

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4350601

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
ENDOLOGIX, INC.	04/03/2017
NELLIX, INC.	04/03/2017
TRIVASCULAR, INC.	04/03/2017

RECEIVING PARTY DATA

Name:	DEERFIELD ELGX REVOLVER, LLC, AS AGENT
Street Address:	C/O DEERFIELD MANAGEMENT COMPANY, L.P., 780 THIRD AVENUE, 37TH FLOOR
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10017

PROPERTY NUMBERS Total: 176

Property Type	Number
Patent Number:	6077296
Patent Number:	7520895
Patent Number:	7892277
Patent Number:	6187036
Patent Number:	6508835
Patent Number:	6197049
Patent Number:	6500202
Patent Number:	6660030
Patent Number:	6733523
Patent Number:	6953475
Patent Number:	8147535
Patent Number:	6261316
Patent Number:	6663665
Patent Number:	8034100
Patent Number:	8568466
Patent Number:	8167925
Patent Number:	6440161
Patent Number:	8377110

PATENT

Property Type	Number
Patent Number:	8523931
Patent Number:	8236040
Patent Number:	8357192
Patent Number:	8764812
Patent Number:	8221494
Patent Number:	8672989
Patent Number:	9149381
Patent Number:	8216295
Patent Number:	9579103
Patent Number:	8945202
Patent Number:	8491646
Patent Number:	8118856
Patent Number:	8821564
Patent Number:	9393100
Patent Number:	8808350
Patent Number:	9549835
Application Number:	14840428
Application Number:	13544426
Application Number:	15429090
Application Number:	14581675
Application Number:	13943246
Application Number:	14461308
Application Number:	15414499
Application Number:	15194159
Application Number:	15379268
Application Number:	15317905
Application Number:	13287907
Patent Number:	9113999
Application Number:	14697433
Patent Number:	7530988
Patent Number:	8182525
Patent Number:	6022359
Patent Number:	6187034
Patent Number:	5931866
Patent Number:	7666220
Patent Number:	8906084
Application Number:	14537749
Patent Number:	8048145

Property Type	Number
Patent Number:	8870941
Application Number:	14525019
Application Number:	11444603
Application Number:	15438682
Patent Number:	7790273
Patent Number:	7951448
Patent Number:	8133559
Patent Number:	8926682
Application Number:	14586110
Patent Number:	8945199
Application Number:	14612048
Patent Number:	5665117
Application Number:	12966852
Patent Number:	8801768
Patent Number:	9415195
Application Number:	14717938
Application Number:	15205365
Patent Number:	9289536
Application Number:	14776385
Application Number:	15256462
Patent Number:	7682383
Patent Number:	8814928
Application Number:	14330812
Application Number:	12706075
Application Number:	62274093
Application Number:	62272538
Application Number:	62382710
Application Number:	62336547
Application Number:	62382207
Application Number:	15310198
Application Number:	62453460
Application Number:	12245620
Patent Number:	8226701
Patent Number:	6602280
Patent Number:	7066951
Patent Number:	7338518
Patent Number:	6733521
Patent Number:	6761733

Property Type	Number
Patent Number:	8224632
Patent Number:	8666714
Patent Number:	7840393
Patent Number:	7241276
Patent Number:	7901379
Patent Number:	8083789
Patent Number:	8663309
Application Number:	14452343
Patent Number:	8066755
Patent Number:	8328861
Patent Number:	8978448
Application Number:	14615337
Patent Number:	8992595
Application Number:	15298166
Patent Number:	9489363
Application Number:	14920828
Application Number:	14631818
Application Number:	13650458
Patent Number:	7708163
Patent Number:	7971751
Patent Number:	9308301
Application Number:	15068415
Patent Number:	7147661
Patent Number:	7766954
Patent Number:	8241346
Patent Number:	8864814
Patent Number:	8167927
Application Number:	14799656
Patent Number:	8900288
Patent Number:	8709065
Patent Number:	7147660
Patent Number:	8226708
Patent Number:	7090693
Patent Number:	8348989
Patent Number:	7682475
Patent Number:	9050754
Patent Number:	9351858
Patent Number:	7081129

Property Type	Number
Patent Number:	7615071
Patent Number:	8361136
Patent Number:	8801769
Application Number:	14320773
Patent Number:	6395019
Patent Number:	9144486
Patent Number:	8216297
Patent Number:	7150758
Patent Number:	7803178
Patent Number:	8267989
Patent Number:	8728372
Patent Number:	9446553
Application Number:	15251011
Patent Number:	8840824
Patent Number:	9549829
Patent Number:	6776604
Patent Number:	7147455
Patent Number:	7125464
Patent Number:	7678217
Patent Number:	8783316
Patent Number:	7632291
Application Number:	12628623
Application Number:	13803033
Patent Number:	9192462
Patent Number:	9463101
Application Number:	15263469
Application Number:	13803046
Patent Number:	9233015
Application Number:	14970621
Patent Number:	9066828
Application Number:	14717080
Patent Number:	9132025
Patent Number:	9585774
Application Number:	15299542
Application Number:	14050835
Application Number:	14151195
Application Number:	14151373
Application Number:	14323059

Property Type	Number
Application Number:	14492674
Application Number:	14643217
Application Number:	14958085
Application Number:	14481834
Patent Number:	5993374
Patent Number:	6048299

CORRESPONDENCE DATA

Fax Number: (312)902-1061

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 312.577.8034

Email: oscar.ruiz@kattenlaw.com

Correspondent Name: OSCAR RUIZ C/O KATTEN MUCHIN ROSENMAN

Address Line 1: 525 W MONROE STREET

Address Line 4: CHICAGO, ILLINOIS 60661

ATTORNEY DOCKET NUMBER: 333285-144 (ABL)

NAME OF SUBMITTER: OSCAR RUIZ

SIGNATURE: /Oscar Ruiz/

DATE SIGNED: 04/03/2017

Total Attachments: 24

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PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT (this “**Agreement**”) made as of April 3, 2017, by Endologix, Inc., a Delaware corporation (“**Endologix**”), Nellix, Inc., a Delaware corporation (“**Nellix**”), TriVascular, Inc., a Delaware corporation (“**TriVascular**”; TriVascular, Endologix and Nellix are each individually a “**Grantor**” and collectively “**Grantors**”), in favor of Deerfield ELGX Revolver, LLC, in its capacity as Agent for the Secured Parties (each as defined in the Credit Agreement referenced below) (in such capacity, “**Grantee**”):

W I T N E S S E T H

WHEREAS, Endologix (“**Borrower**”), the other Loan Parties (including Nellix and TriVascular) from time to time party thereto, the financial institutions from time to time party thereto as Lenders and Grantee have entered into that certain Credit and Security Agreement dated as of April 3, 2017 (as amended, restated, supplemented or otherwise modified from time to time, the “**Credit Agreement**”), pursuant to which Grantee and the Lenders have agreed, subject to the terms and conditions thereof, to make certain loans to, and other credit accommodations in favor of, Borrower (collectively, the “**Loans**”).

WHEREAS, pursuant to the terms of the Credit Agreement, Grantors have granted to Grantee, for its benefit and the benefit of the other Secured Parties, a security interest and Lien upon substantially all assets (including the Collateral) of Grantors, including all right, title and interest of Grantors in, to and under all now owned and hereafter acquired (a) letters patent of the United States or any political subdivision thereof of each Grantor, all reissues and extensions thereof and all goodwill associated therewith, (b) applications for letters patent of the United States and all divisions of each Grantor, continuations and continuations-in-part thereof and (c) rights to, and the rights to obtain any reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of all the foregoing (all of the foregoing in clauses (a), (b) and (c), collectively, “**Patents**”), together with the goodwill of the business symbolized by Grantors’ Patents, and all income, royalties, damages and payments with respect to the foregoing, to secure the payment of all Secured Obligations, in each case other than Excluded Property.

NOW, THEREFORE, in consideration of the premises set forth herein and for other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, Grantors agree as follows:

1. Incorporation of Credit Agreement. The representations and warranties contained in the Credit Agreement to the extent applicable to Grantors are hereby incorporated herein in their entirety by this reference thereto. The provisions of Sections 1.3 and 12.8 of the Credit Agreement are incorporated herein by reference thereto mutatis mutandis. Unless otherwise noted herein, all capitalized terms used herein but not otherwise defined herein shall have the respective meanings ascribed to such terms in the Credit Agreement.

2. Grant and Reaffirmation of Grant of Security Interests. To secure the payment of the Secured Obligations, Grantors grant to Grantee, for its benefit and the benefit of the other Secured Parties, and hereby reaffirm their prior grant pursuant to the Credit Agreement of, a continuing Lien on and security interest in Grantors’ entire right, title and interest in and to

the following (all of the following items or types of property being herein collectively referred to as the “**Patent Collateral**”), whether now owned or existing or hereafter created, acquired or arising:

(a) each Patent listed on Schedule A annexed hereto and all other Patents, together with any reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions thereof, all of the goodwill of the business connected with the use of, and symbolized by, each such Patent, and all proceeds and products with respect to the foregoing; and

(b) all income, royalties, damages and payments at any time due or payable or asserted under and with respect to the foregoing, including without limitation, damages payable with respect to any claim by Grantors against third parties for past, present or future (i) infringement or dilution of each such Patent, or (ii) injury to the goodwill associated with each such Patent, and all proceeds and products with respect to the foregoing.

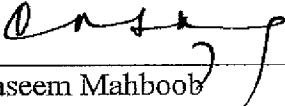
Notwithstanding the foregoing, no Patent Collateral shall include any Excluded Property.

3. Governing Law. This Agreement is governed by and construed and enforced in accordance with the laws of the State of New York applicable to contracts made and to be performed in such State.

This Agreement may be executed in several counterparts, and by each Party on separate counterparts, each of which and any photocopies, facsimile copies and other electronic methods of transmission thereof shall be deemed an original, but all of which together shall constitute one and the same agreement.

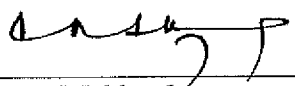
IN WITNESS WHEREOF, Grantor has duly executed this Agreement as of the date first written above.

ENDOLOGIX, INC.

By: 
Name: Vaseem Mahboob
Title: Chief Financial Officer

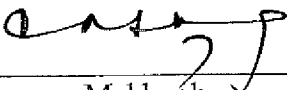
IN WITNESS WHEREOF, Grantor has duly executed this Agreement as of the date first written above.

NELLIX, INC.

By: 
Name: Vaseem Mahboob
Title: Chief Financial Officer

IN WITNESS WHEREOF, Grantor has duly executed this Agreement as of the date first written above.

TRIVASCULAR, INC.

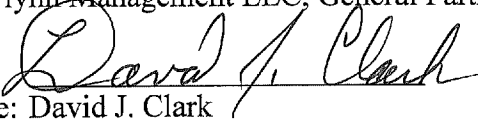
By: 
Name: Vaseem Mahboob
Title: Chief Financial Officer

Agreed and Accepted
As of the Date First Written Above:

DEERFIELD ELGX REVOLVER, LLC
as Agent

By: Deerfield Management Company, L.P.
(Series C), Manager

By: Flynn Management LLC, General Partner

By: 
Name: David J. Clark

Title: Authorized Signatory

SCHEDULE A

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
ENDOLUMINAL VASCULAR PROSTHESIS	09/034,689	3/4/1998	6,077,296	6/20/2000	Endologix, Inc.
SELF EXPANDING BIFURCATING ENDOVASCULAR PROSTHESIS	10/119525	4/8/2002	7,520,895	4/21/2009	Endologix, Inc.
SELF EXPANDING BIFURCATING ENDOVASCULAR PROSTHESIS	11/417883	5/3/2006	7,892,277	2/22/2011	Endologix, Inc.
ENDOLUMINAL VASCULAR PROSTHESIS	09/210280	12/11/1998	6,187,036	2/13/2001	Endologix, Inc.
ENDOLUMINAL VASCULAR PROSTHESIS	09/723979	11/28/2000	6,508,835	1/21/2003	Endologix, Inc.
ARTICULATED BIFURCATION GRAFT	09/251363	2/17/1999	6,197,049	3/6/2001	Endologix, Inc.
BIFURCATION GRAFT DEPLOYMENT CATHETER	09/525778	3/15/2000	6,500,202	12/31/2002	Endologix, Inc.
BIFURCATION GRAFT DEPLOYMENT CATHETER	09/747094	12/22/2000	6,660,030	12/9/2003	Endologix, Inc.
IMPLANTABLE VASCULAR GRAFT	09/891620	6/26/2001	6,733,523	5/11/2004	Endologix, Inc.
BIFURCATION GRAFT DEPLOYMENT CATHETER	10/675060	9/30/2003	6,953,475	10/11/2005	Endologix, Inc.
BIFURCATION GRAFT DEPLOYMENT CATHETER	11/189101	7/25/2005	8,147,535	4/3/2012	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
SINGLE PUNCTURE BIFURCATION GRAFT DEPLOYMENT SYSTEM	09/266661	3/11/1999	6,261,316	7/17/2001	Endologix, Inc.
SINGLE PUNCTURE BIFURCATION GRAFT DEPLOYMENT SYSTEM	09/795993	2/28/2001	6,663,665	12/16/2003	Endologix, Inc.
GRAFT DEPLOYMENT SYSTEM	10/722367	11/25/2003	8,034,100	10/11/2011	Endologix, Inc.
GRAFT DEPLOYMENT SYSTEM	13/269332	10/7/2011	8,568,466	10/29/2013	Endologix, Inc.
SINGLE PUNCTURE BIFURCATION GRAFT DEPLOYMENT SYSTEM	12/732095	3/25/2010	8,167,925	5/1/2012	Endologix, Inc.
DUAL PLACEMENT WIRE CATHETER	09/348356	7/7/1999	6,440,161	8/27/2002	Endologix, Inc.
ENDOLUMENAL VASCULAR PROSTHESIS WITH NEOINTIMA INHIBITING POLYMERIC SLEEVE	10/820455	4/8/2004	8377110	2/19/2013	Endologix, Inc.
DUAL CONCENTRIC GUIDEWIRE AND METHODS OF BIFURCATED GRAFT DEPLOYMENT	11/623022	1/12/2007	8,523,931	9/3/2013	Endologix, Inc.
BIFURCATED GRAFT DEPLOYMENT SYSTEMS AND METHODS	12/101863	4/11/2008	8,236,040	8/7/2012	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
BIFURCATED GRAFT DEPLOYMENT SYSTEMS AND METHODS	13/046541	3/11/2011	8,357,192	1/22/2013	Endologix, Inc.
BIFURCATED GRAFT DEPLOYMENT SYSTEMS AND METHODS	13/745682	1/18/2013	8764812	7/1/2014	Endologix, Inc.
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	12/390346	2/20/2009	8,221,494	7/17/2012	Endologix, Inc.
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	13/546950	7/11/2012	8,672,989	3/18/2014	Endologix, Inc.
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	14/172126	2/4/2014	9,149,381	10/6/2015	Endologix, Inc.
CATHETER SYSTEM AND METHODS OF USING SAME	12/496446	7/1/2009	8,216,295	7/10/2012	Endologix, Inc.
PERCUTANEOUS METHOD AND DEVICE TO TREAT DISSECTIONS	12/771711	4/30/2010	9,579,103	2/28/2017	Endologix, Inc.
FENESTRATED PROSTHESIS	12/769581	4/28/2010	8,945,202	2/3/2015	Endologix, Inc.
STENT GRAFT	12/837398	7/15/2010	8,491,646	7/23/2013	Endologix, Inc.
STENT GRAFT	12/844266	7/27/2010	8,118,856	2/21/2012	Endologix, Inc.
STENT GRAFT	13/397952	2/16/2012	8,821,564	9/2/2014	Endologix, Inc.
DEVICES AND METHODS TO TREAT VASCULAR DISSECTIONS	13/988175	5/17/2013	9,393,100	7/19/2016	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
CATHETER SYSTEM AND METHODS OF USING SAME	13/408952	2/29/2012	8,808,350	8/19/2014	Endologix, Inc.
CATHETER SYSTEM AND METHODS OF USING SAME	14/462485	8/18/14	9,549,835	1/24/2017	Endologix, Inc.
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	14/840428	9/15/2011	N/A	N/A	Endologix, Inc.
CATHETER SYSTEM AND METHODS OF USING SAME	13/544426	7/9/2012	N/A	N/A	Endologix, Inc.
PERCUTANEOUS METHOD AND DEVICE TO TREAT DISSECTIONS	15/429090	2/9/2017	N/A	N/A	Endologix, Inc.
FENESTRATED PROSTHESIS	14/581675	12/23/2010	N/A	N/A	Endologix, Inc.
STENT GRAFT	13/943246	7/16/2013	N/A	N/A	Endologix, Inc.
STENT GRAFT	14/461308	8/15/2014	N/A	N/A	Endologix, Inc.
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	15/414499	1/24/2017	N/A	N/A	Endologix, Inc.
DEVICES AND METHODS TO TREAT VASCULAR DISSECTIONS	15/194159	6/27/2016	N/A	N/A	Endologix, Inc.
CATHETER SYSTEM AND METHODS OF USING SAME	15/379268	12/14/2016	N/A	N/A	Endologix, Inc.
LOCKING ASSEMBLY FOR COUPLING GUIDEWIRE TO DELIVERY SYSTEM	15/317905	12/9/2016	N/A	N/A	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
APPARATUS AND METHOD OF PLACEMENT OF A GRAFT OR GRAFT SYSTEM	13287907	11/2/2011	N/A	N/A	Endologix, Inc.
METHODS FOR DEPLOYING A POSITIONING ANCHOR WITH A STENT-GRAFT	11/876,458	10/22/2007	9,113,999	8/25/2015	Nellix, Inc.
STENT-GRAFT WITH POSITIONING ANCHOR	14/697,433	10/21/2015	N/A	N/A	Nellix, Inc.
METHODS AND SYSTEMS FOR ENDOVASCULAR ANEURYSM TREATMENT	11/187,471	7/22/2005	7,530,988	5/12/2009	Endologix, Inc.
METHODS AND SYSTEMS FOR ENDOVASCULAR ANEURYSM TREATMENT	12/421,297	4/9/2009	8,182,525	5/22/2012	Endologix, Inc.
STENT DELIVERY SYSTEM FEATURING A FLEXIBLE BALLOON	09/229,519	1/13/1999	6,022,359	2/8/2000	Endologix, Inc.
SEGMENTED STENT FOR FLEXIBLE STENT DELIVERY SYSTEM	09/229,856	1/13/1999	6,187,034	2/13/2001	Endologix, Inc.
RADIALLY EXPANSIBLE STENT FEATURING ACCORDION STOP	09/028,305	2/24/1998	5,931,866	8/3/1999	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
SYSTEM AND METHODS FOR ENDOVASCULAR ANEURYSM TREATMENT	11/482,503	7/7/2006	7,666,220	2/23/2010	Endologix, Inc.
SYSTEM AND METHODS FOR ENDOVASCULAR ANEURYSM TREATMENT	12/684,074	1/7/2010	8,906,084	12/9/2014	Nellix, Inc.
SYSTEM AND METHODS FOR ENDOVASCULAR ANEURYSM TREATMENT	14/537,749	11/10/2014	N/A	N/A	Nellix, Inc.
GRAFT SYSTEMS HAVING FILLING STRUCTURES SUPPORTED BY SCAFFOLDS AND METHODS FOR THEIR USE	11/413,460	4/28/2006	8,048,145	11/1/2011	Endologix, Inc.
GRAFT SYSTEMS HAVING FILLING STRUCTURES SUPPORTED BY SCAFFOLDS AND METHODS FOR THEIR USE	13/285,897	10/31/2011	8,870,941	10/28/2014	Nellix, Inc.
GRAFT SYSTEMS HAVING FILLING STRUCTURES SUPPORTED BY SCAFFOLDS AND METHODS FOR THEIR USE	14/525,019	10/27/2014	N/A	N/A	Nellix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
METHODS AND SYSTEMS FOR ANEURYSM TREATMENT USING FILLING STRUCTURES	11/444,603	5/31/2006	N/A	N/A	Endologix, Inc.
METHODS AND SYSTEMS FOR ANEURYSM TREATMENT USING FILLING STRUCTURES	15/438,682	2/21/2017	N/A	N/A	Endologix, Inc.
MATERIAL FOR CREATING MULTI-LAYERED FILMS AND METHODS FOR MAKING THE SAME	11/752,750	5/23/2007	7,790,273	9/7/2010	Endologix, Inc.
MATERIALS FOR CREATING MULTI-LAYERED FILMS AND METHODS FOR MAKING THE SAME	12/858,274	8/17/2010	7,951,448	5/31/2011	Endologix, Inc.
MATERIAL FOR CREATING MULTI-LAYERED FILMS AND METHODS FOR MAKING THE SAME	13/100,483	5/4/2011	8,133,559	3/13/2012	Endologix, Inc.
STENT GRAFT DELIVERY SYSTEM	13/243,941	9/23/2011	8,926,682	1/6/2015	Nellix, Inc.
STENT GRAFT DELIVERY SYSTEM	14/586,110	4/23/2015	N/A	N/A	Nellix, Inc.
SEALING APPARATUS AND METHODS OF USE	12/478,225	6/4/2009	8,945,199	2/3/2015	Nellix, Inc.
SEALING APPARATUS AND METHODS OF USE	14/612,048	2/2/2015	N/A	N/A	Nellix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
ENDOVASCULAR PROSTHESIS WITH IMPROVED SEALING MEANS FOR ANEURYSMAL ARTERIAL DISEASE AND METHOD OF USE	08/620,072	3/21/1996	5,665,117	9/9/1997	Endologix, Inc.
FILLING STRUCTURE FOR A GRAFT SYSTEM AND METHODS OF USE	12/966,852	12/13/2010	N/A	N/A	Endologix, Inc.
GRAFT SYSTEMS HAVING SEMI-PERMEABLE FILLING STRUCTURES AND METHODS FOR THEIR USE	13/355,705	1/23/2012	8,801,768	8/12/2014	Endologix, Inc.
METHOD AND SYSTEM FOR TREATING ANEURYSMS	13/441,762	4/6/2012	9,415,195	8/16/2016	Endologix, Inc.
METHOD AND SYSTEM FOR TREATING ANEURYSMS	14/717,938	5/20/2015	N/A	N/A	Endologix, Inc.
METHOD AND SYSTEM FOR TREATING ANEURYSMS	15/205,365	7/8/2016	N/A	N/A	Endologix, Inc.
METHOD FOR FORMING MATERIALS IN SITU WITHIN A MEDICAL DEVICE	14/201,332	3/7/2014	9,289,536	3/22/2016	Endologix, Inc.

Description/Title	Application No.	Application Date	Patent No.	Registration Date	Owner/Applicant
SYSTEMS AND METHODS FOR FORMING MATERIALS IN SITU WITHIN A MEDICAL DEVICE	14/776,385	3/7/2014	N/A	N/A	Endologix, Inc.
IMPROVED METHOD FOR FORMING HYDROGELS AND MATERIALS THEREFOR	15/256,462	9/2/2016	N/A	N/A	Endologix, Inc.
DEVICES FOR REPAIRING ANEURYSMS	10/481386	6/17/2002	7682383	3/23/2010	Endologix, Inc.
APPARATUS AND METHODS FOR REPAIRING ANEURYSMS	12/616928	6/17/2002	8814928	8/26/2014	Endologix, Inc.
APPARATUS AND METHODS FOR REPAIRING ANEURYSMS	14/330812	7/14/2014	N/A	N/A	Endologix, Inc.
APPARATUS AND METHODS FOR REPAIRING ANEURYSMS	12/706075	2/16/2010	N/A	N/A	Endologix, Inc.
SYSTEMS AND METHODS WITH FENESTRATED GRAFT AND FILLING STRUCTURE	62/274093	12/31/2015	N/A	N/A	Endologix, Inc.
SYSTEMS AND METHODS WITH FILLING STRUCTURES FOR BLOOD VESSELS	62/272538	12/29/2015	N/A	N/A	Endologix, Inc.

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FLUIDIC CONTROL SYSTEMS AND METHODS	62/382710	9/1/2016	N/A	N/A	Endologix, Inc.
SYSTEMS AND METHODS WITH GRAFT BODY, INFLATABLE FILL CHANNEL, AND FILLING STRUCTURE	62/336547	5/13/2016	N/A	N/A	Endologix, Inc.
Systems and Methods with Stents and Filling Structure	62/382207	8/31/2016	N/A	N/A	Endologix, Inc.
MODULAR STENT GRAFT SYSTEMS AND METHODS WITH INFLATABLE FILL STRUCTURES	15/310198	5/5/2015	N/A	N/A	Endologix, Inc.
THORACIC ARCH STENTS	Not yet filed	N/A	N/A	N/A	Endologix, Inc.
LONGITUDINALLY EXTENDABLE STENT GRAFT SYSTEMS AND METHODS	62/453460	2/1/2017	N/A	N/A	Endologix, Inc.
GRAFT FLEXIBILITY ENHANCEMENT INCLUDING THERMAL PLEADING	Not yet filed	N/A	N/A	N/A	Endologix, Inc.
MODULAR VASCULAR GRAFT FOR LOW PROFILE PERCUTANEOUS DELIVERY	12/245,620	10/03/2008	N/A	N/A	TriVascular, Inc.

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STENT AND DELIVERY SYSTEM FOR DEPLOYMENT THEREOF	11/861,756	09/26/2007	8,226,701	07/24/2012	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR EXPANDABLE INTRACORPOREAL DEVICE	09/774,733	1/31/2001	6,602,280	08/05/2003	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR EXPANDABLE INTRACORPOREAL DEVICE	10/419,312	04/17/2003	7,066,951	06/27/2006	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR EXPANDABLE INTRACORPOREAL DEVICE	11/201,028	08/10/2005	7,338,518	03/04/2008	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR ENDOVASCULAR GRAFT	09/834,278	04/11/2001	6,733,521	05/11/2004	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR BIFURCATED ENDOVASCULAR GRAFT	09/917,371	07/27/2001	6,761,733	07/13/2004	TriVascular, Inc.
VIRTUAL PROTOTYPING AND TESTING FOR MEDICAL DEVICE DEVELOPMENT	12/904,994	10/14/2010	8,224,632	07/17/2012	TriVascular, Inc.
VIRTUAL PROTOTYPING AND TESTING FOR MEDICAL DEVICE DEVELOPMENT	13/523,765	06/14/2012	8,666,714	03/04/2014	TriVascular, Inc.

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VIRTUAL PROTOTYPING AND TESTING FOR MEDICAL DEVICE DEVELOPMENT	09/679,725	10/04/2000	7,840,393	11/23/2010	TriVascular, Inc.
PASSIVE HEMOSTATIC SHEATH VALVE	10/636,871	8/06/2003	7,241,276	07/10/2007	TriVascular, Inc.
PASSIVE HEMOSTATIC SHEATH VALVE	11/298,285	12/09/2005	7,901,379	03/08/2011	TriVascular, Inc.
SECUREMENT ASSEMBLY AND METHOD FOR EXPANDABLE ENDOVASCULAR DEVICE	11/941,450	11/16/2007	8,083,789	12/27/2011	TriVascular, Inc.
ASYMMETRIC STENT APPARATUS AND METHOD	11/861,828	09/26/2007	8,663,309	03/04/2014	TriVascular, Inc.
SYSTEM AND METHOD OF PIVOTED STENT DEPLOYMENT	14/452,343	08/05/2014	N/A	N/A	TriVascular, Inc.
SYSTEM AND METHOD OF PIVOTED STENT DEPLOYMENT	11/861,716	09/26/2007	8,066,755	11/29/2011	TriVascular, Inc.
DELIVERY SYSTEM AND METHOD FOR BIFURCATED GRAFT	11/941,434	11/16/2007	8,328,861	12/11/2012	TriVascular, Inc.
IN VITRO TESTING OF ENDOVASCULAR DEVICE	13/649,066	10/10/2012	8,978,448	03/17/2015	TriVascular, Inc.

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DURABLE STENT GRAFT WITH TAPERED STRUTS AND STABLE DELIVERY METHODS AND DEVICES	14/615,337	02/05/2015	N/A	N/A	TriVascular, Inc.
DURABLE STENT GRAFT WITH TAPERED STRUTS AND STABLE DELIVERY METHODS AND DEVICES	13/799,207	03/13/2013	8,992,595	03/31/2015	TriVascular, Inc.
DELIVERY CATHETER FOR ENDOVASCULAR DEVICE	15/298,166	10/19/2016	N/A	N/A	TriVascular, Inc.
DELIVERY CATHETER FOR ENDOVASCULAR DEVICE	13/835,491	03/15/2013	9,489,363	11/22/2016	TriVascular, Inc.
STENT GRAFT DELIVERY SYSTEM WITH ACCESS CONDUIT	14/920,828	10/22/2015	N/A	N/A	TriVascular, Inc.
ADVANCED ENDOVASCULAR GRAFT AND DELIVERY SYSTEM	14/631,818	02/25/2015	N/A	N/A	TriVascular, Inc.
VASCULAR GRAFT HAVING LIMITED END STRUCTURE	13/650,458	10/12/2012	N/A	N/A	TriVascular, Inc.
Constant Force Material Delivery System And Method	11/360,077	02/23/2006	7,708,163	05/04/2010	TriVascular, Inc.
Constant Force Material Delivery System And Method	12/724,068	03/15/2010	7,971,751	07/05/2011	TriVascular, Inc.

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Non-Degradable, Low Swelling, Water Soluble Radiopaque Hydrogel Polymer	13/089,960	04/19/2011	9,308,301	04/12/2016	TriVascular, Inc.
Non-Degradable, Low Swelling, Water Soluble Radiopaque Hydrogel Polymer	15/068,415	03/11/2016	N/A	N/A	TriVascular, Inc.
Radially Expandable Stent	10/029,559	12/20/2001	7,147,661	12/12/2006	TriVascular, Inc.
Advanced Endovascular Graft	11/333,595	01/17/2006	7,766,954	08/03/2010	TriVascular, Inc.
Advanced Endovascular Graft	13/246,643	09/27/2011	8,241,346	08/14/2012	TriVascular, Inc.
Advanced Endovascular Graft	13/246,651	09/27/2011	8,864,814	10/21/2014	TriVascular, Inc.
Barbed Radially Expandable Stent	13/245,661	09/26/2011	8,167,927	05/01/2012	TriVascular, Inc.
Advanced Endovascular Graft	14/799,656	07/15/2015	N/A	N/A	TriVascular, Inc.
Advanced Endovascular Graft Delivery System And Method Of Treatment	12/566,104	09/24/2009	8,900,288	12/02/2014	TriVascular, Inc.
Advanced Endovascular Graft	12/491,336	06/25/2009	8,709,065	04/29/2014	TriVascular, Inc.
Advanced Endovascular Graft	10/327,711	12/20/2002	7,147,660	12/12/2006	TriVascular, Inc.
Inflatable Intraluminal Graft	10/168,053	06/14/2002	8,226,708	07/24/2012	TriVascular, Inc.
Endovascular Graft Joint and Method for Manufacture	10/029,584	12/20/2001	7,090,693	08/15/2006	TriVascular, Inc.
Endovascular Graft Joint and Method for Manufacture	11/429,735	05/08/2006	8,348,989	01/08/2013	TriVascular, Inc.

Patent Security Agreement

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Endovascular Graft Joint and Method for Manufacture	11/870,748	10/11/2007	7,682,475	03/23/2010	TriVascular, Inc.
Endovascular Graft Joint and Method for Manufacture	12/729,182	03/22/2010	9,050,754	06/09/2015	TriVascular, Inc.
Advanced Endovascular Graft	14/704,013	05/05/2015	9,351,858	05/31/2016	TriVascular, Inc.
Endovascular Graft	10/132,754	04/24/2002	7,081,129	07/25/2006	TriVascular, Inc.
Endovascular Graft	11/390,732	03/28/2006	7,615,071	11/10/2009	TriVascular, Inc.
Endovascular Graft	12/566,793	09/25/2009	8,361,136	01/29/2013	TriVascular, Inc.
Endovascular Graft	13/737,351	01/09/2013	8,801,769	08/12/2014	TriVascular, Inc.
Endovascular Graft	14/320,773	07/01/2014	N/A	N/A	TriVascular, Inc.
Endovascular Graft	09/133,978	08/14/1998	6,395,019	05/28/2002	TriVascular, Inc.
Fenestrated Inflatable Graft	13/652,471	10/15/2012	9,144,486	09/29/2015	TriVascular, Inc.
Dual Chamber Cuff Design	11/504,434	08/14/2006	8,216,297	07/10/2012	TriVascular, Inc.
Kink Resistant Endovascular Graft	10/384,103	03/06/2003	7,150,758	12/19/2006	TriVascular, Inc.
Inflatable Porous Implants And Methods Of Drug Delivery	10/769,532	01/30/2004	7,803,178	09/28/2010	TriVascular, Inc.
Inflatable Porous Implants And Methods For Drug Delivery	12/860,364	08/20/2010	8,267,989	09/18/2012	TriVascular, Inc.
PTFE Layers And Methods Of Manufacturing	12/915,636	10/29/2010	8,728,372	05/20/2014	TriVascular, Inc.
PTFE Layers And Methods Of Manufacturing	14/230,318	03/31/2014	9,446,553	09/20/2016	TriVascular, Inc.

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PTFE Layers And Methods Of Manufacturing	15/251,011	08/30/2016	N/A	N/A	TriVascular, Inc.
PTFE Layers And Methods Of Manufacturing	12/910,281	10/22/2010	8,840,824	09/23/2014	TriVascular, Inc.
PTFE Layers And Methods Of Manufacturing	14/458,349	08/13/2014	9,549,829	01/24/2017	TriVascular, Inc.
Method And Apparatus For Shape Forming Endovascular Graft Material	10/029,570	12/20/2001	6,776,604	08/17/2004	TriVascular, Inc.
Method And Apparatus For Shape Forming Endovascular Graft Material	10/868,292	06/14/2004	7,147,455	12/12/2006	TriVascular, Inc.
Method And Apparatus For Manufacturing An Endovascular Graft Section	10/029,557	12/20/2001	7,125,464	10/24/2006	TriVascular, Inc.
Method And Apparatus For Manufacturing An Endovascular Graft Section	11/522,490	09/15/2006	7,678,217	03/16/2010	TriVascular, Inc.
Method And Apparatus For Manufacturing An Endovascular Graft Section	12/697,504	02/01/2010	8,783,316	07/22/2014	TriVascular, Inc.
Inflatable Implant	10/461,853	06/13/2003	7,632,291	12/15/2009	TriVascular, Inc.
Inflatable Implant	12/628,623	12/01/2009	N/A	N/A	TriVascular, Inc.
Low Profile Stent Graft And Delivery System	13/803,033	03/14/2013	N/A	N/A	TriVascular, Inc.

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Low Profile Stent Graft And Delivery System	13/803,037	03/14/2013	9,192,462	11/24/2015	TriVascular, Inc.
Low Profile Stent And Delivery System	14/923,477	10/27/2015	9,463,101	10/11/2016	TriVascular, Inc.
Low Profile Stent Graft And Delivery System	15/263,469	09/13/2016	N/A	N/A	TriVascular, Inc.
Advanced Kink Resistant Stent Graft	13/803,046	03/14/2013	N/A	N/A	TriVascular, Inc.
Endovascular Delivery System With An Improved Radiopaque Marker Scheme	13/803,050	03/14/2013	9,233,015	01/12/2016	TriVascular, Inc.
Endovascular Delivery System With An Improved Radiopaque Marker Scheme	14/970,621	12/16/2015	N/A	N/A	TriVascular, Inc.
Endovascular Delivery System With Flexible And Torqueable Hypotube	13/803,062	03/14/2013	9,066,828	06/30/2015	TriVascular, Inc.
Endovascular Delivery System With Flexible And Torqueable Hypotube	14/717,080	05/20/2015	N/A	N/A	TriVascular, Inc.
Bifurcated Endovascular Prosthesis Having Tethered Contralateral Leg	13/803,067	03/14/2013	9,132,025	09/15/2015	TriVascular, Inc.
Bifurcated Endovascular Prosthesis Having Tethered Contralateral Leg	14/823,076	08/11/2015	9,585,774	03/07/2017	TriVascular, Inc.

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Bifurcated Endovascular Prosthesis Having Tethered Contralateral Leg	15/299,542	10/21/2016	N/A	N/A	TriVascular, Inc.
Endovascular Graft For Aneurysms Involving Major Branch Vessels	14/050,835	10/10/2013	N/A	N/A	TriVascular, Inc.
Sac Liner For Aneurysm Repair	14/151,195	01/09/2014	N/A	N/A	TriVascular, Inc.
Gate Wire For Contralateral Leg Access	14/151,373	01/09/2014	N/A	N/A	TriVascular, Inc.
Systems And Methods For Guidewire Crossover For Bifurcated Prostheses	14/323,059	07/03/2014	N/A	N/A	TriVascular, Inc.
Tandem Modular Endograft	14/492,674	09/22/2014	N/A	N/A	TriVascular, Inc.
Inflatable Occlusion Wire-Balloon For Aortic Applications	14/643,217	03/10/2015	N/A	N/A	TriVascular, Inc.
Internal Iliac Preservation Devices And Methods	14/958,085	12/03/2015	N/A	N/A	TriVascular, Inc.
Endoleak Isolation Sleeves And Methods Of Use	14/481,834	09/09/2014	N/A	N/A	TriVascular, Inc.
MICROCAPSULES FOR SITE-SPECIFIC DELIVERY	08/877593	6/17/1997	5,993,374	11/30/1999	Endologix, Inc.
RADIATION DELIVERY CATHETER	08/965900	11/7/1997	6,048,299	4/11/2000	Endologix, Inc.