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(71) Applicant: **INSERA THERAPEUTICS, INC.** [US/US]; 1560 Arcola Avenue, Sacramento, CA 95835 (US).

(72) Inventors: **JANARDHAN, Vallabh**; 1560 Arcola Avenue, Sacramento, CA 95835 (US). **JANARDHAN, Vikram**; 1560 Arcola Avenue, Sacramento, CA 95835 (US).

(74) Agent: **ALTMAN, Daniel, E.**; Knobbe, Martens, Olson & Bear, LLP, 2040 Main Street, 14th Floor, Irvine, CA 92614 (US).

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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))*

[Continued on next page]

(54) Title: ASPIRATION DEVICES AND ANCHORED FLOW DIVERTING DEVICES

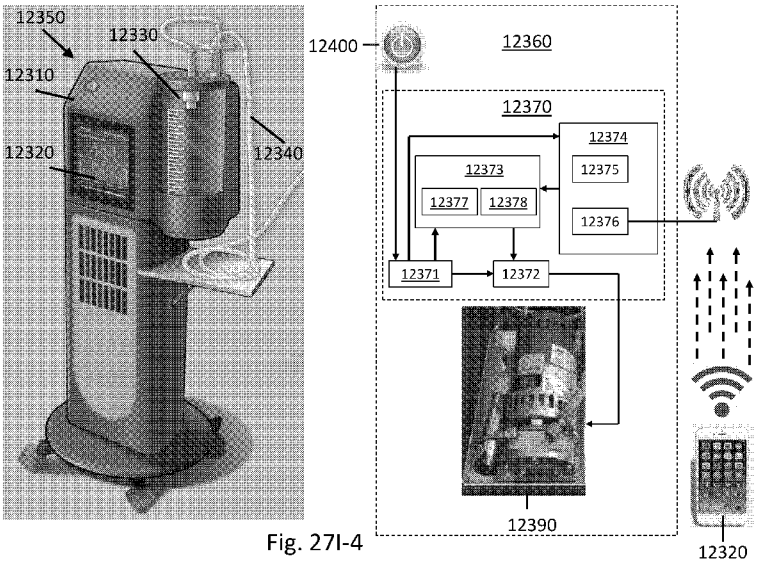


Fig. 27I-4

(57) Abstract: An aspiration system includes a pump and a control system in communication with the pump. The control system includes a microcontroller, an antenna configured to receive a signal, and a pump control board in communication with the microcontroller. The antenna is in communication with the microcontroller. Upon receiving the signal, the pump control board operates the pump to create negative pressure according to the signal.

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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER
IPC - A61B 17/08, 17/22; A61F 13/02, 13/12; A61M 1/00, 1/10, 27/00, 35/00 (2017.01)
CPC - A61B 17/08, 17/22; A61F 13/02, 13/0203, 13/12; A61M 1/00, 1/0023, 1/0031, 1/10, 1/1001, 1/1006, 1/1037, 27/00, 27/006, 35/00

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)
See Search History document

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	WO 2016/018448 A1 (SMITH & NEPHEW, INC.) 4 February 2016; abstract; paragraphs [0032], [0048], [0050]-[0051], [0053]-[0054], [0057], [0066]; figures 1, 3	1, 15-17, 26, 29, 33, 35-36, 38, 43, 119-120, 127, 137-139, 148, 151, 155, 157-158, 160, 165 --- 2-14, 18-25, 27-28, 30-32, 34, 37, 39-42, 44, 45/1-44, 46/45/1-44, 47/46/45/1-44, 48/46/45/1-44, 121-126, 128-136, 140-147, 149-150, 152-154, 156, 159, 161-164, 166, 167/119-166, 168/167/119-166, 169/168/167/119-166, 170/168/167/119-166
X -- Y	WO 2012/057881 A1 (KCI LICENSING, INC.) 3 May 2012; abstract; paragraphs [0024]-[0026], [0035], [0066], [0075]-[0076]; figures 1, 3	1, 30-31, 36-37, 42, 119, 152-153, 158-159, 164 -- 28, 30-32, 34, 37, 42, 45-48 (in part), 150, 152-154, 156, 159, 164, 167-170 (in part)

☒ 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	Date of mailing of the international search report
27 March 2017 (27.03.2017)	08 JUN 2017
Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US17/17824

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:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-48, 119-170 are directed towards an aspiration system.

Group II: Claims 49-118 are directed towards a device for treating an aneurism.

-***-Continued Within the Next Supplemental Box-***-

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 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.:
1-48, 119-170

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.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US17/17824

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2015/0032120 A1 (INSERA THERAPEUTICS, INC.) 29 January 2015; figure 27A; paragraphs [0028]-[0029], [0031], [0791], [0794]-[0795], [0800], [0803], [0835], [0838]-[0839]; claims 1, 9-10	2-14, 18-23, 45-48 (in part), 121-126, 128-136, 140-145, 167-170 (in part)
Y	US 2013/0201316 A1 (MAY PATENTS LTD.) 8 August 2013; paragraphs [0092], [0346]	39-41, 44, 45-48 (in part), 161-163, 166, 167-170 (in part)
Y	US 9,095,326 B2 (RITCHIE, PG et al.) 4 August 2015; column 2, lines 35-60; column 3, lines 40-50; column 7, lines 25-67; column 10, lines 10-30	24-25, 40, 45-48 (in part), 146-147, 162, 167-170 (in part)
Y	US 2014/0276897 A1 (ABBOTT MEDICAL OPTICS INC.) 18 September 2014; paragraphs [0030], [0057]	13-14, 21, 45-48 (in part), 133-134, 143, 167-170 (in part)
Y	(POWEREX) Medical Dry Rotary Vane Vacuum; [Retrieved from the internet 27 March 2017] <URL: http://www.powerexinc.com/article/image_182000000000197> 21 April 2015; page 1, table 1, paragraph 1	27, 45-48 (in part), 149, 167-170 (in part)
A	US 2008/0051708 Al (KUMAR, A et al.) 28 February 2008; entire document	1-48, 119-170
A	WO 2015/157330 A1 (INCUVATE, LLC) 15 October 2015; entire document	1-48, 119-170
A	US 4,930,997 A (BENNETT, AN) 5 June 1990; entire document	1-48, 119-170

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US17/17824

-***-Continued from Box III: Observations where unity of invention is lacking-***-

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

the special technical features of Group I include an aspiration system comprising: a pump; and a control system in communication with the pump, the control system comprising: a microcontroller; an antenna configured to receive a signal, the antenna in communication with the microcontroller; and a pump control board in communication with the microcontroller, wherein, upon receiving the signal, the pump control board operates the pump to create negative pressure according to the signal, which are not present in Group II; and the special technical features of Group II include a device for treating an aneurysm, the device comprising: a first plurality of wires woven to form a first textile structure expandable from a collapsed configuration to an expanded configuration; a second plurality of wires woven to form a second textile structure expandable from a collapsed configuration to an expanded configuration, the second textile structure in a lumen of the first textile structure; a first bulb; a second bulb; a third bulb longitudinally between the first bulb and the second bulb; a first neck radially inward of the third bulb and the first bulb, the third bulb longitudinally spaced from the first bulb by the first neck; and a second neck radially inward of the third bulb and the second bulb, the third bulb longitudinally spaced from the second bulb by the second neck; wherein the third bulb, at least a portion of the first neck, and at least a portion of the second neck comprise the first textile structure and the second textile structure, and wherein porosity of the third bulb is less than porosity of the first bulb and the second bulb, which are not present in Group I.

There are no common technical features between Groups I-II, therefore Groups I-II lack unity a priori.