

(51) International Patent Classification:

A61C 7/08 (2006.01) A61C 19/04 (2006.01)
A61B 5/107 (2006.01)

(21) International Application Number:

PCT/IB2017/051233

(22) International Filing Date:

02 March 2017 (02.03.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

15/059,140 02 March 2016 (02.03.2016) US

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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, 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))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

26 October 2017 (26.10.2017)

(54) Title: ORTHODONTIC SYSTEM WITH TOOTH MOVEMENT AND POSITION MEASURING, MONITORING, AND CONTROL

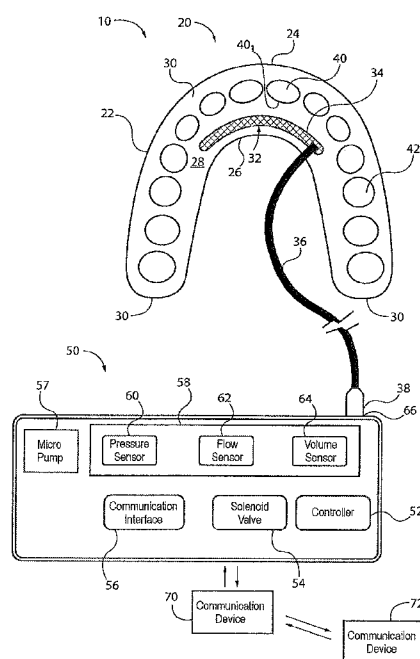


FIG. 1

(57) Abstract: Orthodontic system and method for moving and aligning at least one tooth of a set of teeth of at least one of an upper jaw and a lower jaw of a patient which includes a force exerting member for applying a force to and moving the at least one tooth, a tooth movement sensor member for obtaining at least one of tooth movement data, tooth position data, and tooth identification data, and a tooth movement monitor for calculating at least one of an amount of tooth movement, said orthodontic system includes also an electronic control console which may be operatively connected to the force exerting member and in data communication with the tooth movement monitor, for controlling the operation of the force exerting member based on the at least one of the tooth movement data, the tooth position data, and the tooth identification data received from the tooth movement monitor.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2017/051233

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61C7/08 A61B5/107 A61C19/04
ADD.

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 A61B

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)

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.
A	US 3 975 825 A (SMITH C PERRY) 24 August 1976 (1976-08-24) column 2, line 23 - column 4, line 25 figures 1-4 -----	1-28
X	US 2007/065768 A1 (NADAV ORIT [IL]) 22 March 2007 (2007-03-22)	1-8, 10-14, 19-27
A	paragraph [0073] - paragraph [0138] figures 1-3,7A-11B,13-17B -----	9,15-18, 28
A	WO 2015/058284 A1 (BIOLUX RES LTD) 30 April 2015 (2015-04-30) paragraph [[00186]] - paragraph [[00190]] figure 19 -----	7,8, 25-27
A	JP 2014 131774 A (ALIGN TECHNOLOGY INC) 17 July 2014 (2014-07-17) the whole document -----	1,20



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 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

29 June 2017

Date of mailing of the international search report

13/09/2017

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2017/051233

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.: 39-45
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.:
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:
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 all searchable 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.:
1-28

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: 1-28

Orthodontic appliance or system for moving and aligning at least one tooth of a set of teeth of at least one of an upper jaw and a lower jaw of a patient.

2. claims: 29-38

Electronic control console for controlling the operation of an orthodontic appliance which moves and aligns at least one tooth of a set of teeth of at least an upper jaw and a lower jaw of a patient.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 39-45

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery Claim 39 defines a method for moving and aligning at least one tooth of a set of teeth. Therefore, claim 39 defines a method encompassing a structural change within the mouth of the patient which encompasses substantial health risks like malocclusion, and potential damages on antagonist teeth. Therefore, claim 39 defines a method for treatment of the human or animal body by therapy and surgery under Rule 39.1(iv) PCT. Claims 40-45 depend directly or indirectly on claim 39. Therefore, claims 40-45 encompass all the features of claim 39 (Rule 6.4(b) PCT). Therefore, claims 39-45 define methods for treatment of the human or animal body by therapy and surgery under Rule 39.1(iv) PCT. No search for such methods is required (Article 17(2)(a)(i) PCT, Rule 39.1(iv) PCT).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2017/051233

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