503095210 12/10/2014

PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| HAMID-REZA OSSAREH | 11/19/2014 |
| BAITAO XIAO | 11/18/2014 |
| ADAM NATHAN BANKER | 11/18/2014 |

RECEIVING PARTY DATA

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| City: | DEARBORN | |
| State/Country: | MICHIGAN | |
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PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14566442 |

CORRESPONDENCE DATA

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| ATTORNEY DOCKET NUMBER: | 83495632 |
|-------------------------|-----------------|
| NAME OF SUBMITTER: | JIBEK ENABNIT |
| SIGNATURE: | /Jibek Enabnit/ |
| DATE SIGNED: | 12/10/2014 |

Total Attachments: 3

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PATENT 503095210 REEL: 034467 FRAME: 0089

Please direct all correspondence to customer number: 36865

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|------------------------------|----------|
| Attorney Docket Number | 03773032 |
| | |

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 | METHODS AND SYSTEM FOR DETERMINING COMPRESSOR | | |
|---|---|--|--|
| | RECIRCULATION VALVE SLUDGE | | |
| This declaration is directed | This declaration is directed to: | | |
| The atta | sched application, or | | |
| | States application or PCT international application number filed on | | |
| The above-identified appl | ication was made or authorized to be made by me. | | |
| I hereby state that I have including the claims. | e reviewed and understand the contents of the specification in the above-identified application, | | |
| I believe that I am the orig | ginal inventor or an original joint inventor of a claimed invention in the application. | | |
| continuation-in-part appl | disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for ications, material information which became available between the filing date of the prior al 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. 14/566, 442 , Filing Date December 10, 2014), 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 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 se | cure thereto the rights herein sold, assigned and set over. | | |
| And I hereby represent an | d warrant that I have not granted any rights inconsistent with the rights granted herein. | | |
| | 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. | | |
| LEGAL NAME OF INVI | ENTOR : | | |
| | za Ossareh Date: NOV 19, 2014 | | |
| Signature: | | | |
| | | | |
| | Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form, in form for each additional inventor. | | |

PATENT REEL: 034467 FRAME: 0090

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|----|---|----------|--|
| ۱ | Attorney Docket Number | 83495632 | |
| | Attorney Docker Number | 05475052 | |
| | | | |

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 Invent | ion METHODS AND SYSTEM FOR DETERMINING COMPRESSOR |
|---|--|
| | RECIRCULATION VALVE SLUDGE |
| This declaration | |
| | |
| | The attached application, or |
| | United States application or PCT international application number |
| | filed on |
| | |
| The above-identi | fied application was made or authorized to be made by me. |
| | |
| | at I have reviewed and understand the contents of the specification in the above-identified application, |
| including the clai | ims. |
| | |
| I believe that I ar | n the original inventor or an original joint inventor of a claimed invention in the application. |
| To the second and the second | |
| | e duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for |
| | part applications, material information which became available between the filing date of the prior |
| application and o | he national or PCT international filing date of the continuation-in-part application. |
| Parement to my | employment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto |
| | TECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws |
| | Delaware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, |
| | red to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and |
| | e and foreign, in and to the inventions and discoveries in the above-identified invention including the right |
| | E, its successors, assigns or other legal representatives to make applications and to receive Letters Patent |
| | s and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own |
| | or in my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to |
| | application number and filing date of the application to receive Letters Patent herein: Serial No. |
| | Filing Date December 10, 2014), and I hereby sell, assign and set over to the |
| | successors, assigns or other legal representatives, all rights of priority, including any provisional |
| | and to the inventions and discoveries in any and all countries, entities and intergovernmental organizations |
| including all ap | plications claiming benefit of the filing date hereof, continuations, continuations-in-part, divisionals, |
| reexaminations a | and reissue applications. |
| | |
| | xee for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, |
| | ations for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental |
| | ed to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives |
| may deem neces | sary to secure thereto the rights herein sold, assigned and set over. |
| \$11 - 30 X 0 3 0 0 0 0 0 | |
| And I hereby rep | resent and warrant that I have not granted any rights inconsistent with the rights granted herein. |
| 973 136 1 10 10 10 17 | and and the subject of the second of the sec |
| I nereby acknow | ledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine |
| | of not more than five (5) years or both. |
| | OF INVENTOR |
| Inventor: E | Saitao Xiao Date: 10/2014 |
| Signature: | |
| J. S. Burning | |
| Notes An Annies | ation Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. |
| | declaration form for each additional inventor, |
| L | |

PATENT REEL: 034467 FRAME: 0091

RECORDED: 12/10/2014

| Attorney Docket Number | 83495632 |
|------------------------|----------|

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 | METHODS AND SYSTEM FOR DETERMINING COMPRESSOR RECIRCULATION VALVE SLUDGE | | |
|--|---|--|--|
| This declaration is direc | This declaration is directed to: | | |
| | ttached application, or d States application or PCT international application number filed on | | |
| The above-identified app | plication was made or authorized to be made by me. | | |
| I hereby state that I ha including the claims. | ve reviewed and understand the contents of the specification in the above-identified application, | | |
| I believe that I am the or | riginal 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. 14/566,442, Filing Date December 10,2014, 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 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 a | and warrant that I have not granted any rights inconsistent with the rights granted herein. | | |
| | hat any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine more than five (5) years or both. | | |
| LEGAL NAME OF INV | | | |
| | athan Banker Date: November 18, 2014 | | |
| Signature: | n Banter | | |
| | ta Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. | | |

PATENT REEL: 034467 FRAME: 0092