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D E C I S I O N
of 14 April 1997

Case Number: T 0712/93 - 3.2.2

Application Number: 84901489.9

Publication Number: 0137040

IPC: A61F 2/30

Language of the proceedings: EN

Title of invention:
Ball and socket bearing for artificial joint

Patentee:
JOINT MEDICAL PRODUCTS CORPORATION (a Delaware corporation)

Opponent:
SULZER Medizinaltechnik AG
Waldemar Link GmbH & Co.

Headword:
-

Relevant legal provisions:
EPC Art. 54

Keyword:
"Novelty (yes) - after amendment"

Decisions cited:
T 0820/92, T 0082/93

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0712/93 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 14 April 1997

Appellant: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 4 June 1993 revoking European patent No. 0 137 040 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: H. J. Seidenschwarz
Members: D. Valle
C. Holtz

137

Summary of Facts and Submissions

I. The appellant (proprietor of the patent) lodged a notice of appeal received on 29 July 1993 against the decision of the opposition division to revoke European patent No. 137 140 dispatched on 4 June 1993. The statement setting out the grounds of appeal was received on 1 October 1993.

The fee for appeal was paid on 29 July 1993.

The Opposition Division had held that the grounds for opposition mentioned in Article 100(a) EPC prejudiced the maintenance of the patent for lack of novelty having regard to either of:

(11) US-A-3 683 421 or:

(13) US-A-3 818 512.

During the appeal proceeding following document was also cited:

(A1) Affidavit of Mr. Howard M. Martinie.

II. An oral proceeding was held on 14 April 1997.

(i) The appellant requested that the decision under appeal be set aside, that novelty be acknowledged for any one of the four sets of claims submitted with the statements of grounds for the appeal dated 30 September 1993 (main and second to fourth submission) and that the case be remitted to the first instance for further prosecution of the outstanding matters.

The Respondents requested that the appeal be dismissed.

(ii) Claim 1 of the main submission reads as follows:

Apparatus for use as the socket portion (12, 64, 74) of a prosthetic ball and socket joint (10, 12, 16, 18, 64, 74) whose ball portion (10, 16, 18) includes a ball (10) and a neck (16), the apparatus comprising:

(a) a bearing (12) for receiving the ball (10) of the ball portion of the joint, said bearing (12) having an outer surface (22), an inner surface (21), and a rim (26) connecting the outer and inner surfaces (22, 21), the bearing being adapted so that when the ball (10) of the ball portion (10, 16, 18) of the joint is received therein it is movable within the bearing (12) such that the neck (16) can contact the rim (26) of the bearing (12);

(b) fixation means (64) for attachment to a bony structure, said fixation means (64) having a cavity for receiving the bearing (12); and

(c) means (68, 70, 74, 78, 80) for securing the bearing (12) to the fixation means (64) in any one of a plurality of selectable, physiologically functional orientations relative to the fixation means after the fixation means (64) has been attached to the bony structure, said plurality of selectable orientations being angularly displaced from one another about a first axis, the bearing (12) being non-symmetric with regard to rotation about the first axis and said lack

of symmetry making at least one of the selectable angular orientations of the bearing (12) more preferred for physiological reasons than others of said angular orientations, said means for securing (68, 70, 74, 78, 80) allowing said bearing (12), after having been fully received in said cavity, to be: (1) rotated within the cavity about the first axis from any one of said plurality of selectable angular orientations to any other one of said plurality of selectable orientations independently of the angular orientation of the neck (16), and (2) releasably locked to the fixation means (64) in any one of said plurality of selectable angular orientations, whereby the bearing (12) can be rotated to a more preferred selectable orientation and releasably locked to the fixation means (64) in that orientation after the fixation means (64) has been attached to the bony structure and after the bearing (12) has been fully received in the fixation means' (64) cavity, said non-symmetry of the bearing (12) about the first axis being such that the angular distance between the first axis and the rim (26) of the bearing (12) is smaller in at least one first direction than in at least one other direction, the orientation of the at least one first direction with respect to the anatomy of the patient's body making the at least one selectable angular orientation of the bearing (12) more preferred for physiological reasons than others of said angular orientations.

Claim 1 of the second submission contains three added features as follows:

In the preamble to the claim: "said apparatus being usable with the ball (10) and neck (16) of conventional femoral prostheses (10, 16, 18)"

in part (a): "said bearing's (12) connection with the femoral prosthesis (10, 16, 18) in the assembled joint (10, 12, 16, 18, 64, 74) being solely through contact of the inner surface (21) with the ball (10) and contact of the rim (26) with the neck (16)", and

in part (c) "(1) rotated in either direction without limit within the cavity about the first axis from any one of said plurality of selectable angular orientations to any other of said plurality of selectable orientations independently of the angular orientation of the neck (16), and (2)"

Claim 1 of the third submission corresponds substantially to claim 1 of the main submission with the further added feature in part (c) that there are "at least six selectable angular orientations" for the bearing (12).

Claim 1 of the fourth submission is a combination of claims 1 to 3 as granted including the qualifying amendments of "received" to "fully received".

(iii) In the oral proceedings and in their written submissions the parties argued as follows:

- with respect to Articles 84, 123(2) and 52(4) EPC:

The Appellant:

Having regard to Article 84 EPC the appellant argued that the person skilled in the art could examine a prosthesis having a bearing and a fixation means while the prosthesis was outside the patient's body and determine wether or not its bearing had a plurality of physiologically functional orientations. It would be evident to the person skilled in the art whether a relative angular orientation was physiologically functional or not. This feature as well as all the other features objected to by the respondent were all clearly disclosed in the description of the application as filed, in particular at pages 21, 23, 24, 29 and 31.

The submission that the claims 1 did not comply with Article 52(4) EPC was incorrect since in the claims in suit an apparatus and no method steps were claimed.

The Respondents:

The feature "physiologically functional orientations" in part (c) of claim 1 according to the main, first and second submission was unclear, since it did not describe a prosthetic ball and socket joint but the relationship with the anatomy of the human body, and since the description of the patent in suit did not contain any definition of this feature. Therefore this feature could not be directly and unambiguously derived from the application as filed.

Furthermore the new claims contained the following features which were not disclosed in the application as filed: that the neck could contact the rim of the bearing; that the bearing could be rotated independently from the angular orientation of the neck; a conventional femoral prosthesis; the bearing's connection with the femoral prosthesis...and contact of the rim with the neck; there were at least six selectable angular orientations, the bearing after having been fully received in the cavity of the fixation means could be rotated in any one of the selectable angular orientations.

With respect to the definition of the preferred orientation of the bearing ("physiologically functional orientation relative to the fixation means") in part (c) of the claims according to the first, second and third submission and the definition of said orientation at the end of all claims 1 (the orientation of the at least...than others of said angular orientations") the claims did not comply with Article 52(4) EPC either, since these definitions contained a method step for treatment of the human body by surgery which step depended on the professional decision by a surgeon. According to the decision T 820/92 (OJ EPO 1995, 113) and T 82/93 (OJ EPO 1996, 274), a claim was not allowable if it included at least one feature defining a physical activity or action which constituted a method for treatment of the human body.

- with respect to Article 54 EPC;

The Appellant:

Neither document (11) nor document (13) disclosed an apparatus in accordance with the subject-matter of any of the claims according to the four requests. In particular the apparatus according to document (11) differed in at least three features from the claimed subject-matter as confirmed in document (A1) presented by the inventor of the known apparatus.

The Respondents:

The subject-matter of the claims 1 were not new with respect to document (11) and (13). Both document (11) and the patent in suit disclosed a plurality of possible orientations of the bearing, whereas only one of them was physiologically advantageous. The three screws securing the bearing to the fixation means were a clear hint that the prosthetic ball could held different positions and that the bearing was able to rotate freely after being fully inserted in the cavity of the fixation means. Document (A1) cited with respect to document (11) only contained the opinion of a person which was not supported by any evidence and should therefore be disregarded. The two embodiments of the apparatus according to document (13) comprised a fixation means in which an asymmetrical bearing can be fitted together with a prosthetic ball and socket joint, cut outs in the bearing allowed a free rotation of the ball as long as a security ring had not yet been fastened to the bearing. There

was nothing which could prevent this ring to be unfastened for rotating the ball followed by a renewed fastening of the ring.

Neither the addition of the word "fully" in the feature: "after being received in said cavity" nor the addition of the word "releasably" in the feature "locked to the fixation means" made the subject matter new over the prior art as known from the above cited documents.

Reasons for the Decision

1. The appeal is admissible

2. *Amendments*

2.1 Each of the claims 1 according to the main, first and second submission contains in part (c) the amended feature that "said means for securing (68, 70, 74, 78, 80) allowing said bearing (12), after having been fully received in said cavity, to be: 1) rotated within the cavity about the first axis from any one of said plurality of selectable angular orientations independently of the angular orientation of the neck (16), ...".

This feature is in contradiction with the embodiment according to figure 17 and the corresponding passages in the description. Figure 17 shows that when the neck of the ball portion contacts the rim of the bearing in its lowest position, the bearing itself cannot rotate from the position depicted in this figure, it being prevented therefrom by the presence of the lip (130). This means that the bearing cannot rotate independently

of the angular orientation of the neck, as required in this feature. This contradiction makes the claims unclear.

Therefore, these claims do not comply with Article 84 EPC, hence neither of the first second or third submissions are allowable.

Given this outcome, the further objections raised by the respondents as regards these submissions need not be discussed.

2.2 Claim 1 of the fourth submission is an amalgamation of the claims 1 to 3 of the patent as granted including the amendments of "received" to "fully received", of "locked" to "releasably locked" and of "first direction" to "at least one first direction".

These amendments were not objected to by the respondents. The Board agrees with the conclusions as set out in the decision under appeal that the amendments comply with the requirements of Article 123 EPC.

With respect to the objections raised by the respondents, that the feature that the bearing after being fully received in the cavity of the fixation means can rotate in any one of the selectable angular orientations, it is referred to figures 7, 8, 10, 16, 17, 19, 20, 22, 23, 25 of the application as filed and respectively to the figures 2, 3, 5, 7, 8, 10, 11, 13, 14, 16 and 19 of the patent as granted and to the corresponding description of these figures.

Claim 1 of the fourth submission therefore meets the requirements of Article 123 EPC.

3. *Article 52(4) EPC*

Claim 1 of the fourth submission is directed to an apparatus, which is defined partly by functional features. This way of defining the scope of protection is allowable in so far as it meets the conditions under the EPC and is necessary in order to give the applicant adequate protection. The fact that some features are functional does not in itself transform the claim into a method claim. The claims in the cited decisions, T 820/92 and T 82/93 differ from the present claims in that they were worded as pure method claims. In the latter case the applicant had sought to transform them into product claims, which under the particular circumstances in that case was found contrary to Article 123(3) EPC. Decision T 820/92 only concerned the compliance with Article 52(4) EPC of the method claims in issue. In the present cases no change of category has been requested, nor is the claim worded as a method claim. Consequently the claims comply with Article 52(4) EPC.

4. *Novelty of the subject-matter of the forth submission*

4.1 Document (11) discloses an apparatus for use as the socket portion of a prosthetic ball and socket joint, whose ball portion includes a ball (34) and a neck (30), the apparatus comprising:

(a) a bearing (70) for receiving the ball portion of the joint, said bearing having an outer surface, an inner surface (80), and a rim connecting the outer and inner surfaces;

(b) fixation means (60) for attachment to a bony structure, said fixation means having a cavity for receiving the bearing (70); and

(c) means (flange (64) and the corresponding flange (74) on the bearing (70) and screws (76)) for securing the bearing (70) to the fixation means (60)in any one of a plurality of selectable orientations after the fixation means (60) has been attached to the bony structure, said plurality of selectable orientations being angularly displaced from one another about a first axis (axis 0-0, figure 1),

the bearing (70) being non-symmetric with regard to rotation about the first axis and said lack of symmetry making at least one of the selectable angular orientations of the bearing (70) more preferred for physiological reasons than others of said angular orientations (see description, column 3, lines 30 to 43), said means for securing allowing said bearing (70), after having been fully received in said cavity, to be: (1) rotated within the cavity about the first axis from any one of said plurality of selectable angular orientations to any other one of said plurality of selectable orientations, and (2) releasably locked to the fixation means (60) in any one of said plurality of selectable angular orientations, whereby the bearing (70) can be rotated to a more preferred selectable orientation and releasably locked to the fixation means (60) in that orientation after the fixation means (60) has been attached to the bony structure and after the bearing (70) has been fully received in the fixation means' cavity, said non-symmetry of the bearing (70) about the first axis being such that the angular distance between the first axis and the rim of the bearing (70) is smaller in at least one first direction (upwards in figure 1, whereby the angle to be considered is formed by the axis 0-0 and by the

line connecting a point in the axis with the border of the contact surface between ball (34) and bearing (70)) than in at least one other direction (downwards in figure 1), the orientation of the at least one first direction with respect to the anatomy of the patient's body making the at least one selectable angular orientation of the bearing (70) more preferred for physiological reasons than others of said angular orientations.

The subject-matter of claim 1 distinguishes from the teaching of Document (11) in that:

said means for securing comprises:

(a) a plurality of first projections associated with the bearing, said first projections being separated from one another by a plurality of first spaces;

(b) a plurality of second projections associated with the fixation means, said second projections being separated from one another by a plurality of second spaces: said first and second projections permitting the bearing to be received in and removed from the cavity in any one of a plurality of first positions and permitting the bearing to be rotated while fully received in the cavity about the first axis, said rotation of the bearing permitting the bearing to be moved from said any one of the plurality of first positions to any one of a plurality of second positions in which the bearing cannot be received in or removed from the cavity, said plurality of second positions comprising the plurality of selectable angular orientations of the bearing, the first and second projections being aligned with the

second and first spaces, respectively, in each of the first positions, the first projections passing under the second projections as the bearing is rotated about the first axis, and the first projections being engaged with the second projections in each of the second positions to retain the bearing in the cavity, and

(c) means for locking the bearing in said any one of the plurality of second positions".

4.2 Document (13) shows an apparatus for use as the socket portion of a prosthetic ball and socket joint comprising:

(a) a bearing (13) for receiving the ball portion of the joint, said bearing having an outer surface, an inner surface, and a rim connecting the outer and inner surfaces;

(b) fixation means (1) for attachment to a bony structure, said fixation means having a cavity for receiving the bearing; and

(c) means (16) for securing the bearing to the fixation means in any one of a plurality of selectable orientations after the fixation means has been attached to the bony structure, said plurality of selectable orientations being angularly displaced from one another about a first axis,

the bearing being non-symmetric with regard to rotation about the first axis and said lack of symmetry making at least one of the selectable angular orientations of the bearing more preferred for physiological reasons than others of said angular orientations, said means for

securing allowing said bearing, after having been fully received in said cavity, to be: (1) rotated within the cavity about the first axis from any one of said plurality of selectable angular orientations to any other one of said plurality of selectable orientations and (2) releasably locked to the fixation means in any one of said plurality of selectable angular orientations, whereby the bearing can be rotated to a more preferred selectable orientation and releasably locked to the fixation means in that orientation after the fixation means has been attached to the bony structure and after the bearing has been fully received in the fixation means' cavity.

The subject-matter of claim 1 distinguishes from this known apparatus in that the non-symmetry of the bearing about the first axis is such that the angular distance between the first axis and the rim of the bearing is smaller in at least one first direction than in at least one other direction, the orientation of the at least one first direction with respect to the anatomy of the patient's body making the at least one selectable angular orientation of the bearing more preferred for physiological reasons than others of said angular orientations, in addition to the feature in which the apparatus according to document (11) differs from this subject-matter.

4.3 Therefore the subject-matter of Claim 1 of the forth submission is novel.

5. The appellant has requested that the case be remitted to the first instance for examination of outstanding matters. The Board finds it appropriate as the appellant is entitled to two instances on these matters.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The claims of the main, second and third submissions filed with the statement of grounds of appeal, dated 30 September 1993 are refused.

3. Novelty is acknowledged for the subject-matter of the claims of the fourth submission filed with the statement of grounds.

4. The case is remitted to the first instance for further prosecution of outstanding matters.

The Registrar: The Chairman:

S. Fabiani H. Seidenschwarz