Title: SYSTEMS AND METHODS FOR MEDICAL DEVICE CONTROL

Abstract: Systems, devices, and methods of the present disclosure assist with management of tubes and hoses during surgical procedures. The systems, devices, and methods provide for the proper opening and closing of tubes to facilitate performance of steps in a surgical procedure. Systems, devices, and methods of the present disclosure control fluid delivery to and from a medical device, including devices for tissue processing and cleaning.
Published:
— with international search report (Art. 21(3))

(88) Date of publication of the international search report:

13 July 2019

(15) Information about Correction:

Previous Correction:

see Notice of 05 June 2017
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
INV. C12N5/077 A61M1/00 A61K35/35

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)
C12N A61M A61K

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

Electronic database consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>X</td>
<td>US 3 791 524 A (CHO N) 12 February 1974 (1974-02-12) col umn 1, l ine 58 - col umn 2, l ine 65</td>
<td>1-34</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C. X 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 novel or 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

"S" document member of the same patent family

Date of the actual completion of the international search
20 February 2017

Date of mailing of the international search report
25/04/2017

Name and mailing address of the ISA
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Fax: (+31-70) 340-3016

Filali, Salima

Form PCT/ISA/210 (second sheet) (April 2005)
# 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:

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.: 1-34

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

1. claims: 1-34

Claims 1-26: A tissue treatment system, comprising: a container and a flow management device
Claims 27-34: A flow management device comprising a first plate, a second plate and a third plate.

2. claims: 35-62

Claims 35-62
A tissue treatment system comprising a container, a filter structure, a multi-position switch.

3. claims: 63-75

Claims 63-75
A method of managing surgical conduits

4. claims: 76-85

Claims 76-85
A tube management device

5. claims: 86-90

Claims 86-90
A tissue treatment system comprising a container, a filter structure and a flow management device comprising a first plate and a second plate.

6. claims: 91-94

Claims 91-94
A flow management device comprising a first plate and a second plate.

7. claims: 95-99

Claims 95-99
A flow management device comprising a body including a plurality of first openings and a plurality of second openings.

8. claims: 100-104
Claims 100-104
A flow management comprising a plurality of diaphragm units

9. claims: 105-119

Claims 105-119
A container including an exterior wall surrounding an interior volume for holding tissue and a filter structure for processing tissue.

10. claims: 120-150

Claims 120-150
A container and a flow management device which include a first barrier, a second barrier and a third barrier
<table>
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<tr>
<th>Patent document cited in search report</th>
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<th>Patent family member(s)</th>
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<tr>
<td>US 3791524</td>
<td>12-02-1974</td>
<td>CA 955509 A</td>
<td>01-10-1974</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 2318475 Al</td>
<td>31-10-1973</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FR 2180111 Al</td>
<td>23-11-1973</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GB 1384997 A</td>
<td>26-02-1975</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP S4918094 A</td>
<td>18-02-1974</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 3791524 A</td>
<td>12-02-1974</td>
</tr>
</tbody>
</table>

|                                        |                | Wo 2007143286 A2        | 13-12-2007     |

| US 2013324966 Al                        | 05-12-2013     | AU 2013267772 Al        | 04-12-2014     |
|                                        |                | CA 2875363 Al           | 05-12-2013     |
|                                        |                | EP 2854892 Al           | 08-04-2015     |
|                                        |                | US 2013324966 Al        | 05-12-2013     |
|                                        |                | US 2016144086 Al        | 26-05-2016     |
|                                        |                | Wo 2013180952 Al        | 05-12-2013     |