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(54) Title: CORDLESS PRE-CALIBRATED TORQUE DRIVER WITH ABUTMENT HOLDER FOR IMPLANT PROSTHETICS AND METHODS OF USE

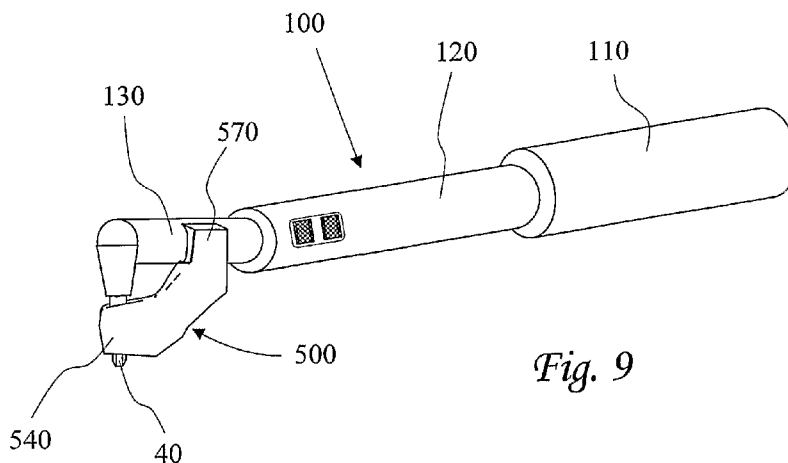


Fig. 9

(57) Abstract: A cordless pre-calibrated torque driver with a detachable abutment holder for driving prosthetics on dental implants. The main object of the present invention is to provide a portable cordless driver for prosthetics on implants with a pre-calibrated torque. The pre-calibrated torque is achieved by a special embodied mechanism on the motor shaft. Another object of the present invention is to provide a portable pre-calibrated torque driver with a detachable abutment holder, which prevents torque delivery to the implant whenever an abutment is tightened or released from it. The holder also enables easy access to posterior implants and one sole hand practice. For that purpose, the present Invention further provides for an organizing device designed to be used along with a cordless driver that can unload the healing caps from the driver. Using a single hand, a dentist can quickly load and unload healing caps from implants to said organizer and back, and abutments with an attached holder from laboratory model to implants and back and without risking implant stability in the bone by torque delivery from the driver (typically 25Ncm). These devices and methods significantly reduce chair time needed to restore dental implants and contribute to improve success rates of implants.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/IL2008/000138

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61C1/12 A61C8/00 B25B23/147

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 B23B B25B

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/166473 A1 (COHEN YECHIEL [IL]) 26 August 2004 (2004-08-26) the whole document	1, 22
X	DE 200 20 766 U1 (BERGAUER PETER [DE]) 23 May 2001 (2001-05-23) the whole document	1, 22
X	US 2005/131415 A1 (HEARN TREVOR C [AU] ET AL) 16 June 2005 (2005-06-16) the whole document	1, 22
X	US 2003/094081 A1 (BECKER THOMAS P [US] ET AL) 22 May 2003 (2003-05-22) the whole document	1
Y		22
	-/--	

☒ Further documents are listed in the continuation of Box C.

☒ 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 document 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

14 May 2008

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INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2008/000138

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 958 541 A (ANNIS JEFFREY R [US] ET AL) 25 September 1990 (1990-09-25)	1
Y	the whole document	22
Y	US 6 607 385 B1 (SEVCIK ROLAND [DE] ET AL) 19 August 2003 (2003-08-19)	1,22
Y	the whole document	
Y	US 2002/146663 A1 (NAKANISHI EIICHI [JP] ET AL) 10 October 2002 (2002-10-10)	1,22
Y	the whole document	
Y	DE 198 48 556 A1 (KALTENBACH & VOIGT [DE]) 27 April 2000 (2000-04-27)	1,22
Y	the whole document	
Y	US 5 725 533 A (CARLSSON LENNART [SE]) 10 March 1998 (1998-03-10)	1,22
	the whole document	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 12-16

Claims 12-16 are in violation of R. 39 PCT because they directly claim a method of carrying out a surgical procedure inside the mouth of the patient. Steps (c) and, in particular, (d) of the method of claim 12 render this very explicit. It is noted that even if the offending steps were deleted from the claim, they would still be essential steps required in the method and would thus be implicit in the method, hence the objection under R. 39 would still hold.

Continuation of Box II.2

Claims Nos.: 8,10

Claims 8 and 10 could not be searched since these claims limit themselves to claiming the results to be achieved by the invention without, though, claiming any clear technical feature which will allow these results to be achieved and hence providing features on which the search could be carried out.

Following the lack of unity with claim 7, claims 9 and 11 have been searched only as being dependent on claim 2. This is, in any case, warranted by the wording of these claims which are specified as dependent on "claims 2 and 7". The scope of claims 9 and 11 is thus limited by whichever one of claims 2 and 7 has the narrowest scope, and this is claim 2 since it also includes the driver of claim 1.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2008/000138

Box No. II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 12-16
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.: 8, 10
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see additional sheet(s)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2,9,11,22

A cordless, contra-angle driver comprising an electric motor with gear mechanism, a latch head, a pre-calibrated torque mechanism, and a holder, the latter having a mechanism for grasping an abutment and an mechanism for attaching said holder to the latch head so that the abutment is prevented from rotating and such that no torque is passed from the abutment.

2. claim: 3

The cordless contra-angle driver of claim 1 in which the pre-calibrated torque mechanism comprises two discs, two latched and a retaining spring.

3. claims: 4-6

The cordless contra-angle of claim 1 in which the powering of the motor can be either by battery, or by external electric power or by compressed air.

4. claim: 7

An abutment holder comprising a mechanism for grasping an abutment and a mechanism for attaching the holder to a latch head of a driver.

5. claims: 17-21

An organizing device comprising threaded holes to hold and release healing caps and/or healing abutments.
Method of using said organizing device.

6. claim: 23

A cordless, driver comprising an electric motor with gear mechanism, a pre-calibrated torque mechanism and a straight nose cone.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2008/000138

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004166473 A1	26-08-2004	NONE	
DE 20020766 U1	23-05-2001	NONE	
US 2005131415 A1	16-06-2005	NONE	
US 2003094081 A1	22-05-2003	US 2005126351 A1	16-06-2005
US 4958541 A	25-09-1990	CA 2023106 A1	14-04-1991
US 6607385 B1	19-08-2003	EP 1084683 A2	21-03-2001
		JP 2001120575 A	08-05-2001
US 2002146663 A1	10-10-2002	EP 1226789 A2	31-07-2002
		JP 2002219136 A	06-08-2002
DE 19848556 A1	27-04-2000	NONE	
US 5725533 A	10-03-1998	NONE	