503671948 01/29/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3718583

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

CONVEYING PARTY DATA

| Name | Execution Date |
|----------------------|----------------|
| MICHAEL JAMES UHRICH | 01/15/2016 |
| JOSEPH NORMAN ULREY | 01/19/2016 |
| GIOVANNI CAVATAIO | 01/19/2016 |
| ADAM NATHAN BANKER | 01/19/2016 |

RECEIVING PARTY DATA

| Name: | FORD GLOBAL TECHNOLOGIES, LLC |
|-------------------|---------------------------------|
| Street Address: | FAIRLANE PLAZA SOUTH, SUITE 800 |
| Internal Address: | 330 TOWN CENTER DRIVE |
| City: | DEARBORN |
| State/Country: | MICHIGAN |
| Postal Code: | 48126 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15010688 |

CORRESPONDENCE DATA

Fax Number: (503)459-4142

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: 503-459-4141

Email: enabnit@ahmrt.com

Correspondent Name: ALLEMAN HALL MCCOY RUSSELL & TUTTLE, LLP

Address Line 1:806 S.W. BROADWAY, SUITE 600Address Line 4:PORTLAND, OREGON 97205

| ATTORNEY DOCKET NUMBER: | 83609967 |
|-------------------------|-----------------|
| NAME OF SUBMITTER: | JIBEK ENABNIT |
| SIGNATURE: | /Jibek Enabnit/ |
| DATE SIGNED: | 01/29/2016 |

Total Attachments: 4

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PATENT REEL: 037623 FRAME: 0136

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| Attorney Docket Number | 83609967 |
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ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY, PROVISIONAL OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

| Little of Invention | EXHAUST HEAT RECOVERY AND HYDROCARBON TRAPPING | |
|--|---|--|
| This declaration is dire | ected to: | |
| □ Unit | attached application, or ted States application or PCT international application number filed on | |
| The above-identified a | application was made or authorized to be made by me. | |
| I hereby state that I hincluding the claims. | nave reviewed and understand the contents of the specification in the above-identified application, | |
| I believe that I am the | original inventor or an original joint inventor of a claimed invention in the application. | |
| continuation-in-part a | to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for pplications, material information which became available between the filing date of the prior tional or PCT international filing date of the continuation-in-part application. | |
| FORD GLOBAL TEC of the State of Delaw hereinafter referred to interest, domestic and of the ASSIGNEE, its for the inventions and name or names, or in 1 insert the serial/applitude of 15/010,688 ASSIGNEE, its succeapplications, in and to including all applicat reexaminations and rei | | |
| And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over. | | |
| And I hereby represent | t and warrant that I have not granted any rights inconsistent with the rights granted herein. | |
| or imprisonment of not | that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine t more than five (5) years or both. | |
| LEGAL NAME OF IN Inventor: _Michae | | |
| Signature: Signature: | Date: //S//5 | |
| Note: An Application D | ata Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. | |

| Attorn | ey Docket Number | 83609967 |
|--------|------------------|----------|
| | | |

ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY, PROVISIONAL OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

| Title of Inventi | on | EXHAUST HEAT RECOVERY AND HYDROCARBON TRAPPING | |
|---|---|---|--|
| This declaration is | s direct | ed to: | |
| | The attached application, or United States application or PCT international application number filed on | | |
| The above-identif | ied app | lication was made or authorized to be made by me. | |
| I hereby state that including the clair | it I hav ms. | reviewed and understand the contents of the specification in the above-identified application, | |
| I believe that I am | the ori | ginal inventor or an original joint inventor of a claimed invention in the application. | |
| continuation-in-pa | art app | disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for lications, material information which became available between the filing date of the prior nal or PCT international filing date of the continuation-in-part application. | |
| for the State of Dohereinafter referred interest, domestic of the ASSIGNEE for the inventions name or names, or insert the serial/a 15/010, ASSIGNEE, its applications, in an including all appreexaminations and And I hereby agree. | TECHI elaware ed to as and for and dis r in my applicat 688 success and to the lication d reissu ee for n | nent agreement heretofore made or by contractual obligation, I do sell, assign and set over unto NOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws is, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, is the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and reign, in and to the inventions and discoveries in the above-identified invention including the right accessors, assigns or other legal representatives to make applications and to receive Letters Patent accessors, assigns or other legal representatives to make applications, in its or their own name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to its innumber and filing date of the application to receive Letters Patent herein: Serial No. ——————————————————————————————————— | |
| organizations, and may deem necessa | to peri | form any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives because thereto the rights herein sold, assigned and set over. | |
| | | d warrant that I have not granted any rights inconsistent with the rights granted herein. | |
| I hereby acknowle or imprisonment o LEGAL NAME O | f not m | at any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine ore than five (5) years or both. | |
| | | rman Ulrey Date: 19-Jacy -2016 | |
| Signature: | alp | R.M. Ulian | |
| Note: An Application | on Data claration | Sheet (PTO/SB/14 of equivalent), including naming the entire inventive entity, must accompany this form, form for each additional inventor. | |

| Attorney Docket Number | 83609967 | | |
|------------------------|----------|-------|---|
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ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY, PROVISIONAL OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

| Title of Invention | EXHAUST HEAT RECOVERY AND HYDROCARBON TRAPPING | | | |
|--|--|--|--|--|
| This declaration is direct | ed to: | | | |
| | | | | |
| The above-identified app | lication was made or authorized to be made by me. | | | |
| I hereby state that I hav including the claims. | ve reviewed and understand the contents of the specification in the above-identified application, | | | |
| I believe that I am the or | iginal inventor or an original joint inventor of a claimed invention in the application. | | | |
| I am aware of the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application. | | | | |
| Pursuant to my employment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto FORD GLOBAL TECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws of the State of Delaware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, hereinafter referred to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and interest, domestic and foreign, in and to the inventions and discoveries in the above-identified invention including the right of the ASSIGNEE, its successors, assigns or other legal representatives to make applications and to receive Letters Patent for the inventions and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own name or names, or in my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to insert the serial/application number and filing date of the application to receive Letters Patent herein: Serial No. 15/010,688 , Filing Date January 29,2016), and I hereby sell, assign and set over to the ASSIGNEE, its successors, assigns or other legal representatives, all rights of priority, including any provisional applications, in and to the inventions and discoveries in any and all countries, entities and intergovernmental organizations including all applications claiming benefit of the filing date hereof, continuations, continuations-in-part, divisionals, reexaminations and reissue applications. | | | | |
| And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over. | | | | |
| And I hereby represent and warrant that I have not granted any rights inconsistent with the rights granted herein. | | | | |
| I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years or both. | | | | |
| LEGAL NAME OF INV | ENTOR OILLIA / 2016 | | | |
| Inventor: <u>Giovanni</u> | Cavataio Date: U1/14/2016 | | | |
| Signature: | vanni Cavatair | | | |
| | a Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. | | | |

RECORDED: 01/29/2016

| Attorney Docket Number | 83609967 |
|------------------------|----------|

ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY, PROVISIONAL OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

| Title of Invention | EXHAUST HEAT RECOVERY AND HYDROCARBON TRAPPING |
|---|--|
| This declaration is directed to: | |
| The attached application, or United States application or PCT international application number filed on | |
| The above-identified application was made or authorized to be made by me. | |
| I hereby state that I have reviewed and understand the contents of the specification in the above-identified application, including the claims. | |
| I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. | |
| I am aware of the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application. | |
| Pursuant to my employment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto FORD GLOBAL TECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws of the State of Delaware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, hereinafter referred to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and interest, domestic and foreign, in and to the inventions and discoveries in the above-identified invention including the right of the ASSIGNEE, its successors, assigns or other legal representatives to make applications and to receive Letters Patent for the inventions and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own name or names, or in my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to insert the serial/application number and filing date of the application to receive Letters Patent herein: Serial No. 15/010,688, Filing Date January 29,2016, and I hereby sell, assign and set over to the ASSIGNEE, its successors, assigns or other legal representatives, all rights of priority, including any provisional applications, in and to the inventions and discoveries in any and all countries, entities and intergovernmental organizations including all applications claiming benefit of the filing date hereof, continuations, continuations-in-part, divisionals, reexaminations and reissue applications. | |
| And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over. | |
| And I hereby represent and warrant that I have not granted any rights inconsistent with the rights granted herein. | |
| I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years or both. | |
| LEGAL NAME OF INV | |
| · · · · · · · · · · · · · · · · · · · | |
| Signature: Man | Banker |
| Note: An Application Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional declaration form for each additional inventor. | |