505519450 06/11/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5566255

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SEUNGWOO HONG	05/23/2019
DONG HO CHU	05/24/2019
DONG HEE HAN	05/23/2019
SANGWOOK KWEON	05/23/2019
GIL HYUN AHN	05/23/2019
KWANHEE LEE	05/24/2019
HEECHANG OH	05/24/2019
YEONGSEOP PARK	05/23/2019
JAEGU KANG	05/23/2019
SUNG BONG PARK	05/23/2019
DONGJIN KANG	05/23/2019

RECEIVING PARTY DATA

Name:	HYUNDAI MOTOR COMPANY
Street Address:	12, HEOLLEUNG-RO
Internal Address:	SEOCHO-GU
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF
Postal Code:	06797
Name:	KIA MOTORS CORPORATION
Name: Street Address:	KIA MOTORS CORPORATION 12, HEOLLEUNG-RO
Street Address:	12, HEOLLEUNG-RO
Street Address: Internal Address:	12, HEOLLEUNG-RO SEOCHO-GU

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16437795	

CORRESPONDENCE DATA

PATENT REEL: 049439 FRAME: 0584

505519450

Fax Number: (972)732-9218

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: (972) 732-1001

Email: docketing@slatermatsil.com

Correspondent Name: SLATER MATSIL, LLP
Address Line 1: 17950 PRESTON ROAD

Address Line 2: SUITE 1000

Address Line 4: DALLAS, TEXAS 75252

ATTORNEY DOCKET NUMBER:	HYU-0276US01-YM
NAME OF SUBMITTER:	GINA MARTINEZ
SIGNATURE:	/Gina Martinez/
DATE SIGNED:	06/11/2019

Total Attachments: 22
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PATENT REEL: 049439 FRAME: 0585

As a below named inventor, I, Seungwoo Hong, a citizen of the Republic of Korea, residing at #104-804, 435, Olympic-ro, Songpa-go, Seoul, Republic of Korea, make the following declaration and assignment:

I declare that	this declaration is directed to:
83	The attached application, or
	United States application number or PCT international application number
	filed on

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby sell, assign, and transfer to Hyundai Motor Company, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12 Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, and Kia Motors Corporation, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

Page 1 of 22

I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Leunguss Hong

May 23, 2019

Page 2 of 22

As a below named inventor, I, Dong Ho Chu, a citizen of the Republic of Korea, residing at \$106-601, 31, Seongbok 2-ro 76beon-gil, Suji-gu, Yongin-si, Gyeonggi-do, Republic of Korea, make the following declaration and assignment.

I decla	re that	this declaration is directed to:
	23	The attached application, or
		United States application number or PCT international application number
		filed on
The ab	ove-idi	entified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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Page 3 of 22

I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

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CHU DONG HO Dong Ho Chu

As a below named inventor, I, Dong Hee Han, a citizen of the Republic of Korea, residing at 32/6. 46, Hakdong-ro 33-gil, Gangnam-gu, Scoul, Republic of Korea, make the following declaration and assignment.

I dec	lare that	t this declaration is directed to: The attached application, or
	8.8	ene anaenen alduransus in
		United States application number or PCT international application number
		filed on
~~		
The	above-ic	lentified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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I hereby sell, assign, and transfer to Hyundai Motor Company, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12 Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, and Kia Motors Corporation, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

Page 5 of 22

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I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Day Healton

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As a below named inventor, I, Sangwook Kweon, a citizen of the Republic of Korea, residing at #101-701, 143, Haesong-ro, Yeonsu-gu, Incheon, Republic of Korea, make the following declaration and assignment.

×	The attached application, or
	United States application number or PCT international application number
	filed on

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby sell, assign, and transfer to **Hyundai Motor Company**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12 Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, and **Kia Motors Corporation**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

Page 7 of 22

I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Ju	HAY 23, 2019.	
Sangwook Kweon	Date	***************************************

As a below named inventor, I, Gil Hyun Ahn, a citizen of the Republic of Korea, residing at #304-1504, 22, Metapolis-ro, Hwaseong-si, Gyeonggi-do, Republic of Korea, make the following declaration and assignment.

I declar	e that	this declaration is directed to:
	(3)	The attached application, or
		United States application number or PCT international application number
		filed on
The abo	ve-ide	entified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby sell, assign, and transfer to **Hyundai Motor Company**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12 Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, and **Kia Motors Corporation**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

Page 9 of 22

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I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

MAY 23, 2019 Date

Page 10 of 22

Attorney Docket No. HYU-0276US01-YM

DECLARATION AND ASSIGNMENT

As a below named inventor, I, Kwanhee Lee, a citizen of the Republic of Korea, residing at #305, 104, Jangdari-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea, make the following declaration and assignment.

I declare that	this declaration is directed to:
83	The attached application, or
	United States application number or PCT international application number
	filed on

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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Page 11 of 22

I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Kumha Lee

Kwanboo Loo

May 24, 2019

Data

As a below named inventor, I, Heechang Oh, a citizen of the Republic of Korea, residing at #111-2501, 24, Hwasan-ro, Paldal-gu, Suwon-si, Gyeonggi-do, Republic of Korea, make the following declaration and assignment.

I decia	re that	this declaration is directed to:
	80	The attached application, or
		United States application number or PCT international application number
		"""" tiled on """"",

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

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Page 13 of 22

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Heeling Oh Teechana Oh

May 14, 2019

Page 14 of 22

As a below named inventor, I, Yeongseop Park, a citizen of the Republic of Korea, residing at #101-707, 15, Songpa-daero 32-gil, Songpa-gu, Seoul, Republic of Korea, make the following declaration and assignment.

Ø	The attached application, or
	United States application number or PCT international application number
	filed on
The above-io	lentified application was made or authorized to be made by me.
I believe that application.	t I am the original inventor or an original joint inventor of a claimed invention in the

I have reviewed and understand the contents of the application, including the claims.

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Yeong seop Park May 23, 2019
Yeongseop Park Date

Page 16 of 22

As a below named inventor, I, Jaegu Kang, a citizen of the Republic of Korea, residing at #202-505, 29, Sconyudong 2-ro, Yeongdeungpo-gu, Scoul, Republic of Korea, make the following declaration and assignment.

I declare that th	is declaration is directed to:		
	The attached application, or		
	United States application number or PCT international application number		
**	filed on		
The above-ident	tified application was made or authorized to be made by me.		
I believe that I application.	um the original inventor or an original joint inventor of a claimed invention in the		
I have reviewed	and understand the contents of the application, including the claims.		
	ne duty to disclose to the U.S. Patent and Trademark Office all information known crial to patentability as defined in 37 C.F.R. §1.56.		
All statements n belief are believe	nade of my own knowledge are true and all statements made on information and ad to be true.		
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existing under the Heolleung-ro, Se	ign, and transfer to Hyundai Motor Company , a corporation organized and se laws of the Republic of Korea, having its principal place of business at 12 cocho-gu, Seoul, 06797, Republic of Korea, and Kia Motors Corporation , a nized and existing under the laws of the Republic of Korea, having its principal		

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place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional,

continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

> PATENT REEL: 049439 FRAME: 0602

I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Jaean Kang May 23, 2019

Taean Kang

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As a below named inventor, I, Sung Bong Park, a citizen of the Republic of Korea, residing at #514-1106, 350, Mokdongdong-ro, Yangcheon-gu, Seoul, Republic of Korea, make the following declaration and assignment.

I declare that this declaration is directed to:

	(2)	The attached application, or
		United States application number or PCT international application number
The ab	ove-id	entified application was made or authorized to be made by me.
I belie applica		I am the original inventor or an original joint inventor of a claimed invention in the
I have	review	red and understand the contents of the application, including the cisims.
		of the duty to disclose to the U.S. Patent and Trademark Office all information known
to me t	to be n	aterial to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby sell, assign, and transfer to **Hyundai Motor Company**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12 Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, and **Kia Motors Corporation**, a corporation organized and existing under the laws of the Republic of Korea, having its principal place of business at 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Republic of Korea, hereinafter "Assignee," its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in my patent application, and in and to the application and all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on

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I agree that Assignee may apply for and receive Letters Patent for the improvements in its own name, and that, when requested, without charge to but at the expense of the Assignee, their successors, assigns, and legal representatives to carry out in good faith the intent and purpose of this agreement, I will execute all non-provisional, divisional, continuation, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to the Assignee, its successors, assigns, and representatives, all facts known to me relating to the improvements and the history thereof; and generally do everything possible which the Assignee, its successors, assigns, or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for the improvements and for vesting title to the improvements and all applications for patents and all patents on the improvements, in the Assignee, its successors, assigns, and legal representatives.

I covenant with the Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

Sung Bong Park

May 23, 2019

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As a below named inventor, I, Dongjin Kang, a citizen of the Republic of Korea, residing at #109-503, 25, Suscong-ro 244beon-gil, Paldal-gu, Suwon-si, Gyeonggi-do, Republic of Korea, make the following declaration and assignment.

I declare that this declaration is directed to:				
	The attached application, or			
	United States application number or PCT international application number			

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

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