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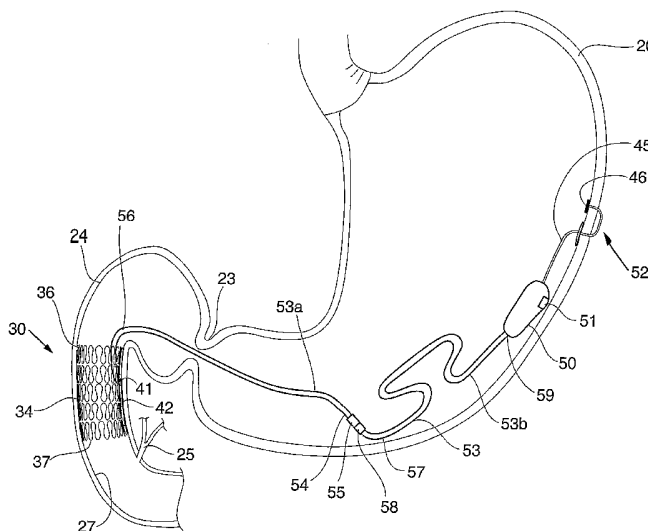
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(54) Title: GASTROINTESTINAL STIMULATION DEVICE



(57) Abstract: A fixation device for holding stimulating electrodes in electrical contact with the wall of a portion of the gastrointestinal tract is provided. In one embodiment, the fixation device includes an expandable member that fixes the electrodes in electrical contact with the gastrointestinal tract wall. Also provided is an implantable device and method for controlling the opening and/or closing of the pylorus. In particular a device and method is provided for stimulating the duodenum to control the closing/and or opening of the pylorus. Finally, a method is provided for treating obesity by controlling the pylorus to retain food in the stomach for a desired period of time, among other things to provide a feeling of satiety and/or to reduce hunger. One aspect includes controlling the pylorus's contraction by electrical stimulation of the duodenum.

WO 2005/041749 A3



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/US04/33210

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61N 1/18 US CL : 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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2003/0125788 A1 (LONG) 03 July 2003 (03.07.2003), see entire document	1, 3, 4, 6, 7, 10-12 ----- 15-22
X --- Y	US 5,423,872 A (CIGAINA) 13 June 1995 (13.06.1995), see entire document.	17-20 ----- 21
X,P --- Y	US 6,754,536 B2 (SWOYER et al.) 22 June 2004 (22.04.2004), see entire document.	13 and 14 ----- 21
X --- Y	US 6,591,137 B1 (FISCHELL et al.) 08 July 2003 (08.07.2003) see entire document.	17-20 ----- 15, 16, 21, 22
X, &	US 6,535,764 B2 (IMRAN et al.) 18 March 2003 (18.03.2003), see entire document.	13 and 14
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 03 August 2005 (03.08.2005)		Date of mailing of the international search report 23 SEP 2005
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 Jeffrey R. Jastrzab Telephone No. (571) 272-2000

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/33210

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 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/US04/33210

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.

- I. Claims 1-13, drawn to a gastrointestinal stimulation device with an expandable member fixation device.
- II. Claims 13-16, drawn to a gastrointestinal stimulation device and method of use.
- III. Claims 17-22, drawn to a method for treating obesity.

The inventions listed as Groups I-III 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 inventions have different modes of operation in that the method does not call for anchoring as in both stimulation devices, and the two stimulation devices have different anchoring particulars thus making them individually distinct. Inventions II and III are additionally distinct in that different effects are achieved, i.e. controlling pyloric contraction and controlling obesity.