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**Datasheet for the decision
of 9 March 2022**

Case Number: T 2302/17 - 3.2.08

Application Number: 10188227.2

Publication Number: 2444028

IPC: A61C1/08, A61C9/00

Language of the proceedings: EN

Title of invention:

A method of providing a patient-specific dental fixture-mating arrangement

Patent Proprietor:

Dentsply IH AB

Opponent:

Nobel Biocare Services AG

Relevant legal provisions:

EPC Art. 56, 84

RPBA Art. 12(4)

RPBA 2020 Art. 13(2)

Keyword:

Inventive step - main request (no) - 4th auxiliary request (no)
- 6th auxiliary request (no) - 7th auxiliary request (yes)
Claims - clarity (no) - 1st to 3rd auxiliary requests (no) -
5th auxiliary request (no) - 5a auxiliary request (no)
Amendment after summons - taken into account (no)



Beschwerdekammern

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Case Number: T 2302/17 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 9 March 2022

Appellant: Nobel Biocare Services AG
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted on 9 August 2017
rejecting the opposition filed against European
patent No. 2444028 pursuant to Article 101(2)
EPC.

Composition of the Board:

Chairwoman P. Acton
Members: C. Vetter
F. Bostedt

Summary of Facts and Submissions

- I. The appeal was filed by the opponent (appellant) against the decision of the opposition division to reject the opposition filed against the patent in suit.
- II. The opposition division had decided, *inter alia*, that:
- (1) the subject-matter of the claims as granted was novel and involved an inventive step
- (2) the patent disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art
- III. Oral proceedings were held before the Board.
- IV. The appellant (opponent) requested that the decision under appeal be set aside and that European patent No. 2 444 028 be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed and that the patent be maintained as granted (main request), alternatively, that the patent be maintained according to one of the 1st to 9th auxiliary requests re-filed with the reply to the statement setting out the grounds of appeal on 16 April 2018 which had been filed during the opposition proceedings on 20 January 2017.

- V. Claim 1 of the main request reads as follows (feature designation in square brackets added by the Board):

[1] A method of providing a patient-specific dental fixture-mating arrangement, the method comprising:

[1.1] - determining, for an implantation site at the maxilla or mandible in which a dental fixture (2, 122, 200, 300, 400, 500) having first indexing means (6, 126, 214, 302, 402a, 402b, 402c, 502) has been or will be inserted,

[1.1.1] an inclination of the fixture relative to the jawbone and

[1.1.2] the rotational orientation of said first indexing means relative to the jawbone,

[1.2] - determining, based on the determined inclination of the fixture and rotational orientation of said first indexing means,

[1.2.1] a shape of a first portion (16", 258) of a dental fixture-mating arrangement (8", 118, 250, 350, 450, 550, 570) and

[1.2.2] the rotational orientation of said first portion relative to the fixture,

[1.3] - providing a dental fixture-mating arrangement which comprises

[1.3.1] a fixture engaging second portion (14, 256, 352) having second indexing means (20", 124, 260, 358, 360, 452a, 452b, 452c, 552, 572) which can only mate with said first indexing means in one rotational position of the second portion relative to the fixture, and

[1.3.2] a first portion having said determined shape and being in such a rotational position relative to said second indexing means so that said determined rotational orientation of the first portion is obtained when the fixture engaging second portion of the dental fixture-mating arrangement is connected to the dental fixture.

Claim 1 according to the 1st auxiliary request differs from claim 1 of the main request in that the determination step of feature **[1.1]** further comprises

determining the height/depth of the first indexing means relative to the jawbone (feature **[1.1.3]**).

Claim 1 according to the 2nd auxiliary request differs from claim 1 of the 1st auxiliary request in that only the depth is determined in feature **[1.1.3']**.

Claim 1 according to the 3rd auxiliary request differs from claim 1 of the 2nd auxiliary request in that the depth, determined in feature **[1.1.3']**, is used for determining the shape and rotational orientation of the first portion in feature **[1.2]**.

Claim 1 according to the 4th auxiliary request differs from claim 1 of the main request in that the dental fixture in feature **[1.1]** is a *subgingival* dental fixture.

The 5th auxiliary request is a combination of the 2nd and 4th auxiliary requests.

The 5a auxiliary request is a combination of the 3rd and 4th auxiliary requests.

Claim 1 according to the 6th auxiliary request differs from claim 1 of the main request in that the following feature is added at the end of the claim: "wherein said second indexing means is provided as protrusions at the fixture engaging second portion of the dental fixture-mating arrangement, so that said second indexing means can only mate in a single rotational orientation with said first indexing means which is provided as matching receiving recesses" (feature **[1.4]**).

Claim 1 according to the 7th auxiliary request differs from claim 1 of the main request in that the

alternative "has been inserted" is deleted from feature [1.1].

VI. In the present decision, reference is made to the following documents:

D1: US 2009/0162813 A1

D3: US 6,788,986 B1

D5: WO 2009/149881 A1

D10b: US 2009/0305190 A1

VII. The appellant's arguments relevant to the present decision can be summarised as follows.

Admission of line of attack D3 in combination with D10b

The appellant did not put forward any arguments.

Main request - inventive step

Starting from D3 as the closest prior art, the subject-matter of claim 1 of the main request was rendered obvious by D10b.

1st to 3rd auxiliary requests - clarity

If the first indexing means was a recess, it not only had a depth along the axial extension of the dental fixture (axial depth) but also a depth in its radial direction (radial depth). The claim language left open which depth was to be determined in feature [1.1.3]. Therefore, claim 1 was not clear within the meaning of Article 84 EPC.

4th auxiliary request - inventive step

Amended feature **[1.1]** did not require that the dental fixture be *subgingivally implanted*, so that the amendment to claim 1 according to the 4th auxiliary request did not result in an additional distinguishing feature over D3.

5th auxiliary request - clarity

The depth of the bore hole is different from the depth of the indexing means. Claim 1 of the 5th auxiliary request does not specify whether in feature **[1.1.3']** the depth to be determined is the *axial* or the *radial* depth.

5a auxiliary request - clarity

The amendments to claim 1 of the 5a auxiliary request did not render the claim clear.

6th auxiliary request - inventive step

D3 disclosed in Figures 8a and 8b that the second positioning elements 16 were protrusions at the fixture engaging second portion of the dental fixture-mating arrangement. Hence, the additional feature **[1.4]** is not a distinguishing feature over D3.

7th auxiliary request - admission of new line of attack

The respondent had accepted the new line of attack against the 7th auxiliary request based on D3, column 7, lines 6 to 17, in its reply to appeal, so it should be admitted into the proceedings.

7th auxiliary request - inventive step

The subject-matter of claim 1 was rendered obvious by D1 in combination with D5 or D10b or by the combined teachings of D3 and D5 or D10b.

VIII. The respondent's arguments relevant to the present decision can be summarised as follows.

Admission of line of attack D3 in combination with D10b

The new inventive-step attack starting from D3 and combining it with D10b had not been presented during the opposition proceedings although it could have been. Therefore, it should not be admitted into the proceedings.

Main request - inventive step

Starting from D3 as the closest prior art, the objective technical problem was improving the long-term functionality of the prosthesis. D10b did not link single indexing to improved functionality, so the subject-matter of claim 1 of the main request was not rendered obvious by D10b.

1st to 3rd auxiliary requests - clarity

If the claim was read with a mind willing to understand, it was clear that the depth to be determined in feature **[1.1.3]** was the depth along the axial extension of the dental fixture (axial depth). Therefore, claim 1 was clear within the meaning of Article 84 EPC.

4th auxiliary request - inventive step

The dental fixture in feature **[1.1]** being a *subgingival* dental fixture led to a limitation with respect to the methods suitable for determining the inclination of the fixture and the rotational orientation of the first indexing means. For example, an impression model could not be used for this purpose.

5th auxiliary request - clarity

Paragraph [0015] of the patent specified that the depth of the bore hole is determined. Therefore, feature **[1.1.3']** was to be construed to mean that the *axial* depth of the indexing means relative to the jaw bone is to be determined.

5a auxiliary request - clarity

The radial depth of the first indexing means would not affect the shape to be determined in features **[1.2]** and **[1.2.1]**. Consequently, it was clear that the depth to be determined in feature **[1.1.3']** was the axial depth.

6th auxiliary request - inventive step

The respondent did not put forward any arguments.

7th auxiliary request - admission of new line of attack

The new line of attack against the 7th auxiliary request based on D3, column 7, lines 6 to 17 was presented for the first time during oral proceedings. It represented an amendment to the appellant's case and was not to be admitted into the appeal proceedings.

7th auxiliary request - inventive step

D3 required the fixtures to be installed in the bone *before* the auxiliary elements are attached and a determination can be made. Since amended feature **[1.1]** required that the dental fixture *will be* inserted into the jawbone, amended feature **[1.1]** was a distinguishing feature over D3 not rendered obvious by any of the other cited documents.

Reasons for the Decision

1. Admission of line of attack of D3 in combination with D10b
 - 1.1 Documents D3 and D10b had both been discussed in opposition proceedings. Also, an inventive-step attack starting from D10b and using D3 as a reference document had been presented during oral proceedings before the opposition division.
 - 1.2 The line of attack starting from D3 in combination with D10b was presented at the earliest possible stage in the appeal proceedings, namely with the statement setting out the grounds of appeal. This line of attack is a valid reaction of the losing party.
 - 1.3 Therefore, the line of attack is not excluded from the proceedings under Article 12(4)RPBA 2007.
2. Main request - inventive step
 - 2.1 It is undisputed that D3 discloses all features of claim 1 of the main request except the feature according to which the second indexing means can only mate with the first indexing means in one rotational orientation (see reply to appeal, page 7, penultimate paragraph).
 - 2.2 The technical effect of this distinguishing feature is that the prosthesis cannot be misoriented.

The objective technical problem, therefore, can be seen in mitigating the risk of a dentist positioning a prosthesis with a rotational orientation other than

what is intended by the dental technician (patent, paragraph [0006]).

- 2.3 The respondent argued that this formulation of the problem included a pointer to the claimed solution.

However, the claimed solution requires that the second indexing means can only *mate* with the first indexing means in one rotational orientation. The above problem does not point to the direction of mating elements. In fact, the formulation of the problem leaves it open as to how the risk of misorienting the prosthesis is mitigated. Thus, various solutions are conceivable, such as the provision of markings or the use of templates.

- 2.4 The respondent further argued that the objective technical problem had to be formulated as improving the long-term functionality of the prosthesis.

Long-term functionality, however, is a property that depends on multiple factors and first and foremost on material characteristics. Moreover, the respondent was not able to demonstrate any relationship with the distinguishing feature. The problem formulated by the respondent, therefore, is not based on the effect of the distinguishing feature, contrary to the principles of the problem-and-solution approach.

- 2.5 Document D10b addresses the above problem in paragraph [0011], last sentence and paragraph [0012]. It states that indexing means are known in the prior art (D10b, paragraph [0006]; Figure 2), for example in the form of recesses 14 on the fixture 2 (first indexing means) and protrusions 15 on the abutment 3 (second indexing means). D10b suggests, as a solution to the problem,

using indexing means with only one positional possibility, i.e. which can only mate in one rotational position (D10b, paragraph [0013]).

2.6 The subject-matter of claim 1 of the main request is thus rendered obvious by the combination of D3 with D10b (Article 56 EPC).

3. 1st to 3rd auxiliary requests - clarity

3.1 In claim 1 of the 1st auxiliary request, an additional feature is added according to which the determination step of feature **[1.1]** further comprises determining the height/depth of the first indexing means relative to the jawbone (feature **[1.1.3]**).

3.2 The respondent argued that with a mind willing to understand, feature **[1.1.3]** was to be interpreted as the height or depth above or below the jawbone.

However, as stressed by the appellant, if the first indexing means is a recess, it not only has a depth along the axial extension of the dental fixture (axial depth) but also a depth in its radial direction (radial depth). The wording of the claim leaves it open which depth is to be determined in feature **[1.1.3]**.

3.3 Therefore, claim 1 of the 1st auxiliary request is not clear within the meaning of Article 84 EPC.

3.4 The same conclusion applies to each of the 2nd and 3rd auxiliary requests since the feature of determining the depth of the first indexing means relative to the jawbone (feature **[1.1.3']**) is present in claim 1 of each of these requests.

4. 4th auxiliary request - inventive step

4.1 In claim 1 of the 4th auxiliary request, the dental fixture in feature **[1.1]** is specified as a *subgingival* dental fixture.

4.2 The respondent argued that this amendment led to a limitation with respect to those methods which are suitable for determining the inclination of the fixture and the rotational orientation of the first indexing means. For example, an impression model could not be used for subgingival dental fixtures.

Regarding the step of determining the inclination of the fixture and the rotational orientation of the first indexing means (features **[1.1]**, **[1.1.1]** and **[1.1.2]**), D3 does not use an impression model but instead a three-dimensional recording arrangement such as a scanner (D3, column 7, lines 44 to 52; Figure 11). A scanner will work in the same way, irrespective of whether it is applied to a transgingival or a subgingival dental fixture.

The remaining method steps of claim 1 are not related to the dental fixture's position with respect to the gingiva. In fact, features **[1.2]**, **[1.2.1]** and **[1.2.2]** pertain to the determination of the shape and rotational orientation of a first portion of a dental fixture-mating arrangement, and features **[1.3]**, **[1.3.1]** and **[1.3.2]** pertain to the provision of the dental fixture-mating arrangement. Therefore, the amendment to claim 1 according to the 4th auxiliary request does not result in an additional distinguishing feature over D3.

Hence, for the claimed method it makes no difference whether the dental fixture is a subgingival dental

fixture as claimed or a transgingival as disclosed in D3.

4.3 It follows that the reasoning regarding the lack of inventive step of the main request (see above point 2.) applies equally to claim 1 of the 4th auxiliary request.

5. 5th auxiliary request - clarity

5.1 The 5th auxiliary request is a combination of the 2nd and 4th auxiliary requests. That is, the dental fixture in feature [1.1] is a *subgingival* dental fixture, and the determination step in feature [1.1] further comprises determining the depth of the first indexing means relative to the jawbone (feature [1.1.3']).

5.2 The respondent argued that paragraph [0015] of the patent specified that the depth of the bore hole is determined, so that feature [1.1.3'] was to be construed to mean that the *axial* depth of the indexing means relative to the jawbone is to be determined.

However, as stressed by the appellant, the depth of the bore hole is different from the depth of the indexing means. Similar to claim 1 of the 1st to 3rd auxiliary requests, claim 1 of the 5th auxiliary request does not specify whether in feature [1.1.3'] the depth to be determined is the axial or the radial depth.

Consequently, claim 1 of the 5th auxiliary request suffers from the same lack of clarity as claim 1 of the 1st to 3rd auxiliary requests (see point 3. above).

6. 5a auxiliary request - clarity

6.1 Claim 1 of the 5a auxiliary request differs from claim 1 of the 5th auxiliary request in that the determination step in feature **[1.2]** is further based on the determined depth of the first indexing means.

6.2 The respondent argued that the radial depth of the first indexing means would not affect the shape to be determined in features **[1.2]** and **[1.2.1]**. Therefore, according to the respondent, it was clear that the depth to be determined in feature **[1.1.3']** was the axial depth.

According to features **[1.2]** and **[1.2.1]**, a shape of a *first* portion of a dental fixture-mating arrangement is determined. This *first* portion, however, is to be distinguished from the fixture engaging *second* portion (feature **[1.3.1]**). The shape of the fixture engaging *second* portion, or the second indexing means provided there, might indeed be influenced by the depth of the first indexing means in order that the second indexing means can mate with it (feature **[1.3.1]**). However, the *first* portion is the opposite part of the dental fixture-mating arrangement, namely the prosthesis-receiving part of the dental fixture-mating arrangement or the prosthesis itself (patent, paragraphs [0026] to [0028]). This part of the dental fixture-mating arrangement is independent of the depth of the first indexing means. Amended feature **[1.2]**, therefore, does not allow coming to any conclusion on which depth is to be determined in feature **[1.1.3']**. Consequently, claim 1 of the 5a auxiliary request suffers from the same lack of clarity as claim 1 of the 1st to 3rd auxiliary requests (see above point 3.).

- 7. 6th auxiliary request - inventive step
 - 7.1 Claim 1 of the 6th auxiliary request contains an additional feature **[1.4]** according to which the second indexing means is provided as *protrusions* at the fixture engaging second portion of the dental fixture-mating arrangement, so that the second indexing means can only mate in a single rotational orientation with the first indexing means provided as matching receiving *recesses*.
 - 7.2 As stressed by the appellant, D3 discloses in Figures 8a and 8b, and the corresponding description in column 10, lines 29-33, rotation preventing positioning elements 16.1 to 16.4, which project outward. Hence, D3 discloses that the second positioning elements 16 are protrusions at the fixture engaging second portion of the dental fixture-mating arrangement. According to D3, column 6, lines 23 to 28, the second positioning elements 16 are designed complementary to the first positioning elements 14 of the implant. That is, D3 further discloses that the first indexing means of the dental fixture is provided as matching receiving recesses. The additional feature **[1.4]**, therefore, is not a distinguishing feature over D3.
 - 7.3 It follows that the reasoning about inventive step of the main request (see above point 2.) applies equally to claim 1 of the 6th auxiliary request.
- 8. 7th auxiliary request - admission of new line of attack
 - 8.1 During oral proceedings, the appellant presented a line of attack against the 7th auxiliary request based on D3, column 7, lines 6 to 17. The respondent requested

that this line of attack not be admitted into the appeal proceedings.

- 8.2 The appellant argued that the respondent had accepted this line of attack in its reply to appeal.

However, as noted by the respondent, the statement setting out the grounds of appeal did not contain an attack against the 7th auxiliary request based on D3, column 7, lines 6 to 17. In fact, the statement setting out the grounds of appeal focused on D1 in combination with D5 or D10b and concluded that the subject-matter of claim 1 of the 7th auxiliary request was rendered obvious by that combination. At the end of the reasoning regarding inventive step of 7th auxiliary request, it was merely stated that this reasoning also applied to the combined teachings of D3 and D5 or D10b - without providing any further details. The respondent, therefore, was neither put in a position to deal with, nor could it "accept", an attack based on the above-mentioned passage of D3, cited for the first time during oral proceedings.

Therefore, this line of argument has to be considered an amendment to the appellant's appeal case, and its admission is governed by Article 13(2) RPBA 2020.

- 8.3 The appellant did not put forward any exceptional circumstances which could have justified the late attack against the 7th auxiliary request. It is therefore not admitted into the proceedings pursuant to Article 13(2) RPBA 2020.

9. 7th auxiliary request - inventive step
- 9.1 In feature **[1.1]** of claim 1 of the 7th auxiliary request, the expression "has been or" is deleted. Consequently, claim 1 of the 7th auxiliary request pertains to a method where the dental fixture is not yet but *will be* inserted into the jawbone.
- 9.2 The respondent argued that D3 required the fixtures to be installed in the bone *before* the auxiliary elements are attached and a determination can be made. Since this alternative was deleted from the claim, amended feature **[1.1]** was a distinguishing feature over D3.
- 9.3 The appellant did not argue against this interpretation of D3. Furthermore, it neither formulated an objective technical problem based on amended feature **[1.1]** as an additional distinguishing feature over D3, nor provided arguments why the distinguishing features were obvious taking into account the teachings of D5 or D10b.
- 9.4 The appellant stated that the subject-matter of claim 1 of the 7th auxiliary request was rendered obvious by D1 in combination with D5 or D10b. It referred to paragraphs [0004], [0149] and [0161] of D1 and argued that D1 disclosed improved methods for automatic dental implant planning based on biomechanical, aesthetic and functional considerations (D1, paragraph [0004]). In one step, implants were chosen from a library (D1, paragraph [0149]) before planning the remaining prosthesis (D1, paragraph [0161]). However, the appellant did not refer in D1 to any specific feature of claim 1 of the 7th auxiliary request and, consequently, did not identify the distinguishing features. Furthermore, the appellant neither formulated an objective technical problem nor demonstrated why the

distinguishing features were obvious taking into account the teaching of D5 or D10b.

9.5 The appellant's argument regarding inventive step of the 7th auxiliary request, therefore, is not convincing. Hence, from the facts and arguments on file, it is to be concluded that the claims according to the 7th auxiliary request meet the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

The decision under appeal is set aside. The case is remitted to the opposition division with the order to maintain the patent on the following basis:

- Claims 1 to 12 according to the 7th auxiliary request and a description to be adapted

The Registrar:

The Chairwoman:



C. Moser

P. Acton

Decision electronically authenticated