



(51) International Patent Classification:

A61C 8/00 (2006.01) A61C 13/00 (2006.01)

(21) International Application Number:

PCT/TR2019/050125

(22) International Filing Date:

27 February 2019 (27.02.2019)

(25) Filing Language:

Turkish

(26) Publication Language:

English

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(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE

(54) Title: AN ABUTMENT STRUCTURE FOR DENTAL IMPLANT

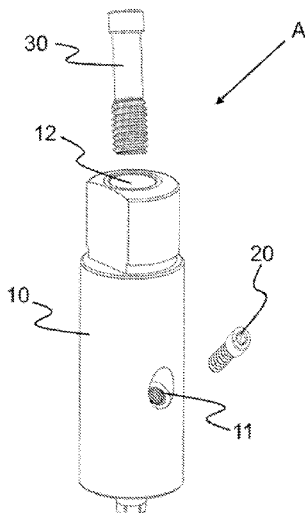


Figure 1

(57) Abstract: The invention relates to an abutment structure (A) comprising a pre-milled block (10) suitable for connection to the implant body in the jawbone via an implant connection screw (30) through an implant connection channel (12) on the upper surface of the implant body to be used in the field of dentistry for dental implant prosthetic treatment. The invention is characterized by comprising; a denture connection channel (11) in an inclined structure on the side of the said pre-milled block (10), a denture connection screw (20) that is located in the said denture connection channel (11) and that allows the denture to be fixed on the pre-milled block (10).



AN ABUTMENT STRUCTURE FOR DENTAL IMPLANT

Technical Field

5 The invention relates to an abutment structure used in prosthetic treatments of a dental implant in the field of dentistry.

In particular, the invention relates to an abutment structure, which is placed on the implant during dental implant applications, and which enables the denture to be secured from the palatal (through the palata) or lingual (through the tongue) surface.

10 Prior Art

Dental implant applications, which are among the most preferred artificial tooth applications in recent years, are preferred often due to the fact that they have a long usage period and can be made independent of other teeth. The implant is an artificial tooth root placed in the jaw bone in order to restore the function and aesthetics of missing teeth.

15 Implant dentures generally consist of an implant body placed on the jawbone, an abutment fixed on the implant body and forming the superstructure of the implant, and a denture fixed on the abutment. The implant body is mounted inside the jawbone to act as a tooth root. After this procedure, the implant body remains unseen below the gingival line. The abutment that forms the upper structure of the implant is the structure that connects the implant body with the screw from
20 the upper surface and allows the implant to be fixed in the mouth by taking the support from the implant body. The abutment is located above the gingival line in the mouth. Abutments are produced in two different types as standard and custom.

In standard abutments, pre-fabricated superstructure supports are determined and they are sent to the laboratory or directly leveled and eroded inside the mouth, trying to make the abutment fit
25 in the mouth of the patient. Since these studies are restricted by the limits of the material, they are not very successful in terms of aesthetics and hygiene. In custom abutments, the size of the implant is measured according to the surrounding gingival line and to the teeth that will appear next to and/or right across the implant, and then, they are produced one by one using advanced technology in its full size.

30 In the prior art, custom abutments are obtained from standard pre-milled abutment blocks made of titanium. These pre-milled blocks in question have a screw hole only on the upper surface to secure the abutment to the implant. Especially in full arch implant restorations, it is not possible to apply the existing pre-milled blocks and multiple-member fixed dentures with a screw, since the axle inclinations of the implants placed are not parallel to each other and there is no suitable

access path to the denture. When single member fixed dentures are screwed, the screw that connects the denture to the abutment remains in the occlusal (biting surface) of the denture. This creates problems both aesthetically and functionally.

As a result, the existence of the above problems and the inadequacy of existing solutions necessitated an improvement in the relevant technical field.

The Purpose of Invention

The invention relates to a structure for dental implant abutment to eliminate the disadvantages mentioned above and bring new advantages to the relevant technical field.

The main purpose of the invention is to ensure that the pre-milled block made of titanium or polyether ether ketone (peek) material has an inclined channel on the side surface and that the denture is fixed to the abutment through the said channel.

Another purpose of the invention is to achieve parallelism in the axle inclinations of the implants in custom abutments through the sloping channel on the side surface of the pre-milled block and to provide an alternative entry path in the denture to enable the screw mounting of the multiple-member fixed dentures.

A further purpose of the invention is to enable the denture to be attached to the abutment by means of said inclined channel structure so that the screw connecting the denture to the abutment is located in the palatal (through the palate) or in the lingual (through the tongue) surface of the denture.

Another main purpose of the invention is to eliminate the functional and aesthetic problems experienced during the placement of the denture in abutment.

Another further main purpose of the invention is the elimination of the risk of infection with the use of a pre-milled block made of polyether ketone (peek) material in the laboratory and the use of titanium block in the mouth of the patient for the first time.

In order to fulfill all of the above-mentioned purposes and purposes that can be arise from the detailed description below, the invention relates to an abutment structure comprising a pre-milled block suitable for connection to the implant body in the jawbone through the implant connection screw on the upper surface of the implant body to be used in the field of dentistry for dental implant prosthetic treatment. A feature of the invention is comprising;

- a denture connection channel in an inclined structure on the side of the said pre-milled block,
- a denture connection screw that is located in the said denture connection channel and that allows the denture to be fixed on the pre-milled block.

The structural and characteristic features and all advantages of the invention outlined in the drawings below and in the detailed description made by referring these figures will be understood

clearly. Therefore, the evaluation should be made considering these figures and detailed explanations.

Brief Description of the Figures

5 **Figure 1** is a perspective view of the abutment structure of the invention in disassembled form.

Figure 2 is a section view of the abutment structure of the invention.

Reference Numbers

- A. Abutment structure
- 10. Pre-milled block
- 10 11. Denture connection channel
- 12. Implant connection channel
- 20. Denture connection screw
- 30. Implant connection screw

Detailed Description of the Invention

15 In this detailed description, preferred embodiments of the abutment structure (A) of the invention will be explained only for a better understanding of the subject matter and without any restrictive effect.

Figure 1 shows an overall view of the abutment structure (A) of the invention in its disassembled form. According to this, the abutment structure (A) is comprising of a pre-milled block (10) made
20 of titanium, a denture connection screw (20) that provides connection to the said pre-milled block (10), and an implant connection screw (30) that provides the connection of the implant to the said pre-milled block (10) in the jaw bone.

The pre-milled block (10) is generally in a cylindrical form and is made of titanium. The upper surface of the pre-milled block (10) has a longitudinal implant connection channel (12) in the
25 center and a denture connection channel (11) on the side surface, which has an inclined structure.

The pre-milled block (10) is processed for custom abutment and then secured to the jaw bone via the implant connection channel (12) and the implant connection screw (30) on the implant body, which is fixed to the jaw bone.

The denture is placed on the pre-milled block (10) to ensure that the pre-milled block (10) is fixed
30 with the denture, and the denture is secured to the pre-milled block (10) by inserting the denture connection screw (20) through the denture connection channel (11) on the side of the pre-milled block (10).

Pre-milled blocks (10) placed into the patient's mouth are titanium. However, pre-milled blocks (10) which are copies of the original pre-milled block (10) used in laboratory operations are

produced from polyether ketone (peek). With the use of the copy in laboratory operations and the use of the original blocks in the mouth of the patient for the first time, the risk of infection is eliminated, and the dental and gingival health is protected.

CLAIMS

- 5 1. An abutment structure (A) comprising a pre-milled block (10) suitable for connection to the implant body in the jawbone via an implant connection screw (30) through an implant connection channel (12) on the upper surface of the implant body to be used in the field of dentistry for dental implant prosthetic treatment, **characterized by comprising;**
- a denture connection channel (11) in an inclined structure on the side of the said pre-milled block (10),
 - a denture connection screw (20) that is located in the said denture connection channel (11) and that allows the denture to be fixed on the pre-milled block (10).
- 10 2. An abutment structure (A) according to Claim 1, **wherein; characterized by** preferring titanium as a material for the pre-milled block (10) used in the mouth of a patient.
3. An abutment structure (A) according to Claim 1, **wherein; characterized by** preferring polyether ketone as a material for the pre-milled block (10) used in laboratory operations.

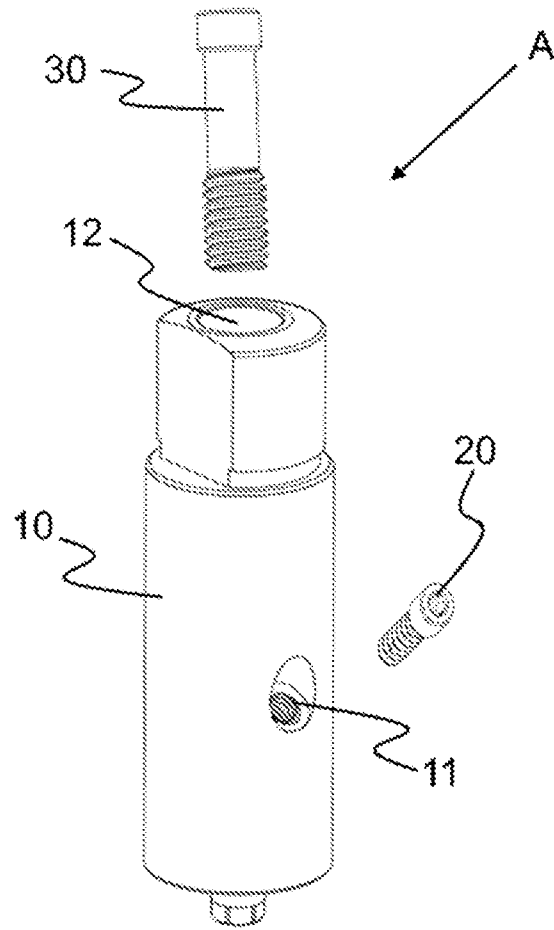


Figure 1

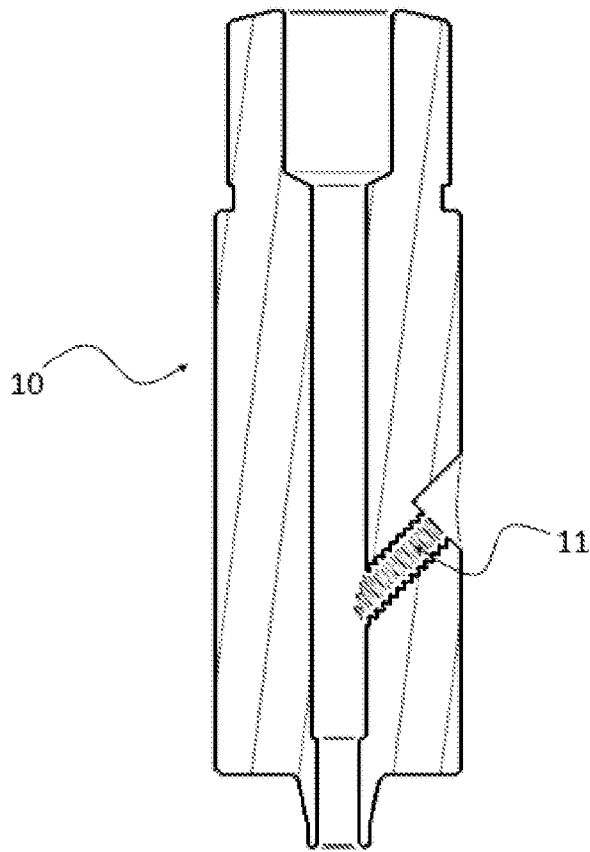


Figure 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/TR2019/050125

A. CLASSIFICATION OF SUBJECT MATTER		
A61C 8/00 (2006.01)i; A61C 13/00 (2006.01)i		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) A61C 8/00; A61C 13/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI, EPODOC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 04 January 2020		Date of mailing of the international search report 04 January 2020
Name and mailing address of the ISA/TR Turkish Patent and Trademark Office (Turkpatent) Hipodrom Caddesi No. 13 06560 Yenimahalle Ankara Turkey Telephone No. (90-312) 303 11 82 Facsimile No. +903123031220		Authorized officer Ceren Bora Orçun Telephone No. 00903123031620

INTERNATIONAL SEARCH REPORT

International application No.

PCT/TR2019/050125

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Information on patent family members

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