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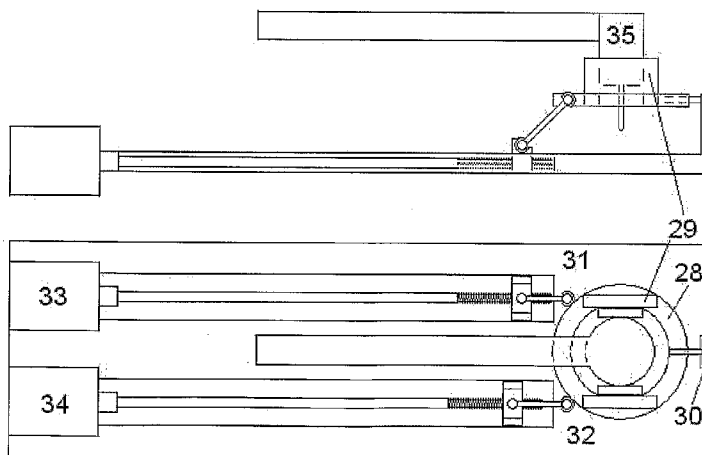
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(54) Title: ODONTO-NAVI-ROBOT FOR PRECISION POSITIONING IMPLANTS IN THE ORAL CAVITY



(57) Abstract: The present invention describes a guiding system for precision positioning of the implants in the oral cavity. Presently implant positioning is performed manually by the doctor and requires high skill, having to take into account both position in which the implant should be placed for optimal prosthesis support, but also, even more importantly, of the amount of bone stock available. Purpose of the present invention is to supply a guide to precision position in predetermined positions on the base of a CAT scan, in order to insure reaching both objectives. The equipment integrates a Navigator-Robot system which is able to move along the denture's plane in order to detect the denture's CAD model, and allows to rotate in two directions a slide made for guiding the micro motor in the direction pre-established, being placed on the same planar 2 DOF system quoted above, able to be used both in active and passive mode, and being the entire 2 + 2 DOF system fixed to the head or the jaw of the patient using a 6 DOF self balanced system. Finally such 2 DOF system to control inclination may consist both in a serial or in a parallel robot, being the last probably preferable for its greater rigidity and precision control.

WO 2008/050372 A3

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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)
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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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 893 098 A (SANDHAUS SAMI DR [CH]) 27 January 1999 (1999-01-27) column 1, lines 3-6 column 2, lines 2-6, 49-55 column 3, lines 15-20 column 4, lines 2-10 column 5, lines 8-26 figures	1-5
X	DE 101 48 389 A1 (BOESECKE ROBERT [DE]; BRIEF JAKOB [DE]; HASFELD STEFAN [DE]; PASTYR OT) 24 April 2003 (2003-04-24) paragraph [0006]; claim 1; figure 1 ----- -/--	1,3-5

Further documents are listed in the continuation of Box C.

See patent family annex.

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98/15234 A (MUSHABAC DAVID R [US]) 16 April 1998 (1998-04-16) page 3, line 15 - page 4, line 2 page 29, lines 7-19 figures 15,25-28	1,3-5
A	WO 93/24069 A (GIANNELLA FRANCESCO [IT]; GIANNELLA GIANNI MICHELE [IT]) 9 December 1993 (1993-12-09) page 6, paragraph 3 - page 7, paragraph 1 figure 1	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
EP 0893098	A	27-01-1999	DE 19802751 A1 US 6030211 A	28-01-1999 29-02-2000
DE 10148389	A1	24-04-2003	NONE	
WO 9815234	A	16-04-1998	AU 7395096 A	05-05-1998
WO 9324069	A	09-12-1993	AT 182768 T BR 9306617 A DE 69325909 D1 DE 69325909 T2 EP 0643568 A1 ES 2135479 T3 IT T0920474 A1 US 5575646 A	15-08-1999 08-12-1998 09-09-1999 20-01-2000 22-03-1995 01-11-1999 03-12-1993 19-11-1996