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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 03/04/2025

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	

ART UNIT	PAPER NUMBER
3771	

NOTIFICATION DATE	DELIVERY MODE
03/04/2025	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Imperative Care v. Inari Medical
IPR2026-00215
Imperative Care Ex. 1002

APPLICATION NO.	ISSUE DATE	PATENT NO.
18/497,249	04-Mar-2025	12239333

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EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at https://patentcenter.uspto.gov

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	03/04/2025	12239333	111552.8023.US07	6832

25096 7590 02/12/2025

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ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional inventors):

Richard Quick, Mission Viejo, CA;
Benjamin Edward Merritt, San Clemente, CA;
John Coleman Thress, Capistrano Beach, CA;
Paul Lubock, Monarch Beach, CA;
Thomas M. Tu, Louisville, KY;

APPLICANT(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional applicants):

Inari Medical, Inc., Irvine, CA;

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18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 01/22/2025

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EXAMINER	
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Supplemental ***Notice of Allowability***	**Application No.** 18/497,249	**Applicant(s)** Quick, Richard	
	Examiner TUAN V NGUYEN	**Art Unit** 3771	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the Request for Continued Examination filed on 09/09/24.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-10 and 12-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☑ Other PTO-90C form.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
18/497,249	10/30/2023	Quick et al.	111552.8023.US07

	EXAMINER	
PERKINS COIE LLP - SEA General PATENT-SEA P.O. BOX 1247 SEATTLE, WA 98111-1247	TUAN V NGUYEN	
	ART UNIT	PAPER
	3771	20250116

DATE MAILED: _____

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Commissioner for Patents

Attached with this Office communication is the Information Disclosure Statement filed on October 11, 2024. The Information Disclosure Statement has been fully considered and signed by examiner.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

PTO-90C (Rev.04-03)

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5867385		03-02-1999	Ikari et al.	
		20240299053		09-12-2024	Hauser	
		20240307166		09-19-2024	Merritt et al.	
		20240307082		09-19-2024	Marchand et al.	
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		5246011		09-21-1993	Caillouette	
		20180280623		10-04-2018	Pilkington et ak	
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		4880408		11-14-1989	Cumes et al.	
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		6776770		08-17-2004	Trerotola	
		20100042118		02-18-2010	Garrison et al.	
		5938645		08-17-1999	Gordon	
		7998104		08-16-2011	Chang	
		8157760		04-17-2012	Criado et al.	
		6481439		11-19-2002	Lewis et al.	
		20170043066		02-16-2017	Laub	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		WO2020142381			07-09-2020	J.D. Franco & CO., LLC		
		WO2018019829			02-01-2018	NEURAVI LIMITED		
		JP2005511989 (corresponding to WO2003048616)			04-28-2005	WILLIAM A. COOK AUSTRALIA PTY.LTD		
		WO2003048616			06-12-2023	WILLIAM A. COOK AUSTRALIA PTY.LTD		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		JP2015208685 (corresponding to EP2939704)			11-24-2015	COOK MEDICAL TECHNOLOGIES LLC		
		EP2939704			11-04-2015	COOK MEDICAL TECHNOLOGIES LLC		
		DE1116001 (English Machine Translation)			10-26-1961	VER ARMATUREN GMBH		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
		Extended European Search Report received for European Application No. 21895504.5; Applicant: Inari Medical, Inc., Date of Mailing: August 16, 2024, 10 pages.	
		Shani, Jacob M.D., et al., "Mechanical Manipulation of Thrombus: Coronary Thrombectomy," Intracoronary Clot Displacement, and Transcatheter Aspiration," 72 Am. J. Cardiol. 116G-118G, 1993, 3 pages.	
		Bose, A., et al., "The Penumbra System: A Mechanical Device for the Treatment of Acute Stroke due to Thromboembolism," 29 Am. J. Neuroradiol. 1409-1413, August 2008, 6 pages.	
		Turk, Aquilla S., et al., "Initial clinical experience with the ADAPT technique: A direct aspiration first pass technique for stroke thrombectomy," 6 J. NeuroIntervent. Surg. 231-237, 2014, 8 pages.	
		Turk, Aquilla S., et al., "Aspiration thrombectomy versus stent retriever thrombectomy as first-line approach for large vessel occlusion (COMPASS): a multicentre, randomized, open label, blinded outcome, non-inferiority trial," 393 Lancet 998-1008, March 2019, 11 pages.	
		Saver, Jeffrey L., "Time is Brain-Quantified," Stroke Center and Department of Neurology, University of California, Los Angeles, 2005, https://www.ahajournals.org/doi/10.1161/01.str.0000196957.55928.ab, 4 pages.	
		Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, 103 pages.	
		Declaration of TROY L. THORNTON in Support of Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, filed with IPR as exhibit on August 12, 2024, 114 pages.	
		Expert Declaration of AQUILLA S. TURK, III, D.O. in Support of Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, filed with IPR as exhibit on August 12, 2024, 24 pages.	
		Declaration of TROY L. THORNTON in Support of Petition for Inter Partes Review of U.S. Patent No. 11,697,011, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, executed on July 8, 2024, filed with IPR as exhibit on August 12, 2024, 138 pages.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

		Petition for Inter Partes Review of U.S. PATENT NO. 11,697,011, Before the Patent Trial and Appeal Board, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, executed on July 8, 2024, filed with IPR as exhibit on August 12, 2024, 97 pages.	
		DEFENDANT IMPERATIVE CARE'S OPPOSITION TO PLAINTIFF INARI MEDICAL'S MOTION FOR A PRELIMINARY INJUNCTION, IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION, INARI MEDICAL, INC. (Plaintiff) V. IMPERATIVE CARE, INC. (Defendants), Civil Action No. 5:24-cv-03117-EKL, filed on September 9, 2024, 44 pages.	
		DECLARATION OF TROY THORNTON IN SUPPORT OF OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION, IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION, INARI MEDICAL, INC. (Plaintiff) V. IMPERATIVE CARE, INC. (Defendants), Civil Action No. 5:24-cv-03117-EKL, filed on September 9, 2024, 74 pages.	
		English translation of Japanese Office Action mailed September 17, 2024 for Japanese Application No. 2023-203650, 6 pages.	

EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	01/16/2025

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

Those documents which are marked with a double asterisk (**) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in prior applications listed as below and relied upon in this application for an earlier filing date under 35 U.S.C. 120.

- Application No. 18/358,837, filed July 25, 2023 (Attorney Docket No. 111552.8023.US06)

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-10-11
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

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	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	755.	20170021130	01-26-2017	Dye	
	756.	20160106353	04-21-2016	Schuetz et al.	
	757.	10960114	03-30-2021	Goisis	
	758.	10531883	01-14-2020	Deville et al.	
	759.	9581942	02-28-2017	Shippert	
	760.	5234403	08-10-1993	Yoda et al.	
	761.	20100106081	04-29-2010	Brandeis	
	762.	20100094201	04-15-2010	Mallaby	
	763.	20050004534	01-06-2005	Lockwood et al.	
	764.	20190365395	12-05-2019	Tran et al.	
	765.	20160038267	02-11-2016	ALLEN et al.	
	766.	20140222070	08-07-2014	BELSON et al.	
	767.	20130204297	08-08-2013	Melsheimer et al.	
	768.	11697012	07-11-2023	Merritt et al.	
	769.	11697011	07-11-2023	Merritt et al.	
	770.	20230218310	07-13-2023	Scheinblum et al.	
	771.	20230218383	07-13-2023	Merritt et al.	
	772.	20230218313	07-13-2023	Rosenbluth et al.	
	773.	20230200970	06-29-2023	Merritt et al.	
	774.	20230233311	07-27-2023	Merritt et al.	
	775.	20070233043	10-04-2007	Dayton et al.	
	776.	8343167	~~01-01-2013~~ 01-01-2025	Henson	
	777.	8568465	10-29-2013	Freudenthal et al.	
	778.	20230241302	08-03-2023	Merritt et al.	
	779.	20230240705	08-03-2023	Rosenbluth et al.	
	780.	20230240706	08-03-2023	Rosenbluth et al.	
	781.	10183159	01-22-2019	Nobles et al.	
	782.	20190366036	12-05-2019	Jalgaonkar et al.	
	783.	20110071503	03-24-2011	TAKAGI et al.	

Change(s) applied to document;
/J.G./
7/11/2024

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25096 7590 01/14/2025

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ART UNIT	PAPER NUMBER
3771	

NOTIFICATION DATE	DELIVERY MODE
01/14/2025	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

Response to Rule 312 Communication	Application No.	Applicant(s)	
	18/497,249	Quick et al.	
	Examiner	Art Unit	AIA (FITF) Status
	TUAN V NGUYEN	3771	Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☑ The amendment filed on 06 January 2025 under 37 CFR 1.312 has been considered, and has been:

a) ☑ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS)

☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78;

☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2);

☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012).

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

OK TO ENTER: /T.V.N/

01/08/2025

Docket No.: 111552.8023.US07
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard Quick et al.

Application No.: 18/497,249

Filed: October 30, 2023

For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Conf. No.: 6832

Art Unit: 3771

Examiner: Tuan Van Nguyen

Customer No. 25096

AMENDMENT AFTER ALLOWANCE UNDER 37 C.F.R. § 1.312

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The Applicant respectfully requests entry of this amendment under 37 C.F.R. § 1.312 for the above-identified U.S. patent application prior to issuance of the patent.

Amendments to the Claims begin on page 2.

Remarks begin on page 12.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**01/06/2025 10:33:52 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	68623961	AUTHORIZED BY	Matthew Williams
CUSTOMER #	25096	FILING DATE	10/30/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Richard Quick

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 5111	**E202516M34185101**	**JiYoung Anderson**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
			TOTAL AMOUNT:	**$1,200.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage

submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**01/06/2025 10:33:52 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	68623961	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-1-6 312 Amendment - 111552.8023.US07.pdf	12	Amendment after Notice of Allowance (Rule 312)	100 KB
2025-1-6 Comments - 111552.8023.US07.pdf	2	Transmittal Letter	90 KB
2025-1-6 Issue Fee Transmittal - 111552.8023.US07.pdf	2	Issue Fee Payment (PTO-85B)	237 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)

2025-1-6 312 Amendment - 111552.8023.US07.pdf	72E73956C466CE84E0FB882F0780EA3DFB755534BA160FB0D65E67473F28C325DE6961B7850B183C75C56375D1C786BE4A8094DEE6F9425D3C2AF30C98DE94C1
2025-1-6 Comments - 111552.8023.US07.pdf	3DA4B9FCAA763D1BE5C3E49624F6596FF9045D07FBA4B5862EDAF9AB3D1C607649C91B91C33F56BB8C4AF921BF66821E77CE911D3773185D94C9BC11D24DBAAE
2025-1-6 Issue Fee Transmittal - 111552.8023.US07.pdf	351495F87DD29ACF6459A4BF70AC5E26B994FBF54BF491524EEF4BF80489DCBC960535F90F34105EECE76988AFBF0C9D9449F84D96F346BBAF575E281E670D69

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B – FEE(S) TRANSMITTAL

Complete and send this form, together with the applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By fax, send to: (571) 273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Perkins Coie LLP (SEA - 25096)
P.O. Box 1247
PATENT - SEA
Seattle, WA, 98111-1247
US

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

JiYoung Anderson	(Typed or printed name)
/JiYoung Anderson/	(Signature)
2025-01-06	(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
18/497,249	Oct 30, 2023	Richard Quick	111552.8023.US07	6832

TITLE OF INVENTION: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
UTILITY	LARGE	1200	0	0	1200	2025-03-24

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN VAN	3771	606-200000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363)

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Perkins Coie LLP
2.
3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Inari Medical, Inc.

(B) RESIDENCE: (CITY and STATE or COUNTRY): Irvine, CA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees Submitted: ☑ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment (*Please first reapply any previously paid fee shown above*):

☑ Electronic Payment via Patent Center or EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 50-0665

5. Change of Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29. NOTE: Absent a valid Certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27. NOTE: If the application was previously under micro entity status, checking this box will be taken as a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status. NOTE: Checking this box will be taken as a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Matthew S. Williams/ Date 2025-01-06

Typed or printed name Matthew S. Williams Registration No. 77,516

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Richard Quick et al.

Application No.: 18/497,249 Confirmation No.: 6832

Filed: October 30, 2023 Art Unit: 3771

For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS Examiner: Tuan Van Nguyen

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In the Notice of Allowability mailed July 9, 2024 and December 24, 2024, the Examiner allowed claims 2–10 and 12–30. The Applicant acknowledges the Examiner's statements of Reasons for Allowance of the above-referenced patent application and agrees that the claimed subject matter is patentable. However, the Applicant takes no position regarding the Reasons for Allowance presented by the Examiner other than the positions the Applicant may have previously taken during prosecution. Therefore, the Examiner's Reasons for Allowance should not be attributed to the Applicant as an indication of the basis for the Applicant's belief that the claims are patentable. Furthermore, the Applicant respectfully asserts that there may also be additional reasons for patentability of the claimed subject matter not explicitly stated in this record and the Applicant does not waive its rights to such arguments by not further addressing such reasons herein.

Dated: January 6, 2025

Respectfully submitted,

By __/Matthew S. Williams/_____
Matthew S. Williams
Registration No.: 77,516

Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
Phone: (206) 359-3343
Fax: (206) 359-7198

Attorneys for Applicant

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Richard Quick et al.	Conf. No.: 6832
Application No.: 18/497,249	Art Unit: 3771
Filed: October 30, 2023	Examiner: Tuan Van Nguyen
For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	Customer No. 25096

AMENDMENT AFTER ALLOWANCE UNDER 37 C.F.R. § 1.312

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The Applicant respectfully requests entry of this amendment under 37 C.F.R. § 1.312 for the above-identified U.S. patent application prior to issuance of the patent.

Amendments to the Claims begin on page 2.

Remarks begin on page 12.

AMENDMENTS TO THE CLAIMS

Please amend claim 5. Following is a complete listing of the claims pending in the application, as amended:

1. (Canceled)

2. (Previously Presented) The clot collection reservoir of claim 3 wherein the second port is positioned proximate to the second housing end portion.

3. (Previously Presented) A clot collection reservoir, comprising:

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; and

a filter removably positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

4. (Previously Presented) The clot collection reservoir of claim 3, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap is removable from the housing to provide access to the filter.

5. (Currently Amended) A clot collection reservoir, comprising:

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber;

a cap configured to be releasably coupled to the second housing end portion; and

a filter coupled to the cap and configured to be positioned when the chamber when the cap is releasably ~~couled~~ coupled to the second housing end portion, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port;

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region; and

wherein the cap is removable from the housing to provide access to the filter.

6. (Previously Presented) A clot collection reservoir, comprising:

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber;

a cap configured to be releasably coupled to the second housing end portion; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port;

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region; and

wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

7. (Previously Presented) The clot collection reservoir of claim 3 wherein the first filter end portion is curved.

8. (Previously Presented) The clot collection reservoir of claim 3 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion.

9. (Previously Presented) The clot collection reservoir of claim 3 wherein the housing is entirely transparent, and wherein the first port is integrally formed with the housing.

10. (Previously Presented) The clot collection reservoir of claim 3 wherein the first filter end portion is positioned closer to the first housing end portion than the second filter end portion, and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end portion.

11. (Canceled)

12. (Previously Presented) The clot treatment system of claim 13 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

13. (Previously Presented) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

wherein the filter is removably positioned within the chamber to provide access to the clot material within the chamber.

14. (Previously Presented) The clot treatment system of claim 13 wherein the second port is positioned proximate to the second housing end portion.

15. (Previously Presented) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber;

a cap configured to be releasably coupled to the second housing end portion; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

16. (Previously Presented) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source;

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; and

a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.

17. (Original) The clot treatment system of claim 16 wherein the aspiration source is configured to generate the negative pressure in the chamber with the valve in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter.

18. (Previously Presented) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

a hemostasis valve coupled to a proximal portion of the aspiration catheter;

at least one tube fluidly coupling the first port to a portion of the aspiration catheter distal of the hemostasis valve;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion;

a second port configured to be fluidly coupled to the aspiration source; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.[[.]]

19. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve comprises:

a tubular member;

a button; and

a filament coupled to the button and the tubular member, wherein the button is actuatable to loosen the filament to unseal the hemostasis valve.

20. (Previously Presented) The clot treatment system of claim 13 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube fluidly coupling the second port to the aspiration source.

21. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration source is fluidly couplable to the at least one tube.

22. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve is configured to receive an instrument therethrough.

23. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve and the aspiration catheter are configured to receive and route an instrument therethrough.

24. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve comprises:

a tubular member defining a lumen;

a first filament extending in a first loop around the tubular member;

a second filament extending in a second loop around the tubular member; and

a pair of actuators biased to circumferentially constrict the first loop and the second loop to elastically deform the tubular member to a first position in which the lumen is constricted, wherein at least one the actuators is movable to decrease a level of tension in the first filament and a level of tension in the second filament to permit

the tubular member to expand against the first loop and the second loop to a second position in which the lumen of the tubular member is at least partially open.

25. (Previously Presented) The clot treatment system of claim 24 wherein the actuators each comprise a button.

26. (Previously Presented) The clot treatment system of claim 24 wherein the first filament includes a first portion operably coupled to a first one of the actuators and a second portion operably coupled to a second one of the actuators, and wherein the second filament includes a first portion operably coupled to the first one of the actuators and a second portion operably coupled to the second one of the actuators.

27. (Previously Presented) The clot treatment system of claim 24 wherein the first filament is flexible, and wherein the second filament is flexible.

28. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 16 French.

29. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 20 French.

30. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 22 French.

REMARKS

The Applicant respectfully requests entry of this amendment under 37 C.F.R. § 1.312 for the above-identified U.S. patent application prior to issuance of the patent. Claim 5 has been amended to correct a typographical error in this amendment. No new matter has been added by this submission.

Please charge any underpayment or credit any overpayment to our Deposit Account No. 50-0665, under Order No. 111552.8023.US07 from which the undersigned is authorized to draw.

Dated: January 6, 2025

Respectfully submitted,

By: /Matthew S. Williams/_____
Matthew S. Williams
Registration No.: 77,516

Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
Phone: (206) 359-3343
Fax: (206) 359-9000
Attorney for Applicant

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

25096 7590 12/24/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	
ART UNIT	**PAPER NUMBER**
3771	

DATE MAILED: 12/24/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

TITLE OF INVENTION: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	03/24/2025

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25096 7590 12/24/2024
PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

TITLE OF INVENTION: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	03/24/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN VAN	3771	606-200000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 12/24/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	
ART UNIT	PAPER NUMBER
3771	

DATE MAILED: 12/24/2024

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/497,249	Applicant(s) Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the Request for Continued Examination filed 09/09/24.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-10 and 12-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on September 9, 2024 has been entered.

Allowable Subject Matter

Claims 2-10 and 12-30 allowed.

Please see Notice of Allowance issued on July 9, 2024 for examiner's statement of reasons for allowance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN V NGUYEN whose telephone number is (571)272-5962. The examiner can normally be reached Monday - Friday 8:30 AM - 5:30 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on 571-272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61M1/60,0001,0003,0281	12/28/2023	TN
A61M39/0613	12/28/2023	TN
A61M2039/027,062	12/28/2023	TN
A61B17/22031	12/28/2023	TN
A61B2017/22035	12/28/2023	TN
A61M25/0122	12/28/2023	TN
A61B17/22031,22,221,220758,320725,22034,22042,22079,22094	12/28/2023	TN

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Group/subgroups combined with text (see search history printout)	12/28/2023	TN
Search update (see search history printout)	04/08/2024	TN
Search update (see search history printout)	06/17/2024	TN
Review references cited in IDSs	12/09/2024	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
Text search	USPAT; USPGPUB	06/17/2024	TN
Text search	USPAT; USPGPUB	12/09/2024	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC								
Symbol							Type	Version
A61B	/	17	/	22031			F	2013-01-01
A61M	/	25	/	0082			I	2013-01-01
A61B	/	17	/	22			I	2013-01-01
A61M	/	39	/	06			I	2013-01-01
A61B	/	17	/	221			I	2013-01-01
A61B	/	2017	/	22042			A	2013-01-01
A61M	/	2210	/	12			A	2013-01-01
A61B	/	2017	/	22079			A	2013-01-01
A61B	/	2017	/	22094			A	2013-01-01
A61B	/	2017	/	22034			A	2013-01-01
A61B	/	2017	/	00907			A	2013-01-01
A61B	/	2217	/	005			A	2013-01-01

CPC Combination Sets									
Symbol							Type	Set	Ranking	Version
	/		/							

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	09 December 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A and 3B

U.S. Patent and Trademark Office — Part of Paper No.: 20241209

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	**Art Unit**
	TUAN V NGUYEN	3771

INTERNATIONAL CLASSIFICATION				
CLAIMED				
A61B	/	17	/	22
A61B	/	17	/	221
A61M	/	25	/	00
A61M	/	39	/	06

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771 (Primary Examiner)	09 December 2024 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A and 3B

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	**Art Unit**
	TUAN V NGUYEN	3771

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	7	10	18	19	26	28								
2	2		11	13	20	27	29								
1	3	11	12	19	21	28	30								
3	4	10	13	20	22										
8	5	12	14	21	23										
9	6	14	15	22	24										
4	7	15	16	23	25										
5	8	16	17	24	26										
6	9	17	18	25	27										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	09 December 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A and 3B

U.S. Patent and Trademark Office Part of Paper No.: 20241209

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		12115056		10-15-2024	Merritt et al.	
		12114876		10-15-2024	Quick et al.	
		20240341779		10-17-2024	Dinh	
		20240341788		10-17-2024	Cox et al.	
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		20180042623		02-15-2018	Satiste	
		20040019310		01-29-2004	Hogendijk	
		20150173782		06-25-2015	Garrison et al.	
		20160106353		04-21-2016	Schuetz et al.	
		20170043066		02-16-2017	Laub	
		20160220741		08-04-2016	Garrison et al.	
		20130281788		10-24-2013	Garrison	
		20140257363		09-11-2014	Lippert	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		WO2014139845			09-18-2014	Neuravi Limited		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	12/09/2024

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

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- Application No. 18/358,837, filed July 25, 2023 (Attorney Docket No. 111552.8023.US06)

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-10-26
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		8529596		09-10-2013	Grandfield et al.	
		8632584		01-21-2014	Henkes et al.	
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		20200324079		10-15-2020	Jalgaonkar et al.	
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		11969331		04-30-2024	Merritt et al.	
		11969178		04-30-2024	Hauser	
		11974910		05-07-2024	Merritt et al.	
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		11980537		05-14-2024	Merritt et al.	
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		12016580		06-25-2024	Quick et al.	
		20240157041		05-16-2024	Zikry et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

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	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS						
		20240198072		06-20-2024	Merritt et al.	
		20170238951		08-24-2017	Yang et al.	
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		9545464		01-17-2017	Roche et al.	
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		20240285387		08-29-2024	Merritt et al.	
		20060079787		04-13-2006	Whiting et al.	

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	**	WO2024103036			05-16-2024	Shifamed Holdings LLC		
	**	WO2019064306			04-04-2019	CERETRIVE LTD.		
	**	CN102316809 (Counterpart: WO2010/095712)			01-11-2012	WELLFIND CO., LTD.		
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	**	JP2003033359			02-04-2023	TARGET THERAPEUTICS INC		
	**	EP0914807 (corresponds to JP2003033359)			05-12-1999	TARGET THERAPEUTICS INC		
	**	JP2016104212			06-09-2016	Covidien LP		
	**	EP2367482 (corresponds to JP2016104212)			10-12-2016	Covidien LP		
	**	JP2017533051			11-09-2017	NATIONAL UNIVERSITY OF IRELAND, GALWAY		
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	**	JP2011517424 (corresponds to WO2009126747)			06-09-2011	REVERSE MEDICAL CORP		
	**	WO2009126747			10-15-2009	REVERSE MEDICAL CORP		
	**	CN110312481 (corresponds to US2018193043)			10-08-2019	Inari Medical, Inc.		
	**	CN106470728 (corresponds to WO2015191646)			03-01-2017	Inceptus Medical, LLC		
	**	WO20002055146			07-18-2002	Microvention, Inc.		

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	**	JP7324264 (corresponds to WO2017070702)			08-01-2023	Inari Medical, Inc.		
	**	JP7491974 (corresponds to WO2017070702)			05-20-2024	Inari Medical, Inc.		
	**	JP7253376 (corresponds to WO2017070702)			03-29-2023	Inari Medical, Inc.		
	**	WO2017070702			04-27-2017	Inari Medical, Inc.		
	**	JP2016513505 (corresponds to WO2014139845)			05-16-2016	Neuravi Limited		
	**	JP2018525088 (corresponds to WO2017033182)			09-06-2018	CARDIOSERT LTD.		
	**	WO2017033182			03-02-2017	CARDIOSERT LTD.		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	**	International Search Report and Written Opinion for International App. No. PCT/US2023/079428; Applicant: Inari Medical, Inc., Date of Mailing: May 29, 2024, 18 pages.	
	**	Extended European Search Report for European Application No. 21818772.2, Applicant: Inari Medical, Inc., Date of Mailing: May 10, 9 pages.	
	**	Chinese Office Action received for Application No. 202111061740.2, Applicant: Inari Medical, Inc, Date of Mailing: May 23, 2024, 15 pages.	
	**	English translation of Japanese Office Action mailed June 25, 2024 for Japanese Application No. 2022-574456, 5 pages.	
	**	Japanese Office Action mailed July 8, 2024 for Japanese Application No. 2022-522892, 14 pages.	
	**	Chinese first Office Action mailed May 10, 2024 for Chinese Application No. 202080087833.X, 11 pages.	
	**	Partial Supplementary European Search Report received for European Application No. 21852966.7; Applicant: Inari Medical, Inc., Date of Mailing: July 23, 2024, 12 pages.	
	**	Japanese Office Action mailed August 2, 2024 for Japanese Application No. 2023-213724, 3 pages.	

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	Attorney Docket Number	111552.8023.US07

	**	English Translation of Japanese Office Action mailed July 23, 2024 for Japanese Application No. 2022-535535, 11 pages.	

EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	12/09/2024

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Name/Print	Matthew S. Williams	Registration Number	77516

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		20150283309		10-08-2015	Look et al.	
		20180338770		11-29-2018	MOGI et al.	
		20150314050		11-05-2015	BEER	
		20180339130		11-29-2018	Ogle	
		20140276592		09-18-2014	Mottola et al.	
		20180078707		03-22-2018	LOONAN	
		20110087173		04-14-2011	Sibbitt, JR. et al.	
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		20240016993		01-18-2024	Haslam et al.	
		5376071		12-27-1994	Henderson	
		4036232		07-19-1977	Genese	
		6436085		08-20-2002	Lauer	
		4187849		02-12-1980	Stim	
		6152909		11-28-2000	Bagaoisan et al.	
		4693257		09-15-1987	Markham	
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

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		11406418		08-09-2022	Bruzzi et al.	
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	Examiner Name	Tuan Van Nguyen
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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		JP2000175925			06-27-2000	ASAHI OPTICAL CO LTD		
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		EP3449967			03-06-2019	COVIDIEN LP		

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		EP4252992			10-04-2023	INCEPT LLC		
		WO2023115032			06-22-2023	COVIDIEN LP		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
		English machine translation of Japanese Office Action mailed October 10, 2024 for Japanese Application No. 2022-522892, 11 pages.	

EXAMINER SIGNATURE

Examiner Signature	/TUAN V NGUYEN/	Date Considered	12/09/2024

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

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	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-11-19
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L243	5	("8529596" "8632584" "8795317" "9072537" "10426644" "10456151" "11337714" "20030004536" "20110009950" "20190216476" "20230047682" "20210154433" "20180235742" "20200078029" "20030191425" "0060149219" "20120143123" "20200324079" "20050080398" "11969332" "11969333" "11969331" "11969178" "11974910" "11974909" "11980537" "11986382" "11998436" "12016580" "20240157041" "20240198072" "20170238951" "20240207593" "12023057" "20240225674" "20090082857" "5053008" "10779855" "20180014840" "20150327875" "20240245501" "20240245502" "3383131" "4705518" "8118275" "11197684" "11478262" "2502639" "4826483" "2707954" "9545464" "5429610" "20060085952" "20240285387" "20060079787" "12115056" "12114876" "20240341779" "20240341788" "12109384" "20150265423"	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:32 AM

		"20180042623" "20040019310" "20150173782" "20160106353" "20170043066" "20160220741" "20130281788" "20140257363").pn.					
L244	2	("12115056" "12114876" "20240341779" "20240341788" "12109384" "20150265423" "20180042623" "20040019310" "20150173782" "20160106353" "20170043066" "20160220741" "20130281788" "20140257363" "11317939" "11406418" "11419621" "11553942" "20200030579" "20220378451" "20230210554" "9254352" "10195320" "11253277" "11553935" "11633272" "11638637" "11819228" "20210186537" "20220226555" "20230015259" "20230248498" "20230248499" "20230248500" "20230248501" "20230248503" "20230248504" "20230355371" "20240016505" "20240108366" "20240131235" "20240173042" "20240261492" "8613717" "9044575" "9402938" "9492635" "9844643" "9937321" "10179224" "10183147" "10188829" "10383983"	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:39 AM

		"10441745" "10492805" "10537710" "10561440" "10661053" "10799671" "10835711" "11147948" "11147949" "11589880" "11672561" "2022021197" "20220331554" "20220378445" "20220378446" "20220378447" "20220378448" "20220378460" "20220387072" "20230149034").pn.					

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N113	3	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:25 AM
N114	1	(aspiration AND vacuum AND connection SAME tub$4 SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:26 AM

		filter WITH chamber AND flow WITH controller SAME second WITH flow AND check WITH valve SAME connector SAME filter).clm.					
N115	3	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:26 AM
N116	3	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/09 09:26 AM

Bibliographic Data

Application No: 18/497,249

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /TUAN V NGUYEN/ Examiner's Signature | Initials

Title: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/30/2023	606	3771	111552.8023.US07
RULE			

APPLICANTS

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Thomas M. Tu, Louisville, KY, UNITED STATES

CONTINUING DATA

This application is a CON of 17865307 07/14/2022 PAT 11849963

17865307 is a CON of 17498642 10/11/2021 PAT 12016580

17498642 is a CON of 16258344 01/25/2019 PAT 11154314

16258344 has PRO of 62622691 01/26/2018

FOREIGN APPLICATIONS

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11/27/2023

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SEATTLE, WA 98111-1247
UNITED STATES

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	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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		6436085		08-20-2002	Lauer	
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		4693257		09-15-1987	Markham	
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	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

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	Examiner Name	Tuan Van Nguyen
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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
		English machine translation of Japanese Office Action mailed October 10, 2024 for Japanese Application No. 2022-522892, 11 pages.	

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-11-19
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**11/19/2024 03:17:57 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	68025222	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 39

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024-11-19 IDS SB08 - 111552.8023.US07.pdf	7	Information Disclosure Statement (IDS) Form (SB08)	155 KB
Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
FOR_EP4039205.pdf	62	Foreign Reference	1294 KB
FOR_EP3449967.pdf	22	Foreign Reference	1648 KB
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FOR_EP4072613_WO2021119197A1.pdf	30	Foreign Reference	1253 KB

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FOR_EP3305221.pdf	1EB7C2042858408EE3EA2841E946EC860F0F31F62035BFB459 CE036CB9B2278330606ED0FC15F6C3E2403068383EED0DE7 ABDD77CC08AE62378A64979F471B33
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FOR_EP3344157_WO2017041062A1.pdf	9B10E7579395B080461572DCE826AFA05FE5A25742DF541576 98F5C789563633C4E0DBBEA7C1CD6DCF04452ECA6F34014B 1C53A6039F1ABF07574E292A773648
FOR_EP3422963_WO2017152086A1.pdf	16C33528E4CA43AEB787EA1C0BE8775CAFB9D9200317539C 5D3B1F4AA908D10AB24CA331F4A158B87DD5AD2707D07B8C 37F5BAAD4EBDD22034C72178D194E74F
FOR_EP3419528_WO2017147493A1.pdf	9C01916E2DAEF76F890BCE9E98EE04137BB41BB741A447BD 590518AF292AA5B63425F1AD2E4633FA0B667BA21369186572 4397B1281186D4CD9F8F629AA36006

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**10/26/2024 06:59:30 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	67733605	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024-10-26 IDS SB08 - 111552.8023.US07.pdf	3	Information Disclosure Statement (IDS) Form (SB08)	128 KB
Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
FOR_WO2014139845.pdf	75	Foreign Reference	3949 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024-10-26 IDS SB08 - 111552.8023.US07.pdf	07C7BFE66262572B0935BA626478F7DEE808EB089C24D9C7E 07DF3A9736D95D5AE447FB617B5E729DC32C1660BB283D7D

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BF90ABF7585FD42D878033F6FD5205F

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Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		12115056		10-15-2024	Merritt et al.	
		12114876		10-15-2024	Quick et al.	
		20240341779		10-17-2024	Dinh	
		20240341788		10-17-2024	Cox et al.	
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		20130281788		10-24-2013	Garrison	
		20140257363		09-11-2014	Lippert	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		WO2014139845			09-18-2014	Neuravi Limited		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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	Attorney Docket Number	111552.8023.US07

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

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	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

Those documents which are marked with a double asterisk (**) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in prior applications listed as below and relied upon in this application for an earlier filing date under 35 U.S.C. 120.

- Application No. 18/358,837, filed July 25, 2023 (Attorney Docket No. 111552.8023.US06)

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-10-26
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5867385		03-02-1999	Ikari et al.	
		20240299053		09-12-2024	Hauser	
		20240307166		09-19-2024	Merritt et al.	
		20240307082		09-19-2024	Marchand et al.	
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		5246011		09-21-1993	Caillouette	
		20180280623		10-04-2018	Pilkington et ak	
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		4880408		11-14-1989	Cumes et al.	
		20070010787		01-11-2007	Hackett et al.	
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		6776770		08-17-2004	Trerotola	
		20100042118		02-18-2010	Garrison et al.	
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		7998104		08-16-2011	Chang	
		8157760		04-17-2012	Criado et al.	
		6481439		11-19-2002	Lewis et al.	
		20170043066		02-16-2017	Laub	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
		WO2020142381			07-09-2020	J.D. Franco & CO., LLC		
		WO2018019829			02-01-2018	NEURAVI LIMITED		
		JP2005511989 (corresponding to WO2003048616)			04-28-2005	WILLIAM A. COOK AUSTRALIA PTY.LTD		
		WO2003048616			06-12-2023	WILLIAM A. COOK AUSTRALIA PTY.LTD		

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		JP2015208685 (corresponding to EP2939704)			11-24-2015	COOK MEDICAL TECHNOLOGIES LLC		
		EP2939704			11-04-2015	COOK MEDICAL TECHNOLOGIES LLC		
		DE1116001 (English Machine Translation)			10-26-1961	VER ARMATUREN GMBH		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
		Extended European Search Report received for European Application No. 21895504.5; Applicant: Inari Medical, Inc., Date of Mailing: August 16, 2024, 10 pages.	
		Shani, Jacob M.D., et al., "Mechanical Manipulation of Thrombus: Coronary Thrombectomy," Intracoronary Clot Displacement, and Transcatheter Aspiration," 72 Am. J. Cardiol. 116G-118G, 1993, 3 pages.	
		Bose, A., et al., "The Penumbra System: A Mechanical Device for the Treatment of Acute Stroke due to Thromboembolism," 29 Am. J. Neuroradiol. 1409-1413, August 2008, 6 pages.	
		Turk, Aquilla S., et al., "Initial clinical experience with the ADAPT technique: A direct aspiration first pass technique for stroke thrombectomy," 6 J. NeuroIntervent. Surg. 231-237, 2014, 8 pages.	
		Turk, Aquilla S., et al., "Aspiration thrombectomy versus stent retriever thrombectomy as first-line approach for large vessel occlusion (COMPASS): a multicentre, randomized, open label, blinded outcome, non-inferiority trial," 393 Lancet 998-1008, March 2019, 11 pages.	
		Saver, Jeffrey L., "Time is Brain-Quantified," Stroke Center and Department of Neurology, University of California, Los Angeles, 2005, https://www.ahajournals.org/doi/10.1161/01.str.0000196957.55928.ab, 4 pages.	
		Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, 103 pages.	
		Declaration of TROY L. THORNTON in Support of Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, filed with IPR as exhibit on August 12, 2024, 114 pages.	
		Expert Declaration of AQUILLA S. TURK, III, D.O. in Support of Petition for Inter Partes Review of U.S. Patent No. 11,744,691, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, filed with IPR as exhibit on August 12, 2024, 24 pages.	
		Declaration of TROY L. THORNTON in Support of Petition for Inter Partes Review of U.S. Patent No. 11,697,011, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, executed on July 8, 2024, filed with IPR as exhibit on August 12, 2024, 138 pages.	

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	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

		Petition for Inter Partes Review of U.S. PATENT NO. 11,697,011, Before the Patent Trial and Appeal Board, IMPERATIVE CARE, INC. (Petitioner) V. INARI MEDICAL, INC. (Patent Owner), Case IPR2024-01257, executed on July 8, 2024, filed with IPR as exhibit on August 12, 2024, 97 pages.	
		DEFENDANT IMPERATIVE CARE'S OPPOSITION TO PLAINTIFF INARI MEDICAL'S MOTION FOR A PRELIMINARY INJUNCTION, IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION, INARI MEDICAL, INC. (Plaintiff) V. IMPERATIVE CARE, INC. (Defendants), Civil Action No. 5:24-cv-03117-EKL, filed on September 9, 2024, 44 pages.	
		DECLARATION OF TROY THORNTON IN SUPPORT OF OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION, IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION, INARI MEDICAL, INC. (Plaintiff) V. IMPERATIVE CARE, INC. (Defendants), Civil Action No. 5:24-cv-03117-EKL, filed on September 9, 2024, 74 pages.	
		English translation of Japanese Office Action mailed September 17, 2024 for Japanese Application No. 2023-203650, 6 pages.	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Attorney Docket Number	111552.8023.US07

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☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

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- Application No. 18/358,837, filed July 25, 2023 (Attorney Docket No. 111552.8023.US06)

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-10-11
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**10/11/2024 05:36:26 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	Michelle Burge
PATENT CENTER #	67542620	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 22

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024-10-11_IDS_SB08_1115528023US07.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	117 KB
Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
FOR_DE1116001B.pdf	5	Foreign Reference	1292 KB
FOR_JP2015208685_counterpart EP2939704.pdf	41	Foreign Reference	2803 KB
FOR_JP2005511989.pdf	14	Foreign Reference	976 KB
FOR_EP2939704.pdf	39	Foreign Reference	2639 KB
FOR_WO2018019829.pdf	59	Foreign Reference	3832 KB

FOR_WO2020142381.pdf	129	Foreign Reference	5748 KB
FOR_WO2003048616.pdf	16	Foreign Reference	674 KB
NPL_Expert Declaration of AQUILLA S. TURK - 24 pages.pdf	24	Non Patent Literature	276 KB
NPL_English Translation of JP Office Action 2024 for 2023-203650 mailed September 17 - 6 pages.pdf	6	Non Patent Literature	118 KB
NPL_Saver.pdf	4	Non Patent Literature	317 KB
NPL_DEFENDANT IMPERATIVE CARES OPPOSITION - 44 pages.pdf	44	Non Patent Literature	2586 KB
NPL_Shani.pdf	3	Non Patent Literature	1821 KB
NPL_Turk_Aspiration - 11 pages.pdf	11	Non Patent Literature	1681 KB
NPL_Bose - pto.pdf	6	Non Patent Literature	555 KB
NPL_Turk_Initial clinical experience - 8 pages.pdf	8	Non Patent Literature	2315 KB
NPL_Petition for Inter Partes Review - 103 pages - uspto.pdf	103	Non Patent Literature	5201 KB
NPL_EESR_21895504.5 mailed August 16 2024 - 10 pages.pdf	10	Non Patent Literature	8953 KB
NPL_Petition for Inter Partes Review - 97 pages.pdf	97	Non Patent Literature	10298 KB
NPL_Declaration of TROY L. THORNTON 114 pages.pdf	114	Non Patent Literature	3856 KB
NPL_DECLARATION OF TROY THORNTON - 74 pages.pdf	74	Non Patent Literature	7696 KB
NPL_Declaration of TROY L. THORNTON - 138 pages.pdf	138	Non Patent Literature	12691 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024-10-11_IDS_SB08_1115528023US07.pdf	C9E6EC32B3A7A621F0D2BEC6170EDB8FE2B5C235D64EFADEC7664A2A31AE53C8EADC4238A751BB7588DDC53E547BA3C6EFBA0A3E841BA3D20C3705C1019E7CD0
FOR_DE1116001B.pdf	202858BD5E3346CE7D2B9AC39676CED85053A8461CA45223D19A67B500376B7EF9540D8E42D2F8B78F3FA9B318835435E9D9E6AB6768987BCB7FF61289712E86
FOR_JP2015208685_counterpart EP2939704.pdf	DE617A066C79A47DA0731C9DEA0A556E20586ACC69720131CB4A35036A5F0C94B9B20BDBE0F226529BAF79716FB7FD58785F2237BE04B949367DE77BECAB5CC5
FOR_JP2005511989.pdf	02D7AB3312F1611B80CF62EA30911AB1B047BFEDC8D5EA6F4257FD1ED023DC7E6F9FFECDA8520AA030EE0BC0BEB1F211BF8C37157E4265FA924F964BE94A9A16
FOR_EP2939704.pdf	2B6D9A9E3CC6490D2AB94C4A9159C5E2E5F4174B1E176347F306FF382B667E0F4F0436A28A6381F0E862ABACDBF91C90E4044FF9B675349447E7B78DEA3C1E24
FOR_WO2018019829.pdf	BC63E4D705CC8A70836C7B236F702DCB6116168843CD4CF8886ACA941132AC936809DFC05C5F88F137F4F4B7F67BC5D13A69D81EA24B4E413ED9935BDE4CB451
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FOR_WO2003048616.pdf	A7F6C848F7D436EEA1B9ED49901DBFAED16341628D69083EC86D2B6770F1012022FF70839B2B61344E77AFF7299C264ED78628A2049E085D8CBD50D193D875C4
NPL_Expert Declaration of AQUILLA S. TURK - 24 pages.pdf	2D692579B7CAA431FB42097DAB7198CB3B8E3966589318F4E8BDAFF0669BADBDE1B290A38C235831B2B7EA3592C7101EDA83054ABB59602752AFDE9F91F222D9
NPL_English Translation of JP Office Action 2024 for 2023-203650 mailed September 17 - 6 pages.pdf	5D2D1753EE26D259A1D2EC169648A7F66BA07D56BC1FD437AD5E78F0F2032F6EDDE39B651BCC72066B271E13725039C8DEA88D0069153954E4D63B754BA42892
NPL_Saver.pdf	8CB40D4251B9C302A3FF2FFDB66A3CF11B0853DF2C0E91731FD8771B96829CC88BDC0CC6A6C90704760EF51B86F6203016E4F76BF3BDCF90ED46F6E60B3C81DD
NPL_DEFENDANT IMPERATIVE CARES OPPOSITION - 44 pages.pdf	D32EC368EA05C87E406AB9570FEF66EA3FEC220CD2F7EF06C52C70D5850C4A7B36FE21932C95894ACD9F4364DA676EC5A52F69AE65A8ACCE307B0C7A2B2E60C6
NPL_Shani.pdf	1A6EDF361DE1557468F3D2C27CD307B7556238C95D22581FEB7F5ADF09CED3F1EF87CCFB022C5CF6DE6E659C595299B202DA863ED6F42CEBB2246A6670BD0752

NPL_Turk_Aspiration - 11 pages.pdf	3FC8AF403E3E8D87EFF783668D28378461F5F6598012A80E9007A2B4C0BE7A2F1B7CE8C483E0B4E82C1640B5A4CBE6688F6C4FA40C5EE93B9601C3C140F77C3D
NPL_Bose - pto.pdf	751FF92ECB41E180A6BF25F44CE74F36F79F6DAF29D3FFA83291469DBDF59B49F159766B3AFD0CD2E550CF8A80424CCB91304A4C6C600739BC7568172090106A
NPL_Turk_Initial clinical experience - 8 pages.pdf	B0780510EABD662C9D1029DB6C85B4C98A36A537836D8EC3C9FC9F010B9327C9D3CCB151F27CDD1457747E361017004588AF1E42BD791D3FDBF16DF80D6280B4
NPL_Petition for Inter Partes Review - 103 pages - uspto.pdf	8B86FC0C25DA1306655FACD46D4AD8049786EC2C1EDA7573FF0D0235FDBCC8AD5A73BBAEED1A79C175AB0D34DEC025AAD1F42967D58D137D13403FF0CC403367
NPL_EESR_21895504.5 mailed August 16 2024 - 10 pages.pdf	4CBCA2CA6CD09DFE0CBCB2A3DF62C81114C683C0FFC4894182B0B23EDD095B871C04AAFB40276A63E89451AC000674645EC4E5BF3E9E26B4CEC7407F1CD4BDC2
NPL_Petition for Inter Partes Review - 97 pages.pdf	7E2ED6B9DC40312B2E64DEE20B25888F4C8C9CEF97FF95BB3A2AD108AE51F14330450A236FEDE183473FCC91810A240313F538EF44EEFABA8326F638AD066CBA
NPL_Declaration of TROY L. THORNTON 114 pages.pdf	C6AD07DAD9D2F80E3241CBD0391BF898A1279D13B07AA2916BB2E684B96933813A8C0654597778BA51FFA91F4277E4CD40630C2D05151390D506506CACD6F3FD
NPL_DECLARATION OF TROY THORNTON - 74 pages.pdf	E7C236EC6F91FFCA51601E0BF6E3BEE3474190645C8E8A7A3C1F8471295E64828706A8F54856C10FFE744220D91BCC0901500E2AC8B2C032338F5C88F2867948
NPL_Declaration of TROY L. THORNTON - 138 pages.pdf	252AC3D63CA34621FFA25D7303E57993ACE6D8A55639B18299CBA827921B1299B807E54BDFB96A432A5F5C24CCA2156D3649446FE12F08387107B8DBEA8C418B

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PUBLICATIONS AND PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		8529596		09-10-2013	Grandfield et al.	
		8632584		01-21-2014	Henkes et al.	
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	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

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		20240198072		06-20-2024	Merritt et al.	
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	Attorney Docket Number	111552.8023.US07

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	**	WO2024103036			05-16-2024	Shifamed Holdings LLC		
	**	WO2019064306			04-04-2019	CERETRIVE LTD.		
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	**	CN110312481 (corresponds to US2018193043)			10-08-2019	Inari Medical, Inc.		
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	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

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	**	JP7253376 (corresponds to WO2017070702)			03-29-2023	Inari Medical, Inc.		
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	**	JP2016513505 (corresponds to WO2014139845)			05-16-2016	Neuravi Limited		
	**	JP2018525088 (corresponds to WO2017033182)			09-06-2018	CARDIOSERT LTD.		
	**	WO2017033182			03-02-2017	CARDIOSERT LTD.		

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	**	International Search Report and Written Opinion for International App. No. PCT/US2023/079428; Applicant: Inari Medical, Inc., Date of Mailing: May 29, 2024, 18 pages.	
	**	Extended European Search Report for European Application No. 21818772.2, Applicant: Inari Medical, Inc., Date of Mailing: May 10, 9 pages.	
	**	Chinese Office Action received for Application No. 202111061740.2, Applicant: Inari Medical, Inc, Date of Mailing: May 23, 2024, 15 pages.	
	**	English translation of Japanese Office Action mailed June 25, 2024 for Japanese Application No. 2022-574456, 5 pages.	
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	**	Japanese Office Action mailed August 2, 2024 for Japanese Application No. 2023-213724, 3 pages.	

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	Application Number	18/497,249 – Conf. # 6832
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	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

	**	English Translation of Japanese Office Action mailed July 23, 2024 for Japanese Application No. 2022-535535, 11 pages.	

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

Those documents which are marked with a double asterisk (**) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in prior applications listed as below and relied upon in this application for an earlier filing date under 35 U.S.C. 120.

- Application No. 18/358,837, filed July 25, 2023 (Attorney Docket No. 111552.8023.US06)

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-09-09
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**09/09/2024 01:17:09 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	67096202	AUTHORIZED BY	Matthew Williams
CUSTOMER #	25096	FILING DATE	10/30/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Richard Quick

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 5111	**E202499D17395604**	**JiYoung Anderson**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1801	REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114)	1360.00	1	1360.00
			TOTAL AMOUNT:	**$1,360.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**09/09/2024 01:17:09 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	67096202	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024.9.9 - IDS SB08 - 111552.8023.US07.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	148 KB
Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
2024.9.9 RCE - 111552.8023.US07.pdf	3	Request for Continued Examination (RCE)	1628 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024.9.9 - IDS SB08 -	00A35E1668BC415B5ABC40AD4CCF0247AB321E2F2F67795E3

111552.8023.US07.pdf	FCCAD5525A24D8BF7C90DEE7310E5218D9448C6F66E24A6D283292DA323B6A8D6088A5E52CBFDD4
2024.9.9 RCE - 111552.8023.US07.pdf	BC5F835C641A9A3137CA76A9F0B41171E426DFD2188B7D4980F7666CAC5789F05BDBDF20CF5C95408C758A2C615F59D2A2687360ABCD87E1B02B5289CE3FE828

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	18/497,249	Filing Date	2023-10-30	Docket Number (if applicable)	111552.8023.US07	Art Unit	3771
First Named Inventor	Richard Quick			Examiner Name	Tuan Van Nguyen		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☐ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 500665

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-09-09
Name	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

25096 7590 07/09/2024
PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	
ART UNIT	**PAPER NUMBER**
3771	

DATE MAILED: 07/09/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

TITLE OF INVENTION: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	10/09/2024

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25096 7590 07/09/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

TITLE OF INVENTION: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	10/09/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN VAN	3771	606-200000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 07/09/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	
ART UNIT	PAPER NUMBER
3771	

DATE MAILED: 07/09/2024

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/497,249	Applicant(s) Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the amendment filed June 3, 2024.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-10 and 12-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

Claims 2-10 and 12-30 allowed.

There is no art of record alone or in combination that teaches a clot collection reservoir that includes the combination of recited limitations in claims 3, 5, and 6.

As to claim 3, art of record alone or in combination did not teach the limitations of a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; and **especially**, a filter is-removably positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the

second port; wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.

As to claim 5, art of record alone or in combination did not teach the limitations of a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; **especially**, a cap configured to be releasably coupled to the second housing end portion; and a filter is-coupled to the cap and configured to be positioned when the chamber when the cap is releasably coupled to the second housing end portion, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region; and wherein the cap is removable from the housing to provide access to the filter.

As to claim 6, art of record alone or in combination did not teach the limitations of a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; **especially**, a cap configured to be releasably coupled to the second housing end portion; and a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region; and wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

There is no art of record alone or in combination that teaches a clot treatment system that includes the combination of recited limitations in claims 13, 15, 16 and 18.

As to claim 13, art of record alone or in combination did not teach the limitations of an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient; an aspiration source; and a clot collection reservoir, comprising- a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and **especially**, a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port, wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and wherein the filter is removably positioned within the chamber to provide access to the clot material within the chamber.

As to claim 15, art of record alone or in combination did not teach the limitations of an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient; an aspiration source; and a clot collection

reservoir, comprising a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; **especially**, a cap configured to be releasably coupled to the second housing end portion; and a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

As to claim 16, art of record alone or in combination did not teach the limitations of an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient; an aspiration source; a clot collection reservoir, comprising- a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion; a

first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber; a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; and **especially**, a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter; wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; and wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.

As to claim 18, art of record alone or in combination did not teach the combination of recited limitations in the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN V NGUYEN whose telephone number is

(571)272-5962. The examiner can normally be reached Monday - Friday 8:30 AM - 5:30 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on 571-272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61M1/60,0001,0003,0281	12/28/2023	TN
A61M39/0613	12/28/2023	TN
A61M2039/027,062	12/28/2023	TN
A61B17/22031	12/28/2023	TN
A61B2017/22035	12/28/2023	TN
A61M25/0122	12/28/2023	TN
A61B17/22031,22,221,220758,320725,22034,22042,22079,22094	12/28/2023	TN

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Group/subgroups combined with text (see search history printout)	12/28/2023	TN
Search update (see search history printout)	04/08/2024	TN
Search update (see search history printout)	06/17/2024	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
Text search	USPAT; USPGPUB	06/17/2024	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC						
Symbol					Type	Version
A61B	/	17	/	22031	F	2013-01-01
A61M	/	25	/	0082	I	2013-01-01
A61B	/	17	/	22	I	2013-01-01
A61M	/	39	/	06	I	2013-01-01
A61B	/	17	/	221	I	2013-01-01
A61B	/	2017	/	22042	A	2013-01-01
A61M	/	2210	/	12	A	2013-01-01
A61B	/	2017	/	22079	A	2013-01-01
A61B	/	2017	/	22094	A	2013-01-01
A61B	/	2017	/	22034	A	2013-01-01
A61B	/	2017	/	00907	A	2013-01-01
A61B	/	2217	/	005	A	2013-01-01

CPC Combination Sets							
Symbol					Type	Set	Ranking	Version
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	17 June 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A and 3B

U.S. Patent and Trademark Office — Part of Paper No.: 20240617

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	**Art Unit**
	TUAN V NGUYEN	3771

INTERNATIONAL CLASSIFICATION				
CLAIMED				
A61B	/	17	/	22
A61B	/	17	/	221
A61M	/	25	/	00
A61M	/	39	/	06

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771 (Primary Examiner) 17 June 2024 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A and 3B

U.S. Patent and Trademark Office Part of Paper No.: 20240617

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	**Art Unit**
	TUAN V NGUYEN	3771

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	7	10	18	19	26	28								
2	2		11	13	20	27	29								
1	3	11	12	19	21	28	30								
3	4	10	13	20	22										
8	5	12	14	21	23										
9	6	14	15	22	24										
4	7	15	16	23	25										
5	8	16	17	24	26										
6	9	17	18	25	27										

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 28	
/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771 (Primary Examiner)	17 June 2024 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A and 3B

U.S. Patent and Trademark Office Part of Paper No.: 20240617

Bibliographic Data

Application No: 18/497,249

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /TUAN V NGUYEN/ Examiner's Signature | Initials

Title: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/30/2023	606	3771	111552.8023.US07
RULE			

APPLICANTS

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Benjamin Edward Merritt, San Clemente, CA, UNITED STATES

John Coleman Thress, Capistrano Beach, CA, UNITED STATES

Paul Lubock, Monarch Beach, CA, UNITED STATES

Thomas M. Tu, Louisville, KY, UNITED STATES

CONTINUING DATA

This application is a CON of 17865307 07/14/2022 PAT 11849963

17865307 is a CON of 17498642 10/11/2021 PAT 12016580

17498642 is a CON of 16258344 01/25/2019 PAT 11154314

16258344 has PRO of 62622691 01/26/2018

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

11/27/2023

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FILING FEE RECEIVED

$6,320

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L236	10	("20240082540" "11925369" "11937838" "1182091" "3863624" "3661144" "20160128857" "9566179" "20150366690" "20190366049").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:00 AM
L237	11	("20240082540" "1192539" "11937838" "11937834" "11865291" "3863624" "3661144" "20160128857" "9866179" "20150366690" "20190366049").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:11 PM
L238	14	("8187465" "8439858" "566179" "9827364" "10967111" "10994063" "11266825" "11607483" "11963861" "20150366690" "20160128857" "20190366049" "20220296797" "20230052964" "20230248502").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/15 08:42 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N91	2	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM
N92	2	(aspiration SAME system AND vacuum	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM

		WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.					
N93	2	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM
N94	1	(aspiration AND vacuum AND connection SAME tub$4 SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME filter WITH chamber AND flow WITH controller SAME second WITH flow AND check WITH valve SAME connector SAME filter).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM
N95	1	(aspiration AND vacuum AND connection SAME tub$4	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM

		SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME filter WITH chamber AND flow WITH controller SAME second WITH flow AND check WITH valve SAME connector SAME filter).clm.					
N96	2	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM
N97	1	(aspiration AND vacuum AND connection SAME tub$4 SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME filter WITH chamber AND flow WITH controller SAME second WITH flow AND check WITH valve SAME connector SAME	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/29 09:06 AM

		filter).clm.					
N98	1	(aspiration AND vacuum AND connection SAME tub$4 SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME filter WITH chamber AND flow WITH controller SAME second WITH flow AND check WITH valve SAME connector SAME filter).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:16 PM
N99	2	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:16 PM
N100	1	(aspiration AND vacuum AND connection SAME tub$4 SAME vacuum AND filter WITH chamber SAME housing AND first WITH end AND second WITH end AND port SAME first WITH end AND fluid WITH connector SAME second WITH end AND filter SAME flow WITH path AND catheter SAME vacuum SAME filter WITH chamber AND flow WITH	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:16 PM

		controller SAME second WITH flow AND check WITH valve SAME connector SAME filter).clm.					
N101	2	(aspiration SAME system AND vacuum WITH source AND connection WITH tubing AND catheter AND filter WITH chamber SAME tubing SAME housing AND port AND fluid WITH connector AND fluid WITH path AND filter WITH chamber SAME vacuum WITH source AND flow WITH controller AND hemostasis WITH valve SAME second WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:16 PM
N102	0	(vacuum SAME aspiration AND housing SAME chamber AND cap SAME aspirat$4 AND flow WITH path SAME cap AND catheter SAME flexible SAME port SAME housing AND flow WITH regulator AND first WITH operator SAME actuation WITH mechanism AND second WITH operator AND filter SAME housing SAME flow WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/14 03:16 PM
N103	0	(reservoir AND housing SAME sealed WITH chamber AND first WITH port SAME aspirat$4 WITH catheter SAME first WITH path AND second WITH port SAME aspirat$4 WITH source SAME second WITH path AND cylindrical WITH shape SAME filter WITH end AND housing SAME transparent SAME material).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/17 04:23 PM
N104	0	(reservoir AND housing	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/17

		SAME sealed WITH chamber AND first WITH port SAME aspirat$4 WITH catheter SAME first WITH path AND second WITH port SAME aspirat$4 WITH source SAME second WITH path AND cylindrical WITH shape SAME filter WITH end AND housing SAME transparent SAME material AND cap).clm.					04:23 PM
N105	0	(reservoir AND housing SAME sealed WITH chamber AND first WITH port SAME aspirat$4 WITH catheter SAME first WITH path AND second WITH port SAME aspirat$4 WITH source SAME second WITH path AND cylindrical WITH shape SAME filter WITH end AND housing SAME transparent SAME material AND remova$5 SAME chamber SAME acess SAME material).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/17 04:28 PM
N106	0	(reservoir AND housing SAME sealed WITH chamber AND first WITH port SAME aspirat$4 WITH catheter SAME first WITH path AND second WITH port SAME aspirat$4 WITH source SAME second WITH path AND valve SAME clot WITH reservoir SAME first WITH port SAME open WITH position AND negative WITH pressure SAME chamber SAME second WITH port).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/17 04:31 PM
N107	0	(clot WITH system AND aspirat$4 SAME clot WITH material AND hemostasis WITH valve SAME catheter AND at	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/17 04:33 PM

		WITH least WITH one SAME first WITH port AND aspirat$4 WITH source AND clot WITH reservoir AND housing SAME chamber SAME first WITH end SAME second WITH end AND first WITH port AND second WITH port AND filter SAME cylindrical WITH shape AND negative WITH pressure SAME chamber).clm.					

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	8187465		05-29-2012	Nierich	
	2	8439858		05-14-2013	Huang et al.	
	3	9566179		02-14-2017	Andreas et al.	
	4	9827364		11-28-2017	Peticca et al.	
	5	10967111		04-06-2021	Iida	
	6	10994063		05-04-2021	Fisher et al.	
	7	11266825		03-08-2022	Peter et al.	
	8	11607483		03-21-2023	Iida	
	9	11963861		04-23-2024	Strauss et al.	

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	20150366690	A1	12-24-2015	Lumauig	
	2	20160128857	A1	05-12-2016	Kao	
	3	20190366049	A1	12-05-2019	Hannon et al.	
	4	20220296797	A1	09-22-2022	Chawla	
	5	20230052964	A1	02-16-2023	Singh et al.	
	6	20230248502	A1	08-10-2023	Buck et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	1	05694718	JP	B2	04-01-2015	TRUMO KABUSHIKI KAISHA		
	2	2231256	EP	B1	05-30-2018	Vortex Medical		
	3	2394680	EP	A1	12-14-2011	CARDIONOVA S.R.L.		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

	4	2540328	EP	A1	10-02-2013	Eurosets S.R.L.		
	5	2023069874	WO	A1	04-27-2023	IMPERATIVE CARE, INC.		

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report and Written Opinion for International App. No. PCT/US2024/010875; Applicant: Inari Medical, Inc., Date of Mailing: April 26, 2024, 15 pages.	

EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	06/15/2024

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

Based on PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-06-03
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
BENJAMIN D. CASHDOLLAR
PERKINS COIE LLP
P.O. BOX 1247
SEATTLE, WA 98111-1247
UNITED STATES OF AMERICA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* **26 April 2024 (26.04.2024)**
Applicant's or agent's file reference **111552-8039WO00**	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2024/010875**	International filing date *(day/month/year)* **09 January 2024 (09.01.2024)**
Applicant **INARI MEDICAL, INC.**	

1. ☑ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   How? Directly to the International Bureau preferably through ePCT, or on paper to:
   The International Bureau of WIPO, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland

   For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

   Within **22 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45bis.1). The procedure for requesting supplementary international search is described in the PCT Applicant's Guide, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/US	Authorized officer
Mail Stop PCT, Attn: ISA/US **Commissioner for Patents** **P.O. Box 1450, Alexandria, VA 22313-1450**	**MATOS** **TAINA**
Facsimile No. **571-273-8300**	Telephone No. **571-272-4300**

Form PCT/ISA/220 (revised January 2020)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference **111552-8039WO00**		**FOR FURTHER ACTION** see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2024/010875**	International filing date *(day/month/year)* **09 January 2024 (09.01.2024)**	(Earliest) Priority Date *(day/month/year)* **09 January 2023 (09.01.2023)**
Applicant **INARI MEDICAL, INC.**		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **2** sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

   ☑ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☑ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☑ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. **6A**

   ☑ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2024/010875

A. CLASSIFICATION OF SUBJECT MATTER

IPC: ***A61F 2/06*** (2024.01); ***A61F 2/95*** (2024.01); *A61M 25/06* (2024.01)

CPC: ***A61F 2/06; A61F 2/95;*** *A61M 2025/0681*

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.
	US 2016/0128857 A1 (VENITI, INC.) 12 May 2016 (12.05.2016)	
X	entire document	1, 3-6, 9, 10, 15-18, 23, 24
Y	entire document	2, 7, 8, 11-14, 19-22, 25-32
	US 9,566,179 B2 (J.W. MEDICAL SYSTEMS LTD.) 14 February 2017 (14.02.2017)	
Y	entire document	2, 7, 8, 11-14, 19-22, 25-32
	JP 05694718 B2 (TERUMO CORP.) 01 April 2015 (01.04.2015)	
Y	see machine translation	29
	US 2015/0366690 A1 (ABBOTT CARDIOVASCULAR SYSTEMS INC.) 24 December 2015 (24.12.2015)	
A	entire document	1-32
	US 2019/0366049 A1 (MEDTRONIC VASCULAR, INC.) 05 December 2019 (05.12.2019)	
A	entire document	1-32

☐ 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
"D" document cited by the applicant in the international application
"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
16 April 2024 (16.04.2024)	**26 April 2024 (26.04.2024)**
Name and mailing address of the ISA/US **Mail Stop PCT, Attn: ISA/US** **Commissioner for Patents** **P.O. Box 1450, Alexandria, VA 22313-1450** Facsimile No. **571-273-8300**	Authorized officer **MATOS** **TAINA** Telephone No. **571-272-4300**

Form PCT/ISA/210 (second sheet) (July 2022)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
BENJAMIN D. CASHDOLLAR
PERKINS COIE LLP
P.O. BOX 1247
SEATTLE, WA 98111-1247
UNITED STATES OF AMERICA

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	**26 April 2024 (26.04.2024)**
Applicant's or agent's file reference **111552-8039WO00**	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2024/010875	**09 January 2024 (09.01.2024)**	**09 January 2023 (09.01.2023)**

International Patent Classification (IPC) or both national classification and IPC
IPC: ***A61F 2/06*** (2024.01); ***A61F 2/95*** (2024.01); *A61M 25/06* (2024.01)
CPC: ***A61F 2/06; A61F 2/95;*** *A61M 2025/0681*

Applicant
INARI MEDICAL, INC.

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [x] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US **Commissioner for Patents** **P.O. Box 1450, Alexandria, VA 22313-1450**	**16 April 2024 (16.04.2024)**	**MATOS, Taina**
Facsimile No. **571-273-8300**		Telephone No. **571-272-4300**

Form PCT/ISA/237 (cover sheet) (July 2022)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2024/010875

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
   - [✓] the international application in the language in which it was filed.
   - [ ] a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(b)).

3. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
   - a. [ ] forming part of the international application as filed.
   - b. [ ] furnished subsequent to the international filing date for the purposes of international search (Rule 13*ter*.1(a)),
     - [ ] accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.

4. [ ] With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.

5. Additional comments:

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	2, 7, 8, 11-14, 19-32	YES
	Claims	1, 3-6, 9, 10, 15-18	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-32	NO
Industrial applicability (IA)	Claims	1-32	YES
	Claims	None	NO

2. Citations and explanations:

---------- EXPLANATION ----------

Claims 1, 3-6, 9, 10, and 15-18 lack novelty under PCT Article 33(2) as being anticipated by US 2016/0128857 to Veniti, Inc. (hereinafter, "Veniti").

Regarding Claim 1, Veniti discloses an intravascular catheter for treatment of clot material from within a blood vessel of a human patient (stent delivery system 100, Fig. 1A; see also Paras. [0030] and [0045]), comprising: an outer sheath (shuttle sheath 120, Fig. 1A) having an outer sheath lumen (lumen of shuttle sheath 120, Figures 1A-1D); an outer sheath drive component (outer shaft 114, Fig. Figures 1A-1D; see also Para. [0051]) having an outer sheath drive component lumen (central lumen 116, Fig. 1A; see also Para. [0049]), wherein the outer sheath drive component is operably coupled to the outer sheath (Figures 1A-1D; see also Para. [0051], as outer shaft 114 is locked with shuttle sheath 120); a guidewire sheath (middle shaft 108, Fig.1A) including a guidewire sheath lumen configured to receive a guidewire (Fig.1A; see also Para. [0047], as middle shaft 108 is slidably disposed over inner shaft 102 and configured for over the wire use. Furthermore, a guidewire recived within the central lumen of inner shaft 102 would be disposed within the lumen of middle shaft 108), wherein at least a portion of the guidewire sheath is slidably disposed within the outer sheath lumen (Figures 1A-1D; see also Para. [0047]); a guidewire sheath drive component slidably disposed within the outer sheath drive component lumen (inner shaft 102, Fig. 2C; see also Para. [0051]), wherein the guidewire sheath drive component is operably coupled to the guidewire sheath (Figures 1A-1D); and a clot treatment component coupled to the guidewire sheath (stent 128, Figures 1A-1D; see also Para. [0048]), wherein the clot treatment component is configured to transition between (i) a first configuration in which the clot treatment component is positioned within the outer sheath lumen (Figures 1A-1B), and (ii) a second configuration in which at least a portion of the clot treatment component is exposed from the outer sheath lumen in response to movement of the outer sheath drive component, the guidewire sheath drive component, or both the outer sheath drive component and the guidewire sheath drive component (Figures 1C-1D; see also Para. [0051]).

Regarding Claim 3, Veniti discloses the catheter of claim 1 wherein the outer sheath drive component includes a region configured to overlap with a portion of the guidewire sheath when the clot treatment component is in the first configuration and the second configuration (Figures 1A-1D).

Regarding Claim 4, as best understood, Veniti discloses the catheter of claim 3 wherein the guidewire sheath includes a proximal segment (portion of middle shaft 108 disposed closest to hub 112, Fig. 1A) and a distal segment (portion of middle shaft 108 including and closest to stop 132, Fig. 1A), wherein at least part of the proximal segment is configured to be conterminous with the region of the outer sheath drive component (Fig. 1D, as in the illustrated configuration, the proximal portion of middle shaft 108 is enclosed within a common boundary of outer shaft 114), and wherein the distal segment is centered within the outer sheath lumen (Figures 1A-1B).

Regarding Claim 5, Veniti discloses the catheter of claim 4 wherein at least a portion of the clot treatment component is coupled to the distal segment of the guidewire sheath (Figures 1A-1D).

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

Regarding Claim 6, Veniti discloses the catheter of claim 5 wherein the distal segment of the guidewire sheath includes a distal tip of the catheter (nosecone 126, Figures 1A-1D), and wherein at least the portion of the clot treatment component is coupled to the distal tip (Figures 1A-1D).

Regarding Claim 9, Veniti discloses the catheter of claim 1 wherein the guidewire sheath includes a distal segment centered within the outer sheath lumen (Figures 1A-1B), and wherein at least a portion of the clot treatment component is coupled to the distal segment of the guidewire sheath (Figures 1A-1D).

Regarding Claim 10, Veniti discloses the catheter of claim 9 wherein the distal segment of the guidewire sheath includes a distal tip of the catheter (nosecone 126, Figures 1A-1D), and wherein at least the portion of the clot treatment component is coupled to the distal tip (Figures 1A-1D).

Regarding Claim 15, Veniti discloses a method for intravascular treatment of clot material from within a blood vessel of a human patient (Para. [0077]), the method comprising: advancing a catheter (delivery catheter, Fig. 6A; see also Para. [0075]) distally through the blood vessel (vessel V, Fig. 6A; see also Para. [0075]); and transitioning the catheter from (i) a first configuration (Fig. 6A) in which a clot men of shuttle sheath 610, Fig. 6A; see also Para. [0075], as stent 616 is only permitted to self expand after shuttle sheath 610 is proximally retracted) of an outer sheath of the catheter (shuttle sheath 610, Fig. 6A), and (ii) a second configuration (Figures 6B-6C) in which at least a portion of the clot treatment component is exposed from the outer sheath lumen (Figures 6B-6C; see also Para. [0075]), wherein the catheter includes (a) an outer sheath drive component (outer shaft/sheath 606, Fig. 6A) including an outer sheath drive component lumen (lumen of outer shaft/sheath 606, Figures 6A-6C) and coupled to the outer sheath (Figures 6A-6C; see also Para. [0075]) and (b) an elongate member operably coupled to the clot treatment component and slidably disposed within the outer sheath drive component lumen (inner shaft 602, Figures 6A-6C), and wherein transitioning the catheter includes at least one of moving the outer sheath drive component in a first direction relative to the clot treatment component to cause the outer sheath to uncover at least the portion of the clot treatment component, and/or moving the elongate member in a second direction relative to the outer sheath to cause at least the portion of the clot treatment component to extend beyond the outer sheath lumen (Figures 6A-6C; see also Para. [0075], as outer shaft/ sheath 606 is proximally retracted, proximally retracting shuttle sheath 610, to uncover stent 616).

Regarding Claim 16, Veniti discloses the method of claim 15 wherein the second direction (Figures 2B-2D) is opposite the first direction (Figures 6B-6C and see also 1B-1D; see also Para. [0075], as the exemplary method of treating the vessel be with a bi-directional stent delivery system of the prior disclosed embodiments).

Regarding Claim 17, Veniti discloses the method of claim 15, further comprising causing the clot treatment component to expand when the catheter is in the second configuration (Figures 6B-6C; see also Para. [0075]).

Regarding Claim 18, Veniti discloses the method of claim 17 wherein causing the clot treatment component to expand includes transitioning the catheter to the second configuration to allow the clot treatment component to expand (Figures 6B-6C; see also Para. [0075]).

Claims 23 and 24 lack an inventive step under PCT Article 33(3) as being obvious over US 2016/0128857 to Veniti, Inc. (hereinafter, "Veniti").

Regarding Claim 23, Veniti discloses the method of claim 15.

Veniti fails to further include, in the same embodiment, that the elongate member includes a guidewire sheath drive component, and wherein moving the elongate member includes moving the guidewire sheath drive component in the second direction relative to the outer sheath to cause at least the portion of the clot treatment component to extend beyond the outer sheath lumen.

Veniti teaches in a different embodiment, however, that an elongate member (inner shaft 102, Figures 2A-2D) includes a guidewire sheath drive component (Fig. 2C; see also Para. [0053]), and wherein moving the elongate member includes moving the guidewire sheath drive component in the second direction relative to an outer sheath (shuttle sheath 120, Figures 2B-2D) to cause at least a portion of a

clot treatment component (stent 128, Figures 2A-2D) to extend beyond the outer sheath lumen (Figures 2D-2D).

It would have been obvious to one of ordinary skill in the art to modify the first embodiment of Veniti to further include that the elongate member includes a guidewire sheath drive component, and wherein moving the elongate member includes moving the guidewire sheath drive component in the second direction relative to the outer sheath to cause at least the portion of the clot treatment component to extend beyond the outer sheath lumen, as taught by the latter embodiment of Veniti, the motivation being that Veniti discloses that the exemplary method of treating the vessel with a bi-directional stent delivery system of the prior disclosed embodiments (Para. [0075]).

Regarding Claim 24, Veniti discloses the method of claim 23.

Veniti fails to further include, in the same embodiment, that moving the guidewire sheath drive component includes causing movement of a guidewire sheath operably coupled to the guidewire sheath drive component, and wherein the clot treatment component is operably coupled to the guidewire sheath so that causing movement of the guidewire sheath includes causing at least the portion of the clot treatment component to extend beyond the outer sheath lumen.

Veniti teaches in a different embodiment, however, that moving the guidewire sheath drive component includes causing movement of a guidewire sheath operably coupled to the guidewire sheath drive component (middle shaft 108, Figures 2A-2D), and wherein the clot treatment component is operably coupled to the guidewire sheath (Figures 2A-2D) so that causing movement of the guidewire sheath includes causing at least the portion of the clot treatment component to extend beyond the outer sheath lumen (Figures 2C-2D).

It would have been obvious to one of ordinary skill in the art to modify the first embodiment of Veniti to further include that moving the guidewire sheath drive component includes causing movement of a guidewire sheath operably coupled to the guidewire sheath drive component, and wherein the clot treatment component is operably coupled to the guidewire sheath so that causing movement of the guidewire sheath includes causing at least the portion of the clot treatment component to extend beyond the outer sheath lumen, as taught by the latter embodiment, the motivation being that Veniti discloses that the exemplary method of treating the vessel with a bi-directional stent delivery system of the prior disclosed embodiments (Para. [0075]).

Claims 2, 7, 8, 11-14, 19-22, 25-28, and 30-32 lack an inventive step under PCT Article 33(3) as being obvious over US 2016/0128857 to Veniti, Inc. (hereinafter, "Veniti") in view of US 9,566,179 to J.W. Medical Systems Ltd. (hereinafter, "JW Medical").

Regarding Claim 2, Veniti discloses the catheter of claim 1.

Veniti fails to explicitly disclose a clot treatment drive component slidably disposed within the outer sheath drive component lumen and operably coupled to the clot treatment component, wherein the clot treatment component is configured to transition between the first configuration and the second configuration in response to movement of the clot treatment drive component, the outer sheath drive component, the guidewire sheath drive component, or any two or more of the outer sheath drive component, the guidewire sheath drive component, and clot treatment drive component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns.18-24), and teaches a clot treatment drive component (expandable member 30, Fig. 2A) slidably disposed within an outer sheath drive component lumen (lumen of sheath 38, Fig. 2A; see also col. 8, lns. 4-18) and operably coupled to a clot treatment component (stent segments 46, Figures 1-2B), wherein the clot treatment component is configured to transition between a first configuration (Fig. 2A) and a second configuration (Fig. 2B) in response to movement of the clot treatment drive component, the outer sheath drive component, a guidewire sheath drive component, or any two or more of the outer sheath drive component, the guidewire sheath drive component, and clot treatment drive component (clot treatment drive component and outer sheath drive component, Figures 2A-2B).

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include a clot treatment drive component slidably disposed within the outer sheath drive component lumen and operably coupled to the clot treatment component, wherein the clot treatment component is configured to transition between the first configuration and the second configuration in response to movement of the clot treatment drive component, the outer sheath drive component, the guidewire sheath drive component, or any two or more of the outer sheath drive component, the guidewire sheath drive component, and clot treatment drive component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 7, Veniti discloses the catheter of claim 4.

Veniti fails to explicitly disclose that at least a portion of the clot treatment component is slidably disposed on the distal segment.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches at least a portion of a clot treatment component (plurality of stent segments 46, Figures 1-2A) slidably disposed on a distal segment of a guidewire sheath (distal segment of guidewire tube 40, Figures 1-2A; see also col. 7, ln. 64-col. 8, ln. 4).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the intravascular catheter of Veniti to further include that at least a portion of the clot treatment component is slidably disposed on the distal segment, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 8, Veniti discloses the catheter of claim 4 wherein the guidewire sheath further includes an intermediate segment extending between the distal segment and the proximal segment (intermediate segment of middle shaft 108, Fig. 1A).

Veniti fails to explicitly disclose that the intermediate segment is sloped radially inward from the proximal segment toward the distal segment.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches an intermediate segment of a guidewire sheath (intermediate segment of guidewire tube 40, Fig. 2A) that is sloped radially inward from a proximal segment toward a distal segment of the guidewire sheath (Fig. 2A, as guidewire tube 40 is sloped radially inward as it extends into sheath 38).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the intermediate segment is sloped radially inward from the proximal segment toward the distal segment, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 11, Veniti discloses the catheter of claim 9.

Veniti fails to explicitly disclose that at least a portion the clot treatment component is slidably disposed on the distal segment of the guidewire sheath.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches at least a portion of a clot treatment component (plurality of stent segments 46, Figures 1-2A) slidably disposed on a distal segment of a guidewire sheath (distal segment of guidewire tube 40, Figures 1-2A; see also col. 7, ln. 64-col. 8, ln. 4).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that at least a portion the clot treatment component is slidably disposed on the distal segment of the guidewire sheath, as taught by JW Medical, the motivation being that JW Medical

attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 12, Veniti discloses the catheter of claim 9 wherein the guidewire sheath further includes a proximal segment (portion of middle shaft 108 disposed closest to hub 112, Fig. 1A).

Veniti fails to explicitly disclose that the proximal segment is positioned radially outwardly from the distal segment of the guidewire sheath.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches a proximal segment of a guidewire sheath (proximal segment of guidewire tube 40, Fig. 2A) positioned radially outwardly from a distal segment of the guidewire sheath (Fig. 2A, as guidewire tube 40 is sloped radially inward as it extends into and through sheath 38).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the proximal segment is positioned radially outwardly from the distal segment of the guidewire sheath, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 13, modified Veniti discloses the catheter of claim 12.

Veniti fails to explicitly disclose that the proximal segment is not centered within the outer sheath lumen.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches a proximal segment of a guidewire sheath that is not centered within the outer sheath lumen (proximal segment of guidewire tube 40 extending outside of sheath 38, Fig. 2A).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the proximal segment is not centered within the outer sheath lumen, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 14, modified Veniti discloses the catheter of claim 12 wherein the guidewire sheath further includes an intermediate segment extending between the distal segment and the proximal segment (intermediate segment of middle shaft 108, Fig. 1A).

Veniti fails to explicitly disclose that the intermediate segment is sloped radially inward from the proximal segment toward the distal segment.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches an intermediate segment of a guidewire sheath (intermediate segment of guidewire tube 40, Fig. 2A) that is sloped radially inward from a proximal segment toward a distal segment of the guidewire sheath (Fig. 2A, as guidewire tube 40 is sloped radially inward as it extends into sheath 38).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the intermediate segment is sloped radially inward from the proximal segment toward the distal segment, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 19, Veniti discloses the method of claim 17.

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

Veniti fails to explicitly disclose that causing the clot treatment component to expand includes moving a clot treatment drive component operably coupled to the clot treatment component relative to a guidewire sheath positioned within the catheter and adjacent to the outer sheath drive component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches that causing a clot treatment component (stent segments 46, Figures 1-2B) to expand includes moving a clot treatment drive component (expandable member 30, Fig. 2A) operably coupled to the clot treatment component (Figures 1-2B) relative to a guidewire sheath (guidewire tube 40, Fig. 2A) positioned within the catheter and adjacent to an outer sheath drive component (pusher 36, Figures 2A-2B).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the method of Veniti to further include that causing the clot treatment component to expand includes moving a clot treatment drive component operably coupled to the clot treatment component relative to a guidewire sheath positioned within the catheter and adjacent to the outer sheath drive component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 20, Veniti discloses the method of claim 17.

Veniti fails to explicitly disclose that causing the clot treatment component to expand includes moving a drive cuff of the catheter to cause the expansion of the clot treatment component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches causing a clot treatment component (plurality of stent segments 46, Figures 1-2A) to expand includes moving a drive cuff of a catheter (pusher 36, Fig. 2A) to cause the expansion of the clot treatment component (col. 8, lns. 12-17).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the method of Veniti to further include that causing the clot treatment component to expand includes moving a drive cuff of the catheter to cause the expansion of the clot treatment component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 21, modified Veniti discloses the method of claim 20.

Veniti fails to explicitly disclose that moving the drive cuff includes moving the drive cuff in the first direction relative to the clot treatment component to drive the expansion of the clot treatment component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches that moving the drive cuff includes moving the drive cuff in the first direction relative to the clot treatment component to drive the expansion of the clot treatment component (col. 8, lns. 12-17, as pusher 36 is drawn proximally in tandem with sheath 38).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the method of Veniti to further include that moving the drive cuff includes moving the drive cuff in the first direction relative to the clot treatment component to drive the expansion of the clot treatment component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 22, modified Veniti discloses the method of claim 20.

Veniti fails to explicitly disclose that moving the drive cuff includes moving the drive cuff in the first direction relative to the clot treatment component to allow the clot treatment component to expand.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches moving the drive cuff includes moving the drive cuff

in the first direction relative to the clot treatment component to allow the clot treatment component to expand (col. 8, lns. 12-17, as pusher 36 is drawn proximally in tandem with sheath 38).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the method of Veniti to further include that moving the drive cuff includes moving the drive cuff in the first direction relative to the clot treatment component to allow the clot treatment component to expand, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 25, as best understood, Veniti discloses a catheter for treating a human patient (stent delivery system 100, Fig. 1A; see also Paras. [0030] and [0045]), the catheter comprising: an outer sheath (shuttle sheath 120, Fig. 1A) having an outer sheath lumen (lumen of shuttle sheath 120, Figures 1A-1D); an outer sheath drive component (outer shaft 114, Fig. Figures 1A-1D; see also Para. [0051]) having an outer sheath drive component lumen (central lumen 116, Fig. 1A; see also Para. [0049]), wherein the outer sheath drive component is operably coupled to the outer sheath (Figures 1A-1D; see also Para. [0051], as outer shaft 114 is locked with shuttle sheath 120); a guidewire sheath (middle shaft 108, Fig.1A) including a guidewire sheath lumen configured to receive a guidewire (Fig.1A; see also Para. [0047], as middle shaft 108 is slidably disposed over inner shaft 102 and configured for over the wire use. Furthermore, a guidewire received within the central lumen of inner shaft 102 would be disposed within the lumen of middle shaft 108), wherein at least a portion of the guidewire sheath is slidably disposed within the outer sheath (Figures 1A-1D; see also Para. [0047]); a guidewire sheath drive component slidably disposed within the outer sheath drive component (inner shaft 102, Fig. 2C; see also Para. [0051]), wherein the guidewire sheath drive component is operably coupled to the guidewire sheath (Figures 1A-1D); a clot treatment component coupled to the guidewire sheath (stent 128, Figures 1A-1D; see also Para. [0048]); wherein the catheter is configured to transition between a (i) first configuration in which the clot treatment component is positioned within the outer sheath lumen (Figures 1A-1B), and (ii) a second configuration in which at least a portion of the clot treatment component is exposed from the outer sheath lumen in response to at least one of (a) first movement the outer sheath drive component relative to the guidewire sheath in a first direction (Figures 1C-1D; see also Para. [0051]), and (b) second movement of the guidewire sheath drive component relative to the outer sheath in a second direction (Figures 2B-2D), and the clot treatment drive component is configured to transition the clot treatment component between (i) a first state in which the clot treatment component has a first dimension (Figures 1A-1B), and (ii) a second state in which the clot treatment component has a second dimension greater or less than the first dimension (Figures 1C-1D).

Veniti fails to explicitly disclose that the outer sheath drive component is slidably disposed within the outer sheath lumen; that at least a portion of the guidewire sheath is laterally adjacent to the outer sheath drive component; and a clot treatment drive component slidably disposed within the outer sheath drive component lumen and operably coupled to the clot treatment component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches an outer sheath drive component (pusher 36, Fig. 2A) slidably disposed within an outer sheath lumen (lumen of sheath 38, Fig. 2A; see also col. 8, lns. 4-18); that at least a portion of a guidewire sheath (guidewire tube 40, Fig. 2A) is laterally adjacent to the outer sheath drive component (Fig. 2A); and a clot treatment drive component (expandable member 30, Fig. 2A) slidably disposed within the outer sheath drive component lumen and operably coupled to the clot treatment component (Figures 2A-2B; see also col. 8, lns. 38-45).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the outer sheath drive component is slidably disposed within the outer sheath lumen; that at least a portion of the guidewire sheath is laterally adjacent to the outer sheath drive component; and a clot treatment drive component slidably disposed within the outer sheath drive component lumen and operably coupled to the clot treatment component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

Regarding Claim 26, modified Veniti discloses the catheter of claim 25 wherein: in the first state, the clot treatment component has a first mechanical property (Figures 1A-1B), and in the second state, the clot treatment component has a second mechanical property (Figures 1C-1D; see also Para. [0051]).

Regarding Claim 27, modified Veniti discloses the catheter of claim 26 wherein: the first mechanical property includes at least one of a first radial force, a first tensile force, a first compressive force, and/or a first shape (first compressive force and shape, Figures 1A-1B), and the second mechanical property includes at least one of a second radial force, a second tensile force, a second compressive force, and/or a second shape (second compressive force and shape, Figures 1C-1D).

Regarding Claim 28, modified Veniti discloses the catheter of claim 25 wherein the clot treatment component includes a mechanical thrombectomy component extending radially outwardly from the guidewire sheath (Figures 1C-1D).

Regarding Claim 30, modified Veniti discloses the catheter of claim 25.

Veniti fails to explicitly disclose that the clot treatment drive component is a first clot treatment drive component operably coupled to a first portion of the clot treatment component, the catheter further comprising a second clot treatment drive component slidably coupled to a second portion of the clot treatment component.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches that the clot treatment drive component is a first clot treatment drive component operably coupled to a first portion of the clot treatment component (expandable member 30, Figures 2A-2B), the catheter further comprising a second clot treatment drive component slidably coupled to a second portion of the clot treatment component (inflation shaft 34, Figures 2A-2B; see also col. 8, lns. 3-4, as stent segments 46 are slidable).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the clot treatment drive component is a first clot treatment drive component operably coupled to a first portion of the clot treatment component, the catheter further comprising a second clot treatment drive component slidably coupled to a second portion of the clot treatment component, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 31, modified Veniti discloses the catheter of claim 30.

Veniti fails to explicitly disclose that the first clot treatment drive component includes a first clot treatment drive component lumen, and wherein the second clot treatment drive component is slidably disposed within the first clot treatment drive component lumen.

JW Medical is in the field of interventional catheters and prostheses for treatment of vascular diseases, including coronary artery disease and peripheral vascular disease, as well as diseases of other body lumens and other structures (col. 1, lns. 18-24), and teaches that the first clot treatment drive component includes a first clot treatment drive component lumen (Fig. 2B), and wherein the second clot treatment drive component is slidably disposed within the first clot treatment drive component lumen (Figures 2A-2B).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the first clot treatment drive component includes a first clot treatment drive component lumen, and wherein the second clot treatment drive component is slidably disposed within the first clot treatment drive component lumen, as taught by JW Medical, the motivation being that JW Medical attributes such a configuration for manipulation of interventional catheters with greater control, precision, and visibility (JW Medical, col. 7, lns. 40-42).

Regarding Claim 32, modified Veniti discloses the catheter of claim 25 wherein the second direction (Figures 2B-2D) is opposite the first direction (Figures 1B-1D).

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

Claim 29 lacks an inventive step under PCT Article 33(3) as being obvious over US 2016/0128857 to Veniti, Inc. (hereinafter, "Veniti") in view of US 9,566,179 to J.W. Medical Systems Ltd. (hereinafter, "JW Medical") and JP 05694718 to Terumo Corp. (hereinafter, "Terumo").

Regarding Claim 29, modified Veniti discloses the catheter of claim 25.

Veniti fails to explicitly disclose that the clot treatment component includes a coring element having a proximally-facing leading edge.

Terumo is in the field of stent grafts and stent graft systems to deliver the stent graft into the body (Abstract), and teaches a clot treatment component (stent graft 10, Figures 6A-6B) that includes a coring element (blades 22, Figures 6A-6B) having a proximally-facing leading edge (Figures 6A-6B).

It would have been obvious to one of ordinary skill in the art before the priority date to modify the catheter of Veniti to further include that the clot treatment component includes a coring element having a proximally-facing leading edge, as taught by Terumo, the motivation being that such a configuration simplifies procedures wherien cutting or damaging a desired biological tissue and blocking the function thereof is necessary (Terumo, Paras. [0002] and [0005]-[0006]).

Claims 1-32 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 4 and 25 are objected under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 4 and 25 are indefinite for the following reasons: Claim 4, depends from claim 3 and refers to "… the portion of the outer sheath drive component…", which does not have any antecedent basis in claim 13. For the purposes of this opinion, the noted claim language is best understood as intending to instead recite, --...the region of the outer sheath drive component...--. Claim 25 recites, "...in response to movement in response to at least one of (a) first movement the outer sheath drive component relative to the guidewire sheath in a first direction, and (b) second movement..." Such language is unclear, and therefore renders the claim indefinite. For the purposes of this Written Opinion, the noted claim language is interpreted as intending to instead recite, --...in response to at least one of (a) first movement the outer sheath drive component relative to the guidewire sheath in a first direction, and (b) second movement...--.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	8187465		05-29-2012	Nierich	
	2	8439858		05-14-2013	Huang et al.	
	3	9566179		02-14-2017	Andreas et al.	
	4	9827364		11-28-2017	Peticca et al.	
	5	10967111		04-06-2021	Iida	
	6	10994063		05-04-2021	Fisher et al.	
	7	11266825		03-08-2022	Peter et al.	
	8	11607483		03-21-2023	Iida	
	9	11963861		04-23-2024	Strauss et al.	

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	20150366690	A1	12-24-2015	Lumauig	
	2	20160128857	A1	05-12-2016	Kao	
	3	20190366049	A1	12-05-2019	Hannon et al.	
	4	20220296797	A1	09-22-2022	Chawla	
	5	20230052964	A1	02-16-2023	Singh et al.	
	6	20230248502	A1	08-10-2023	Buck et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	1	05694718	JP	B2	04-01-2015	TRUMO KABUSHIKI KAISHA		
	2	2231256	EP	B1	05-30-2018	Vortex Medical		
	3	2394680	EP	A1	12-14-2011	CARDIONOVA S.R.L.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

	4	2540328	EP	A1	10-02-2013	Eurosets S.R.L.		
	5	2023069874	WO	A1	04-27-2023	IMPERATIVE CARE, INC.		

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report and Written Opinion for International App. No. PCT/US2024/010875; Applicant: Inari Medical, Inc., Date of Mailing: April 26, 2024, 15 pages.	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	**Application Number**	18/497,249 – Conf. # 6832
	Filing Date	2023-10-30
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-06-03
Name/Print	Matthew S. Williams	Registration Number	77516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**06/03/2024 06:12:30 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	Julie Willie
PATENT CENTER #	65797231	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 10

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
ResponseNFOA.pdf		14	-	74 KB
ResponseNFOA-A....pdf	(1-1)	1	Amendment/Request for Reconsideration-After Non-Final Rejection	16 KB
ResponseNFOA-CLM.pdf	(2-11)	10	Claims	49 KB
ResponseNFOA-REM.pdf	(12-14)	3	Applicant Arguments/Remarks Made in an Amendment	33 KB
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NPL_ISR - PCT-US-2024_010875 - April 26 2024 - 15 pages.pdf	15	Non Patent Literature	2957 KB
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Digest

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**06/03/2024 06:12:30 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	Julie Willie
PATENT CENTER #	65797231	AUTHORIZED BY	Matthew Williams
CUSTOMER #	25096	FILING DATE	10/30/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Richard Quick

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PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 0368	**E202463I13287422**	**Julie Willie**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1806	SUBMISSION OF AN INFORMATION DISCLOSURE STATEMENT	260.00	1	260.00
1201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	480.00	4	1920.00
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(54) Device for filtering arterial blood

(57) The device (1) for filtering arterial blood comprises at least a boxy body (2) which defines a filtering chamber (3, 4) having at least an inlet port (5) of the blood to be filtered, at least an outlet port (6) of the filtered blood and at least an air discharge port (7); at least an internally hollow filtering element (8) arranged at least in part inside the filtering chamber (3, 4), the body (2) and the filtering element (8) delimiting at least an inner chamber (3) and an outer chamber (4) with respect to the filtering element itself, wherein the inner chamber (3) is surrounded by the outer chamber (4) and these latter communicate with the inlet port (5) and with the outlet port (6) respectively, and where the inner chamber (3) has at least an inlet mouth (3a) of the blood to be filtered defined in correspondence to the lower base (8b) of the filtering element (8), the blood to be filtered passing through the inlet mouth (3a), entering the inner chamber (3) and crossing the filtering element (8) to collect in the outer chamber (4), the air bubbles collecting in the upper part of the inner chamber itself.

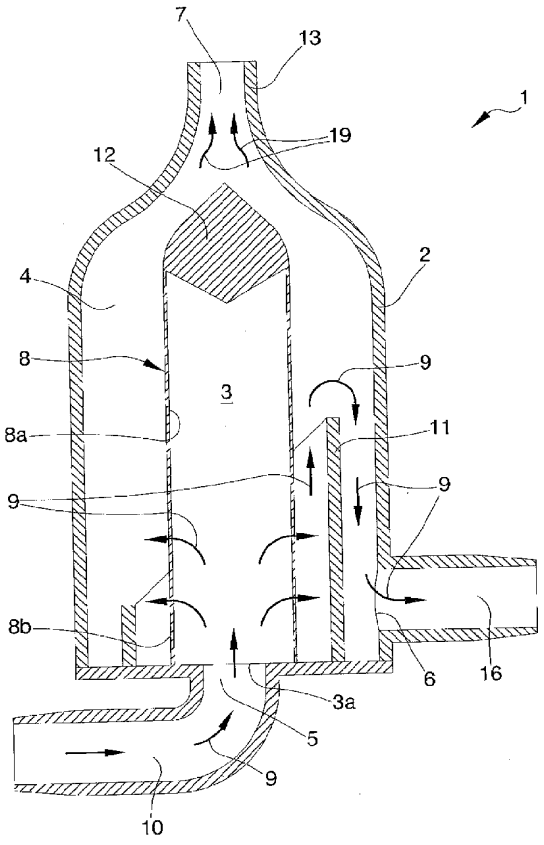


Fig. 1

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Description

[0001] The present invention relates to a device for filtering arterial blood.

[0002] As is known, during the course of a number of surgical operations, an extracorporeal circulation becomes necessary of the patient's blood in a circuit which comprises a number of appliances suitable for ensuring the correct treatment of the blood itself.

[0003] Generally, a circuit for the extracorporeal circulation of blood comprises the following devices which are interlinked by means of related connection lines: a tank for containing the blood flowing from the patient, also called venous blood, a pump for conveying the blood in the circuit, a heat exchanger suitable for ensuring the correct blood temperature, an oxygenator with the function of ceding oxygen to the blood and a filter suitable for treating the blood flowing from the oxygenator, also called arterial blood, to trap any air bubbles in the blood itself.

[0004] The present treatise relates in particular to the device for filtering arterial blood which is arranged downstream of the oxygenator.

[0005] The filtering devices for filtering arterial blood of known type generally comprise a body defining a filtering chamber inside which is arranged an internally hollow filtering element.

[0006] More in detail, the filtering chamber has an inlet port for the blood to be filtered, an outlet port for the filtered blood and an air discharge port.

[0007] The filtering element, which defines a closed profile, divides the filtering chamber into a chamber inside and a chamber outside the filtering element itself where the outer chamber is arranged around the inner chamber.

[0008] Generally, the inlet port is positioned in the upper part of the body facing the outer chamber, which is therefore suitable for containing the blood to be filtered, while the inner chamber is suitable for containing the filtered blood. The blood flowing from the oxygenator is introduced inside the outer chamber, where it makes a substantially helical trajectory around the filtering element, is pushed in a radial direction through the filtering element itself, is collected in the inner chamber and exits towards the outside of the body. During the filtering stage, the air bubbles in the blood to be filtered remain in the outer chamber and naturally convene upwards, where the related discharge port is positioned. These known filtering devices do have a number of drawbacks however.

[0009] In fact, following the introduction of the blood to be filtered into the outer chamber, pockets of air can form in correspondence to the bottom of the outer chamber itself. These pockets of air must be suitably removed before subsequent use, and this operation, called "air removal", calls for the filtering device to be overturned and shaken manually. Furthermore, because the outer surface of the filtering element is generally folded to form ribs (also called pleats), it can occur that a certain quantity of air bubbles remain trapped between such ribs and, consequently, in this case as well, it is best to remove them manually between one use and another.

[0010] These known devices are not therefore very easy to use for health operators, who must dedicate time to remove the filtering device from the relative connections and proceed with the air removal operation.

[0011] Furthermore, the need to move the above-described filtering devices to perform air removal also makes their integration with the oxygenator complicated, i.e., the realization of an oxygenator and a filtering device integrally associated with one another.

[0012] Another drawback of the known filtering devices consists in the fact that the air bubbles are pushed by the centrifugal force towards the filtering element, with the risk therefore of their passing through this, further breaking up and ending up in the arterial line leading to the patient.

[0013] The main object of the present invention is to provide a device for filtering arterial blood which is able to considerably reduce the presence of air remaining inside it during filling and which is therefore easier and more practical to use compared to devices of known type.

[0014] Within this aim, one object of the present invention is therefore to provide a filtering device that does not require any manual intervention to eliminate any air remaining inside it.

[0015] Another object of the present invention is to provide a filtering device which allows obtaining a more efficient separation of the air from the blood compared to devices of known type and which therefore reduces the risk of the presence of air bubbles in the arterial blood which is infused to the patient.

[0016] Yet another object of the present invention is to provide a device that can be easily integrated with an oxygenator.

[0017] Another object of the present invention is to provide a device for filtering arterial blood which allows to overcome the mentioned drawbacks of the state of the art within the ambit of a simple, rational, easy and effective to use as well as low cost solution.

[0018] The above objects are achieved by the present device for filtering arterial blood comprising:

- ant least a boxy body which defines a filtering chamber having at least an inlet port of the blood to be filtered, at least an outlet port of the filtered blood and at least an air discharge port, the latter being defined in correspondence to the upper portion of the filtering chamber itself;
- at least an internally hollow filtering element and arranged at least in part inside said filtering chamber, said body and said filtering element delimiting at least an inner chamber and an outer chamber with respect to the filtering element itself, wherein said outer chamber surrounds said inner chamber;

characterised by the fact that said inner and outer cham-

bers communicate with said inlet port and with said outlet port respectively, and by the fact that said inner chamber has at least an inlet mouth of the blood to be filtered defined in correspondence to the lower base of said filtering element, the blood to be filtered passing through said inlet mouth, entering said inner chamber and crossing said filtering element to collect in said outer chamber, the air bubbles collecting in the upper part of the inner chamber itself.

[0019] Other characteristics and advantages of the present invention will become more evident from the description of a preferred, but not sole, embodiment of a device for filtering arterial blood, illustrated purely as ain example but not limited to the annexed drawings in which:

figure 1 is a section view of an embodiment of the device according to the invention;
figure 2 is a section view of an alternative embodiment of the device according to the invention;
figure 3 is a section view of an alternative embodiment of the device according to the invention.

[0020] With particular reference to such figures, globally indicated by 1 is a device for filtering arterial blood.

[0021] The device 1 comprises a body 2 which defines a filtering chamber 3, 4 having at least an inlet port 5 of the blood to be filtered, at least an outlet port 6 of the filtered blood and at least a discharge port 7 of the air to the outside. The filtering chamber 3, 4 is therefore that inside which the blood coming from the inlet port 5 is filtered.

[0022] In the present treatise, the terms inlet port, outlet port and discharge port are used to identify the ports, defined by the body 2, directly facing onto the filtering chamber 3,4. Such ports do not necessarily coincide with the openings of the body 2 which face onto the outside. More in particular, the body 2 can have one or more ducts communicating on the one side with the outside and on the opposite side with one of either the inlet port, the outlet port or the discharge port.

[0023] Preferably, the body 2 is substantially bell shaped and the discharge port 7 is defined in correspondence to the upper portion of the filtering chamber 3, 4. Advantageously, at least one between either the inlet port 5 and the outlet port 6 is arranged in correspondence to the lower portion of the filtering chamber 3, 4. Preferably, both the inlet port 5 and the outlet port 6 are arranged in correspondence to the lower portion of the filtering chamber 3, 4.

[0024] In the preferred embodiments shown in the illustrations, the inlet port 5 is defined in correspondence to the base of the body 2, the outlet port 6 is defmed in correspondence to the lateral surface of the body 2 and the discharge port is defined in correspondence to the upper top of the body 2.

[0025] The terms "lower" and "upper" used in the present treatise refer to the position taken up by the device in normal operating conditions.

[0026] The device 1 then comprises at least one filtering element 8 hollow on the inside and arranged at least partially inside the body 2.

[0027] The filtering element 8 is therefore housed at least in part inside the filtering chamber 3,4 and delimits an inner chamber 3 and an outer chamber 4 with respect to the filtering element itself, where the outer chamber 4 surrounds the inner chamber 3 at least in part.

[0028] The filtering chamber 3,4 can therefore completely or in part contain the filtering element 8.

[0029] More in particular, the inner chamber 3 is delimited laterally by the filtering element 8 only while the outer chamber 4 is substantially positioned between the filtering element 8 and the body 2.

[0030] The filtering surface is therefore that which delimits the chambers 3 and 4 laterally.

[0031] Advantageously, the filtering element 8 has a substantially circular cross section. In the preferred embodiments shown in the illustrations, the filtering element 8 has a substantially tubular shape and therefore has a lateral surface 8a, defining the filtering surface, and two bases 8b and 8c opposite one another, of which one lower base 8b and one upper base 8c.

[0032] Preferably, the filtering surface 8a is contained inside the filtering chamber 3,4. According to the invention, the inner chamber 3 and the outer chamber 4 are suitable for containing the blood to be filtered and the filtered blood respectively and are therefore in communication with the inlet port 5 of the blood to be filtered and with the outlet port 6 of the filtered blood respectively. The inner chamber 3 and the outer chamber 4 therefore correspond to the blood pre-filtering chamber and to the blood post-filtering chamber respectively. According to the invention, furthermore, the inner chamber 3 has an inlet mouth 3a for the blood to be filtered defmed in correspondence to the lower base 8b of the filtering element 8.

[0033] In use, the blood to be filtered flows through the inlet mouth 3a to enter the inner chamber 3, where the air bubbles naturally collect up in the upper part of the inner chamber itself by effect of their lower weight, passes through the filtering element 8 and collects up in the outer chamber 4 before exiting from the outlet port 6. The path followed by the blood and the air inside the device 1 is indicated by the arrows 9 and 19, shown in the illustrations, respectively. Advantageously, the body 2 comprises a transit channel 10 for the blood to be filtered, communicating on the one side with the inlet port 5 and on the opposite side with the outside, suitable for introducing the blood to be filtered into the inner chamber 3 through the inlet mouth 3a thereof, where the latter is arranged in correspondence to the inlet port 5.

[0034] Preferably, the channel 10 is suitable for introducing the blood to be filtered in correspondence to the median area of the inlet mouth 3a, i.e. substantially along the longitudinal axis of the inner chamber 3.

[0035] Alternative embodiments cannot however be ruled out wherein the blood to be filtered is introduced

tangentially into the inlet mouth 3a, so as to create a whirling movement inside the inner chamber 3.

[0036] In the preferred embodiments of the device 1 shown in the illustrations, the channel 10 is arranged below the filtering element 8.

[0037] Advantageously, the inlet port 5 and the discharge port 7 face onto the inner chamber 3 and onto the outer chamber 4 respectively and are arranged on opposite sides with respect to the filtering element 8. The filtering element 8 is therefore substantially placed between the inlet port 5 and the discharge port 7. This particular conformation of the device 1 allows improving the fluid dynamics inside the filtering chamber 3,4, thus facilitating the removal of stagnant air, inasmuch as the direction of introduction of the blood to be filtered is in accord with the exit direction of the air from the device itself. The particular reciprocal arrangement of the inlet/outlet ports/mouths also allows achieving an efficient separation of the air from the blood.

[0038] Furthermore, the outlet port 6 of the filtered blood is arranged laterally with respect to the filtering element 8, i.e., outside the ideal extension of the filtering element itself along its longitudinal axis. More in detail, the body 2 defines a connection 16 for the exit of the blood communicating on one side with the outlet port 6 and on the opposite side with the outside.

[0039] Alternative embodiments cannot however be ruled out with a different arrangement of the inlet port 5 and outlet port 6.

[0040] Advantageously, as shown in the illustrations, the device 1 comprises at least one interruption element 11 for interrupting the flow of filtered blood arranged in the outer chamber 4 and positioned substantially facing at least onto the outlet port 6.

[0041] Such interruption element 11 is suitable for hindering the flow of filtered blood towards the outlet port 6, deviating it upwards as shown by the arrows 9, to avoid it coming out of the outlet port itself immediately after the filtering stage and thereby facilitating the separation of any air bubbles still in the filtered blood.

[0042] In the preferred embodiment shown in the illustrations, the interruption element 11 has a substantially annular shape to surround the lower base 8b of the filtering element 8 and has a variable height, the height of its portion arranged in correspondence to the outlet port 6 being greater than that of the diametrically opposite portion.

[0043] Four alternative embodiments of the device 1 are described here below.

[0044] In the first embodiment illustrated in figure 1, the device 1 comprises an upper closing element 12 of the inner chamber 3.

[0045] Such closing element 12 is therefore associated with the filtering element 8 in correspondence to the upper base 8c thereof.

[0046] Suitably, in this embodiment, the surface of the closing element 12 facing onto the inner chamber 3 is substantially convex so as to push the air bubbles towards the filtering surface 8a.

[0047] The air still in the filtered blood, which collects up in the outer chamber 4 and that which passes through the filtering element 8 therefore exits through the discharge port 7.

[0048] In the second embodiment shown in figure 2, the inner chamber 3 also has an outlet mouth 3b for the air which collects up inside it, where such outlet mouth 3b is defined in correspondence to the upper base 8c of the filtering element 8.

[0049] Suitably, the body 2 has an entrance 13, defined in correspondence to the discharge port 7, and the outlet mouth 3b is arranged inside such entrance 13 to prevent the air coming out through it being able to enter the outer chamber 4 again and thus mix with the filtered blood.

[0050] The outlet mouth 3b is therefore contained inside the body 2 and arranged in communication with the outer chamber 4. Variations to this embodiment cannot however be ruled out which with the outlet mouth 3b being arranged outside the body 2.

[0051] Preferably, in this second embodiment, the outlet mouth 3b has a substantially capillary conformation, so as to prevent the air coming out of the outer chamber 4 through the discharge port 7 being able to enter the inner chamber 3.

[0052] The third embodiment of the device 1, not shown in detail in the illustrations, substantially has the same configuration as the second embodiment shown in figure 2 and, therefore, in this case as well, its inner chamber 3 has an outlet mouth 3b for the air.

[0053] Nevertheless, in this embodiment, the outlet mouth 3b has a larger cross section than that of the second embodiment described above and comprises a valve device (not shown), e.g., made up of a unidirectional membrane, suitable for allowing the air to come out of the inner chamber 3 and preventing it from coming in.

[0054] In the second and in the third embodiment described herein, the outlet mouth 3b and the discharge port 7 are substantially aligned with one another vertically. Furthermore, in these embodiments, the upper base 8b of the filtering element 8 is tapered towards the outlet mouth itself and is substantially closed laterally.

[0055] In the fourth embodiment shown in figure 3 as well, the inner chamber 3 has an outlet mouth 3b for the air contained inside it and defmed in correspondence to the upper base 8c of the filtering element 8.

[0056] In this fourth embodiment, the body 2 defines a further opening 15 separated from the discharge port 7 and the upper base 8c is associated with the body 2 in correspondence to such further opening 15.

[0057] More in particular, the body 2 and the upper base 8c are associated with one another so as to substantially separate the outlet mouth 3b from the outer chamber 4 and the air contained in the inner chamber 3 therefore flows outwards passing through the further opening 15.

[0058] This way, the discharge port 7 and the outlet mouth 3b are not in direct communication with one an-

other and are suitable for conveying towards the outside of the body 2 air still in the filtered blood, and therefore contained in the outer chamber 4 and the air collected up in the inner chamber 3 respectively.

[0059] In the embodiment in figure 3, the upper base 8c fits through the further opening 15 and the outlet mouth 3b faces directly onto the outside of the body 2.

[0060] In a variation (not shown) of the fourth embodiment described herein, the upper base 8c is associated integral with the body 2 in correspondence to the further opening 15 and the outlet mouth 8b therefore remains inside the profile defined by the body itself.

[0061] In both these variations of the fourth embodiment, the air contained in the inner chamber 3 comes out towards the outside, passing through the further opening 15.

[0062] In this fourth embodiment as well, the upper base 8c is tapered towards the outlet mouth 3b and is substantially closed at the side.

[0063] The operation of the present invention is the following.

[0064] The blood to be filtered which enters the body 2 is conveyed by the channel 10 towards the inlet port 5 and enters the inner chamber 3 passing through the inlet mouth 3a. The blood to be filtered then enters the inner chamber 3 proceeding from the bottom upwards.

[0065] Once it has entered the inner chamber 3, the blood to be filtered passes through the filtering surface 8a, while the air bubbles collect up naturally, by effect of their lower weight, in the upper part of the inner chamber itself.

[0066] The air bubbles then move substantially along the entire length of the inner chamber 3, thereby favouring their detachment from the blood to be filtered. The blood to be filtered crossing the filtering element 8 collects up in the outer chamber 4 and impacts the interruption element 11 before coming out through the outlet port 6.

[0067] As can be seen by observing the arrows 9, the interruption element 11 causes a diversion upwards of the blood coming out of the filtering element 8 so as to make a further separation of any air bubbles still inside it.

[0068] Any air bubbles still inside the filtered blood collect up in the upper part of the outer chamber 4 and exit outside from the discharge port 7.

[0069] The way the air bubbles in the inner chamber 3 come out varies, on the other hand, according to the embodiment of the device 1.

[0070] More in particular, in the first embodiment described above, the air bubbles collected in the upper part of the inner chamber 3 are directed by the closing element 12 towards the filtering surface 8a, in such a way that, having crossed the filtering element 8, they are in the proximity of the discharge port 7 and do not mix again with the filtered blood which instead collects up in the lower part of the outer chamber 4.

[0071] In the second and in the third embodiment of the device 1, the air bubbles in the inner chamber 3 move naturally towards the outlet mouth 3b. The air bubbles which exit from the outlet mouth 3b find themselves inside the entrance 13 through which they exit outside the body 2. The presence of the entrance 13, which increases the exit speed of the bubbles towards the outside, facilitates the exit of the air bubbles arriving from the inner chamber 3 and reduces the risk of these passing into the outer chamber 4.

[0072] Furthermore, the capillarity of the outlet mouth 3b or the presence of the valve device prevents the air bubbles coming from the outer chamber 4 from entering the inner chamber 3.

[0073] In the fourth embodiment, on the other hand, the inner chamber 3 and the outer chamber 4 are substantially separate from one another, and so the air bubbles in the inner chamber 3 and in the outer chamber 4 exit outside the body 2 passing through the outlet mouth 3b and through the discharge port 7 respectively.

[0074] The device 1 can also be coupled in a monolithic way with an oxygenator device not shown in the illustrations.

[0075] The present invention therefore also concerns a method for filtering arterial blood by means of the device 1 described above and which comprises the following stages:

- introduction of the blood to be filtered into the inner chamber 3 through the lower base 8b of the filtering element 8, the air bubbles in the blood to be filtered collecting up in the upper part of the inner chamber 3;
- filtering of the blood contained in the inner chamber 3 through the filtering element 8, the filtered blood and the air bubbles collecting up in the outer chamber 4 and at least in the upper part of the inner chamber 3 respectively;
- exit of the filtered blood from the outer chamber 4 through the outlet port 6.

[0076] It has in fact been ascertained how the described invention achieves the proposed objects and in particular the fact is underlined that the introduction from below of the blood to be filtered inside the filtering device permits avoiding the formation of stagnant air inside the device.

[0077] The device according to the invention therefore allows avoiding the need to remove stagnant air manually, as in the case of devices of known type, thereby facilitating the integration thereof with a blood oxygenation device.

[0078] Again, the device according to the invention allows achieving more efficient removal of the air bubbles present in the blood coming from the oxygenator compared to known devices.

Claims

1. Device (1) for filtering arterial blood comprising:

- at least a boxy body (2) which defines a filtering chamber (3, 4) having at least an inlet port (5) of the blood to be filtered, at least an outlet port (6) of the filtered blood and at least an air discharge port (7), the latter being defmed in correspondence to the upper portion of the filtering chamber itself;
- at least an internally hollow filtering element (8) arranged at least in part inside said filtering chamber (3, 4), said body (2) and said filtering element (8) delimiting at least an inner chamber (3) and an outer chamber (4) with respect to the filtering element itself, wherein said outer chamber (4) surrounds said inner chamber (3);

characterised by the fact that said inner and outer chambers (3, 4) communicate with said inlet port (5) and with said outlet port (6) respectively, and by the fact that said inner chamber (3) has at least an inlet mouth (3a) of the blood to be filtered defmed in correspondence to the lower base (8b) of said filtering element (8), the blood to be filtered passing through said inlet mouth (3a), entering said inner chamber (3) and crossing said filtering element (8) to collect in said outer chamber (4), the air bubbles collecting in the upper part of the inner chamber itself.

2. Device (1) according to claim 1, **characterised by** the fact that said body (2) defines at least a channel (10) for the flow of the blood to be filtered communicating with said inlet port (5) and suitable for introducing the blood to be filtered in said inner chamber (3) through said inlet mouth (3a), where the lower base (8b) of said filtering element (8) is arranged in proximity of said inlet port (5).

3. Device (1) according to claim 1 or 2, **characterised by** the fact that said channel (10) is suitable for conveying the blood to be filtered in correspondence to the median area of said inlet mouth (3a).

4. Device (1) according to one or more of the preceding claims, **characterised by** the fact that said inlet port (5) and said outlet port (6) are both arranged at the lower portion of said body (2).

5. Device (1) according to one or more of the preceding claims, **characterised by** the fact that said outlet port (6) is arranged on the side of said filtering element (8).

6. Device (1) according to one or more of the preceding claims, **characterised by** the fact that said inlet port (5) and said discharge port (7) face onto said inner chamber (3) and onto said outer chamber (4) respectively and are arranged on substantially opposite parts of said filtering element (8).

7. Device (1) according to one or more of the preceding claims, **characterised by** the fact that it comprises at least an interruption element (11) of the flow of filtered blood arranged in said outer chamber (4) and positioned substantially facing at least onto said outlet port (6), said interruption element (11) being suitable for hindering the flow of the filtered blood towards said outlet port (6) deviating it upwards.

8. Device (1) according to one or more of the preceding claims, **characterised by** the fact that it comprises an upper closing element (12) of said inner chamber (3), the surface of said closing element (12) facing onto said inner chamber (3) being substantially convex to push the air bubbles towards said filtering element (8).

9. Device (1) according to one or more of the claims from 1 to 7, **characterised by** the fact that said inner chamber (3) has an air outlet mouth (3b) defined in correspondence to the upper base (8c) of said filtering element (8).

10. Device (1) according to claim 9, **characterised by** the fact that said body (2) has an entrance (13) defined in correspondence to said discharge port (7) and by the fact that said air outlet mouth (3b) is arranged substantially inside said entrance (13).

11. Device (1) according to claim 9 or 10, **characterised by** the fact that said outlet mouth (3b) has a substantially capillary conformation.

12. Device (1) according to claim 9 or 10, **characterised by** the fact that it comprises at least a valve element arranged in correspondence to said outlet mouth (3b) and suitable for allowing/preventing the exit/entry of air from/to said inner chamber (3).

13. Device (1) according to one or more of the claims from 9 to 12, **characterised by** the fact that said inlet mouth (3a), said outlet mouth (3b) and said air discharge port (7) are substantially aligned with one another.

14. Device (1) according to claim 9, **characterised by** the fact that said body (2) has a further opening (15) separated from said discharge port (7) and that the upper base (8c) of said filtering element (8) is associated with said body (2) in correspondence to said further opening (15) in such a way as to substantially separate said outlet mouth (3b) from said outer chamber (4)..

15. Equipment for oxygenating and filtering blood, **characterised by** the fact that it comprises at least a filtering device (1) according to one or more of the preceding claims and a device for blood oxygenation

associated integrally with each other.

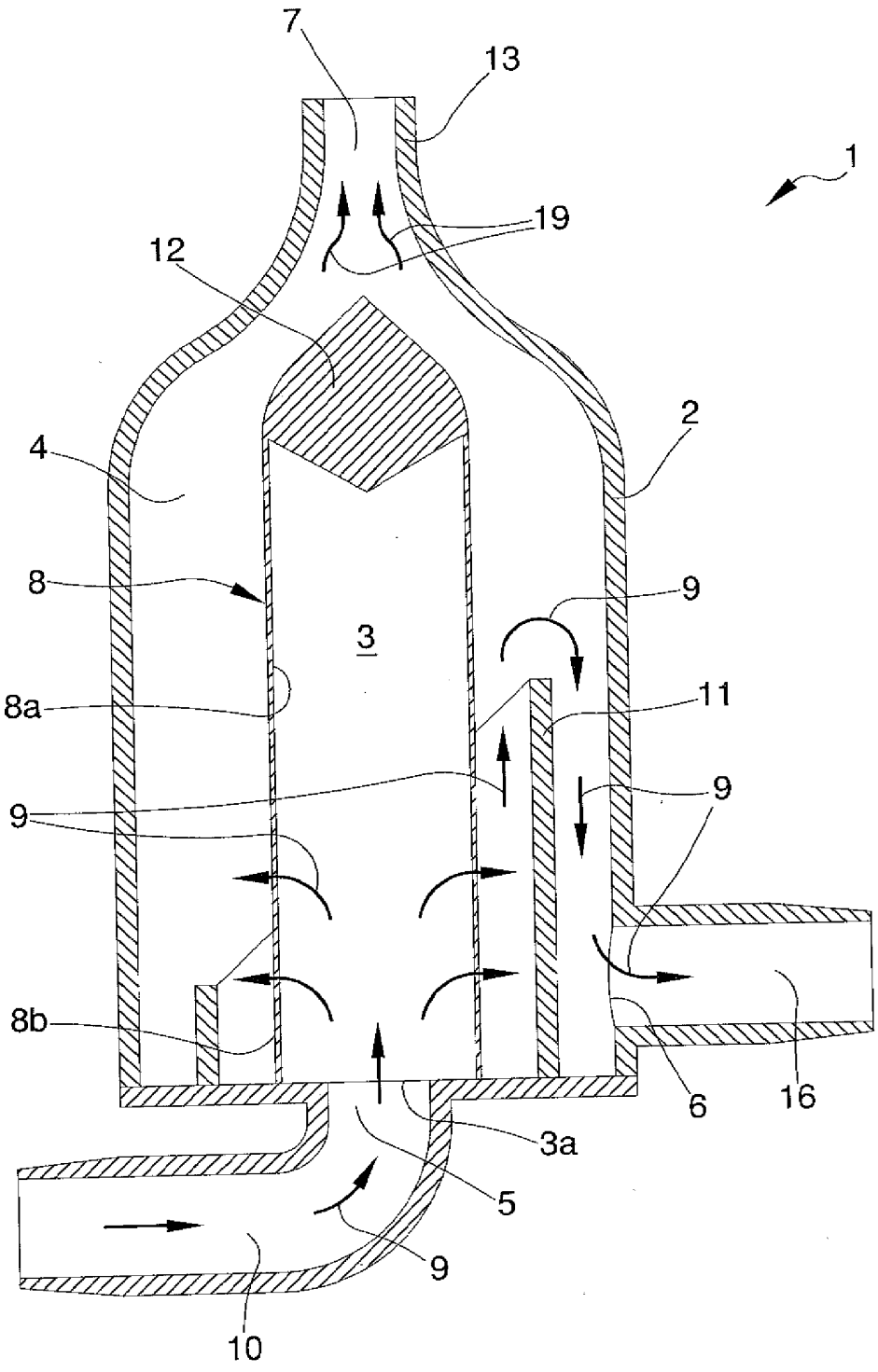


Fig. 1

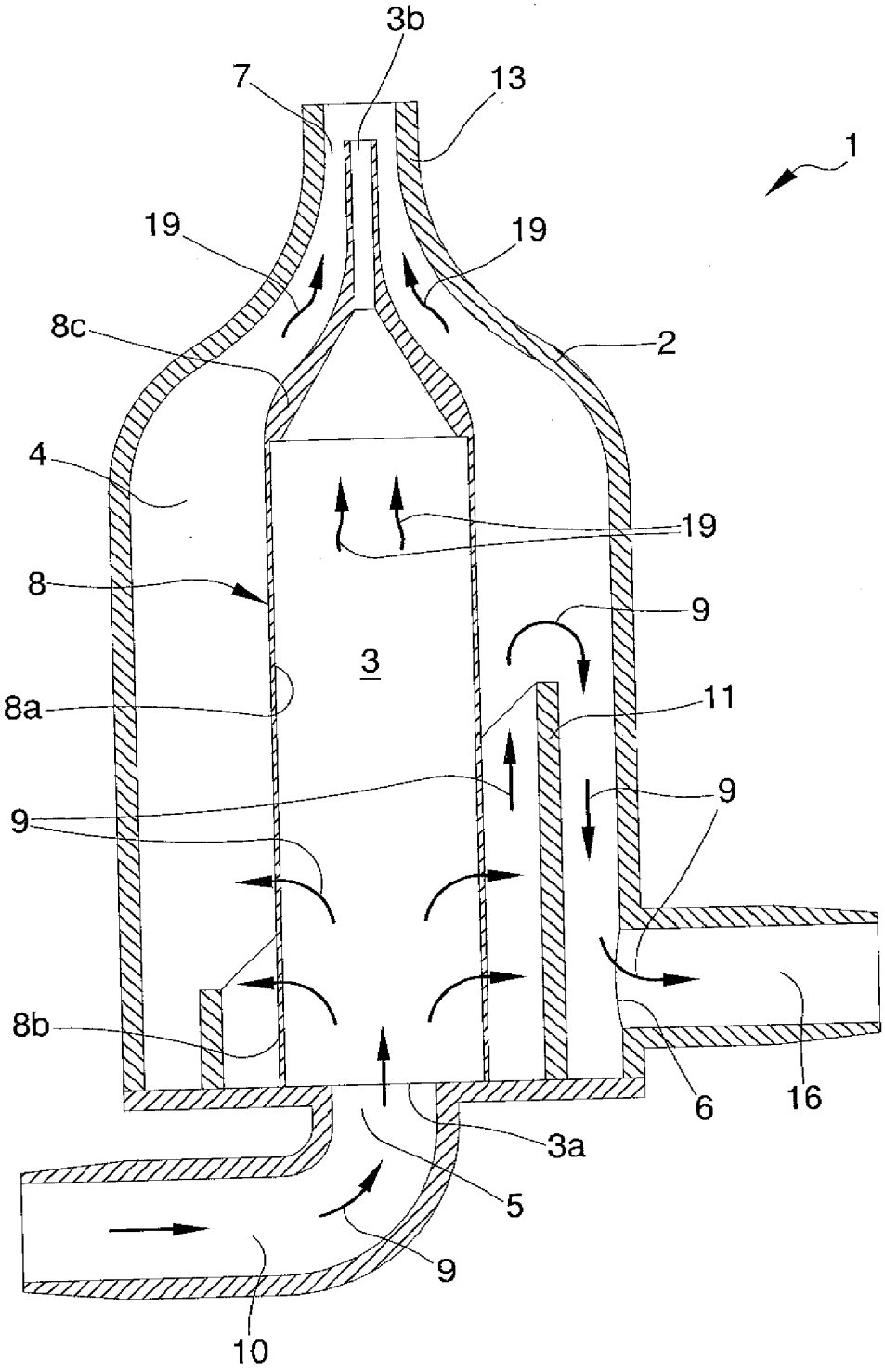


Fig. 2

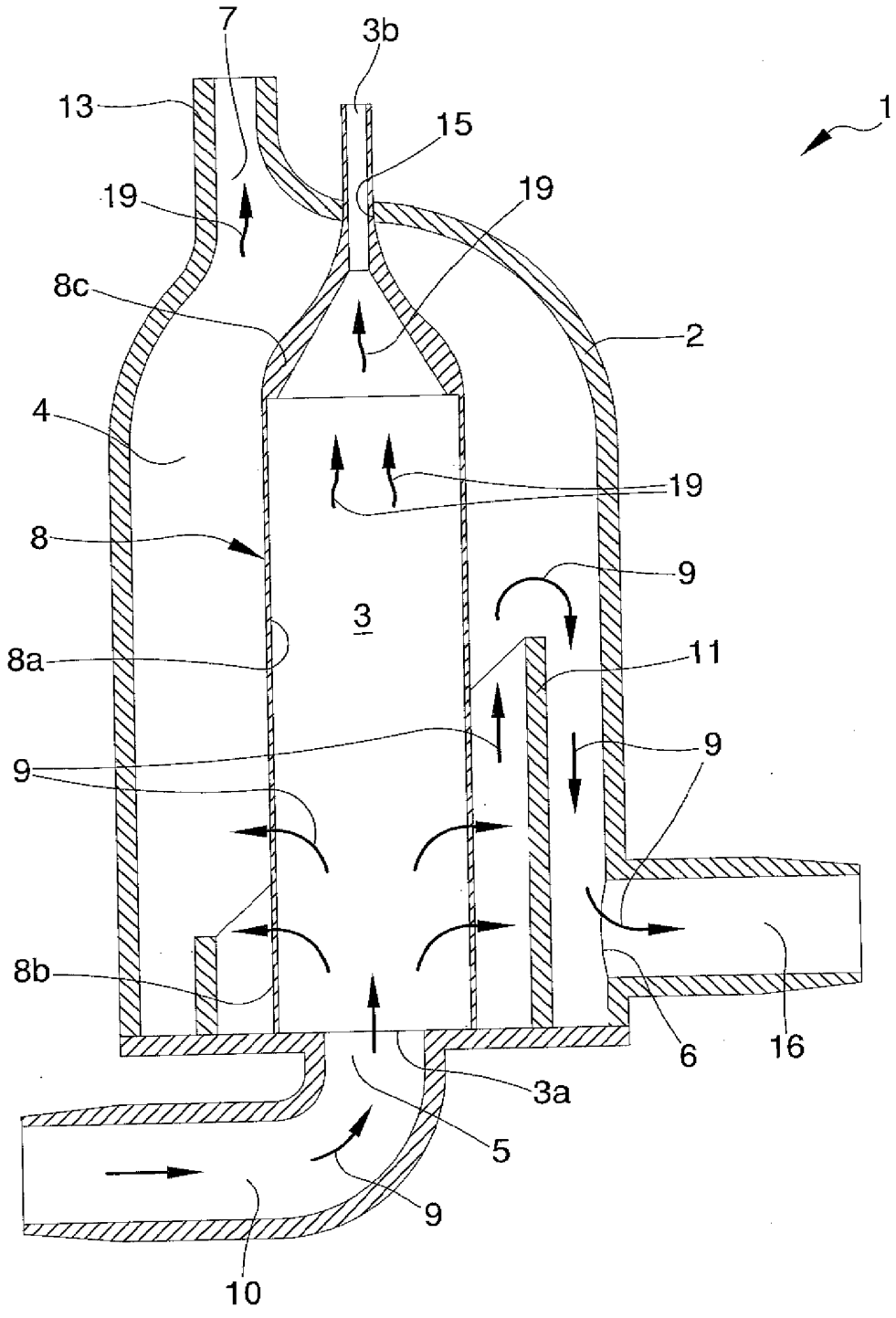


Fig. 3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 12 17 3399

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 203 592 A1 (CONVERGENZA AG [LI] CONVERGENZA HANDELSANSTALT [LI]) 8 May 2002 (2002-05-08)	1-6, 8-10, 12-15	INV. A61M1/36
A	* paragraph [0012] - paragraph [0022]; figures 1-4 *	7	
X	US 2004/228760 A1 (STRINGER STEVEN K [US] ET AL) 18 November 2004 (2004-11-18)	1-3,5,6, 9,10,13, 15	
Y	* page 10, line 4 - page 11, line 16; figures 1,2a,2b *	12	
X	US 6 918 887 B1 (GREMEL ROBERT F [US] ET AL) 19 July 2005 (2005-07-19)	1-3,5,6, 15	
Y	* paragraph [0013] - paragraph [0017]; figures 2-4 *	12	
X	GB 2 183 168 A (SARTORIUS GMBH SARTORIUS GMBH [DE]) 3 June 1987 (1987-06-03)	1-6,8,15	
A	* page 2, line 52 - page 2, line 107; figures 1,2 *	7	

TECHNICAL FIELDS SEARCHED (IPC)
A61M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	30 August 2012	Germano, Alessandro

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 12 17 3399

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-08-2012

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		US 4758337 A	19-07-1988

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard Quick et al.

Application No.: 18/497,249

Filed: October 30, 2023

For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Conf. No.: 6832

Art Unit: 3771

Examiner: Tuan Van Nguyen

Customer No. 25096

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION UNDER 37 C.F.R. § 1.111

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Office Action mailed on April 26, 2024, please amend and consider the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2.

Remarks begin on page 12.

AMENDMENTS TO THE CLAIMS

Please amend claims 2–10, 12–16, 18, and 20, and cancel claims 1 and 11. Following is a complete listing of the claims pending in the application, as amended:

1. (Canceled)

2. (Currently Amended) The clot collection reservoir of claim ~~1~~ 3 wherein the second port is positioned proximate to the second housing end portion.

3. (Currently Amended) ~~The~~ A clot collection reservoir, comprising: ~~of claim 1~~

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; and

~~wherein the~~a filter ~~is~~ removably positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

4. (Currently Amended) The clot collection reservoir of claim ~~1~~3, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap is removable from the housing to provide access to the filter.

5. (Currently Amended) ~~The~~ A clot collection reservoir, comprising: ~~of claim 4~~

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber;

a cap configured to be releasably coupled to the second housing end portion; and

~~wherein the~~a filter ~~is~~ coupled to the cap and configured to be positioned when the chamber when the cap is releasably couled to the second housing end portion, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port;

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region; and

wherein the cap is removable from the housing to provide access to the filter.

6. (Currently Amended) ~~The~~ A clot collection reservoir, ~~of claim 1, further~~ comprising:

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber;

a cap configured to be releasably coupled to the second housing end portion; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port;

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region;~~,~~ and

wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

7. (Currently Amended) The clot collection reservoir of claim ~~1~~ 3 wherein the first filter end portion is curved.

8. (Currently Amended) The clot collection reservoir of claim ~~1~~ 3 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion.

9. (Currently Amended) The clot collection reservoir of claim ~~1~~ 3 wherein the housing is entirely transparent, and wherein the first port is integrally formed with the housing.

10. (Currently Amended) The clot collection reservoir of claim ~~1~~ 3 wherein the first filter end portion is positioned closer to the first housing end portion than the second filter end portion, and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end portion.

11. (Canceled)

12. (Currently Amended) The clot treatment system of claim ~~11~~ 13 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

13. (Currently Amended) ~~The~~ A clot treatment system ~~of claim 11~~, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

wherein the filter is removably positioned within the chamber to provide access to the clot material within the chamber.

14. (Currently Amended) The clot treatment system of claim ~~11~~ 13 wherein the second port is positioned proximate to the second housing end portion.

15. (Currently Amended) ~~The~~ A clot treatment system, comprising: ~~of claim 11~~

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; ~~wherein the clot collection reservoir further comprises~~

a cap configured to be releasably coupled to the second housing end portion~~,~~; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port; and

-wherein the cap and the filter are removable from the housing to provide access to the clot material within the chamber.

16. (Currently Amended) ~~The~~ A clot treatment system, ~~of claim 11, further~~ comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source;

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and

a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter

end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port; and

a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.

17. (Original) The clot treatment system of claim 16 wherein the aspiration source is configured to generate the negative pressure in the chamber with the valve in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter.

18. (Currently Amended) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

a hemostasis valve coupled to a proximal portion of the aspiration catheter;

at least one tube fluidly coupling the first port to a portion of the aspiration catheter distal of the hemostasis valve;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion;

a second port configured to be fluidly coupled to the aspiration source; and

a filter positioned within the chamber, wherein the filter ~~body~~ has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter ~~body~~ extends continuously about the first filter end portion such that the filter ~~body~~ encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter ~~body~~ into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter ~~body~~ into the interior region and through the second port.[[.]]

19. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve comprises:

a tubular member;

a button; and

a filament coupled to the button and the tubular member, wherein the button is actuatable to loosen the filament to unseal the hemostasis valve.

20. (Currently Amended) The clot treatment system of claim ~~11~~ 13 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube fluidly coupling the second port to the aspiration source.

21. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration source is fluidly couplable to the at least one tube.

22. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve is configured to receive an instrument therethrough.

23. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve and the aspiration catheter are configured to receive and route an instrument therethrough.

24. (Previously Presented) The clot treatment system of claim 18 wherein the hemostasis valve comprises:

a tubular member defining a lumen;

a first filament extending in a first loop around the tubular member;

a second filament extending in a second loop around the tubular member; and

a pair of actuators biased to circumferentially constrict the first loop and the second loop to elastically deform the tubular member to a first position in which the lumen is constricted, wherein at least one the actuators is movable to decrease a level of tension in the first filament and a level of tension in the second filament to permit the tubular member to expand against the first loop and the second loop to a second position in which the lumen of the tubular member is at least partially open.

25. (Previously Presented) The clot treatment system of claim 24 wherein the actuators each comprise a button.

26. (Previously Presented) The clot treatment system of claim 24 wherein the first filament includes a first portion operably coupled to a first one of the actuators and a second portion operably coupled to a second one of the actuators, and wherein the second filament includes a first portion operably coupled to the first one of the actuators and a second portion operably coupled to the second one of the actuators.

27. (Previously Presented) The clot treatment system of claim 24 wherein the first filament is flexible, and wherein the second filament is flexible.

28. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 16 French.

29. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 20 French.

30. (Previously Presented) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 22 French.

REMARKS

Claims 1–30 were pending when the present Office Action was mailed on April 26, 2024. In this response, claims 3, 5, 6, 13, 15, and 16 have been rewritten in independent form to put these claims in condition for allowance, and claims 2, 4, 7–10, 12, 14, and 20 have been amended to depend from one of allowable claims 3 or 13. Claims 1 and 11 have been canceled. Claim 18 has been amended to address a minor informality. The foregoing amendments and cancelations are made without commenting on or conceding the merits of any rejections or objections of these claims and without prejudice to or disclaimer of pursuing the subject matter of these claims in a continuation or other related application. No claims have been added in this response. Accordingly, claims 2–10 and 12–30 are currently pending.

The status of the application in light of the April 26, 2024, Office Action is as follows:

(A) Claim 18 was objected to;

(B) Claims 11, 14, and 20 were rejected under 35 U.S.C. § 102(a)(1) over U.S. Patent No. 3,863,624 to Gram ("Gram"); claims 1, 2, 4, 7–10, and 12 were rejected under 35 U.S.C. § 103 over a combination of Gram and U.S. Patent No. 5,197,485 to Grooters ("Grooters"); and

(C) Claims 18, 19, and 21–30 were indicated to be allowable if the objection to claim 18 was overcome; and claims 3, 5, 6, 13, 15, 16, and 17 were indicated to be allowable if rewritten in independent form.[1]

(A) Response to the Objection to Claim 18

Claim 18 was objected to for an informality. Without commenting on or conceding the merits of this objection, claim 18 has been amended to address the alleged informality. Accordingly, the objection to claim 18 should be withdrawn.

[1] Claim 14 was indicated to be allowable in the Office Action and also indicated to be rejected under Section 102 over Gram. In the interest of expediting prosecution and without commenting on or conceding the allowability of claim 14, claim 14 has been amended to depend from allowable claim 13.

(B) Response to the Section 102/103 Rejection of Claims 1, 2, 4, 7–12, 14, and 20 (Gram)

Claims 11, 14, and 20 were rejected under 35 U.S.C. § 102(a)(1) over Gram. Claims 1, 2, 4, 7–10, and 12 were rejected under 35 U.S.C. § 103 over the combination of Gram and Grooters. Without commenting on or conceding the merits of these rejections, independent claims 1 and 11 have been canceled in this response and, accordingly, the rejections of these claims are now moot. Furthermore, claims 3 and 13 (which were indicated to be allowable) have been rewritten in independent form, and claims 2, 4, 7–10, 12, 14, and 20 have been amended to depend from one of allowable claims 3 or 13. Accordingly, the Section 102/103 rejections of claims 2, 4, 7–10, 12, 14, and 20 should be withdrawn.

(C) Indication of Allowable Subject Matter

Claims 18, 19, and 21–30 were indicated to be allowable if the objection to claim 18 was overcome; and claims 3, 5, 6, 13, 15, 16, and 17 were indicated to be allowable if rewritten in independent form. As noted above, the objection to claim 18 should be withdrawn, and claims 3, 5, 6, 13, 15, and 16 have been rewritten in independent form. Accordingly, claims 3, 5, 6, 13, 15–19, and 21–30 are in condition for allowance.

The Applicant thanks the Examiner for indicating that claims 3, 5, 6, 13, 15–19, and 21–30 are allowable. Although the undersigned attorney agrees with the Examiner's conclusion that claims 3, 5, 6, 13, 15–19, and 21–30 are allowable, the undersigned attorney notes that these claims may be allowable for reasons other than those identified by the Examiner and does not concede that the Examiner's characterization of the terms of these claims and the prior art are correct.

Conclusion

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The Applicant accordingly requests reconsideration of the application and respectfully submits that the application is in condition for allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact the undersigned at (206) 359-3343.

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicant is not conceding that previously pending claims are not patentable over the applied references; instead, any alteration or characterizations are being made to expedite prosecution of this application.

The Applicant also reserves the right to later pursue any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter that might be found disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any underpayment or credit any overpayment to Deposit Account No. 50-0665, under Order No. 111552.8023.US07 from which the undersigned is authorized to draw.

Respectfully submitted,

Dated: June 3, 2024 By: /Matthew S. Williams/

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Attorney for Applicant

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/497,249	Filing Date 10/30/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	06/03/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 28	Minus	** 30	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 7	Minus	*** 3	= 4		x $480 =	1920
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	1920

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	PROGRAM SUPPORT SPECIALIST
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/FIKIRTE A GEREMEW/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 04/26/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER
NGUYEN, TUAN VAN

ART UNIT	PAPER NUMBER
3771	

NOTIFICATION DATE	DELIVERY MODE
04/26/2024	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

Office Action Summary	Application No. 18/497,249	Applicant(s) Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 04/03/24.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-30 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☑ Claim(s) 18-19 and 21-30 is/are allowed.

7) ☑ Claim(s) 1-2,4,7-12 and 20 is/are rejected.

8) ☑ Claim(s) 3,5-6 and 13-17 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Response to Amendment

1. In view of the amendment filed on April 3, 2024, claims 1, 3, 10-11, 13 and 18-19 have been amended and claims 21-30 have been added. Accordingly, claims 1-30 are pending and under examination.

Response to Arguments

1. Applicant's arguments with respect to claim(s) 1-3, 7, 8, 10-14, 16-17, and 20 were rejected under 35 U.S.C. § 102(a)(1) over Gram have been considered but are moot because the new ground of rejection does not rely on any reference applied in the prior rejection of record for any teaching or matter specifically challenged in the argument.

Claim Objections

1. Claim 18 is objected to because of the following informalities: the limitations of "the filter body" in lines 14, 16-17, 21 and 23-24 should be amended to read "the filter." Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

3. Claim(s) 11, 14 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Gram (US 3,863,624).

4. Referring to claim 11, Gram discloses a tissue removing system that is capable of performing the function of a clot treatment system, comprising:

an aspiration catheter 9 (Fig. 1) that capable to be intravascularly positioned proximate to clot material within a blood vessel of a patient; an aspiration source (col. 3, ln 23-25 inherently discloses a vacuum source coupled to tube 12; Fig. 1); and

a clot collection reservoir 5 (Fig. 2), comprising:

a housing 5 (Fig. 2) defining a sealed chamber and having a first housing end portion (the portion at lead line 7 as shown in Fig. 2) and a second housing end

portion opposite the first housing end portion (the portion at lead line 6 as shown in Fig. 2);

a first port (8 as shown in Fig. 2) configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port 18, 19 (Fig. 2) configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path from the chamber; and

a filter 20, 21 (Fig. 2) positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port (Fig. 2);

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port; and

wherein the filter is capable to inhibit the clot material from passing through the filter body into the interior region and through the second port.

5. Referring to claim 14, Gram discloses the clot treatment system of claim 11 wherein the second port 18, 19 (Fig. 2) is positioned proximate to the second housing end portion 5 (Fig. 2).

6. Referring to claim 20, Gram discloses the clot treatment system of claim 11 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube 12 (Fig. 1) fluidly coupling the second port 18, 19 (Fig. 2) to the aspiration source.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim(s) 1-2, 4, 7-10 and 12 is/are rejected under 35 U.S.C. 103 as unpatentable over Gram (US 3,863,624) in view of Grooters (US 5,197,485, which is cited in the most recent Office action).

5. Referring to claim 1, Gram discloses a clot collection reservoir (Figs. 1-3. Gram discloses the device is for collecting tissue samples from the endometrium, thus, it is capable for collecting clot; col. 2, ln 1-10), comprising:

a housing (5 as shown in Fig. 2; col. 3, ln 19-36) defining a sealed chamber and having a first housing end portion (the portion at lead line 7 as shown in Fig. 2) and a second housing end portion opposite the first housing end portion (the portion at lead line 6 as shown in Fig. 2);

a first port (8 as shown in Fig. 2) configured to be fluidly coupled to an aspiration catheter (cannula or curette 9 has been interpreted as aspiration catheter, col. 3, ln 21-22; Fig. 1), wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port 18, 19 (Fig. 2) configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber (Col. 3, ln 23-36: "*a connector 10 which through a fitting 11 may be connected to a vacuum hose 12...* Through passages 22, 23, and 24, the connectors 18 and 19 and the compartment 17 communicate with the interior of the connector 10."); and

a filter 20, 21 (Fig. 2; col. 3, ln 30-34) positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port 18, 19 (Fig. 2); wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and tissue from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port; wherein the filter 20, 21 is configured to inhibit the tissue from passing through the filter body into the interior region and through the second port.

Gram discloses housing is made from plastic material (col. 2, ln 32-35). Gram discloses the invention substantially as claimed except for disclosing the housing 5 is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region. However, in the same field of endeavor, which is a clot collection reservoir, Grooters discloses "*handle section 24 is preferably fabricated of transparent plastic to enable visual inspection of fluid flowing through the apparatus.*" (col. 4, ln 34-36). Therefore, it would have been obvious to one of ordinary skill in the art, before the effective filling date of the claimed invention, to have made the housing 5 of Gram with transparent plastic to enable visual inspection of fluid flowing through the reservoir and material in the reservoir.

6. Referring to claim 2, Gram discloses the clot collection reservoir of claim 1 wherein the second port 18, 19 (Fig. 2) is positioned proximate to the second housing end portion 6 (Fig. 2).

7. Referring to claim 4, Gram discloses the clot collection reservoir of claim 1, further comprising a cap 25 (Fig. 2; col. 3, ln 38-40: "*a loose cover 25 serves to close the connector 10, when the fitting 11 is removed after use of the device*.") configured to be releasably coupled to the second housing end portion, wherein the cap is removable from the housing 5 to provide access to the filter (examiner notes that when cover 25 and fitting 11 are not coupled to the housing 5, the opening of port 18 or 19 provides access to the filters 20 or 21).

8. Referring to claim 7, Gram discloses the clot collection reservoir of claim 1 wherein the first filter end portion is curved (Fig. 3 show filters 20, 21 have cylindrical shape).

9. Referring to claim 8, Gram discloses the clot collection reservoir of claim 1 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion (Col. 3, ln 23-36: "*a connector 10 which through a fitting 11 may be connected to a vacuum hose 12*... Through passages 22, 23, and 24, the connectors 18 and 19 and the compartment 17 communicate with the interior of the connector 10.").

10. Referring to claim 9, Gram as modified by Grooters discloses the clot collection reservoir of claim 1 wherein the housing 5 is entirely transparent (see rejection of claim 1 above).

11. Referring to claim 10, Gram discloses the clot collection reservoir of claim 1 wherein the first filter end portion is positioned closer to the first housing end portion (the location near lead line 13 as shown in Fig. 2) than the second filter end portion (the location at ports 18 and 19 as shown in Fig. 2), and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end portion.

12. Referring to claim 12, Gram discloses the clot treatment system of claim 11 and the housing is made from plastic material (col. 2, ln 32-35). Gram discloses the invention substantially as claimed except for disclosing wherein the housing 5 is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region (col. 4, ln 34-36). However, in the same field of endeavor, which is a clot collection reservoir, Grooters discloses *"handle section 24 is preferably fabricated of transparent plastic to enable visual inspection of fluid flowing through the apparatus."* (col. 4, ln 34-36). Therefore, it would have been obvious to one of ordinary skill in the art, before the effective filling date of the claimed invention, to have made the housing 5 of Gram with transparent plastic to enable visual inspection of fluid flowing through the reservoir and material in the reservoir.

Allowable Subject Matter

1. Claims 18-19 and 21-30 would be allowable if claim 18 is amended to overcome the objection set forth in this Office action.

2. Claims 3, 5-6 and 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN V NGUYEN whose telephone number is (571)272-5962. The examiner can normally be reached Monday - Friday 8:30 AM - 5:30 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on 571-272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Notice of References Cited	Application/Control No. 18/497,249	Applicant(s)/Patent Under Reexamination Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-3661144-A	1972-05-09	Jensen; Jorgen Albrecht	A61M1/79	606/160
*	B	US-3785380-A	1974-01-15	Brumfield; Robert C.	A61M1/76	604/902
*	C	US-3863624-A	1975-02-04	Gram; Hans	A61M1/79	604/191
	D					
	E					
	F					
	G					
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	I					
	J					
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	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61M1/60,0001,0003,0281	12/28/2023	TN
A61M39/0613	12/28/2023	TN
A61M2039/027,062	12/28/2023	TN
A61B17/22031	12/28/2023	TN
A61B2017/22035	12/28/2023	TN
A61M25/0122	12/28/2023	TN
A61B17/22031,22,221,220758,320725,22034,22042,22079,22094	12/28/2023	TN

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Group/subgroups combined with text (see search history printout)	12/28/2023	TN
Search update (see search history printout)	04/08/2024	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L224	40	(inari WITH medical) AND (quick WITH richard)	(US-PGPUB; USPAT)	OR	ON	ON	2024/04/08 12:46 PM
L225	17	(inari WITH medical) AND (quick WITH richard)	(USPAT)	OR	ON	ON	2024/04/08 12:46 PM
L226	30	(quick WITH richard) AND clot	(USPAT)	OR	ON	ON	2024/04/08 12:49 PM
L227	9	(quick WITH richard) AND hemostasis WITH valve AND filament$4	(US-PGPUB; USPAT)	OR	ON	ON	2024/04/08 01:19 PM
L228	116	("2449497" | "3191600" | "3324855" | "3430631" | "3520300" | "3610242" | "3675653").pn. OR ("3785380").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/04/08 04:50 PM
L229	32	("3863624").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/04/17 04:06 PM
L230	1	("3661144").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/04/23 04:10 PM
L231	37	("3661144").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/04/23 04:16 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS

Examiner Initial*	Cite No	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	2.	20170172591	06-22-2017	Ulm, III	
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	5.	11833023	12-05-2023	Hauser	
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	8.	11839393	12-12-2023	Hauser	
	9.	11844921	12-19-2023	Merritt et al.	
	10.	11849963	12-26-2023	Quick	
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	12.	20210128182	05-06-2021	Teigen et al.	
	13.	20170143880	05-25-2017	LUXON et al.	
	14.	20090312786	12-17-2009	Trask et al.	
	15.	20120095448	04-19-2012	KAJII	
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	17.	20130123705	05-16-2013	Holm et al.	
	18.	11890180	02-06-2024	Merritt et al.	
	19.	20140163615	06-12-2014	Gadlage et al.	
	20.	5323514	06-28-1994	Masuda et al.	
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	25.	11918244	03-05-2024	Marchand et al.	
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	30.	5951539	09-14-1999	Nita et al.	
	31.	11213356	01-04-2022	Tanner et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS

Examiner Initial*	Cite No	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	37.	20190328411	10-31-2019	VALE et al.	
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	42.	11865291	01-09-2024	Merritt et al.	
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	47.	20180250498	09-06-2018	Stern et al.	
	48.				
	49.				

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Examiner Initial*	Cite No	Foreign Document Number[3]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	1.	WO2012114633	08-30-2012	TERUMO KABUSHIKI KAISHA		
	2.	JP2007-222658 (Counterpart: WO1998/050103)	09-06-2007	EMBOL-X, INC.		
	3.					
	4.					
	5.					

NON-PATENT LITERATURE DOCUMENTS

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

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Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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	Attorney Docket Number	111552.8023.US07

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report and Written Opinion for International App. No. PCT/US23/66538; Date of Filing: May 3, 2023, Applicant: Inari Medical, Inc., Date of Mailing: January 4, 2024, 14 pages.	
	3.	English translation of Japanese Office Action received for JP Application No. 2022-574456, Applicant: Inari Medical, Inc, Date of Mailing: January 23, 2024, 12 pages.	
	4.	Chinese First Office Action received for CN Application No. 201980067623.1, Applicant: Inari Medical, Inc., Date of Mailing: January 31, 2024, 10 pages.	
	5.	International Search Report and Written Opinion for International App. No. PCT/US23/73765; Date of Filing: September 8, 2023, Applicant: Inari Medical, Inc., Date of Mailing: February 28, 2024, 7 pages.	
	6.	International Search Report and Written Opinion for International App. No. PCT/US23/69892; Date of Filing: July 10, 2023, Applicant: Inari Medical, Inc., Date of Mailing: February 29, 2024, 12 pages.	
	7.	English translation of Japanese Office Action mailed January 19, 2024 for Japanese Application No. 2022-160947, 8 pages.	

EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	04/08/2024

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references. This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information that may be material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, Applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-04-03
Name/Print	Matthew S. Williams	Registration Number	77,516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**04/03/2024 12:34:38 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	64947559	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 12

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2024-04-03 Response to NFOA 2024-01-03 - 111552.8023.US07.pdf		12	-	133 KB
2024-04-03 Response to NFOA 2024-01-03 - 111552.8023.US07-A....pdf	(1-1)	1	Amendment/Request for Reconsideration-After Non-Final Rejection	75 KB
2024-04-03 Response to NFOA 2024-01-03 - 111552.8023.US07-IACS.pdf	(2-8)	7	Amendment Copy Claims/Response to Suggested Claims	88 KB
2024-04-03 Response to	(9-12)	4	Applicant Arguments/Remarks	113 KB

NFOA 2024-01-03 - 111552.8023.US07-REM.pdf		Made in an Amendment	
2024.04.03 IDS SB08 - 111552-8023US07.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	139 KB

Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.

FOR_WO2012114633.pdf	30	Foreign Reference	1051 KB
FOR_JP2007222658A_Counterpart_WO1998050103.pdf	90	Foreign Reference	3559 KB
NPL_JP_OA_EN_translation_2022_574456_Jan_23_2024_12pages.pdf	12	Non Patent Literature	90 KB
NPL_JP_OA_EN_translation_2022_160947_Jan_19_2024_8pages.pdf	8	Non Patent Literature	120 KB
NPL_ISR_WO_PCTUS20236 9892_FEB_29_2024_12page s.pdf	12	Non Patent Literature	5789 KB
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NPL_ISR_WO_PCTUS20230 66538_Jan_4_2024_14pages .pdf	14	Non Patent Literature	5972 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024-04-03 Response to NFOA 2024-01-03 - 111552.8023.US07.pdf	13D145F8029DF0441E410A3D0F3F8E7B0487A35A1BC152A7E992D512D45D252EAC97E922C8FD4C372AF68E99E89DB43E889130C0E8441135512FA930A9C54C3A
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2024-04-03 Response to NFOA 2024-01-03 - 111552.8023.US07-REM.pdf	6F1D5178A1BC1AFDBBA2C16AFE8101450C7097FEBCD42FF2FEEFEA05B0C980FC3225FA4EC7D374F1C1696E94E0516F4D656CC4DA4604B1A09C9FEAD40830682E
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FOR_JP2007222658A_Counterpart_WO1998050103.pdf	0DBB529BD4ABEB3F768EA7E171378E9230D3CEA398C7572B4A7D7DDAFC1DB65FEBEA1FDE2CACC81B35E1DB37E4068BD24CC91CADF685642C2AD05F235ED6EB8A
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NPL_CN_OA_201980067623_1-Jan-31-2024_10pages.pdf	D36442307760D7AA0218DDEDF940C7677E44D4096160D20632D68F8CA4724B1004BC9A1ADC81D006F7042DB9C272D5833AEEDEA99A3217C8C65E4108F8A849A8
NPL_ISR_WO_PCTUS2023066538_Jan_4_2024_14pages.pdf	43452CFFE399F781C5F99D65FA4B848AA463C9719275C622663A81E0C640AB139227D70DDF2414CD10F23F3E15D9D9828D358C67D9F6509A07A71A72C45B7336

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES
PATENT AND TRADEMARK OFFICE

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	04/03/2024 12:34:38 PM Z ET	111552.8023.US07

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	64947559	AUTHORIZED BY	Matthew Williams
CUSTOMER #	25096	FILING DATE	10/30/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Richard Quick

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 5111	E202443C35286613	JiYoung Anderson

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1806	SUBMISSION OF AN INFORMATION DISCLOSURE STATEMENT	260.00	1	260.00
1202	EACH CLAIM IN EXCESS OF 20	100.00	10	1000.00
			TOTAL AMOUNT:	$1,260.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard Quick et al.

Application No.: 18/497,249

Filed: October 30, 2023

For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Conf. No.: 6832

Art Unit: 3771

Examiner: Tuan Van Nguyen

Customer No. 25096

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION UNDER 37 C.F.R. § 1.111

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Office Action mailed on January 3, 2024, please amend and consider the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2.

Remarks begin on page 9.

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 3, 10, 11, 13, 18, and 19 and add new claims 21–30. Following is a complete listing of the claims pending in the application, as amended:

1. (Currently Amended) A clot collection reservoir, comprising:

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber; and

a filter positioned within the chamber, wherein the filter ~~body~~ has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter ~~body~~ extends continuously about the first filter end portion such that the filter ~~body~~ encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter ~~body~~ into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter ~~body~~ into the interior region and through the second port; and

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

2. (Original) The clot collection reservoir of claim 1 wherein the second port is positioned proximate to the second housing end portion.

3. (Currently Amended) The clot collection reservoir of claim 1 wherein the filter is removably positioned within the ~~camber~~chamber.

4. (Original) The clot collection reservoir of claim 1, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap is removable from the housing to provide access to the filter.

5. (Original) The clot collection reservoir of claim 4 wherein the filter is coupled to the cap.

6. (Original) The clot collection reservoir of claim 1, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap and filter are removable from the housing to provide access to the clot material within the chamber.

7. (Original) The clot collection reservoir of claim 1 wherein the first filter end portion is curved.

8. (Original) The clot collection reservoir of claim 1 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion.

9. (Original) The clot collection reservoir of claim 1 wherein the housing is entirely transparent, and wherein the first port is integrally formed with the housing.

10. (Currently Amended) The clot collection reservoir of claim 1 wherein the first filter end portion is positioned closer to the first housing end portion than the second filter end portion, and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end ~~portion~~portion.

11. (Currently Amended) A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber;

a second port configured to be fluidly coupled to the aspiration source, wherein the second port provides a second fluid path to the chamber; and

a filter positioned within the chamber, wherein the filter ~~body~~ has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter ~~body~~ extends continuously about the first filter end portion such that the filter ~~body~~ encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter ~~body~~ into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter ~~body~~ into the interior region and through the second port.

12. (Original) The clot treatment system of claim 11 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

13. (Currently Amended) The clot treatment system of claim 11 wherein the filter is removably positioned within the ~~camber~~ chamber to provide access to the clot material within the chamber.

14. (Original) The clot treatment system of claim 11 wherein the second port is positioned proximate to the second housing end portion.

15. (Original) The clot treatment system of claim 11 wherein the clot collection reservoir further comprises a cap configured to be releasably coupled to the second housing end portion, wherein the cap and filter are removable from the housing to provide access to the clot material within the chamber.

16. (Original) The clot treatment system of claim 11, further comprising a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter.

17. (Original) The clot treatment system of claim 16 wherein the aspiration source is configured to generate the negative pressure in the chamber with the valve in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter.

18. (Currently Amended) ~~The~~ A clot treatment system ~~of claim 11~~, ~~further~~ comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

a hemostasis valve coupled to a proximal portion of the aspiration catheter; ~~and~~

at least one tube fluidly coupling the first port to a portion of the aspiration catheter distal of the hemostasis valve;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion;

a second port configured to be fluidly coupled to the aspiration source; and

a filter positioned within the chamber, wherein the filter body has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter body extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter body into the interior region and through the second port..

19. (Currently Amended) The clot treatment system of claim ~~16~~ 18 wherein the hemostasis valve comprises:

a tubular member;

a button; and

a filament coupled to the button and the tubular member, wherein the button is actuatable to loosen the filament to unseal the hemostasis valve.

20. (Original) The clot treatment system of claim 11 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube fluidly coupling the second port to the aspiration source.

21. (New) The clot treatment system of claim 18 wherein the aspiration source is fluidly couplable to the at least one tube.

22. (New) The clot treatment system of claim 18 wherein the hemostasis valve is configured to receive an instrument therethrough.

23. (New) The clot treatment system of claim 18 wherein the hemostasis valve and the aspiration catheter are configured to receive and route an instrument therethrough.

24. (New) The clot treatment system of claim 18 wherein the hemostasis valve comprises:

a tubular member defining a lumen;

a first filament extending in a first loop around the tubular member;

a second filament extending in a second loop around the tubular member; and

a pair of actuators biased to circumferentially constrict the first loop and the second loop to elastically deform the tubular member to a first position in which the lumen is constricted, wherein at least one the actuators is movable to decrease a level of tension in the first filament and a level of tension in the second filament to permit the tubular member to expand against the first loop and the second loop to a second position in which the lumen of the tubular member is at least partially open.

25. (New) The clot treatment system of claim 24 wherein the actuators each comprise a button.

26. (New) The clot treatment system of claim 24 wherein the first filament includes a first portion operably coupled to a first one of the actuators and a second portion operably coupled to a second one of the actuators, and wherein the second filament includes a first portion operably coupled to the first one of the actuators and a second portion operably coupled to the second one of the actuators.

27. (New) The clot treatment system of claim 24 wherein the first filament is flexible, and wherein the second filament is flexible.

28. (New) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 16 French.

29. (New) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 20 French.

30. (New) The clot treatment system of claim 18 wherein the aspiration catheter has a size of at least 22 French.

REMARKS

Claims 1–20 were pending when the present Office Action was mailed on January 3, 2024. In this response, claims 1, 3, 10, 11, 13, and 19 have been amended to further clarify certain features of these claims and to expedite prosecution of this application. The foregoing amendments are made without commenting on or conceding the merits of any rejections of these claims and without prejudice to or disclaimer of pursuing the subject matter of these claims in a continuation or other related application. Allowable claim 18 has been rewritten in independent form. New claims 21–30 have been added; no claims have been canceled. Accordingly, claims 1–30 are currently pending.

The status of the application in light of the January 3, 2024, Office Action is as follows:

(A) Claims 1, 3, 10, 11, and 13 were objected to;

(B) Claims 1–3, 7, 8, 10–14, 16–17, and 20 were rejected under 35 U.S.C. § 102(a)(1) over U.S. Patent No. 5,197,485 to Grooters ("Grooters");

(C) Claim 9 was rejected under 35 U.S.C. § 103 over Grooters; and

(D) Claims 4–6, 15, 18, and 19 were indicated to be allowable if rewritten in independent form.

As a preliminary matter, the undersigned attorney wishes to thank the Examiner for engaging in a productive telephone interview on March 29, 2024, to discuss the present Office Action, the applied Grooters, U.S. Patent No. 3,785,380 ("Brumfield"; newly identified by the Examiner), and a proposed amendment to independent claims 1 and 11. At that time, the Examiner provisionally agreed, pending further search and consideration, that independent claims 1 and 11 would patentably distinguish over Grooters and Brumfield if amended as set forth herein.

The remarks set forth herein summarize and expand on the March 29th telephone interview and reflect the agreements reached between the Examiner and the undersigned attorney. Accordingly, the Applicant requests that this paper constitute the Applicant's Interview Summary.

If the Examiner notices any deficiencies in this regard, the Examiner is encouraged to contact the undersigned attorney so that any such deficiencies can be promptly addressed.

A. Response to Objections to Claims 1, 3, 10, 11, and 13

Claims 1, 3, 10, 11, and 13 were objected to for various informalities. Without commenting on or conceding the merits of this objection, claims 1, 3, 10, 11, and 13 have been amended to address the alleged informalities. Accordingly, the objection to claims 1, 3, 10, 11, and 13 should be withdrawn.

B. Response to the Section 102 Rejection of Claims 1–3, 7, 8, 10–14, 16, 17, and 20 (Grooters)

Claims 1–3, 7, 8, 10–14, 16–17, and 20 were rejected under 35 U.S.C. § 102(a)(1) over Grooters. The Applicant respectfully submits that the Section 102 rejection of claim 1 should be withdrawn because Grooters fails to disclose or suggest all the claimed features

For example, as discussed and agreed upon during the March 29th telephone interview, Grooters fails to disclose or suggest at least the following features of claim 1: (i) "a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port" and (ii) "wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port." Therefore, for at least the reasons discussed during the March 29th telephone interview, the Section 102 rejection of independent claim 1 (and claims 2, 3, 7, 8, and 10 depending therefrom) should be withdrawn.

Independent claim 11 includes some features generally similar to the features of amended independent claim 1 discussed above. Accordingly, independent claim 11 (and claims 12–14, 16, 17, and 20 depending therefrom) are patentable over Grooters for at least the reasons discussed above and during the March 29th telephone interview with respect to independent claim 1, and for the additional features of these claims.

C. Response to the Section 103 Rejection of Claim 9 (Grooters)

Claim 9 was rejected under 35 U.S.C. § 103 over Grooters. Claim 9 depends from independent claim 1. As noted above, Grooters cannot support a Section 102 rejection of independent claim 1 for at least the reason that this reference fails to disclose all the claimed features. The Applicant further respectfully submits that it would not have been obvious to modify the express teachings of Grooters to come up with the features of claim 1. Accordingly, Grooters fails to support a proper Section 103 rejection of dependent claim 9 for at least the reason that this reference fails to disclose or suggest all the features of independent claim 1, and for the additional features of this dependent claim. Therefore, the Section 103 rejection of claim 9 should be withdrawn.

D. Allowable Subject Matter

Claims 4–6, 15, 18, and 19 were indicated to be allowable if rewritten in independent form. As noted above, claim 18 has been rewritten in the stated form and is in condition for allowance. The Applicant thanks the Examiner for indicating that claims 4–6, 15, 18, and 19 are allowable. Although the undersigned attorney agrees with the Examiner's conclusion that 4–6, 15, 18, and 19 are allowable, the undersigned attorney notes that these claims may be allowable for reasons other than those identified by the Examiner and does not concede that the Examiner's characterization of the terms of these claims and the prior art are correct.

New Claims 21–30

New claims 21–30 have been added in this response. New claims 21–30 depend from allowable independent claim 18. Accordingly, new claims 21–30 are allowable for at least the reason that they depend from an allowable independent claim, and for the additional features of these dependent claims.

Conclusion

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The Applicant accordingly requests reconsideration of the application and respectfully submits that the application is in condition for allowance. If the

Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact the undersigned at (206) 359-3343.

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicant is not conceding that previously pending claims are not patentable over the applied references; instead, any alteration or characterizations are being made to expedite prosecution of this application.

The Applicant also reserves the right to later pursue any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter that might be found disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any underpayment or credit any overpayment to Deposit Account No. 50-0665, under Order No. 111552.8023.US07 from which the undersigned is authorized to draw.

Respectfully submitted,

Dated: April 3, 2024

By: /Matthew S. Williams/

Matthew S. Williams
Registration No.: 77,516

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Attorney for Applicant

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	20210316127	10-14-2021	Buck et al.	
	2.	20170172591	06-22-2017	Ulm, III	
	3.	11832837	12-05-2023	Hauser	
	4.	11832838	12-05-2023	Hauser	
	5.	11833023	12-05-2023	Hauser	
	6.	20230390045	12-07-2023	Merritt et al.	
	7.	20230389932	12-07-2023	Ozenne et al.	
	8.	11839393	12-12-2023	Hauser	
	9.	11844921	12-19-2023	Merritt et al.	
	10.	11849963	12-26-2023	Quick	
	11.	20130190701	07-25-2013	Kirn	
	12.	20210128182	05-06-2021	Teigen et al.	
	13.	20170143880	05-25-2017	LUXON et al.	
	14.	20090312786	12-17-2009	Trask et al.	
	15.	20120095448	04-19-2012	KAJII	
	16.	20160220795	08-04-2016	KORKUCH et al.	
	17.	20130123705	05-16-2013	Holm et al.	
	18.	11890180	02-06-2024	Merritt et al.	
	19.	20140163615	06-12-2014	Gadlage et al.	
	20.	5323514	06-28-1994	Masuda et al.	
	21.	5911728	06-15-1999	Sepetka et al.	
	22.	20200129741	04-30-2020	Kawwas et al.	
	23.	20240058113	02-22-2024	Strauss et al.	
	24.	2018014840	01-18-2018	Panian	
	25.	11918244	03-05-2024	Marchand et al.	
	26.	11918243	03-05-2024	Marchand et al.	
	27.	6059745	05-09-2000	Gelbfish	
	28.	20030225379	12-04-2003	Schaffer et al.	
	29.	20050131387	06-16-2005	Pursley	
	30.	5951539	09-14-1999	Nita et al.	
	31.	11213356	01-04-2022	Tanner et al.	

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	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS

Examiner Initial*	Cite No	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	32.	7905877	03-15-2011	Jilnenez et al.	
	33.	20010041881	11-15-2001	SARGE et al.	
	34.	20110264132	10-27-2011	Strauss et al.	
	35.	20200054861	02-20-2020	Korkuch et al.	
	36.	20190223893	07-25-2019	GILVARRY et al.	
	37.	20190328411	10-31-2019	VALE et al.	
	38.	20240082540	03-14-2024	Brodt et al.	
	39.	11925369	03-12-2024	Hauser	
	40.	11937838	03-26-2024	Cox et al.	
	41.	11937834	03-26-2024	Dinh	
	42.	11865291	01-09-2024	Merritt et al.	
	43.	20190366036	12-05-2019	Jalgaonkar et al.	
	44.	20110071503	03-24-2011	TAKAGI et al.	
	45.	20120109109	05-03-2012	KAJII	
	46.	20100016837	01-21-2010	Howat	
	47.	20180250498	09-06-2018	Stern et al.	
	48.				
	49.				

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[5]
	1.	WO2012114633	08-30-2012	TERUMO KABUSHIKI KAISHA		
	2.	JP2007-222658 (Counterpart: WO1998/050103)	09-06-2007	EMBOL-X, INC.		
	3.					
	4.					
	5.					

NON-PATENT LITERATURE DOCUMENTS

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

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	Attorney Docket Number	111552.8023.US07

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report and Written Opinion for International App. No. PCT/US23/66538; Date of Filing: May 3, 2023, Applicant: Inari Medical, Inc., Date of Mailing: January 4, 2024, 14 pages.	
	3.	English translation of Japanese Office Action received for JP Application No. 2022-574456, Applicant: Inari Medical, Inc, Date of Mailing: January 23, 2024, 12 pages.	
	4.	Chinese First Office Action received for CN Application No. 201980067623.1, Applicant: Inari Medical, Inc., Date of Mailing: January 31, 2024, 10 pages.	
	5.	International Search Report and Written Opinion for International App. No. PCT/US23/73765; Date of Filing: September 8, 2023, Applicant: Inari Medical, Inc., Date of Mailing: February 28, 2024, 7 pages.	
	6.	International Search Report and Written Opinion for International App. No. PCT/US23/69892; Date of Filing: July 10, 2023, Applicant: Inari Medical, Inc., Date of Mailing: February 29, 2024, 12 pages.	
	7.	English translation of Japanese Office Action mailed January 19, 2024 for Japanese Application No. 2022-160947, 8 pages.	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	3771
	Examiner Name	Tuan Van Nguyen
	Attorney Docket Number	111552.8023.US07

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references. This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information that may be material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, Applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2024-04-03
Name/Print	Matthew S. Williams	Registration Number	77,516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: Benjamin D. Cashdollar
Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
United States Of America

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PATENT DOCKETING
MAR 05 2024
PERKINS COIE LLP

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing *(day/month/year)*	FEB 29 2024
Applicant's or agent's file reference: 111552-8044WO00	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No.: PCT/US23/69892	International filing date *(day/month/year)*: 10 July 2023 (10.07.2023)
Applicant: INARI MEDICAL, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

How? Directly to the International Bureau preferably through ePCT, or on paper to:
The International Bureau of WIPO, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland

For more detailed instructions, see the *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to any protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
   - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
   - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within 22 months from the priority date, the applicant may request that a supplementary international search be carried out by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

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 Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/220 (revised January 2020)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION
111552-8044WO00	see Form PCT/ISA/220 as well as, where applicable, item 5 below.

International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US23/69892	10 July 2023 (10.07.2023)	

Applicant
INARI MEDICAL, INC.

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the language, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed.
      ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
   b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the title,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,
   a. the figure of the drawings to be published with the abstract is Figure No. 1A
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2022)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US23/69882

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:
-***-Please See Supplemental Page-***-

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.:
1-20

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/US23/69892

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. A61F 2/01; A61B 17/00; A61B 17/22; A61B 17/221; A61M 1/00; A61M 25/01 (2023.01)
ADD.
CPC - INV. A61F 2/011; A61B 17/221; A61F 2/01; A61M 25/0097

ADD. A61B 17/22032; A61B 2017/00778; A61B 2017/22051; A61B 2017/320716; A61B 2217/005; A61F 2/013; A61M 1/79

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 database consulted during the international search (name of database 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	US 2011/0264132 A1 (STRAUSS BRIAN M) 27 October 2011; Figure 11c; Paragraphs 0003, 0006, 0012, 0018, 0045, 0082; Abstract	1, 2, 4-6, 13-16, 18, 19 --- 3, 7-9, 17, 20
X --- Y	US 2018/0143721 A1 (INCEPTUS MEDICAL LLC) 26 May 2016; Figures 12, 13, 15a; Paragraphs 0054, 0077, 0080; Abstract	1, 2, 4-6, 10, 13-16, 19 --- 3, 7-9, 11, 12, 17, 20
Y	US 2012/0143239 A1 (AKLOG LISHAN) 07 June 2012; Paragraphs 0027, 0046	3, 7-9, 17, 20
Y	US 2020/0054861 A1 (ABIOMED INC.) 20 February 2020; Paragraphs 0266-0268	11, 12
A	US 2019/0223893 A1 (NEURAVI LIMITED) 25 July 2019; entire document	1-20
A	US 2019/0328411 A1 (NEURAVI LIMITED) 31 October 2019; entire document	1-20

☐ 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
"D" document cited by the applicant in the international application
"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
12 January 2024 (12.01.2024)	FEB 29 2024
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 Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/210 (second sheet) (July 2022)

-***-Continued From Box No. III: Observations where unity of invention is lacking-***-

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 1-20 are directed toward a system and method for removing clot material from a blood vessel of patient.

Group II: Claims 21-45 are directed toward a method of removing clot material from a blood vessel of a patient using a clot treatment system and a system for removing clot material from a vasculature of patient.

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:

Group I include an intermediate catheter configured to extend through the delivery catheter; an embolic protection device coupled to a distal portion of the intermediate catheter, wherein the delivery catheter and intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first embolic protection device position in which the embolic protection device is constrained within the delivery catheter and (b) a second embolic protection device position in which the embolic protection device is unconstrained by the delivery catheter and configured to expand within the blood vessel; a deployment catheter configured to extend through the intermediate catheter; wherein the deployment catheter and the intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first clot treatment device position in which the clot treatment device is constrained within the deployment catheter and (b) a second clot treatment device position in which the clot treatment device is unconstrained by the deployment catheter and configured to expand within the blood vessel; retracting the delivery catheter to allow the embolic protection device to expand within the blood vessel at least partially proximal to the clot material; advancing a clot treatment assembly through the intermediate catheter and at least partially through the clot material; retracting a deployment catheter of the clot treatment assembly relative to a clot treatment device of the clot treatment assembly to allow the clot treatment device to expand within the blood vessel at least partially distal to the clot material; and withdrawing the clot treatment device proximally though the clot material and into the embolic protection device, which are not present in Group II.

Group II include radially constraining a clot treatment device and an embolic protection device within the catheter; moving the catheter proximally to deploy the clot treatment device at least partially distal to clot material within the blood vessel; and moving the catheter further proximally to deploy the embolic protection device at least partially proximal to the clot material; a clot treatment device coupled to the second shaft and positioned distal of the embolic protection device; wherein, in response to proximal movement of the catheter relative to the mechanical thrombectomy assembly, the clot treatment device and the embolic protection device are configured to transition between an undeployed configuration and a deployed configuration; wherein the intermediate deployment shaft is positioned radially outward of the first shaft, which are not present in Group I.

The common technical features of Groups I and II are a system for removing clot material from a blood vessel of patient, the system comprising: a catheter; an embolic protection device; a clot treatment device coupled to the elongate shaft; a method of removing clot material from a blood vessel of a patient, the method comprising: advancing a catheter through the blood vessel such that a distal portion of the catheter is proximate to the clot material.

These common technical features are disclosed by US 2020/0155293 A1 to Morrison et al. (hereinafter 'Morrison'). Morrison discloses a system for removing clot material from a blood vessel of patient (An intravascular emboli capture and retrieval system for intravascular embolism protection and embolism removal or maceration; paragraph [0104]), the system comprising: a catheter (capture/delivery sheath 12; figure 1; paragraph [0104]); an embolic protection device (capture sleeve 14; figure 1; paragraph 0104]); a clot treatment device coupled to the elongate shaft (filter 26 coupled to the shaft and used for maceration of the clot; figure 2; paragraph [0108]); a method of removing clot material from a blood vessel of a patient (method of removing a clot from the blood vessel; paragraph [0113]), the method comprising: advancing a catheter through the blood vessel such that a distal portion of the catheter is proximate to the clot material (advancing delivery sheath 12 (catheter) through the blood vessel such that a distal portion is proximate the clot as shown; figure 8; paragraph [0113]).

Since the common technical features are previously disclosed by the Morrison reference, the common features are not special and so Groups I and II lack unity.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: Benjamin D. Cashdollar
Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
United States Of America

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PATENT DOCKETING

MAR 05 2024

PERKINS COIE LLP

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	FEB 29 2024
Applicant's or agent's file reference 111552-8044WO00	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US23/69892	10 July 2023 (10.07.2023)	

International Patent Classification (IPC) or both national classification and IPC
IPC - INV. A61F 2/01; A61B 17/00; A61B 17/22; A61B 17/221; A61M 1/00; A61M 25/01 (2023.01)
ADD.
CPC - INV. A61F 2/011; A61B 17/221; A61F 2/01; A61M 25/0097
ADD. A61B 17/22032; A61B 2017/00778; A61B 2017/22051; A61B 2017/320716; A61B 2217/005

Applicant INARI MEDICAL, INC.

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [x] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	12 January 2024 (12.01.2024)	Shane Thomas PCT Help Desk Telephone No. 571-272-4300

Form PCT/ISA/237 (cover sheet) (July 2022)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US23/69852

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(b)).

3. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing:

a. ☐ forming part of the international application as filed.

b. ☐ furnished subsequent to the international filing date for the purposes of international search (Rule 13*ter*.1(a)),

☐ accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.

4. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.

5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US23/69892

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:

☐ paid additional fees.

☐ paid additional fees under protest and, where applicable, the protest fee.

☐ paid additional fees under protest but the applicable protest fee was not paid.

☒ not paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

☐ complied with.

☒ not complied with for the following reasons:

-***-Please See Supplemental Page-***-

4. Consequently, this opinion has been established in respect of the following parts of the international application:

☐ all parts.

☒ the parts relating to claims Nos. 1-20

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US23/69892

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	3, 7-9, 11, 12, 17, 20	YES
	Claims	1, 2, 4-6, 10, 13-16, 18, 19	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1, 2, 4-6, 13-16, 18, and 19 lack novelty under PCT Article 33(2) as being anticipated by STRAUSS US 2011/0264132 A1 (STRAUSS).

As to claims 1 and 14, STRAUSS teaches a system and method for removing clot material from a blood vessel of patient, the system comprising: a delivery catheter (sheath, shroud, jacket; para [0092]); an intermediate catheter (guide catheter 1120) configured to extend through the delivery catheter (para [0092]); an embolic protection device (flared distal end 1122) coupled to a distal portion of the intermediate catheter (fig. 11c), wherein the delivery catheter and intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first embolic protection device position in which the embolic protection device is constrained within the delivery catheter (within the sheath, shroud, jacket; para [0092]) and (b) a second embolic protection device position in which the embolic protection device is unconstrained by the delivery catheter and configured to expand within the blood vessel (removal of the sheath, shroud, jacket; para [0092]); a deployment catheter (proximal shaft 1102) configured to extend through the intermediate catheter (fig. 11c); an elongate shaft (snare 1118) configured to extend through the deployment catheter (fig. 11c); and a clot treatment device (expandable region 1104) coupled to the elongate shaft (fig. 11c), wherein the deployment catheter and the intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first clot treatment device position in which the clot treatment device is constrained within the deployment catheter (recovery, para [0093]; best seen in fig. 4b; fig. 12, para [0045]) and (b) a second clot treatment device position in which the clot treatment device is unconstrained by the deployment catheter and configured to expand within the blood vessel (figs. 11c).

As to claims 2 and 16, STRAUSS teaches the system/method of claims 1 and 14 wherein, in the second embolic protection device position, the embolic protection device is configured to expand to a diameter of the blood vessel (fig. 11c).

As to claims 4 and 15, STRAUSS teaches the system/method of claims 2 and 14 wherein, in the second embolic protection device position, the embolic protection device is configured to substantially prevent blood flow through the blood vessel (fig. 11c).

As to claims 5 and 18, STRAUSS teaches the system/method of claims 1 and 14 wherein the blood vessel is a periphery artery (pars [0003], [0008]).

As to claims 6 and 19, STRAUSS teaches the system/method of claims 1 and 14 wherein the embolic protection device is a funnel having a tapered shape (fig. 11c).

As to claim 13, STRAUSS teaches the system of claim 1, further comprising an aspiration source fluidly coupled to the delivery catheter (para [0012], [0018]).

Claims 1, 2, 4-6, 10, 13-16, and 19 lack novelty under PCT Article 33(2) as being anticipated by INCEPTUS US 2016/0143721 A1 (INCEPTUS).

As to claims 1 and 14, INCEPTUS teaches a system and method for removing clot material from a blood vessel of patient, the system comprising: a delivery catheter (guide catheter 1404); an intermediate catheter (funnel catheter 1412) configured to extend through the delivery catheter (fig. 15a); an embolic protection device (expandable portion 1414) coupled to a distal portion of the intermediate catheter (fig. 15a), wherein the delivery catheter and intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first embolic protection device position in which the embolic protection device is constrained within the delivery catheter (within guide catheter; para [0080]) and (b) a second embolic protection device position in which the embolic protection device is unconstrained by the delivery catheter and configured to expand within the blood vessel (removal from guide catheter, fig. 15a; para [0077]); a deployment catheter (pusher member 1201) configured to extend through the intermediate catheter (fig. 15a); an elongate shaft (see shaft connected to 1202, fig. 15a) configured to extend through the deployment catheter (fig. 15a); and a clot treatment device (1202) coupled to the elongate shaft (fig. 15a), wherein the deployment catheter and the intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first clot treatment device position in which the clot treatment device is constrained within the deployment catheter (fig. 12) and (b) a second clot treatment device position in which the clot treatment device is unconstrained by the deployment catheter and configured to expand within the blood vessel (fig. 13).

-***-Continued in Supplemental Box-***-

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-***-Continued From Box IV (ii): Lack of unity of invention-***-

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 1-20 are directed toward a system and method for removing clot material from a blood vessel of patient.

Group II: Claims 21-45 are directed toward a method of removing clot material from a blood vessel of a patient using a clot treatment system and a system for removing clot material from a vasculature of patient.

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:

Group I include an intermediate catheter configured to extend through the delivery catheter; an embolic protection device coupled to a distal portion of the intermediate catheter, wherein the delivery catheter and intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first embolic protection device position in which the embolic protection device is constrained within the delivery catheter and (b) a second embolic protection device position in which the embolic protection device is unconstrained by the delivery catheter and configured to expand within the blood vessel; a deployment catheter configured to extend through the intermediate catheter; wherein the deployment catheter and the intermediate catheter are movable relative to one another to move the embolic protection device between (a) a first clot treatment device position in which the clot treatment device is constrained within the deployment catheter and (b) a second clot treatment device position in which the clot treatment device is unconstrained by the deployment catheter and configured to expand within the blood vessel; retracting the delivery catheter to allow the embolic protection device to expand within the blood vessel at least partially proximal to the clot material; advancing a clot treatment assembly through the intermediate catheter and at least partially through the clot material; retracting a deployment catheter of the clot treatment assembly relative to a clot treatment device of the clot treatment assembly to allow the clot treatment device to expand within the blood vessel at least partially distal to the clot material; and withdrawing the clot treatment device proximally though the clot material and into the embolic protection device, which are not present in Group II.

Group II include radially constraining a clot treatment device and an embolic protection device within the catheter; moving the catheter proximally to deploy the clot treatment device at least partially distal to clot material within the blood vessel; and moving the catheter further proximally to deploy the embolic protection device at least partially proximal to the clot material; a clot treatment device coupled to the second shaft and positioned distal of the embolic protection device; wherein, in response to proximal movement of the catheter relative to the mechanical thrombectomy assembly, the clot treatment device and the embolic protection device are configured to transition between an undeployed configuration and a deployed configuration; wherein the intermediate deployment shaft is positioned radially outward of the first shaft, which are not present in Group I.

The common technical features of Groups I and II are a system for removing clot material from a blood vessel of patient, the system comprising: a catheter; an embolic protection device; a clot treatment device coupled to the elongate shaft; a method of removing clot material from a blood vessel of a patient, the method comprising: advancing a catheter through the blood vessel such that a distal portion of the catheter is proximate to the clot material.

These common technical features are disclosed by US 2020/0155293 A1 to Morrison et al. (hereinafter 'Morrison'). Morrison discloses a system for removing clot material from a blood vessel of patient (An intravascular emboli capture and retrieval system for intravascular embolism protection and embolism removal or maceration; paragraph [0104]), the system comprising: a catheter (capture/delivery sheath 12; figure 1; paragraph [0104]); an embolic protection device (capture sleeve 14; figure 1; paragraph 0104]); a clot treatment device coupled to the elongate shaft (filter 26 coupled to the shaft and used for maceration of the clot; figure 2; paragraph [0109]); a method of removing clot material from a blood vessel of a patient (method of removing a clot from the blood vessel; paragraph [0113]), the method comprising: advancing a catheter through the blood vessel such that a distal portion of the catheter is proximate to the clot material (advancing delivery sheath 12 (catheter) through the blood vessel such that a distal portion is proximate the clot as shown; figure 6; paragraph [0113]).

Since the common technical features are previously disclosed by the Morrison reference, the common features are not special and so Groups I and II lack unity.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-***-Continued From Box V. 2: Citations and Explanations-***-

As to claims 2 and 16, INCEPTUS teaches the system/method of claims 1 and 14, wherein in the second embolic protection device position, the embolic protection device is configured to expand to a diameter of the blood vessel (fig. 15a).

As to claims 4 and 15, INCEPTUS teaches the system/method of claims 2 and 14, wherein, in the second embolic protection device position, the embolic protection device is configured to substantially prevent blood flow through the blood vessel (fig. 15a).

As to claim 5, INCEPTUS teaches the system of claim 1 is fully capable of being used in a periphery artery.

As to claims 6 and 18, INCEPTUS teaches the system/method of claims 1 and 14, wherein the embolic protection device is a funnel having a tapered shape (fig. 15a).

As to claim 10, INCEPTUS teaches the system of claim 1, further comprising: a valve assembly fixedly coupled to a proximal portion of the deployment catheter (para [0054]); and a hub fixedly coupled to a proximal portion of the elongate shaft, wherein the valve assembly is movable relative to the hub to retract the deployment catheter relative to the elongate shaft to move the clot treatment device between the first clot treatment position and the second clot treatment position (para [0054]).

As to claim 13, INCEPTUS teaches the system of claim 1, further comprising an aspiration source fluidly coupled to the delivery catheter (para [0054]).

Claims 3, 7-9, 17, and 20 lack an inventive step under PCT Article 33(3) as being obvious over STRAUSS in view of AKLOG et al. US 2012/0143239 A1 (AKLOG).

As to claims 3 and 17, STRAUSS teaches the system/method of claims 2 and 14. It should be noted that STRAUSS fails to specifically teach wherein the embolic protection device is impermeable to blood. STRAUSS teaches treating a thrombous/clot (abstract).

AKLOG teaches a system/method with a common embolic protection device that is impermeable to blood (para [0046]). The impermeable embolic protection device preventing a clot/emboli from leaking through into the vasculature (para [0046]). Therefore, it would have been obvious to one having ordinary skill in the art before the relevant date to modify embolic protection device of STRAUSS to be impermeable in view of AKLOG to prevent a clot/emboli from entering the bloodsteam thereby preventing a stroke (para [0027]).

As to claim 7, STRAUSS teaches the system of claim 6. It should be noted that STRAUSS fails to teach wherein the embolic protection device is impermeable to blood. STRAUSS teaches treating a thrombous/clot (abstract).

AKLOG teaches a system with a common embolic protection device that is impermeable to blood (para [0046]). The impermeable embolic protection device preventing a clot/emboli from leaking through into the vasculature (para [0046]). Therefore, it would have been obvious to one having ordinary skill in the art before the relevant date to modify embolic protection device of STRAUSS to be impermeable in view of AKLOG to prevent a clot/emboli from entering the bloodsteam thereby preventing a stroke (para [0027]).

As to claims 8 and 20, STRAUSS teaches the system/method of claims 1 and 14. It should be noted that STRAUSS fails to teach wherein the embolic protection device is a balloon. STRAUSS teaches an embolic protection device that is expandable (para [0079])

AKLOG teaches a system/method with a common embolic protection device that is a balloon (inflatable body 30). It would have been obvious to one having ordinary skill in the art before the relevant date to modify the system/method of STRAUSS to make use of a balloon to expand the embolic protection device in view of AKLOG as an obvious alternative for expanding the embolic protection device

As to claim 9, STRAUSS in view of AKLOG teaches the system of claim 8. Modified STRAUSS further teaches wherein in the second embolic protection device position, the balloon is configured to expand to a diameter of the blood vessel to substantially prevent blood flow through the blood vessel (fig. 11c, STRAUSS).

Claims 3, 7-9, 17, and 20 lack an inventive step under PCT Article 33(3) as being obvious over INCEPTUS in view of AKLOG.

As to claims 3 and 17, INCEPTUS teaches the system/method of claims 2 and 14. It should be noted that INCEPTUS fails to specifically teach wherein the embolic protection device is impermeable to blood. INCEPTUS teaches treating an emolism/clot (abstract).

AKLOG teaches a system/method with a common embolic protection device that is impermeable to blood (para [0046]). The impermeable embolic protection device preventing a clot/emboli from leaking through into the vasculature (para [0046]). Therefore, it would have been obvious to one having ordinary skill in the art before the relevant date to modify embolic protection device of INCEPTUS to be impermeable in view of AKLOG to prevent a clot/emboli from entering the bloodsteam thereby preventing a stroke (para [0027]).

As to claim 7, INCEPTUS teaches the system of claim 6. It should be noted that INCEPTUS fails to teach wherein the embolic protection device is impermeable to blood. INCEPTUS teaches treating an emolism/clot (abstract).

AKLOG teaches a system with a common embolic protection device that is impermeable to blood (para [0046]). The impermeable embolic protection device preventing a clot/emboli from leaking through into the vasculature (para [0046]). Therefore, it would have been obvious to one having ordinary skill in the art before the relevant date to modify embolic protection device of INCEPTUS to be impermeable in view of AKLOG to prevent a clot/emboli from entering the bloodsteam thereby preventing a stroke (para [0027]).

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

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-***-Continued from previous Supplemental Box-***-

As to claims 8 and 20, INCEPTUS teaches the system/method of claims 1 and 14. It should be noted that INCEPTUS fails to teach wherein the embolic protection device is a balloon. INCEPTUS teaches an embolic protection device that is expandable (para [0077])

AKLOG teaches a system/method with a common embolic protection device that is a balloon (inflatable body 30). It would have been obvious to one having ordinary skill in the art before the relevant date to modify the system/method of INCEPTUS to make use of a balloon to expand the embolic protection device in view of AKLOG as an obvious alternative for expanding the embolic protection device

As to claim 9, INCEPTUS in view of AKLOG teaches the system of claim 8. Modified INCEPTUS further teaches wherein in the second embolic protection device position, the balloon is configured to expand to a diameter of the blood vessel to substantially prevent blood flow through the blood vessel (fig. 15a, INCEPTUS).

Claims 11 and 12 lack an inventive step under PCT Article 33(3) as being obvious over INCEPTUS in view of ABIOMED, INC. US2020/0054861 (ABIOMED)

As to claim 11, INCEPTUS teaches the system of claim 1. It should be noted that INCEPTUS fails to teach a handle having a housing and a trigger movable relative to the housing, wherein the deployment catheter is fixedly coupled to the trigger, and wherein the trigger is movable relative to housing to retract the deployment catheter relative to the elongate shaft to move the clot treatment device between the first clot treatment position and the second clot treatment position. INCEPTUS teaches a system that manually operated.

ABIOMED teaches a system that includes a housing and a trigger movable relative to the housing, wherein the deployment catheter is fixedly coupled to the trigger, and wherein the trigger is movable relative to housing to retract the deployment catheter relative to the elongate shaft to move the clot treatment device between the first clot treatment position and the second clot treatment position (para [0286]-[0288]). Therefore, it would have been obvious to one having ordinary skill in the art before the relevant date to modify the system of INCEPTUS to include a housing and trigger in view of ABIOMED as an alternative to manually operating the catheters by hand.

As to claim 12, INCEPTUS in view of ABIOMED teaches the system of claim 11. Modified INCEPTUS further teaches a hub fixedly coupled to a proximal portion of the elongate shaft, wherein the hub is coupled to the housing (para [0266]-[0268], ABIOMED).

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 04/03/2024

PERKINS COIE LLP - SEA General
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EXAMINER	
NGUYEN, TUAN VAN	

ART UNIT	PAPER NUMBER
3771	

NOTIFICATION DATE	DELIVERY MODE
04/03/2024	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

Applicant-Initiated Interview Summary	**Application No.** 18/497,249	**Applicant(s)** Quick et al.		
	Examiner TUAN V NGUYEN	**Art Unit** 3771	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
TUAN V NGUYEN	Primary Examiner	Telephonic
MATTHEW WILLIAMS	Attorney of Record	

Date of Interview: 29 March 2024

Issues Discussed:

35 U.S.C. 102

In a telephonic interview with applicant's representative on March 29, 2024, the rejection of independent claims 1 and 11 as being anticipated by Grooters (US 5,197,485) was discussed. Applicant argued that the orientation of the filter trap 26 of Grooters is opposite to the orientation of the filter as recited in the claims. Examiner agreed with applicant's arguments. Brumfield (US 3,785,380) was discussed against claims 1 and 11. Examiner stated that Figs. 7-8 of Brumfield reference read on claims 1 and 11.

☑ Attachment

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:	RICHARD QUICK	EXAMINER:	TUAN VAN NGUYEN
APPLICATION NO.:	18/497,249	ART UNIT:	3771
FILED:	OCTOBER 30, 2023	CONF. NO:	6832
FOR:	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS		

Proposed Agenda

DO NOT ENTER—FOR DISCUSSION PURPOSES ONLY

Examiner Nguyen,

The present paper is an agenda for a telephone interview regarding U.S. Patent Application No. 18/497,249 scheduled for Thursday, March 28, 2024 at 10:30 AM (Eastern). I will call you at 571-272-5962.

The proposed list of participants for the interview includes:

- Examiner Nguyen
- Matthew S. Williams (Reg. No. 77,516)

During the interview, the Applicant's representative plans to discuss:

(1) Discussion of independent claim 1. *See*, e.g., Figures 1A, 1B, and 3A–3C of the application as filed.

(2) Discussion of the Section 102 rejection of claim 1 over U.S. Patent No. 5,197,485 to Grooters ("Grooters").

(a) The Applicant respectfully submits that the Section 102 rejection of claim 1 should be withdrawn because Grooters fails to disclose or suggest all the claimed features.

(b) For example, Grooters fails to disclose or suggest at least the following features of claim 1: (i) "a filter positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and **wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port**" and (ii) "wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) **draw blood through the filter into the interior region and through the second port**."

(c) With reference to Figure 2 of Grooters (reproduced below), this reference discloses an aortic sampling device including a cannula 12 coupled to a handle section 14. (Grooters, col. 3: 34–37.) A perfusion pump creates a vacuum in the cannula 12 through a check valve 16 for sampling aortic plaque. (*Id.* at col. 4: 37 – col. 5: 13.) "The interior of handle section 24 defines a cylindrical chamber 24a containing a removable filter trap 26 with a porosity sufficient to permit blood to flow freely while straining any particulate debris." (*Id.* at col. 4: 18–21.) "Trap 26 includes a mesh pouch 26a secured around the inlet to a collar 26b which fits snugly on a boss 14f extending beyond the threaded end of section 14 and which seats against a shoulder 24b at the inlet of chamber 24a." (*Id.* at col. 4: 21–25.) "Pouch 26a is substantially square in cross section but for a portion adjacent collar 26b thus providing clearance adjacent the side of chamber 24a for fluid to flow through the sides as well as through the bottom of pouch 26a." (*Id.* at col. 4: 25–29.)

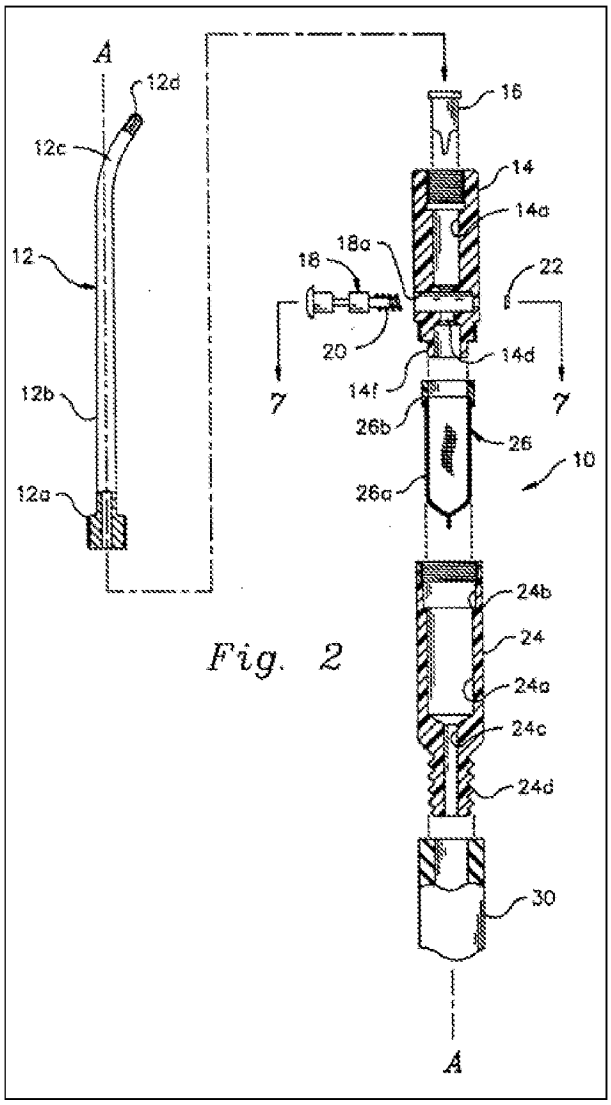


Fig. 2

Grooters, Figure 2.

(d) With reference to Figure 2 of Grooters (reproduced above), the Office Action relies on "the region at lead line 14f," "the region at lead line 24c-24d," and the filter trap 26" of Grooters for allegedly disclosing a "first port," a "second port," and a "filter," respectively, as recited in claim 1. (Office Action pg. 4.) The Office Action further alleges that the filter trap 26 "extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port 24c-24d (the region between outer surface of filter body and inner surface of chamber 24a and above the entrance of second port 24c as

shown in Fig. 2)." (*Id.*) The Applicant respectfully disagrees. The filter trap 26 of Grooters encloses an interior region around the region at lead line 14f (i.e., the alleged "first port") rather than around the region at lead line 24c-24d (i.e., the alleged "second port"). **That is, the orientation of the filter trap 26 is opposite to that recited in claim 1.** Compare, in contrast, Figure 3C of the present application:

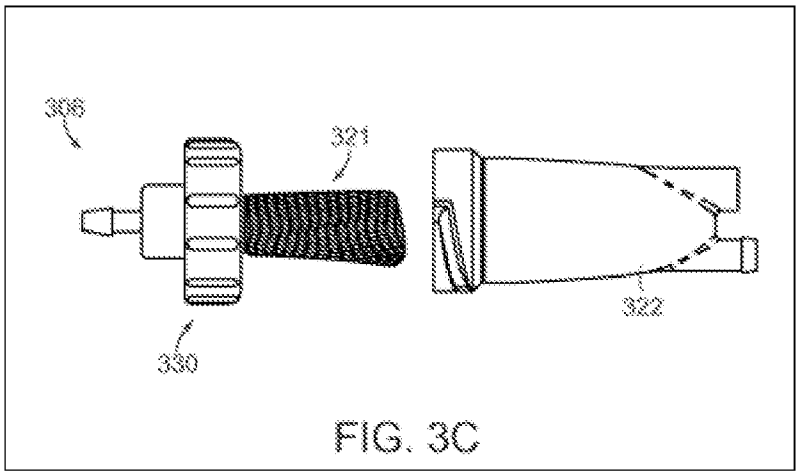


FIG. 3C

Present Application, Figure 3C.

(e) Accordingly, for at least the foregoing reasons, the Applicant respectfully submits that the Section 102 rejection of independent claim 1 over Grooters should be withdrawn.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/497,249	Filing Date 10/30/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	04/03/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 20	= 10		x $100 =	1000
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	1000

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/Ruby Johnson/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/497,249	10/30/2023	Richard Quick	111552.8023.US07

CONFIRMATION NO. 6832

25096
PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

PUBLICATION NOTICE

OC000000069314562

Date Mailed: 03/07/2024

Title:SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Publication No.US-2024-0074771-A1
Publication Date:03/07/2024

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**01/05/2024 10:50:02 AM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	63849743	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Declaration signed all inventors - 111552.8023.US07.pdf	5	Oath or Declaration filed	2276 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Declaration signed all inventors - 111552.8023.US07.pdf	763E7D93D0ECD172F98D1482082A2D8A30365B4A56851558C2 7A5E44800AC01D0EA061B17B00608E50928AC4F20146DD53F 2FD1312C848B2A083353D4442C67D

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If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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Docket No.: 111552.8023.US07

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 18/497,249

filed on October 30, 2023.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any wilful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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LEGAL NAME OF INVENTOR

Inventor: John Coleman Thress Date: 11/13/2023

Signature: _____

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LEGAL NAME OF INVENTOR

Inventor: Benjamin Edward Merritt Date: 11/7/23

Signature:

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Richard Quick Date 11/16/23

Signature:

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Docket No.: 111552.8023.US07

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PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Paul Lubock Date : November 16, 2023

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

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I hereby acknowledge that any wilful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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LEGAL NAME OF INVENTOR

Inventor: Thomas M. Tu Date: 11/17/23

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S.Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 01/03/2024

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER	
NGUYEN, TUAN VAN	

ART UNIT	PAPER NUMBER
3771	

NOTIFICATION DATE	DELIVERY MODE
01/03/2024	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

Office Action Summary	Application No. 18/497,249	Applicant(s) Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 10/30/23.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-3,7-14,16-17 and 20 is/are rejected.

8) ☑ Claim(s) 4-6,15 and 18-19 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 10/30/23 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Priority

1. This application is a continuation of U.S. Patent Application No. 17/865,307, filed on July 14, 2022, which is a continuation of U.S. Patent Application No. 17/498,642, filed on October 11, 2021, which is a continuation of U.S. Patent Application No. 16/258,344, filed on January 25, 2019, which is now issued as U.S. Patent No. 11,154,314, which claims the benefit of U.S. Provisional Patent Application No. 62/622,691, filed on January 26, 2018.

Claim Objections

1. Claim 1, line 7 recites "wherein the filter body." It is understood that applicant intended to recite "wherein a filter body of the filter." Appropriate correction is required.

2. Claim 3, "the camber" should be amended to read "the chamber," which is referred back to "a chamber" in claim 1, line 2. Appropriate correction is required.

3. Claim 10, a period is missing at the end of limitation "the first filter end portion."

4. Claim 11, line 11 recites "wherein the filter body." It is understood that applicant intended to recite "wherein a filter body of the filter." Appropriate correction is required.

5. Claim 13, "the camber" should be amended to read "the chamber," which is referred back to "a chamber" in claim 11, line 6. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

3. Claim(s) 1-3, 7-8, 10-14, 16-17 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Grooters (US 5,197,485, which is cited in the IDS filed November 27, 2023).

4. Referring to claim 1, Grooters discloses a clot collection reservoir (Figs. 1, 2 and 5), comprising:

a housing (housing sections 14 and 24 as shown in Fig. 2; col. 4, ln18-36) defining a chamber (24a as shown in Fig. 2)

and having a first housing end portion 14 and a second housing end portion 24c-24d opposite the first housing end portion;

a first port (the region at lead line 14f as shown in Fig. 2; col. 3, ln 55 – col. 4, ln 36) configured to be fluidly coupled to an aspiration catheter (cannula 12 has been interpreted as aspiration catheter; Fig. 2), wherein the first port is positioned proximate to the first housing end portion;

a second port (the region at lead line 24c-24d for coupling to tube 30 as shown in Fig. 2) configured to be fluidly coupled to an aspiration source; and

a filter 26 (Fig. 2; col. 4, ln 18-36) positioned within the chamber 24a, wherein [[the]]a filter body 26a of the filter has a substantially cylindrical shape extending from a first filter end portion 26b to a second filter end portion 26a, and wherein the filter body extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port 24c-24d (the region between outer surface of filter body and inner surface of chamber 24a and above the entrance of second port 24c as shown in Fig. 2); wherein the aspiration source is configured to generate negative pressure in the chamber via the second port 24c-24d to (a) draw blood and clot material from the aspiration catheter 12 through the first port into the chamber and (b) draw blood through the filter body 26a into the interior region and through the second port 24c-24d; wherein the filter 26 is configured to inhibit the clot material from passing through the filter body into the interior region and through the second port; and

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region (col. 4, ln 34-36).

5. Referring to claim 2, Grooters discloses the clot collection reservoir of claim 1 wherein the second port 24c-24d (Fig. 2) is positioned proximate to the second housing end portion 24d (Fig. 2).

6. Referring to claim 3, Grooters discloses the clot collection reservoir of claim 1 wherein the filter 26 is removably positioned within the chamber 24a (col. 5, ln 1-2).

7. Referring to claim 7, Grooters discloses the clot collection reservoir of claim 1 wherein the first filter end portion is curved (col. 4, lines 12-25 discloses the cross-section view of the handle 14 and chamber 24a is a circular shape, thus, the filter 26 also has a circular shape in cross-section view of end view).

8. Referring to claim 8, Grooters discloses the clot collection reservoir of claim 1 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion (col. 4, ln 45-49).

9. Referring to claim 10, Grooters discloses the clot collection reservoir of claim 1 wherein the first filter end portion 26b (Fig. 2) is positioned closer to the first housing end portion 14 (Fig. 2) than the second filter end portion 24c-24d (Fig. 2), and wherein the second filter end portion 26a (Fig. 2) is positioned closer to the second housing end portion 24c-24d than the first filter end portion.

10. Referring to claim 11, Grooters discloses a clot removing system that is capable of performing the function of a clot treatment system, comprising:

an aspiration catheter 12 (Fig. 2) configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient; an aspiration source (col. 4, ln 45-49); and

a clot collection reservoir 14, comprising:

a housing (components 14 and 24 as shown in Fig. 2) defining a chamber 14a and 24a and having a first housing end portion (region at lead line 14 as shown in Fig. 2) and a second housing end portion 24c-24d opposite the first housing end portion;

a first port 14f (Fig. 2) configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion 14;

a second port 24c-24d (Fig. 2) configured to be fluidly coupled to the aspiration source; and

a filter 26 positioned within the chamber, wherein the filter body 26a has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter body extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port (the region between outer surface of filter body and inner surface of chamber 24a and above the entrance of second port 24c as shown in Fig. 2);

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration

catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter body into the interior region and through the second port.

11. Referring to claim 12, Grooters discloses the clot treatment system of claim 11 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region (col. 4, ln 34-36).

12. Referring to claim 13, Grooters discloses the clot treatment system of claim 11 wherein the filter is removably positioned within the chamber to provide access to the clot material within the chamber (col. 5, ln 1-2).

13. Referring to claim 14, Grooters discloses the clot treatment system of claim 11 wherein the second port 24c-24d (Fig. 2) is positioned proximate to the second housing end portion 24c-24d (Fig. 2).

14. Referring to claim 16, Grooters discloses the clot treatment system of claim 11, further comprising a valve 18 (Fig. 2) positioned between the clot collection reservoir and the aspiration catheter 12, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter (col. 3, ln 67 – col. 4, ln 12).

15. Referring to claim 17, Grooters discloses the clot treatment system of claim 16 wherein the aspiration source is configured to generate the negative pressure in the chamber 14a and 24a with the valve 18 in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter (col. 3, ln 67 – col. 4, ln 12).

16. Referring to claim 20, Grooters discloses the clot treatment system of claim 11 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube 30 (Fig. 2) fluidly coupling the second port to the aspiration source.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim(s) 9 is/are rejected under 35 U.S.C. 103 as being unpatentable over Grooters.

5. Referring to claim 9, Grooters discloses the clot collection reservoir of claim 1 wherein the housing 24 is at least transparent, and wherein the first port is integrally formed with the housing (col. 4, ln 34-36; Fig. 2). Grooters fails to disclose the housing 24 is entirely transparent. However, it would have been obvious to one of ordinary skill in the art to make the two components of the housing 24, which are components 14 and 24 as shown in Fig. 2, with same transparent material to provide the surgeon the ability to observe valve 16 and filter 26. Furthermore, making components 14 and 24 from a same transparent material also simplify the inventory of raw material.

Allowable Subject Matter

1. Claims 4-6, 15 and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN V NGUYEN whose telephone number is (571)272-5962. The examiner can normally be reached Monday - Friday 8:30 AM - 5:30 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on 571-272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For

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/TUAN V NGUYEN/
Primary Examiner, Art Unit 3771

Notice of References Cited	Application/Control No. 18/497,249	Applicant(s)/Patent Under Reexamination Quick et al.	
	Examiner TUAN V NGUYEN	Art Unit 3771	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-3785380-A	1974-01-15	Brumfield; Robert C.	A61M1/76	604/902
*	B	US-6908455-B2	2005-06-21	Hajianpour; Mohammed Ali	A61M1/84	604/266
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	D					
	E					
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	K					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
	N					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61M1/60,0001,0003,0281	12/28/2023	TN
A61M39/0613	12/28/2023	TN
A61M2039/027,062	12/28/2023	TN
A61B17/22031	12/28/2023	TN
A61B2017/22035	12/28/2023	TN
A61M25/0122	12/28/2023	TN
A61B17/22031,22,221,220758,320725,22034,22042,22079,22094	12/28/2023	TN

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Group/subgroups combined with text (see search history printout)	12/28/2023	TN

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/497,249	Quick et al.
	Examiner	Art Unit
	TUAN V NGUYEN	3771

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/TUAN V NGUYEN/ Primary Examiner, Art Unit 3771	

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	27.	4978341	12-18-1990	Niederhauser	
	28.	5059178	10-22-1991	Ya	
	29.	5100423	03-31-1992	Fearnot	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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Approved for use through 07/31/2012. OMB 0651-0031
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	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	58.	6066158	05-23-2000	Engelson et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.V.N/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	111552.8023.US07

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	Attorney Docket Number	111552.8023.US07

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	51. **	International Search Report and Written Opinion for International App. No. PCT/US21/35965, Date of Filing: June 4, 2021, Applicant: Inari Medical, Inc., Date of Mailing: September 28, 2021, 12 pages.
	52. **	International Search Report and Written Opinion for International App. No. PCT/US21/45072 Date of Filing: August 6, 2021, Applicant: Inari Medical, Inc., Date of Mailing: January 20, 2022, 10 pages.
	53. **	International Search Report and Written Opinion for International App. No. PCT/US21/58793; Date of Filing: November 10, 2021, Applicant: Inari Medical, Inc., Date of Mailing: March 16, 2022, 13 pages.
	54. **	International Search Report and Written Opinion for International App. No. PCT/US21/59718; Date of Filing: November 17, 2021, Applicant: Inari Medical, Inc., Date of Mailing: March 22, 2022, 13 pages.
	55. **	International Search Report and Written Opinion for International App. No. PCT/US21/59735; Date of Filing: November 17, 2021, Applicant: Inari Medical, Inc., Date of Mailing: March 22, 2022, 11 pages.
	56.	International Search Report and Written Opinion for International App. No. PCT/US23/60502; Date of Filing: January 11, 2023, Applicant: Inari Medical, Inc., Date of Mailing: May 25, 2023, 9 pages.
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	62.	Extended European Search Report issued for EP Application No. 20877370.5, Date of Mailing: October 17, 2023, 11 pages.
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	Attorney Docket Number	111552.8023.US07

EXAMINER SIGNATURE			
Examiner Signature	/TUAN V NGUYEN/	Date Considered	12/27/2023

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Attorney Docket Number	111552.8023.US07

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references. This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information that may be material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, Applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2). Those documents which are marked with a double asterisk (**) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in prior application numbers **16/258,344,** filed on **January 25, 2019** and **17/865,307,** filed on **July 14, 2022** relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2023-11-27
Name/Print	Matthew S. Williams	Registration Number	77,516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	1	"20190231373"	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/05 09:38 PM
L2	13	((("Inari") near3 ("Medical") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2020/10/06 04:04 PM
L3	253	((("Quick") near3 ("Richard"))).INV.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/10/06 04:05 PM
L5	5718	A61B2017/22042,22094,22034.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/06 06:42 PM
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L27	24	L25 and clean$4 same reinsert$4	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/06 08:44 PM
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		same lock$4 and lock$4 same (catheter sheath)					
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L39	7358	A61M25/01.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/07 03:21 PM
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L42	47	L41 and (adapt$3 connector attachment coupl$4) same seal$4 and seal$4 same (sheath catheter)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/07 03:25 PM
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L47	1745	A61B2017/22035.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/07 09:12 PM
L48	1	("20150335416").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/10/08 09:58 AM
L49	19178	A61F2/95.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 09:39 AM
L50	12084	A61B17/221.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 10:09 AM
L51	7	L50 and clean$4 same reinsert$4 and clean$4 same (new prestine)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 10:09 AM
L52	1	("20090163896").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/10/09 11:30 AM

L53	338	A61B17/22031.cpc. and clamp	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 04:53 PM
L54	135	A61B17/22031.cpc. and clamp same tub$4	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 04:53 PM
L55	21	606/159.ccls. and (releas$4 open$3 unlock$4) with seal with catheter	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/09 05:36 PM
L56	537	(releas$4 open$3 unlock$4) with seal with catheter and 606/$.ccls.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/10 10:35 AM
L57	1	("5911710").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/10/10 10:46 AM
L58	7	604/249.ccls. and hemostasis with seal	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/10 10:59 AM
L59	875	604/249.ccls.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/10 11:02 AM
L60	2426	604/246.ccls.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/10 11:02 AM
L61	2881	A61M2039/062.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2020/10/10 12:38 PM
L62	752	A61M2039/062.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/10 12:38 PM
L63	104	("4000739" | "4029099" | "4062363" | "4205675" | "4327723" | "4327735" | "4362150" | "4424833" | "4430081" | "4483340" | "4551137" | "4564014" | "4582181" | "4613329" | "4634433" | "4638805" | "4657536" | "4684363" | "4692200" | "4696304" | "4714461" | "4715378" | "4726374" | "4748982" | "4759751" | "4767409" | "4793351" | "4811737" | "4821722" | "4844092" | "4846174" | "4917094" | "4930341" | "4983167" | "5114408" | "5149326").PN. OR	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/10/10 01:42 PM

		("5334153").URPN.					
L68	8	(("10524811") or ("10912577") or ("20110152823") or ("20210113224") or ("20110160763") or ("20050283165") or ("20110125181") or ("20020095171")).PN.	(US-PGPUB; USPAT)	OR	ON	ON	2021/06/18 08:07 AM
L71	2	wo-2020036809-$.did.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/06/18 02:54 PM
L72	1	("20200046368").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2021/06/18 02:56 PM
L73	19	((("Inari") near3 ("Medical") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/09/01 02:14 PM
L74	277	((("Quick") near3 ("Richard"))).INV.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/01 02:16 PM
L77	17	("5102417" | "5603698" | "5662700" | "5876436" | "6719790" | "7462191" | "7544198" | "8414632" | "20030144670" | "20030199849" | "20040106900" | "20040236403" | "20060036263" | "20060264905" | "20070270780" | "20080015625" | "20080167522").pn. OR ("9408694").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/01 04:38 PM
L78	1	("8876848").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/01 04:45 PM
L79	62	("4364391" | "4884579" | "5057083" | "5058580" | "5095915" | "5465733" | "5474535" | "5773020" | "5865826" | "5885217" | "5910134" | "5980493" | "6637435" | "6695850" | "6814718" | "6926728" | "7198631" | "7306574" | "7632277" | "7695489" | "7713193" | "7776062" | "8202289" | "8396532" | "8485969" | "20020026207" | "20020133128" | "20040015138" | "20040138589" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/01 04:45 PM

		"20040243212" | "20050131393" | "20050216007" | "20050234437" | "20060124134" | "20060208028" | "20070060927" | "20070156219" | "20080009797" | "20080009823" | "20080125791" | "20080146967" | "20090024089" | "20090209912" | "20090216238" | "20090306657" | "20090312784" | "20090318896" | "20100010334" | "20100016984" | "20100036226" | "20100262158" | "20100298832" | "20110087234" | "20110166579" | "20110245800" | "20110275935" | "20110319898" | "20120116323" | "20120123464" | "20120316565" | "20130255694").pn. OR ("8876848").urpn. AND (PGPB | USPT | USOC).dbnm.					
L82	3748	A61M1/0281.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 09:13 AM
L83	1730	A61M1/0281.cpc. AND filter	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2022/09/06 09:13 AM

			HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L84	676	A61M1/0281.cpc. AND filter AND valve	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 09:13 AM
L85	32	A61M1/008.cpc. AND filter AND valve	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 09:15 AM
L86	115	A61B17/22031,22,221.cpc. AND (reservoir container collect$4) SAME filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 10:23 AM
L87	12	A61B17/220758,320725.cpc. AND (reservoir container collect$4) SAME filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 10:24 AM
L88	122	A61B2017/22034,22042,22079,22094.cpc. AND (reservoir container collect$4) WITH (debris thromb$5 embol$5) AND filter	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 10:34 AM

		SAME valve					
L89	188	("4164223" | "4315506" | "4458877" | "4662871" | "4696669" | "4767403" | "4902276" | "4911399" | "5254085" | "5318546" | "5496267" | "5704584" | "6193732" | "6226843" | "6261283" | "6423028" | "6471683" | "6689109" | "6887220" | "6960189" | "7004931" | "7033336" | "7178699" | "7472882" | "7530976" | "7641170" | "7713276" | "7717853" | "7918822" | "7931659" | "7976515" | "7998168" | "8206374" | "8287654" | "8333796" | "8366726" | "8366735" | "8435225" | "8460312" | "8465507" | "8518017" | "8568370" | "8617106" | "8636754" | "8647294" | "8690907" | "8715314" | "8721595" | "8770542" | "8814778" | "8852218" | "8911487" | "8932321" | "9017349" | "9119656" | "9186151" | "9248228" | "9402757" | "9402985" | "9526864" | "9526865" | "9554805" | "9572933" | "9615832" | "9615951" | "9623230" | "9655633" | "9775621" | "9820761" | "9883863" | "9901351" | "9901352" | "9943321" | "9980841" | "10166024" | "10299947" | "20030023263" | "20030229368" | "20040102716" | "20040267305" | "20050149068" | "20050182432" | "20050256447" | "20050273122" | "20060025794" | "20060058837" | "20060264995" | "20070060888" | "20070100276" | "20070129652" | "20070239261" | "20080015478" | "20080154184" | "20080163731" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/06 10:38 AM

		"20080208324" | "20080319355" | "20090012545" | "20090030400" | "20090120957" | "20090187198" | "20100204672" | "20100217276" | "20110160621" | "20110184454" | "20110238147" | "20110313328" | "20110314977" | "20110319927" | "20120078140" | "20120078285" | "20120150147" | "20120171055" | "20120289892" | "20120330196" | "20130110087" | "20130261730" | "20130299032" | "20140128907" | "20140180377" | "20140358175" | "20150073524" | "20150157378" | "20150173767" | "20150196304" | "20150223813" | "20150342682" | "20150374380" | "20160008001" | "20160166265" | "20160166266" | "20160220741" | "20160220807" | "20160278895" | "20170027730" | "20170095259" | "20170105743" | "20170120039" | "20170135700" | "20170136209" | "20170143938" | "20170147765" | "20170151032" | "20170169374" | "20170172581" | "20170215902" | "20170238950" | "20170238951" | "20170238953" | "20170239440" | "20170239441" | "20170239447" | "20170252536" |					

		"20170296195" | "20170333170" | "20170340797" | "20170354777" | "20170360450" | "20170367857" | "20180014840" | "20180042623" | "20180064578" | "20180132857" | "20180154063" | "20180193042" | "20180197633" | "20180199944" | "20180221029" | "20180228502" | "20180242989" | "20180263642" | "20180263646" | "20180271686" | "20180317922" | "20180353194" | "20190142452" | "20190175184" | "20190216476" | "20190239910").pn. OR ("10531883").urpn. AND (PGPB | USPT | USOC).dbnm.					
L90	354	A61B2017/$6.cpc. AND (reservoir container collect$4) WITH (debris thromb$5 embol$5) AND filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 12:53 PM
L91	67	("3224434" | "3342175" | "3526219" | "3727602" | "3785380" | "3889657" | "4243048" | "4249541" | "4393879" | "4655226" | "4680029" | "4794928" | "4815477" | "4838855" | "4857045" | "5011490" | "5030201" | "5073168" | "5087265").pn. OR ("5197485").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/06 01:34 PM
L92	42	("3623607" | "3785380" | "3863624" | "3889657" | "3890712" | "4068664" | "4400168" | "4417874" | "4468217" | "4701164" | "4813926" | "4878900" | "4886492" | "5013300" | "5078605" | "5098416" | "5123840" | "5197485" | "5244458" | "D365146"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/06 01:41 PM

		| "5520668" | "5597385" | "5630939" | "5741134" | "5766134" | "5779649" | "5807353" | "6083175").pn. OR ("6908455").urpn. AND (PGPB | USPT | USOC).dbnm.					
L93	7822	A61B10/04.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 01:49 PM
L94	3	A61B10/04.cpc. AND (debris thromb$5 embol$5) SAME filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 01:49 PM
L95	3	A61B10/04.cpc. AND (debris thromb$5 embol$5) SAME filter AND filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 01:50 PM
L96	1	A61B10/04.cpc. AND (debris thromb$5 embol$5) SAME filter AND check near3 valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/09/06 01:50 PM
L97	7	("5827229" | "8057497" | "20050137498" | "20060129091" | "20090036871" | "20130317529" | "20140081075").pn. OR ("10456152").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/06 02:09 PM
L98	43	606/159.ccls. AND (debris thromb$5 embol$5) SAME filter AND filter SAME valve	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/06 02:12 PM
L99	4	("20150352325" "20150173782" "20130035628" "5197485").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/06 04:11 PM
L100	21	606/159.ccls. AND (debris thromb$5 embol$5) SAME filter AND filter SAME (housing chamber) AND (housing chamber) SAME valve	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/06 04:39 PM
L101	22	606/159.ccls. AND (debris thromb$5 embol$5) SAME filter AND filter SAME (housing chamber container) AND (housing chamber	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/06 04:52 PM

		container cartridge magazine) SAME valve					
L102	1970	A61B17/$6.cpc. AND check near3 valve AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:03 PM
L103	155	A61B17/$6.cpc. AND check near3 valve AND catheter AND valve SAME connector SAME cap	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:04 PM
L104	380	A61B17/$6.cpc. AND check near3 valve AND catheter AND valve SAME cap	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:14 PM
L105	484	A61M2039/027.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:23 PM
L106	564	A61B17/$6.cpc. AND one near3 way near4 valve AND catheter AND valve SAME cap	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:41 PM
L107	448	A61M39/0613.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 01:50 PM
L108	27	("4946133" | "5125915" | "5167637" | "5205831" | "5205834" | "5259842" | "5478331" | "5507732" | "5556387" | "5810869" | "5895376" | "5957901" | "6024729" | "6197016" | "6287280" | "6299132" | "6344031" | "6609696" | "7226433" | "20030066978" | "20030094429" | "20040172008" | "20060229564" | "20070073242" | "20080255651" | "20080289181").pn. OR ("8951229").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/07 02:11 PM
L109	1	("5,349,984").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/07 02:13 PM
L110	111	("2960998" | "3025874" | "4665943" | "4681132" | "4805664" | "4953589" | "5098405").pn. OR ("5349984").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/07 02:14 PM
L111	67	("3224434" | "3342175" | "3526219" | "3727602" | "3785380" | "3889657" | "4243048" | "4249541"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/09/08 10:34 AM

		| "4393879" | "4655226" | "4680029" | "4794928" | "4815477" | "4838855" | "4857045" | "5011490" | "5030201" | "5073168" | "5087265").pn. OR ("5197485").urpn. AND (PGPB | USPT | USOC).dbnm.					
L112	320	stopcock near2 valve SAME (suction vacuum aspirat$4) AND A61B17/$6.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/08 02:50 PM
L113	362	stopcock near2 valve SAME (suction vacuum aspirat$4) AND A61B2017/$6.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2022/09/08 02:57 PM
L114	4	("20150352325" "6564828" "5197485" "20130035628").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/12/05 09:12 AM
L115	5	("20150352325" "6564828" "5197485" "20130035628" "20220346813").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/12/05 09:14 AM
L116	38	(Artificial Intelligence) More like doc: US-5197485-A Text: (US-8657840-B2 OR US-8475482-B2 OR US-20120215245-A1 OR AU-2003255187-A1 OR JP-2021527479-A OR US-3889657-A OR US-20060270974-A1 OR AU-6501800-A OR EP-1885430-A2 OR WO-2006124307-A2 OR CA-2609138-A1 OR US-5522826-A OR EP-1206220-B1 OR US-5827229-A OR AU-2003252147-A1 OR WO-2004011058-A2 OR EP-1539275-A2 OR AU-2003252147-B9 OR AU-2003252147-B2 OR US-4393879-A).did.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/12/05 09:34 AM
L118	11	(tuan WITH v WITH nguyen).xp. AND skin SAME abras$4	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/06 09:40 AM
L119	66	("2701559" | "2712823" | "2867214" | "2881763" | "2921585" | "4378804" | "4646482" | "4957747"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/06 09:43 AM

		| "5012797" | "5035089" | "5037431" | "5037432" | "5100412" | "5121388" | "5207234" | "5697920" | "5800446" | "5810842" | "5971999" | "6042552" | "6241739" | "6423078" | "6500183" | "6641591" | "6695583" | "7070488" | "7153311" | "7276072" | "7837695" | "20040010268" | "20040122447" | "20040143274").pn. OR ("8277287").urpn. AND (PGPB | USPT | USOC).dbnm.					
L120	15	51/$6.ccls. AND valve SAME filter AND (vacuum$4 suction$4 aspirat$$)	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/06 09:48 AM
L121	45	("10478535"|"11259821"|"11433218"|"11439799"|"11457936"|"11529158"|"20010049486"|"20040127936"|"20060217664"|"20070010787"|"20080234715"|"20100217276"|"20110034986"|"20110196309"|"20130281788"|"20140257363"|"20140296868"|"20150173782"|"20160220741"|"20170056032"|"20170196576"|"20170252057"|"20170319221"|"20170340867"|"20180104404"|"20190239910"|"20190336142"|"20210022843"|"20210315598"|"20220211400"|"20220346800"|"20220346801"|"20220346814"|"20220347455"|"20220362512"|"3675657"|"5158564"|"6451036"|"6719717"|"6960189"|"7004931"|"7223253"|"8057497"|"9216277"|"9980813").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/06 10:07 AM
L122	197	("3965896" | "3985133" | "4518497" | "4898572" | "4921478" | "5055198" | "5114400" | "5135492" | "5215519" | "5374401" | "5407425" | "5549569" | "5743886" | "5759160" | "5833650" | "5876611"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/06 10:14 AM

		| "5954695" | "5961472" | "5971948" | "6059745" | "6161547" | "6251291" | "6423032" | "6447473" | "20010049486").pn. OR ("7223253").urpn. AND (PGPB | USPT | USOC).dbnm.					
L123	8583	A61M1/60.0001.0003.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/01/06 04:18 PM
L124	709	L123 AND filter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/06 04:18 PM
L125	465	L123 AND filter AND valve	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/06 04:31 PM
L126	45	("10478535"|"11259821"|"11433218"|"11439799"|"11457936"|"11529158"|"20010049486"|"20040127936"|"20060217664"|"20070010787"|"20080234715"|"20100217276"|"20110034986"|"20110196309"|"20130281788"|"20140257363"|"20140296868"|"20150173782"|"20160220741"|"20170056032"|"20170196576"|"20170252057"|"20170319221"|"20170340867"|"20180104404"|"20190239910"|"20190336142"|"20210022843"|"20210315598"|"20220211400"|"20220346800"|"20220346801"|"20220346814"|"20220347455"|"20220362512"|"3675657"|"5158564"|"6451036"|"6719717"|"6960189"|"7004931"|"7223253"|"8057497"|"9216277"|"9980813").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/07 11:13 AM

L127	4	("6719717" "5197485" "20150352325" "6564828").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/07 12:21 PM
L128	5	("6719717" "5197485" "20150352325" "6564828" "8057497").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/07 03:37 PM
L129	6	("6719717" "5197485" "20150352325" "6564828" "8057497" "11154314").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/24 03:45 PM
L130	336	A61B17/$6.cpc. AND ((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 08:28 AM
L131	378	A61B2017/$6.cpc. AND ((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 08:28 AM
L132	630	A61B17/$6.cpc. AND ((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/01/25 08:28 AM
L133	661	A61B2017/$6.cpc. AND ((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/01/25 08:28 AM
L134	92	("2795390" | "3552712" | "4268005" | "4406656" | "4451252" | "4516398"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/25 09:01 AM

		| "4705501" | "4894057" | "4923462" | "4955375" | "5112301" | "5161773" | "5180364" | "5197192" | "5290263" | "5295956" | "5305982" | "5314406" | "5374244" | "5376100" | "5441482" | "5464398" | "5527292" | "5549626" | "5584803" | "5669876" | "5827243" | "5833650" | "5935100" | "6066149" | "6179816" | "6251121" | "6450987" | "6468291" | "6540712" | "6551268" | "6595967" | "6660014" | "6855136" | "6908474" | "7223253" | "20020103472" | "20020151918" | "20040019310" | "20050020973" | "20050085761").pn. OR ("8002725").urpn. AND (PGPB | USPT | USOC).dbnm.					
L135	461	("3631848" | "4771777" | "4840690" | "4865581" | "4921478" | "4921479" | "4946440" | "5135484" | "5250060" | "5312356" | "RE34633" | "5324262" | "5328471" | "5338300" | "5380284" | "5385562" | "5429605" | "5437632" | "5443454" | "5454795" | "5476450" | "5484407" | "5484412" | "5484418" | "5492530" | "5496294" | "5522836" | "5527292" | "5542937" | "5558635" | "5573520" | "5599326" | "5628754" | "5658264" | "5658309" | "5667499" | "5695483" | "5702373" | "5707376" | "5730734" | "5749849" | "5749858" | "5776141" | "5794629" | "5795341" | "5810869" | "5827229" | "5833650" | "5836926" | "5846251" | "5851210" | "5853400" | "5876367" | "5876386" | "5882334" | "5895399" | "5908407" | "5913848" | "5916208" | "5921952" | "5928192" | "5935122" | "5938645" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/25 09:17 AM

		"5957882" | "5976093" | "5976178" | "5997508" | "5997523" | "6004310" | "6013085" | "6022340" | "6030369" | "6033388" | "6044845" | "6053903" | "6053904" | "6071263" | "6074357" | "6074398" | "6090072" | "6110139" | "6139524" | "6146370" | "6146373" | "6146415" | "6152909" | "6152912" | "6159230" | "6161547" | "6165199" | "6176844" | "6197016" | "6206868" | "6210370" | "6234971" | "6238430" | "6254628" | "6258080" | "6270477" | "6277139" | "6287319" | "6295989" | "6295990" | "6306106" | "6306163" | "6364900" | "6368316" | "6368344" | "6379325" | "6383172" | "6413235" | "6423032" | "6423086" | "6428531" | "6435189" | "6436087" | "6454741" | "6458151" | "6464664" | "6481439" | "6482172" | "6482217" | "6508824" | "6517520" | "6527746" | "6533800" | "6540712" | "6544276" | "6549800" | "6551268" | "6555057" | "6562049" | "6562052" | "6582390" | "6582396" | "6582448" | "6595953" | "6595980" | "6605074" | "6612999" | "6623471" | "6623491" | "6623518" | "6626886" | "6632236" | "6635070" | "6638243" | "6638245" | "6641573" | "6645160" | "6645222" | "6652480" | "6656152" | "6663650" | "6663652" | "6676637" | "6679893" | "6682505" | "6685722" | "6692473" | "6702782" | "6711436" | "6719717" | "6730104" | "6733517" | "6740104" | "6749627" | "6755803" | "6755847" | "6758854" | "6764464" | "6790204" | "6824545" | "6827730" | "6837881" | "6840949" | "6849068" | "6855136" | "6884235" |				

		"6902540" | "6905490" | "6905505" | "6908474" | "6929632" | "6929634" | "6936060" | "6958059" | "6960189" | "6972030" | "7001400" | "7004924" | "7004931" | "7004952" | "7022100" | "7029488" | "7033325" | "7033336" | "7033344" | "7048758" | "7063714" | "7083594" | "7104979" | "7108677" | "7144386" | "7150712" | "7152605" | "7166088" | "7169165" | "7172621" | "7223253" | "7232452" | "7250042" | "7306585" | "7309334" | "7316678" | "7367982" | "7374560" | "7374561" | "7384412" | "7402151" | "7422579" | "7458980" | "7497844" | "7524303" | "7534250" | "7731683" | "7766049" | "7766820" | "7806906" | "7815626" | "7842065" | "7854746" | "7867216" | "7905856" | "7905877" | "7909812" | "7927309" | "7927347" | "7972294" | "7972308" | "7998104" | "8021351" | "8029533" | "8048032" | "8052640" | "8066757" | "8142413" | "RE43300" | "8152782" | "8157760" | "8172831" | "8181324" | "8221348" | "8231600" | "8251978" | "8252010" | "8292850" | "8343089" | "8414516" | "8425549" | "8465456" | "8523801" | "8545552" | "8574245" | "8708954" | "8870805" | "RE45380" | "8961549" | "8996095" | "9034007" | "9126018" | "9144662" | "RE45760" | "RE45776" | "20010044598" | "20010049486" | "20010049517" | "20020087119" | "20020128679" | "20020133111" | "20020151922" | "20020156455" | "20020156460" |				

		"20020165598" |					
		"20020173815" |					
		"20020183783" |					
		"20030040762" |					
		"20030065356" |					
		"20030069468" |					
		"20030078562" |					
		"20030186203" |					
		"20030212304" |					
		"20030212384" |					
		"20040059243" |					
		"20040116878" |					
		"20040133232" |					
		"20040138608" |					
		"20040210194" |					
		"20050131453" |					
		"20050154344" |					
		"20050154349" |					
		"20050209559" |					
		"20050273051" |					
		"20060058836" |					
		"20060058837" |					
		"20060058838" |					
		"20060089618" |					
		"20060135961" |					
		"20060200191" |					
		"20060271098" |					
		"20070021778" |					
		"20070173784" |					
		"20070197956" |					
		"20070198028" |					
		"20070198049" |					
		"20080082107" |					
		"20080140010" |					
		"20080177245" |					
		"20080200946" |					
		"20090018455" |					
		"20090024072" |					
		"20090030400" |					
		"20090198172" |					
		"20090254166" |					
		"20090264865" |					
		"20090299393" |					
		"20100004607" |					
		"20100042118" |					
		"20100063479" |					
		"20100063480" |					
		"20100094330" |					
		"20100114017" |					
		"20100145308" |					
		"20100185216" |					
		"20100204672" |					
		"20100204684" |					
		"20100217276" |					
		"20100228269" |					
		"20100256600" |					
		"20100318097" |					
		"20110009875" |					

		"20110034986" | "20110087147" | "20110112567" | "20110125181" | "20110152760" | "20110238041" | "20120310212" | "20130035628" | "20130116701" | "20130184735" | "20130281788" | "20140025043" | "20140155783" | "20140257186" | "20140296769" | "20140296868" | "20150174368").pn. OR ("9561345").urpn. AND (PGPB | USPT | USOC).dbnm.					
L136	18	A61B2017/$6.cpc. AND ((one near3 way near4 valve) (check near3 valve)) SAME filter SAME hous$4 AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 09:55 AM
L139	2	blood SAME filter AND ((one near3 way near4 valve) (check near3 valve)) SAME filter SAME convenien$4 AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:16 AM
L140	193	blood SAME filter AND ((one near3 way near4 valve) (check near3 valve)) SAME filter SAME in WITH one AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:19 AM
L141	1968	((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:34 AM
L142	605	((one near3 way near4 valve) (check near3 valve)) SAME filter AND catheter AND blood WITH filter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:34 AM
L143	66	("2006/0111667").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/25 10:43 AM
L144	3961	one near3 way near4 valve WITH filter	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:48 AM
L145	1114	one near3 way near4 valve WITH filter AND blood	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 10:48 AM

L146	76	("2992701" | "3275145" | "3545438" | "3568977" | "3930096" | "4111228" | "4141379" | "4167482" | "4222407" | "4239041" | "4311587").pn. OR ("4488961").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/25 10:50 AM
L147	37	("2008/0011667").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/25 11:15 AM
L150	10	("20150352325" "20130035628" "5197485" "8057497" "20100297577" "20080011667" "20180042623" "20060206028" "11154314" "20050020973").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/25 03:05 PM
L151	11	("20150352325" "20130035628" "5197485" "8057497" "20100297577" "20080011667" "20180042623" "20060206028" "11154314" "20050020973" "6719717").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/01/26 08:41 AM
L152	37	(Artificial Intelligence) More like doc: US-20100297577-A1 Text: (EP-2432417-A1 OR WO-2010135005-A1 OR CA-2799300-A1 OR US-9693843-B2 OR WO-2022011143-A1 OR US-5630939-A OR US-4083706-A OR US-20220008178-A1 OR US-5741134-A OR CA-2161165-C OR US-20080257815-A1 OR US-6299763-B1 OR EP-0779799-A1 OR WO-9639986-A1 OR US-3890712-A OR US-8393898-B2 OR US-20050239016-A1 OR WO-2006049878-A2 OR US-20060093990-A1 OR CA-2161165-A1).did.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/01/26 09:15 AM

L153	21	("2010/0297577").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/26 09:19 AM
L154	45	("10478535"|"11259821"|"11433218"|"11439799"|"11457936"|"11529158"|"20010049486"|"20040127936"|"20060217664"|"20070010787"|"20080234715"|"20100217276"|"20110034986"|"20110196309"|"20130035628"|"20130281788"|"20140257363"|"20140296868"|"20160220741"|"20170056032"|"20170196576"|"20170252057"|"20170319221"|"20170340867"|"20180104404"|"20190239910"|"20190336142"|"20210022843"|"20210315598"|"20220211400"|"20220346801"|"20220346813"|"20220347455"|"20220362512"|"3675657"|"5158564"|"6451036"|"6564828"|"6719717"|"6960189"|"7004931"|"7223253"|"9216277"|"9980813").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/05/09 04:43 PM
L155	23	("11013523"|"11406801"|"11554005"|"11559382"|"20030116731"|"20050054995"|"20120172918"|"20140052161"|"20160262774"|"20180042623"|"20180184912"|"20180256177"|"20210137667"|"20220142638"|"20220151647"|"20220152355"|"4611594"|"5421824"|"5653684"|"5908435"|"6818006"|"9078682"|"9827084").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/05/09 04:44 PM
L156	13	("20010031981"|"20040102807"|"20140074144"|"20140188127"|"20210236148"|"20230046775"|"20230062809"|"20230070120"|"5158533"|"6059814"|"8535283"|"8753322"|"8808259").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/05/09 04:44 PM
L157	45	(Artificial Intelligence) Similar to 17/865,307 with 0 CPC	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2023/05/09 05:21 PM

		Selections and 0 Text Selections Text (US-20190231373-A1 OR US-11154314-B2 OR US-20220240959-A1 OR US-20220346814-A1 OR US-20220346813-A1 OR US-20230046775-A1 OR CA-2939315-C OR AU-2015274704-A1 OR WO-2015191646-A1 OR EP-3094363-A1 OR US-9526864-B2 OR WO-2021025440-A2 OR CN-106470728-A OR JP-2017518093-A OR WO-2023279009-A2 OR AU-2015274704-B2 OR CA-2939315-A1 OR US-10426498-B1 OR WO-2021016213-A1 OR EP-3998966-A1 OR KR-20220038096-A OR US-20150360001-A1 OR WO-2021194789-A1 OR EP-4164727-A1 OR JP-2022540692-A OR US-20220125450-A1 OR JP-6438495-B2 OR WO-2010093521-A1 OR US-20100204672-A1 OR US-20200121336-A1 OR JP-2020062317-A OR CN-112890914-A OR EP-3713507-A1 OR CN-114502086-A OR US-11589880-B2 OR US-20230062809-A1 OR JP-2021023827-A OR US-20220346801-A1 OR US-11554005-B2 OR US-11490911-B2 OR WO-2011142994-A2 OR US-20220346800-A1 OR US-20220218369-A1 OR KR-20210018115-A OR EP-4144307-A1 OR KR-20210110003-A OR KR-102371974-B1 OR US-20160135826-A1 OR US-20210137540-A1 OR CN-108024820-	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))				

		A).did.					
L158	0	(vacuum SAME aspiration AND housing SAME chamber AND cap SAME aspirat$4 AND flow WITH path SAME cap AND catheter SAME flexible SAME port SAME housing AND flow WITH regulator AND first WITH operator SAME actuation WITH mechanism AND second WITH operator AND filter SAME housing SAME flow WITH path).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/05/22 10:28 AM
L159	35	("11013523"|"11406801"|"11554005"|"11559382"|"20010031981"|"20030116731"|"20040102807"|"20050054995"|"20120172918"|"20140052161"|"20140074144"|"20140188127"|"20160262774"|"20180042623"|"20180184912"|"20180256177"|"20210137667"|"20220142638"|"20220151647"|"20220152355"|"20230046775"|"20230062809"|"20230070120"|"4611594"|"5158533"|"5421824"|"5653684"|"5908435"|"6059814"|"6818006"|"8535283"|"8753322"|"8808259"|"9078682"|"9827084").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/05/22 04:06 PM
L160	46	(Artificial Intelligence) Similar to: 17/865,297 with 0 CPC Selections and 0 Text Selections Text: (US-20190231373-A1 OR US-11154314-B2 OR US-20220240959-A1 OR US-20220346814-A1 OR US-20220346813-A1 OR US-20230046775-A1 OR AU-2015274704-A1 OR EP-3094363-A1 OR CA-2939315-C OR WO-2015191646-A1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2023/05/22 04:09 PM

		OR JP-2017518093-A OR WO-2023279009-A2 OR AU-2015274704-B2 OR CA-2939315-A1 OR US-20150360001-A1 OR US-20150352325-A1 OR US-9526865-B2 OR US-20230062809-A1 OR JP-2021023827-A OR US-11554005-B2 OR US-20220346800-A1 OR US-11490911-B2 OR US-20220346801-A1 OR EP-3772357-A1 OR US-20220218369-A1 OR KR-20210018115-A OR KR-20210110003-A OR KR-102371974-B1 OR US-20160135826-A1 OR US-20210137540-A1 OR CN-108024820-A OR CN-111938750-A OR CN-112336414-A OR CN-112842461-A OR US-20220330960-A1 OR US-11553935-B2 OR WO-2023009703-A1 OR US-20230043096-A1 OR CA-3114285-A1 OR AU-2019321256-A1 OR WO-2020036809-A1 OR EP-3836855-A1 OR CN-108024804-A OR US-20200046368-A1 OR CN-113729856-B OR US-20230026412-A1 OR US-11559382-B2 OR JP-2021534851-A OR WO-2022104374-A1 OR US-11241243-B2).did.					
L161	1	("20210177262").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/12 10:28 PM
L162	2	("20210177262" "20220346638").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/13 08:28 AM
L163	44	(Artificial Intelligence) Similar to: 17/763,810 with 0 CPC Selections and 0 Text Selections Text: (CN-114746033-A OR US-20220346638-A1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2023/06/13 10:00 AM

		OR WO-2021076356-A1 OR EP-4044942-A1 OR JP-2022553223-A OR EP-3166512-B1 OR JP-2020114426-A OR EP-3781021-B1 OR US-11147583-B2 OR US-20200069327-A1 OR JP-2022078035-A OR JP-2017519599-A OR US-20210059713-A1 OR US-20220039828-A1 OR WO-2016007652-A1 OR EP-3166512-A1 OR CA-2955242-A1 OR US-20180146978-A1 OR US-10357277-B2 OR JP-6728128-B2 OR WO-2022192102-A1 OR JP-2021521916-A OR WO-2019204797-A1 OR EP-3781021-A1 OR JP-7021278-B2 OR CN-107106190-B OR CN-107106190-A OR CN-112312828-A OR CN-108882948-A OR US-20210076949-A1 OR US-11399863-B2 OR US-20230157718-A1 OR US-20190029714-A1 OR JP-2019513446-A OR WO-2017173370-A1 OR EP-3435892-A1 OR JP-6959255-B2 OR US-11382653-B2 OR US-10660510-B2 OR US-20170215914-A1 OR US-20200060718-A1 OR US-20220273337-A1 OR WO-2012145133-A2 OR JP-2011229956-A OR US-20120046679-A1 OR CA-2803992-A1 OR WO-2012003430-A2 OR EP-2588012-A2 OR JP-2013531542-A OR EP-2588012-B1).did.	MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))				
L164	8777	A61M1/60,0001,0003.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2023/06/13 10:55 AM

			IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L165	466	A61M39/0613.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/13 10:55 AM
L166	2	("20150352325" "20070038225" "2015002555").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/13 06:46 PM
L167	3	("20150352325" "20070038225" "20150025555").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/13 06:46 PM
L169	18	A61B17/$6.cpc. AND pre near3 charg$4 WITH vacuum WITH (source syringe) AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/14 10:17 AM
L170	18	A61B2017/$6.cpc. AND pre near3 charg$4 WITH vacuum WITH (source syringe) AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/14 10:20 AM
L171	29	A61B2017/$6.cpc. AND pre near3 charg$4 WITH vacuum WITH (source syringe) AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/14 10:21 AM
L172	37	A61B2017/$6.cpc. AND pre near3 charg$4 WITH vacuum AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE,	OR	ON	ON	2023/06/14 10:21 AM

			SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L173	681	A61B2017/$6.cpc. AND (aspirat$6 vacuum) WITH open$4 WITH valve AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/14 10:26 AM
L174	837	A61B2017/$6.cpc. AND (aspirat$6 vacuum suction$4) WITH open$4 WITH valve AND catheter SAME (clot thromb$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/14 10:26 AM
L175	116	A61B2017/$6.cpc. AND (aspirat$6 suction$4) WITH open$4 WITH valve WITH (vacuum WITH source) AND catheter SAME (clot thromb$4) SAME (aspirat$6 suction$6)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/14 10:31 AM
L176	3	("20150352325" "20070038225" "2015002555" "20220240959").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/14 05:48 PM

L177	4	("20150352325" "20070038225" "20150025555" "20220240959").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/14 05:49 PM
L178	5	("20150352325" "20070038225" "20150025555" "20220240959" "5911710").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/16 01:16 PM
L179	408	("4430081" | "4580573" | "4626245" | "4857062" | "4895346" | "4929235" | "4978341" | "4978344" | "5000745" | "5006114" | "5041095" | "5051109" | "5092845" | "5092846" | "5098406" | "5102395" | "5106054" | "5114408" | "5125903" | "5127626" | "5154701" | "5167637" | "5176652" | "5195980" | "5205829" | "5207649" | "5215527" | "5215528" | "5256150" | "5267966" | "5269997" | "5273546" | "5290245" | "5290249" | "5300033" | "5304142" | "5304143" | "5304156" | "5312362" | "5312363" | "5330436" | "5334160" | "5336192" | "5350362" | "5350363" | "5356390" | "5366446" | "5403292" | "5458640" | "5584808" | "5591137" | "5599305").pn. OR ("5911710").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/06/16 01:17 PM
L180	19	("4112932" | "4535773" | "5112321" | "5217441" | "5224930").pn. OR ("5330436").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/06/16 01:42 PM
L181	1	("5256150").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/06/17 10:27 AM
L182	284	("2844351" | "4311136" | "4401433" | "4540411" | "4580573" | "4601713" | "4738666" | "4857062" | "5015239" | "5066285").pn. OR ("5256150").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/06/17 10:28 AM

L183	7	("20150352325" "20070038225" "20150025555" "20220240959" "5911710" "8057497" "20150173782").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 12:06 PM
L184	8	("20150352325" "20070038225" "20150025555" "20220240959" "5911710" "8057497" "20150173782" "5197485").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 12:06 PM
L185	166	A61B2017/22034,22042,22079,22094.cpc. AND (reservoir container collect$4) WITH (debris thromb$5 embol$5) AND filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 03:18 PM
L186	13	A61B17/220758,320725.cpc. AND (reservoir container collect$4) SAME filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 03:18 PM
L187	139	A61B17/22031,22,221.cpc. AND (reservoir container collect$4) SAME filter SAME valve	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 03:18 PM
L188	487	A61M39/0613.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 09:55 PM
L189	27	("10772636"|"11166703"|"20050203605"|"20160192912"|"20210038385"|"20210393278"|"5256150"|"5330436"|"6152144"|"6540722"|"7128073"|"7152605"|"7678131"|"7713282"|"7722641"|"8080032"|"8480708"|"8523897"|"8535343"|"8647367"|"8784469"|"8834519"|"9011551"|"9168043"|"9301769"|"9566073"|"9717488").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:28 AM
L190	14	("10531883"|"10960114"|"20050004534"|"20060264905"|"20100094201"|"20100106081"|"20160030708"|"20160106353"|"20160135829"|"20170021130"|"20190365395"|"5234403"|"5244619"|"9581942").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:28 AM
L191	18	("11697011"|"11697012"|"20130030460"|"2013	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:29 AM

		0144326"|"20130204297"|"20140005715"|"20140180397"|"20140222070"|"20140324091"|"20150018859"|"20150150672"|"20150196744"|"20160038267"|"20160367285"|"20230200970"|"20230218310"|"20230218313"|"20230218383").PN.					
L192	8	("10183159"|"20070233043"|"20230233311"|"20230240705"|"20230240706"|"20230241302"|"8343167"|"8568465").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:29 AM
L193	55	("10058339"|"10384034"|"10456555"|"10485952"|"10926060"|"10953195"|"1101890"|"11065019"|"11185664"|"11224450"|"11224721"|"11305094"|"11383064"|"11395903"|"11576691"|"11596768"|"11744691"|"20040019310"|"20080312681"|"20110071503"|"20120109109"|"20130150793"|"20170143359"|"20170143938"|"20170281204"|"20180055999"|"20180250498"|"20190015298"|"20190366036"|"20200046940"|"20200121334"|"20210138194"|"20210205577"|"20210404464"|"20220033888"|"20220370761"|"20230059721"|"20230122587"|"20230248380"|"20230270991"|"3416531"|"3860006"|"4981478"|"5391152"|"5639276"|"5971958"|"7122034"|"7481805"|"7815608"|"8021351"|"8070694"|"9241669"|"9265512"|"9532792"|"9662129").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:29 AM
L194	10	("20030023263"|"20030135151"|"20040039351"|"20110152889"|"20140180055"|"20200022711"|"20230310137"|"20230310138"|"20230310751"|"6017335").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24 08:30 AM
L195	1	("10799331").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/24

							08:55 AM
L196	45	(Artificial Intelligence) Similar to: 18/358,837 with 0 CPC Selections and 0 Text Selections Text: (US-20220346814-A1 OR US-11154314-B2 OR US-20220240959-A1 OR US-20220346813-A1 OR US-20230046775-A1 OR US-20210298773-A1 OR US-11554005-B2 OR EP-3094363-A1 OR CA-2939315-C OR US-11642209-B2 OR CN-113456168-A OR JP-2021159767-A OR KR-20210016878-A OR EP-3888570-A2 OR CN-106470728-A OR US-11096712-B2 OR AU-2015274704-B2 OR CA-2939315-A1 OR JP-2021087777-A OR WO-2021016213-A1 OR EP-3998966-A1 OR US-20220346801-A1 OR US-20220125450-A1 OR KR-20220038096-A OR US-20150360001-A1 OR JP-6438495-B2 OR US-20230218383-A1 OR US-20230320834-A1 OR US-20200121336-A1 OR EP-3639769-A1 OR CN-111067588-A OR JP-2020062317-A OR CN-114502086-A OR EP-3713507-A1 OR WO-2019102307-A1 OR US-20210186540-A1 OR US-20210161544-A1 OR CN-115590580-A OR US-11589880-B2 OR EP-3831318-A1 OR US-11517340-B2 OR US-20230310138-A1 OR US-20230149034-A1 OR US-20230033555-A1 OR KR-20210070201-A OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2023/12/07 09:50 PM

		US-20200281612-A1 OR EP-3705067-A2 OR JP-2023011528-A OR US-20160008014-A1 OR US-9408620-B2).did.					
L197	13	(richard WITH quick) AND inari	(USPAT)	OR	ON	ON	2023/12/08 08:49 AM
L198	117	("4393879").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/12/26 11:06 PM
L199	12911	A61B10/04.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/27 09:08 AM
L201	7830	A61M1/60,63.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/27 11:52 AM
L202	2863	A61M1/60,63.cpc. AND filter	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2023/12/27 11:53 AM

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L203	44	(Artificial Intelligence) Similar to: 18/497,249 with 0 CPC Selections and 0 Text Selections Text: (US-11154314-B2 OR US-20220346814-A1 OR US-20220240959-A1 OR US-20220346813-A1 OR US-20230046775-A1 OR US-20230320834-A1 OR US-11642209-B2 OR US-20230310138-A1 OR KR-20210016878-A OR WO-2021025440-A2 OR AU-2015274704-A1 OR EP-3094363-A1 OR US-11744691-B2 OR KR-102249913-B1 OR CA-2939315-C OR US-20210298773-A1 OR CN-106470728-A OR US-20200281612-A1 OR CN-111643153-A OR EP-3705067-A2 OR US-10888343-B2 OR EP-3448280-B1 OR JP-6874120-B2 OR ES-2859656-T3 OR US-20230310137-A1 OR US-9526865-B2 OR US-20150352325-A1 OR US-20150360001-A1 OR AU-2015274704-B2 OR US-20220346801-A1 OR US-11554005-B2 OR CN-113456168-A OR JP-2021159767-A OR CN-109890304-B OR EP-3888570-A2 OR US-20230218383-A1 OR JP-6438495-B2 OR US-20170303948-A1 OR CA-3184745-A1 OR EP-4171400-A1 OR WO-2021263033-A1 OR JP-2023531474-A OR US-20220346800-A1 OR EP-3840674-A1 OR US-20230200970-	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2023/12/27 01:39 PM

		A1 OR JP-2021087777-A OR JP-2021171644-A OR EP-3895635-A2 OR US-20210322037-A1 OR CN-115590580-A).did.					
L204	6246	A61B2017/00907.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/27 01:41 PM
L205	364	A61B2017/00907.cpc. AND filter	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/27 01:41 PM
L206	76	A61B17/$6.cpc. AND filter SAME blood SAME (clear transparent$4) SAME (visual$4 view$4)	(US-PGPUB; USPAT)	OR	ON	ON	2023/12/27 03:44 PM
L207	120	A61B17/$6.cpc. AND filter SAME blood SAME (hous$4 contain$$ chamber) AND (hous$4 contain$$ chamber) SAME (clear transparent$4) SAME (visual$4 view$4)	(US-PGPUB; USPAT)	OR	ON	ON	2023/12/27 03:48 PM
L208	59	("5197485").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/12/27 04:09 PM
L209	15	("6908455").urpn. AND (PGPB | USPT |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/12/27 04:10 PM

		USOC).dbnm.					
L210	102	("3785380").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/12/28 09:40 AM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/497,249	10/30/2023	Richard Quick	111552.8023.US07	6832

25096 7590 12/11/2023

PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER
CENTRAL, DOCKET

ART UNIT	PAPER NUMBER
OPAP	

NOTIFICATION DATE	DELIVERY MODE
12/11/2023	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 18/497,249	**Applicant(s)** Quick et al.	
	Examiner FIKIRTE A GEREMEW	**Art Unit** OMBL	**AIA (FITF) Status** Yes

1. THE REQUEST FILED 30 October 2023 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to FIKIRTE GEREMEW at (703) 756-1930. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/FIKIRTE A GEREMEW/ PROGRAM SUPPORT ASSISTANT, OMBL	

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/497,249

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	* 0			OR	x =	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x =	0
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1820

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
18/497,249	10/30/2023		1980	111552.8023.US07	20	2

CONFIRMATION NO. 6832

FILING RECEIPT

25096
PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

OC00000065024040

Date Mailed: 11/28/2023

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Richard Quick, Mission Viejo, CA;
Benjamin Edward Merritt, San Clemente, CA;
John Coleman Thress, Capistrano Beach, CA;
Paul Lubock, Monarch Beach, CA;
Thomas M. Tu, Louisville, KY;

Applicant(s)

Inari Medical, Inc., Irvine, CA;

Power of Attorney: The patent practitioners associated with Customer Number 25096

Domestic Priority data as claimed by applicant

This application is a CON of 17/865,307 07/14/2022
which is a CON of 17/498,642 10/11/2021
which is a CON of 16/258,344 01/25/2019 PAT 11,154,314
which claims benefit of 62/622,691 01/26/2018

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 11/27/2023
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/497,249**
Projected Publication Date: 03/07/2024
Non-Publication Request: No
Early Publication Request: No
Title

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/497,249	10/30/2023	Richard Quick	111552.8023.US07

CONFIRMATION NO. 6832

25096
PERKINS COIE LLP - SEA General
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

INFORMAL NOTICE

OC000000065024046

Date Mailed: 11/28/2023

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):

  Richard Quick
  Benjamin Edward Merritt
  John Coleman Thress
  Paul Lubock
  Thomas M. Tu

  An inventor's oath or declaration in compliance with 37 CFR 1.63 or 1.64 executed by or with respect to each inventor must be submitted no later than the date on which the issue fee is paid in response to a notice requiring such fee. See 37 CFR 1.53(f).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mphongsavan/

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Kathi Vidal

Kathi Vidal
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office

Derrick Brent
Deputy Under Secretary of Commerce for Intellectual Property and
Deputy Director of the United States Patent and Trademark Office

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/497,249- Conf # 6832
	Filing Date	October 30, 2023
	First Named Inventor	Richard Quick
	Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	111552.8023.US07

U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	2846179	08-05-1958	Monckton	
	2.	2955592	10-11-1960	Maclean	
	3.	3088363	05-07-1963	W. Sparks	
	4.	3197173	07-27-1965	Taubenheim	
	5.	3435826	04-01-1969	T. J. Fogarty	
	6.	3515137	06-02-1970	Santomieri	
	7.	3892161	07-01-1975	Sokol	
	8.	3923065	12-02-1975	Nozick et al.	
	9.	4030503	06-21-1977	Clark,III	
	10.	4034642	07-12-1977	Iannucci et al.	
	11.	4222380	09-16-1980	Terayama	
	12.	4243040	01-06-1981	Beecher	
	13.	4287808	09-08-1981	Leonard et al.	
	14.	4324262	04-13-1982	Hall	
	15.	4393872	07-19-1983	Reznik et al.	
	16.	4469100	09-04-1984	Hardwick	
	17.	4523738	06-18-1985	Raftis et al.	
	18.	4551862	11-12-1985	Haber	
	19.	4604094	08-05-1986	Shook	
	20.	4646736	03-03-1987	Auth et al.	
	21.	4650466	03-17-1987	Luther	
	22.	4863440	09-05-1989	Chin et al.	
	23.	4883458	11-28-1989	Shiber	
	24.	4890611	01-02-1990	Monfort et al.	
	25.	4946440	08-07-1990	Hall	
	26.	4960259	10-02-1990	Sunnanvader et al.	
	27.	4978341	12-18-1990	Niederhauser	
	28.	5059178	10-22-1991	Ya	
	29.	5100423	03-31-1992	Fearnot	

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U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	30.	5127626	07-07-1992	Hilal et al.	
	31.	5129910	07-14-1992	Phan et al.	
	32.	5192286	03-09-1993	Phan et al.	
	33.	5192290	03-09-1993	Hilal	
	34.	5329923	07-19-1994	Lundquist	
	35.	5360417	11-01-1994	Gravener et al.	
	36.	5364345	11-15-1994	Lowery et al.	
	37.	5389100	02-14-1995	Bacich et al.	
	38.	5419774	05-30-1995	Willard et al.	
	39.	5443443	08-22-1995	Shiber	
	40.	5476450	12-19-1995	Ruggio	
	41.	5490859	02-13-1996	Mische et al.	
	42.	5591137	01-07-1997	Stevens	
	43.	5662703	09-02-1997	Yurek et al.	
	44.	5746758	05-05-1998	Nordgren et al.	
	45.	5749858	05-12-1998	Cramer	
	46.	5782817	07-21-1998	Franzel et al.	
	47.	5827229	10-27-1998	Auth et al.	
	48.	5873866	02-23-1999	Kondo et al.	
	49.	5873882	02-23-1999	Straub et al.	
	50.	5876414	03-02-1999	Straub	
	51.	5911710	06-15-1999	Barry et al.	
	52.	5941869	08-24-1999	Patterson et al.	
	53.	5971938	10-26-1999	Hart et al.	
	54.	5972019	10-26-1999	Engelson et al.	
	55.	5974938	11-02-1999	Lloyd	
	56.	5989233	11-23-1999	Yoon	
	57.	5993463	11-30-1999	Gianotti	
	58.	6066158	05-23-2000	Engelson et al.	

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U.S. PATENTS AND PUBLICATIONS					
Examiner Initial*	Cite No.	Patent Number	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references. This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information that may be material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, Applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

COPIES OF REFERENCES

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2). Those documents which are marked with a double asterisk (**) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in prior application numbers **16/258,344,** filed on **January 25, 2019** and **17/865,307,** filed on **July 14, 2022** relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew S. Williams/	Date (YYYY-MM-DD)	2023-11-27
Name/Print	Matthew S. Williams	Registration Number	77,516

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**11/27/2023 07:23:34 PM Z ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	Michelle Burge
PATENT CENTER #	63390705	FILING DATE	10/30/2023
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 27

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2023-11-27_IDS_SB08_1115528023US07.pdf	40	Information Disclosure Statement (IDS) Form (SB08)	416 KB
Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
NPL_EESR-EP20877370.5-Oct 17 2023 11 pages.pdf	11	Non Patent Literature	1028 KB
FOR_WO2023215779.pdf	33	Foreign Reference	1420 KB
FOR_WO2023192925.pdf	54	Foreign Reference	2231 KB

NPL_Gross_DumpThePump.pdf	4	Non Patent Literature	858 KB
FOR_WO2023137341.pdf	75	Foreign Reference	3600 KB
NPL_ISR-PCTUS23_65128 Nov 14 2023 - 14 pages.pdf	14	Non Patent Literature	2404 KB
NPL_ISR_WO_PCTUS20236 1256_JUN_07_2023_8pages.pdf	8	Non Patent Literature	3835 KB
NPL_ISR_WO_PCTUS20230 60502_May_25_2023_9pages.pdf	9	Non Patent Literature	3976 KB
NPL_JP_OA_EN_translation _2021_507564_June_7_2023 _7pages.pdf	7	Non Patent Literature	94 KB
NPL_ISR_WO_PCTUS20236 0927_JUL_20_2023_12pages.pdf	12	Non Patent Literature	6279 KB
FOR_EP2942624.pdf	24	Foreign Reference	1193 KB
FOR_WO2023154612.pdf	42	Foreign Reference	8869 KB
FOR_EP3583972.pdf	21	Foreign Reference	1729 KB
FOR_EP3013404.pdf	15	Foreign Reference	585 KB
FOR_WO2023147353.pdf	52	Foreign Reference	9750 KB
FOR_WO2006029270.pdf	33	Foreign Reference	1162 KB
FOR_EP3589348_Counterpart_WO2018160810.pdf	44	Foreign Reference	2158 KB
FOR_WO2006124307.pdf	19	Foreign Reference	2083 KB

FOR_EP3620204.pdf	50	Foreign Reference	3285 KB
FOR_EP4137070.pdf	51	Foreign Reference	3220 KB
FOR_CN106178227.pdf	14	Foreign Reference	6114 KB
FOR_WO2016014955.pdf	63	Foreign Reference	2330 KB
FOR_WO2015179329.pdf	56	Foreign Reference	2438 KB
FOR_WO2018065092.pdf	50	Foreign Reference	3409 KB
FOR_WO2019173475.pdf	114	Foreign Reference	5744 KB
NPL_EP_OA_168769412-Jul-18-2023_6pages.pdf	6	Non Patent Literature	505 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2023-11-27_IDS_SB08_1115528023US07.pdf	658500A2372C9B265A348C426EA52EF8822218377F4B40094AE8883742B908BE171AE7AD9B0A2B390295CC23A90B2453666DB1090A94851AF74FC9A25341C71E
NPL_EESR-EP20877370.5-Oct 17 2023 11 pages.pdf	965199476EC91E44333C0B2C98A43D4DB73CBBE22CD58A51C5F767C071A88473B07F82C411A5BAB6F24DB4311E74FDAC803F906F3C960C97292C98BC16A40CF0
FOR_WO2023215779.pdf	822189693D23DE0172A440D88C414B1830B6A2EA08247722E04B87B1176552CCF2625D119E1A1B60EB97B33DE23A2BA3A56E554FDC3DA071CC5608A9C2902D4F
FOR_WO2023192925.pdf	505C8B0B5181623D59604F65A91F55E7362EC91ECCFAED65CDDADF834C815E200E02C38FF719F0C512F22B547F9B3C14DD623B59C16DAB25BFB5A8A2FC85055F
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NPL_ISR-PCTUS23_65128 Nov 14 2023 - 14 pages.pdf	0D8172E4E2C5CA2C3EB1552C85530BE7ED95C8BEBB81598DEE99414192B1D5BD56A716931753D0B4C943E7A07F8030B5B3707F1FEA77C81A2CC385DDA4C3B6DF
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NPL_JP_OA_EN_translation_2021_507564_June_7_2023_7pages.pdf	2272FDE0C8B9D6C2C654816392741B6A54B81145D6CBA5D05CEC760E93C77634AC3C6903081FC18F1F3B3760D1DF5869AB3A21DEA3EB50D59B10DF35C6D21826
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FOR_EP3583972.pdf	20142461FB539351E85DD0CDFDF94FE05B172201133D002BE12CAD7FB84A5FD3C8DA8934B29ACD66A40E1F09497F15E20CC6DBCA9196DB801A4C0F50157B4B49
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	239E65684B3C420E64BF8199072731D19F7A1660C105A98D724710E703801BF7EA7D6C3F631B8B2
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FOR_EP3589348_Counterpart_WO2018160810.pdf	AA753CB1CBA311E135DDA14916DFBAF32AA3D0A4376215D4AEC2A9E4B7E296508256B35AE443DADB47FA2C003893D715E9FE17BCD337B49A01A611DD0D33D980
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FOR_WO2016014955.pdf	0710FF4A205B544557AF0AAA6A2E591699F47C6A08438059239DED95069666A06C938CE87444B8F91ABD511A3B40F1D2BFAEF58C9DB44754D1F0E81C6B469D25
FOR_WO2015179329.pdf	43BCB081A4C6C2B8E97B71085C2A3D632BDC5B383946E56F1CCC388BF0C089FE871497E604833F3A1BFD326B168ED51932C7C726E0E80D808788E4C4AF266A1E
FOR_WO2018065092.pdf	7F61F427C385B4E42106CDBA32BD197A0EDEF853DFC34BB9

	4D31E4D5FB7DC63075F19D8B1823AEB3E85C3C23690F2493B F6BEFFF806BB1A244C52BB7D2D3E288
FOR_WO2019173475.pdf	46135CA36322848AC7713731C3C3A89B30E3CD582A0A4656E0 00533596F331158ECD136D065C986D6C15459727E80D1E8901 469442DD51ADE518ACC9FD2FBBD5
NPL_EP_OA_168769412-Jul-18-2023_6pages.pdf	F13D295A29D8952A9F9086D54D1C95F50D1C556D73443FF18 A5A35B838EED8CDE0F9A5994317C1F7112185A8C6C56E8B65 57532E2AC16B7A4BB1A96A01E4C476

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: Matthew S. Williams
Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
United States Of America

RECEIVED
PATENT DOCKETING
JUN 12 2023
PERKINS COIE LLP

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 111552-8035WO00	Date of mailing (day/month/year) JUN 07 2023 FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US23/61256	International filing date (day/month/year) 25 January 2023 (25.01.2023)
Applicant INARI MEDICAL, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   How? Directly to the International Bureau preferably through ePCT, or on paper to:
   The International Bureau of WIPO, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland

   For more detailed instructions, see the *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to any protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
   - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
   - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within 22 months from the priority date, the applicant may request that a supplementary international search be carried out by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

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 Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/220 (revised January 2020)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference		FOR FURTHER ACTION
111552-8035WO00		see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US23/61256	25 January 2023 (25.01.2023)	31 January 2022 (31.01.2022)
Applicant INARI MEDICAL, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 9 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the language, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the title,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

   a. the figure of the drawings to be published with the abstract is Figure No. 3A

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US23/61256

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. A61M 1/00 (2023.01)
ADD. A61B 17/22; A61M 25/00 (2023.01)

CPC - INV. A61M 1/84; A61M 25/0043; A61M 25/0045; A61M 25/005
ADD. A61B 2017/22079; A61B 2217/005; A61M 25/0023; A61M 2025/0073; A61M 2206/16; A61M 2206/20

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 database consulted during the international search (name of database 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	US 2016/0030708 A1 (ANGIODYNAMICS INC.) 04 February 2016; figures 4, 6b; paragraphs 0006, 0009, 0030, 0036, 0038, 0039; abstract; claim 3	1-13, 15-21 --- 14
X	US 2016/0135829 A1 (ANGIODYNAMICS INC.) 19 May 2016; figures 2a-4c, 7; paragraphs 0037, 0049	22-24
Y	US 2008/0264905 A1 (ESKRIDGE ET AL.) 23 November 2008; paragraphs 0005, 0027	14
A	US 5,244,619 A (BURNHAM) 14 September 1993; entire document	1-24
A	US 2017/0021130 A1 (DYE) 26 January 2017; entire document	1-24

☐ 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
"D" document cited by the applicant in the international application
"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
24 April 2023 (24.04.2023)	JUN 07 2023
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 Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/210 (second sheet) (July 2022)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: Matthew S. Williams
Perkins Coie LLP
P.O. Box 1247
Seattle, WA 98111-1247
United States Of America

RECEIVED
PATENT DOCKETING

JUN 12 2023

PERKINS COIE LLP

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	JUN 07 2023

Applicant's or agent's file reference	FOR FURTHER ACTION
111552-8035WO00	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US23/61256	25 January 2023 (25.01.2023)	31 January 2022 (31.01.2022)

International Patent Classification (IPC) or both national classification and IPC
IPC - INV. A61M 1/00 (2023.01)
ADD. A61B 17/22; A61M 25/00 (2023.01)
CPC - INV. A61M 1/84; A61M 25/0043; A61M 25/0045; A61M 25/005
ADD. A61B 2017/22078; A61B 2217/005; A61M 25/0023; A61M 2025/0073; A61M 2206/16; A61M 2206/20

Applicant INARI MEDICAL, INC.

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	24 April 2023 (24.04.2023)	Shane Thomas PCT Help Desk Telephone No. 571-272-4300

Form PCT/ISA/237 (cover sheet) (July 2022)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US23/61256

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(b)).

3. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing:

a. ☐ forming part of the international application as filed.

b. ☐ furnished subsequent to the international filing date for the purposes of international search (Rule 13*ter*.1(a)).

☐ accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.

4. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US23/61256

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	14	YES
	Claims	1-13, 15-24	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-3, 7-10, 15, and 17-21 lack novelty under PCT Article 33(2) as being anticipated by AngioDynamics, Inc. US 2016/0030708 A1 (AngioDynamics).

As to claim 1, AngioDynamics teaches an aspiration catheter (30), comprising: a proximal terminus; a distal terminus; and an inner surface defining a lumen (para [0009]), wherein the inner surface includes at least one groove formed therein (channels 33) and that extends from the distal terminus at least partially toward the proximal terminus (fig. 4).

As to claim 2, AngioDynamics teaches the aspiration catheter of claim 1 wherein the at least one groove extends from the distal terminus to the proximal terminus (para [0036]; claim 3).

As to claim 3, AngioDynamics teaches the aspiration catheter of claim 1 wherein the lumen extends along a longitudinal axis, and wherein the at least one groove revolves circumferentially about the longitudinal axis between the proximal terminus and the distal terminus (abstract; para [0009], para [0030]).

As to claim 7, AngioDynamics teaches the aspiration catheter of claim 1 wherein the at least one groove has a spiral shape (abstract; para [0009], para [0030]).

As to claim 8, AngioDynamics teaches the aspiration catheter of claim 1 wherein the at least one groove comprises a plurality of grooves (fig. 4; abstract; para [0009]; para [0030]).

As to claim 9, AngioDynamics teaches the aspiration catheter of claim 8 wherein the plurality of grooves are equally spaced apart about a circumference of the inner surface (fig. 4; see cross-section in fig. 8b).

As to claim 10, AngioDynamics teaches the aspiration catheter of claim 8 wherein the lumen extends along a longitudinal axis, and wherein the plurality of grooves revolves circumferentially about the longitudinal axis between the proximal terminus and the distal terminus (para [0036]; claim 3).

As to claim 15, AngioDynamics teaches an aspiration catheter (30), comprising: a proximal terminus; a distal terminus; and an inner surface defining a lumen extending along a longitudinal axis (para [0009]), wherein the inner surface includes a plurality of grooves formed therein (channels 33), wherein the grooves extend at least partially between the distal terminus and the proximal terminus (fig. 4), and wherein the grooves revolve circumferentially about the longitudinal axis between the distal terminus and the proximal terminus (abstract; para [0009], para [0030]).

As to claim 17, AngioDynamics teaches the aspiration catheter of claim 15 wherein the grooves are equally spaced about a circumference of the inner surface (fig. 4; see cross-section in fig. 8b).

As to claim 18, AngioDynamics teaches the aspiration catheter of claim 15 wherein the grooves extend to the distal terminus (para [0036]; claim 3).

As to claim 19, AngioDynamics teaches the aspiration catheter of claim 15 wherein the grooves extend entirely between the distal terminus and proximal terminus (para [0036]; claim 3).

As to claim 20, AngioDynamics teaches a system for removing material from within a lumen of a human patient, the system comprising: an aspiration catheter (30) configured to be positioned at a treatment site proximate to the material within the lumen, wherein the aspiration catheter comprises a proximal terminus; a distal terminus; and an inner surface defining a lumen (para [0009]), wherein the inner surface includes at least one groove formed therein (channels 33) and that extends from the distal terminus at least partially toward the proximal terminus (fig. 4); a tubing assembly fluidly coupled to the catheter (connected to a port or syringe; para [0036], [0039]) and including a fluid control device (power aspiration para [0006] or syringe 110); and a pressure source fluidly coupled to the tubing assembly and configured to generate negative pressure (power aspiration para [0006] or syringe 110, para [0039]), wherein the fluid control device is movable

-***-Continued in Supplemental Box-***-.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-***-Continued From Box V. 2. Citations and Explanations-***-

between (a) a first position in which the pressure source is fluidly connected to the aspiration catheter via the tubing assembly and (b) a second position in which the pressure source is fluidly disconnected from the aspiration catheter (the catheter is fully capable of being connected and disconnected from pressure source).

As to claim 21, AngioDynamics teaches the system of claim 20 wherein the lumen extends along a longitudinal axis, wherein the at least one groove includes a plurality of grooves (fig. 4), wherein the grooves are equally spaced about a circumference of the inner surface (fig. 4; see cross-section in fig. 8b), wherein the grooves extend at least partially from the distal terminus to the proximal terminus (fig. 4), and wherein the grooves revolve circumferentially about the longitudinal axis between the proximal terminus and the distal terminus (abstract; para [0009], para [0030]).

Claims 22-24 lack novelty under PCT Article 33(2) as being anticipated by AngioDynamics US 2018/0135629 A1 (AngioDynamics2).

As to claim 22, AngioDynamics2 teaches a method for removing material from within a lumen of a human patient, the method comprising: positioning a distal portion of an aspiration catheter proximate to the material within the lumen (figs. 2a-4c), wherein the aspiration catheter includes an inner surface having at least one groove formed therein (para [0037]), and wherein the at least one groove extends from a distal terminus of the aspiration catheter at least partially toward a proximal terminus of the aspiration catheter (para [0037]); coupling a pressure source to the aspiration catheter via a fluid control device (para [0049]), wherein (a) opening of the fluid control device fluidly connects the pressure source to the aspiration catheter and (b) closing of the fluid control device fluidly disconnects the pressure source from the aspiration catheter; activating the pressure source to generate a vacuum while the fluid control device is closed; and opening the fluid control device to apply the vacuum to the aspiration catheter to thereby aspirate at least a portion of the material into the aspiration catheter (it is well known that powering on a vacuum pump will open/activate will connect a vacuum, and powering off the pump will close disconnect a vacuum).

As to claim 23, AngioDynamics2 teaches the method of claim 22 wherein the at least one groove defines a leak path past the clot material when the clot material is aspirated into the aspiration catheter (channels form paths).

As to claim 24, AngioDynamics2 teaches the method of claim 22 wherein the at least one groove generates a helical flow pattern in the lumen when the clot material is aspirated into the aspiration catheter (para [0037], [0039]; fig. 7]).

Claims 4-6, 11-13, and 16 lack an inventive step under PCT Article 33(3) as being obvious over AngioDynamics.

As to claims 4-6, AngioDynamics teaches the aspiration catheter of claim 3. It should be noted that AngioDynamics fails to specifically teach the at least one groove revolves about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch. AngioDynamics does teaches that the pitch of the grooves can be used to optimize flow rate depending of the procedure (para [0035]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the grooves revolves about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranged involves only routine skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the grooves of AngioDynamics to revolve about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch depending on the desired effect during a procedure (para [0035]).

As to claims 11-13, AngioDynamics teaches the aspiration catheter of claim 10. It should be noted that AngioDynamics fails to specifically teach the plurality of grooves revolves about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch. AngioDynamics does teaches that the pitch of the grooves can be used to optimize flow rate depending of the procedure (para [0035]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the grooves revolves about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranged involves only routine skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the grooves of AngioDynamics to revolve about 0.05 times or more per inch; between about 0.13-0.15 times per inch; or more than about 0.13 times per inch depending on the desired effect during a procedure (para [0035]).

As to claims 16, AngioDynamics teaches the aspiration catheter of claim 15. It should be noted that AngioDynamics fails to specifically teach the at least one groove revolves between about 0.13-0.15 times per inch. AngioDynamics does teaches that the pitch of the grooves can be used to optimize flow rate depending of the procedure (para [0035]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the grooves revolves about 0.13-0.15 times per inch, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranged involves only routine skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the grooves of AngioDynamics to revolve about 0.13-0.15 times per inch depending on the desired effect during a procedure (para [0035]).

Claim 14 lacks an inventive step under PCT Article 33(3) as being obvious over AngioDynamics in view of Eskridge et al. US 2006/0264905 A1 (Eskridge).

As to claim 14, AngioDynamics teaches the aspiration catheter of claim 1. It should be noted that AngioDynamics fail to teaches wherein the catheter further comprises: an inner liner having the inner surface, wherein the at least one groove is formed in the inner liner; a braid of wires over the inner liner; a wire coiled over the inner liner; and an outer sheath over the braid, the wire, and the inner liner. AngioDynamics does teach the desire to prevent pinching or collapsing of the catheter when negative pressure is applied (para [0007]).

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

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
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-***-Continued from previous Supplemental Box-***-

Eskridge teaches multi-layered catheter construction is well known in the art, and it is well known to combinations of liners, coils, and braids to prevent kinks (para [0005], [0027]). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the catheter of AngioDynamics to include the liner, coil, and braid of Eskridge to prevent pinching or collapsing of the catheter by increasing stiffness while still providing flexibility (para [0005], [0027]).

Claims 1-24 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Richard Quick	Nonprovisional Application Number (if known):	Not Yet Assigned
Title of Invention:	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYS		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Matthew S. Williams/	Date 2023-10-30
Name (Print/Typed) Matthew S. Williams	Practitioner Registration Number 77,516

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 03/31/2021. OMB 0651-0035
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 25096

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Inari Medical, Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	10 Dec 2021
Name	Brian Strauss		
Title	Vice President, Inari Medical, Inc.		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

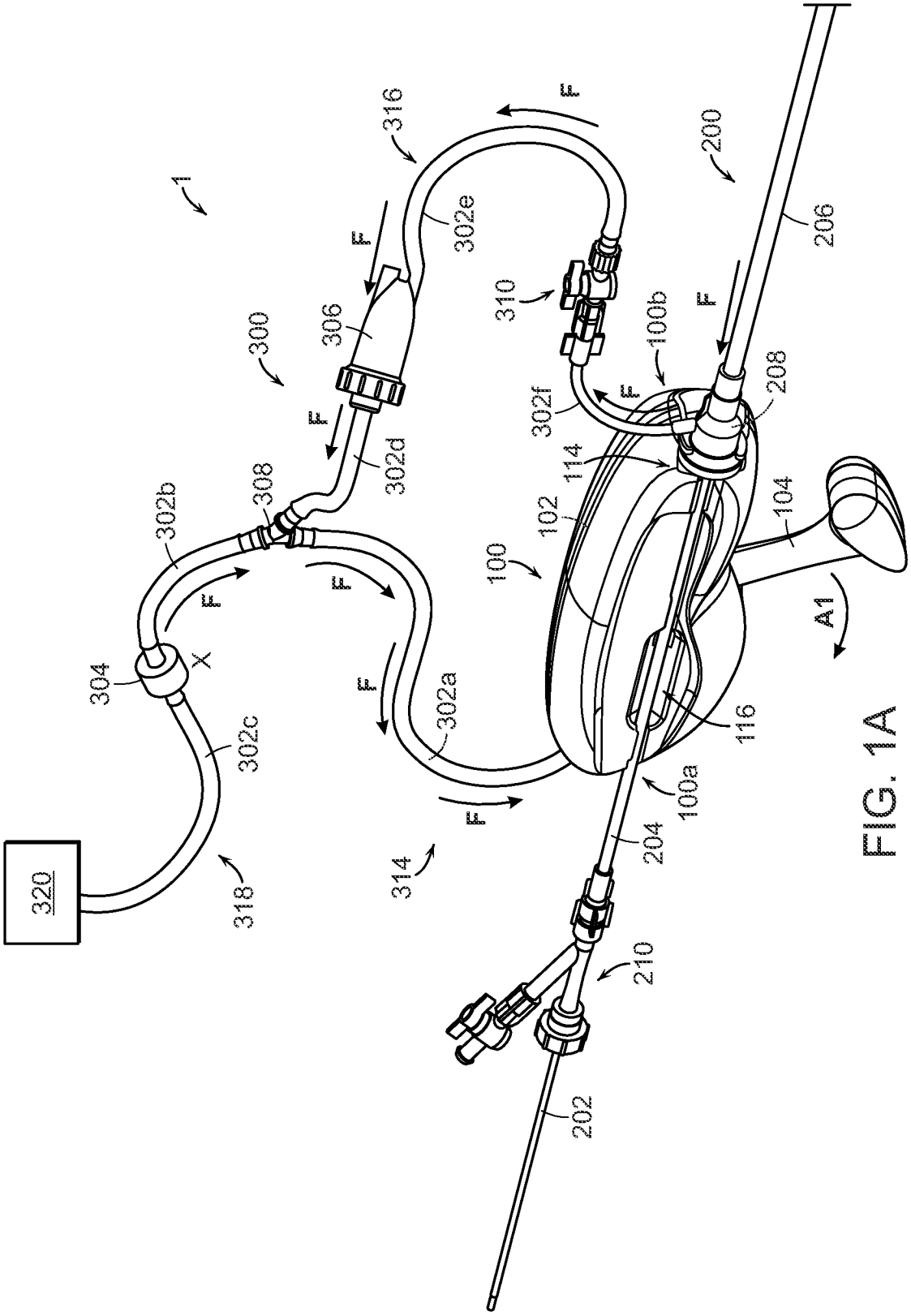

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FIG. 1A

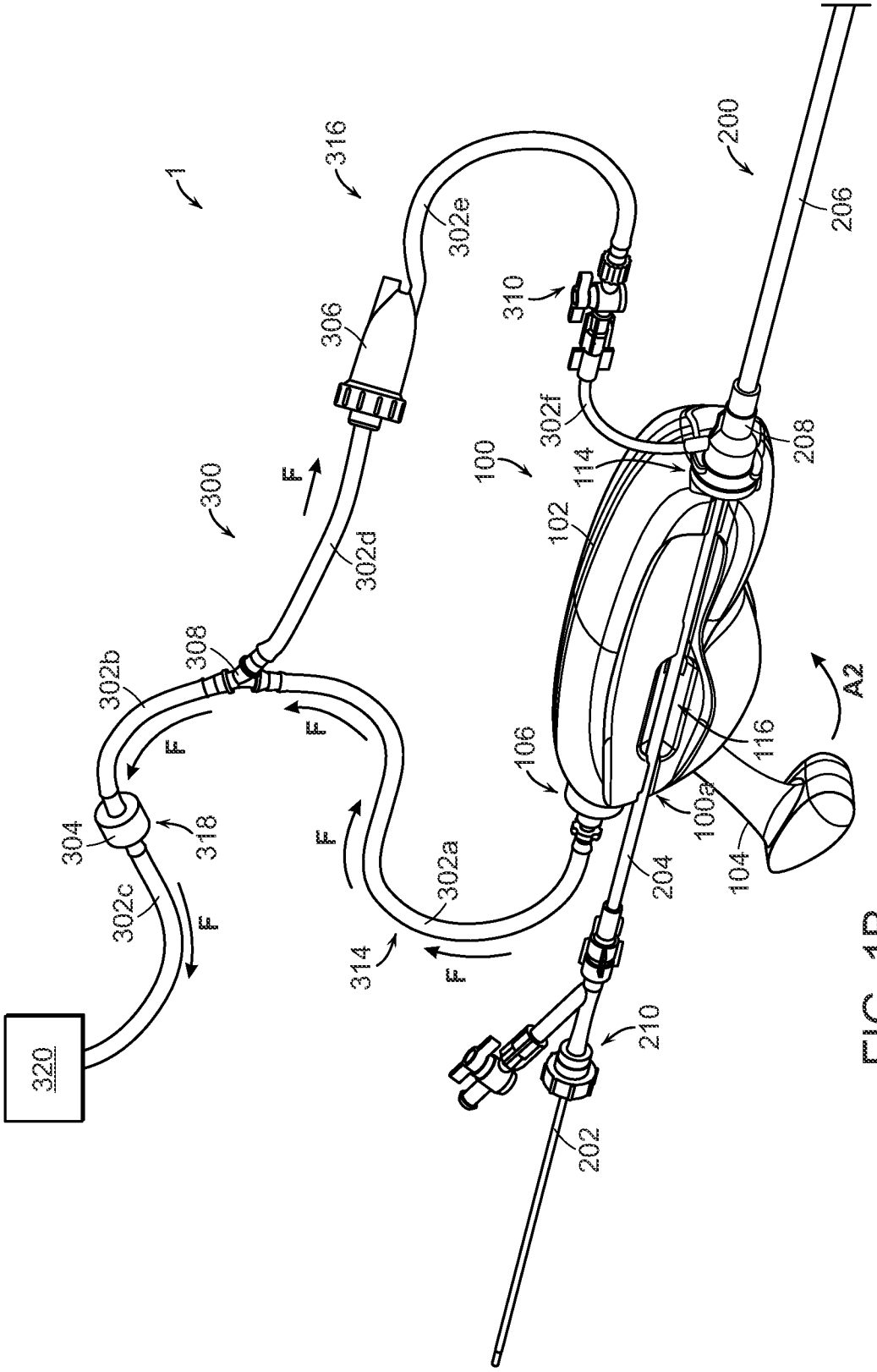

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FIG. 1B

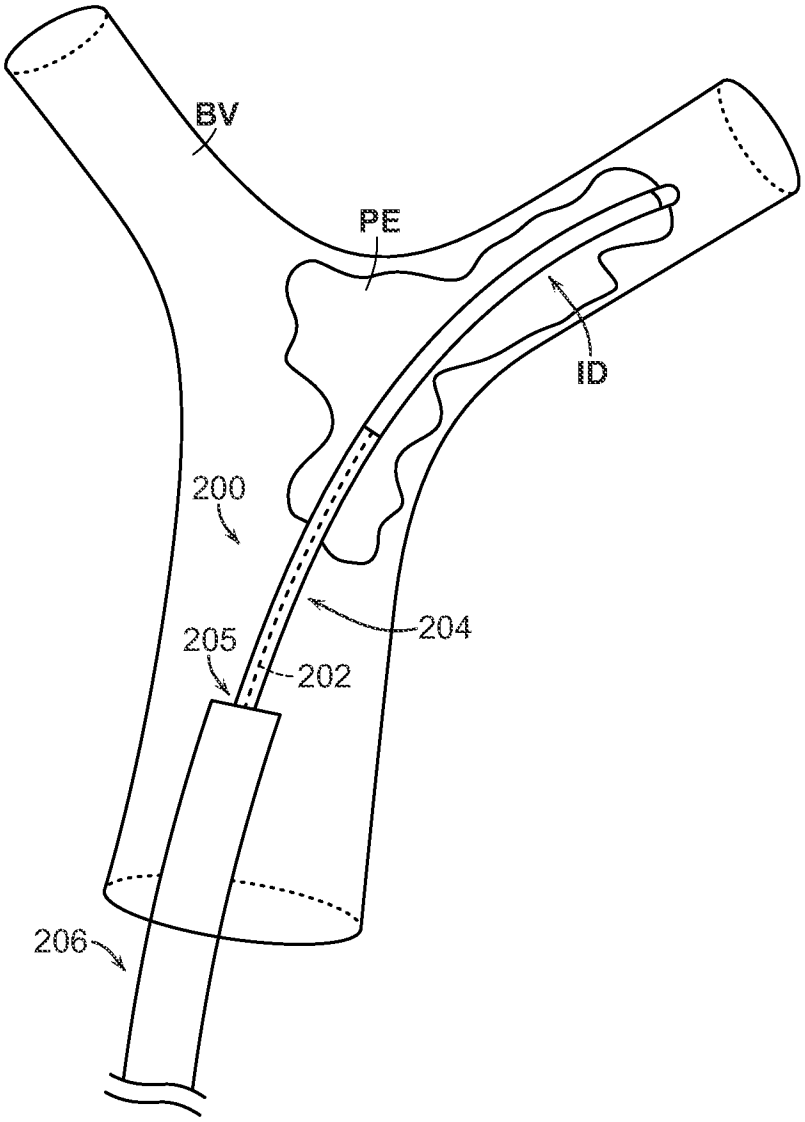


FIG. 2A

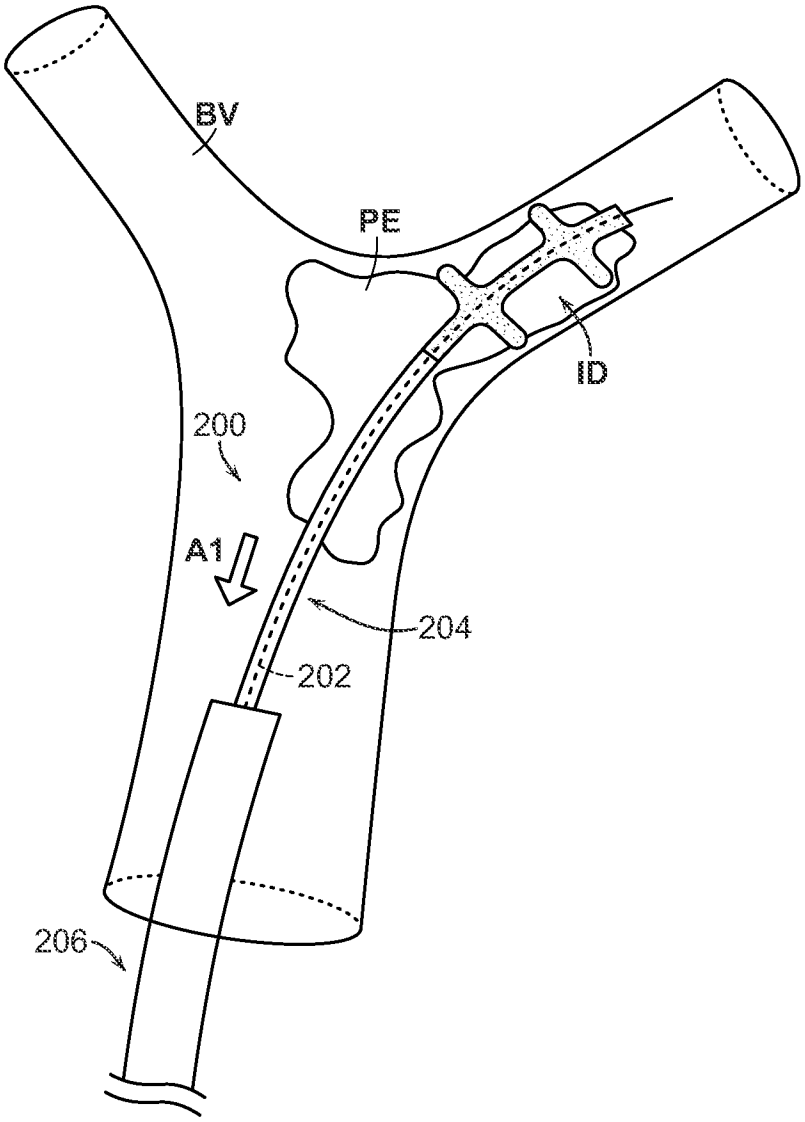


FIG. 2B

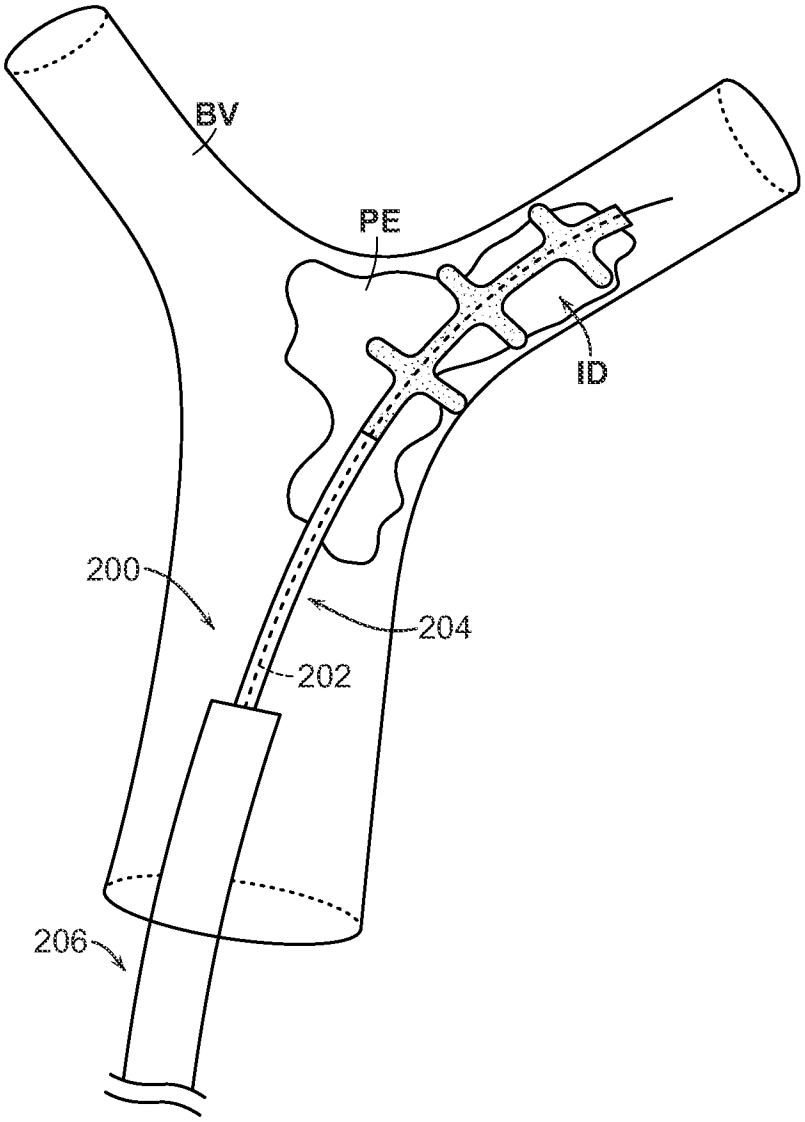


FIG. 2C

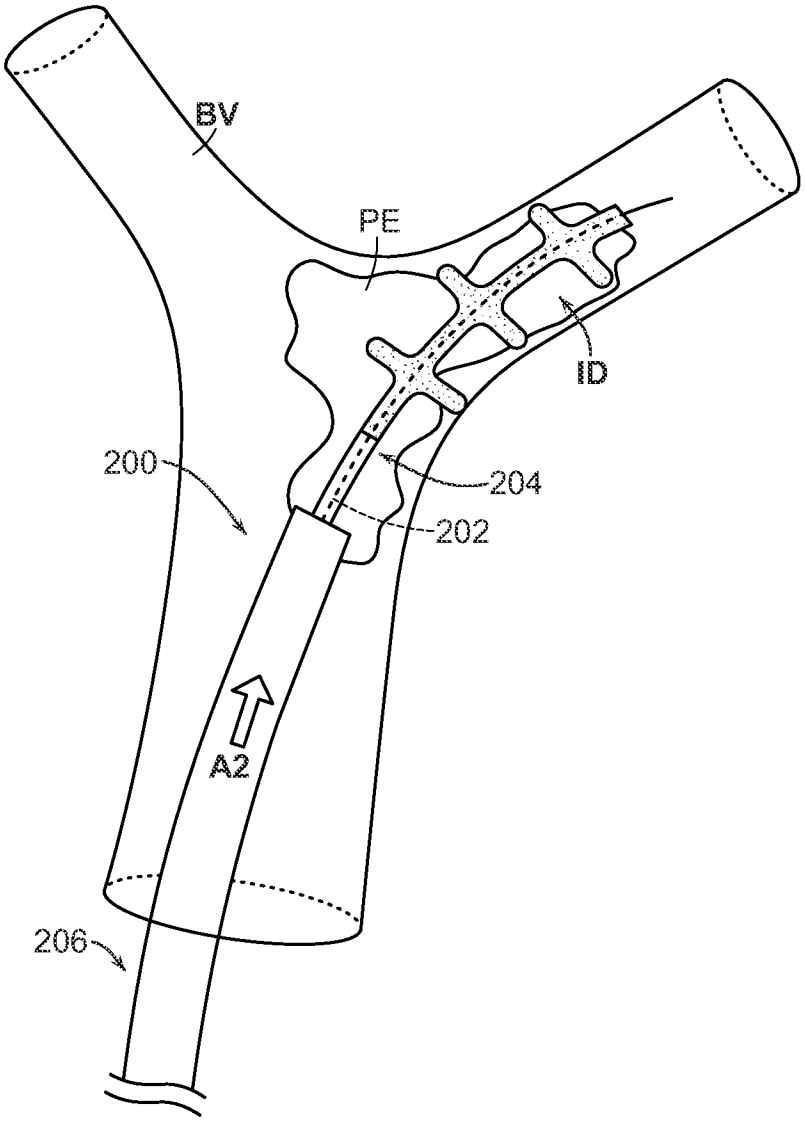


FIG. 2D

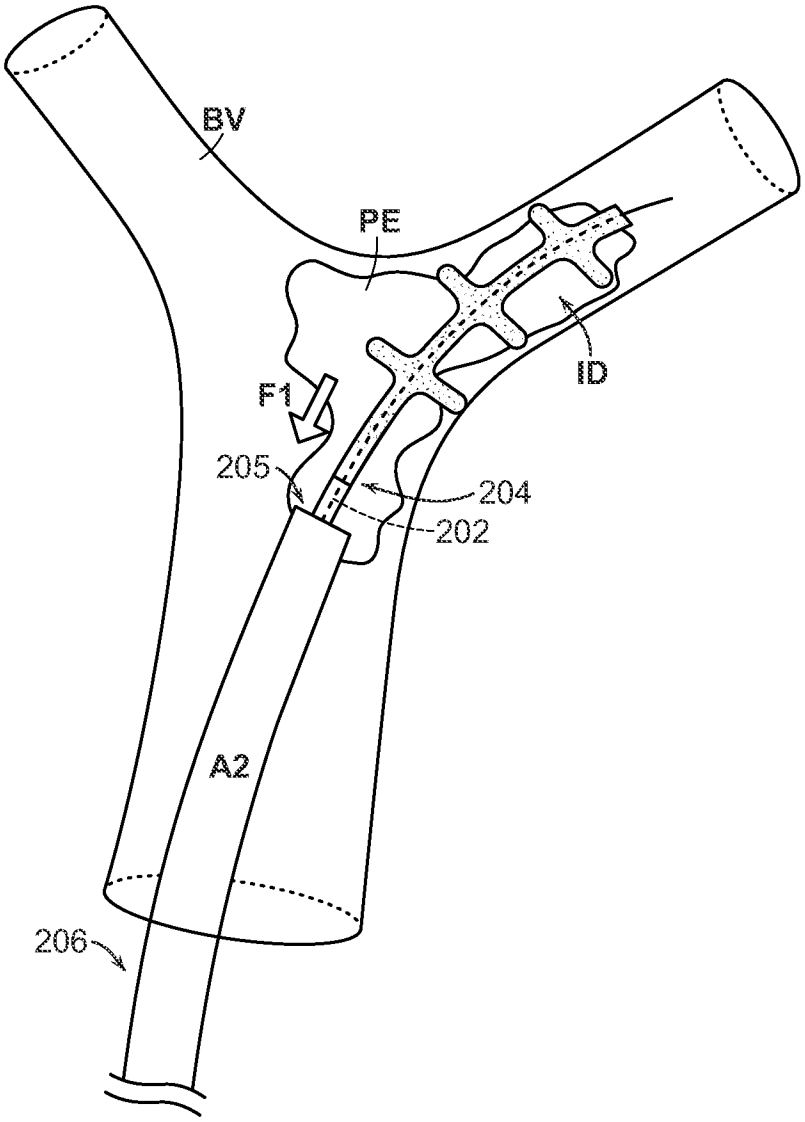


FIG. 2E

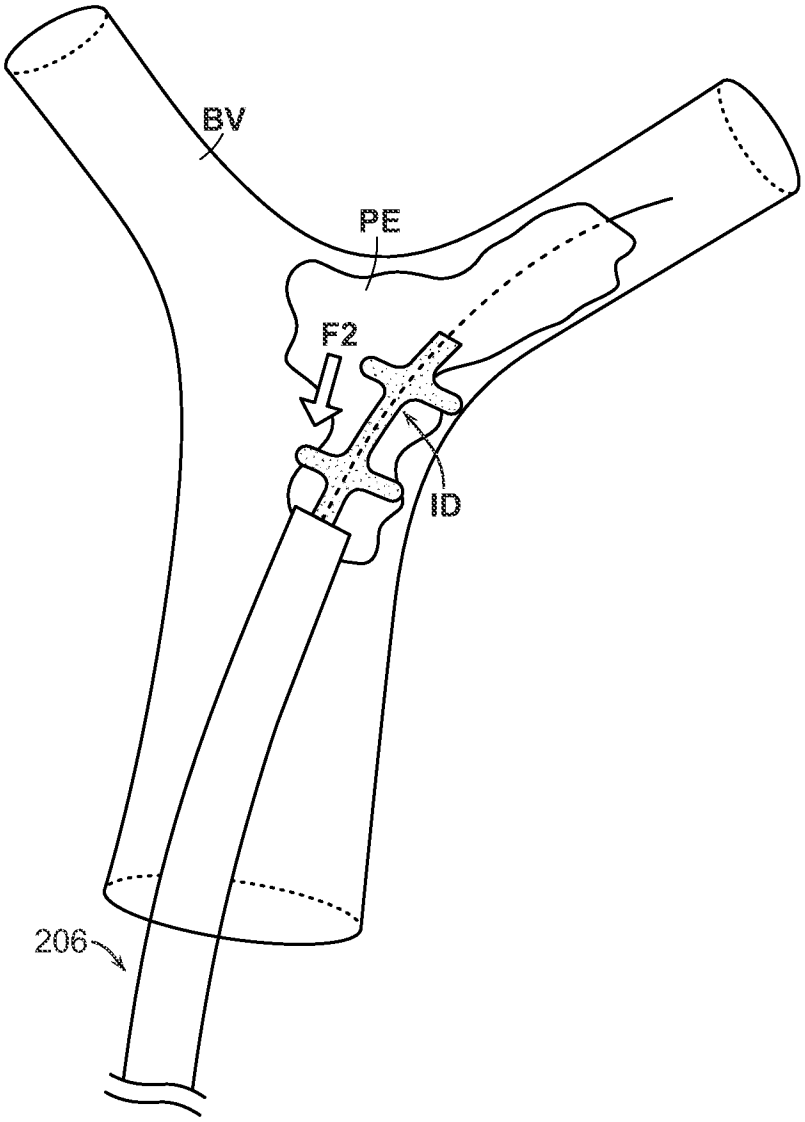


FIG. 2F

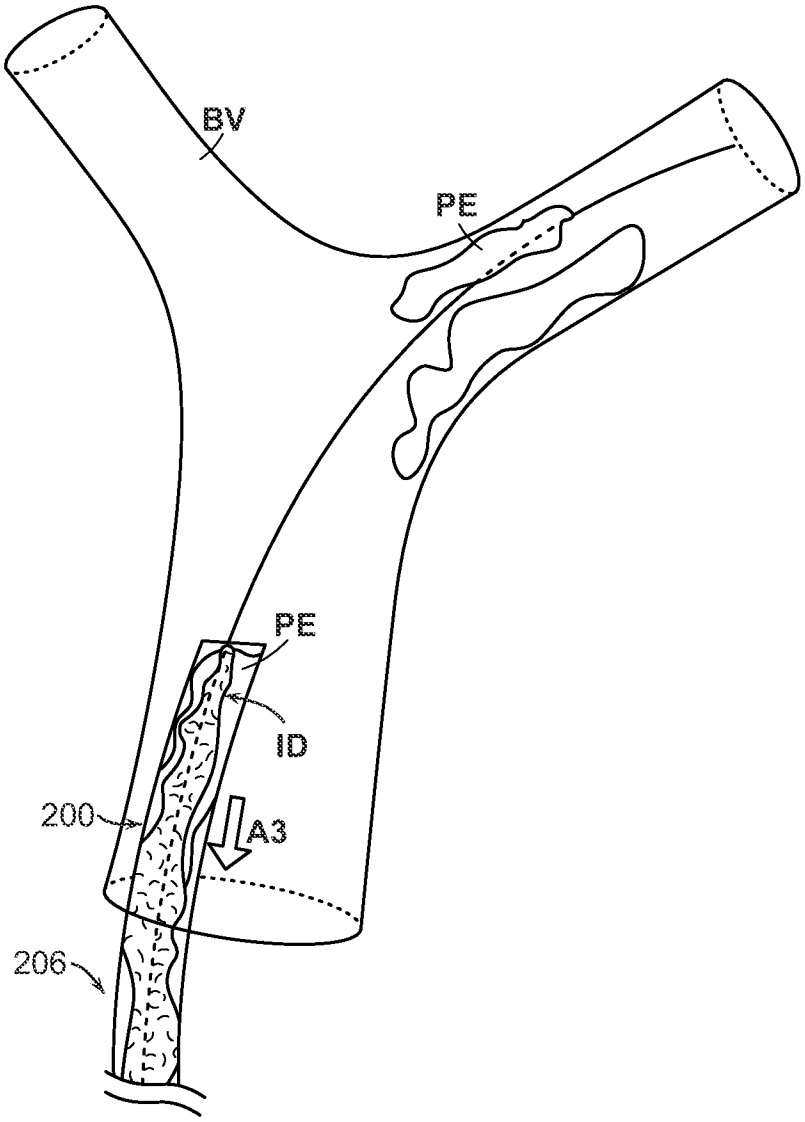


FIG. 2G

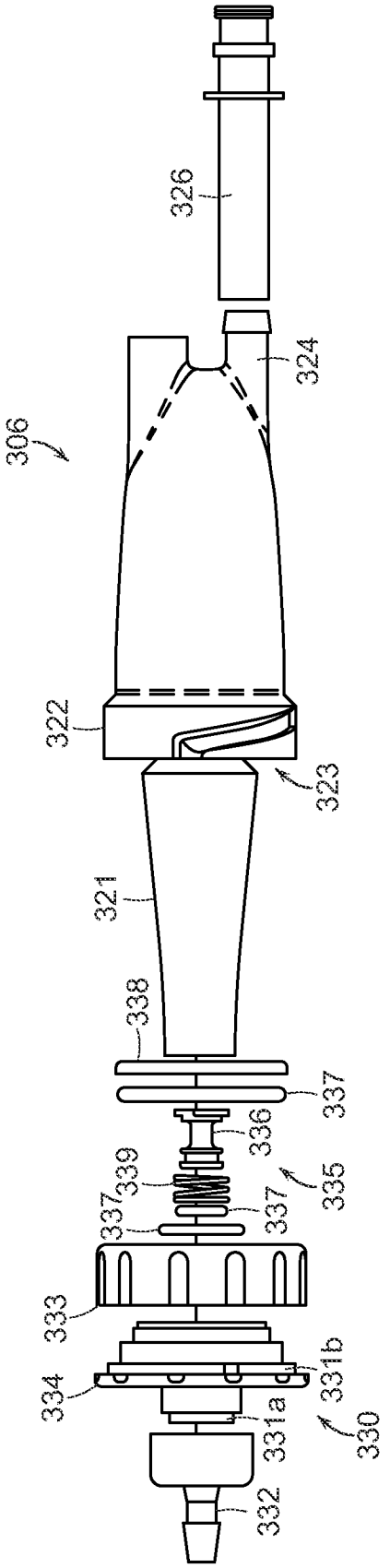

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FIG. 3A

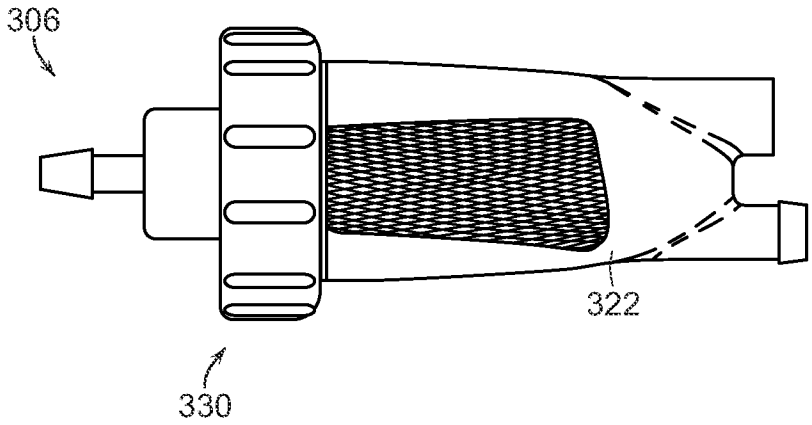


FIG. 3B

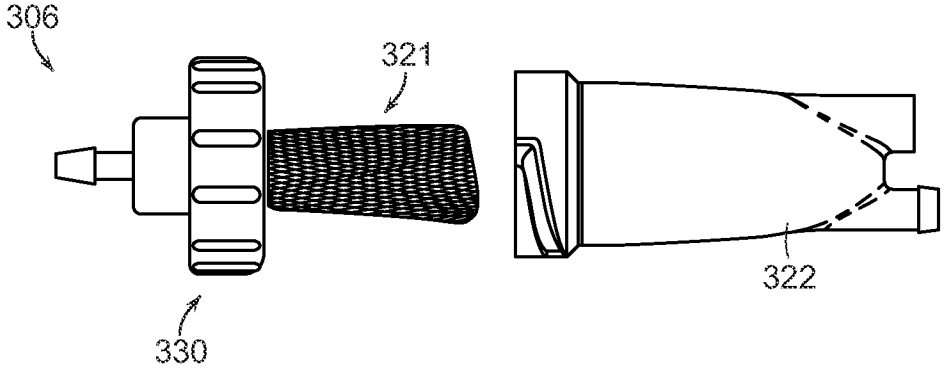


FIG. 3C

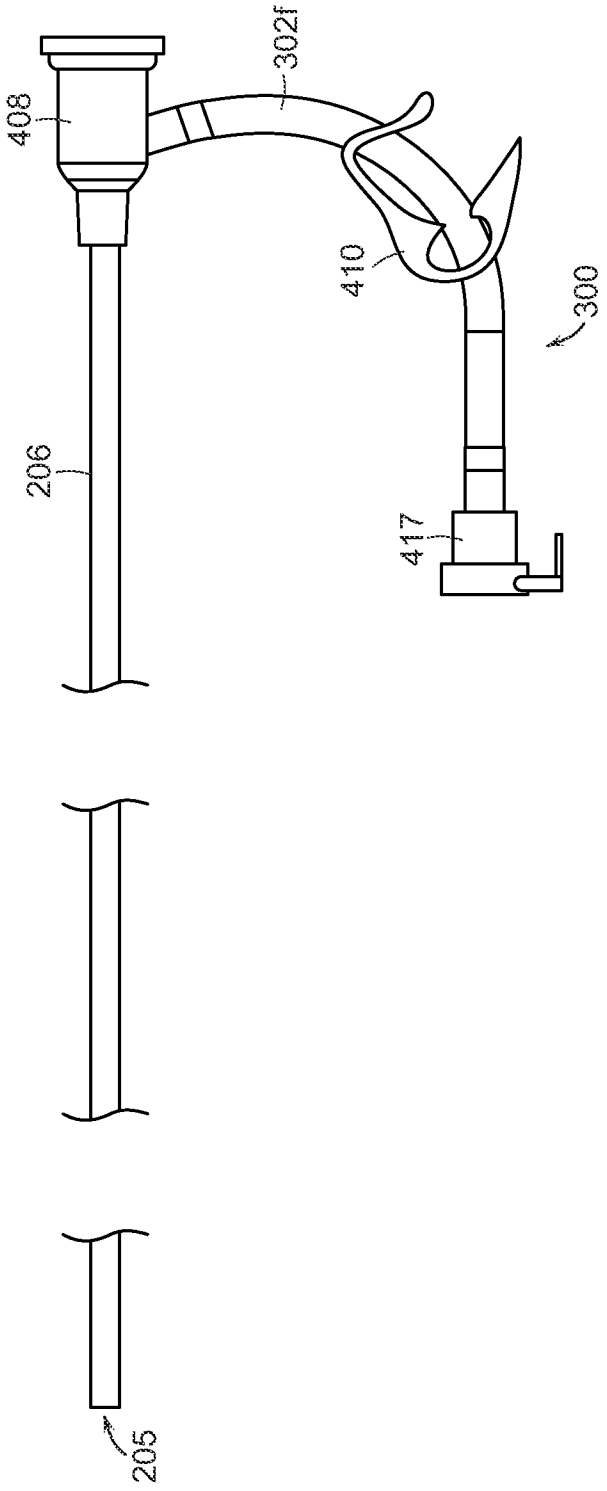


FIG. 4

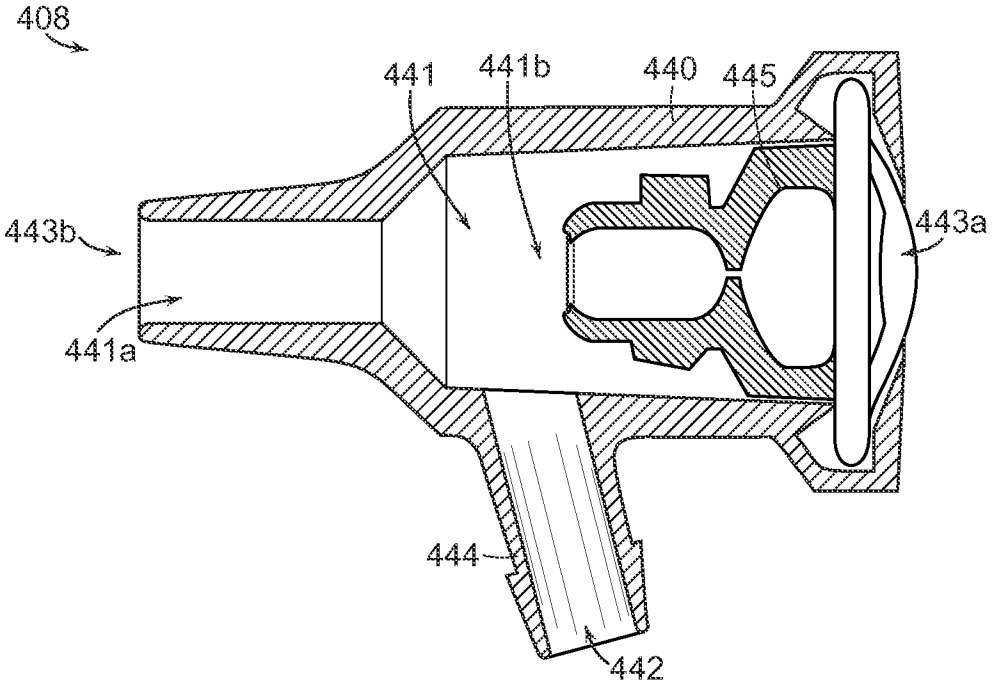

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FIG. 5

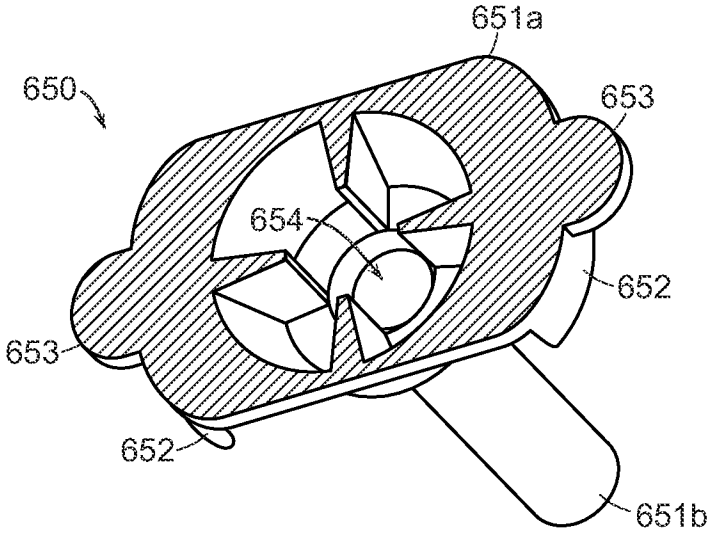

651a
650
653
654
652
653
652
651b

FIG. 6

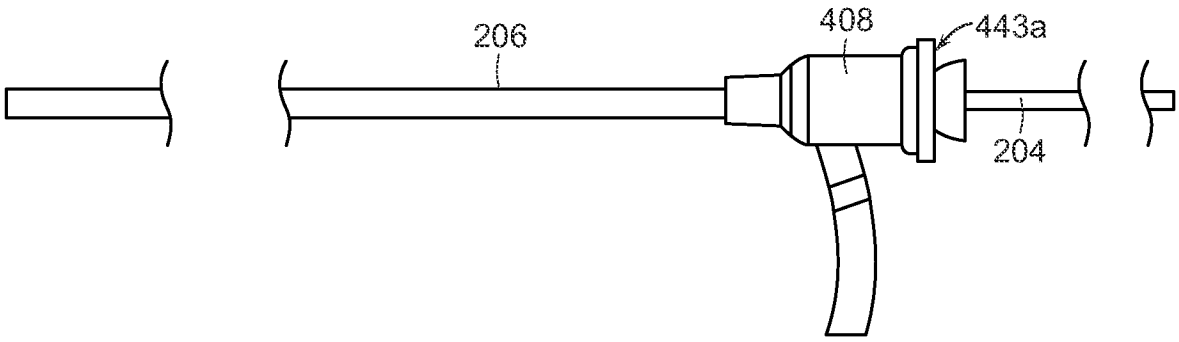

206
408
443a
204

FIG. 7A

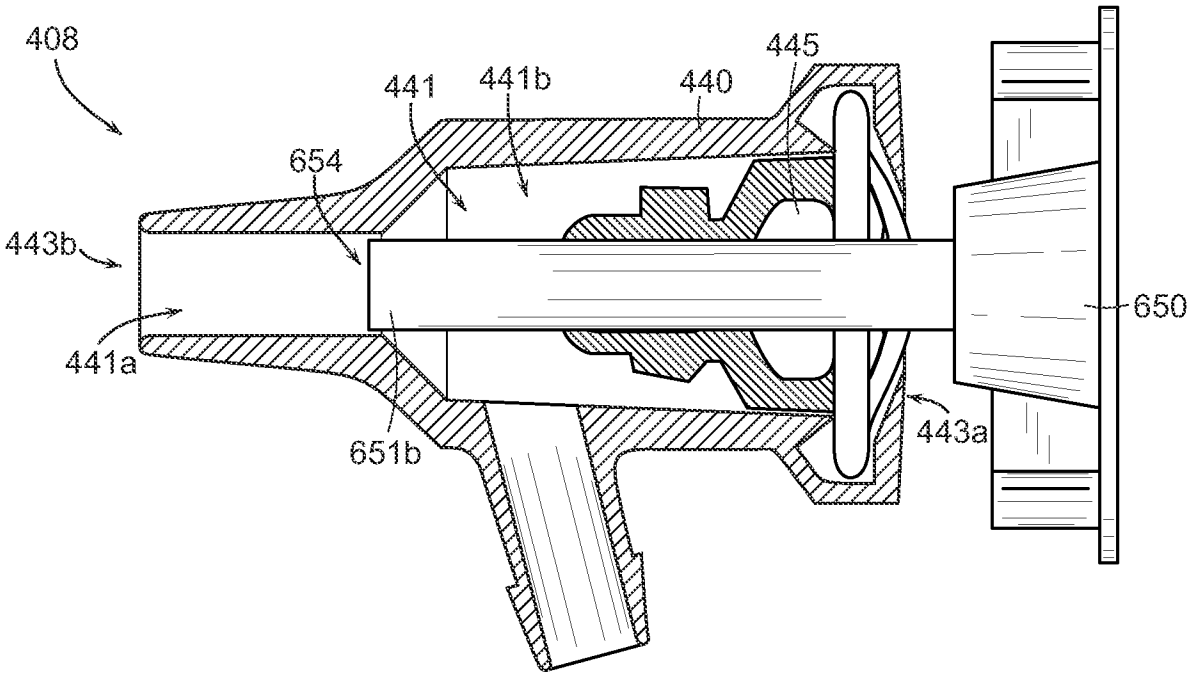

408
441
441b
440
445
654
443b
441a
651b
443a
650

FIG. 7B

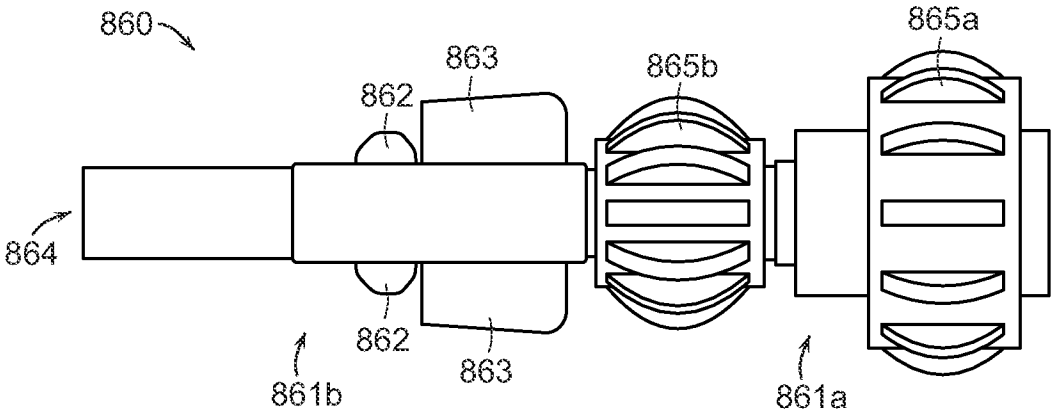


FIG. 8

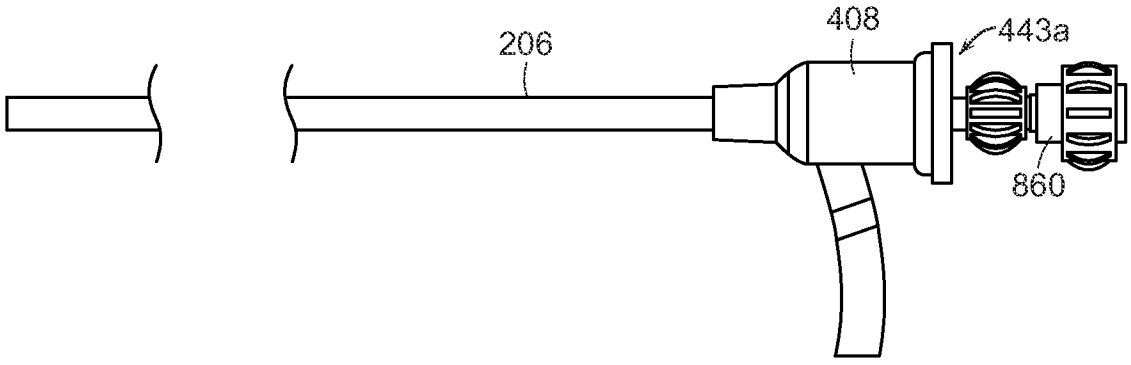


FIG. 9

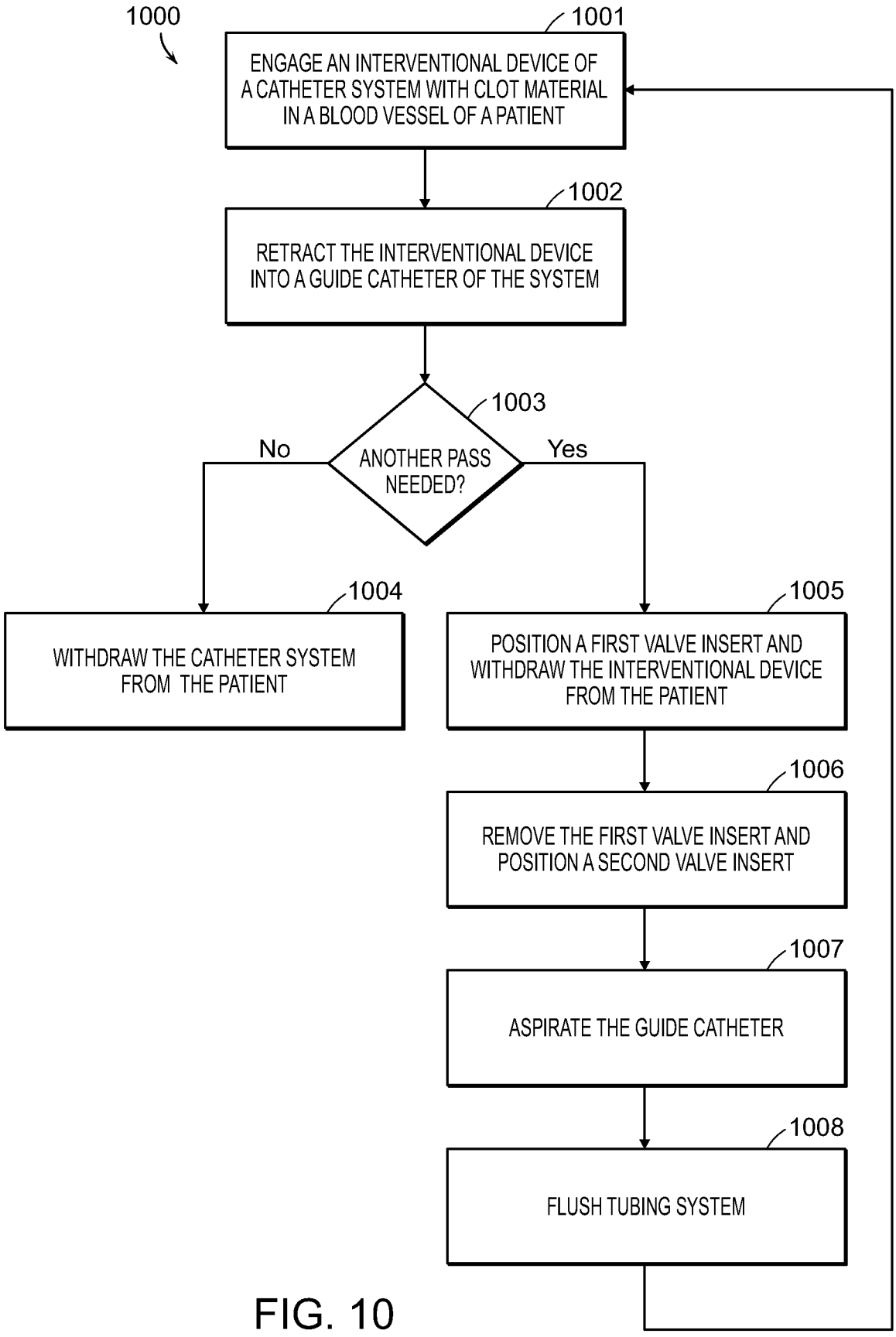

1000
1001
ENGAGE AN INTERVENTIONAL DEVICE OF A CATHETER SYSTEM WITH CLOT MATERIAL IN A BLOOD VESSEL OF A PATIENT
1002
RETRACT THE INTERVENTIONAL DEVICE INTO A GUIDE CATHETER OF THE SYSTEM
1003
ANOTHER PASS NEEDED?
No
Yes
1004
WITHDRAW THE CATHETER SYSTEM FROM THE PATIENT
1005
POSITION A FIRST VALVE INSERT AND WITHDRAW THE INTERVENTIONAL DEVICE FROM THE PATIENT
1006
REMOVE THE FIRST VALVE INSERT AND POSITION A SECOND VALVE INSERT
1007
ASPIRATE THE GUIDE CATHETER
1008
FLUSH TUBING SYSTEM

FIG. 10

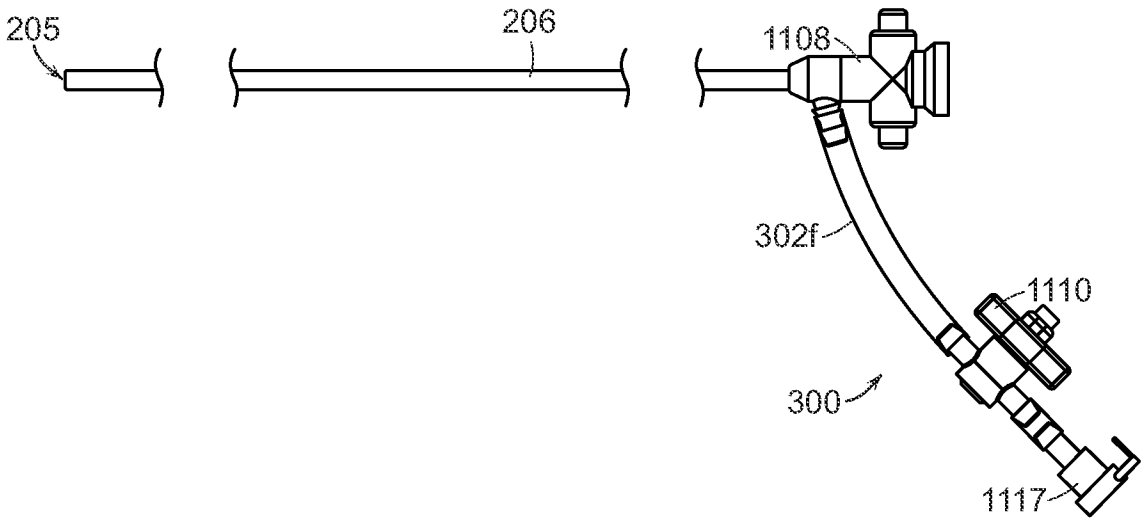


FIG. 11

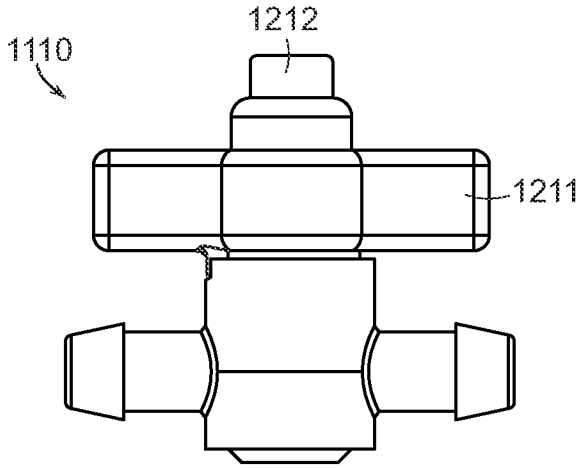


FIG. 12

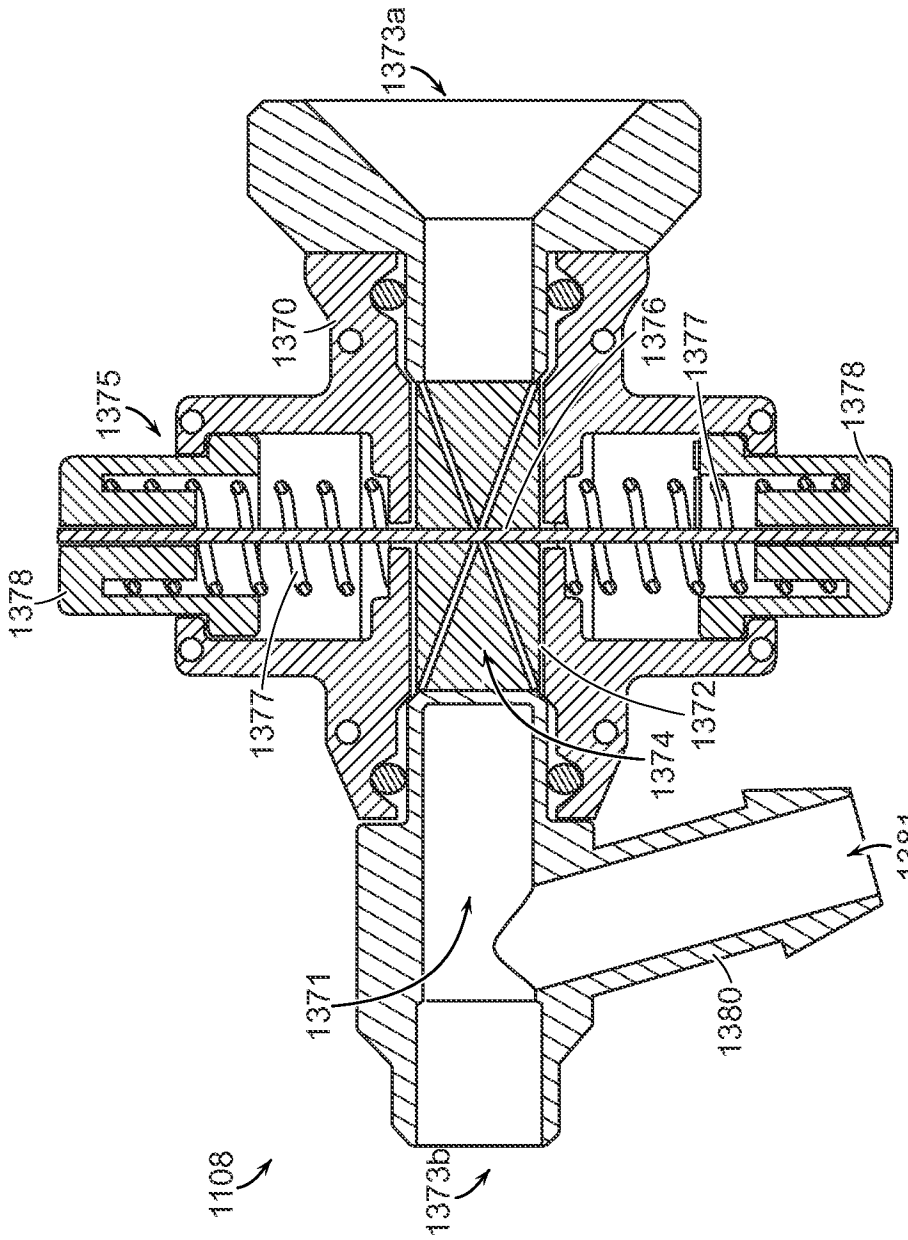

1373a
1370
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1375
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1378
1377
1374
1372
1381
1371
1380
1108
1373b

FIG. 13A

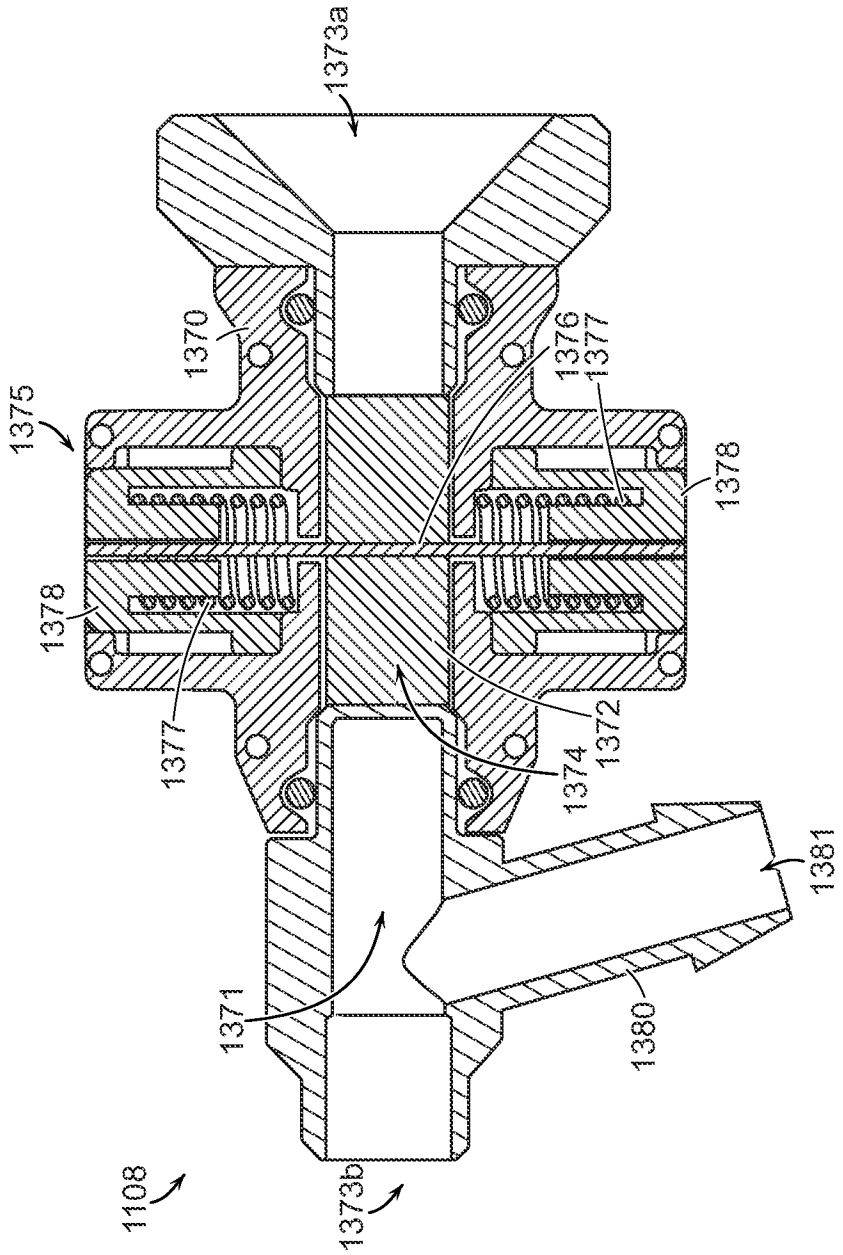

1373a
1370
1376
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1378
1377
1374
1372
1381
1371
1380
1108
1373b

FIG. 13B

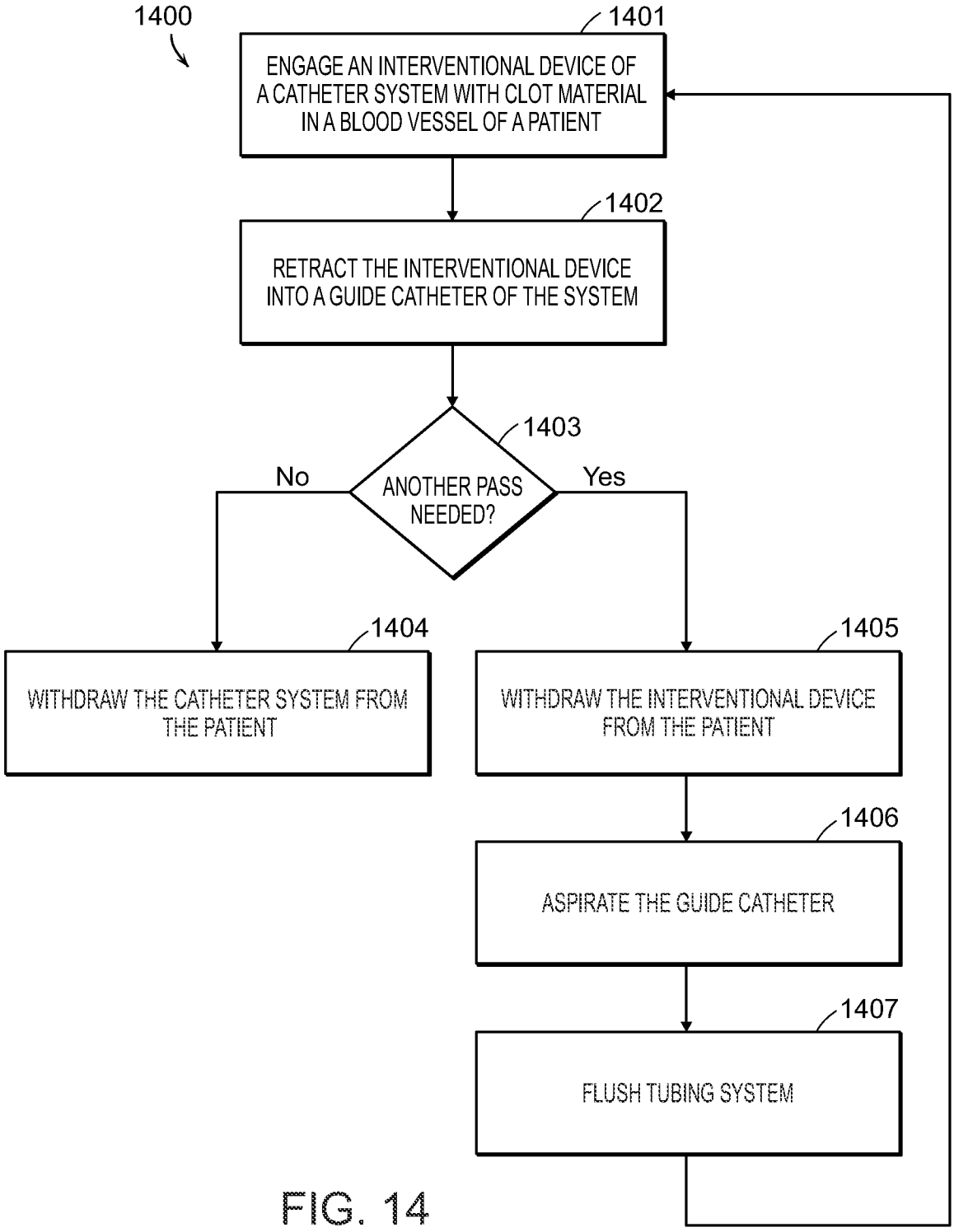

1400
1401
ENGAGE AN INTERVENTIONAL DEVICE OF A CATHETER SYSTEM WITH CLOT MATERIAL IN A BLOOD VESSEL OF A PATIENT
1402
RETRACT THE INTERVENTIONAL DEVICE INTO A GUIDE CATHETER OF THE SYSTEM
1403
ANOTHER PASS NEEDED?
No
Yes
1404
WITHDRAW THE CATHETER SYSTEM FROM THE PATIENT
1405
WITHDRAW THE INTERVENTIONAL DEVICE FROM THE PATIENT
1406
ASPIRATE THE GUIDE CATHETER
1407
FLUSH TUBING SYSTEM

FIG. 14

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Richard Quick et al.

Application No.: Not Yet Assigned	Confirmation No.: NA
Filed: Concurrently Herewith	Art Unit: NA
For: SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	Examiner: Not Yet Known

AUTHORIZATION FOR: EXTENSIONS OF TIME UNDER 37 C.F.R. § 1.136(a)(3) AND PAYMENT OF FEES UNDER 37 C.F.R. § 1.17

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

With respect to the above-identified application, the Commissioner is authorized to treat any concurrent or future reply requiring a petition for an extension of time under 37 C.F.R. § 1.136(a)(3) for its timely submission as incorporating a petition therefor for the appropriate length of time.

The Commissioner is also authorized to charge any extension of time fees or other fees that may be required under 37 C.F.R. § 1.17 for any paper filed concurrently herewith or in the future, or credit any overpayment, to Deposit Account No. 50-0665.

Dated: October 30, 2023

Respectfully submitted,

By /Matthew S. Williams/
Matthew S. Williams
Registration No.: 77,516

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UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**10/30/2023 02:07:41 PM ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	63111190	FILING DATE	-
CUSTOMER #	25096	FIRST NAMED INVENTOR	Richard Quick
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Matthew Williams

Documents

TOTAL DOCUMENTS: 8

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
ADS - 111552-8023US7.pdf	10	Application Data Sheet	1781 KB
Warning: The attached version of the AIA/14 form is not the current version and data may not fully load to USPTO systems.			
Track-One-Request-111552-8023US07.pdf	2	Track One Request	863 KB
POA_Transmittal-111552-8023US7.pdf	1	Power of Attorney	615 KB
US_POA-signed_2021-Inari.pdf	1	Power of Attorney	112 KB

2023-10-30 General Fee Authorization - 111552-8023US7.pdf	2	Authorization for Extension of Time all replies	145 KB
Track One CON Application - 111552-8023US7-APP.TEXT.docx	41	Application body structured text document	73 KB

Warning: At least one claim appears to not end with a period. Please review and revise if necessary.

Track One CON Application - 111552-8023US7 - uspto.pdf	41	Auxiliary PDF of Application	190 KB
Drawings-111552-8023US7-uspto.pdf	20	Drawings-only black and white line drawings	266 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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US_POA-signed_2021-Inari.pdf	70488FDF7CD87E0C6D59EAD79E452D13BBDE1738E734AF3BA91996429DCC236E983EF67ABADEC655C11ABE933E56C59A42CE9D80ADB80973310D031403859AAA
2023-10-30 General Fee	71D1B958AA3213066468065FC122692D7123835BB03647633CF

Authorization - 111552-8023US7.pdf	445BDD412F663EE88C819BEE232132EBF9714D28679B90F4BAF946D50777C18C83E02E3E4A050
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Drawings-111552-8023US7-uspto.pdf	8D26B2296B34F341AAD0C0F667E040425C31BEC53638895B68C6FA9C10A9B2C913C4B5CF03228A7CD7B5BC554F54F9BB5DB10E29B2077A9F69BAFCCF25803F0D

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of U.S. Patent Application No. 17/865,307, filed on July 14, 2022, and titled "SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS," which is a continuation of U.S. Patent Application No. 17/498,642, filed on October 11, 2021, and titled "SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS," which is a continuation of U.S. Patent Application No. 16/258,344, filed on January 25, 2019, and titled "SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS," which is now issued as U.S. Patent No. 11,154,314, which claims the benefit of U.S. Provisional Patent Application No. 62/622,691, filed on January 26, 2018, and titled "SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS," which are incorporated herein by reference in their entireties.

TECHNICAL FIELD

[0002] The present technology relates generally to devices and methods for the intravascular treatment of emboli and/or thrombi within a blood vessel of a human patient. In particular, some embodiments of the present technology relate to systems for repeatedly deploying an interventional device at or proximate to a pulmonary embolism within a patient.

BACKGROUND

[0003] Thromboembolic events are characterized by an occlusion of a blood vessel. Thromboembolic disorders, such as stroke, pulmonary embolism, heart attack, peripheral thrombosis, atherosclerosis, and the like, affect many people. These disorders are a major cause of morbidity and mortality.

[0004] When an artery is occluded by a clot, tissue ischemia develops. The ischemia will progress to tissue infarction if the occlusion persists. Infarction does not develop or is greatly limited

if the flow of blood is reestablished rapidly. Failure to reestablish blood flow can lead to the loss of limb, angina pectoris, myocardial infarction, stroke, or even death.

[0005] In the venous circulation, occlusive material can also cause serious harm. Blood clots can develop in the large veins of the legs and pelvis, a common condition known as deep venous thrombosis (DVT). DVT arises most commonly when there is a propensity for stagnated blood (e.g., long distance air travel, immobility, etc.) and clotting (e.g., cancer, recent surgery, such as orthopedic surgery, etc.). DVT causes harm by: (1) obstructing drainage of venous blood from the legs leading to swelling, ulcers, pain, and infection, and (2) serving as a reservoir for blood clots to travel to other parts of the body including the heart, lungs, brain (stroke), abdominal organs, and/or extremities.

[0006] In the pulmonary circulation, the undesirable material can cause harm by obstructing pulmonary arteries—a condition known as pulmonary embolism. If the obstruction is upstream, in the main or large branch pulmonary arteries, it can severely compromise total blood flow within the lungs, and therefore the entire body, and result in low blood pressure and shock. If the obstruction is downstream, in large to medium pulmonary artery branches, it can prevent a significant portion of the lung from participating in the exchange of gases to the blood resulting in low blood oxygen and buildup of blood carbon dioxide.

[0007] There are many existing techniques to reestablish blood flow through an occluded vessel. One common surgical technique, an embolectomy, involves incising a blood vessel and introducing a balloon-tipped device (such as the Fogarty catheter) to the location of the occlusion. The balloon is then inflated at a point beyond the clot and used to translate the obstructing material back to the point of incision. The obstructing material is then removed by the surgeon. Although such surgical techniques have been useful, exposing a patient to surgery may be traumatic and best avoided when possible. Additionally, the use of a Fogarty catheter may be problematic due to the possible risk of damaging the interior lining of the vessel as the catheter is being withdrawn.

[0008] Percutaneous methods are also utilized for reestablishing blood flow. A common percutaneous technique is referred to as balloon angioplasty where a balloon-tipped catheter is introduced to a blood vessel (e.g., typically through an introducing catheter). The balloon-tipped catheter is then advanced to the point of the occlusion and inflated to dilate the stenosis. Balloon angioplasty is appropriate for treating vessel stenosis, but it is generally not effective for treating acute

thromboembolisms as none of the occlusive material is removed and the vessel will re-stenos after dilation. Another percutaneous technique involves placing a catheter near the clot and infusing streptokinase, urokinase, or other thrombolytic agents to dissolve the clot. Unfortunately, thrombolysis typically takes hours to days to be successful. Additionally, thrombolytic agents can cause hemorrhage and in many patients the agents cannot be used at all.

[0009] Various devices exist for performing a thrombectomy or removing other foreign material. However, such devices have been found to have structures which are either highly complex, cause trauma to the treatment vessel, or lack sufficient retaining structure and thus cannot be appropriately fixed against the vessel to perform adequately. Furthermore, many of the devices have highly complex structures that lead to manufacturing and quality control difficulties as well as delivery issues when passing through tortuous or small diameter catheters. Less complex devices may allow the user to pull through the clot, particularly with inexperienced users, and such devices may not completely capture and/or collect all of the clot material.

[0010] Moreover, with many devices, it is difficult or not possible to make repeated attempts at removing clot material (e.g., to make multiple passes with a device). In particular, if a first pass with a device does not completely capture and/or collect all of the clot material, the device and an accompanying catheter system must be removed from the patient, cleaned, and subsequently reinserted into the patient in order to make a second pass and remove additional material. This can be time consuming and traumatic for the patient.

[0011] Thus, there exists a need for an improved embolic extraction device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Many aspects of the present technology can be better understood with reference to the following drawings. The components in the drawings are not necessarily to scale. Instead, emphasis is placed on illustrating clearly the principles of the present disclosure.

[0013] Figures 1A and 1B are perspective views of a retraction and aspiration system shown in a first state and a second state, respectively, in accordance with embodiments of the present technology.

[0014] Figures 2A–2G are schematic illustrations of a distal portion of the retraction and aspiration system during a clot removal procedure in accordance with embodiments of the present technology.

[0015] Figures 3A–3C are a fully-exploded view, an isometric view, and a partially-exploded view of a clot reservoir of the retraction and aspiration system in accordance with embodiments of the present technology.

[0016] Figure 4 is a side view of an attachment member and a fluid control unit of the retraction and aspiration system in accordance with embodiments of the present technology.

[0017] Figure 5 is a side cross-sectional view of the attachment member shown in Figure 4.

[0018] Figure 6 is an isometric view of a first valve insert in accordance with embodiments of the present technology.

[0019] Figures 7A and 7B are a side view and a side cross-sectional view, respectively, of the first valve insert shown in Figure 6 inserted into the attachment member shown in Figure 4 in accordance with embodiments of the present technology.

[0020] Figure 8 is a side view of a second valve insert in accordance with embodiments of the present technology.

[0021] Figure 9 is a side view of the second valve insert shown in Figure 8 inserted into the attachment member shown in Figure 4 in accordance with embodiments of the present technology.

[0022] Figure 10 is a flow diagram of a process or method for operating the retraction and aspiration system in accordance with embodiments of the present technology.

[0023] Figure 11 is a side view of an attachment member and a fluid control unit of the retraction and aspiration system in accordance with embodiments of the present technology.

[0024] Figure 12 is a side view of the fluid control unit shown in Figure 11 in accordance with embodiments of the present technology.

[0025] Figures 13A and 13B are side cross-sectional views of the attachment member shown in Figure 11 in a first configuration and a second configuration, respectively, in accordance with embodiments of the present technology.

[0026] Figure 14 is a flow diagram of a process or method for operating the retraction and aspiration system in accordance with embodiments of the present technology.

DETAILED DESCRIPTION

[0027] The present technology is generally directed to systems and associated devices and methods for engaging and removing clot material from a blood vessel of a human patient. In some embodiments, an interventional device can be advanced through a guide catheter and deployed within clot material in a blood vessel. The interventional device can subsequently be withdrawn from the patient through the guide catheter to remove clot material captured by the interventional device. In some embodiments of the present technology, the interventional device can be repeatedly deployed in/withdrawn from the blood vessel to capture a desired amount of the clot material—without requiring that the guide catheter be fully withdrawn from the patient after each "pass" (e.g., each repeated deployment/withdrawal of the interventional device). That is, the guide catheter may be inserted only a single time during an intravascular procedure including multiple passes to remove clot material from the patient.

[0028] Although many of the embodiments are described below with respect to devices, systems, and methods for treating a pulmonary embolism, other applications and other embodiments in addition to those described herein are within the scope of the technology (e.g., intravascular procedures other than the treatment of emboli, intravascular procedures for treating cerebral embolism, etc.). Additionally, several other embodiments of the technology can have different configurations, states, components, or procedures than those described herein. Moreover, it will be appreciated that specific elements, substructures, advantages, uses, and/or other features of the embodiments described with reference to Figures 1A–14 can be suitably interchanged, substituted or otherwise configured with one another in accordance with additional embodiments of the present technology. Furthermore, suitable elements of the embodiments described with reference to Figures 1A–14 can be used as standalone and/or self-contained devices. A person of ordinary skill in the art, therefore, will accordingly understand that the technology can have other embodiments with additional elements, or the technology can have other embodiments without several of the features shown and described below with reference to Figures 1A–14.

[0029] With regard to the terms "distal" and "proximal" within this description, unless otherwise specified, the terms can reference a relative position of the portions of a retraction and aspiration apparatus and/or an associated catheter system with reference to an operator and/or a location in the vasculature. Also, as used herein, the designations "rearward," "forward," "upward," "downward," etc. are not meant to limit the referenced component to use in a specific orientation. It will be appreciated that such designations refer to the orientation of the referenced component as illustrated in the Figures; the retraction and aspiration system of the present technology can be used in any orientation suitable to the user.

I. Selected Embodiments of Retraction/Aspiration Systems and Methods of Use

[0030] Figures 1A and 1B are perspective views of a proximal portion of a clot retrieval system 1 configured in accordance with embodiments of the present technology, shown in a first state and a second state, respectively. Referring to Figures 1A and 1B together, the clot retrieval system 1 includes a retraction and aspiration device 100 ("RA device 100"), a catheter system 200, and a tubing system 300. In some embodiments, the RA device 100 is coupleable to the catheter system 200 and operable to simultaneously (i) retract a portion of the catheter system 200 and (ii) aspirate through the catheter system 200. In certain embodiments, the RA device 100 and catheter system 200 can both be fluidly coupled to the tubing system 300 to enable material (e.g., blood and clot material) aspirated from the catheter system 200 to flow into the tubing system 300. In particular, the RA device 100, the catheter system 200, and the tubing system 300 can be the same as or similar to one or more of the retraction and aspiration devices, catheter systems, and tubing systems disclosed in U.S. Patent 9,526,864, filed June 9, 2015, and titled "RETRACTION AND ASPIRATION DEVICE FOR TREATING EMBOLISM AND ASSOCIATED METHODS," which is incorporated herein by reference in its entirety.

[0031] Figures 2A–2G are schematic illustrations of a distal portion of the clot retrieval system 1 during a clot removal procedure in accordance with embodiments of the present technology. In particular, Figures 2A–2G illustrate a distal portion of the catheter system 200 that is positioned proximate to an embolism or clot material within a blood vessel (e.g., a pulmonary blood vessel). Accordingly, operation of the catheter system 200 is described with references to Figures 2A–2G.

[0032] Figure 2A is a side view of a distal portion of the catheter system 200 positioned adjacent an embolism or clot material PE within a blood vessel BV (e.g., a pulmonary blood vessel). As shown in Figure 2A, the catheter system 200 can include an outer guide catheter 206 defining a lumen 205, a delivery sheath 204 slidably received within the lumen of the guide catheter 206, and an elongated pull (and/or push) member 202 slidably received within a lumen of the delivery sheath 204. The guide catheter 206 and the delivery sheath 204 individually comprise an elongated shaft having a lumen and, in some embodiments, the push member 202 can also define a lumen (e.g., configured to receive a guidewire therethrough). In a particular embodiment, the catheter system 200 does not include a guide catheter 206 and/or a delivery sheath 204. As shown in Figure 2A, a distal portion of the push member 202 can be integral with or coupled to an interventional device ID, such as a clot removal and/or clot treatment device, that is housed within the delivery sheath 204. Accordingly, axial movement of the pull member 202 causes axial movement of the interventional device ID.

[0033] As further shown in Figure 2A, the delivery sheath 204 and the interventional device ID can be positioned at least partially within the clot material PE. Access to the pulmonary vessels can be achieved through the patient's vasculature, for example, via the femoral vein. The catheter system 200 can include an introducer 210 (Figure 1A and 1B; e.g., a Y-connector with a hemostasis valve) that can be partially inserted into the femoral vein. A guidewire (not shown) can be guided into the femoral vein through the introducer 210 and navigated through the right atrium, the tricuspid valve, the right ventricle, the pulmonary valve and into the main pulmonary artery. Depending on the location of the embolism, the guidewire can be guided to one or more of the branches of the right pulmonary artery and/or the left pulmonary artery. It will be understood, however, that other access locations into the venous circulatory system of a patient are possible and consistent with the present technology. For example, the user can gain access through the jugular vein, the subclavian vein, the brachial vein or any other vein that connects or eventually leads to the superior vena cava. Use of other vessels that are closer to the right atrium of the patient's heart can also be advantageous as it reduces the length of the instruments needed to reach the pulmonary embolism.

[0034] As shown in Figures 2B and 2C, the delivery sheath 204 can be withdrawn proximally (e.g., as indicated by arrow A1 in Figure 2B) to allow the interventional device ID to expand within

the clot material PE, thereby grabbing the clot material PE that is nearby. Although Figure 2B shows the interventional device ID positioned at the treatment site such that a distal terminus of the interventional device ID is distal of a distal terminus of the clot material PE, in some procedures the interventional device ID may be positioned such that the distal terminus of the interventional device ID is proximal of the distal terminus of the clot material PE. As shown in Figure 2D, in some embodiments the guide catheter 206 can optionally be advanced distally (e.g., as indicated by arrow A2) until the guide catheter 206 is positioned proximate to a proximal portion of the clot material PE.

[0035] Referring again to Figures 1A and 1B, the RA device 100 includes (i) a housing 102, (ii) an actuation mechanism that includes a lever 104 coupled to and extending from the housing 102, and (iii) a pressure source (obscured in Figures 1A and 1B; e.g., a syringe) positioned within the housing 102, coupled to the actuation mechanism, and configured to generate negative and/or positive pressure. The lever 104 is shown in a first position and second position in Figures 1A and 1B, respectively. The housing 102 can have a proximal portion 100a, a distal portion 100b, and an opening 114 at the distal portion 100b configured to receive a portion of the catheter system 200 and to mechanically couple the catheter system 200 to the housing 102. For example, a proximal portion of the guide catheter 206 can include an attachment/valve member 208 that is configured to be detachably coupled to the RA device 100 (e.g., via a snap-fit arrangement) to secure the catheter 200 to the RA device 100. As described in greater detail below, the attachment/valve member 208 can fluidly couple an aspiration lumen of the catheter system 200 (e.g., the lumen 205 of the guide catheter 206) to the tubing system 300 of the clot retrieval system 1.

[0036] The housing 102 can further include a channel 116 that extends proximally from the opening 114 along approximately the length of the housing 102, as shown in Figures 1A and 1B. The channel 116 can have a height at least as great as the outer diameter of the delivery sheath 204 of the catheter system 200 (and/or another component of the catheter system 200) such that the delivery sheath 204 can fit sideways through the channel 116. In some embodiments, the pull member 202 and the interventional device ID (Figures 2A–2G) can be pre-loaded into the delivery sheath 204, and the delivery sheath 204 can be fed distally through the channel 116 (e.g., either via the proximal end of the channel 116 or first pushed sideways through a portion of the channel 116) and into the guide catheter 206. In other embodiments, the interventional device ID and the delivery sheath 204 are fed

into the guide catheter 206 and the interventional device ID is deployed prior to coupling the guide catheter 206 to the RA device 100.

[0037] When the RA device 100 is coupled to the catheter system 200 (e.g., when the attachment/valve member 208 of the catheter system 200 is positioned within the opening 114 in the housing 102 of the RA device 100), movement of the lever 104 functions to retract a portion of the catheter system 200 positioned in the channel 116 (e.g., the delivery sheath 204 and/or the push member 202). For example, the RA device 100 can include a locking portion that grips the delivery sheath 204 (and, in some embodiments, indirectly the push member 202) to pull the delivery sheath 204 proximally as the lever 104 is moved from the first to the second position.

[0038] The tubing system 300 of the clot retrieval system 1 fluidly couples the pressure source of the RA device 100 to the aspiration lumen of the catheter system 200. When the RA device 100 is coupled to the catheter system 200, movement of the lever 104 functions to simultaneously generate negative pressure in the pressure source and to retract a portion of the catheter system 200, as described above. The tubing system 300 has a first portion 314 coupled to the pressure source, a second portion 316 coupled to the guide catheter 206, and a drainage portion 318 coupled to a reservoir 320 (e.g., a vinyl bag). The first portion 314, second portion 316, and/or drainage portion 318 can include one or more tubing sections 302 (labeled individually as tubing sections 302a–302f) and/or fluid control unit, such as one or more control valves. In certain embodiments, one or more of the tubing sections 302 can have a relatively large diameter (e.g., greater than about 0.1 inch, greater than about 0.210 inch, etc.) to help inhibit clogging of clot material within the tubing system 300.

[0039] More specifically, the first portion 314 can include the tubing section 302a. The drainage portion 318 can include (i) the tubing section 302b, (ii) a first fluid control unit (e.g., a valve) 304, and (iii) the tubing section 302c. The second portion 316 can include (i) the tubing section 302d, (ii) a clot reservoir 306, (iii) the tubing section 302e, (iv) a second fluid control unit 310, and (v) the tubing section 302f. In some embodiments, the first fluid control unit 304 can be a one-way valve (e.g., a check valve) that only allows fluid flow from the first portion 314 and/or second portion 316 to the drainage portion 318 (and not vice-versa). In certain embodiments, as described in detail with reference to Figures 3A–3C, the clot reservoir 306 can also include a one-way valve that only

allows fluid flow from the second portion 316 to the drainage portion 318 (and not vice-versa). In some embodiments, the second fluid control unit 310 can be a stopcock or a clamp that is externally operated to regulate the flow of liquid through the second portion 316 of the tubing system 300. A Y-connector 308 can fluidly couple the first, second, and drainage portions 314, 316, 318. In other embodiments, the first, second, and/or drainage portions 314, 316, 318 can have more or fewer tubing sections, connectors, and/or fluid control unit and/or other suitable configurations.

[0040] As shown in Figures 1A and 2E, moving the lever 104 from the first position to the second position (indicated by arrow A1 in Figure 1A) simultaneously (1) generates a negative pressure in the lumen 205 of the guide catheter 206 (indicated by arrow F in Figure 1A and F1 in Figure 2E), and (2) retracts the delivery sheath 204 and/or push member 202 proximally, thereby retracting the interventional device ID from the treatment site. During this time, in some embodiments, the guide catheter 206 remains fixed (e.g., by the housing 102) relative to the delivery sheath 204 and pull member 202. In such embodiments, as the lever 104 moves from the first position to the second position, the interventional device ID, delivery sheath 204, pull member 202, and at least a portion of the clot material PE are drawn proximally into the guide catheter 206.

[0041] As shown in Figure 1B, moving the lever 104 from the second position to the first position (indicated by arrow A2 in Figure 1B) creates a positive pressure (e.g., indicated by arrows F in Figure 1B) in the first portion 314 and drainage portion 318 of the tubing system 300. The clot reservoir 306 prevents the positive pressure from affecting the aspiration lumen of the catheter system 200, thereby preventing backflow of fluid into the blood vessel BV at the treatment site. With respect to the catheter system 200, when the lever 104 is actuated from the second position to the first position, the RA device 100 does not engage the delivery sheath 204 or the push member 202 to move these components. Thus, the next time the lever 104 is actuated relative to the housing 102, the RA device 100 engages a new portion of the delivery sheath 204 and push member 202 such that the delivery sheath 204 and push member 202 are incrementally retracted proximally each time the lever 104 is "pumped" (e.g., moved from the first position toward the second position and then back toward the first position).

[0042] Depending on the age and size of the clot material PE, local anatomical and/or physiological conditions, and position of the interventional device ID relative to the clot material PE,

the lever 104 can be pumped several times to fully extract the clot material PE and/or interventional device ID from the treatment site. For example, Figures 2D and 2E show the proximal movement of the delivery sheath 204 and pull member 202 after a first pump of the lever 104. Figures 2E and 2F show the proximal movement of the delivery sheath 204, pull member 202, and interventional device ID after a second pump of the lever 104 (e.g., including a second instance of pressure generation indicated by arrows F1 and F2 in Figures 2E and 2F, respectively). In some embodiments, the interventional device ID and the clot material PE can be fully withdrawn into the guide catheter 206 after a single pump of the lever 104. In other embodiments, such as those procedures where the interventional device ID is initially positioned such that a distal terminus of the interventional device ID is proximal of a distal terminus of the clot material PE (the clot material PE often originates in a vein of the patient's leg, and thus is cast into an elongated, worm-like shape), it can take several pumps of the lever 104 to fully withdraw the clot material PE into the guide catheter 206. Thus, in some embodiments, even when the interventional device ID is positioned within the guide catheter 206 such that a distal terminus of the interventional device ID is proximal of the distal terminus of the guide catheter 206, the lever 104 can be pumped several more times to continue to withdraw the clot material PE into the guide catheter 206 and the tubing system 300 (e.g., into the second portion 316, the clot reservoir 306, and/or the drainage portion 318).

[0043] Once the clot material PE is positioned within the guide catheter 206 such that a distal terminus of the clot material PE is proximal from a distal terminus of the guide catheter 206, the catheter system 200 can be withdrawn proximally (e.g., as indicated by arrow A3 in Figure 2G) from the treatment site, and removed from the patient. However, sometimes, as shown in Figure 2G, retracting the interventional device ID and delivery sheath 204 into the guide catheter 206 may not remove all of the clot material PE (or a desired amount of the clot material PE) from the blood vessel BV. That is, a single "pass" (e.g., a deployment of the interventional device ID and subsequent retraction of the interventional device ID into the guide catheter 206) may not adequately remove the clot material PE from the blood vessel BV. In such instances, the operator of the clot retrieval system 1 may wish to make another pass with the interventional device ID to remove all or a portion of the remaining clot material PE in the blood vessel BV.

[0044] To redeploy the interventional device ID, many conventional systems require that the entire catheter system, including the guide catheter 206, be fully removed from the patient (e.g., including a guide catheter). That is, if the once-deployed interventional device is reintroduced without fully removing and cleaning the catheter system, there is a significant risk that clot material and/or other contaminants from the catheter system will be reintroduced into the blood vessel of the patient during a second pass. As described in further detail below, the present technology advantageously allows for an interventional device to be redeployed without fully removing a guide catheter, and with a significantly reduced risk of reintroducing clot material and/or other contaminants into the blood vessel of the patient.

II. Selected Embodiments of Clot Reservoirs and Associated Methods of Use

[0045] Figures 3A–3C are a fully-exploded view, an isometric view, and a partially-exploded view of the clot reservoir 306 of the clot retrieval system 1. With reference to Figure 3A, the clot reservoir 306 includes a housing 322 defining a chamber 323, a filter 321 configured to be positioned within the housing 322, and a cap assembly 330 configured to be coupled to the housing 322. The housing 322 can include a port 324 configured to be removably, fluidly coupled to the catheter system 200. In some embodiments, a tubing section 326 is coupled to the port 324 during priming of the clot retrieval system 1 and, as described in further detail below with reference to Figures 10 and 14, during flushing of the tubing system 300. In certain embodiments the tubing section 326 is semi-permanently coupled to the housing 322 and can be used to fluidly couple the housing 322 to the tubing system 300 and/or the catheter system 200.

[0046] In the embodiment illustrated in Figure 3A, the cap assembly 330 includes a fluid connector (e.g., a barbed outlet) 332 for connecting to the tubing system 300 (e.g., to the tubing section 302d shown in Figures 1A and 1B), a nut 333 for releasably securing the cap assembly 330 to the housing 322 (e.g., via a threaded coupling), a first cap portion 334, and a second cap portion 338. In some embodiments, the fluid connector 332 is secured to the first cap portion 334 via an adhesive 331a, and the first cap portion 334 is secured to the nut 333 via a second adhesive 331b. In some embodiments, the first and second adhesives 331a, 331b are the same. The cap assembly 330 can further include a check valve assembly 335 positioned between the first and second cap portions 334, 338 and comprising a piston 336 and a spring 339 (e.g., a passivated compression

spring). The check valve assembly 335 provides for one-way fluid flow through the clot reservoir 306, for example, from the catheter system 200 to the reservoir 320 (Figures 1A and 1B). The clot reservoir 306 can further include one or more O-rings 337 for sealing the various components.

[0047] In operation, blood and clot material flow into the clot reservoir 306 via the port 324 as the lever 104 of the RA device 100 is moved from the first position toward the second position. Clot material is captured within the housing 322 and inhibited from exiting through the cap assembly 330 by the filter 321 while blood is allowed to flow from the port 324 to the fluid connector 332. In particular, the filter 321 inhibits clot material from passing into the check valve assembly 335, which could inhibit function of the check valve assembly 335 and/or macerate the clot material and make it indistinguishable from or difficult to distinguish from other fluids (e.g., blood) aspirated and/or removed from the patient. The check valve assembly 335 subsequently inhibits backflow of fluid through the housing 322 via the fluid connector 332 as the lever 104 of the RA device 100 is moved from the second position toward the first position. With reference to Figures 3B and 3C, the cap assembly 330 can be decoupled from the housing 322 to, for example, permit an operator to remove clot material collected in the housing 322. Moreover, as shown, the housing 322 may be made of a transparent material that permits the operator to visualize material within the housing 322. As described in further detail below, in some embodiments, the operator can at least partially determine whether subsequent passes using the interventional device ID are necessary by visualizing the amount of clot material collected in the housing 322.

[0048] Additional details of the clot reservoir 306, and associated devices and methods, are described in Appendix A to this application.

III. Selected Embodiments of Attachment/Valve Members, and Associated Devices and Methods of Use

[0049] Figure 4 is a side view of an attachment/valve member 408 ("attachment member 408") of the catheter system 200 and a second fluid control unit 410 of the tubing system 300 in accordance with embodiments of the present technology. The attachment member 408 and second fluid control unit 410 can have some features generally similar to the features of the attachment/valve member 208 and second fluid control unit 310, respectively, described above with reference to Figures 1A and 1B.

For example, the attachment member 408 can be integral with or coupled to a proximal portion of the guide catheter 206 and configured to be detachably coupled to the RA device 100 (Figures 1A and 1B; e.g., via a snap-fit arrangement) to at least partially secure the catheter system 200 to the RA device 100. When secured to the RA device 100, the attachment member 408 can fluidly couple the lumen 205 (e.g., an aspiration lumen) of the guide catheter 206 to the tubing system 300 of the clot retrieval system 1 via the tubing section 302f. Likewise, the second fluid control unit 410 can be a clamp ("clamp 410") that is externally operable to regulate the flow of liquid through the tubing section 302f. For example, the clamp 410 may be actuated (e.g., compressed or squeezed by the hand of an operator) to partially or fully restrict fluid flow through the tubing section 302f. In some embodiments, the clamp 410 includes features for locking or maintaining the clamp 410 in a position such that it restricts fluid flow through the tubing section 302f. Figure 4 illustrates the clamp 410 in a position that permits fluid flow through the tubing section 302f.

[0050] As further shown in Figure 4, the tubing system 300 can include a connector 417 that, for example, fluidly connects the tubing section 302f to other portions of the tubing system 300 (e.g., those shown in Figures 1A and 1B). In some embodiments, the connector 417 is a quick-release connector that enables rapid coupling/decoupling of the tubing section 302f to the clot reservoir 306 and/or other components of the tubing system 300. In some embodiments, the tubing system 300 can include a flush port adapter that can be removably coupled to the connector 417. The flush port adapter can be configured to, for example, fluidly connect a flushing device (e.g., a syringe) to the catheter system 200 so that the guide catheter 206 can further be flushed with a fluid (e.g., heparinized saline).

[0051] Figure 5 is a side cross-sectional view of the attachment member 408 show in Figure 4. As shown in the embodiment of Figure 5, the attachment member 408 includes a body or housing 440 having a proximal opening 443a, a distal opening 443b, and a first lumen 441 extending between the proximal and distal openings 443a and 443b. The first lumen 441 further comprises a first portion 441a having a first diameter (e.g., a constant first diameter) and a second portion 441b having a second diameter greater than the first diameter. In some embodiments, the first diameter can be generally the same as the outer diameter of the guide catheter 206. The housing 443 further includes a branch portion 444 configured to be coupled to the tubing section 302f and having a second lumen 442

branching from the first lumen 441. In some embodiments, the second lumen 442 can have a relatively large diameter (e.g., between about 0.098 inch and 0.210 inch, about 0.210 inch, greater than 0.210 inch, etc.) to help inhibit clogging and/or collecting of clot material within the attachment member 408 during, for example, aspiration of the guide catheter 206.

[0052] As illustrated in the embodiment of Figure 5, the attachment member 408 can further include a valve 445 within the second portion 441b of the first lumen 441. The valve 445 can be, for example, a hemostasis valve configured to maintain hemostasis by preventing fluid flow in the proximal direction through the proximal opening 443a of the attachment member 408 as the delivery sheath 204, the pull member 202, the guidewire, the interventional device ID, and/or other components of the catheter system 200 are inserted through the valve 445 for advancement to the treatment site in the blood vessel BV.

[0053] Figure 6 is an isometric view of a first valve insert 650, such as a hub valve insert, in accordance with embodiments of the present technology. The first valve insert 650 is configured to be inserted at least partially into the first lumen 441 of the attachment member 408 (e.g., into the valve 445) through the proximal opening 443a of the attachment member 408. Accordingly, Figures 7A and 7B are a side view and a side cross-sectional view, respectively, of the first valve insert 650 inserted into the attachment member 408 in accordance with embodiments of the present technology.

[0054] Referring to Figure 6, the first valve insert 650 includes a proximal portion 651a, a distal portion 651b extending from the proximal portion 651a, and a lumen 654. As illustrated in the embodiment of Figure 6, the proximal portion 651a can optionally include one or more first engagement features (e.g., flanges, tabs, etc.) 652 configured to engage with the attachment member 408 of the of the catheter system 200 to securely position (e.g., lock, mate, flush, etc.) the first valve insert 650 within the attachment member 408. For example, in some embodiments, the first engagement features 652 can be configured to "snap" into (e.g., mate with) corresponding grooves on the attachment member 408. The proximal portion 651a can further include one or more second engagement features 653 (e.g., flanges, tabs, etc.) configured to be gripped by an operator to enable the operator to, for example, easily manipulate and/or position the first valve insert 650 within the attachment member 408.

[0055] Referring to Figures 6–7B together, the distal portion 651b of the first valve insert 650 is configured to be positioned at least partially within the second portion 441b of the first lumen 441 of the attachment member 408. For example, the first valve insert 650 can be advanced distally over the delivery sheath 204 and/or the guidewire of the catheter system 200 to the attachment member 408. Once inserted into the attachment member 408, the first valve insert 650 opens (e.g., exercises) the valve 445. In some embodiments, the lumen 654 of the distal portion 651b of the first valve insert 650 has a generally constant diameter that is generally the same as the first diameter of the first portion 441a of the first lumen 441 of the attachment member 408. In the embodiment illustrated in Figure 7B, when the first valve insert 650 is within the attachment member 408, the distal portion 651b extends substantially or entirely through the second portion 441b of the first lumen 441 such that the lumen 654 of the first valve insert 650 and the second portion 441a of the first lumen 441 of the attachment member 408 together define a generally continuous lumen extending through the attachment member 408 (e.g., between the distal opening 443b of the attachment member 408 and a proximal terminus of the lumen 654).

[0056] In one aspect of the present technology, the continuous lumen formed by inserting the first valve insert 650 into the attachment member 408 can have a generally constant diameter along the length of the lumen configured to accommodate the outer diameter of the guide catheter 206. Accordingly, as described in further detail below, when a clot retaining portion of an interventional device and associated clot material are retracted proximally through the guide catheter 206, the interventional device ID does not greatly change shape (e.g., expand or compress) while passing through the attachment member 408 and the likelihood of clot material being retained within the attachment member 408 is greatly reduced.

[0057] Figure 8 is a side view of a second valve insert 860 (e.g., an aspiration insert) in accordance with embodiments of the present technology. Similar to the first valve insert 650, the second valve insert 860 is configured to be inserted at least partially into the first lumen 441 of the attachment member 408 (e.g., through the valve 445) through the proximal opening 443a of the attachment member 408. Accordingly, Figure 9 is a side view of the second valve insert 860 inserted into the attachment member 408 in accordance with embodiments of the present technology.

[0058] Referring to Figure 8, the second valve insert 860 includes a proximal portion 861a, a distal portion 861b extending from the proximal portion 861a, and a lumen 864 extending through the second valve insert 860. As illustrated in the embodiment of Figure 8, the distal portion 861b can optionally include one or more first engagement features (e.g., flanges, tabs, etc.) 862 configured to engage with the attachment member 408 to securely position (e.g., lock) the second valve insert 860 within the attachment member 408. For example, in some embodiments, the first engagement features 862 can be configured to "snap" into (e.g., mate with) corresponding grooves on the attachment member 408. The proximal portion 861a can further include one or more second engagement features 865a (e.g., flanges, tabs, etc.) configured to be gripped by an operator to enable the operator to, for example, easily manipulate and/or position the second valve insert 860 within the attachment member 408.

[0059] The proximal portion 861a can include one or more adjustment features 865 (labeled individually as adjustment features 865a and 865b) for adjusting a diameter of the lumen 864. For example, in some embodiments the second valve insert 860 is a Tuohy Borst Adapter that can be adjusted, via the one or more adjustment features 865, to seal the proximal opening 443a of the attachment member 408 by sealing the lumen 864 against a component of the catheter system 200 inserted therethrough. More particularly, referring to Figures 8 and 9 together, the distal portion 861b of the second valve insert 860 is configured to be positioned at least partially within the attachment member 408 (e.g., within the second portion 441b of the first lumen 441). For example, the second valve insert 860 can be advanced distally over the guidewire of the catheter system 200 to the attachment member 408. Once inserted into the attachment member 408, the second valve insert 860 opens (e.g., exercises) the valve 445. By tightening at least one of the adjustment features 865, at least a portion of the lumen 864 can be narrowed until a seal is formed between the second valve insert 860 and the guidewire or other component of the catheter system 200 positioned therein.

[0060] As described in further detail below, in some embodiments, the second valve insert 860 may more completely seal against components of the catheter system 200 than the valve 445 of the attachment member 408. Accordingly, use of the second valve insert 860 can improve the efficiency of aspiration of the guide catheter 206 using the RA device 100 (Figures 1A and 1B).

[0061] Figure 10 is a flow diagram of a process or method 1000 for operating the clot retrieval system 1 including the attachment member 408 and the first and second valve inserts 650, 860 to remove clot material from within a blood vessel (e.g., a pulmonary blood vessel) of a human patient in accordance with embodiments of the present technology. Although some features of the method 1000 are described in the context of the embodiments shown in Figures 1A–9 for sake of illustration, one skilled in the art will readily understand that the method 1000 can be carried out using other suitable systems and/or devices.

[0062] The method 1000 includes engaging the interventional device ID of the catheter system 200 with the clot material PE in the blood vessel BV as, for example, described above with reference to Figures 2A–2D (block 1001). In particular, the attachment member 408 (Figures 4 and 5) of the catheter system 200 can be attached to the RA device 100, and the interventional device ID can be deployed within at least a portion of the clot material PE by proximally retracting the delivery sheath 204.

[0063] The method 1000 continues by proximally retracting the interventional device ID and associated clot material PE into the guide catheter 206 of the catheter system 200 until a distal terminus of the clot material PE is proximal from a distal terminus of the guide catheter 206 as, for example, described above with reference to Figures 2E–2G (block 1002). In particular, the RA device 100 can be pumped or cycled one or more times (e.g., one time, three times, five times, etc.) to retract the interventional device ID and/or delivery sheath 204 into the guide catheter 206 while simultaneously aspirating the lumen 205 of the guide catheter 206 to remove clot material PE and blood, which are drawn through the attachment member 408 and into the tubing system 300 (e.g., through the clot reservoir 306 to the reservoir 320).

[0064] In some embodiments, the interventional device ID can be retracted proximally into the guide catheter 206 without use of the RA device 100. For example, the operator can manually retract the interventional device ID and associated clot material PE into the guide catheter 206.

[0065] After initial deployment of the interventional device ID in blocks 1001 and 1002, the operator can determine whether it is necessary or desirable to redeploy the interventional device ID within the blood vessel BV of the patient in order to remove additional clot material PE that was not removed during a previous pass with the interventional device ID (block 1003). In some

embodiments, the operator can visualize the amount of clot material PE collected in the clot reservoir 306 to at least partially determine whether another pass is needed. In other embodiments, the operator can rely on imaging (e.g., fluoroscopic imaging) of the blood vessel BV or other techniques known in the art to determine whether an additional pass is necessary. If another pass is not needed (e.g., the clot material PE was adequately removed), the operator can elect to withdraw the catheter system 200 from the patient (block 1004). If clot material PE remains in the vessel, the operator can prepare to redeploy the interventional device ID.

[0066] To redeploy the interventional device ID, the method 1000 includes positioning the first valve insert 650 (Figure 6) and withdrawing the interventional device ID from the patient (block 1005). In particular, before positioning the first valve insert 650, the catheter system 200 can be decoupled from the RA device by (i) decoupling the attachment member 408 from the distal portion 100b of the RA device 100 and (ii) removing the delivery sheath 204 and/or guidewire from the channel 116. Additionally, in some embodiments, the clamp 410 can be actuated (e.g., closed) to prevent fluid flow from the guide catheter 206 into the tubing system 300 during withdrawal of the interventional device ID.

[0067] The first valve insert 650 can be advanced over the delivery sheath 204 and/or guidewire of the catheter system 200 until it is positioned (e.g., seated) at least partially within the attachment member 408 (Figures 7A and 7B). Once the first valve insert 650 is positioned within the attachment member 408, the interventional device ID and delivery sheath can be fully withdrawn from the patient. For example, in some embodiments, the operator may grip a portion of the delivery sheath 204 that is exposed proximally from the RA device 100 and pull the delivery sheath 204 and interventional device ID proximally through the guide catheter 206. In some embodiments, the first valve insert 650 is only positioned within the attachment member 408 when the interventional device ID is proximate the attachment member 408. That is, the operator may partially withdraw the delivery sheath 204 and interventional device ID within the guide catheter 206 before advancing the first valve insert 650 into position. In some embodiments, the delivery sheath 204 includes a marking (e.g., a specific color pattern) configured to indicate to the operator that the distal end of the delivery sheath 204 and/or the interventional device ID is near (e.g., proximally approaching) the attachment member 408. In certain embodiments, the guidewire of the catheter system 200 is pinned during withdrawal

of the interventional device ID and the delivery sheath 204 such that the guidewire does not move relative to the interventional device ID and the delivery sheath 204. Therefore, in such embodiments, the guidewire does not need to be re-advanced to the treatment site prior to an additional pass.

[0068] In operation, the first valve insert 650 helps create a lumen of constant diameter through the attachment member 408 such that a diameter of the interventional device ID does not substantially change (e.g., expand and/or contract) as the interventional device ID is withdrawn proximally through the attachment member 408. In particular, the first valve insert 650 can effectively shield the interventional device ID from the valve 445 of the attachment member 408. Without the first valve insert 650, as the interventional device ID is withdrawn proximally it can expand within the attachment member 408 (e.g., as the interventional device ID passes through the second portion 441b of the first lumen 441) before being squeezed (e.g., radially collapsed) as it passes through the valve 445. Without the first valve insert 650, the valve 445 may strip (e.g., break off, shear, etc.) clot material PE that held by the interventional device ID. This can cause clot material PE to remain in the attachment member 408 after the interventional device ID is fully withdrawn from the patient, which presents a significant risk that remaining clot material PE will be reintroduced into the blood vessel BV of the patient if a second pass is made with the interventional device ID without fully removing the guide catheter 206 from the patient to enable cleaning of the guide catheter 206 and the attachment member 408. The first valve insert 650 of the present technology inhibits clot material PE engaged with the interventional device ID from being stripped by the valve 445 within the attachment member 408 and, therefore, enables a second pass with the interventional device ID to be made without removing the guide catheter 206 from the patient.

[0069] The method 1000 includes removing the first valve insert 650 and positioning the second valve insert 860 (Figure 9) (block 1006). For example, the first valve insert 650 can be withdrawn proximally over the guidewire of the catheter system 200 and the second valve insert 860 can then be advanced distally over the guidewire until it is positioned within the attachment member 408. In some embodiments, the first valve insert 650 is removed and the second valve insert 860 is inserted into the attachment member 408 immediately after the delivery sheath 204 and interventional device ID are withdrawn from the patient. Prompt removal of the first valve insert 650 can restore

function of the valve 445 and prevent excess blood from leaking through the lumen 654 of the first valve insert 650 once the delivery sheath 204 and interventional device ID are removed.

[0070] Positioning the second valve insert 860 further includes adjusting (tightening) the second valve insert 860 over the guidewire to seal the proximal opening 443a of the attachment member 408. In some embodiments, the method 1000 need not include positioning of the second valve insert 860. Instead, the valve 445 of the attachment member 408 may provide a suitable seal for subsequent aspiration steps. However, in some embodiments, use of the second valve insert 860 can provide a better seal between the guidewire of the catheter system 200 and the attachment member 408, and thus improve the efficiency of aspiration using the RA device 100.

[0071] The method 1000 includes aspirating the guide catheter 206 by, for example, pumping or cycling the lever 104 of the RA device 100 one or more times (block 1007). In embodiments where the clamp 410 was previously closed (e.g., at block 1005), prior to pumping the lever 104, the operator can actuate (e.g., open) the clamp 410 to permit fluid flow from the guide catheter 206 into the tubing system 300. Aspirating the guide catheter 206 removes any residual clot material PE remaining in the guide catheter 206. Accordingly, the residual clot material PE is not reintroduced into the blood vessel BV of the patient when the interventional device ID and delivery sheath 204 are subsequently advanced through the guide catheter 206 during another pass. In certain embodiments, the guide catheter 206 can further be flushed with a fluid (e.g., heparinized saline). For example, the connector 417 can be decoupled from the tubing system 300 and the fluid can be introduced from a flushing device (e.g., a syringe) through a flush port adapter coupled (e.g., semi-permanently coupled) to the connector 417.

[0072] In some embodiments, the guide catheter 206 can be aspirated without use of the RA device 100. For example, a syringe or other pressure source can be fluidly coupled directly to the connector 417 and used to aspirate the guide catheter 206. In such embodiments, opening of the clamp 410 fluidly connects the syringe to the lumen 205 of the guide catheter 206 and closing of the clamp 410 fluidly disconnects the syringe from the lumen 205 of the guide catheter 206. In some embodiments, the syringe or other pressure source can be pre-charged with a vacuum—such as by drawing a plunger of the syringe with the clamp 410 closed. The clamp 410 can then be opened to instantaneously or nearly instantaneously (e.g., immediately) apply the stored vacuum pressure to the

tubing system 300 and to the lumen 205 of the guide catheter 206, thereby generating suction throughout the guide catheter 206. In particular, suction can be generated at a distal portion of the guide catheter 206. In one aspect of the present technology, pre-charging or storing the vacuum before applying the vacuum to the lumen 205 of the guide catheter 206 is expected to generate greater suction forces with a faster ramp time (and correspondingly greater fluid flow velocities) at and/or near a distal portion of the guide catheter 206 as compared to, for example, simply activating the pressure source of the RA device 100 by cycling the lever 104 of the RA device 100. These suction forces generated by application of the stored vacuum can be used to not only aspirate the guide catheter 206, but also to aspirate or otherwise remove some or all of the clot material PE remaining in the blood vessel BV after retraction of the interventional device ID.

[0073] The method 1000 includes flushing the tubing system 300 (block 1008). In some embodiments, flushing the tubing system 300 includes (i) actuating (e.g., closing) the clamp 410 to inhibit fluid flow from the guide catheter 206 into the tubing system 300, (ii) disconnecting the tubing section 326 of the clot reservoir 306 from the tubing section 302e and the connector 417 of the tubing system 300, (iii) placing the tubing section 326 into a container of fluid (e.g., saline), and (iv) pumping the lever 104 of the RA device 100 to draw the fluid through the tubing system 300. In some embodiments, the housing 322 of the clot reservoir 306 can be temporarily disconnected (e.g., unscrewed) from the cap assembly 330 so that the clot material PE in the clot reservoir 306 can be removed. In certain embodiments, the tubing system 300 need not be flushed prior to a second pass with the interventional device ID or another interventional device. In some embodiments, flushing the tubing system 300 can include attaching a syringe to the fluid connector 332 of the clot reservoir 306 and/or to the tubing section 302a of the tubing system 300 and using the syringe to generate a negative pressure to draw the fluid through the clot reservoir 306.

[0074] After the tubing system 300 has been flushed, the method 1000 can return to block 1001. In particular, the same interventional device ID and delivery sheath 204 can be cleaned and subsequently advanced through the guide catheter 206 and to the remaining clot material PE in the blood vessel BV. In some embodiments, a new interventional device and delivery sheath can be used for each pass to reduce the likelihood of contamination (e.g., reintroduction of clot material PE into

the patient). Once the desired amount of clot material PE has been removed from the patient, the catheter system 200 may be fully withdrawn from the patient (block 1004).

[0075] In one aspect of the present technology, the method 1000 provides for multiple passes of an interventional device without requiring that the entire guide catheter be removed after each pass. Accordingly, the present technology allows for only a single insertion of a guide catheter during a procedure including multiple passes to remove clot material—increasing the speed of the procedure and reducing trauma to the patient since the guide catheter does not need to be reintroduced (e.g., advanced through the vasculature and past the heart) before each pass.

[0076] Moreover, in certain embodiments, the present technology can enable the guide catheter 206 to be relocated to an alternate treatment site within the patient without removing the guide catheter 206 from the patient and, therefore, without reintroducing the guide catheter 206 through the heart. For example, the guide catheter 206 can be relocated to another treatment site within the lungs including a treatment site in the opposite lung. More specifically, (i) a dilator can be reintroduced into the guide catheter 206, (ii) the guide catheter 206 can be withdrawn into the main pulmonary artery, (iii) the guidewire can be redirected to the new treatment site, (iv) the guide catheter 206 can be advanced over the guidewire to the new treatment site, and (v) the dilator can be removed.

[0077] Additional details of the systems, devices, and methods described above with reference to Figures 4–9 are provided in Appendix B to this application.

IV. Other Selected Embodiments of Attachment/Valve Members, and Associated Devices and Methods of Use

[0078] Figure 11 is a side view of an attachment/valve member 1108 ("attachment member 1108") of the catheter system 200 and a second fluid control unit 1110 of the tubing system 300 in accordance with embodiments of the present technology. The attachment member 1108 and the second fluid control unit 1110 can have some features generally similar to the features of the attachment members 208, 408 and the second fluid control unit 310, 410, respectively, described above with reference to Figures 1A–10. For example, the attachment member 1108 can be integral with or coupled to a proximal portion of the guide catheter 206 and configured to be detachably coupled to the RA device 100 (Figures 1A and 1B; e.g., via a snap-fit arrangement) to at least partially secure the catheter system 200 to the RA device 100. When secured to the RA Device

100, the attachment member 1108 can fluidly connect the lumen 205 (e.g., an aspiration lumen) of the guide catheter 206 to the tubing system 300 of the clot retrieval system 1 via the tubing section 302f. Likewise, the second fluid control unit 1110 can be a stopcock ("stopcock 1110") that is externally operable to regulate the flow of fluid through the tubing section 302f.

[0079] As further shown in Figure 11, the tubing system 300 can include a connector 1117 for, for example, fluidly connecting the tubing section 302f and the stopcock 1110 to other portions of the tubing system 300 (e.g., those shown in Figures 1A and 1B). In some embodiments, the connector 1117 is a quick-release connector that enables rapid coupling/decoupling of the tubing section 302f and stopcock 1110 to other components of the tubing system 300.

[0080] Figure 12 is a side view of the stopcock 1110 in accordance with embodiments of the present technology. In the embodiment illustrated in Figure 12, the stopcock 1110 includes a grip member (e.g., a handle, a knob, etc.) 1211 that can be actuated (e.g., twisted by the hand of an operator) to partially or fully restrict fluid flow through the tubing section 302f. In some embodiments, the stopcock 1110 also includes an injection port 1212 (e.g., a needleless injection port) configured to receive a syringe or other fluid delivery member therethrough. In some embodiments, the injection port 1212 permits fluid to be introduced into the attachment member 1108 and the guide catheter 206 without requiring that a connector 1117 be decoupled from the tubing system 300. For example, in some embodiments, an operator can actuate the stopcock 1110 (e.g., twist the grip member 1211) to close the stopcock 1110 and subsequently introduce a syringe at the injection port 1212 to flush the guide catheter 206 with a fluid (e.g., saline) introduced via the syringe.

[0081] Figures 13A and 13B are side cross-sectional views of the attachment member 1108 in a first configuration and a second configuration, respectively, in accordance with embodiments of the present technology. The attachment member 1108 can be, for example, a garrote valve (e.g., a hemostasis valve) as disclosed in provisional U.S. Patent Application No. 62/554,931, filed September 6, 2017, and titled "HEMOSTASIS VALVES AND METHODS OF USE," which is reproduced in Appendix D to this application, and which is incorporated herein by reference in its entirety.

[0082] In particular, referring to Figures 13A and 13B together, the attachment member 1108 can include a housing 1370 having a proximal opening 1373a and a distal opening 1373b, and defining

a first lumen (e.g., an interior channel) 1371 extending between the proximal and distal openings 1373a, 1373b. The housing 1370 further includes a branch portion 1380 configured to be coupled to the tubing section 302f and defining a second lumen 1381 branching from the first lumen 1371. In some embodiments, the second lumen 1381 can have a relatively large diameter (e.g., between about 0.098 inch and 0.210 inch, about 0.210 inch, greater than 0.210 inch, etc.) to help inhibit clogging and/or collection of clot material within the attachment member 1108 during, for example, aspiration of the guide catheter 206. In one aspect of the present technology, the first lumen 1371 can have a generally constant diameter along its length.

[0083] As shown, a tubular member (e.g., an elongate member) 1372 can extend at least partially through the first lumen 1371 to define a central lumen 1374 that is generally coaxial with the first lumen 1371. In some embodiments, the tubular member 1372 can comprise a compliant tubular structure (e.g., a silicon tube) that can be, for example, a thin-walled compliant tubular structure. The thin-walled structure of the tubular member 1372 can facilitate the collapse, and specifically the uniform collapse of the tubular member 1372 and sealing of the tubular member 1372. For example, the attachment member 1108 can further include an actuation mechanism 1375 coupled to the tubular member 1372 and configured to collapse and seal the tubular member 1372 via compression and/or constriction of one or more filaments 1376 coupled to the tubular member 1372.

[0084] More specifically, in some embodiments, the actuation mechanism 1375 can be a manual actuator such as one or more buttons 1378. Depression or release of the buttons can, in some embodiments, facilitate sealing of the tubular member 1372 around tools or instruments of a wide range of sizes and/or diameters that fit through the tubular member 1372. For example, Figure 13A illustrates the attachment member 1108 with the actuation mechanism 1375 in the first configuration in which the tubular member 1372 is in a collapsed and/or sealed state having a minimum diameter (e.g., conformed to a diameter of a portion of a catheter system inserted therethrough). In the embodiment shown in Figure 13A, the actuation mechanism 1375 is biased (e.g., by one or more springs 1377) to maintain the tubular member 1372 in the collapsed state. Specifically, in the first configuration, the actuation mechanism 1375 can tighten the filament 1376 to constrict or compress the tubular member 1372 to seal the central lumen 1374 of the tubular member 1372. Thus, when the buttons 1378 are not depressed, the attachment member 1108 can provide a hemostatic seal.

[0085] As shown in the embodiment of Figure 13B, the attachment member 1108 is in an expanded (e.g., open) and/or unsealed state having a maximum diameter (e.g., a diameter generally the same as the first lumen 1371). More particularly, one or more of the buttons 1378 may be depressed to, for example, loosen the filament 1376 and allow expansion of the tubular member 1372 to unseal the central lumen 1374 of the tubular member 1372.

[0086] Accordingly, the actuation mechanism 1375 and tubular member 1372 of the attachment member 1108 provide for sealing of the attachment member 1108 around, for example, various components of the catheter system 200 (e.g., the delivery sheath 204, the pull member 202, the guidewire, the interventional device ID, etc.) that are inserted through the attachment member 1108 for advancement to the treatment site in the blood vessel BV. Moreover, in the second configuration, the central lumen 1374 of the tubular member 1372 and the first lumen 1371 of the housing 1370 can together provide a continuous lumen of generally constant diameter. As described above, such a constant diameter can prevent clot material PE associated with the interventional device ID from getting stuck in (e.g., remaining in) the attachment member 1108 as the interventional device ID is retracted through the attachment member 1108—thus minimizing the risk of reintroducing clot material to the patient upon a second pass using the interventional device ID (or another interventional device).

[0087] Figure 14 is a flow diagram of a process or method 1400 for operating the clot retrieval system 1 including the attachment member 1108 to remove clot material from within a blood vessel (e.g., a pulmonary blood vessel) of a human patient in accordance with embodiments of the present technology. Although some features of the method 1400 are described in the context of the embodiments shown in Figures 1A, 1B, and 11–13 for sake of illustration, one skilled in the art will readily understand that the method 1400 can be carried out using other suitable systems and/or devices.

[0088] The method 1400 includes engaging the interventional device ID of the catheter system 200 with the clot material PE in the blood vessel BV as, for example, described above with reference to Figures 2A–2D (block 1401). In particular, the attachment member 1108 of the catheter system 200 can be coupled to the RA device 100, and the interventional device ID can be deployed within at

least a portion of the clot material PE by proximally retracting the delivery sheath 204 relative to the interventional device ID.

[0089] The method 1400 continues by proximally retracting the interventional device ID and associated clot material PE into the guide catheter 206 of the catheter system 200 until a distal terminus of the clot material PE is proximal from a distal terminus of the guide catheter 206 as, for example, described above with reference to Figures 2E–2G (block 1402). In particular, the RA device 100 can be pumped or cycled one or more times (e.g., one time, three times, five times, etc.) to retract the interventional device ID and/or delivery sheath 204 into the guide catheter 206 while simultaneously aspirating the lumen 205 of the guide catheter 206 to remove clot material PE and blood, which are drawn through the attachment member 1108 of the catheter system 200 and into the tubing system 300 (e.g., through the clot reservoir 306 to the reservoir 320).

[0090] In some embodiments, the interventional device ID can be retracted proximally into the guide catheter 206 without use of the RA device 100. For example, the operator can manually retract the interventional device ID and associated clot material PE into the guide catheter 206.

[0091] After the initial deployment of the interventional device ID in blocks 1401 and 1402, the operator can determine whether it is necessary or desirable to redeploy the interventional device ID within the blood vessel BV of the patient in order to remove additional clot material PE that was not removed during a previous pass with the interventional device ID (block 1403). In some embodiments, the operator can visualize the amount of clot material PE collected in the clot reservoir 306 to at least partially determine whether another pass is needed. In other embodiments, the operator can rely on imaging (e.g., fluoroscopic imaging) of the blood vessel BV or other techniques known in the art to determine whether an additional pass is necessary. If another pass is not needed (e.g., the clot material PE was adequately removed), the operator can elect to withdraw the catheter system 200 from the patient at block 1404. If clot material PE remains in the vessel, the operator can prepare to redeploy the interventional device ID.

[0092] To redeploy the interventional device ID, the method 1400 includes withdrawing the interventional device ID from the patient (block 1405). In particular, before withdrawing the interventional device ID, the catheter system 200 can be decoupled from the RA device by (i) decoupling the attachment member 1108 from the distal portion 100b of the RA device 100 and (ii)

removing the delivery sheath 204 and/or guidewire from the channel 116 of the RA device 100. Additionally, in some embodiments, the stopcock 1110 can be actuated (e.g., twisted closed) to prevent fluid flow from the guide catheter 206 into the tubing system 300 during withdrawal of the interventional device ID.

[0093] The delivery sheath 204 and/or another component of the catheter system 200 may then be manually (e.g., by the operator) or automatically pulled proximally to withdraw the interventional device ID from the patient. Before the interventional device ID and associated clot material PE are withdrawn through the attachment member 1108, the actuation mechanism 1375 of the attachment member 1108 can be actuated (e.g., by depressing the buttons 1378) to move the tubular member 1372 to the second configuration (e.g., to open the tubular member 1372) such that the central lumen 1374 of the tubular member 1372 and the first lumen 1371 of the housing 1370 together provide a continuous lumen of generally constant diameter. Accordingly, the interventional device ID can be fully withdrawn (e.g., retracted proximally) through the attachment member 1108 without causing a significant amount of clot material PE associated with the interventional device ID to remain in the attachment member 1108—thus minimizing the risk of reintroducing clot material to the patient upon an additional pass using the interventional device ID (or another interventional device). Moreover, in certain embodiments, the guidewire of the catheter system 200 is pinned during withdrawal of the interventional device ID and the delivery sheath 204 such that the guidewire does not move relative to the interventional device ID and the delivery sheath 204. Therefore, in such embodiments, the guidewire does not need to be re-advanced to the treatment site prior to an additional pass.

[0094] Once the interventional device ID has been fully removed from the guide catheter 206 and the attachment member 1108, the attachment member 1108 can be returned to the first (e.g., sealed) configuration by, for example, releasing the buttons 1378. Next, the method includes aspirating the guide catheter 206 by, for example, pumping or cycling the lever 104 of the RA device 100 one or more times (block 1406). In embodiments where the stopcock 1110 was previously closed (e.g., at block 1405), prior to pumping the lever 104, the stopcock 1110 can be opened to permit fluid flow from the guide catheter 206 into the tubing system 300. Aspirating the guide catheter 206 removes any residual clot material PE remaining in the guide catheter 206. Accordingly, the residual clot material PE is not reintroduced into the blood vessel BV of the patient when the

interventional device ID and delivery sheath 204 (or another interventional device ID) are subsequently advanced through the guide catheter 206 during another pass. In certain embodiments, the guide catheter 206 can further be flushed with a fluid (e.g., heparinized saline). For example, the fluid can be introduced through the injection port 1212 while simultaneously pressing the buttons 1378 of the attachment member 1108. In certain embodiments, the stopcock 1110 can be closed (e.g., at block 1406), and a syringe can be connected to the injection port 1212 and used to generate a negative pressure prior to opening the stopcock 1110 to permit fluid flow from the guide catheter 206 into the syringe.

[0095] In some embodiments, the guide catheter 206 can be aspirated without use of the RA device 100. For example, a syringe or other pressure source can be fluidly coupled directly to the connector 1117 and used to aspirate the guide catheter 206. In such embodiments, opening of the stopcock 1110 fluidly connects the syringe to the lumen 205 of the guide catheter 206 and closing of the stopcock 1110 fluidly disconnects the syringe from the lumen 205 of the guide catheter 206. In some embodiments, the syringe or other pressure source can be pre-charged with a vacuum—such as by drawing a plunger of the syringe with the stopcock 1110 closed. The stopcock 1110 can then be opened to instantaneously or nearly instantaneously (e.g., immediately) apply the stored vacuum pressure to the tubing system 300 and to the lumen 205 of the guide catheter 206, thereby generating suction throughout the guide catheter 206. In particular, suction can be generated at a distal portion of the guide catheter 206. In one aspect of the present technology, pre-charging or storing the vacuum before applying the vacuum to the lumen 205 of the guide catheter 206 is expected to generate greater suction forces with a faster ramp time (and correspondingly greater fluid flow velocities) at and/or near a distal portion of the guide catheter 206 as compared to, for example, simply activating the pressure source of the RA device 100 by cycling the lever 104 of the RA device 100. These suction forces generated by application of the stored vacuum can be used to not only aspirate the guide catheter 206, but also to aspirate or otherwise remove some or all of the clot material PE remaining in the blood vessel BV after retraction of the interventional device ID.

[0096] The method 1400 includes flushing the tubing system 300 (block 1407). In some embodiments, flushing the tubing system 300 includes (i) closing the stopcock 1110 to inhibit fluid flow from the guide catheter 206 into the tubing system 300, (ii) disconnecting the tubing section 326

of the clot reservoir 306 from the tubing section 300e of the tubing system 300, (iii) placing the tubing section 326 into a container of fluid (e.g., saline), and (iv) pumping the lever 104 of the RA device 100 to draw the fluid through the tubing system 300. In some embodiments, the housing 322 of the clot reservoir 306 can be temporarily decoupled (e.g., unscrewed) from the cap assembly 330 so that the clot material PE in the clot reservoir 306 can be removed. In certain embodiments, the tubing system 300 need not be flushed prior to an additional pass with the interventional device ID. In some embodiments, flushing the tubing system 300 can include attaching a syringe to the fluid connector 332 of the clot reservoir 306 and/or to the tubing section 302a of the tubing system 300 and using the syringe to generate a negative pressure to draw the fluid through the clot reservoir 306.

[0097] After the tubing system 300 has been flushed, the method 1400 can return to block 1401. In particular, the same interventional device ID and delivery sheath 204 can be cleaned and subsequently advanced through the guide catheter 206 and to the remaining clot material PE in the blood vessel. In some embodiments, a new interventional device ID and delivery sheath 204 can be used for each pass to reduce the likelihood of contamination (e.g., reintroduction of clot material PE). Once the desired amount of clot material PE has been removed from the patient, the catheter system 200 may be fully withdrawn from the patient (block 1404).

[0098] In one aspect of the present technology, the method 1400 provides for multiple passes of an interventional device without requiring that the entire guide catheter be removed after each pass. Accordingly, the present technology allows for only a single insertion of a guide catheter during a procedure including multiple passes to remove clot material—increasing the speed of the procedure and reducing trauma to the patient since the guide catheter does not need to be reintroduced (e.g., advanced through the vasculature and past the heart) before each pass.

[0099] Moreover, in certain embodiments, the present technology can enable the guide catheter 206 to be relocated to an alternate treatment site within the patient without removing the guide catheter 206 from the patient and, therefore, without reintroducing the guide catheter 206 through the heart. For example, the guide catheter 206 can be relocated to another treatment site within the lungs including a treatment site in the opposite lung. More specifically, (i) a dilator can be reintroduced into the guide catheter 206, (ii) the guide catheter 206 can be withdrawn into the main

pulmonary artery, (iii) the guidewire can be redirected to the new treatment site, (iv) the guide catheter 206 can be advanced over the guidewire to the new treatment site, and (v) the dilator can be removed.

[0100] Additional details of the systems, devices, and methods described above with reference to Figures 11–14 are provided in Appendix C to this application.

V. Examples

1. A method for the intravascular treatment of clot material from a treatment site within a blood vessel of a human patient, the method comprising:

engaging a first interventional device with the clot material at the treatment site in the blood vessel;

retracting the first interventional device and a portion of the clot material into a distal portion of an elongated shaft;

inserting a first valve insert into an attachment member coupled to a proximal portion of the elongated shaft;

withdrawing the first interventional device and the portion of the clot material proximally through (a) the elongated shaft, (b) the attachment member, and (c) the first valve insert;

inserting a second valve insert into the attachment member instead of the first valve insert;

aspirating the elongated shaft; and

advancing a second interventional device distally through the elongated shaft to the treatment site.

2. The method of example 1 wherein, after inserting the first valve insert into the attachment member, the first valve insert and the attachment member together define a lumen having a generally constant diameter.

3. The method of example 2 wherein the diameter of the lumen is generally the same as the diameter of the elongated shaft.

4. The method of any one of examples 1–3 wherein inserting the first valve insert into the attachment member includes exercising a valve of the attachment member.

5. The method of any one of examples 1–4, further comprising actuating the second valve insert to seal the attachment member.

6. The method of any one of examples 1–5 wherein the first interventional device and the second interventional device are the same interventional device, and wherein the method further comprises cleaning the interventional device to remove the portion of the clot material.

7. The method of any one of examples 1–6, further comprising engaging the second interventional device with remaining clot material at the treatment site in the blood vessel.

8. The method of any one of examples 1–7 wherein aspirating the elongated shaft includes aspirating, into the elongated shaft, at least a portion of clot material remaining at the treatment site in the blood vessel.

9. The method of example 8 wherein aspirating the elongated shaft includes—

coupling a syringe to the elongated shaft via a fluid control unit, wherein opening of the fluid control unit fluidly connects the syringe to the elongated shaft, and wherein closing of the fluid control device fluidly disconnects the syringe from the elongated shaft;

drawing a plunger of the syringe to generate a vacuum while the fluid control unit is closed; and

opening the fluid control unit to apply the vacuum to the elongated shaft to thereby aspirate the portion of the remaining clot material into the elongated shaft.

10. The method of example 9 wherein the fluid control unit is a clamp.

11. A method for the intravascular treatment of clot material from a treatment site within a blood vessel of a human patient, the method comprising:

engaging a first interventional device with the clot material at the treatment site in the blood vessel;

retracting the first interventional device and a portion of the clot material into a distal portion of an elongated shaft;

withdrawing the interventional device and the portion of the clot material from the blood vessel through the elongated shaft and an attachment member coupled thereto, including—

before withdrawing the interventional device through the attachment member, actuating the attachment member to move the attachment member from a first configuration in which a lumen of the attachment member is sealed to a second configuration in which the lumen of the attachment member is open;

after withdrawing the interventional device through the attachment member, actuating the attachment member to return the attachment member to the first configuration from the second configuration;

aspirating the elongated shaft; and

advancing a second interventional device distally through the elongated shaft to the treatment site.

12. The method of example 11 wherein actuating the attachment member includes pressing one or more buttons on the attachment member.

13. The method of example 11 or 12 wherein in the second configuration, the lumen of the attachment member has a generally constant diameter.

14. The method of example 13 wherein the diameter of the lumen is generally the same as a diameter of the elongated shaft.

15. The method of any one of examples 11–14 wherein the first interventional device and the second interventional device are the same interventional device, and wherein the method further comprises cleaning the interventional device to remove the portion of the clot material.

16. The method of any one of examples 11–15, further comprising engaging the second interventional device with remaining clot material in the blood vessel.

17. The method of one of examples 11–16 wherein aspirating the elongated shaft includes—

coupling a syringe to the elongated shaft via a stopcock, wherein opening of the stopcock fluidly connects the syringe to the elongated shaft, and wherein closing of the stopcock fluidly disconnects the syringe from the elongated shaft;

drawing a plunger of the syringe to generate a vacuum while the stopcock is closed; and

opening the stopcock to apply the vacuum to the elongated shaft to thereby aspirate, into the elongated shaft, at least a portion of clot material remaining at the treatment site in the blood vessel.

18. A method for the intravascular treatment of clot material from a treatment site within a blood vessel of a human patient, the method comprising:

engaging an interventional device with the clot material at the treatment site in the blood vessel;

retracting the interventional device and a portion of the clot material into a distal portion of a lumen of an elongated shaft;

unsealing an attachment member coupled to a proximal portion of the elongated shaft;

withdrawing the interventional device and the portion of the clot material through the lumen of the elongated shaft and through the attachment member;

sealing the attachment member;

aspirating the elongated shaft; and

advancing the same or a different interventional device distally through the lumen of the elongated shaft to the treatment site.

19. The method of example 18 wherein unsealing the attachment member includes exercising a valve of the attachment member such that a lumen of the attachment member has a diameter that is about equal to a diameter of the lumen of the elongated shaft.

20. The method of example 18 or 19, further comprising:

engaging the same or the different interventional device with clot material remaining in the blood vessel; and

retracting the same or the different interventional device interventional device and a portion of the remaining clot material into the distal portion of the lumen of the elongated shaft;

unsealing the attachment member; and

withdrawing the same or the different interventional device and the portion of the remaining clot material through the lumen of the elongated shaft and through the attachment member.

VI. Conclusion

[0101] The above detailed descriptions of embodiments of the technology are not intended to be exhaustive or to limit the technology to the precise form disclosed above. Although specific embodiments of, and examples for, the technology are described above for illustrative purposes, various equivalent modifications are possible within the scope of the technology as those skilled in the relevant art will recognize. For example, although steps are presented in a given order, alternative embodiments may perform steps in a different order. The various embodiments described herein may also be combined to provide further embodiments.

[0102] From the foregoing, it will be appreciated that specific embodiments of the technology have been described herein for purposes of illustration, but well-known structures and functions have not been shown or described in detail to avoid unnecessarily obscuring the description of the embodiments of the technology. Where the context permits, singular or plural terms may also include the plural or singular term, respectively.

[0103] Moreover, unless the word "or" is expressly limited to mean only a single item exclusive from the other items in reference to a list of two or more items, then the use of "or" in such a list is to be interpreted as including (a) any single item in the list, (b) all of the items in the list, or (c) any combination of the items in the list. Additionally, the term "comprising" is used throughout to mean including at least the recited feature(s) such that any greater number of the same feature and/or additional types of other features are not precluded. It will also be appreciated that specific embodiments have been described herein for purposes of illustration, but that various modifications may be made without deviating from the technology. Further, while advantages associated with some embodiments of the technology have been described in the context of those embodiments, other embodiments may also exhibit such advantages, and not all embodiments need necessarily exhibit such advantages to fall within the scope of the technology. Accordingly, the disclosure and associated technology can encompass other embodiments not expressly shown or described herein.

CLAIMS

I/We claim:

1. A clot collection reservoir, comprising:

a housing defining a chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion;

a second port configured to be fluidly coupled to an aspiration source; and

a filter positioned within the chamber, wherein the filter body has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter body extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port;

wherein the filter is configured to inhibit the clot material from passing through the filter body into the interior region and through the second port; and

wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

2. The clot collection reservoir of claim 1 wherein the second port is positioned proximate to the second housing end portion.

3. The clot collection reservoir of claim 1 wherein the filter is removably positioned within the camber.

4. The clot collection reservoir of claim 1, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap is removable from the housing to provide access to the filter.

5. The clot collection reservoir of claim 4 wherein the filter is coupled to the cap.

6. The clot collection reservoir of claim 1, further comprising a cap configured to be releasably coupled to the second housing end portion, wherein the cap and filter are removable from the housing to provide access to the clot material within the chamber.

7. The clot collection reservoir of claim 1 wherein the first filter end portion is curved.

8. The clot collection reservoir of claim 1 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion.

9. The clot collection reservoir of claim 1 wherein the housing is entirely transparent, and wherein the first port is integrally formed with the housing.

10. The clot collection reservoir of claim 1 wherein the first filter end portion is positioned closer to the first housing end portion than the second filter end portion, and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end portion

11. A clot treatment system, comprising:

an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient;

an aspiration source; and

a clot collection reservoir, comprising—

a housing defining a chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion;

a first port configured to be fluidly coupled to the aspiration catheter, wherein the first port is positioned proximate to the first housing end portion;

a second port configured to be fluidly coupled to the aspiration source; and

a filter positioned within the chamber, wherein the filter body has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter body extends continuously about the first filter end portion such that the filter body encloses an interior region around the second port;

wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter body into the interior region and through the second port; and

wherein the filter is configured to inhibit the clot material from passing through the filter body into the interior region and through the second port.

12. The clot treatment system of claim 11 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.

13. The clot treatment system of claim 11 wherein the filter is removably positioned within the camber to provide access to the clot material within the chamber.

14. The clot treatment system of claim 11 wherein the second port is positioned proximate to the second housing end portion.

15. The clot treatment system of claim 11 wherein the clot collection reservoir further comprises a cap configured to be releasably coupled to the second housing end portion, wherein the cap and filter are removable from the housing to provide access to the clot material within the chamber.

16. The clot treatment system of claim 11, further comprising a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuatable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter.

17. The clot treatment system of claim 16 wherein the aspiration source is configured to generate the negative pressure in the chamber with the valve in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter.

18. The clot treatment system of claim 11, further comprising:

a hemostasis valve coupled to a proximal portion of the aspiration catheter; and

at least one tube fluidly coupling the first port to a portion of the aspiration catheter distal of the hemostasis valve.

19. The clot treatment system of claim 16 wherein the hemostasis valve comprises:

a tubular member;

a button; and

a filament coupled to the button and the tubular member, wherein the button is actuatable to loosen the filament to unseal the hemostasis valve.

20. The clot treatment system of claim 11 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube fluidly coupling the second port to the aspiration source.

ABSTRACT OF THE DISCLOSURE

Systems and methods for the intravascular treatment of clot material within a blood vessel of a human patient are disclosed herein. A method in accordance with embodiments of the present technology can include, for example, engaging an interventional device of a catheter system with clot material in a blood vessel and withdrawing the interventional device and the portion of the clot material through a guide catheter. In some embodiments, the catheter system can include an attachment/valve member coupled to a proximal portion of the guide catheter, and the method can include unsealing the attachment/valve member to facilitate withdrawing the interventional device through the attachment/valve member without significant retention of clot material within the attachment/valve member. The method can further include resealing and aspirating the guide catheter before advancing another interventional device to the clot material to again engage and remove clot material from the blood vessel.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/497,249	**10/30/2023 02:07:41 PM ET**	**111552.8023.US07**

Title of Invention

SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6832	FILED BY	JiYoung Anderson
PATENT CENTER #	63111190	AUTHORIZED BY	Matthew Williams
CUSTOMER #	25096	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Richard Quick

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 3369	**E20230TE08049426**	**JiYoung Anderson**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	140.00	1	140.00
1817	REQUEST FOR PRIORITIZED EXAMINATION	4200.00	1	4200.00
1111	UTILITY PATENT APPL. SEARCH FEE	700.00	1	700.00
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	320.00	1	320.00

1051	SURCHARGE- LATE FILING FEE, SEARCH FEE, EXAMINATION FEE, INVENTOR'S OATH OR DECLARATION, OR APPLICATION FILED WITHOUT AT LEAST ONE CLAIM OR BY REFERENCE	160.00	1	160.00
1311	PATENT APPL. EXAMINATION FEE	800.00	1	800.00
			TOTAL AMOUNT:	**$6,320.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Richard Quick
Title	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	111552.8023.US07

SIGNATURE of Applicant or Patent Practitioner

Signature	/Matthew S. Williams/	Date (Optional)	2023-10-30
Name	Matthew S. Williams	Registration Number	77,516
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Inari Medical, Inc.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Richard		Quick	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Mission Viejo	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o Inari Medical, Inc.
Address 2	6001 Oak Canyon, Suite #100

City	Irvine	State/Province	CA
Postal Code	92618	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Benjamin	Edward	Merritt	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Clemente	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o Inari Medical, Inc.
Address 2	6001 Oak Canyon, Suite #100

City	Irvine	State/Province	CA
Postal Code	92618	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	John	Coleman	Thress	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

City	Capistrano Beach	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o Inari Medical, Inc.		
Address 2	6001 Oak Canyon, Suite #100		
City	Irvine	State/Province	CA
Postal Code	92618	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Paul		Lubock	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Monarch Beach	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o Inari Medical, Inc.		
Address 2	6001 Oak Canyon, Suite #100		
City	Irvine	State/Province	CA
Postal Code	92618	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Thomas	M.	Tu	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Louisville	State/Province	KY	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o Inari Medical, Inc.		
Address 2	6001 Oak Canyon, Suite #100		
City	Irvine	State/Province	CA
Postal Code	92618	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Customer Number	25096		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS		
Attorney Docket Number	111552.8023.US07	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	20	**Suggested Figure for Publication (if any)**	1A

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	25096		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	17/865307	2022-07-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/865307	Continuation of	17/498642	2021-10-11
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17/498642	Continuation of	16/258344	2019-01-25	11154314	2021-10-26

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/258344	Claims benefit of provisional	62/622691	2018-01-26

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◉ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Inari Medical, Inc.		
Mailing Address Information For Applicant:			
Address 1	6001 Oak Canyon, Suite #100		
Address 2			
City	Irvine	**State/Province**	CA
Country	US	Postal Code	92618
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Matthew S. Williams/			Date (YYYY-MM-DD)	2023-10-30
First Name	Matthew S.	Last Name	Williams	Registration Number	77,516

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111552.8023.US07
	Application Number	
Title of Invention	SINGLE INSERTION DELIVERY SYSTEM FOR TREATING EMBOLISM AND ASSOCIATED SYSTEMS AND METHODS	

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.