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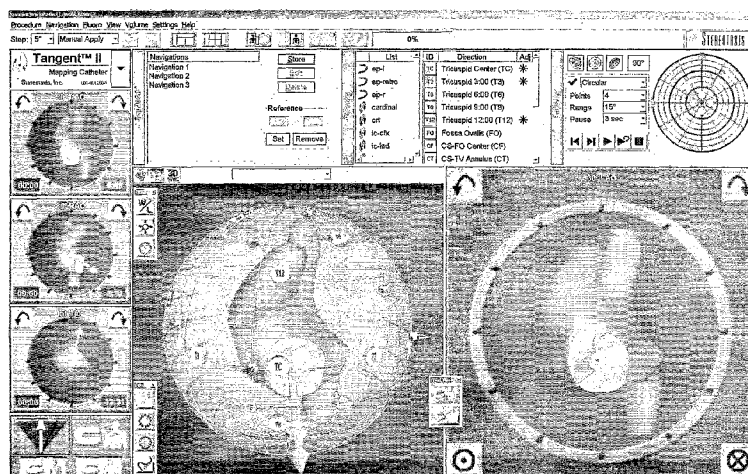
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(88) Date of publication of the international search report:

13 November 2008

(54) Title: USER INTERFACE FOR REMOTE CONTROL OF MEDICAL DEVICES



(57) Abstract: An interface for remotely controlling a medical device in a patient's body provides a two dimensional display of a three dimensional rendering of the operating region, and allows the user to select the orientation or location of the distal end of the medical device on the display and then operate a navigation system to cause the distal end of the medical device to approximately assume the selected orientation or location.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/19880

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: G06F 3/00( 2006.01);A61B 17/52( 2006.01);A61B 19/00( 2006.01)

USPC: 715/772,740,764,768,854,856

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. : 715/772,740,764,768,854,856

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)

USPAT; US-PGPUB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,343,936 B1 (KAUFMAN et al) 05 February 2002 (05.02.2002), abstract; figures 4-8	10-11

☐ 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

28 August 2008 (28.08.2008)

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/19880

## 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.: 1-22

### 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.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US05/19880

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

The inventions listed as Groups I-VI 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: each of the Groups defines a distinctly different interface, method and system for controlling a magnetic navigation system.

Group I is directed to an interface for controlling a magnetic navigation system for determining an application point in the operating region on a predetermined branched path through the subject's vasculature. Group II is directed to an interface for selecting one of the plurality of patterns of new orientations of a medical device. Group III is directed to an interface for indicating the desired direction of the applied magnet field on a display, the display including first and second active areas for separate controlling the indicator. Group IV is directed to an interface for displaying and manipulating a representation of a 3-D object, pointing on the surface of the 3-D object corresponding to directions in the operating region in a subject. Group V is directed to an interface for displaying a representation of the distal end of the medical device in the operating region. Group VI is directed to an interface for applying control variables to the navigation system.