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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))
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(88) Date of publication of the international search report:

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(54) Title: CLOSURE MEMBERS WITH CAM SURFACE ARRANGEMENTS FOR SURGICAL INSTRUMENTS WITH SEPARATE AND DISTINCT CLOSURE AND FIRING SYSTEMS

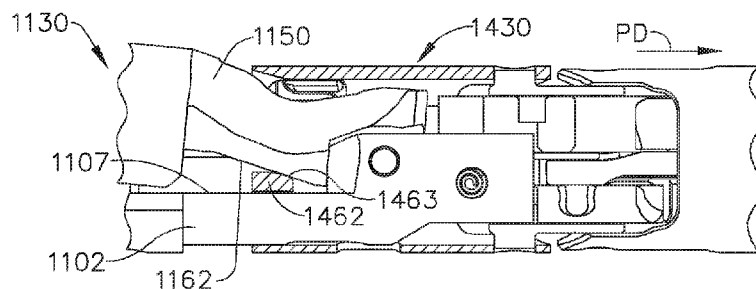


FIG. 37

(57) Abstract: A surgical instrument with separate closure and firing systems for applying closure and firing motions. In one form, the surgical instrument includes a hollow closure member and a firing member. The hollow closure member is configured to move axially between an unactuated position and closure positions. The firing member is supported for axial travel between a starting position in the hollow closure member and an ending position in the surgical end effector. The closure system is configured to apply closure actuation motions to the hollow closure member. The firing system is configured to apply a firing motion to the firing member in order to move the firing member from the starting position to the ending position.



# INTERNATIONAL SEARCH REPORT

International application No  
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**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A61B17/072  
ADD.

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)  
A61B

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)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2015/136833 A1 (SHELTON IV FREDERICK E [US] ET AL) 21 May 2015 (2015-05-21)	1-20
Y	paragraphs [0354], [0369], [0361] - [0363], [0358], [0366], [0369], [0375] - [0377]; figures 1-3,9A,13A,15,25	8,9,16
Y	----- EP 2 005 896 A2 (ETHICON ENDO SURGERY INC [US]) 24 December 2008 (2008-12-24)	8,9,16
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Y	----- US 2011/288573 A1 (YATES DAVID C [US] ET AL) 24 November 2011 (2011-11-24)	8,9,16
A	paragraph [0275]; figures 1,5,81,93-95	1,10,17
Y	----- US 2015/173756 A1 (BAXTER III CHESTER O [US] ET AL) 25 June 2015 (2015-06-25)	8,9,16
A	paragraphs [0346] - [0348], [0394]; figures 51-54	1,10,17
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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 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)

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"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

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**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/US2017/066385

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2011/290853 A1 (SHELTON IV FREDERICK E [US] ET AL) 1 December 2011 (2011-12-01) paragraph [0174]; figures 3.6,56 -----	8,9,16
A	WO 2009/039506 A1 (POWER MED INTERVENTIONS INC [US]; WHITMAN MICHAEL P [US]; MALINOUSKAS) 26 March 2009 (2009-03-26) figure 4C -----	8,9,16
A	EP 1 774 916 A1 (ETHICON ENDO SURGERY INC [US]) 18 April 2007 (2007-04-18) figure 2C -----	8,9,16
A	US 5 762 256 A (MASTRI DOMINICK L [US] ET AL) 9 June 1998 (1998-06-09) figure 9 -----	8,9,16
A	US 2013/056521 A1 (SWENSGARD BRETT E [US]) 7 March 2013 (2013-03-07) paragraph [0065] -----	8,9,16
A	WO 2016/187770 A1 (COVIDIEN LP [US]; COVIDIEN MEDICAL DEVICES TECH CO LTD [CN]) 1 December 2016 (2016-12-01) paragraph [0015]; figures 4,14 -----	8,9,16

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2017/066385

## 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 additional 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 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.:

### 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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7, 10-15, 17-20

End effector with firing member located completely within the closure member and closure system actuatable without actuating firing system

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2. claims: 8, 9, 16

Closure member with positive jaw opening feature

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# INTERNATIONAL SEARCH REPORT

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