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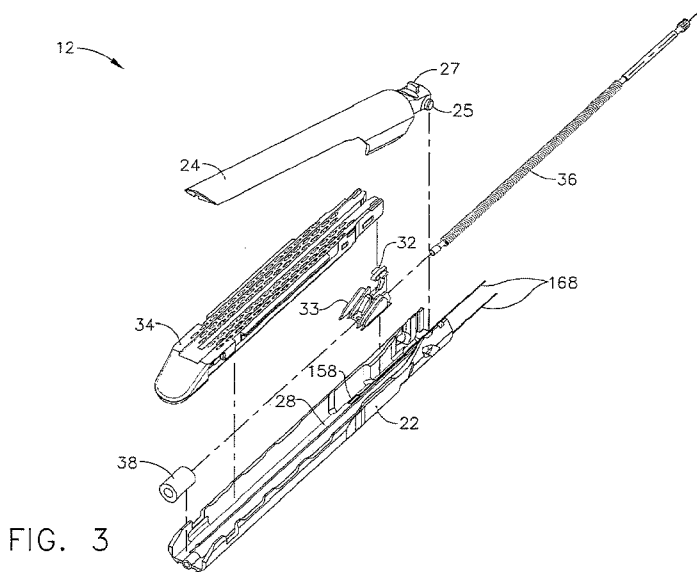
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Declarations under Rule 4.17:

- 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))

[Continued on next page]

(54) Title: SURGICAL CUTTING AND FASTENING INSTRUMENT WITH APPARATUS FOR DETERMINING CARTRIDGE AND FIRING MOTION STATUS



(57) Abstract: Sensor arrangements for determining the position of a firing element in an end effector of a surgical instrument. In various forms, the sensor arrangement comprises a resistive element (152) supported in the end effector. As the firing element (32, 33, 36) translates within the end effector, it movingly contacts the resistive element to generate signals indicative of the firing element position. In other arrangements, the sensor can detect the status or presence of a staple cartridge in the end effector. The sensor arrangement can communicate with a memory device (160), processor (180) and indicator (1005).





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- *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))*

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2013/023721

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 Y	US 2009/090763 A1 (ZEMLOK MICHAEL A [US] ET AL) 9 April 2009 (2009-04-09) figures 1,6-9,18-22	1,11 1-3, 5-15, 17-20

Y	US 5 693 042 A (BOIARSKI ANTHONY A [US] ET AL) 2 December 1997 (1997-12-02) figures 1-6	1-3,5-9, 11-15,17

Y	US 2006/278680 A1 (VIOLA FRANK J [US] ET AL) 14 December 2006 (2006-12-14) figures 1, 2, 2A, 2B, 3, 4, 10, 11	1-3,5-8, 11-15,17

Y	US 2011/288573 A1 (YATES DAVID C [US] ET AL) 24 November 2011 (2011-11-24) paragraphs [0210], [0292], [0302], [0327], [0376], [0377] figures 71, 72, 75, 93-95	10,18-20

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)

"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

"&" document member of the same patent family

Date of the actual completion of the international search

11 September 2013

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20/09/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/023721

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: 1-9, 11-17

A surgical instrument / staple cartridge with further limitations of the firing element to provide a more accurate user feedback on the position of the firing element (see claims 1, 3 and 12)

2. claims: 10, 18-20

A surgical instrument further including a robotic system with a processor for remotely determining positions of the firing element during robotic surgery (see claims 10 and 18).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2013/023721

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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