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Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: VESTIBULAR STIMULATION APPARATUS AND ASSOCIATED METHODS OF USE

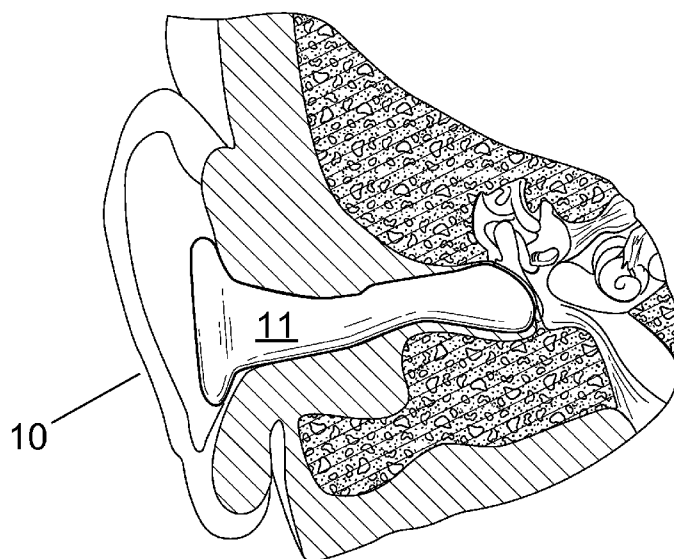


FIG. 1

(57) Abstract: A device and associated method for providing vestibular stimulation to an individual includes active elements positioned on or proximate an ear insert. The active elements include but are not limited to at least one electrode, at least one thermometer, and at least one thermoelectric transducer. The device includes a computerized control module regulating the active elements. The device incorporates an ear insert that allows the active elements to engage the individual's ear canal and therefore access the individual's vestibular system. Vestibular stimulation applied to the individual is customized for directly stimulating desired regions of the brain for therapeutic or diagnostic purposes. In a preferred embodiment, the device provides vestibular stimulation sufficient to promote physiological changes in the individual, the changes selected from the group consisting of circadian temperature cycle time shifts, ascorbic acid production, serotonin production, acetylcholine production, histamine production, and heat shock protein production.



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3 September 2009

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/071935

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61H39/06
ADD. A61B5/01 A61N1/36

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)

A61H A61B A61N

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)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/195588 A1 (FISCHELL DAVID R [US] ET AL) 16 October 2003 (2003-10-16)	29-32
A	paragraphs [0010], [0025], [0043], [0067]; figure 2	1-25
A	----- DATABASE MEDLINE [Online] US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US; 10 December 1965 (1965-12-10), GCOATS A C: "Temperature effects on the peripheral auditory apparatus." XP002512781 Database accession no. NLM5853941 the whole document -/--	1-32



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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

30 January 2009

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/071935

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	& SCIENCE (NEW YORK, N.Y.) 10 DEC 1965, vol. 150, no. 702, 10 December 1965 (1965-12-10), pages 1481-1483, ISSN: 0036-8075 ----- WO 2007/051911 A (WEARFONE OY [FI]; HEIKKINEN TAITO [FI]) 10 May 2007 (2007-05-10) the whole document -----	1-32

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

Continuation of Box II.1

Claims Nos.: 26-28, 33-43, 87-96

Due to the step of delivering a caloric vestibular stimulation to an individual, independent claims 26, 41 and 87 relate to a method for treatment of the human or animal body by therapy (Rule 39.1(iv) PCT). Independent claim 33 does not fulfill the clarity requirements of the PCT since it is selfcontradictory with respect to whether or not there is a sleeve interposed between the thermoelectric transducer and the ear canal (Article 6 PCT).

Continuation of Box II.2

Claims Nos.:

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/071935

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.: 26-28, 33-43, 87-96
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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.:
1-25, 29-32

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-25, 29-32

Caloric vestibular stimulation device with sleeve

2. claims: 44-61

Caloric vestibular stimulation device with temperature
measuring element

3. claims: 62-86

Caloric vestibular stimulation device with stimulation
electrode

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/071935

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003195588	A1	16-10-2003	NONE
WO 2007051911	A	10-05-2007	CN 101356794 A 28-01-2009
			EP 1943819 A1 16-07-2008
			KR 20080072889 A 07-08-2008
			US 2008268913 A1 30-10-2008