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) [ ] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 19 September 2006

Case Number: T 1183/04 - 3.2.02

Application Number: 97900037.9

Publication Number: 0888082

IPC: A61B 5/042

Language of the proceedings: EN

Title of invention:
Mapping catheter

Applicant:
Biosense Webster, Inc.

Opponent:
-

Headword:
-

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

Keyword:
"Inventive step (main and first auxiliary request (no), second auxiliary request (yes))"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1183/04 - 3.2.02

D E C I S I O N
of the Technical Board of Appeal 3.2.02
of 19 September 2006

Appellant: Biosense Webster, Inc.
3333 Diamond Canyon Road
Diamond Bar
California 91765 (US)

Representative: Mercer, Christopher Paul
Carpmaels & Ransford
43, Bloomsbury Square
London WC1A 2RA (GB)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 11 May 2004 refusing European application No. 97900037.9 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: T. Kriner
Members: S. Chowdhury
M. Vogel

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dated 11 May 2004 to refuse European patent application No. 97 900 037.9.

The grounds of refusal were that the subject-matter of claim 1 of the main request lacked novelty, and the subject-matter of claim 1 of the auxiliary request did not involve an inventive step.

The following documents cited during the examining procedure were found by the Board to be relevant to the appeal proceedings:

D3: WO-A-94/12098
D4: US-A-5 391 199.

II. On 21 July 2004 the appellant (applicant) lodged an appeal against the decision and paid the prescribed fee on the same day. On 21 September 2004 a statement of grounds of appeal was filed.

III. Oral proceedings took place on 19 September 2006, at which the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request including claims 1 to 7 filed at the oral proceedings, or on the basis of the first auxiliary request including claims 1 to 7 filed at the oral proceedings, or on the basis of the second auxiliary request comprising the following documents:

- Claims 1 to 6 filed at the oral proceedings

- Description pages 1, 24, 26, 27, 30, 33, 34, 45 as published

- Description pages 2, 3, 9, 10, 25 as filed with the letter of 31 July 2006

- Description pages 4 to 8, 21 to 23, 28, 29, 31, 32, 35 to 44, 46 to 48 filed at the oral proceedings

- Figures 1 to 18B as published.

IV. Independent claim 1 of the main request reads as follows:

"An apparatus (20) comprising: an elongate probe (22) having a distal end for insertion into the body of a subject; a structure (24) which is extendible beyond the distal end of the elongate probe and retractable into the distal end of the elongate probe and which, when retracted into the distal end of the probe, has a narrow, elongated configuration and, after extension beyond the distal end of the probe, has a substantially rigid configuration of known shape and orientation relative to the distal end of the probe; a plurality of electrophysiological sensors (26, 28, 30), for generating signals responsive to an electrophysiological activity, said sensors (26, 28, 30) having substantially fixed positions, away from the long axis of the elongate probe (22), on said structure (24) in said substantially rigid configuration; and one or more coordinate sensing devices (32), fixed to said apparatus (20) in known positional relation to said structure (24) in said substantially rigid configuration, for generating position signals in

response to externally applied magnetic fields, which signals are indicative of the positions of said electrophysiological sensors (26, 28, 30) in said substantially rigid configuration."

Claim 1 of the first auxiliary request differs from claim 1 of the main request only in that "a plurality of electrophysiological sensors" is replaced by "at least three electrophysiological sensors".

Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request only in that "substantially rigid configuration" is replaced by "substantially rigid ring configuration".

Claim 1 of the main and first auxiliary requests have claims 2 to 7 appended thereto and claim 1 of the second auxiliary request has claims 2 to 6 appended thereto.

V. The appellant argued as follows:

D3 did not teach a structure which had a substantially rigid configuration of known shape and orientation when deployed in use because it provided individual arms intended for deploying to different lengths depending on the space in which the catheter found itself in the heart. It was contrary to the teaching of D3 to deploy the arms in a fixed position. Therefore, the exact position and orientation of the arms would not be known, for this imaging would be necessary. Moreover, the arms of the document D3 were rotatable in order to ablate tissue, and they were also flexible and would not attain a known shape and orientation when deployed. By

contrast, the arms of the apparatus of Figure 11 of the application were resilient, and in the context this meant that they were made of a memory alloy, for example.

The document D4 taught how the position of the distal end of the probe was determined, and a combination of the teachings of documents D3 and D4 would give knowledge of the position and orientation of the distal end of the probe but not of the electrodes since the positions of the arms in document D3 would be unknown when individually deployed.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

The claims of all the requests are considered by the Board to be clear and to be properly based on the disclosure of the application as originally filed. Consequential amendment of the description has been undertaken with respect to the second auxiliary request.

3. *The embodiment of Figure 11 and D3*

3.1 According to the appellant the disclosure of D3 differs from that of the present application in that D3 does not disclose a structure which "after extension beyond the distal end of the probe, has a substantially rigid configuration of known shape and orientation relative to the distal end of the probe", because D3 provides

individual arms intended for deploying to different lengths and the exact position and orientation of the arms would not be known when deployed in the heart.

3.2 The Board is of the view, however, that the properties of the arms of the embodiment described with reference to Figures 11A and 11B of the application are the same as those of the arms of document D3, and their behaviour when deployed would also be the same. In particular, the configuration of the arms of Figures 11A and 11B of the application, in the deployed condition in the heart, would be unknown to the same extent as that of the arms of D3.

3.3 The relevant passages on page 38 of the application (WO-A-97/24983) merely state that the arms are substantially rigid and resilient, and it is by virtue of these properties that the arms expand outwardly when deployed out of the catheter, which is confirmed by page 8, lines 8 and 9. If the arms were to be deployed in free space then they would indeed adopt "a substantially rigid configuration of known shape and orientation relative to the distal end of the probe". However, if the structure were to be deployed within the heart, the ends of the arms would interact with the heart walls and be bent away from their "free space" positions.

3.4 This is also what would happen in the case of D3. If the arms thereof were to be extended in free space in unison (see page 8, line 17 of D3) at a suitable temperature then the structure would adopt "a substantially rigid configuration of known shape and orientation relative to the distal end of the probe"

because the arms may be made of shape memory alloy and be elastic (page 5, lines 11 to 26). However, if the arms of D3 were to be deployed in the heart their free ends would also interact with the heart walls and be perturbed away from their "free space" positions.

3.5 As regards the appellant's argument that the arms of D3 are rotatable, they clearly are not rotatable in the embodiment described with reference to Figure 6 of D3.

4. *Inventive step main and auxiliary requests*

4.1 Given the above, D3 discloses apparatus comprising: an elongate probe (22) having a distal end for insertion into the body of a subject; a structure (41) which is extendible beyond the distal end of the elongate probe and retractable into the distal end of the elongate probe and which, when retracted into the distal end of the probe, has a narrow, elongated configuration and, after extension beyond the distal end of the probe, has a substantially rigid configuration of known shape and orientation relative to the distal end of the probe; more than three electrophysiological sensors (57) (see Figure 4), for generating signals responsive to an electrophysiological activity, said sensors (57) having substantially fixed positions, away from the long axis of the elongate probe (22), on said structure (42) in said substantially rigid configuration.

4.2 Claim 1 of the application defines, in addition, one or more coordinate sensing devices, fixed to said apparatus in known positional relation to said structure in said substantially rigid configuration, for generating position signals in response to

externally applied magnetic fields, which signals are indicative of the positions of said electrophysiological sensors in said substantially rigid configuration.

4.3 Such coordinate sensing devices are well known in the art, however, as exemplified by document D4. This was put to the appellant's representative and not disputed by him. The representative argued instead that the combination of the teachings of D3 and D4 would give knowledge of the position and orientation of the distal end of the catheter but not of the individual electrodes on the arms, since the latter would not have a substantially rigid configuration of known shape and orientation relative to the distal end of the probe. However, this argument is not valid for the reasons given in point 3.0 above.

4.4 Since these additional features of claim 1 amount to the use of a well-known device for its known purpose in the application, claim 1 is not considered to involve an inventive step.

For the above reasons claim 1 of the main and first auxiliary requests, which encompasses the embodiments of Figures 11A and 11B, does not involve an inventive step.

5. *Inventive step second auxiliary request*

As shown above, because the arms of the Figure 11 embodiment of the application are free, the electrodes they support are movable relative to each other when

they are perturbed from their "free space" positions upon deployment in the heart.

By contrast, if the arms have no free ends, and instead the electrodes are carried on a closed carrier, then the carrier configuration becomes more stable and the electrodes are less prone to being perturbed when the carrier interacts with the heart wall. This is indicated in the paragraph commencing on page 5, line 8 of the application.

Thus, the structure described with reference to Figures 1 and 6 of the application, which is ring-shaped, is clearly more stable against such perturbations. Moreover, it has the advantage of being easy to manufacture as compared with other prior art structures involving basket and such-like shapes.

Since the prior art does not teach the use of a substantially rigid ring configuration in the present context, claim 1 of the second auxiliary request involves an inventive step.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.

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

   - Claims 1 to 6 filed at the oral proceedings (second auxiliary request)

   - Description pages 1, 24, 26, 27, 30, 33, 34, 45 as published

   - Description pages 2, 3, 9, 10, 25 as filed with the letter of 31 July 2006

   - Description pages 4 to 8, 21 to 23, 28, 29, 31, 32, 35 to 44, 46 to 48 filed at the oral proceedings

   - Figures 1 to 18B as published.

The Registrar The Chairman

V. Commare T. K. H. Kriner