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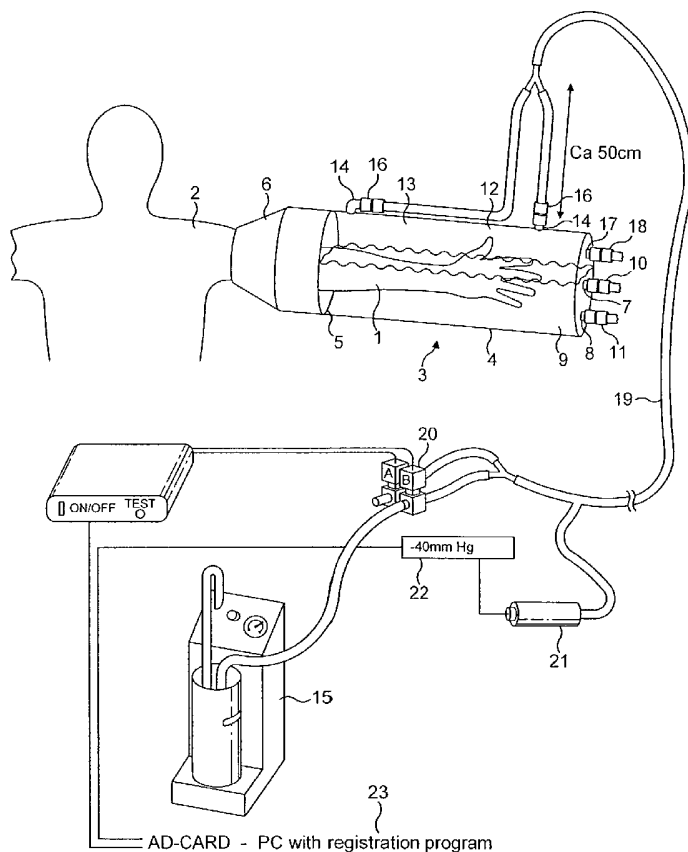
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[Continued on next page]

(54) Title: DEVICE FOR APPLYING A PULSATING PRESSURE TO A LOCAL REGION OF THE BODY AND APPLICATIONS THEREOF



(57) Abstract: The present invention generally relates to a device for applying a pulsating pressure to a local region of the body and applications thereof. The device may be used to increase the blood flow in a local region of the body, and in preferred embodiments provides a device for regulating the core body temperature of a patient. The disclosed device comprises a pressure chamber (4) and an element to generate pulses of pressure within the chamber. The pressure in the chamber can be negative, i.e. less than atmospheric, or positive. The limb to be treated is either immersed in liquid, contained in the pressure chamber, or separated from it by a liquid barrier layer in which case the device further comprises means for creating negative pressure between the barrier layer and the skin in order to maintain them in mutual contact.

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/05644

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 A61H9/00 A61H23/04 A61F7/08

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)  
 IPC 7 A61H A61F

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)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 094 983 A (MACLEOD NORMAN A) 25 June 1963 (1963-06-25)	1-5,7, 9-11,13, 14
Y	column 3, line 71 -column 4, line 36; figures 1,3,4,9-12	12,26
Y	US 5 683 438 A (GRAHN DENNIS A) 4 November 1997 (1997-11-04) cited in the application column 3, line 24 -column 4, line 38 column 5, line 49 - line 67; figure 1	12
A	US 2 272 481 A (EDWARD MEADOW ET AL) 10 February 1942 (1942-02-10) page 1, right-hand column, line 25 -page 2, right-hand column, line 11	1-14
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
- \*8\* document member of the same patent family

Date of the actual completion of the international search

28 May 2004

Date of mailing of the international search report

22 JUN 2004

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/05644

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 626 601 A (RILEY JOHN P) 27 January 1953 (1953-01-27) the whole document ---	1-3,10, 12
A	US 4 186 732 A (CHRISTOFFEL WILLIAM D) 5 February 1980 (1980-02-05) the whole document ---	1-14
A	US 3 859 989 A (SPIELBERG THEODORE E) 14 January 1975 (1975-01-14) the whole document ---	1-14
P, Y	WO 03/045289 A (DYNATHERM MEDICAL INC) 5 June 2003 (2003-06-05) page 7, line 15 -page 8, line 8 page 10, line 8 - line 21; figures 2,4A,5 ---	26
X	US 3 878 839 A (NORTON ROBERT L ET AL) 22 April 1975 (1975-04-22) column 4, line 40 -column 5, line 64 column 8, line 2 - line 33 column 11, line 13 - line 28; figures 2,3,6-8 ---	26
A	US 4 269 175 A (DILLON RICHARD S) 26 May 1981 (1981-05-26) the whole document ---	26
A	US 3 403 673 A (MACLEOD NORMAN A) 1 October 1968 (1968-10-01) the whole document -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 03/05644

## 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.: 15-25, 27-47  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
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 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:

see additional sheet

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

International Application No. PCT/ GB 03 /05644

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. Claims: 1-14

Device for applying pulsating pressure to a limb with a pressure chamber containing liquid, in use in direct contact with the limb, and an element for generating pulses of pressure transmitted to the limb directly via the liquid.

2. Claim : 26

Device for applying pulstating pressure to a limb with a pressure chamber containing liquid, in use separated from the limb by a barrier layer of flexible material, an element for generating pulses of pressure transmitted to the limb directly via the liquid and a means for generating negative pressure between the barrier and the limb to maintain the barrier layer in contact with the limb.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/05644

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3094983	A	25-06-1963 GB 979094 A	01-01-1965
US 5683438	A	04-11-1997 EP 0767640 A1 WO 9628120 A1	16-04-1997 19-09-1996
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