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(74) Agent: BUJOLD, Michael, J.; Davis & Bujold,
P.L.L.C., 112 Pleasant Street, Concord, NH 03301 (US).

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(71) Applicant (for all designated States except US):
SALTER LABS [US/US]; 100 West Sycamore Road,
Arvin, CA 93023 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CURTI, James, N. [US/US]; 3709 Halford Court, Bakersfield, CA 93309 (US). ADRIANCE, Kyle, L. [US/US]; 1400 Ironstone Drive, Bakersfield, CA 93312 (US). LAND, Eric, C. [US/US]; 4634 Summer Side Avenue, Bakersfield, CA 93303 (US).

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[Continued on next page]

(54) Title: ADAPTIVE TEMPERATURE SENSOR FOR BREATH MONITORING DEVICE

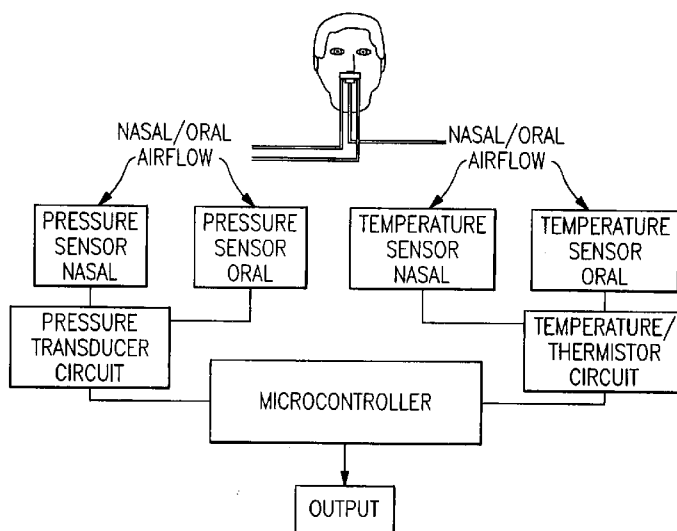


FIG. 1

(57) Abstract: A system and method for sleep monitoring, diagnosing and sensing temperature and pressure for a breathing cycle of a patient including a sensing device suitable for both nasal and oral breath monitoring for measuring respiratory air wave and airflow information during sleep apnea diagnostic session and processing the acquired air wave and airflow breathing information for input to conventional polysomnography equipment.



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— *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))*

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4 March 2010

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/046388**A. CLASSIFICATION OF SUBJECT MATTER***A61B 5/087(2006.01)i, A61B 5/00(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)

A61B 5/087; A16B 5/08; A61B 5/08; A61M 15/08; A61M 16/00; A61M 16/16; A62B 7/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models since 1975.
Japanese utility models and applications for utility models since 1975.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: PRESSURE, TEMPERATURE, SENSOR, CANNULA, BREATH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 6165133 A (RAPOPORT et al.) 26 December 2000 See abstract, Claims 1~11, Figs. 1~11	1-20,28-49 21-27
X Y	US 5069222 A (MCDONALD, JR.) 03 December 1991 See abstract, Claims 1~15, Figs. 1~6	21-27 1-20,28-49
Y	US 2006-0060198 A1 (AYLSWORTH et al.) 23 March 2006 See abstract, Claims 1~31, Figs. 1~7	1-49
Y	US 5752511 A (SIMMONS et al.) 19 May 1998 See abstract, Claims 1~16, Figs. 1~9	1-49
Y	US 5682881 A (WINTHROP et al.) 04 November 1997 See abstract, Claims 1~18, Figs. 1~6A	1-49
Y	US 2008-0051674 A1 (DAVENPORT et al.) 28 February 2008 See abstract, Claims 1~43, Figs. 1~15A	1-49
Y	US 6342040 B1 (STARR et al.) 29 January 2002 See abstract, Claims 1~30, Figs. 1~19	1-49

 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 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

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Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

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Authorized officer

BAK, JUNYUNG

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/046388

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.: 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:

- Group I, claims 1-14, 28 are directed to a system for determining a breathing cycle of a patient.
Group II, claims 15-20, 29 are directed to a method for determining a breathing cycle of a patient.
Group III, claims 21-27 are directed to a temperature sensing device.
Group IV, claims 30-47 are directed to another system for determining a breathing cycle of a patient.
Group V, claims 48-49 are directed to another method for determining a breathing cycle of a patient.

The single general concept linking Groups I-V together is a device comprising a temperature sensor. This common concept is, however, described in US 6,165,133 A, 26 December 2000 (Rapoport et al.) and, therefore, does not represent any contribution over the prior art. Hence, the inventions listed as Grpups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because the above mentioned common concept fails to make a contribution over the prior art within the meaning of PCT Rule 13.2.

- 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 fee, this Authority did not invite payment of any additional fee.
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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/046388

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6165133 A	26.12.2000	AU 1997-10211 B2 AU 722212 B2 CA 2237985 C JP 03-737121 B2 JP 2000-500379 A WO 97-18752 A1	15.11.1996 27.07.2000 05.07.2005 18.01.2006 18.01.2000 29.05.1997
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