



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
20.04.2016 Bulletin 2016/16

(43) Date of publication A2:
27.01.2016 Bulletin 2016/04

(21) Application number: **15177440.3**

(22) Date of filing: **20.07.2015**

(51) Int Cl.:
A61B 5/00 (2006.01) **A61B 5/01 (2006.01)**
A61B 5/024 (2006.01) **A61B 5/08 (2006.01)**
A61B 5/11 (2006.01) **A61B 5/113 (2006.01)**
A61B 10/00 (2006.01) **A61H 9/00 (2006.01)**
A61B 5/145 (2006.01) **A61B 5/16 (2006.01)**
A61F 5/56 (2006.01) **A61M 21/02 (2006.01)**
G01G 19/44 (2006.01) **A61M 21/00 (2006.01)**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME
 Designated Validation States:
MA

- **DUSANTER, Florent**
92120 Montrouge (FR)
- **YANG, Ruiyi**
78310 Coignières (FR)
- **BUARD, Nadine**
92190 Meudon (FR)
- **HUTCHINGS, Cédric**
92130 Issy Les Moulineaux (FR)
- **RECHKE, Bastien**
92310 Sèvres (FR)
- **GAUTIER, Julien**
75015 Paris (FR)

(30) Priority: **21.07.2014 US 201414336856**

(71) Applicant: **Withings**
92130 Issy les Moulineaux (FR)

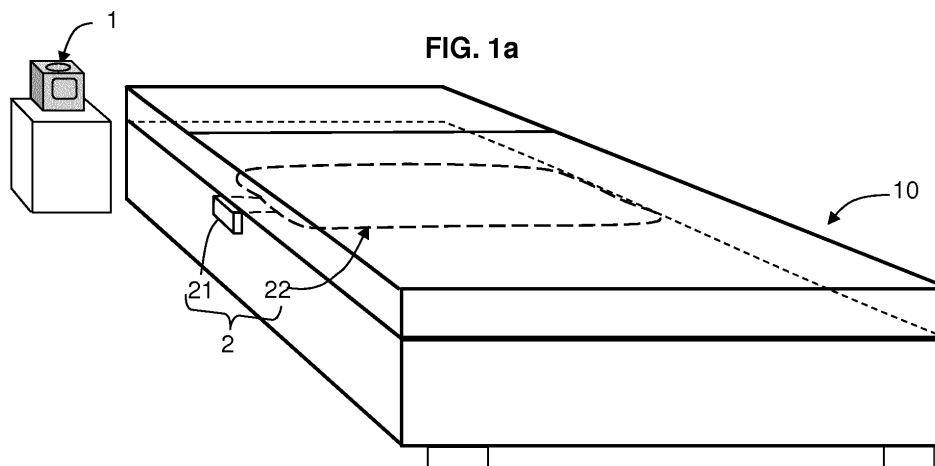
(72) Inventors:
 • **AUPHAN, Raphael**
75017 Paris (FR)

(74) Representative: **Cabinet Plasseraud**
66, rue de la Chaussée d'Antin
75440 Paris Cedex 09 (FR)

(54) **SYSTEM TO MONITOR AND ASSIST INDIVIDUAL'S SLEEP**

(57) A sleep assist system to monitor and assist the user's sleep comprises a bedside device positioned near the user's bed, the bedside device comprising a loud-speaker and a light source and optionally a microphone, a light sensor, a temperature sensor, a control unit, an air quality sensor, a display unit, a user interface. The sleep assist system further comprises a first sensing unit positioned in the user's bed and comprising one or more

sensors adapted to sense at least pressure and/or changes in pressure exerted by the user lying in the bed. The system monitors the user's sleep, assesses the user's sleep cycles and the phase of sleep cycle, and provides the user with at least one light and sound program, the light and sound program being based on the assessment of the user's sleep cycles and the phase of sleep cycle.





EUROPEAN SEARCH REPORT

Application Number
EP 15 17 7440

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	David Pierce: "Withings Aura uses light, sound, and science to help you sleep better (hands-on)", The Verge, 5 January 2014 (2014-01-05), XP055229051, Retrieved from the Internet: URL:http://www.theverge.com/2014/1/5/5273428/withings-aura-uses-light-and-sound-to-help-you-sleep-better [retrieved on 2015-11-17] * the whole document *	1-14	INV. A61B5/00 A61B5/01 A61B5/024 A61B5/08 A61B5/11 A61B5/113 ADD. A61B10/00 A61H9/00 A61B5/145 A61B5/16 A61F5/56 A61M21/02 G01G19/44 A61M21/00
X	KR 2012 0092249 A (WOO HYO JUN [KR]) 21 August 2012 (2012-08-21) * figures 2,5,7 * * paragraphs [0014] - [0018], [0025] - [0028], [0035], [0044] - [0048], [0109] - [0111], [0125] *	1-14	
X	JP 2008 183205 A (AISIN SEIKI) 14 August 2008 (2008-08-14) * figures 2-4 * * paragraphs [0006], [0019], [0024] - [0025], [0031] - [0033] *	1-14	TECHNICAL FIELDS SEARCHED (IPC) A61B A61M
X,D	WO 2007/052108 A2 (EARLYSENSE LTD [IL]; PINHAS ITZHAK [IL]; HALPERIN AVNER [IL]; AVERBOUK) 10 May 2007 (2007-05-10) * figures 1,2 * * paragraphs [0128] - [0130], [0133], [0222], [0249], [0261], [0262], [0273] *	1-14	
-----		-/--	

-The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		19 November 2015	Albrecht, Ronald
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		& : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)



Application Number

EP 15 17 7440

5

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

10

Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

15

No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

20

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

25

see sheet B

30

All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

35

As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

40

Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

45

None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

50

1-14

55

The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 15 17 7440

5

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

10

1. claims: 1-14

sleep modification based on sensed sleep cycles by visual
and acoustic stimulation

15

2. claim: 15

detecting reasons for low sleep quality

20

25

30

35

40

45

50

55

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 15 17 7440

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-11-2015

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 20120092249 A	21-08-2012	KR 20120092249 A	21-08-2012
		WO 2012108736 A2	16-08-2012

JP 2008183205 A	14-08-2008	NONE	

WO 2007052108 A2	10-05-2007	CA 2668602 A1	10-05-2007
		EP 1955233 A2	13-08-2008
		JP 5281406 B2	04-09-2013
		JP 2009532072 A	10-09-2009
		JP 2013154190 A	15-08-2013
		US 2007118054 A1	24-05-2007
		US 2013245502 A1	19-09-2013
		WO 2007052108 A2	10-05-2007

US 2008157956 A1	03-07-2008	NONE	

US 2011190594 A1	04-08-2011	NONE	

JP 2006094969 A	13-04-2006	NONE	

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	用于监控和协助个人睡眠的系统		
公开(公告)号	EP2976993A3	公开(公告)日	2016-04-20
申请号	EP2015177440	申请日	2015-07-20
[标]申请(专利权)人(译)	WITHINGS		
申请(专利权)人(译)	WITHINGS		
当前申请(专利权)人(译)	WITHINGS		
[标]发明人	AUPHAN RAPHAEL DUSANTER FLORENT YANG RUIYI BUARD NADINE HUTCHINGS CEIC RECHKE BASTIEN GAUTIER JULIEN		
发明人	AUPHAN, RAPHAEL DUSANTER, FLORENT YANG, RUIYI BUARD, NADINE HUTCHINGS, CÉDRIC RECHKE, BASTIEN GAUTIER, JULIEN		
IPC分类号	A61B5/00 A61B5/01 A61B5/024 A61B5/08 A61B5/11 A61B5/113 A61B10/00 A61H9/00 A61B5/145 A61B5/16 A61F5/56 A61M21/02 G01G19/44 A61M21/00		
CPC分类号	A61B5/0022 A61B5/0024 A61B5/01 A61B5/02405 A61B5/02444 A61B5/0816 A61B5/1102 A61B5/ /1126 A61B5/113 A61B5/14542 A61B5/165 A61B5/4343 A61B5/4812 A61B5/4815 A61B5/4818 A61B5/ /681 A61B5/6892 A61B5/747 A61B10/0012 A61B2560/0242 A61B2562/0204 A61B2562/0247 A61F5/ /56 A61H9/0007 A61H9/0078 A61H2201/0142 A61H2201/0188 A61H2201/10 A61H2201/5048 A61H2201/5058 A61H2201/5061 A61H2201/5082 A61H2201/5097 A61H2230/06 A61H2230/207 A61H2230/42 A61H2230/50 A61M21/02 A61M2021/0022 A61M2021/0027 A61M2021/0044 A61M2021/ /0083 A61M2205/3306 A61M2205/332 A61M2205/3368 A61M2205/3375 A61M2205/3553 A61M2205/ /3561 A61M2205/3569 A61M2205/3584 A61M2205/3592 A61M2205/505 A61M2205/52 A61M2230/06 A61M2230/42 A61M2230/50 A61M2230/62 A61M2230/63 G01G19/445 A61B5/0205 A61B5/11 A61B5/ /7435 A61B5/746		
代理机构(译)	柜PLASSERAUD		
审查员(译)	ALBRECHT, RONALD		
优先权	14/336856 2014-07-21 US		
其他公开文献	EP2976993A2		
外部链接	Espacenet		

摘要(译)

用于监视和协助用户睡眠的睡眠辅助系统包括位于用户床附近的床边装置，床边装置包括扬声器和光源以及可选的麦克风，光传感器，温度传感器，控制单元，空气质量传感器，显示单元，用户界面。睡眠辅助系统还包括第一感测单元，其定位在用户的床中并且包括一个或多个传感器，其适于至少感测躺在床中的用户施加的压力和/或压力的变化。系统监视用户的睡眠，评估用户的睡眠周

