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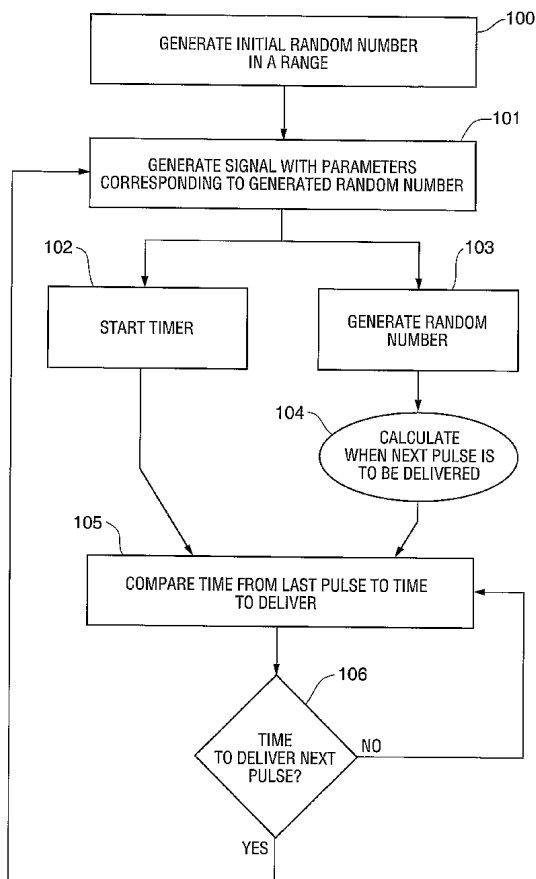
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[Continued on next page]

(54) Title: RANDOMIZED STIMULATION OF A GASTROINTESTINAL ORGAN



(57) Abstract: A device, system and method for stimulating a digestive organ. A random number is first generated (100) within a range of random numbers. Each random number corresponds to a particular stimulation signal or a stimulation parameter within a range of parameters. A pulse or burst of pulses with parameters corresponding to the generated random number is generated and delivered to a digestive organ for stimulation (101). Then a timer is started to identify when the first signal has been initiated (102) and a random number is again generated (103) corresponding to a particular stimulation signal of a stimulation parameter. And, a calculation is made as to when the next stimulation pulse or burst of pulses is to be delivered (104). The time for delivery of the next signal and the time of the timer are compared to determine if it is time for the next pulse or burst of pulses to be delivered. If it is not time to deliver the next pulse or burst of pulses (106) then the comparison is made again (105) until it is time to deliver the next pulse or burst of pulses (106).

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FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,  
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GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *with international search report*

**Declaration under Rule 4.17:**

— *as to applicant's entitlement to apply for and be granted a  
patent (Rule 4.17(ii))*

**(88) Date of publication of the international search report:**

23 April 2009

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US06/34003

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: A61N 1/00(2006.01)

USPC: 607/40

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. : 607/40

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)  
EAST and PALM

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,690,691 A (Chen et al ) 25 November 1997 (25.11.1997), fig.2;col.5,lines 52-58;col.7,lines 12-14;col.4,lines 45-63;col.3,lines 50-54;col.3,lines 30-33;col.9,lines 7-15 and fig.5,col.3,lines 63-67	1,3-10
Y	US 4,338,945 (Yukio Kosugi et al) 13 July 1982 (13.07.1982) ,col.1,lines 7-8,lines 17-30, lines 25-31	1,3-10
Y	US 4,153,059 (Fravel et al) 8 May 1979 (8.05.1979) col.1,lines 50-56.	2

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 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

11 June 2008 (11.06.2008)

Date of mailing of the international search report

11 JUL 2008

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/34003

## 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.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
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 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:  
Please See Continuation 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 additional fees, this Authority did not invite payment of any 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.: claim 1-10

- 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.

**BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-10, drawn to digestive organ stimulator.

Group II, claim(s) 11-19, drawn to a method of stimulating a digestive organ.

The inventions listed as Groups **I-II** do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature of the Group I invention is the claimed signal generator and feature is not present in group II. Therefore, unity of invention is lacking.