



(51) International Patent Classification:
A61B 10/00 (2006.01)

(21) International Application Number:
PCT/GB2015/054153

(22) International Filing Date:
23 December 2015 (23.12.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1423098.1 23 December 2014 (23.12.2014) GB
1423092.4 23 December 2014 (23.12.2014) GB
1423108.8 23 December 2014 (23.12.2014) GB

(71) Applicant (for all designated States except US): **FERTILITY FOCUS LIMITED** [GB/GB]; Unit 19D, University of Warwick, Warwick Innovation Centre, Gallows Hill, Warwick CV34 6UW (GB).

(72) Inventors; and

(71) Applicants (for US only): **PARDEY, James** [GB/GB]; c/o Fertility Focus Limited, Unit 19D, University of Warwick, Warwick Innovation Centre Gallows Hill, Warwick CV34 6UW (GB). **MILNES, Robert** [GB/GB]; c/o Fertility Focus Limited, Unit 19D, University of Warwick, Warwick Innovation Centre, Gallows Hill Warwick CV34 6UW (GB).

(74) Agent: **WARREN, Caroline**; Mathys & Squire LLP, The Shard 32 London Bridge Street, London Greater London SE1 9SG (GB).

(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, 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, KN, KP, KR, 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.

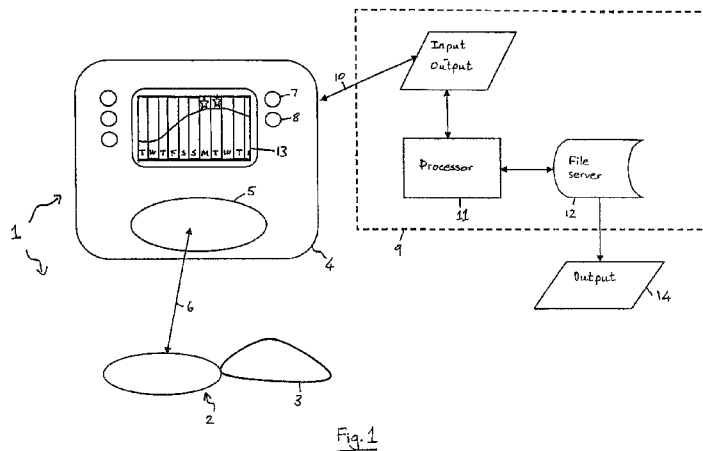
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, 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:
15 September 2016

(54) Title: Processing a Physical Signal



(57) Abstract: Processing a Physical Signal There are described herein methods and apparatus for processing a physical signal, in particular for processing data obtained in relation to the physical characteristics of a user, in particular a female user. One or more sensors can be used to obtain the data, in particular indwelling thermometers, aural thermometers, blood pressure and heart rate monitors. There are also described herein methods and apparatus for analysing and further processing the data to obtain and provide health information in relation to the user, in particular in relation to the user's fertility or state of ovulation.

WO 2016/102971 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/054153

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B10/00
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)
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.
X	US 2013/310704 A1 (JAMES MICHAEL HOWARD [GB] ET AL) 21 November 2013 (2013-11-21) paragraphs [0060] - [0074], [0091], [0092], [0093], [0062], [0107] - [0121], [0144] - [0172], [0193] - [0195], [0227] - [0229]; figures 1-4 paragraphs [0233], [0234]	1-18
A	WO 2013/164974 A1 (OMRON HEALTHCARE CO LTD [JP]) 7 November 2013 (2013-11-07) abstract; figures 1-11	1-18
A	US 2012/238900 A1 (RECHBERG NATALIE [CH]) 20 September 2012 (2012-09-20) paragraphs [0041] - [0058]; figures 1-7	1-18
	-/--	

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

15 April 2016

Date of mailing of the international search report

19/07/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Hochrein, Marion

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/054153

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2014/207484 A1 (FERTILITY FOCUS LTD [GB]; PARDEY JAMES [GB]; MILNES ROBERT [GB]) 31 December 2014 (2014-12-31) figures 1-8 -----	1-18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2015/054153

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.: 19, 20
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.:

1-18

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

Continuation of Box II.1

Claims Nos.: 19, 20

Claims 19 and 20 were not searched because they relate to a diagnostic method practised on the human or animal body (Rule 39.1(iv) PCT). In claim 19, 1) data is collected ("data values obtained from a physical sensor ... of the basal body temperature"); 2) the data is compared to standard values and 3) a significant deviation is found("... further predetermined criteria ... indicative of at least one physical state of the female human user, further analysing the series ... to determine whether the series meets at least one of the further predetermined criteria"); 4) a typical clinical picture is attributed ("processing .. to generate an output indicative of a physical state of the female human user", s. p. 86, l. 17 -p. 10, l. 12).

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

A signal processing system processing indicators to generate an output indicative of a physical state of the female human user

2. claims: 21-30, 35-40

A temperature sensing system having two different temperature sensors and associated method

3. claims: 31-34

A temperature sensing system a tympanic temperature sensor

4. claims: 41, 42

A method for determining a representative temperature value for a user comprising a plurality of movement indicators

5. claims: 43-47

A method for providing an indication of a health condition of a user, the system comprising two sensors and a cpu analysing the first sensor against a first criterion and the second sensor against a second criterion

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2015/054153

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013310704	A1	21-11-2013	AT 509580 T 15-06-2011
			AU 2007293287 A1 13-03-2008
			CN 101528138 A 09-09-2009
			EP 2061380 A2 27-05-2009
			ES 2366929 T3 26-10-2011
			JP 2010502338 A 28-01-2010
			US 2009326410 A1 31-12-2009
			US 2013296735 A1 07-11-2013
			US 2013310704 A1 21-11-2013
			US 2016030011 A1 04-02-2016
			WO 2008029130 A2 13-03-2008

WO 2013164974	A1	07-11-2013	CN 104271048 A 07-01-2015
			DE 112013002289 T5 22-01-2015
			JP 2013230300 A 14-11-2013
			US 2015133744 A1 14-05-2015
			WO 2013164974 A1 07-11-2013

US 2012238900	A1	20-09-2012	EP 2685904 A1 22-01-2014
			US 2012238900 A1 20-09-2012
			WO 2012125650 A1 20-09-2012

WO 2014207484	A1	31-12-2014	EP 3013247 A1 04-05-2016
			GB 2518920 A 08-04-2015
			US 2016143630 A1 26-05-2016
			WO 2014207484 A1 31-12-2014
