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[Continued on next page]

(54) Title: CLOSED LOOP NEURAL ACTIVITY TRIGGERED REHABILITATION DEVICE AND METHOD

(57) Abstract: A closed loop, neural activity triggered rehabilitation de-
vice and method are provided for facilitating recovery of a patient from the
effects of a sensory motor disability. The device includes a sensor system
positionable adjacent the brain of the patient. The sensor system detects
neural signals. A functional stimulation component is operatively connectable
to at least one body part, such as a muscle or a nerve. The function-
al stimulation component stimulates the at least one body part in re-
sponse to the neural signals detected. A sensory stimulation module is op-
eratively connected to the patient to provide sensory feedback thereto.

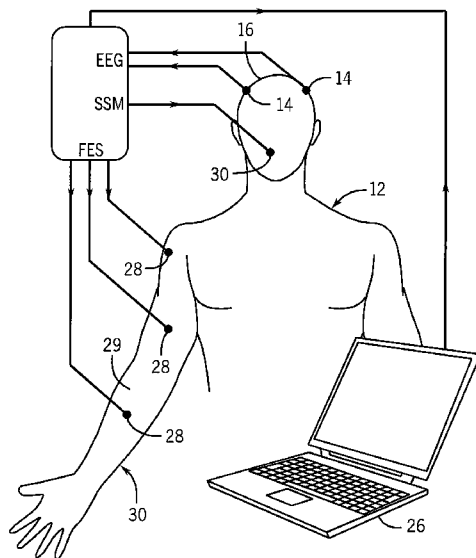


FIG. 1

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- *with international search report (Art. 21(3))*
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A. CLASSIFICATION OF SUBJECT MATTER*A61N 1/36(2006.01)i, A61N 1/08(2006.01)i, A61H 1/00(2006.01)i, A61N 1/37(2006.01)i*

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)

A61N 1/36; A61B 5/0476; A61N 1/18; A61N 1/04; A61N 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: sensory motordisability, sensor system, electroencephalography(EEG), functional electronic stimulation(FES), sensory stimulation module(SSM), rehabilitation device

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0306531 A1 (LEUTHARDT ERIC CLAUDE et al.) 10 December 2009 See abstract, paragraph[0045]; claims 12-13	1,7
A	US 2008-0319505 A1 (BOYDEN EDWARD S. et al.) 25 December 2008 See abstract, paragraph[0016], paragraph[0019] - paragraph[0020]; claims 1-2, 4	1,6-7,12,17-18
A	US 2003-0074032 A1 (BRADFORD EVAN GLINER) 17 April 2003 See abstract, paragraph[0021], paragraph[0040]; claim 28	1-21
A	US 2007-0142864 A1 (IMAD LIBBUS et al.) 21 June 2007 See abstract, paragraph[0099]; claim 1	1-21
A	US 7231254 B2 (DILORENZO, D. J.) 12 June 2007 See abstract; claim 1	1-21
A	US 2006-0004422 A1 (DIRK DE RIDDER) 05 January 2006 See abstract; claims 1, 10-11	1-21

 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 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

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"&" document member of the same patent family

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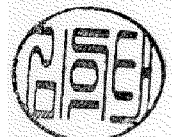
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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

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.: 22 - 30
because they relate to subject matter not required to be searched by this Authority, namely:

Claims 22 to 30 pertain to a method of treating tissue of a patient and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.

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:

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 fee, this Authority did not invite payment of any additional fee.
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.:

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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