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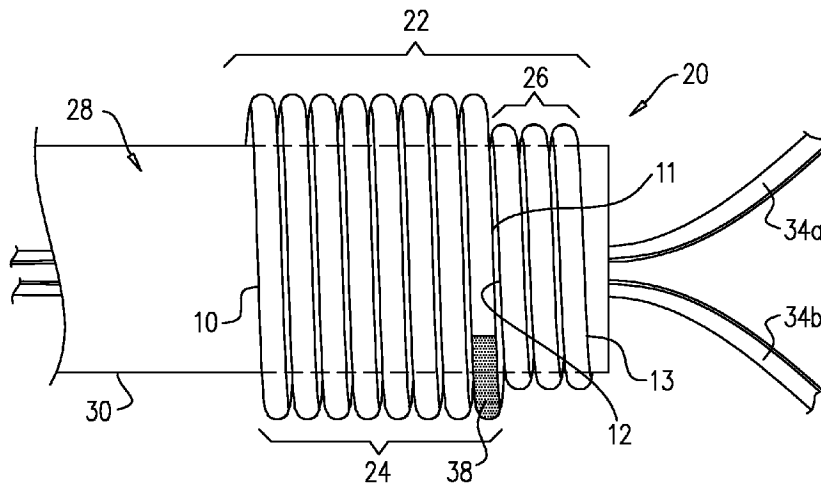
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(54) Title: LOCKING CONCEPTS

FIG. 1A



(57) Abstract: Apparatus (20) is described including first and second tubular elements (24, 26) shaped to define respective first and second lumens (L1, L2) therethrough. In an unlocked configuration, the first end (12) of the second tubular element (26) is disposed closer to the first end (10) of the first tubular element (24) than is the second end (13) of the second tubular element (26), and sutures (34a, 34b) are slidable through the first and second lumens (L1, L2). In a locking configuration, the second end (13) of the second tubular element (26) is disposed closer to the first end (10) of the first tubular element (24) than is the first end (12) of the second tubular element (26), and the sutures (34a, 34b) are inhibited from sliding through the first and second lumens (L1, L2). Other embodiments are also described.

WO 2013/179295 A3

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61B 17/04 (2013.01)

USPC - 606/232

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(8) - A44B 17/00; A61B 17/00, 17/04, 17/06, 17/10, 17/11, 17/68, 17/86, 17/88; A61M 25/02 (2013.01)

USPC - 24/102SL, 136R, 461, 504, 505, 517, 518, 519, 528, 544; 128/898; 604/175; 606/139, 142, 143, 144, 148, 151, 213, 216, 228, 232, 916

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
CPC - A61B 17/0401, 17/0467, 17/0487, 2017/0451, 2017/0496 (2013.01)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase, Google Patents, Google Scholar

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y         | US 2010/0121349 A1 (MEIER et al) 13 May 2010 (13.05.2010) entire document          | 28-31                 |
| Y         | US 2006/0106423 A1 (WEISEL et al) 18 May 2006 (18.05.2006) entire document         | 28-31                 |
| A         | US 2007/0276437 A1 (CALL et al) 29 November 2007 (29.11.2007) entire document      | 1-43                  |
| A         | US 2008/0300629 A1 (SURTI) 04 December 2008 (04.12.2008) entire document           | 1-43                  |
| A         | US 2007/0021781 A1 (JERVIS et al) 25 January 2007 (25.01.2007) entire document     | 1-43                  |

 Further documents are listed in the continuation of Box C.


\* 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

25 November 2013

Date of mailing of the international search report

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**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:

See extra 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 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.:

1-43

**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.

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, claims 1-43 are drawn to an apparatus for use with sutures.

Group II, claims 44-65 are drawn to an apparatus for use with a heart valve.

The inventions listed as Groups I and 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 features of Group I, a first tubular element, a second tubular element, an unlocked configuration, and a locking configuration are not present in Group II; and the special technical features of Group II, a support having a leaflet-engaging side, and a plurality of leaflet-piercing elements, are not present in Group I.

Since none of the special technical features of the Group I and II inventions is found in more than one of the inventions, unity is lacking.