2.1 Document D6, see in particular Figure 1, discloses a handpiece (16) for receiving and engaging a rotatable surgical tool, comprising a drive shaft (26) for engaging said surgical tool and a motor assembly (31) for rotating said drive shaft (26) about its longitudinal axis whereby the handpiece further comprises a sealing system made of a static seal element and a dynamic seal element, the static seal element being represented by the couple of O-rings, and the dynamic seal element being represented by the surface of the shaft itself.

The subject-matter of claim 1 is distinguished therefrom in that the static seal element (46) is sealed to the motor assembly (18), in that the dynamic seal element (48) is sealed to the drive shaft (14) and in that said static seal element (46) and said dynamic seal element (48) have mating sealing portions which define a face seal in a surface which is transverse to the axis of rotation of said drive shaft (14).

2.2 The problem to be solved is to prevent damage to the motor caused by entering in the motor of debris and fluid coming from the patient's body during operation, see patent in suit, column 1, lines 23 to 26. As stated in the patent in suit, column 1, lines 27 to 42, it was known to solve this problem by flexible seals or O-rings. However these known solutions have been not satisfactory allowing passage of fluid during operation.

2.3 The distinguishing features of claim 1 belong to the general knowledge of the person skilled in the art. See, for example the standard handbook D7, chapter 26-11 titled "Seals for Rotary Motion", and in particular Figure 26 to 11. The cited figure shows a static seal element (left), which is obviously sealed to the motor assembly, and a dynamic seal element (right) sealed to the drive shaft, whereby said static seal element and said dynamic seal element have mating sealing portions which define a face seal in a surface which is transverse to the axis of rotation of said drive shaft.

The handbook D7 explains further in section 26-11-1 that the use of O-rings as seals for rotating shafts is not always been successful and that failure occurs rapidly.

A person skilled in the art being confronted with the problem of improving the sealing between the rotating part and the static part of the handpiece of the state of the art will therefore apply the general knowledge contained in the handbook D7 to the device according to document D6 and thereby arrive to the claimed invention without any inventive skill being involved therein.

2.4 As a further evidence of the obviousness of the main claim it can be mentioned that in the device according to

document D6 the spring housing (rotating part) urges with its vertical left surface against the vertical right surface of the motor shaft casing (stationary part) thereby realizing at least to a certain extent a sealing according to the characterizing part of the claim.

In this respect it is irrelevant whether the sealing is situated on the motor casing itself or on an extension of it as far as the sealing is effective on isolating the static part from the rotating one. The person skilled in the art will consider the choice of the exact longitudinal location of the sealing on the basis of the general design of the device as a matter of workshop activity.

2.5 Accordingly, the subject-matter of claim 1 does not involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

V. Commare W. D. Weiß