

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM567195

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|-----------------------------------|--|------------------------|-----------------------|
| SUBMISSION TYPE: | NEW ASSIGNMENT | | |
| NATURE OF CONVEYANCE: | Intellectual Property Security Agreement | | |
| CONVEYING PARTY DATA | | | |
| Name | Formerly | Execution Date | Entity Type |
| Misonix Opco, Inc. | | 09/27/2019 | Corporation: NEW YORK |
| RECEIVING PARTY DATA | | | |
| Name: | SWK Funding LLC | | |
| Street Address: | 14755 Preston Road, Suite 105 | | |
| City: | Dallas | | |
| State/Country: | TEXAS | | |
| Postal Code: | 75254 | | |
| Entity Type: | Limited Liability Company: DELAWARE | | |
| PROPERTY NUMBERS Total: 20 | | | |
| Property Type | Number | Word Mark | |
| Registration Number: | 2812718 | MISONIX | |
| Registration Number: | 3373435 | SONICONE | |
| Registration Number: | 3775329 | SONASTAR | |
| Registration Number: | 3583091 | OSTEOSCULPT | |
| Registration Number: | 4715865 | BONESCALPEL | |
| Registration Number: | 4506761 | SONICONE PLUS | |
| Registration Number: | 5281793 | BETTER MATTERS | |
| Registration Number: | 5281796 | MISONIX BETTER MATTERS | |
| Registration Number: | 5162349 | SONICVAC | |
| Serial Number: | 88458797 | NEXUS | |
| Serial Number: | 88458830 | NEXUS | |
| Serial Number: | 88458987 | NEXUS | |
| Serial Number: | 88708790 | NEXUS | |
| Serial Number: | 88708890 | NEXUS | |
| Serial Number: | 88709046 | NEXUS | |
| Registration Number: | 1082387 | SONURGY | |
| Registration Number: | 1136653 | FIBRA-SONICS | |
| Registration Number: | 1197145 | ASTRAMAX | |
| Registration Number: | 1195124 | MYSTAIRE | |

OP \$515.00 2812718

| Property Type | Number | Word Mark |
|----------------|----------|-----------|
| Serial Number: | 87517998 | MISONIX |

CORRESPONDENCE DATA

Fax Number: 6175236850
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: 617-523-2700
Email: susan.dinicola@hklaw.com,tatyana.bloom@hklaw.com
Correspondent Name: Holland & Knight LLP
Address Line 1: 10 St. James Avenue
Address Line 4: Boston, MASSACHUSETTS 02116

| | |
|---------------------------|---------------------|
| NAME OF SUBMITTER: | Susan C. DiNicola |
| SIGNATURE: | /Susan C. DiNicola/ |
| DATE SIGNED: | 03/16/2020 |

Total Attachments: 18

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This INTELLECTUAL PROPERTY SECURITY AGREEMENT, dated as of September 27, 2019 (as may be amended, restated, supplemented, or otherwise modified from time to time, this “**Agreement**”), made by MISONIX OPCO, INC., a New York Corporation (the “**Grantor**”), in favor of SWK FUNDING LLC, a Delaware limited liability company, as collateral agent (in such capacity, “**Agent**”) for the Lenders (as defined below) party to the Credit Agreement (as defined below).

W I T N E S S E T H:

WHEREAS, pursuant to that certain Amended and Restated Credit Agreement, dated on or about the date hereof (as amended, restated, supplemented or otherwise modified from time to time, the “**Credit Agreement**”), by and among SOLSYS MEDICAL, LLC, a Delaware limited liability company (“**Borrower**”), Agent and the financial institutions party thereto from time to time as lenders (each a “**Lender**” and collectively, the “**Lenders**”), Agent and Lenders have agreed to make certain financial accommodations available to Borrower, and Borrower has granted a security interest to Agent, for the benefit of Lenders, in, among other things, all right, title and interest of Borrower in, to and under all of Borrower’s Intellectual Property (as defined below), whether now existing or hereafter arising or acquired as security for the Obligations;

WHEREAS, the Borrower is affiliated with the Grantor, and the Borrower and the Grantor are engaged in interrelated businesses, and the Grantor will derive substantial direct and indirect benefit from extensions of credit under the Credit Agreement; and

WHEREAS, the Grantor is the owner of the entire right, title and interest in, to and under the Intellectual Property listed on Schedule I hereto as applicable.

NOW, THEREFORE, in consideration of the premises and to induce Agent and Lenders to enter into the Credit Agreement, the Grantor hereby agrees with Agent as follows:

1. Defined Terms.

(a) Definitions. Unless otherwise defined herein or the context otherwise requires, terms used in this Agreement, including its preamble and recitals, have the meanings provided in the Credit Agreement.

(b) Definitions of Certain Terms Used Herein. As used herein, the following terms shall have the following meanings:

“**Copyrights**” shall mean all of the Grantor’s (or if referring to another Person, such other Person’s) now existing or hereafter acquired right, title, and interest in and to: (i) copyrights, rights and interests in copyrights, works protectable by copyright, all applications, registrations and recordings relating to the foregoing as may at any time be filed in the United States Copyright Office or in any similar office or agency of the United States, any State thereof, any political subdivision thereof or in any other country, and all research and development relating to the foregoing; and (ii) all renewals of any of the foregoing.

“**Copyright Licenses**” shall mean all written agreements naming the Grantor as licensor or licensee, granting any right under any Copyright, including the grant of rights to manufacture, distribute, exploit and sell materials derived from any Copyright (other than agreements relating to widely-available software subject to “shrink-wrap” or “click-through” software licenses).

“**Credit Agreement**” shall have the meaning assigned to such term in the recitals of this Agreement.

“**Intellectual Property**” shall mean all present and future: trade secrets, know-how and other proprietary information; Trademarks, internet domain names, service marks, trade dress, trade names, business names, designs, logos, slogans (and all translations, adaptations, derivations and combinations of the foregoing) indicia and other source and/or business identifiers, and the goodwill of the business relating thereto and all registrations or applications for registrations which have heretofore been or may hereafter be issued thereon throughout the world; Copyrights (including Copyrights for computer programs, but excluding commercially available off-the-shelf software and any Intellectual Property rights relating thereto) and all tangible and intangible property embodying the Copyrights, unpatented inventions (whether or not patentable); Patents; industrial design applications and registered industrial designs; license agreements related to any of the foregoing and income therefrom, books, records, writings, computer tapes or disks, flow diagrams, specification sheets, computer software, source codes, object codes, executable code, data, databases and other physical manifestations, embodiments or incorporations of any of the foregoing; the right to sue for all past, present and future infringements of any of the foregoing; all other intellectual property; and all common law and other rights throughout the world in and to all of the foregoing.

“**IP Collateral**” shall have the meaning assigned to such term in Section 2 hereof.

“**Licenses**” shall mean, collectively, the Trademark Licenses, the Patent Licenses, and the Copyright Licenses.

“**Patents**” shall mean all of the Grantor’s (or if referring to another Person, such other Person’s) now existing or hereafter acquired right, title and interest in and to: (i) all patents, patent applications, inventions, invention disclosures and improvements, and all applications, registrations and recordings relating to the foregoing as may at any time be filed in the United States Patent and Trademark Office or in any similar office or agency of the United States, any state thereof, any political subdivision thereof or in any other country, and all research and development relating to the foregoing; and (ii) the reissues, divisions, continuations, renewals, extensions and continuations-in-part of any of the foregoing.

“**Patent Licenses**” shall mean all agreements, whether written or oral, providing for the grant by or to the Grantor of any right to manufacture, develop, market, use or sell any products derived, in whole or in part, from any invention covered by a Patent or any similar agreement related to any other use of any invention covered by a Patent.

“**Trademarks**” shall mean all of the Grantor’s (or if referring to another Person, such other Person’s) now existing or hereafter acquired right, title, and interest in and to: (i) all of the Grantor’s (or if referring to another Person, such other Person’s) trademarks, trade names, corporate names, company names, business names, fictitious business names, trade styles, service marks, logos, other business identifiers, all applications, registrations and recordings relating to the foregoing as may at any time be filed in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof, any political subdivision thereof or in any other country, and all research and development relating to the foregoing; (ii) all renewals thereof; and (iii) all designs and general intangibles of a like nature.

“**Trademark Licenses**” shall mean, collectively, each agreement, whether written or oral, providing for the grant by or to the Grantor of any right to use any Trademark.

(c) **Other Definitional Provisions.**

(i) The words “hereof,” “herein” and “hereunder” and words of similar import when used in this Agreement shall refer to this Agreement as a whole and not to any particular provision of this Agreement, and section and paragraph references are to this Agreement unless otherwise specified.

(ii) The meanings given to terms defined herein shall be equally applicable to both the singular and plural forms of such terms.

2. **Grant of Security Interest.** To secure the payment and performance of the Obligations, the Grantor hereby confirms and acknowledges that it has granted (and, to the extent not previously granted under the Guarantee and Collateral Agreement, does hereby grant) to Agent, for the benefit of Lenders, a lien and security interest in the Grantor’s entire right, title and interest in its Intellectual Property and all proprietary rights relating to or arising from such Intellectual Property, in each case whether now owned or hereafter acquired by the Grantor, and including, without limitation, the Grantor’s right, title and interest in and to the Intellectual Property and proprietary rights identified on Schedule I attached hereto and made a part hereof, and the right to sue for past, present and future infringements and dilutions, and all rights corresponding thereto throughout the world, and the entire goodwill of the Grantor’s business connected with and symbolized by such Intellectual Property and all income, fees, royalties, proceeds and other payments at any time due or payable with respect to any of the foregoing (referred to collectively as the “**IP Collateral**”); provided, that the IP Collateral shall not include the Excluded Property (as defined in the Guarantee and Collateral Agreement).

3. **Protection of Intellectual Property by Grantor.** The Grantor shall, at its sole cost, expense and risk, in connection with the operation of its business, comply with the requirements set forth in Section 5.7 of the Guarantee and Collateral Agreement in respect to the Intellectual Property.

4. **Representations and Warranties.** The Grantor represents and warrants that:

(a) Schedule I is a true, correct and complete list of all registered or applied-for Intellectual Property in which the Grantor purports to have an ownership or license interest.

(b) The Grantor has the legal right and authority to enter into this Agreement and perform its terms.

(c) If the Grantor amends its name, the Grantor shall provide copies of such amendment documentation to Agent and shall re-register the Grantor’s Intellectual Property with the appropriate Governmental Authority and shall execute and deliver such agreements or documentation as Agent shall request to maintain a perfected first priority security interest in such Intellectual Property subject to Permitted Liens.

5. **No Violation of Credit Agreement.** The representations, warranties or covenants contained herein are supplemental to those representations, warranties and covenants contained in the other Loan Documents, and shall not be deemed to modify any such representation, warranty or covenant contained in any other Loan Document.

6. Agreement Applies to Future Intellectual Property.

(a) The provisions of this Agreement shall automatically apply to any such additional property or rights described in Section 2 above, all of which shall be deemed to be and treated as “IP Collateral” within the meaning of this Agreement.

(b) Upon the request of Agent, the Grantor shall execute and deliver, and have recorded, any and all agreements, instruments, documents and papers as Agent may reasonably request to evidence Agent’s security interest in any IP Collateral and the goodwill of the Grantor relating thereto or represented thereby (including, without limitation, filings with the United States Patent and Trademark Office or any similar office), and the Grantor hereby constitutes Agent as its attorney-in-fact to execute and file all such writings for the foregoing purposes, all acts of such attorney being hereby ratified and confirmed; provided, however, that Agent’s taking of such action shall not be a condition to the creation or perfection of the security interest created hereby.

7. Grantor’s Rights to Enforce Intellectual Property. Prior to Agent’s giving of notice to the Grantor following the occurrence and during the continuance of an Event of Default, the Grantor shall have the exclusive right to sue for past, present and future infringement of the IP Collateral, including the right to seek injunctions and/or money damages, in an effort by the Grantor to protect the IP Collateral against encroachment by third parties, provided, however, that:

(a) Any money damages awarded or received by the Grantor on account of such suit (or the threat of such suit) shall constitute IP Collateral.

(b) Any damages recovered in any action pursuant to this Section, net of costs and attorneys’ fees reasonably incurred, shall be applied in accordance with the Credit Agreement and the Guarantee and Collateral Agreement.

(c) Following the occurrence and during the continuance of any Event of Default, Agent, by notice to the Grantor may terminate or limit the Grantor’s rights under this Section 7.

8. Agent’s Actions to Protect Intellectual Property. Pursuant to and in accordance with the Credit Agreement, Agent, acting in its own name or in that of the Grantor, may (but shall not be required to) act in the Grantor’s place and stead and/or in Agent’s own right with respect to the rights and obligations of the Grantor under Section 3, Section 6 and Section 7 hereof.

9. Rights Upon Default. Upon the occurrence and during the continuance of any Event of Default, Agent may exercise all rights and remedies as provided for in the Credit Agreement.

10. Agent as Attorney In Fact.

(a) The Grantor hereby irrevocably constitutes and designates Agent as its attorney-in-fact to:

(i) Following the occurrence and during the continuance of an Event of Default, supplement and amend from time to time Schedule I of this Agreement to include any new or additional Intellectual Property of the Grantor.

(ii) Exercise any of the rights and powers referenced herein in accordance with this Agreement.

- (b) The grant of a power of attorney, being coupled with an interest, shall be irrevocable until the Obligations are paid in full.
- (c) Agent shall not be obligated to do any of the acts or to exercise any of the powers authorized by Section 8, Section 9 or Section 10 of this Agreement, but if Agent elects to do any such act or to exercise any of such powers, it shall not be accountable for more than it actually receives as a result of such exercise of power, and shall not be responsible to the Grantor for any act or omission to act, except to the extent Agent acted with gross negligence or willful misconduct as determined by a court of competent jurisdiction.

11. **Agent's Rights.** Upon an Event of Default and during the continuance thereof, any use by Agent of the IP Collateral, as authorized hereunder in connection with the exercise of Agent's rights and remedies under this Agreement and under the Credit Agreement shall be coextensive with the Grantor's rights thereunder and with respect thereto and without any liability for royalties or other related charges.

12. **No Limitation; Loan Documents.** This Agreement has been executed and delivered by the Grantor for the purpose of recording the security interest granted to Agent with respect to the IP Collateral with the United States Patent and Trademark Office, the United States Copyright Office, as well as with any similar office or department of any other foreign or domestic Governmental Authority. The security interest granted hereby has been granted as a supplement to, and not in limitation of, the security interest granted to Agent, for the benefit of Lender, under the Guarantee and Collateral Agreement and the other Loan Documents. The other Loan Documents (and all rights and remedies of the Grantor, Agent, and Lenders thereunder) shall remain in full force and effect in accordance with their terms.

13. **Termination; Release of Trademark Collateral.** This Agreement and all obligations of the Grantor and Agent hereunder shall terminate on the date upon which the Obligations are performed in full and paid in full. Upon termination of this Agreement, Agent shall, at the expense of the Grantor, take such actions required by the Credit Agreement or the Guarantee and Collateral Agreement or as otherwise reasonably requested by the Grantor to release its security interest in the IP Collateral.

14. **Binding Effect; Benefits.** This Agreement shall be binding upon the Grantor and its successors and assigns, and shall inure to the benefit of Agent, Lenders and their respective successors and assigns.

15. **GOVERNING LAW.** THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE INTERNAL LAWS OF THE STATE OF NEW YORK WITHOUT GIVING EFFECT TO ITS CHOICE OF LAW PROVISIONS THAT WOULD REQUIRE THE APPLICATION OF THE LAWS OF ANY OTHER JURISDICTION.

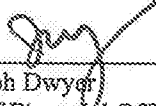
16. **Copy of Agreement.** The Grantor acknowledges receipt of a signed copy of this Agreement.

[Remainder of page intentionally blank; signature page follows.]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be executed by its duly authorized representatives as of the date first above written.

GRANTOR:

MISONIX OPCO, INC.,
a New York Corporation

By: 
Name: Joseph Dwyer
Title: Chief Financial Officer

[Signature Page to Intellectual Property Security Agreement]

#70440724

TRADEMARK
REEL: 006892 FRAME: 0055

AGENT:

SWK FUNDING LLC,

By: SWK Holdings Corporation,
its sole Manager.

By: 
Name: Winston Black
Title: Managing Director

INTELLECTUAL PROPERTY
(Misonix OpCo, Inc.)

A. Issued Patents (United States):

| Patent Number | Description of Invention |
|----------------------|---|
| 6,492,762 | Ultrasonic transducer, transducer array, and fabrication method |
| 6,787,974 | Ultrasound transducer unit and planar ultrasound lens |
| 6,461,314 | Intrabody hifu applicator |
| 6,454,730 | Thermal film ultrasonic dose indicator |
| 6,799,729 | Ultrasonic cleaning & atomized probe |
| 6,379,371 | Flat ultrasonic bone cutting blade with liquid cooling |
| 6,443,969 | Flat ultrasonic bone cutting blade with liquid cooling |
| 6,736,814 | Ultrasonic probe with bipolar cautery |
| 7,776,027 | Ultrasonic probe with motion-responsive power shut-off |
| 8,444,629 | Ultrasonic probe with motion-responsive power shut-off |
| 9,775,666 | Automatic interruption stopping of us waveform |
| 6,648,839 | Ultrasonic probe with bipolar or monopolar cautery |
| 7,442,168 | Ergonomic handpiece with vibration damping |
| 6,902,536 | Ultrasonic probe with width- adjustable cautery applicator |
| 7,223,267 | Ultrasonic probe with detachable cautery forceps |
| 7,717,913 | Ultrasonic probe with width- adjustable cautery applicator |
| 7,931,611 | Ultrasonic debridement probe |
| 8,343,178 | Ultrasonic blunt blade method |
| 8,814,870 | Hook-shaped ultrasonic cutting blade |
| 8,025,672 | Ultrasonic debridement probe with healing mode |
| 9,693,792 | Probe w active pain sup. |

| | |
|------------|--|
| 8,353,912 | Ultrasonic discectomy method and tool |
| 8,659,208 | Digital waveform generator |
| 9,070,856 | Digital waveform generator |
| 8,109,925 | Ultrasonic breast fibroid treatment |
| 9,636,187 | Surgical shield |
| 8,698,377 | Composite ultrasonic imaging and treatment transducer |
| 9,517,053 | Composite ultrasonic imaging and treatment transducer |
| D627,463 | Debrider with scoop head |
| 8,690,783 | HIFU probe with focusing lens |
| 10,039,566 | HIFU probe with focusing lens |
| 8,894,673 | Ultrasonic osteotome especially for skull and spine |
| 9,421,028 | Ultrasonic osteotome especially for skull and spine |
| D700,327 | Ultrasonic osteotome design 1 |
| D715,434 | Ultrasonic osteotome design 2 |
| D715,936 | Ultrasonic osteotome design 3 |
| D715,435 | Ultrasonic osteotome design 4 |
| D715,436 | Ultrasonic osteotome design 5 |
| D680,218 | Bone-cutting blade with single serrated edge (design) |
| D667,117 | Bone-cutting blade with two serrated edges (design) |
| D644,326 | Debrider head with 2 scoops |
| D699,839 | Surgical shield |
| 10,076,349 | Ultrasonic drill |
| D685,087 | Laparoscopic cannula with distal end offset or window |
| D741,481 | Hook blade with serrations |
| 10,206,704 | spine surgery methods |
| 9,211,137 | Ultrasonic probe with irrigant outlets in probe shank |
| 9,387,005 | Flat blade with large shallow recess(es) for coolant |
| 9,788,852 | Large shallow recesses in flats of blade serving as reservoirs |
| 9,320,528 | Ultrasonic blade with micro-pores for coolant conduction |
| 10,219,822 | Ultrasonic blade with micro-pores for coolant conduction |
| 10,182,837 | Reinforced sheath connector for use with bent probes |
| 9,622,766 | Probe with head traversing window in deflectable sheath |

| | |
|------------|---|
| 9,949,751 | Ultrasonic debridement probe head with rake-like teeth |
| 10,092,741 | Monitoring nerves, blood vessels during ultrasonic surgery |
| 9,872,697 | High Efficiency Wound Debridement Probe |
| | Biofilm prevention & multiple spaced section ports |
| 10,092,308 | Biofilm prevention/reduction |
| 10,117,666 | ULTRASONIC INSTRUMENT AND METHOD USING SAME |
| D408,529 | CANNULA FOR ULTRASONIC PROBE |
| 10,299,809 | METHOD FOR REDUCING BIOFILM FORMATION |
| 8,430,897 | ULTRASONIC WOUND DEBRIDER PROBE AND METHOD OF USE |
| 9,119,658 | HOOK SHAPED ULTRASONIC CUTTING BLADE |
| 5,306,261 | Catheter with collapsible wire guide |
| 5,371,429 | Electromechanical transducer device |
| 5,397,293 | Ultrasonic device with sheath and transverse motion damping |
| 5,419,761 | Liposuction apparatus and associated method |
| 5,443,456 | Catheter with collapsible wire guide |
| 5,465,468 | Method of making an electromechanical transducer device |
| 5,527,273 | Ultrasonic lipectomy probe and method for manufacture |
| 5,769,211 | Medical handpiece with autoclavable switch |
| 6,869,439 | Ultrasonic dissector |

B. Patent Applications (United States):

| Patent Number | Description of Invention |
|---------------|---|
| 16/032,813 | Imaging elements on outer probe casing; therapy transducer inside + movable |
| 16/116,255 | Ultrasonic drill |
| 16/268,198 | spine surgery methods |
| 13/930,148 | Eccentric-head ultrasonic probe with vibration damping |
| 15/423,234 | Reinforced sheath connector for use with bent probes |
| 15/936,785 | Ultrasonic probe with end-of-life indicator |
| 14/264,705 | Light source on handpiece: induction power, removable |
| 16/126,649 | Monitoring nerves, blood vessels during ultrasonic surgery |
| 14/795,667 | Probe with meltable plastic part as end-of-life indicator |
| 15/873,607 | Debrider w/Cup-shaped Head w/Serrated Rim |
| 14/938,280 | Bone stimulation to promote healing |
| 16/269,229 | Biofilm prevention/reduction |

| | |
|------------|---|
| 16/126,737 | Biofilm prevention/reduction |
| 14/939,668 | Minimally invasive ultrasonic surgery for spine and orthopedic procedures |
| 15/147,323 | Probe grounded to reduce leakage |
| 15/221,271 | Removal of biofilm from prostheses & tools |
| 15/664,663 | Reduction in electrical interference |
| 15/450,818 | METHOD OF REDUCING OR REMOVING BIOFILM |
| 16/243,816 | Robotic Surgery, Constant Speed, Voltage Feed |
| 62/660,625 | Drill w/applied force interruption, liquid thru tip |
| 16/169,569 | Fluid Handling Assembly & Tube Set |
| 13/307,691 | ULTRASONIC SURGICAL INSTRUMENT, ASSOCIATED SURGICAL METHOD AND RELATED MANUFACTURING METHOD |
| 16/392,244 | ULTRASONIC SURGICAL INSTRUMENT, ASSOCIATED SURGICAL METHOD AND RELATED MANUFACTURING METHOD |
| 11/371,708 | Method for the treatment of peyronie's disease |
| 13/838,247 | Ultrasonic Treatment Method and Apparatus with Active Pain Suppression |
| 13/411,839 | PROTECTIVE SLEEVE AND ASSOCIATED SURGICAL METHOD |
| 14/038,394 | ULTRASONIC SURGICAL INSTRUMENT WITH DUAL END EFFECTOR |
| 14/041,605 | ULTRASONIC SURGICAL APPARATUS WITH POWER REDUCTION |
| 11/158,883 | Fluid containment apparatus for surgery and method of use |
| 14/109,512 | PROTECTIVE SLEEVE AND ASSOCIATED SURGICAL METHOD |
| 14/109,417 | PROTECTIVE SLEEVE AND ASSOCIATED SURGICAL METHOD |
| 14/211,656 | SHEATH COUPLING MEMBER AND ASSOCIATED INSTRUMENT ASSEMBLY |
| 06/731,772 | ULTRASONIC LITHOTRIPTOR PROBE |
| 06/830,752 | VENTED ULTRASONIC TRANSDUCER FOR SURGICAL HANDPIECE |
| 07/632,679 | ULTRASONIC DEVICE HAVING WIRE SHEATH |
| 07/737,424 | ULTRASONIC NEEDLE WITH SLEEVE THAT INCLUDES A BAFFLE |
| 07/737,425 | APPARATUS FOR ELIMINATING AIR BUBBLES IN AN ULTRASONIC SURGICAL |
| 08/319,677 | NEEDLE FOR ULTRASONIC SURGICAL PROBE |
| 08/319,727 | NEEDLE FOR ULTRASONIC SURGICAL PROBE |
| 08/371,145 | BUBBLE CONTROL DEVICE FOR AN ULTRASONIC SURGICAL PROBE |
| 09/109,617 | ULTRASONIC PROBE WITH ISOLATED AND TEFLON COATED OUTER CANNULA |
| 09/632,060 | ELECTRICAL CONNECTOR |
| 10/137,470 | Device and method for ultrasonic tissue excision with tissue selectivity |
| 11/511,870 | Ultrasonic debrider probe and method of use |
| 12/125,622 | Ultrasonic Dissector |
| 29/081,180 | CANNULA FOR ULTRASONIC PROBE |

| | |
|------------|--|
| 29/092,122 | HANDPIECE HOUSING FOR ULTRASONIC THERAPY |
| | |

C. Issued Patents (Non-United States):

| Country | Patent Number | Description of Invention |
|---------|----------------|--|
| CAN | 2,362,241 | Ultrasonic probe with low-friction bushings |
| EUR | 1,161,187 | Ultrasonic probe with low-friction bushings |
| JAPAN | 4,699,667 | Flat ultrasonic bone cutting blade with liquid cooling |
| CAN | 2,389,551 | Flat ultrasonic bone cutting blade with cooling |
| EUR | 1,311,197 | Flat ultrasonic bone cutting blade with cooling |
| JAPAN | 4,429,020 | Ultrasonic probe with bipolar or monopolar cautery |
| CAN | 2475771 | Ultrasonic probe with bipolar or monopolar cautery |
| EUR | 1478294 | Ultrasonic probe with bipolar or monopolar cautery |
| JAPAN | 4,429,160 | Ergonomic handpiece with vibration damping |
| CAN | 2,480,773 | Ergonomic handpiece with vibration damping |
| EUR | 1492592 | Ergonomic handpiece with vibration damping |
| CAN | 2,492,075 | Ultrasonic probe with motion-responsive power shut-off |
| EUR | 1538999 | Ultrasonic probe with motion-responsive power shut-off |
| CAN | 2,602,485 | Ultrasonic debridement probe |
| CAN | 2,655,068 | Hook-shaped ultrasonic cutting blade |
| EUR | 2.032.043 | Hook-shaped ultrasonic cutting blade |
| CAN | 2,661,917 | Ultrasonic debridement probe with healing mode |
| EUR | 2059179 | Ultrasonic debridement probe with healing mode |
| EUR | 2.234.556 | Ultrasonic debridement probe with scalloped head |
| CAN | 2,711,770 | Ultrasonic debridement probe with scalloped head |
| CAN | 136404 | Debrider with scoop head |
| EUR | 001736091-0001 | Debrider with scoop head |
| JAPAN | 1413340 | Debrider with scoop head |
| JAPAN | 6129855 | Ultrasonic osteotome especially for skull and spine |

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|-----------|------------------|---|
| CHINA | 201280055896.2 | Ultrasonic osteotome especially for skull and spine |
| CAN | 145187 | Osteotome blade shapes |
| EUR | 2021808-001-005 | Osteotome blade shapes |
| CAN | 141672 | Bone-cutting blades with 1 or 2 serrated edges (design) |
| EUR | 1899238 | Bone-cutting blade with 1 or 2 serrated edges (design) |
| JAPAN | 1445133 | Bone-cutting blade with single serrated edge (design) |
| JAPAN | 1446424 | Bone-cutting blade with two serrated edges (design) |
| CAN | 141360 | Debrider head with 2 scoops |
| EUR | 1903303 | Debrider head with 2 scoops |
| JAPAN | 1437930 | Debrider head with 2 scoops |
| CHINA | ZL2014800251826 | ULTRASONIC SURGICAL DRILL & ASSOCIATED SURGICAL METHOD |
| CAN | 147210 | Laparoscopic cannula with distal end offset or window |
| EUR | 2096008 | Laparoscopic cannula with distal end offset or window |
| JAPAN | 1471069 | Laparoscopic cannula with distal end offset or window |
| CAN | 152513 | Serrated hook blade |
| EUROPE | 2293001-0001 | Serrated hook blade |
| JAPAN | 6450380 | IRRIGATION OUTLET(S) IN SHANK |
| JAPAN | | LARGE SHALLOW RECESSES ON SIDE OF BLADE |
| CHINA | ZL2014800414518 | MICROPOROUS BLADE |
| HONG KONG | HK1223007 | MICROPOROUS BLADE |
| JAPAN | 6362700 | SEMI RIGID SHEATH FLEXING TO INCREASE DEBRIDING DEPTH |
| CHINA | ZL201480058010.9 | Probe with head traversing window in deflectable sheath |

D. Patent Applications (Non-United States):

| Country | Application Number | Description of Invention |
|---------|--------------------|---|
| EUR | 15173566.9 | Hook-shaped ultrasonic cutting blade |
| CAN | 2,799,717 | Composite ultrasonic imaging and treatment transducer |

| | | |
|---------------------|----------------|---|
| CAN | 2,799,760 | HIFU with lens; imaging elements on outer probe casing; therapy transducer inside + movable; Fresnel lens |
| CAN | 2,851,267 | Ultrasonic osteotome especially for skull and spine |
| EUR | 12837901.3.0 | Ultrasonic osteotome especially for skull and spine |
| CAN | 2,820,572 | Time-reversal manufacturing of ultrasonic probes |
| EUR | 11846265.4 | Time-reversal manufacturing of ultrasonic probes |
| CAN | 2,906,512 | Ultrasonic drill |
| EUR | 14767324.8 | Ultrasonic drill |
| JAPAN | 2016-501240 | Ultrasonic drill |
| CAN | 2,916,967 | Eccentric-head ultrasonic probe with vibration damping |
| CHINA | 201480043638.1 | Eccentric-head ultrasonic probe with vibration damping |
| HONG KONG VIA CHINA | 16111843.8 | Eccentric-head ultrasonic probe with vibration damping |
| EUR | 14818585.3 | Eccentric-head ultrasonic probe with vibration damping |
| JAPAN | 2016-523829 | Eccentric-head ultrasonic probe with vibration damping |
| CAN | 2,916,838 | Ultrasonic probe with irrigant outlets in probe shank |
| CHINA | 201480042110.2 | Ultrasonic probe with irrigant outlets in probe shank |
| HONG KONG VIA CHINA | 16111189 | Ultrasonic probe with irrigant outlets in probe shank |
| EUR | 14816983.2 | Ultrasonic probe with irrigant outlets in probe shank |
| CAN | 2,916,914 | Flat blade with large shallow recess(es) for coolant |
| CHINA | 201480043643.2 | Flat blade with large shallow recess(es) for coolant |
| HONG KONG VIA CHINA | 16111842.9 | Flat blade with large shallow recess(es) for coolant |
| EUR | 14817142.4 | Flat blade with large shallow recess(es) for coolant |
| CAN | 2,917,015 | Ultrasonic blade with micro-pores for coolant conduction |

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|---------------------|----------------|--|
| JAPAN | 2016-523885 | Ultrasonic blade with micro-pores for coolant conduction |
| CAN | 2,921,617 | Probe with head traversing window in deflectable sheath |
| EUR | 14838072.8 | Probe with head traversing window in deflectable sheath |
| CAN | 2,925,451 | Ultrasonic probe with end-of-life indicator |
| CHINA | 201480060740.2 | Ultrasonic probe with end-of-life indicator |
| EUR | 14847151.9 | Ultrasonic probe with end-of-life indicator |
| JAPAN | 2016-517348 | Ultrasonic probe with end-of-life indicator |
| CAN | 2,938,109 | Ultrasonic debridement probe head with rake-like teeth |
| CHINA | 201580017003.9 | Ultrasonic debridement probe head with rake-like teeth |
| HONG KONG | 17105187.3 | Ultrasonic debridement probe head with rake-like teeth |
| EUR | 15746296.1 | Ultrasonic debridement probe head with rake-like teeth |
| JAPAN | 2016-550183 | Light source on handpiece: induction power, removable |
| CAN | 2,947,279 | Light source on handpiece: induction power, removable |
| China | 201580031790.2 | Light source on handpiece: induction power, removable |
| HONG KONG VIA CHINA | 17110662.7 | Light source on handpiece: induction power, removable |
| EUR | 15785631.1 | Monitoring nerves, blood vessels during ultrasonic surgery |
| JAPAN | 2016-565223 | Monitoring nerves, blood vessels during ultrasonic surgery |
| CAN | 2,988,741 | Ultrasonic Surgery w/Nerve, Blood Monitoring |
| CHINA | 2016800451554 | Ultrasonic Surgery w/Nerve, Blood Monitoring |
| HONG KONG VIA CHINA | 18112126 | Ultrasonic Surgery w/Nerve, Blood Monitoring |
| JAPAN | 2017-564047 | Ultrasonic Surgery w/Nerve, Blood Monitoring |

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|---------------------|----------------|---|
| EUROPE | 16808086.9 | Probe with meltable plastic part as end-of-life indicator |
| CAN | 2,992,055 | Probe w/Meltable Plastic Component |
| CHINA | 2016800474486 | Probe w/Meltable Plastic Component |
| HONG KONG VIA CHINA | 18109518 | Probe w/Meltable Plastic Component |
| JAPAN | 2018-500727 | Probe w/Meltable Plastic Component |
| EUR | 16821973.1 | Debrider w/Cup-shaped Head w/Serrated Rim |
| CAN | 2,992,121 | Debrider w/Cup-shaped Head w/Serrated Rim |
| CHINA | 201680041420.1 | Debrider w/Cup-shaped Head w/Serrated Rim |
| HONG KONG VIA CHINA | 18109516.6 | Debrider w/Cup-shaped Head w/Serrated Rim |
| JAPAN | 2018-501284 | Debrider w/Cup-shaped Head w/Serrated Rim |
| EUR | 16824918.3 | VacCurette Probe |
| PCT | US17/029124 | Probe Grounded to Reduce Leakage |
| CAN | 3,023,055 | Probe Grounded to Reduce Leakage |
| CHINA | 2017800368674 | Probe Grounded to Reduce Leakage |
| JAPAN | 2018-558162 | Probe Grounded to Reduce Leakage |
| EUR | 17793008.8 | Probe Grounded to Reduce Leakage |
| PCT | US17/041953 | Removal of Biofilm from Prostheses & Tools |
| CAN | 3,032,078 | Removal of Biofilm from Prostheses & Tools |
| CHINA | 2017800462089 | Removal of Biofilm from Prostheses & Tools |
| JAPAN | 2019-504026 | Removal of Biofilm from Prostheses & Tools |
| EUR | 17834961.9 | Removal of Biofilm from Prostheses & Tools |
| PCT | US17/044676 | Reduction in electrical interference |
| CAN | 3,032,805 | Reduction in electrical interference |
| CHINA | 2017800479018 | Reduction in electrical interference |

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|--------|-------------|---|
| JAPAN | 2019-505395 | Reduction in electrical interference |
| EUROPE | 17837470.8 | Reduction in electrical interference |
| PCT | US18/020877 | METHOD OF REDUCING OR REMOVING BIOFILM |
| PCT | US19/013010 | Robotic Surgery, Constant Speed, Voltage Feed |
| PCT | US18/057070 | FLUID HANDLING ASSEMBLY AND TUBE SET |

E. Trademarks:

| Country | Mark | Application No. | Registration No. | Application Date | Issue Date |
|---------|------------------------|-----------------|------------------|------------------|------------|
| | | | | | |
| US | MISONIX | 76500292 | 2,812,718 | 3/25/2003 | 2/10/2004 |
| EUROPE | MISONIX | 12143533 | 4,479,036 | 6/8/2005 | 4/5/2015 |
| JAPAN | MISONIX | 2005-67630 | 5,069,488 | 7/22/2005 | 8/10/2007 |
| US | SonicOne | 76647416 | 3,373,435 | 9/26/2005 | 2/22/2008 |
| US | SONASTAR | 77410974 | 3,775,329 | 3/3/2008 | 4/13/2010 |
| US | OSTEOSCULPT | 77529601 | 3,583,091 | 7/23/2008 | 3/3/2009 |
| US | BONESCALPEL | 86374807 | 4,715,865 | 8/22/14 | 4/7/2015 |
| US | SONICONE PLUS | 85778417 | 4,506,761 | 11/13/12 | 4/1/2014 |
| US | BETTER MATTERS | 86/756,216 | 5,281,793 | 9/14/15 | 9/5/2017 |
| US | MISONIX BETTER MATTERS | 86/757,542 | 5,281,796 | 9/15/15 | 9/5/2017 |
| US | SONICVAC | 86/849,744 | 5,162,349 | 12/15/15 | 3/14/2017 |
| US | nexUS (PENDING) | 87/518,119 | | 7/6/2017 | |
| US | MISONIX | 87/517,998 | 5,931,329 | 7/6/2017 | 1/30/2018 |
| US | NEXUS | 88/458,797* | None | 6/4/2019 | None |
| US | NEXUS | 88/458,830* | None | 6/4/2019 | None |
| US | NEXUS | 88/458,987* | None | 6/4/2019 | None |
| US | (Design Only) | 88/708,790 | None | 11/27/2019 | None |
| US | (Design Only) | 88/708,890 | None | 11/27/2019 | None |
| US | NEXUS | 88/709,046 | None | 11/27/2019 | None |
| US | SONURGY | 73/128,805 | 1,082,387 | 5/27/1980 | 6/8/1982 |
| US | FIBRA-SONICS | 73/205,280 | 1,136,653 | 5/27/1980 | 6/8/1982 |
| US | ASTRAMAX | 73/263,560 | 1,197,145 | 5/27/1980 | 6/8/1982 |
| US | MYSTAIRE | 73/325,805 | 1,195,124 | 5/27/1980 | 6/8/1982 |

* Excluded Property under clause (ii) of the definition thereof in the Amended and Restated Guarantee and Collateral Agreement.

F. Copyrights:

None

G. Domain Names:

Misonix.com