

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5989609

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ESSENTIAL MEDICAL, INC.	12/31/2019

RECEIVING PARTY DATA

Name:	ARROW INTERNATIONAL, INC.
Street Address:	550 EAST SWEDES FORD ROAD
City:	WAYNE
State/Country:	PENNSYLVANIA
Postal Code:	19087

PROPERTY NUMBERS Total: 41

Property Type	Number
Application Number:	14199271
Application Number:	15385616
Application Number:	61846217
Application Number:	61745006
Application Number:	61752115
Application Number:	61794776
Application Number:	61920207
Application Number:	61935511
Application Number:	61551251
Application Number:	61621409
Application Number:	61664947
Application Number:	61673570
Application Number:	61712348
Application Number:	61794069
Application Number:	61821478
Application Number:	62077013
Application Number:	62185415
Application Number:	62278298
Application Number:	62374177
Application Number:	62332347

PATENT

Property Type	Number
Patent Number:	10555727
Patent Number:	9554785
Patent Number:	10485524
Patent Number:	9757104
Patent Number:	10154835
Patent Number:	10383611
Patent Number:	10448937
Patent Number:	10182804
Patent Number:	10390810
Application Number:	16568588
Application Number:	16279577
Application Number:	16245906
Application Number:	15813831
Application Number:	16522161
Application Number:	16509759
Application Number:	14086418
Application Number:	14777090
Application Number:	16077525
Application Number:	16098578
Application Number:	16324333
PCT Number:	US1261855

CORRESPONDENCE DATA

Fax Number: (484)531-1735

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: 484-531-1718

Email: ltorres@offitkurman.com

Correspondent Name: OFFIT KURMAN PA

Address Line 1: 401 PLYMOUTH ROAD

Address Line 2: SUITE 100

Address Line 4: PLYMOUTH MEETING, PENNSYLVANIA 19462

ATTORNEY DOCKET NUMBER:	04840003.00001
NAME OF SUBMITTER:	LAURIE TORRES
SIGNATURE:	/Laurie Torres/
DATE SIGNED:	02/28/2020

Total Attachments: 11

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RECORDABLE ASSIGNMENT

WHEREAS, Essential Medical, Inc., a Delaware corporation ("ASSIGNOR"), desires to sell, transfer, convey, assign, and deliver all of its right, title, and interest in, to, and under the Intellectual Property (as defined below), including the rights to file patent applications and obtain patents in all jurisdictions worldwide; and

WHEREAS, Arrow International, Inc., a Pennsylvania corporation ("ASSIGNEE"), desires to acquire all of ASSIGNOR's right, title, and interest in, to, and under the Intellectual Property (as defined below).

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged by ASSIGNOR, ASSIGNOR hereby further acknowledges that it has sold, assigned, transferred, and set over, and by these presents does hereby sell, assign, transfer, and set over, unto ASSIGNEE, its successors, legal representatives, and assigns, all of ASSIGNOR's right, title, and interest throughout the world in, to, and under the Intellectual Property (as defined below).

"Intellectual Property" means any and all intellectual property and any and all rights relating to intellectual property owned by the ASSIGNOR (by whatever name or term known or designated) set forth in Schedule I, and including, but not limited to (i) rights associated with works of authorship throughout the world, including, but not limited to copyrights and moral rights; (ii) all registered and unregistered trademarks, trade names and service marks, applications and registrations of any of the foregoing and similar rights; (iii) trade secret rights; (iv) all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, reissues, and reexaminations of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable; (v) information, whether of a technical, manufacturing, marketing or other nature, including product formulae, manufacturing processes, marketing and sales programs, technical data and designs; (vi) technologies including any and all software, inventions, updates, adaptations, know-how, technical data, trade secrets, functional or detailed design specifications, designs, and enhancements of any of the foregoing whether patentable or unpatentable, registered or unregistered; (vii) design rights; (viii) all other intellectual and industrial property rights (of every kind and nature and however designated), including logos, "rental" rights, and rights to remuneration, whether arising by operation of law, contract, license, or otherwise; and (ix) the right to make all necessary registrations and applications for the same.

ASSIGNOR does hereby assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of any Intellectual Property.

ASSIGNOR hereby covenants and agrees that it will communicate to ASSIGNEE, its successors, legal representatives, and assigns any facts known to ASSIGNOR respecting the Intellectual Property immediately upon becoming aware of those facts, and that it will testify in any legal proceeding involving any of the Intellectual Property, will sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, and will generally take or cause to be taken all such other actions necessary or desirable for ASSIGNEE, its successors, legal representatives, and assigns to obtain and enforce the benefits of the present assignment in all countries.

This Recordable Assignment (this "**Assignment**") and any claim, controversy, dispute, or cause of action (whether in contract, tort, or otherwise) based upon, arising out of, or relating to this Assignment and the transactions contemplated hereby shall be governed by, and construed in accordance with, the laws of the United States and the Commonwealth of Pennsylvania, without giving effect to any choice or conflict of law provision or rule (whether of the Commonwealth of Pennsylvania or any other jurisdiction).

Schedule 1
Assignor Intellectual Property

PATENTS							
EMI Reference	Attorney Reference	Status	Title	Country	Application No.	Filing Date	Patent No. Issue Date
EMI-0012-USPR	04840003.000031	Abandoned	Vascular Closure Device With Occlusion Balloon Guidewire	US	14/199,271	03/06/2014	N/A N/A
	04840003.000056	Abandoned	Vascular Locating Systems and Methods of Use	US	15/385,616	12/20/2016	N/A N/A
EMI-0004-USPR2	04840003.000002	Expired	Vascular Locating System	US	61/846,217	07/15/2013	N/A N/A
EMI-0004-USPR	04840003.000004	Expired	Radiopaque Puncture Location	US	61/745,006	12/21/2012	N/A N/A
EMI-0005-USPR	04840003.000005	Expired	Vascular Closure System Toggle Placement	US	61/752,115	01/14/2013	N/A N/A
EMI-0007-USPR	04840003.000006	Expired	Surgically Closing Percutaneously Punctures	US	61/794,776	03/15/2013	N/A N/A
EMI-0011-USPR	04840003.000010	Expired	Vascular Closure Device	US	61/920,207	12/23/2013	N/A N/A
	04840003.000012	Expired	Wire Guided Collagen Plug And Sealing Method	US	61/935,511	02/04/2014	N/A N/A
EMI-0002-USPR	04840003.000013	Expired	Large Bore Vascular Sealing Device and Method	US	61/551,251	10/25/2011	N/A N/A

PATENT**REEL: 052053 FRAME: 0466**

EMI-0002-USPR2	04840003.00014	Expired	Guidewire Through Toggle	US	61/621,409	04/06/2012	N/A	N/A
	04840003.00015	Expired	Cutting Dilator	US	61/664,947			
EMI-0003-USPR	04840003.00016	Expired	Multi-Lumen Tamper Tube	US	61/673,570	07/19/2012	N/A	N/A
	04840003.00018	Expired	Lateral Pressure Washer	US	61/712,348	10/02/2013	N/A	N/A
	04840003.00023	Expired	Vascular Closure Device with Occlusion Balloon Guidewire	US	61/794,069	03/15/2013	N/A	N/A
EMI-0006-USPR	04840003.00024	Expired	Vascular Closure Device With C-Beam Sealing Pad	US	61/821,478	05/09/2013	N/A	N/A
	04840003.00036	Expired	Vascular Closure Device With Deforming Components	US	62/077,013	11/07/2014	N/A	N/A
	04840003.00037	Expired	Vascular Closure Device With Removable Guide Member	US	62/185,415	06/26/2015	N/A	N/A
EMI-0008-USPR	04840003.00039	Expired	Vascular Closure System with Introducer for Sheath Transfer	US	62/278,298	01/13/2016	N/A	N/A
EMI-0010-USPR	04840003.00042	Expired	Vascular Closure Device With Locking Assembly For A Tamper	US	62/374,177	08/12/2016	N/A	N/A
EMI-0009-USPR	04840003.00043	Expired	Releasable Elongated Assembly	US	62/332,347	05/05/2016	N/A	N/A

EMI-0012-US01	04840003.00046	Allowed	Vascular Closure Device with Removable Guide Member	US	15/192,632	06/24/2016	N/A	N/A
EMI-0004-US01	04840003.00007	Issued	Vascular Locating Systems and Methods of Use	US	14/063,522	10/25/2013	9,554,785	01/31/2017
EMI-00002-US01	04840003.00017	Issued	INSTRUMENT AND METHODS FOR SURGICALLY CLOSING PERCUTANEOUS PUNCTURES	US	13/605,720	09/06/2012	10,485,524	11/26/2019
EMI-0003-US01	04840003.00026	Issued	Multi-Lumen Tamper Tube	US	13/946,398	07/19/2013	9,757,104	09/12/2017
EMI-0006-US01	04840003.00032	Issued	Vascular Closure Device With Conforming Plug Member	US	14/274,466	05/09/2014	10,154,835	12/18/2019
EMI-0002-US02	04840003.00035	Issued	INSTRUMENT AND METHODS FOR SURGICALLY CLOSING PERCUTANEOUS PUNCTURES	US	14/569,291	12/12/2014	10,383,611	08/20/2019
EMI-0011-US01	04840003.00048	Issued	Vascular Closure Device	US	15/105,180	06/16/2016	10,448,937	10/22/2019
EMI-0004-US02	04840003.00054	Issued	Vascular Locating Systems and Methods of Use	US	15/385,656	12/20/2016	10,182,804	01/22/2019
EMI-0003-US02	04840003.00061	Issued	Multi-Lumen Tamper Tube	US	15/675,115	08/11/2017	10,390,810	08/27/2019
EMI-0011-US02	04840003.00093	Pending	Vascular Closure Device	US	16/568,588	09/12/2019	N/A	N/A

EMI-0013-US01	04840003.00064	Pending	PUNCTURE LOCATING SYSTEM WITH BLOOD PULSATION INDICATOR	US	16/279,577	02/19/2019	N/A	N/A
EMI-0004-US03	04840003.00076	Pending	Vascular Locating Systems and Methods of Use	US	16/245,906	01/11/2019	N/A	N/A
EMI-0001-US04	04840003.00084	Pending	DEPLOYMENT INSTRUMENT FOR CLOSURE DEVICE FOR PERCUTANEOUSLY SEALING PUNCTURES	US	15/813,831	11/15/2017	N/A	N/A
EMI-0003-US03	04840003.00086	Pending	Multi-Lumen Tamper Tube	US	16/5822,161	07/25/2019	N/A	N/A
EMI-0002-US03	04840003.00089	Pending	INSTRUMENT AND METHODS FOR SURGICALLY CLOSING PERCUTANEOUS PUNCTURES	US	16/509,759	07/12/2019	N/A	N/A
EMI-0017-US01	04840003.00081	Pending	Methods for Exchanging Devices	US	15/727,243	10/05/2017	N/A	N/A
EMI-0005-US01	04840003.00008	Pending	Vascular Closure System Toggle Placement	US	14/086,418	11/21/2013	N/A	N/A
EMI-0007-US01	04840003.00040	Pending	Vascular Closure Devices and Methods of Use	US	14/777,090	09/15/2015	N/A	N/A
EMI-0008-US01	04840003.00065	Pending	VASCULAR CLOSURE SYSTEM WITH INTRODUCER FOR SHEATH TRANSFER	US	16/077,525	08/13/2018	N/A	N/A

PATENT

REEL: 052053 FRAME: 0469

EMI-0009-US01	04840003.00070	Pending	Releasable Elongated Assembly	US	16/098,578	11/02/2018	N/A	N/A
EMI-0010-US01	04840003.00079	Pending	Vascular Closure Device With Locking Assembly For A Tamper	US	16/324,333	02/08/2019	N/A	N/A
EMI-0016-US01	04840003.00082	Pending	Methods for Exchanging Devices	US	15/646,206	07/11/2017	N/A	N/A
EMI-0002-WO01	04840003.00019	Expired	Surgically Closing Percutaneously Punctures	PCT	PCT/US2012/061855	10/25/2012	N/A	N/A
EMI-0007-WO01	04840003.00009	Expired	Vascular Closure Devices And Methods Of Use	PCT	PCT/US2014/022416	03/10/2014	N/A	N/A
EMI-0011-WO01	04840003.00034	Expired	Vascular Closure Device	PCT	PCT/US2014/068694	12/05/2014	N/A	N/A
	04840003.00041	Expired	Vascular Closure Device with Force Responsive Components	PCT	PCT/US2015/059501	11/06/2015	N/A	N/A
EMI-0008-WO01	04840003.00055	Expired	Vascular Closure System with Introducer for Sheath Transfer	PCT	PCT/US2017/013314	01/13/2017	N/A	N/A
EMI-0009-WO01	04840003.00058	Expired	Releasable Elongated Assembly	PCT	PCT/US2017/031268	05/05/2017	N/A	N/A
EMI-0010-WO01	04840003.00060	Expired	Vascular Closure Device With Locking Assembly For A Tamper	PCT	PCT/US2017/045885	08/08/2017	N/A	N/A
EMI-0008-CN01	04840003.00067	Pending	Vascular Closure System with Introducer for Sheath Transfer	China	201780017147.3	9/18/2018	N/A	N/A

EMI-0010-CN01	04840003.00080	Pending	Vascular Closure Device With Locking Assembly For A Tamper	China	201780049584.3	02/12/2019	N/A	N/A
EMI-0002-EP01	04840003.00033	Issued	Surgically Closing Percutaneously Punctures	Europe	12843990.8	10/25/2012	2770916	07/06/2016
EMI-0002-EP02	04840003.00045	Issued	Surgically Closing Percutaneously Punctures	Europe	16177200.9	10/25/2012	3092953	08/28/2019
EMI-0011-EP01	04840003.00047	Pending	Vascular Closure Device	Europe	14824199.5	12/05/2014	N/A	N/A
EMI-0001-EP01	04840003.00085	Pending	SELF-LOCKING CLOSURE DEVICE FOR PERCUTANEOUSLY SEALING PUNCTURES	Europe	11793097.4	05/05/2017	N/A	N/A
EMI-0008-EP01	04840003.00066	Pending	Vascular Closure System with Introducer for Sheath Transfer	Europe	17703510.2	08/13/2018	N/A	N/A
EMI-0009-EP01	04840003.00071	Pending	Releasable Elongated Assembly	Europe	17723889.6	11/05/2018	N/A	N/A
EMI-0002-EP03	04840003.00090	Pending	Surgically Closing Percutaneously Punctures	Europe	19187190.4	07/19/2019	N/A	N/A
	04840003.00096	Pending	Vascular Closure Device With Locking Assembly For A Tamper	Europe	19209274.0	11/14/2019	N/A	N/A
EMI-0010-EP01	04840003.00078	Pending	Vascular Closure Device With Locking Assembly For A Tamper	Europe	17754921.9	02/28/2019	N/A	N/A

EMI-0002-FREP	04840003.00049	Issued	Surgically Closing Percutaneously Punctures	France	2770916	10/25/2012	2770916	07/16/2016
EMI-0002-DEEP	04840003.00050	Issued	Surgically Closing Percutaneously Punctures	Germany	602012020308.0	10/25/2012	2770916	07/16/2016
EMI-0010-JP01	04840003.00077	Issued	Vascular Closure Device With Locking Assembly For A Tamper	Japan	2019-518273	02/12/2019		
EMI-0010-JP02	04840003.00097	Pending	VASCULAR CLOSURE DEVICE WITH LOCKING ASSEMBLY FOR A TAMPER	Japan	2019-209543	11/20/2019	N/A	N/A
EMI-0002-NLEP	04840003.00051	Issued	Surgically Closing Percutaneously Punctures	Netherlands	12843990.8	10/25/2012	2770916	07/16/2016
EMI-0002-CHEP	04840003.00052	Issued	Surgically Closing Percutaneously Punctures	Switzerland	2770916	10/25/2012	2770916	07/16/2016
EMI-0002-GBEP	04840003.00053	Issued	Surgically Closing Percutaneously Punctures	United Kingdom	12843990.8	10/25/2012	2770916	07/16/2016
EMI-0002-DEEP2	04840003.00045 DE	Issued	Surgically Closing Percutaneously Punctures	Germany	16177200.9	10/25/2012	3092953	08/28/2019
EMI-0002-FREP2	04840003.00045 FR	Issued	Surgically Closing Percutaneously Punctures	France	16177200.9	10/25/2012	3092953	08/28/2019
EMI-0002-GBEP2	04840003.00045 UK	Issued	Surgically Closing Percutaneously Punctures	United Kingdom	16177200.9	10/25/2012	3092953	08/28/2019
EMI-0002-SEEP2	04840003.00045 CH	Issued	Surgically Closing Percutaneously Punctures	Switzerland	16177200.9	10/25/2012	3092953	08/28/2019

PATENT

REEL: 052053 FRAME: 0472

EMI-0002- IEEP2	04840003.00045 IE	Issued	Surgically Closing Percutaneously Punctures	Ireland	16177200.9	10/25/2012	3092953	08/28/2019
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IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 31st day of December, 2019.

ESSENTIAL MEDICAL, INC.

By: 
Name: Jacob Elguicze
Title: Treasurer and Vice President

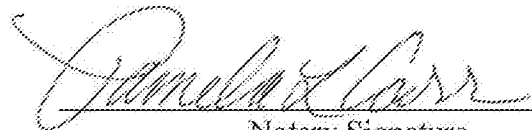
COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY

} ss.

On December 31, 2019, before me, Pamela L. Carr, notary public, personally appeared Jacob Elguicze, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

[SEAL]


Notary Signature

Commonwealth of Pennsylvania - Notary Seal
PAMELA L. CARR - Notary Public
Montgomery County
My Commission Expires Apr 8, 2022
Commission Number 1023866