Title: NON-STUTTERING BIOFEEDBACK METHOD AND APPARATUS USING DAF

Abstract: Methods, devices and systems treat non-stuttering speech and/or language related disorders by administering a delayed auditory feedback signal having a delay of about 200 ms via a portable device. The DAF treatment may be delivered on a chronic basis. For certain disorders, such as Parkinson’s disease, the delay is set to be about 100 ms, and may be set to be even shorter such as about 50 ms or less. Certain methods treat cluttering (an abnormally fast speech rate) by exposing the individual to a DAF signal having a sufficient delay that automatically causes the individual to slow his or her speech rate.
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
5 February 2004
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : A61F 5/38
US CL. : 600/023
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)
U.S. : 600/023; 128/905; 704/271

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>US 6,231,500 B1 (KEHOE) 15 May 2001, see entire document.</td>
<td>1-43</td>
</tr>
</tbody>
</table>

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 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 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
  - "&": document member of the same patent family

Date of the actual completion of the international search
17 October 2003 (17.10.2003)

Date of mailing of the international search report
24 November 2003

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703)305-3230

Authorized officer
John P. Lacy

Telephone No. 308-0858

Form PCT/ISA/210 (second sheet) (July 1998)