

04-07-2009

U.S. DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office



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To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

**1. Name of conveying party(ies)**

Heartland Technology Partners, LLC

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

**3. Nature of conveyance/Execution Date(s):**

Execution Date(s) February 28, 2009

- ☐ Assignment ☐ Merger  
☒ Security Agreement ☐ Change of Name  
☐ Joint Research Agreement  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other \_\_\_\_\_

**2. Name and address of receiving party(ies)**

Name: The Donna M. Irwin Family Trust

Internal Address: 330 Tom Brown Road

Moorestown, NJ 08057

Street Address: 330 Tom Brown Road

City: Moorestown

State: New Jersey

Country: United States Zip: 08057

Additional name(s) & address(es) attached? ☐ Yes ☒ No

**4. Application or patent number(s):**

☐ This document is being filed together with a new application.

**A. Patent Application No.(s)**

Serial #11/114822 Serial #60/893345  
Serial #11/625002 Serial #60/906743  
Serial #11/625022  
Serial #11/625159  
Serial #11/625024

**B. Patent No.(s)**

Patent No. US 7,442,035 B2

Additional numbers attached? ☐ Yes ☒ No

**5. Name and address to whom correspondence concerning document should be mailed:**

Name: Jenkins & Kling, P.C., Attn: Keli Robertson

Internal Address: 10 S. Brentwood Blvd., Ste. 200

Clayton, MO 63105

Street Address: 10 S. Brentwood Blvd., Ste. 200

City: Clayton

State: Missouri Zip: 63105

Phone Number: 314-721-2525

Fax Number: 314-721-5525

Email Address: krobertson@jenkinskling.com

**6. Total number of applications and patents involved: 8**

**7. Total fee (37 CFR 1.21(h) & 3.41) \$320.00**

- ☐ Authorized to be charged to deposit account  
☒ Enclosed  
☐ None required (government interest not affecting title)

**8. Payment Information**

Deposit Account Number \_\_\_\_\_

Authorized User Name \_\_\_\_\_

**9. Signature:**

Signature

Keli N. Robertson

Name of Person Signing

April 1, 2009

Date

Total number of pages including cover sheet, attachments, and documents: **7**

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

**PATENT**  
**REEL: 022482 FRAME: 0810**

## COLLATERAL ASSIGNMENT OF PATENT RIGHTS

This Collateral Assignment of Patent Rights is made as of the 28<sup>th</sup> day of February, 2009 between **HEARTLAND TECHNOLOGY PARTNERS, LLC**, a Colorado limited liability company having a mailing address at 9870 Big Bend Boulevard, St. Louis, Missouri 63122 ("Assignor") and **THE DONNA M. IRWIN FAMILY TRUST**, a family trust u/i dtd Oct 12, 2006 having a mailing address at 330 Tom Brown Road, Moorestown, New Jersey 08057 ("Lender").

**BACKGROUND.** Assignor is indebted to Lender pursuant to a Convertible Promissory Note of even date herewith in the original principal amount of Five Hundred Thousand and 00/100 Dollars (\$500,000.00) (collectively "the Obligations"). Assignor has adopted, used and continues to use certain patents, patent applications and patent rights (collectively, the "Patent Rights") in its business and has agreed, among other things, to collaterally assign to Lender such Patent Rights to secure and continue the Obligations.

NOW, THEREFORE, in consideration of the premises, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby agrees with Lender as follows:

1. To secure the complete and timely satisfaction of all Obligations, Assignor hereby grants, assigns and conveys to Lender the entire right, title and interest in and to the Patent Rights registered or filed in the United States Patent and Trademark Office, including without limitation all proceeds thereof (such as, by way of example, license royalties and proceeds of infringement suits), the right to sue for past, present and future infringements, all rights corresponding thereto throughout the world and all re-issues, divisions, continuations, renewals, extensions and continuations-in-part thereof (collectively called the "Patents"): See Exhibit "A" attached hereto and incorporated herein. Lender hereby acknowledges and agrees that Assignor holds an undivided one-half interest in those Patents described as C through H, inclusive, described in Exhibit "A".

2. Assignor covenants and warrants that:

(a) The Patents are subsisting and have not been adjudged invalid or unenforceable, in whole or in part;

(b) To the best of Assignor's knowledge, each of the Patents is valid and enforceable and Assignor has notified Lender in writing of all prior art (including public uses and sales) of which it is aware;

(c) Assignor is the sole and exclusive owner of the entire and unencumbered right, title and interest in and to each of the Patents, free and clear of any liens, charges and encumbrances, including without limitation licenses, shop rights and covenants by Assignor not to sue third persons; and

(d) Assignor has the unqualified right to enter into this Agreement and perform its terms and has entered and will enter into written agreements with each of its present and future employees, agents and consultants which will enable it to comply with the covenants herein contained.

Except as specifically set forth above, Assignor does not warrant that the Patents might not be declared invalid if challenged in court.

3. Assignor agrees that, until all of the Obligations shall have been satisfied in full, it will not enter into any agreement (for example, a license agreement) which is inconsistent with Assignor's obligations under this Agreement, without Lender's prior written consent.

4. If, before the Obligations shall have been satisfied in full, Assignor shall obtain rights to any new patentable inventions, or become entitled to the benefit of any patent application or patent for any reissue, division, continuation, renewal, extension, or continuation-in-part of any Patent or any improvement on any Patent, the provisions of paragraph 1 hereof shall automatically apply thereto and Assignor shall give to Lender prompt notice thereof in writing hereof.

5. Assignor authorizes Lender to modify this Agreement to include any future patents and patent applications which are Patents under paragraph 1 or paragraph 4 hereof.

6. Upon and after the occurrence of an Event of Default or default under any of the agreements securing any of the Obligations (collectively, an "Event of Default"), Lender shall have the exclusive, non-transferable right and license to make, complete and sell any of its collateral (and finish any collateral in any unfinished condition) to which the Patents may or do apply or to which are utilized in the normal course of business of Assignor, and any purchaser from Lender may use, maintain or resell such collateral free from any infringement or other claims relating to the Patents. Said right and license shall be deemed granted as of the date of this Agreement and shall be irrevocable (and deemed coupled with an interest) until the Obligations are paid in full or otherwise released in writing by Lender.

7. Upon and after the occurrence of an Event of Default, Lender shall have, in addition to all other rights and remedies given it by this Agreement, those allowed by law and the rights and remedies of a secured party under the Uniform Commercial Code as enacted in any jurisdiction in which the Patents may be located or used and, without limiting the generality of the foregoing, the Lender may immediately, without demand of performance and without other notice (except as set forth next below) or demand whatsoever to Assignor, all of which are hereby expressly waived, and without advertisement, sell at public or private sale or otherwise realize upon, in St. Louis, Missouri or elsewhere, the whole or from time to time any part of the Patents, or any interest which the Assignor may have therein, and after deducting from the proceeds of sale or other disposition of the Patents all expenses (including all reasonable expenses for brokers' fees and legal services), shall apply the residue of such proceeds toward the payment of the Obligations. Any remainder of the proceeds after payment in full of the Obligations shall be paid over to the Assignor. Notice of any sale or other disposition of the Patents shall be given to Assignor at least five (5) days before the

time of any intended public or private sale or other disposition of the Patents is to be made, which Assignor hereby agrees shall be reasonable notice of such sale or other disposition. At any such sale or other disposition, any holder of any of the Obligations or Lender may, to the extent permissible under applicable law, purchase the whole or any part of the Patents sold, free from any right of redemption on the part of Assignor, which right is hereby waived and released.

8. At such time as Assignor shall completely satisfy all of the Obligations, Lender shall execute and deliver to Assignor all deeds, assignments and other instruments as may be necessary or proper to re-vest in Assignor full title to the Patents, subject to any disposition thereof which may have been made by Lender pursuant hereto.

9. Any and all fees, costs and expenses, of whatever kind or nature, including the reasonable attorneys' fees and legal expenses, incurred by Lender in connection with the preparation of this Agreement and all other documents relating hereto and the consummation of this transaction, the filing or recording of any documents (including all taxes in connection therewith) in public offices, the payment or discharge of any taxes, counsel fees, maintenance fees, encumbrances or otherwise protecting, maintaining, preserving the Patents, or in defending or prosecuting any actions or proceedings arising out of or related to the Patents, shall be borne and paid by Assignor on demand by Lender and until so paid shall be added to the principal amount of the Obligations and shall bear interest at the highest rate prescribed under the Obligations.

10. Assignor shall have the duty, through counsel acceptable to Lender, to prosecute diligently any patent application of the Patents pending as of the date of this Agreement or thereafter until the Obligations shall have been paid in full, to make application on unpatented but patentable inventions and to preserve and maintain all rights in patent applications and patents of the Patents. Any expenses incurred in connection with such an application shall be borne by Assignor. The Assignor shall not abandon any right to file a patent application, or any pending patent application or patent without the consent of the Lender, which consent shall not be unreasonably withheld.

11. Lender shall have the right but shall in no way be obligated to bring suit in its own name to enforce the Patents and any license thereunder, in which event Assignor shall at the request of Lender do any and all lawful acts and execute any and all proper documents required by Lender in aid of such enforcement and Assignor shall promptly, upon demand, reimburse and indemnify Agent for all costs and expenses incurred by Lender in the exercise of its rights under this paragraph 11.

12. No course of dealing between Assignor and Lender, nor any failure to exercise, nor any delay in exercising, on the part of Lender, any right, power or privilege hereunder or under the Loan Agreement shall operate as a waiver thereof; nor shall any single or partial exercise of any right, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

13. All of Lender's rights and remedies with respect to the Patents, whether established hereby or by the Obligations, or by any other agreements or by law shall be cumulative and may be exercised singularly or concurrently.

14. The provisions of this Agreement are severable, and if any clause or provision shall be held invalid and unenforceable in whole or in part in any jurisdiction, then such invalidity or unenforceability shall affect only such clause or provision, or part thereof, in such jurisdiction, and shall not in any manner affect such clause or provision in any other jurisdiction, or any other clause or provision of this Agreement in any jurisdiction.

15. This Agreement is subject to modification only by a writing signed by the parties except as provided in Paragraph 5 hereof.

16. The benefits and burdens of this Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the parties.

17. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. Said counterparts shall constitute but one and the same instrument and shall be binding upon each of the undersigned individually as fully and completely as if all had signed but one instrument so that the joint and several liability of each of the undersigned hereunder shall be unaffected by the failure of any of the undersigned to execute any or all of the said counterparts.

18. The validity and interpretation of this Agreement and the rights and obligations of the parties shall be governed by the laws of the State of Missouri without regard to conflict of law provisions.

WITNESS the execution hereof under seal as of the day and year first above written.

HEARTLAND TECHNOLOGY PARTNERS, LLC

By: Michael J. Rutsch

Print Name: Michael J. Rutsch

Title: MANAGER

THE DONNA M. IRWIN FAMILY TRUST

By: Donna M. Irwin

Print Name: Donna Irwin

Title: Trustee

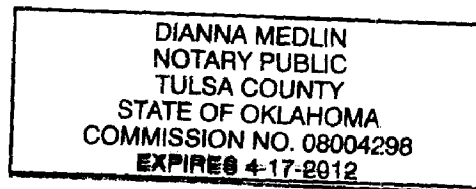
STATE OF Oklahoma )  
COUNTY OF Tulsa ) SS

On this 4<sup>th</sup> day of March, 2009, before me, a notary public in and for the County and State aforesaid, appeared Michael J. Ruisch personally known to me, and who stated that he is the Manager of Heartland Technology Partners, LLC, a Colorado limited liability company, and that he executed the above instrument as his free act and deed for the purposes therein stated.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.

Dianna Medlin  
Notary Public

My Commission Expires:  
4-17-2012



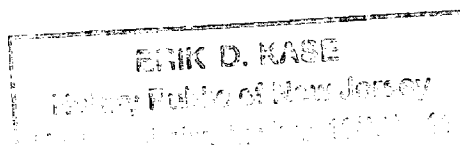
STATE OF New Jersey )  
COUNTY OF Burlington ) SS

On this 28 day of February, 2009, before me, a notary public in and for the County and State aforesaid, appeared Donna M. Irwin personally known to me, and who stated that he is the TRUSTEE of The Donna M. Irwin Family Trust, and that he executed the above instrument as his free act and deed for the purposes therein stated.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.

Erin D. Kase  
Notary Public

My Commission Expires:  
\_\_\_\_\_



**EXHIBIT "A"**

- A. US Patent Application, "Waste Heat Recovery System" (filed 4-28-2005); Serial #11/114822;
- B. US Patent Application, "Methods of Reducing Greenhouse Gases & Generating Carbon Credits" (filed 3/6/2007); Serial #60/893345;
- C. US Patent Application, "Air Stripper" (filed 1/19/2007); Serial #11/625002;
- D. US Patent Application, "Cooling Tower" (filed 1/19/2007); Serial #11/625022;
- E. US Patent Application, "Desalination System" (filed 1/19/2007); Serial #11/625159;
- F. US Patent Application, "Fluid Scrubber" (filed 1/19/2007); Serial #11/625024;
- G. US Patent, "Gas induction Bustle for use with a Flare or Exhaust Stack," Patent No. US 7,442,035 B2; issue date: October 28, 2008;
- H. US Patent Application, "Wastewater Concentrator" (filed 3/13/2007); Serial #60/906743.