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(54) Title: SLEEP MONITORING AND TRACKING SYSTEM AND METHOD THEREOF

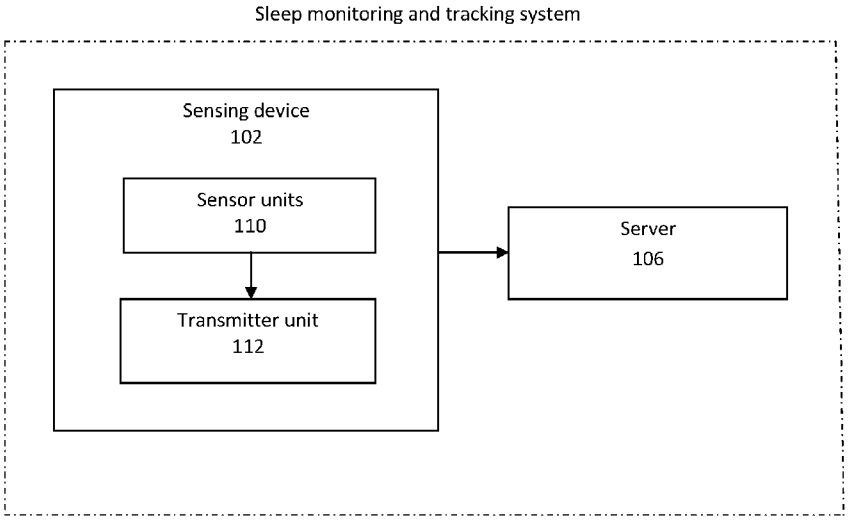


FIG. 1

(57) Abstract: A sleep monitoring and tracking system (100) is provided. The sleep monitoring and tracking system (100) comprising a sensing device (102) for measuring sleep related data of an occupant and a server (106) communicatively coupled to the sensing device (102) via a communication network. The sensing device (102) comprises a set of sensor units (110) configured to sense bedtime-related data of the occupant and a transmitter unit for transmitting occupancy and/or the bedtime-related data. The server (106) comprises a communication module (126) for receiving bedtime-related data of the occupant from the sensing device (102), a processor (124) for processing the bedtime-related data of the occupant to generate sleep related data for the occupant, a memory (122, 128) for storing sleep related data of the occupant and a User Interface (130) (UI) for providing display of sleep related data of the occupant. A method of analyzing sleep data and identifying sleep pattern and sleep stages namely light sleep, deep sleep and REM sleep of a user using the

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[Continued on next page]

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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:
23 November 2017 (23.11.2017)

sleep monitoring and tracking system (100) is also described.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2017/050036

A. CLASSIFICATION OF SUBJECT MATTER
A61M21/00,A61B5/00 Version=2017.01

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)

A61M, 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)

Patseer, IPO Internal Database
Keywords: sleep monitoring, sensor, transmitter

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7942824 B1 (CLEVELAND MEDICAL DEVICES INC) 17 May 2011 (17.05.2011) Abstract; Column 10; Column 15, lines 20-45; Column 33, lines 20-65; Column 44, lines 37-66	1-9
X	US 2013030257 A1 (RESMED SENSOR TECHNOLOGIES LTD) 31 January 2013 (31.01.2013) Abstract; Paragraphs [0006], [0015], [0062], [0075] & [0087]	1-9
X	US 20070276439 A1 (MEDTRONIC INC) 29 November 2007 (29.11.2007) Paragraphs [0007], [0070], [0101] & [0073]	1-9

☐ 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	Date of mailing of the international search report
25-10-2017	25-10-2017
Name and mailing address of the ISA/ Indian Patent Office Plot No.32, Sector 14,Dwarka,New Delhi-110075 Facsimile No.	Authorized officer Aditya Venkateswara Telephone No. +91-1125300200

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2017/050036

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.: 10
because they relate to subject matter not required to be searched by this Authority, namely:
The subject matter of claim 10 relates to computer programs, which does not require an international search by the International Searching Authority in accordance with PCT Article 17(2)(a)(i) and [Rule 39.1(vi)].

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:

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.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IN2017/050036

Citation	Pub.Date	Family	Pub.Date
US 2013030257 A1	31-01-2013	WO 2013040511 A1	21-03-2013
		EP 2755720 A1	23-07-2014