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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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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[Continued on next page]

- (54) Title: BANDLIMITING ANTI-NOISE IN PERSONAL AUDIO DEVICES HAVING ADAPTIVE NOISE CANCELLATION (ANC)

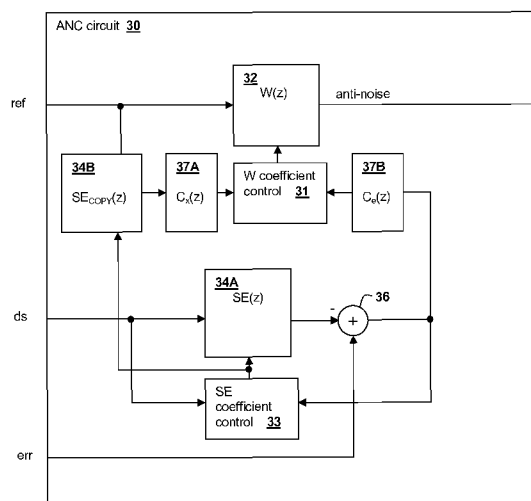


Fig. 3

- (57) Abstract: A personal audio device, such as a wireless telephone, includes noise canceling circuit that adaptively generates an anti-noise signal from a reference microphone signal and injects the anti-noise signal into the speaker or other transducer output to cause cancellation of ambient audio sounds. An error microphone is provided proximate the speaker to measure the output of the transducer in order to control the adaptation of the anti-noise signal and to estimate an electro-acoustical path from the noise canceling circuit through the transducer. The anti-noise signal is adaptively generated to minimize the ambient audio sounds at the error microphone. A processing circuit that performs the adaptive noise canceling (ANC) function also filters one or both of the reference and/or error microphone signals, to bias the adaptation of the adaptive filter in one or more frequency regions to alter a degree of the minimization of the ambient audio sounds at the error microphone.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
INV. G10K11/178  
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)  
G10K

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 2010/061564 A1 (CLEMOW RICHARD [GB] ET AL) 11 March 2010 (2010-03-11)	1-3, 5-10, 12-17, 19,20
Y	abstract; figures 2,9,10 paragraphs [0002], [0003], [0006] - [0015], [0019], [0021], [0041], [0047], [0091], [0097] - [0103]	4,11,18
X	US 2010/296668 A1 (LEE TE-WON [US] ET AL) 25 November 2010 (2010-11-25) abstract; figures 2B,3B paragraphs [0007], [0068], [0071], [0098] - [0100], [0104], [0109], [0128]	1,7,8,14

Further documents are listed in the continuation of Box C.

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Date of the actual completion of the international search 22 March 2013	Date of mailing of the international search report 04/04/2013
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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 de Jong, Frank
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International application No  
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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.
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Information on patent family members

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