#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



# 

(10) International Publication Number WO 2014/124255 A3

(43) International Publication Date 14 August 2014 (14.08.2014)

(51) International Patent Classification: A61B 17/068 (2006.01) A61B 17/072 (2006.01)

(21) International Application Number:

PCT/US2014/015299

(22) International Filing Date:

7 February 2014 (07.02.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/763,078 8 February 2013 (08.02.2013)

US

- (71) Applicant: ETHICON ENDO-SURGERY, INC. [US/US]; 4545 Creek Road, Cincinnati, OH 45242 (US).
- (72) Inventors: ARONHALT, Taylor, W.; 306 Beech Road, Loveland, OH 45140 (US). SMITH, Bret, W.; 4736 Eastport Drive, Kings Mills, OH 45034 (US). SCHMID, Katherine, J.; 3969 Sharonview Drive, Cincinnati, OH 45241 (US). SWAYZE, Jeffrey, S.; 7047 Birchley Drive, Hamilton, OH 45011 (US). HENDERSON, Cortney, E.; 191 Hounds Run, Loveland, OH 45140 (US). SCHEIB, Charles, J.; 11329 Donwiddle Drive, Loveland, OH 45140 (US). SHELTON, IV, Frederick, E.; 245 East Main Street, Hillsboro, OH 45133 (US).
- (74) Agents: JOHNSON, Philip, S. et al.; Johnson & Johnson, One Johnson & Johnson Plaza, New Brunswick, NJ 08933 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

#### **Declarations under Rule 4.17**:

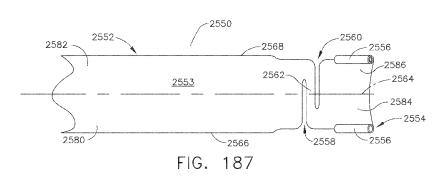
- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

#### Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report:

4 December 2014

#### (54) Title: ANVIL LAYER ATTACHED TO A PROXIMAL END OF AN END EFFECTOR



(57) Abstract: An anvil-attachable layer for use with a surgical stapler, or fastening instrument, wherein a proximal end portion of the layer is attached to a staple cartridge assembly, for example. The layer may be attached to the staple cartridge assembly by an adhesive, weld, or a staple-cartridge-based clamp, wherein the attachment is weak enough to allow the layer to pull away from the staple cartridge assembly with stapled tissue. Alternatively, the layer can include two or more lateral slits that define a connector region that can be cut by a knife of a surgical stapler to release the layer.





International application No PCT/US2014/015299

A. CLASSIFICATION OF SUBJECT MATTER INV. A61B17/068 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. DOCUM	C. DOCUMENTS CONSIDERED TO BE RELEVANT							
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.						
Х	US 2009/218384 A1 (ARANYI ERNIE [US]) 3 September 2009 (2009-09-03)	1-3,10						
A	paragraph [0075]; figures 23,11 paragraph [0072] paragraph [0074] paragraph [0073] paragraph [0052]	9						
Х	EP 1 256 317 A2 (ETHICON ENDO SURGERY INC [US]) 13 November 2002 (2002-11-13) column 4, line 40 - line 46; figures 1-3,7	1-5,7,8, 10						
X	EP 2 005 895 A2 (TYCO HEALTHCARE [US]) 24 December 2008 (2008-12-24) paragraph [0040]; figures 7,1, 12 paragraph [0041] paragraph [0042] - paragraph [0043] paragraph [0028]	1-3,6,10						
	-/							

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  Date of the actual completion of the international search  6 October 2014  Name and mailing address of the ISA/  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040,  Fax: (+31-70) 340-3040,  Fax: (+31-70) 340-3016	paragraph [0040]; figures 7,1, paragraph [0041] paragraph [0042] - paragraph [0 paragraph [0028]	_
"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 filling 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 filling date but later than the priority date claimed  Date of the actual completion of the international search  Name and mailing address of the ISA/  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040,  Later document published after the international filling date or priority date and not in conflict with the application but cited to understand the priority with the application but cited to understand the principle or theory underlying the invention 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 taken alone  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is accombined with one or more other such documents, such combination being obvious to a person skilled in the art  "X" document member of the same patent family  Date of mailing of the international search report  Allowandors  Allowandors	X Further documents are listed in the continuation of Box C.	·
6 October 2014  Name and mailing address of the ISA/  European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040,  Hausmann Alexanden	"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	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
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040,	·	
	European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040,	

International application No
PCT/US2014/015299

O(OOIIIIIIde	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012/318842 A1 (ANIM JACQUELINE A [US] ET AL) 20 December 2012 (2012-12-20) paragraph [0716]; figures 1,66,67,81 paragraph [0002] paragraph [0715]	11-19
Х	EP 2 090 252 A2 (ETHICON ENDO SURGERY INC [US]) 19 August 2009 (2009-08-19) paragraph [0053]; figures 40,43,44	11-14, 16-18
X	paragraph [0053]; figures 40,43,44  EP 2 462 880 A2 (TYCO HEALTHCARE [US] COVIDIEN LP [US]) 13 June 2012 (2012-06-13) paragraph [0067]; figures 22,26,13 paragraph [0068]	11,15, 16,19

International application No. PCT/US2014/015299

# **INTERNATIONAL SEARCH REPORT**

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:
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. X Claims Nos.: 11-19(partially) 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:  See FURTHER INFORMATION sheet PCT/ISA/210
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. X 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.
fee was not paid within the time limit specified in the invitation.  X  No protest accompanied the payment of additional search fees.

Information on patent family members

International application No PCT/US2014/015299

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2009218384	A1	03-09-2009	AU CA EP JP JP US	2010201031 A 2697819 A 2238918 A 5581101 B 2010240429 A 2009218384 A 2011215133 A	1 06-10-2010 1 13-10-2010 2 27-08-2014 28-10-2010 1 03-09-2009
EP 1256317	A2	13-11-2002	AU CA CN DE EP ES JP JP MX US	785035 B 3435802 A 2384900 A 1383788 A 60217008 T 1256317 A 1759640 A 2278875 T 2318657 T 4226267 B 2003000603 A PA02004509 A 2002165563 A	14-11-2002 1 07-11-2002 11-12-2002 2 12-07-2007 2 13-11-2002 2 07-03-2007 3 16-08-2007 3 01-05-2009 2 18-02-2009 07-01-2003 16-07-2004
EP 2005895	A2	24-12-2008	AU CA CN EP ES JP JP US US	2008202670 A 2634850 A 101336835 A 102319093 A 2005895 A 2417918 A 2393015 T 5335299 B 2009000531 A 2013150817 A 2008314960 A 2011036895 A 2014027490 A	1 22-12-2008 07-01-2009 18-01-2012 2 24-12-2008 1 15-02-2012 3 17-12-2012 2 06-11-2013 08-01-2009 08-08-2013 1 25-12-2008 1 17-02-2011
US 2012318842	A1	20-12-2012	EP US US US US US WO WO WO	2644112 A 2644118 A 2012241497 A 2012312860 A 2012318842 A 2012318844 A 2012318844 A 2013256382 A 2013148838 A 2014004195 A 2014004197 A 2014004199 A	2 02-10-2013 1 27-09-2012 1 13-12-2012 1 20-12-2012 1 20-12-2012 1 20-12-2012 1 20-12-2012 1 03-10-2013 2 03-10-2013 1 03-01-2014 1 03-01-2014
EP 2090252	A2	19-08-2009	BR CN EP HK JP JP RU US	PI0901513 A 101507637 A 2090252 A 1137127 A 5586857 B 2009189847 A 2009105159 A 2009206125 A	19-08-2009 2 19-08-2009 1 21-06-2013 2 10-09-2014 27-08-2009 20-08-2010

Information on patent family members

International application No
PCT/US2014/015299

					PCT/US2014/015299		
Patent document cited in search report		Publication date		Patent family member(s)		Publication date	
EP 2462880	A2	13-06-2012	AU CA EP US	2011250822 2757630 2462880 2012145763	9 A1 9 A2	28-06-2012 10-06-2012 13-06-2012 14-06-2012	

# FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-10

A staple cartridge according to claim 4 comprising a cartridge body, staple cavities, staples, a proximal end portion of the cartridge body, a layer with a proximal end portion and attachment means for attaching the first layer to the cartridge. The staple cartridge further comprising a second layer and the attachment means comprising a meltable region, solving the problem of how to attach a layer to the cartridge.

2. claims: 11-19(partially)

A staple cartridge according to claim 11 or 16 respectively comprising a cartridge body, staple cavities, staples, a proximal end portion of the cartridge body, a layer with a proximal end portion or attachment portion. The layer further comprising a second portion movable relative to the first portion/ attachment portion, solving the problem of how to provide an alternative way to attach a buttress on both sides of the tissue.

---

# FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

to the claims".

Claims Nos.: 11-19(partially)

An incomplete search has been carried out. The search of the second group of inventions covers only those embodiments of the claims that were found in the passages and figures that were indicated by the applicant in reply to the invitation to provide informal clarification pursuant to Rule 9.34 PCT.

It is noted that the applicant has indicated these passages and figures as being "particularly relevant" to the claims and expects the search to be carried out with "particular consideration" of them. However, such a formal, non-limiting statement is not suitable to overcome the deficiency explained to the applicant in invitation to provide informal clarification pursuant to Rule 9.34 PCT.

As stipulated under Rule 9.34 PCT, the European Patent Office has therefore drawn up a partial search report that is exclusively directed to the subject matter found in the passages that were indicated as being "particularly relevant

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.