



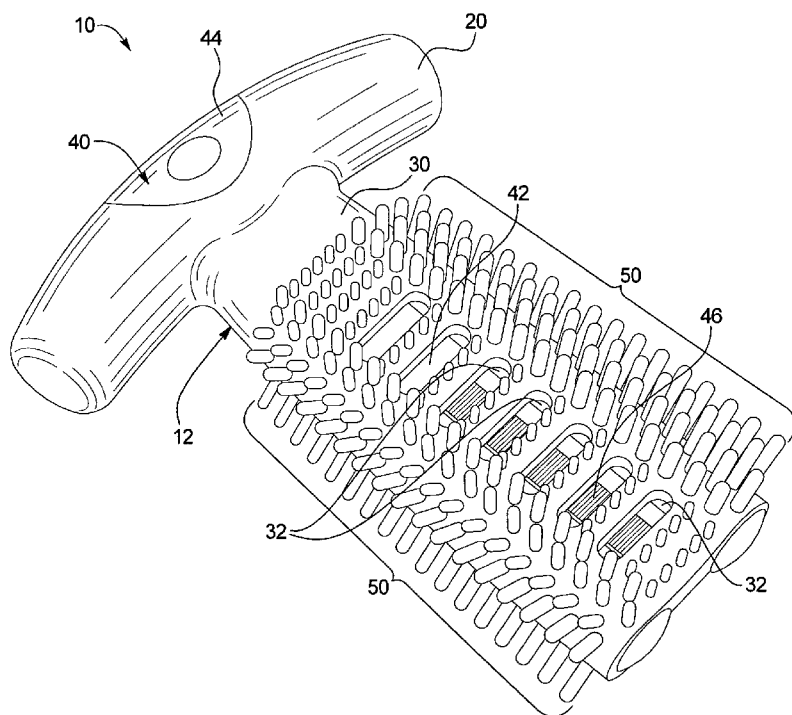
- (51) International Patent Classification:
A61B 5/00 (2006.01) *A61C 19/00* (2006.01)
- (21) International Application Number:
PCT/US2011/001727
- (22) International Filing Date:
6 October 2011 (06.10.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/455,152 15 October 2010 (15.10.2010) US
- (71) Applicant (for all designated States except US): **NESTEC S. A.** [CH/CH]; Avenue Nestle 55, CH-1800 Vevey (CH).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SMITH, Rebecca** [US/US]; 332 May Avenue, Glen Ellyn, IL 60137 (US). **BLAIR, Thomas, J.** [US/US]; 15734 Heathercraft Drive, Chesterfield, MO 63017 (US). **NOTTINGHAM, William** [US/US]; 43 Haskell Drive, Bratenahl, OH 44108 (US).

- (74) Agent: **GUFFEY, Wendell, Ray**; Nestle Purina Petcare Global, Resources, Inc., Checkerboard Square 11t, St. Louis, MO 63164 (US).
- (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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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,

[Continued on next page]

(54) Title: ORAL ENGAGEMENT ASSEMBLIES

FIG. 1



(57) Abstract: The invention provides oral engagement assemblies and methods of using the oral engagement assemblies. In a general aspect, the oral engagement assembly includes a mouthpiece comprising a handle and a support attached to the handle. A diagnostic receptacle is insertable into the mouth-piece to form the oral engagement assembly. One or more diagnostic sensors can be fixedly or releasably inserted into the diagnostic receptacle. The invention also provides kits useful for making the oral engagement assemblies and using such oral engagement assemblies for diagnosing a condition or disease in the animal.





SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, (88) Date of publication of the international search report:
GW, ML, MR, NE, SN, TD, TG). 23 May 2013

Published:

— *with international search report (Art. 21(3))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 11/01727

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61B 5/00; A61C 19/00 (2012.01) USPC - 600/573; 433/25 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) IPC(8) - A61B 5/00; A61C 19/00 (2012.01) USPC - 600/573; 433/25 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched 433* (Search term limited; see below) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWest (PGPB, USPT, EPAB, JPAB); Google Search Terms: Mouthpiece, mouth piece, mouthguard, mouth guard, handle, bristles, protrusions, bumps, test strip, teststrip, sensor, measur\$, diagnos\$											
C. DOCUMENTS CONSIDERED TO BE RELEVANT											
Category* X - Y X - Y Y A	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:20%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width:20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>US 2009/0221884 A1 (RYAN) 03 September 2009 (03.09.2009) Entire document, especially Abstract, para [0032]- para [0036] and FIGS. 1-2.</td> <td>1, 3-4, 6, 8-9, 13-14, 16, 18, 20, 22, 37-40, 42, 44-45 and 51, 53-55 5, 15, 17, 19, 21, 27 43, 46-47</td> </tr> <tr> <td>US 2006/0013738 A1 (RAMSEY) 19 January 2006 (19.01.2006) Entire document, especially Abstract, para [0017]- para [0019] and FIGS. 1-2.</td> <td>1, 6-7 10-11, 22-26, 28-29, 30-33 2, 5, 12, 15, 17, 19, 21, 27, 34-36, 41, 43, 46-48</td> </tr> <tr> <td>US 2006/0141421 A1 (BRAUNECKER et al.) 29 June 2006 (29.06.2006) Entire document, especially Abstract, para [0029] and para [0034].</td> <td>2, 12, 34-36, 41, 48</td> </tr> <tr> <td>US 2009/0024058 A1 (BLOWICK et al.) 22 January 2009 (22.01.2009) Entire document .</td> <td>1-48, 53, 53-55</td> </tr> </tbody> </table>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	US 2009/0221884 A1 (RYAN) 03 September 2009 (03.09.2009) Entire document, especially Abstract, para [0032]- para [0036] and FIGS. 1-2.	1, 3-4, 6, 8-9, 13-14, 16, 18, 20, 22, 37-40, 42, 44-45 and 51, 53-55 5, 15, 17, 19, 21, 27 43, 46-47	US 2006/0013738 A1 (RAMSEY) 19 January 2006 (19.01.2006) Entire document, especially Abstract, para [0017]- para [0019] and FIGS. 1-2.	1, 6-7 10-11, 22-26, 28-29, 30-33 2, 5, 12, 15, 17, 19, 21, 27, 34-36, 41, 43, 46-48	US 2006/0141421 A1 (BRAUNECKER et al.) 29 June 2006 (29.06.2006) Entire document, especially Abstract, para [0029] and para [0034].	2, 12, 34-36, 41, 48	US 2009/0024058 A1 (BLOWICK et al.) 22 January 2009 (22.01.2009) Entire document .	1-48, 53, 53-55
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
US 2009/0221884 A1 (RYAN) 03 September 2009 (03.09.2009) Entire document, especially Abstract, para [0032]- para [0036] and FIGS. 1-2.	1, 3-4, 6, 8-9, 13-14, 16, 18, 20, 22, 37-40, 42, 44-45 and 51, 53-55 5, 15, 17, 19, 21, 27 43, 46-47										
US 2006/0013738 A1 (RAMSEY) 19 January 2006 (19.01.2006) Entire document, especially Abstract, para [0017]- para [0019] and FIGS. 1-2.	1, 6-7 10-11, 22-26, 28-29, 30-33 2, 5, 12, 15, 17, 19, 21, 27, 34-36, 41, 43, 46-48										
US 2006/0141421 A1 (BRAUNECKER et al.) 29 June 2006 (29.06.2006) Entire document, especially Abstract, para [0029] and para [0034].	2, 12, 34-36, 41, 48										
US 2009/0024058 A1 (BLOWICK et al.) 22 January 2009 (22.01.2009) Entire document .	1-48, 53, 53-55										
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>											
<table style="width:100%; border:none;"> <tr> <td style="width:50%; border:none;"> * 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 </td> <td style="width:50%; border:none;"> "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 </td> </tr> </table>		* 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								
* 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 18 January 2012 (18.01.2012)	Date of mailing of the international search report <p align="center" style="font-size: 1.2em; font-weight: bold;">3 0 JAN 2012</p>										
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: <p align="center">Lee W. Young</p> PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774										

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/01727

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.:
because they relate to subject matter not required to be searched by this Authority, namely:

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.: 49-50, 52
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:

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 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.:

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.