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D E C I S I O N
of 21 January 2003

Case Number: T 0814/00 - 3.2.2

Application Number: 96400844.5

Publication Number: 0739613

IPC: A61F 2/34

Language of the proceedings: EN

Title of invention:
Acetabulum cup for a total prosthesis of the hip

Applicant:
BENOIST GIRARD & Cie, et al

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Inventive step: no"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0814/00 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 21 January 2003

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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 23 March 2000 refusing European patent application No. 96 400 844.5 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: W. D. Weiß
Members: D. Valle

J. C. M. De Preter

Summary of Facts and Submissions

I. The appellants (applicants) filed an appeal against the decision of the examining division to refuse the application for lack of novelty having regard to the document:

D1: US-A-4 566 138.

II. The following further document cited in the decision under appeal is relevant for the decision:

D3: EP-A-404 680.

III. Following a provisional request of the appellants, oral proceedings have been summoned for the 3 April 2002. The appellants, however, with letter of 22 March 2002, declared that they would not attend the oral proceedings and requested that a decision be rendered on the basis of the submissions on file (main and three auxiliary requests). Subsequently the Board cancelled with order of 22 March 2002 the oral proceedings. On 4 June 2002 the Board sent a communication containing the provisional opinion that the main as well as the three auxiliary requests on file did not involve an inventive step having regard to the teaching of documents D1 and D3. The appellants answered with the letter of 14 October 2002, where they substantially restated his previous arguments and submitted an additional auxiliary (fourth) request. The Board then summoned for oral proceedings with communication of 6 November 2002 and gave its preliminary opinion that also the fourth request was not inventive having regard to the above cited documents.

IV. Oral proceedings have been held on 21 January 2003. The appellants did not attend the oral proceedings and informed the Office of their intent in advance with letter of 17 January 2003.

V. The final requests of the appellants, as contained in the letter of 14 October 2002, are that a patent be granted on the basis of the main or of one of the four auxiliary requests on file.

VI. Claim 1 of the main request as submitted with letter of 27 September 1999, reads as follows:

"Acetabulum cup (1) for a total prosthesis of the hip in the form of a spherical cup and having concentric surfaces, inside (2) and outside (3), defining between them a wall (7), characterized in that the convex outside surface comprises threaded blind holes (4, 4') having an axial length shorter than the thickness of the wall, the axis of said threaded blind holes (4, 4') intersect the axis of the cup and the orifices (5, 5'), through which the threaded blind holes (4, 4') emerge, form two rows, each distributed symmetrically on the outside surface (3) of the cup in a staggered arrangement with respect to each other".

Claim 1 of the first auxiliary request filed with letter of 22 December 2000, reads as follows (additions with respect to the main request are in italics):

"Acetabulum cup (1) for a total prosthesis of the hip in the form of a spherical cup and having concentric surfaces, inside (2) and outside (3), defining between them a wall (7), characterized in that the convex outside surface comprises threaded blind holes (4, 4')

having an axial length shorter than the thickness of the wall, the axis of said threaded blind holes (4, 4') intersect the axis of the cup and the orifices (5, 5'), through which the threaded blind holes (4, 4') emerge, form two rows, each distributed symmetrically on the outside surface (3) of the cup in a staggered arrangement with respect to each other, *the axis of the holes (4) of the first row with the axis of the cup (1) being about 55° and the axis of the holes (4') of the second row with the axis of the cup (1) being about 30°*".

The second and third auxiliary requests, filed with letter of 13 March 2002, contain a main claim 1, which reads, respectively, as follows:

"Acetabulum cup (1) for a total prosthesis of the hip in the form of a spherical cup and having concentric surfaces, inside (2) and outside (3), defining between them a wall (7), characterized in that the convex outside surface comprises threaded blind holes (4, 4') having an axial length shorter than the thickness of the wall, the axis of said threaded blind holes (4, 4') intersect the axis of the cup and the orifices (5, 5'), through which the threaded blind holes (4, 4') emerge, form two rows, each distributed symmetrically on the outside surface (3) of the cup in a staggered arrangement with respect to each other, *one or more threaded spikes (8, 8') are force fitted into the various threaded blind holes by inserting a threaded portion of the spike into said threaded blind holes, from the outside."*

"Acetabulum cup (1) for a total prosthesis of the hip in the form of a spherical cup and having concentric

surfaces, inside (2) and outside (3), defining between them a wall (7), characterized in that the convex outside surface comprises threaded blind holes (4, 4') having an axial length shorter than the thickness of the wall, the axis of said threaded blind holes (4, 4') intersect the axis of the cup and the orifices (5, 5'), through which the threaded blind holes (4, 4') emerge, form two rows, each distributed symmetrically on the outside surface (3) of the cup in a staggered arrangement with respect to each other*, the axis of the holes (4) of the first row with the axis of the cup (1) being about 55° and the axis of the holes (4') of the second row with the axis of the cup (1) being about 30°, one or more threaded spikes (8, 8') are force fitted into the various threaded blind holes by inserting a threaded portion of the spike into said threaded blind hole, from the outside."*

Claim 1 of the fourth auxiliary request filed with letter of 14 October 2002 reads as follows:

"1. Acetabulum cup (1) for a total prosthesis of the hip, in the form of a spherical cup and having concentric surfaces, inside (2) and outside (3), defining between them a wall (7), *the inside surface (2) contacting an insert*, characterized in that the convex outside surface comprises threaded blind holes (4, 4') having an axial length shorter than the thickness of the wall, the axis of said threaded blind holes (4, 4') intersect the axis of the cup and the orifices (5, 5'), through which the threaded blind holes (4, 4') emerge, form two rows, each distributed symmetrically on the outside surface (3) of the cup in a staggered arrangement with respect to each other, *one or more threaded spikes (8, 8') are force fitted into*

the various threaded blind holes by inserting a threaded portion of the spike into the threaded bore from the outside."

VII. The appellants submitted the following arguments:

The examining division did not warn the applicants about the impending refusal and therefore contravened the Guidelines for examination, C-VI, 4.3.
The feature in claim 1 of the main request that the blind holes formed two rows in a staggered arrangement was not disclosed by document D1. Certainly, document D1 contained the statement that any suitable arrangement of the spacers could be used. However, a generic disclosure did not take away the novelty of a specific disclosure, see Guidelines, C-IV, 7.4.

There was no motivation to combine the teaching of document D3 with the teaching of document D1. Document D1 related to a cup designed to be fixed to the bone by means of a cement, whereby the acrylic inserts in the holes of the cup had the function of spacers. On the contrary, the cup according to document D3 was designed to be fastened to the bone by means of spikes or screws, to be located in the holes of the cup, without cement.

In any case, a combination of the teaching of documents D1 and D3 did not take away the inventive step of claim 1 of the main request. The problem solved by document D1 had nothing to do with that of the invention, which consisted in avoiding migration of plastic particles generated from micromotion between the polyethylene insert and the inner surface of the metal shell. Document D1 did not suggest that the

apertures through the metal shell were undesirable. The cup of Figure 8 of document D1, see also column 6, lines 25 to 29, was all polyethylene and could not be used with metal spikes since the plastic could not provide sufficient support for the spikes during use. It did not appear that this cup was to be secured by means of screws or spikes, and still less that such screws or spikes could be fitted within the blind holes. According to document D1 only spacers were fitted into the blind holes.

Moreover, document D1 could not be regarded as the closest prior art. Document D3, cited in the patent application, was to be regarded as the nearest prior art, instead. However the apertures provided within the acetabulum cup of document D3 had a length equal to the thickness of the wall. Document D3 did not suggest the problem of the present invention. A combination of documents D3 and D1 would merely teach placing through holes in the outer shells, but not replacing through holes with blind holes as taught by the present invention.

The first auxiliary request contained a main claim 1 made of the original claims 1 and 4. The contested decision merely asserted that claim 4 was not searched. No objections were raised in connection with novelty and inventive step. Document D3 should be considered as the nearest prior art for the claim 1 of the first auxiliary request. The problem originating from document D3 was to avoid debris. There was no suggestion in document D1 to solve this problem.

Claim 1 of the second auxiliary request was a combination of claims 1 and 6 of the original

application. Document D1 did not disclose spikes force fitted in the blind holes. Starting from document D3, there was no reason to combine its teaching with that of document D1 in the form of the invention.

Claim 1 of the third auxiliary request was a combination of the features of claim 1 of the first and second auxiliary request.

Claim 1 of the fourth auxiliary request was supported by page 1, lines 24 to 28, and page 3, lines 34 to 36 of the original application. Document D3 was the closest prior art for claim 1 of the fourth auxiliary request, because it disclosed an insert. As explained above, there was no reason to combine the teaching of document D3 with that of document D1 in the form of claim 1 of the fourth auxiliary request.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 Novelty

Document D1 discloses am acetabulum cup for a total prosthesis of the hip in the form of a spherical cup and having concentric surfaces, inside and outside, defining between them a wall the convex outside surface of which comprises threaded blind holes having an axial length shorter that the thickness of the wall, the axis of said threaded blind holes intersecting the axis of the cup, see Figures 2 and 8.

Claim 1 differs therefrom in that the orifices, through which the threaded blind holes emerge, form two rows, each distributed symmetrically on the outside surface of the cup in a staggered arrangement with respect to each other.

Accordingly claim 1 is novel with respect to D1.

The statement in column 4, lines 27 to 31, of document D1 on which the appealed decision supports the novelty objection, does not really affect the novelty of the claim because such passage does not directly and unambiguously disclose two rows of holes.

2.2 Inventive step

Starting from document D1, the problem to be solved by the invention is to improve the implantation and fixation of the cup to the bone.

The problem is known from document D3, column 4, lines 49 to 58 which delivers also the solution according to the claimed invention.

Contrary to the assertion of the appellants, the person skilled in the field would combine the teachings of document D1 and document D3 in the way of the invention because both documents - like the invention - relate to acetabulum cups.

Contrary to the assertion of the appellants, the purpose of the invention can not be seen in avoiding migration of plastic particles generated from micromotion between a polyethylene insert and the metal cup because the invention does not claim a polyethylene

insert, see also description of EP-A-739 613, column 2, first paragraph. It is also irrelevant that the cup of document D1 cannot be used with metal spikes, because the claimed invention does not necessarily require metal spikes either.

Contrary to the assertion of the appellants, document D3 does not represent the nearest prior art for claim 1 of the main request. Document D3 discloses an acetabulum cup (1) and a plastic insert (14) intended to be accommodated on the inside of the cup in fixed relationship with it through the protrusion (17) to be inserted in the corresponding axial opening (6) of the cup. In contrast thereto, the invention extends also to the embodiments without insertion, see column 2 of EP-A-739 613, first paragraph, and claim 1. For such embodiments document D1 is more relevant, because it differs from the invention merely through the distribution of the holes.

Accordingly the subject-matter of claim 1 of the main request does not involve an inventive step having regard to the teaching of the documents D1 and D3.

3. *The auxiliary requests*

3.1 Formal matters

The Board sees no reasons to formally challenge the auxiliary requests. In particular the newly claimed subject-matter is originally disclosed in the claims and passages of the description cited by the appellants and reported in point VII of the facts and submissions.

3.2 Inventive step

The additional features of claim 1 of the first auxiliary request, specifying that the axis of the holes of the first and second row with respect to the axis of the cup are 55° and 30°, respectively, are disclosed in document D3, column 4, last paragraph, where it is said that the axis of the rows in relation to the plane of the spherical cup are 35° and 60°, respectively. Being the axis of the cup orthogonal to its plane, that means an inclination of the axis of the rows with respect to the axis of the cup of 90°-35° = 55° and 90°-60° = 30°.

Accordingly, the subject-matter of claim 1 of the first auxiliary request does not involve an inventive step having regard to the above cited documents D1 and D3.

Claim 1 of the second auxiliary request contains the additional method feature with respect to claim 1 of the main request that threaded spikes are force fitted into the holes of the claimed acetabulum cup. The feature is essentially known from document D1, column 3, lines 9 to 14, where is stated that spacers are force fitted into the complementary holes.

Accordingly, the subject-matter of claim 1 of the second auxiliary request does not involve an inventive step when starting from document D1 as the closest prior art and having regard to the teaching of document D3.

Even if document D3 was considered as the starting point for the test of nonobviousness for claim 1 of the second auxiliary request, this would lead to the same conclusion as above. Claim 1 differs from the teaching of document D3 essentially in that the treaded holes of

the known acetabulum cup are blind. In contrast thereto, the holes of the cup disclosed in document D3 are through holes, which has the consequence that said cup presents an irregular inside surface. Starting therefrom, the problem to be solved consists therefore in avoiding migration of debris formed by wear against the irregular inside surface of the cup, see EP-A-739 613, column 2, lines 6 to 9. It appears obvious, in order to provide a smooth internal surface, to replace the through holes of the cup of document D3 by blind ones, because blind holes like those of the invention are known in the field of acetabulum cups, see document D1, Figures 7 and 8.

Claim 1 of the third auxiliary request combines the features of claims 1 of the first and second auxiliary requests and therefore the same considerations as above apply to this claim.

Claim 1 of the fourth auxiliary request differs from claim 1 of the second auxiliary request by the additional feature that the inside surface of the cup contacts an insert. This feature is, however, also disclosed by document D3, Figures 4 to 6.

Accordingly, the subject-matter of all the claims 1 of the four auxiliary requests does not involve an inventive step having regard to the teaching of the documents D1 and D3.

4. *Further matters*

The appellants complain that they were not warned that the application would be refused after they had amended the claims and commented on the objections of the

examining division with a view to overcome them.

The examining division issued a communication on 18 May 1999 objecting that the features of claims 1 to 5 were known from document D1 and that also the claims 2 to 6 did not contain features representing an inventive step with respect to documents D1 and D3. The newly submitted claims on which the decision is based comprises a new claim 1 made of the original features contained in claims 1 to 3 (in part) for which the examining division had expressed the objection of lack of novelty and inventive step.

When incorporating claims 1, 2 and part of claim 3 in claim 1 the appellants should have been aware from the earlier communication that the examining division would consider also such claims as not novel or not inventive, so that they were sufficiently warned that even after that amendment the application could be refused.

As to the appellants comments on the first communication, the examining division had no obligation to issue a second communication if the appellants response failed to convince it. In that respect the examining division has a discretionary power which does not appear to have been exercised in an unreasonable way. Nor does it appear that the decision was essentially based on grounds which the appellants had no opportunity to comment.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

V. Commare W. D. Weiß