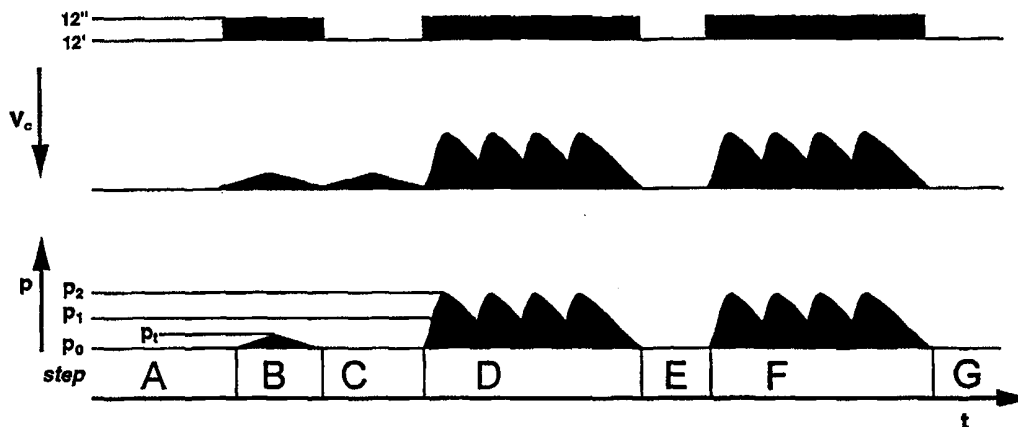




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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			(43) International Publication Date: 13 January 2000 (13.01.00)
(21) International Application Number: PCT/SE99/01167 (22) International Filing Date: 29 June 1999 (29.06.99) (30) Priority Data: 9802422-7 6 July 1998 (06.07.98) SE (71) Applicant (for all designated States except US): PASCAL MEDICAL AB [SE/SE]; Attn.: Engvall, Daniel, Pilefelts-gatan 73, S-302 50 Halmstad (SE). (72) Inventors; and (75) Inventors/Applicants (for US only): DENSERT, Barbara [SE/SE]; Örnäsvägen 76, S-302 40 Halmstad (SE). ENGVALL, Daniel [SE/SE]; Hertig Knuts gata 37B, S-302 50 Halmstad (SE). NILSSON, Anders [SE/SE]; Rosentorpsvägen 21, S-302 44 Halmstad (SE). (74) Agent: CONIMAR AB; Gerhard Miksche, P.O. Box 2086, S-141 02 Huddinge (SE).		(81) Designated States: AU, BG, BR, BY, CA, CN, CZ, EE, HR, HU, IL, IN, IS, JP, KR, KZ, LT, LV, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, ZA, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 24 February 2000 (24.02.00)	

(54) Title: METHOD OF TREATING MENIERE'S DISEASE AND CORRESPONDING APPARATUS



(57) Abstract

In a method of treating Ménière's disease intermittent air pressure pulse trains are administered to an outwardly sealed external ear volume bordering to a surgically perforated tympanic membrane. In a pulse train air pressure is increased from ambient (p₀) to a first level (p₁) and from there repeatedly to a second level (p₂) and repeatedly decreased to the first level (p₁), and finally decreased to ambient (p₀). P₁ is from 4 to 16 cm H₂O, p₂ is from 8 to 16 cm H₂O, with the proviso that p₁ > p₂, the pressure increase rate is from 0 to 4 mm H₂O per millisecond, the pressure decrease rate is from 0 to 2 mm H₂O per millisecond, the modulation frequency is from 3 to 9 Hz, the intermittent time period is from 3 to 10 seconds. Also disclosed is an apparatus for carrying out the method.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/01167

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A61F 11/00

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)

IPC7: A61F

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

SE,DK,FI,NO classes as above

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

EEPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9723178 A1 (PASCAL MEDICAL AB), 3 July 1997 (03.07.97), page 10, line 19 - page 12, line 28, figures 1-3 --	5-13
A	WO 8302556 A1 (DENSERT, BARBARA ET AL), 4 August 1983 (04.08.83), figure 1, abstract --	5-14
A	US 4754748 A (ANTOWSKI), 5 July 1988 (05.07.88), column 2, line 7 - column 3, line 23, figures 1-4 -- -----	5-14



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"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

"&" document member of the same patent family

Date of the actual completion of the international search

22 December 1999

Date of mailing of the international search report

07 -01- 2000

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE99/01167

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: **1-4**
because they relate to subject matter not required to be searched by this Authority, namely:
Methods for treatment of the human or animal body by surgery or therapy (PCT Rule 39.1(iv))
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:

Box II Observations where unity of invention is lacking (Continuation of item 2 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.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/SE 99/01167

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9723178 A1	03/07/97	AU 1403597 A SE 510140 C SE 9504658 A	17/07/97 19/04/99 23/06/97
WO 8302556 A1	04/08/83	AU 1151783 A EP 0099388 A FI 71804 B,C FI 834308 A SE 8200356 A	12/08/83 01/02/84 31/10/86 24/11/83 23/07/83
US 4754748 A	05/07/88	AU 4775085 A EP 0229060 A JP 62500148 T SE 8404375 D WO 8601399 A	24/03/86 22/07/87 22/01/87 00/00/00 13/03/86