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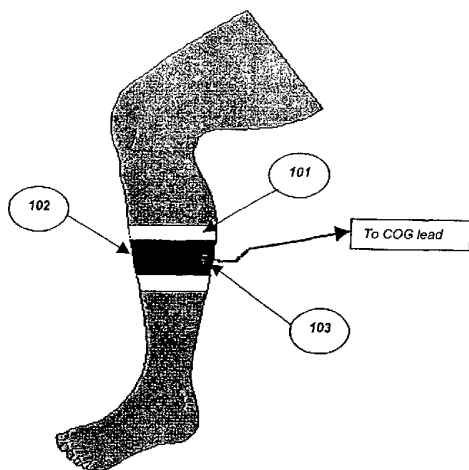
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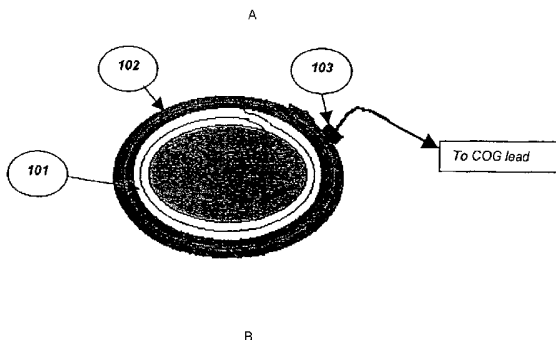
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[Continued on next page]

(54) Title: APPARATUS FOR PERFORMING MICROCURRENT ELECTROTHERAPY



(57) Abstract: An electrotherapy method and apparatus for healing injuries and tissue diseases to the human or animal body is disclosed. Particularly, the electrotherapy method disclosed herein comprises delivering a current under various conditions, such as, applying microcurrents ranging from 4 miliamperes to 1 femtoamperes, applying an alternating current with a frequency in the range of .00065 Hz to .00085 Hz, utilizing large surface area electrodes to achieve to low current densities of less than 5 microamperes per square inch. The apparatus of the present invention includes a plurality of electrode wraps for applying said electrotherapy method to a body. Each electrode wrap includes a first layer wrap of water absorptive material and a second layer wrap of moderately conductive material. Each electrode wrap is placed on a portion of the body, including, without limitation, arms, legs, hands, feet and torso. The method and apparatus of the present invention are useful in treating wounds, ulcerations, spinal cord injuries, amyotrophic lateral sclerosis, multiple sclerosis, nervous system abnormalities, scar tissue and age lines.



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patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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*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.*

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/42099

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 A61N1/04 A61N1/32 A61B5/05		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61N A61B		
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		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 935 156 A (MARINO CARL M ET AL) 10 August 1999 (1999-08-10) cited in the application column 3, line 7 -column 6, line 45; figures ---	9
A	GB 2 123 698 A (BIOSTIM INC) 8 February 1984 (1984-02-08) page 1, line 3 -page 2, line 18; figures ---	9,10
A	WO 99 20341 A (ELECTROLOGIC OF AMERICA INC) 29 April 1999 (1999-04-29) page 5, line 24 -page 10, line 19; figures ---	9,10
A	US 5 038 797 A (BATTERS ROBERT C) 13 August 1991 (1991-08-13) column 3, line 4 -column 6, line 17; figures ---	10,11
	-/--	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> 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. *&* document member of the same patent family		
Date of the actual completion of the international search  5 August 2002		Date of mailing of the international search report  12.08.2002
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  Rakotondrajaona, C

## INTERNATIONAL SEARCH REPORT

International Application No  
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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 5 010 896 A (WESTBROOK BARBARA-ANN) 30 April 1991 (1991-04-30) column 2, line 16 -column 3, line 21; figures ---	10,11
A	US 5 362 420 A (ITOH STEVEN K ET AL) 8 November 1994 (1994-11-08) column 2, line 65 -column 4, line 2; figures ---	10,11
A	US 4 240 437 A (CHURCH CHARLES J) 23 December 1980 (1980-12-23) column 3, line 67 -column 5, line 49; figures -----	10,11

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/42099

## 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.: 1-8  
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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

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

1. Claim : 9

A current output generator comprising: a user interface, a status display, a cycle span time display, a sonic alarm, a power supply, a voltage regulator, a polarity switching circuit, a constant current source, electrical safety circuits, a range cycle processor, an option board, a system control processor and a femto-pico attenuator.

2. Claims: 10, 11

An electrode wrap comprising:

- a) a first layer water absorbent bandage of sufficient length to cover 200 or more square inches of skin surface area, and
- b) a second layer moderately conductive, synthetic rubber impregnated cloth strap of sufficient length to cover 200 or more square inches of skin surface area, with said second layer wrap being approximately 2 inches wide and having a nominal resistance of .1666 Kohms for each foot of length.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/42099

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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