

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4159387

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CURTIS WALTON STOVER	11/10/2016
JONATHAN MICHAEL RAUSCH	11/14/2016
SATOSHI ATSUCHI	11/08/2016
GULCHARAN SINGH BRAINCH	11/08/2016
ROBERT DAVID BRIGGS	11/15/2016
RONALD SCOTT BUNKER	11/10/2016
AMBARISH JAYANT KULKARNI	11/08/2016
MICHAEL ALAN MEADE	11/08/2016
BYRON ANDREW PRITCHARD	11/08/2016
ROBERT PROCTOR	11/09/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	GENERAL ELECTRIC COMPANY
<b>Street Address:</b>	1 RIVER ROAD
<b>City:</b>	SCHENECTADY
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	12345
<b>PROPERTY NUMBERS Total: 3</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	62004697
<b>Application Number:</b>	15314490
<b>PCT Number:</b>	US2015032597
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(203)840-6495
<i>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.</i>	
<b>Phone:</b>	203-229-3883
<b>Email:</b>	maureen.silveira@ge.com
<b>Correspondent Name:</b>	GENERAL ELECTRIC COMPANY GE GLOBAL PATEN
<b>Address Line 1:</b>	901 MAIN AVENUE
<b>Address Line 2:</b>	3RD FLOOR

PATENT

<b>Address Line 4:</b> NORWALK, CONNECTICUT 06851	
<b>ATTORNEY DOCKET NUMBER:</b>	271959-1, -2 & -3
<b>NAME OF SUBMITTER:</b>	MAUREEN SILVEIRA
<b>SIGNATURE:</b>	/Maureen Silveira/
<b>DATE SIGNED:</b>	11/28/2016
<b>Total Attachments: 13</b> source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page1.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page2.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page3.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page4.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page5.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page6.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page7.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page8.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page9.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page10.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page11.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page12.tif source=271959_3_US_Signed_[Combined_Declaration_and_]Assignment_28NOV2016#page13.tif	

**COMBINED DECLARATION AND GLOBAL ASSIGNMENT  
FOR UTILITY OR DESIGN PATENT APPLICATION**

As the below named inventor(s), I/we hereby declare that:

This declaration and assignment are directed to:

**ENGINE COMPONENTS WITH IMPINGEMENT COOLING FEATURES**

- ☐ the specification of which is attached hereto OR  
☒ United States application or PCT international application number

15/314490 filed on November 28, 2016, as  
amended on [date] (if applicable).  
(We hereby authorize and request the Company or its delegated attorneys or agents to  
insert above the application number and filing date of the application when known.)

The above-identified application was made or authorized to be made by us.

We believe that we are original joint inventors of a claimed invention in the application.

We hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC § 1001 by fine or imprisonment of not more than five (5) years, or both.

We have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the patentability of this application as defined in 37 CFR § 1.56, including, for continuation-in-part applications, material information which became available between the filing date of the prior application and the filing date of the continuation-in-part application.

In accordance with our obligation(s) under an Employee Innovation and Proprietary Information Agreement or (as applicable) arising out of other agreements (such as, but not limited to, the Services Agreement between General Electric Company, a New York corporation, and our employers), and/or for other good and valuable consideration of which we acknowledge receipt, I/we,

Inventor First Name	Inventor Middle Name	Inventor Last Name		Residence Town	Residence State	Residence Country
Curtis	Walton	Stover	of	West Chester	Ohio	US
Jonathan	Michael	Rausch	of	West Chester	Ohio	US
Satoshi		Atsuchi	of	Rexford	New York	US
Gulcharan	Singh	Brainch	of	West Chester	Ohio	US
Robert	David	Briggs	of	West Chester	Ohio	US
Ronald	Scott	Bunker	of	Placitas	New Mexico	US

Ambarish	Jayant	Kulkarni	of	Niskayuna	New York	US
Michael	Alan	Meade	of	West Chester	OH	US
Byron	Andrew	Pritchard	of	Cincinnati	Ohio	US
Robert		Proctor	of	Cincinnati	Ohio	US

hereby sell and assign to:

Name of Company: <i>GENERAL ELECTRIC COMPANY</i>
Entity Type (optional):
Address: <i>1 River Road, Schenectady, New York 12345, United States of America</i>

herein referred to as "Company", its successors and assigns our entire respective rights, titles and interests in and to the invention and improvements made or conceived by us described in the application(s) listed above and in the following table:

Country of Filing	Type of Filing	Application Number	Filing Date	Title
US	Provisional	62/004697	May 29, 2014	Angled Impingement with Channel Cooling Features
US	Provisional	62/004685	May 29, 2014	Angled Impingement Insert with Discrete Cooling Features
PCT	WO	PCT/US2015/032597	May 27, 2015	Engine Components with Impingement Cooling Features

(We hereby authorize and request the Company or its delegated attorneys or agents to insert above the application number and filing date of the application(s) when known.)

and any and all applications for patent and patents therefrom in any and all countries, including all divisions, continuations, continuations-in-part, reexaminations, renewals, and reissues thereof, and all rights of priority resulting from the filing of the application(s), and authorize and request any official whose duty it is to issue patents, to issue any patent on the inventions and improvements resulting therefrom to the Company, or its successors or assigns, and agree that on request and without further consideration, we will communicate to the Company or its representatives or nominees any facts known to us respecting the inventions and improvements and testify in any legal proceeding, make all rightful oaths, sign all lawful papers and execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights in all countries including, but not limited to, any provisional, non-provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, for any derivation proceedings relating thereto, and, as to any patents that issue from such applications, for any supplemental examination, derivation

proceeding, opposition, post grant review, reissue, re-examination, inter partes review, or extension thereof, and generally do everything possible to aid the Company, its successors, assigns, and nominees to obtain and enforce proper patent protection for the invention and its improvements in all countries.

Remuneration claims of the inventor(s)/assignor(s) potentially arising from German Law on Employee Inventions, or any other respective country law, remain unaffected by this assignment.

INVENTOR 1

Signature: Curtis W. Stover Date: 11/10/2016  
Curtis Walton Stover

Witnessed by: [Signature] Date: 11/10/2016  
Signature

Michael Melzak  
Printed Name of Witness

Witnessed by: [Signature] Date: 11/10/2016  
Signature

Jeffrey Ksander  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Curtis Walton Stover Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named **Curtis Walton Stover**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 2

Signature:   
Jonathan Michael Rausch

Date: 11-14-16

Witnessed by:   
Signature

Date: 11-14-16

Kurt Whittington  
Printed Name of Witness

Witnessed by:   
Signature

Date: 11-14-16

William Herman  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Jonathan Michael Rausch

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Jonathan Michael Rausch, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 3

Signature: [Signature]  
Satoshi Atsuchi

Date: Nov. 8, 2016

Witnessed by: [Signature]  
Signature

Date: Nov. 8, 2016

Hongbin Ju  
Printed Name of Witness

Witnessed by: [Signature]  
Signature

Date: Nov 8, 2016

STUART CONNELL  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Satoshi Atsuchi

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Satoshi Atsuchi, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)



GE Docket No. 271959-2

INVENTOR 4

Signature: Gulcharan Singh Brainch

Date: \_\_\_\_\_

Witnessed by: \_\_\_\_\_  
Signature

Date: \_\_\_\_\_

Printed Name of Witness

Witnessed by: \_\_\_\_\_  
Signature

Date: \_\_\_\_\_

Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

Gulcharan Singh Brainch  
Gulcharan Singh Brainch

Date: 11/8/2016

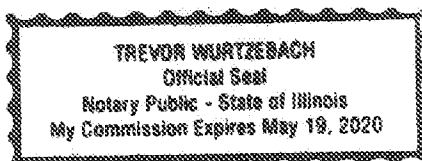
STATE OF

COUNTY OF

This 8<sup>th</sup> day of November, 2016 before me personally came the above-named Gulcharan Singh Brainch, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

T. Wurtz  
(Notary Public)



INVENTOR 5

Signature: *Robert David Briggs*  
Robert David Briggs

Date: 11/15/2016

Witnessed by: *Jeffrey J. Schultz*  
Signature

Date: 11/15/2016

Jeffrey J. Schultz  
Printed Name of Witness

Witnessed by: *Blake H. Backley*  
Signature

Date: 11/15/2016

Blake H. Backley  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Robert David Briggs

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named **Robert David Briggs**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 6

Signature: \_\_\_\_\_  
**Ronald Scott Bunker**

Date: \_\_\_\_\_

Witnessed by: \_\_\_\_\_  
Signature

Date: \_\_\_\_\_

\_\_\_\_\_  
Printed Name of Witness

Witnessed by: \_\_\_\_\_  
Signature

Date: \_\_\_\_\_

\_\_\_\_\_  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

Ronald Scott Bunker  
**Ronald Scott Bunker**

Date: 10 Nov. 2016

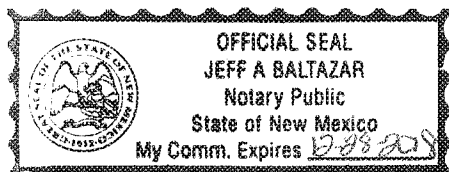
STATE OF

COUNTY OF

This 10 day of November, 2016, before me personally came the above-named **Ronald Scott Bunker**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

Jeff A Baltazar  
(Notary Public)



INVENTOR 7

Signature:   
Ambarish Jayant Kulkarni

Date: 11/8/2016

Witnessed by:   
Signature

Date: 11-08-2016

Arghvikaesh Keshavom  
Printed Name of Witness

Witnessed by:   
Signature

Date: 11/08/2016

WAYNE R GADDY  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Ambarish Jayant Kulkarni

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Ambarish Jayant Kulkarni, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 8

Signature: Michael Alan Meade  
Michael Alan Meade

Date: 11/8/2016

Witnessed by: [Signature]  
Signature

Date: 11/8/2016

Zachary Adam Scowles  
Printed Name of Witness

Witnessed by: [Signature]  
Signature

Date: 08 November 2016

Boyd B. Coe  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Michael Alan Meade

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Michael Alan Meade, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 9

Signature: Byron Andrew Pritchard  
Byron Andrew Pritchard

Date: 8 Nov 2016

Witnessed by: Hein  
Signature

Date: 11-08-2016  
~~08-11-2016~~

Harshikesh Keshawom  
Printed Name of Witness

Witnessed by: Wayne R. Gaddy  
Signature

Date: 11/08/2016

WAYNE R. GADDY  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

Byron Andrew Pritchard Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Byron Andrew Pritchard, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)

INVENTOR 10

Signature: Robert Proctor  
Robert Proctor

Date: 11/9/2016

Witnessed by: George Moertle  
Signature

Date: 11/9/2016

George Moertle  
Printed Name of Witness

Witnessed by: Hajjat Nasr  
Signature

Date: 11/09/2016

Hajjat Nasr  
Printed Name of Witness

**SECTION BELOW IS FOR USE ONLY IF SIGNING IN PRESENCE OF A NOTARY**

\_\_\_\_\_  
Robert Proctor

Date: \_\_\_\_\_

STATE OF

COUNTY OF

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ before me personally came the above-named Robert Proctor, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

\_\_\_\_\_  
(Notary Public)