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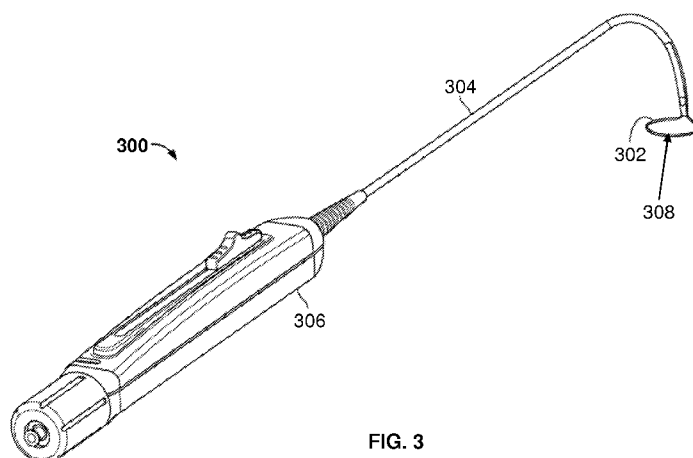


FIG. 3

(57) Abstract: Described here are closure devices and methods for ligating tissue, such as the left atrial appendage. The closure devices may comprise a snare loop assembly comprising a snare and a suture loop releasably attached thereto, and a snare control. The closure devices may further comprise one or more reference markings, wherein the relative positioning between a portion of the snare control and the reference markings provides an indication of the diameter of the snare loop assembly. In some variations, when the snare loop assembly is closed around a tissue such as the left atrial appendage, the measured diameter of the snare loop assembly may help a user determine whether the snare loop assembly has been properly positioned relative to the tissue, as well as the approximate size that a suture loop may have when released from the snare loop assembly.



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/37217

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61B 17/12 (2014.01)

CPC - A61B 17/12013

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) : A61B 17/12 (2014.01)

CPC : A61B 17/12013

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8) : A61B 17/00, 17/03, 17/04 (2014.01)

USPC : 606/1, 139, 144 148 CPC: A61B 17/00, 17/04, 17/0469, 17/12, 17/12009

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Patbase, Google Scholar, Google Patent: snare, suture, loop, thumb, slider, tension, force, load, gauge, gage, measure, indicate, detect, sense, diameter, mark, indicator, indicia, display, size, dimension, length, track, control, extend, retract, deploy, tighten, shorten, ligate, ligature, tissue, scale

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2012/170652 A1 (FUNG et al) 13 December 2012 (13.12.2012) see especially para [0042], [0045], [0046], [0047], [0120], [0133]-[0135], [0149]-[0152], fig 1, 4, 31A-B, 35A-D	1-8
Y	US 2003/0199817 A1 (THOMPSON et al) 23 October 2003 (23.10.2003) see especially para [0160]-[0163], fig 31, 32	1-8
A	US 2013/0035699 A1 (HENEVELD et al) 07 February 2013 (07.02.2013) see whole document	1-8
A	US 5,906,620 A (NAKAO et al) 25 May 1999 (25.05.1999) see whole document	1-8
A	US 5,300,078 A (BUELNA) 05 April 1994 (05.04.1994) see whole document	1-8
A	US 3,507,270 A (FERRIER) 21 April 1970 (21.04.1970) see whole document	1-8

☐ 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

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/37217

## 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 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 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.:  
1-8

### 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/US 14/37217

Box III - Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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.

Group I: claims 1-8 directed to a system

Group II: claims 9-12 directed to a device for closing tissue

The groups of inventions above 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:

Special Technical Features:

The special technical feature of the Group I claims is a controller having reference markings, which is not present in the claims of Group II.

The special technical feature of the Group II claims is retention member and stopper tube, which is not present in the claims of Group I.

Common Technical Features:

Groups I-II share the technical feature of an elongate body and a snare loop assembly comprising a snare and a suture loop. This generic feature does not avoid the prior art, as evinced by WO 2012/170652 A1 to Fung et al (hereinafter Fung) which notably teaches a ligation device having an elongate body and snare assembly comprising a snare and suture loop (para [0042], [0045], [0046], fig 14).

Therefore, the listed inventions lack unity of invention under PCT Rule 13 because they do not share a same or corresponding special technical feature.