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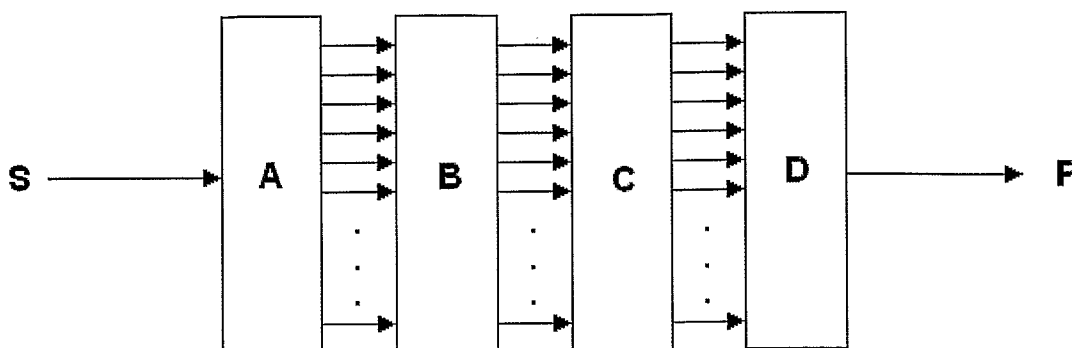
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(54) Title: METHOD, DEVICE AND SYSTEM FOR CARDIO-ACOUSTIC SIGNAL ANALYSIS



(57) Abstract: The invention relates to the field of visualization and automated analysis of the digitized cardiac auscultation (acoustic) signals. According to the invention, the method of cardio-acoustic signal analysis comprises the steps of: receiving a signal representative of heart sounds from an acoustic sensor; representing the received signal in a time-frequency-amplitude domain; where the method further comprises the step of applying a psycho-acoustic model to the received signal in the time-frequency-amplitude domain in order to generate a representation of the signal in a time - perceptual frequency - perceptual loudness domain. A device and a system are operative of performing the analysis of cardiac auscultation (acoustic) signals according to the method.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER INV. A61B7/00		
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		
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, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 012 815 A (BENNETT JR WILLIAM R [US] ET AL) 7 May 1991 (1991-05-07) column 10, line 63 - column 15, line 30; figures 8-12 -----	1-10
A	WO 93/22970 A (MCG INTERNATIONAL INC [US]) 25 November 1993 (1993-11-25) page 14, line 7 - page 19, line 13; figures 7A-7D,8 ----- <div style="text-align: right;">-/--</div>	1-10
<div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex. </div>		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents :</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*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</p> <p>*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</p> <p>*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.</p> <p>*G* document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search <div style="text-align: center;">14 June 2007</div>		Date of mailing of the international search report <div style="text-align: center;">21/06/2007</div>
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 <div style="text-align: center;">Lommel, André</div>

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BRUSCO M ET AL: "Digital phonocardiography: a PDA-based approach" CONFERENCE PROCEEDINGS. 26TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY (IEEE CAT. NO.04CH37558) IEEE PISCATAWAY, NJ, USA, vol. 3, 2004, pages 2299-2302 Vol., XP010775437 ISBN: 0-7803-8439-3 figures 6a,6b,7a,7b</p> <p>-----</p>	1,4,7
A	<p>ZWICKER E ET AL: "AUDIO ENGINEERING AND PSYCHOACOUSTICS: MATCHING SIGNALS TO THE FINAL RECEIVER, THE HUMAN AUDITORY SYSTEM" JOURNAL OF THE AUDIO ENGINEERING SOCIETY, AUDIO ENGINEERING SOCIETY, NEW YORK, NY, US, vol. 39, no. 3, 1 March 1991 (1991-03-01), pages 115-126, XP000208423 ISSN: 1549-4950 2 psychoacoustical principles applicable in audio engineering practice; figure 9</p> <p>-----</p>	1,4,7
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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