

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 March 2007 (29.03.2007)

PCT

(10) International Publication Number
WO 2007/034371 A3

- (51) International Patent Classification:
A61B 5/12 (2006.01) G07C 9/00 (2006.01)
- (21) International Application Number:
PCT/IB2006/053252
- (22) International Filing Date:
13 September 2006 (13.09.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
05108781.5 22 September 2005 (22.09.2005) EP
- (71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **AKKERMANS, Antonius, H., M.** [NL/NL]; C/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **BRUEKERS, Alphons, A., M., L.** [NL/NL]; C/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN DER LEEST, Vincent** [NL/NL]; C/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (74) Agents: **GROENENDAAL, Antonius, W., M.** et al.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- Published:
 - with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report:
27 November 2008

(54) Title: METHOD AND APPARATUS FOR ACOUSTICAL OUTER EAR CHARACTERIZATION

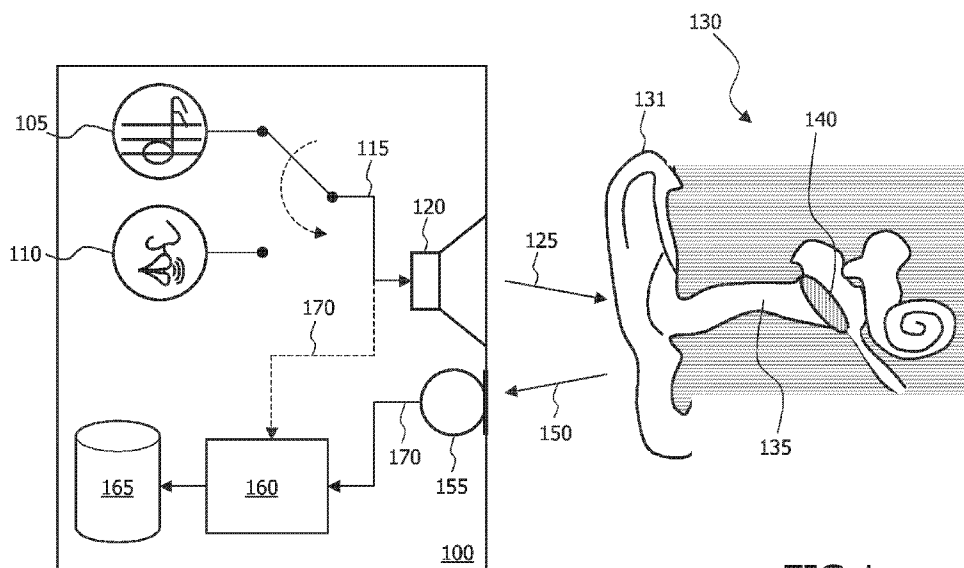


FIG. 1

(57) Abstract: The present invention relates to a method and apparatus for characterizing acoustical properties of an outer ear 130, the method comprising the steps of: transmitting a first acoustic signal 125 towards the outer ear 130, receiving a second acoustic signal 150 from the outer ear 130, and characterizing acoustical properties 165 of the outer ear on the basis of the second acoustic signal 150. The method is characterized in that the first acoustic signal 125 comprises at least one of the following elements: music, and speech. The present invention further relates to a method and apparatus for enrolling, authenticating and identifying a person on the basis of acoustical properties of an outer ear 130.

WO 2007/034371 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2006/053252

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B5/12 G07C9/00

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 G07C G06K

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 205 884 A (MATSUSHITA ELECTRIC IND CO LTD [JP]) 15 May 2002 (2002-05-15) paragraphs [0009], [0029] - [0056]; claims 18-36	1-3, 8, 10-15
X	GB 2 375 205 A (ORANGE PERSONAL COMM SERV LTD [GB]) 6 November 2002 (2002-11-06) page 12, line 4 - page 14, line 8; claims	1, 10-13
A	US 5 787 187 A (BOUCHARD ANN MARIE [US] ET AL) 28 July 1998 (1998-07-28) cited in the application column 5, line 61 - column 6, line 35	1-17
	-/--	

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 document 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.

8 document member of the same patent family

Date of the actual completion of the international search

18 September 2008

Date of mailing of the international search report

06/10/2008

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Manschot, Jan

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2006/053252

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	TONH M AKKERMANS ET AL: "Acoustic Ear Recognition" ADVANCES IN BIOMETRICS LECTURE NOTES IN COMPUTER SCIENCE;;LNCS, SPRINGER, BERLIN, DE, vol. 3832, 9 December 2005 (2005-12-09), pages 697-705, XP019026949 ISBN: 978-3-540-31111-9 the whole document -----	1-17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2006/053252

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1205884	A	15-05-2002	DE 60119871 T2	28-09-2006
			JP 2002143130 A	21-05-2002
			US 2002057805 A1	16-05-2002
<hr/>				
GB 2375205	A	06-11-2002	EP 1388127 A1	11-02-2004
			WO 02091310 A1	14-11-2002
			JP 4060716 B2	12-03-2008
			JP 2004532584 T	21-10-2004
			US 2004215968 A1	28-10-2004
<hr/>				
US 5787187	A	28-07-1998	NONE	
<hr/>				