502080386 10/01/2012

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------|----------------|
| Mingyao XU | 10/01/2012 |

RECEIVING PARTY DATA

| Name: | SUMITOMO HEAVY INDUSTRIES, LTD. |
|-----------------|----------------------------------|
| Street Address: | 1-1, Osaki 2-chome, Shinagawa-ku |
| City: | Tokyo |
| State/Country: | JAPAN |
| Postal Code: | 141-6025 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13632252 |

CORRESPONDENCE DATA

Fax Number: 2027978188

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 202 797 4181

Email: IPUSA@IPUSAPAT.COM, ips@itohpat.co.jp

Correspondent Name: IPUSA, P.L.L.C

Address Line 1: 1054 31ST STREET, N.W.

Address Line 2: Suite 400

Address Line 4: Washington, DISTRICT OF COLUMBIA 20007

| ATTORNEY DOCKET NUMBER: | 12SJ-011 |
|-------------------------|--------------|
| NAME OF SUBMITTER: | Chris Tanner |

Total Attachments: 3

source=12SJ-011AssignmentRecordation#page1.tif source=12SJ-011AssignmentRecordation#page2.tif source=12SJ-011AssignmentRecordation#page3.tif

> PATENT REEL: 029054 FRAME: 0980

CH \$40,00 1363

Form PTO-1595 (Rev. 07/05) OMB No. 0651-0027 (exp. 6/30/2008) U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

| RECORDATION FORM COVER SHEET PATENTS ONLY | | | | |
|--|---|--|--|--|
| To the Director of the U.S. Patent and Trademark Office: Pleas | e record the attached documents or the new address(es) below. | | | |
| 1. Name of conveying party(ies) Mingyao XU | 2. Name and address of receiving party(ies) Name:SUMITOMO HEAVY INDUSTRIES, LTD. Internal Address: | | | |
| Additional name(s) of conveying party(ies) attached? Yes V No 3. Nature of conveyance/Execution Date(s): Execution Date(s) October 1, 2012 V Assignment Merger | Street Address: 1-1, Osaki 2-chome, Shinagawa-ku, | | | |
| Security Agreement Change of Name Joint Research Agreement Government Interest Assignment | City: Tokyo State: Country: Japan Zip:141-6025 | | | |
| Executive Order 9424, Confirmatory License Other | Additional name(s) & address(es) attached? Yes No | | | |
| 4. Application or patent number(s): ✓ This A. Patent Application No.(s) Additional numbers att | document is being filed together with a new application. B. Patent No.(s) ached? Yes No | | | |
| 5. Name and address to whom correspondence concerning document should be mailed: | 6. Total number of applications and patents involved:_1 | | | |
| Name: IPUSA, PLLC Internal Address: | 7. Total fee (37 CFR 1.21(h) & 3.41) \$_40.00 Authorized to be charged by credit card Authorized to be charged to deposit account | | | |
| Street Address: 1054 31st Street, N.W., Suite 400 | Enclosed None required (government interest not affecting title) | | | |
| City: Washington | 8. Payment Information | | | |
| State; DC Zip:20007 | a. Credit Card Last 4 Numbers Expiration Date : | | | |
| Phone Number: 202-797-4181 | b. Deposit Account Number 50-4424 | | | |
| Fax Number: 202-797-8188 Email Address: ipusa@ipusapat.com | Authorized User Name Christopher M. Tanner | | | |
| 9. Signature: Signature | Oct (, 20/2 | | | |
| Christopher M. Tanner Name of Person Signing | Total number of pages including cover sheet, attachments, and documents: | | | |

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

ASSIGNMENT

THIS ASSIGNMENT, by Mingvao XU (hereinafter referred to as "Assignor"), residing at Nishitokyo-shi, Tokyo, Japan,

WHEREAS, Assignor has invented certain new and useful improvements in

CRYOGENIC REFRIGERATOR, CRYOPUMP AND DISPLACER

set forth in a patent application for Letters Patent of the United States, executed concurrently herewith; and

WHEREAS, SUMITOMO HEAVY INDUSTRIES, LTD. (hereinafter referred to as "Assignee"), having offices at 1-1, Osaki 2-chome, Shinagawa-ku, Tokyo 141-6025 Japan, is desirous of acquiring the entire right, title and interest in and to said inventions and said application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefor and thereon;

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignor has sold, assigned, transferred and set over, and by these presents does sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and application for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuation-in-part of said application, and any and all Letters Patent in the United States and all foreign countries which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignor, had this sale and Assignment not been made;

AND for the same consideration, Assignor hereby represents and warrant to Assignee, its successors legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights titles, and or interests that have arisen to Assignee under the law or that have already been transferred to Assignee, Assignor is the sole and lawful owner of the entire right, title and interest in and to said inventions and application for Letters Patent above-mentioned, and that the same are unencumbered and that Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, Assignor hereby covenants and agrees to and with Assignee, its successors, legal representatives and assigns, that Assignor will sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of any Letters Patent and applications for Letters Patent for said inventions, without charge to Assignee, its successors, legal representatives, and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns shall advise; that any proceeding in connection with said inventions, or said patent application for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of any application for Letters Patent, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable;

AND Assignor hereby requests that the Director of the United States Patent and Trademark Office issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the said Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns;

AND Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document: All practitioners associated with the Customer Number 77464.

AND Assignor acknowledges an obligation of assignment of this invention to Assignee at the time the invention was made.

| October | 1, | 2012 | hugh |
|---------|----|------|------------|
| Date | | | Mingyao XU |