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- (71) **Applicant** (for all designated States except US):
ETHICON ENDO-SURGERY, INC. [US/US]; 4545
Creek Road, Cincinnati, OH 45242 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants** (for US only): **SHELTON, Frederick E.** [US/US]; 245 East Main Street, Hillsboro, OH 45133 (US). **BAXTER, Chester O., III** [US/US]; 6375
Pawnee Ridge, Loveland, OH 45140 (US). **SWAYZE, Jeffrey S.** [US/US]; 7047 Birchley Drive, Hamilton, OH 45011 (US). **MORGAN, Jerome R.** [US/US]; 3275 S.
Whitetree Circle, Cincinnati, OH 45236 (US). **RHEE, Sora** [DE/US]; 353 West 4th Street, Cincinnati, OH 45202
(US). **ARONHALT, Taylor W.** [US/US]; 306 Beech
Road, Loveland, OH 45140 (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, 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

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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))

[Continued on next page]

(54) **Title:** STAPLE CARTRIDGE COMPRISING A VARIABLE THICKNESS COMPRESSIBLE PORTION

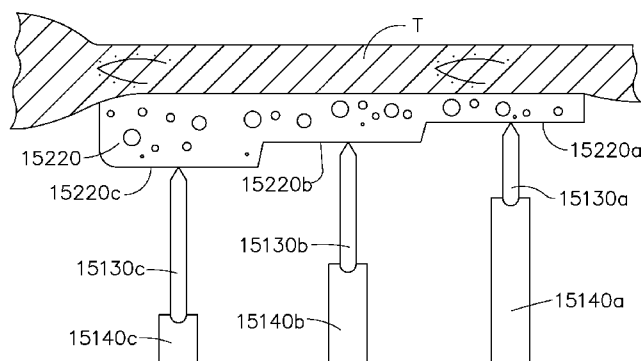


FIG. 297

(57) **Abstract:** A fastener cartridge can comprise a support portion, a tissue thickness compensator positioned relative to the support portion, and a plurality of fasteners positioned within the support portion and/or the tissue thickness compensator which can be utilized to fasten tissue. In use, the fastener cartridge can be positioned in a first jaw of a surgical fastening device, wherein a second jaw, or anvil, can be positioned opposite the first jaw. To deploy the fasteners, a staple-deploying member is advanced through the fastener cartridge to move the fasteners toward the anvil. As the fasteners are deployed, the fasteners can capture at least a portion of the tissue thickness compensator therein along with at least a portion of the tissue being fastened.



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14 March 2013

INTERNATIONAL SEARCH REPORT

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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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/131732 A1 (HOLSTEN HENRY E [US] ET AL) 14 June 2007 (2007-06-14)	1-19, 23-28
Y	paragraphs [0126], [0128], [0152], [0165], [0166]; figures 7, 9A-15, 17A-17F, 19A, 19B, 21A, 22A, 25, 26	11-20, 22
Y	EP 2 116 195 A1 (TYCO HEALTHCARE [US]) 11 November 2009 (2009-11-11) figures 1, 3, 6, 13	1-19, 23-28
Y	US 2007/262116 A1 (HUEIL JOSEPH C [US] ET AL) 15 November 2007 (2007-11-15) paragraphs [0098], [0099], [0110]; figures 11, 13, 14, 15, 15A, 19, 20, 29, 44, 46, 70, 71	1-10, 20, 22-28
	----- -/-	



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

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

16 November 2012

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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) 340-3016

Authorized officer

Assion, Jean-Charles

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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	EP 2 090 244 A2 (ETHICON ENDO SURGERY INC [US]) 19 August 2009 (2009-08-19) figures 24-26,29-32,62 -----	11-19, 23,26,28 1-10
Y A	EP 1 621 141 A2 (ETHICON ENDO SURGERY INC [US]) 1 February 2006 (2006-02-01) figures 10,17 -----	11-19, 23,26,28 1-10
Y	WO 03/086206 A1 (TYCO HEALTHCARE [US]) 23 October 2003 (2003-10-23) pages 19-20; figures 2A,2B,3,4>A,6,714,15 -----	11-19
Y	US 5 542 594 A (MCKEAN WANDA L [US] ET AL) 6 August 1996 (1996-08-06) column 4; figures 1,6,7 -----	11-19
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Y A	EP 2 111 803 A2 (TYCO HEALTHCARE [US]) 28 October 2009 (2009-10-28) paragraphs [0008], [0021], [0024]; figures 2,4 -----	20,22
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Y	US 2008/023522 A1 (OLSON LEE A [US] ET AL OLSON LEE ANN [US] ET AL) 31 January 2008 (2008-01-31) paragraphs [0033], [0085], [0109], [0149], [0153]; figures 3,6,11,18,42a,57,57a,62 -----	23,26,28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/032968

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: 1-10, 23-25, 27

staple cartridge with cradles and a tissue thickness compensator having different first and second thicknesses

2. claims: 11-19

staple cartridge having a slot configured to receive a cutting member and a deck having non parallel first and second top planes

3. claims: 20-22

staple cartridge having a deck surface having a proximal surface positioned above its distal surface

4. claims: 26, 28

cartridge with a staple driver moving several staples simultaneously

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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