



(51) International Patent Classification:

H01R 25/00 (2006.01) *A61B 5/0482* (2006.01)
A61B 5/16 (2006.01) *A61B 5/0484* (2006.01)
A61B 5/0476 (2006.01)

(21) International Application Number:

PCT/EP2009/062764

(22) International Filing Date:

1 October 2009 (01.10.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(71) **Applicant** (for all designated States except US): **WIDEX**
A/S [—/DK]; Nymoellevej 6, DK-3540 Lynge (DK).

A/S [—/DK]; Nymoellevej 6, DK-3540 Lynge (DK).

(72) **Inventors; and**

(75) **Inventors/Applicants (for US only): KIDMOSE, Preben** [DK/DK]; Myrholmen 24, DK- 2760 Maalov (DK).
WESTERMANN, Soren Erik [DK/DK]; Gl. Strandvej
237, DK- 3050 Humlebak (DK).

237, DK- 3050 Humlebak (DK).

(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

kind of national protection available): AE, AG, AL, AM.

AO, AT, AU, AZ, BA, BB, BG, BH, 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, 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, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: PORTABLE MONITORING DEVICE WITH HEARING AID AND EEG MONITOR

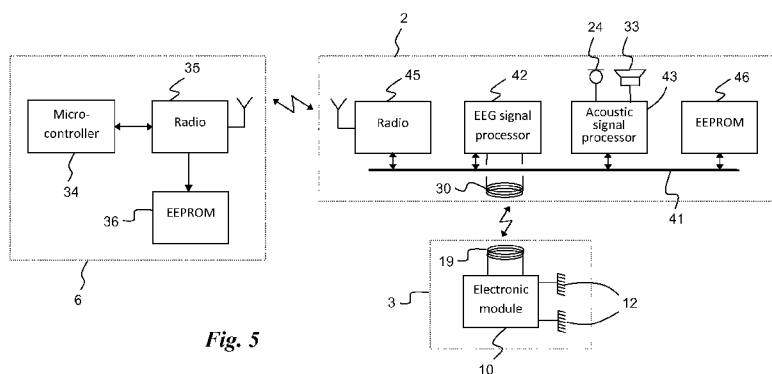


Fig. 5

(57) Abstract: A portable monitoring device comprising a hearing aid having a housing, at least one microphone (24) for receiving ambient sound, acoustic signal processing means (43) for processing a signal from the microphone, and an acoustic output transducer (33), said portable monitoring device further comprising an EEG monitoring system for monitoring EEG signals of a person using the portable monitoring device, said EEG monitoring system being arranged at least partly in said housing, said EEG monitoring system comprising a measuring unit (3) having electrodes (12) for measuring one or more EEG signals from the person carrying the EEG monitor, said electrodes (12) being arranged external to the housing or at the outer surface of the housing. Said EEG monitoring system further comprises a processing unit (42) having EEG signal processing means for analyzing the EEG signal, said processing unit being arranged in said housing, said signal processing means being adapted for, based on the EEG signal, identifying or predicting specific biological incidences, such as a seizure, in said person, said processing unit comprising decision means for deciding, based on said analyzed EEG signal, when an alarm or information must be provided to said person, and means for providing said alarm or information through said output transducer (33).

(57) Abstract: A portable monitoring device comprising a hearing aid having a housing, at least one microphone (24) for receiving ambient sound, acoustic signal processing means (43) for processing a signal from the microphone, and an acoustic output transducer (33), said portable monitoring device further comprising an EEG monitoring system for monitoring EEG signals of a person using the portable monitoring device, said EEG monitoring system being arranged at least partly in said housing, said EEG monitoring system comprising a measuring unit (3) having electrodes (12) for measuring one or more EEG signals from the person carrying the EEG monitor, said electrodes (12) being arranged external to the housing or at the outer surface of the housing. Said EEG monitoring system further comprises a processing unit (42) having EEG signal processing means for analyzing the EEG signal, said processing unit being arranged in said housing, said signal processing means being adapted for, based on the EEG signal, identifying or predicting specific biological incidences, such as a seizure, in said person, said processing unit comprising decision means for deciding, based on said analyzed EEG signal, when an alarm or information must be provided to said person, and means for providing said alarm or information through said output transducer (33).