505809848 12/09/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT5856677

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GEUNUK KIM	10/15/2019
WONTAE KIM	11/18/2019
JINHYEOK CHO	11/19/2019
JONGSEOK CHA	10/29/2019

RECEIVING PARTY DATA

Name:	LG DISPLAY CO., LTD.
Street Address:	128, YEOUI-DAERO, YEONGDEUNGPO-GU
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF
Postal Code:	07336

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16706430

CORRESPONDENCE DATA

Fax Number: (650)938-5200

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: 6509888500

Email: FWLGDisplayPatents@fenwick.com

CARLO MIGUEL C. OCAMPO **Correspondent Name:**

FENWICK & WEST LLP Address Line 1: Address Line 2: **801 CALIFORNIA STREET**

Address Line 4: MOUNTAIN VIEW, CALIFORNIA 94041

ATTORNEY DOCKET NUMBER:	34504-44167/US
NAME OF SUBMITTER:	CARLO MIGUEL C. OCAMPO, REG. NO. 65,328
SIGNATURE:	/Carlo Miguel C. Ocampo/
DATE SIGNED:	12/09/2019

Total Attachments: 8

source=44167 US Combined Declaration and Assignment (Fully Executed)#page1.tif source=44167 US Combined Declaration and Assignment (Fully Executed)#page2.tif

PATENT REEL: 051216 FRAME: 0120 505809848

source=44167 US Combined Declaration and Assignment (Fully Executed)#page3.tif	
source=44167 US Combined Declaration and Assignment (Fully Executed)#page4.tif	
source=44167 US Combined Declaration and Assignment (Fully Executed)#page5.tif	
source=44167 US Combined Declaration and Assignment (Fully Executed)#page6.tif	
source=44167 US Combined Declaration and Assignment (Fully Executed)#page7.tif	
source=44167 US Combined Declaration and Assignment (Fully Executed)#page8.tif	

PATENT REEL: 051216 FRAME: 0121

COMBINED DECLARATION (37 CFR 1.63) FOR U.S. PATENT APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT OF INVENTION

Title of Invention	Disp	lay Device
DECLARATION As the below named	and un	dersigned inventor, I hereby declare that:
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 believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

Thereby 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.

Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.

ASSIGNMENT

WHEREAS, I have made an invention described and/or claimed in the above-identified application; and

WHEREAS, LG Display Co., Ltd., a corporation of the Republic of Korea, having a place of business at 128, Yeoni-daero, Yeongdeungpo-gu, Seoni, 07336, Republic of Korea, (hereinafter referred to as "ASSIGNEE") desires to acquire the entire right, title, and interest in and to said invention in all countries throughout the world and the above-identified United States patent application;

NOW. THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to the ASSIGNEE, and its lawful successors and assigns, the entire right, title, and interest in and to said invention, the above-identified United States patent application and all divisions, continuations, and continuations-in-part of said application, and reissues, extensions, and renewals of Letters Patent granted thereon, and all corresponding patent applications filed in countries foreign to the United States ("foreign countries") and corresponding international patent applications, and all Letters Patents issuing on any such patent applications in the United States and foreign countries;

I hereby assign to the ASSIGNEE, and its lawful successors and assigns, the right to file patent applications in foreign countries on said invention in its own name and the right to claim priority to the above-identified United States patent application under the terms of the International Convention and any other relevant treaties:

Attorney Docket No. 34504-44167/US Assignee Ref. No. F19-0202U8001; OPD192255US Page 2 / 2

I hereby authorize and request the United States Patent and Trademark Office and officials in patent offices in foreign countries to issue any and all of said Letters Patent to the ASSIGNEE as the assignee of my entire right, title, and interest in and to the same, for the sole use and benefit of the ASSIGNEE, and its lawful successors and assigns, to the full end of the term for which said Letters Patent may be granted;

I hereby grant the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document;

I hereby covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment; and

Further, I hereby further covenant and agree that I will, without further consideration, communicate with the ASSIGNEE, and its lawful successors and assigns, any facts known to me respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said ASSIGNEE, and its lawful successors or assigns, execute all divisional, continuation, continuation-in-part, and reissue applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, and its lawful successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the ASSIGNEE, and its lawful successors and assigns.

IN TESTIMONY WHEREOF, I have bereunto set my hands.

NAME OF INVENTOR (Full Legal Name): Gennuk KIM

Signature: Date: 2014. /0.15

NAME OF INVENTOR (Full Legal Name): WonTae KIM

Signature: Date:
NAME OF INVENTOR (Full Legal Name): JinHyeok CHO

Signature: Date:
NAME OF INVENTOR (Full Legal Name): Jongseok CHA

Fenwick & West LLP

Date:

Signature:

Attorney Docket No. 34504-44167/US Assignce Ref. No. F19-0202US001; OPD192255US Page 1/2

COMBINED DECLARATION (37 CFR 1.63) FOR U.S. PATENT APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT OF INVENTION

Title of Invention	Disp	lay Device
DECLARATION As the below names	d and un	dersigned inventor, I hereby declare that:
This declaration is directed to:		The attached application, or United States application or PCT international application numberfiled 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.

Thereby 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.

Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.

ASSIGNMENT

WHEREAS, I have made an invention described and/or claimed in the above-identified application; and

WHEREAS, LG Display Co., l.td., a corporation of the Republic of Korea, having a place of business at 128, Yeoni-daero, Yeongdeungpo-gu, Seoni, 07336, Republic of Korea, (hereinafter referred to as "ASSIGNEE") desires to acquire the entire right, title, and interest in and to said invention in all countries throughout the world and the above-identified United States patent application;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to the ASSIGNEE, and its lawful successors and assigns, the entire right, title, and interest in and to said invention, the above-identified United States patent application and all divisions, continuations, and continuations-in-part of said application, and reissues, extensions, and renewals of Letters Patent granted thereon, and all corresponding patent applications filed in countries foreign to the United States ("foreign countries") and corresponding international patent applications, and all Letters Patents issuing on any such patent applications in the United States and foreign countries;

I hereby assign to the ASSIGNEE, and its lawful successors and assigns, the right to file patent applications in foreign countries on said invention in its own name and the right to claim priority to the above-identified United States patent application under the terms of the International Convention and any other relevant treaties:

I hereby authorize and request the United States Patent and Trademark Office and officials in patent offices in foreign countries to issue any and all of said Letters Patent to the ASSIGNEE as the assignee of my entire right, title, and interest in and to the same, for the sole use and benefit of the ASSIGNEE, and its lawful successors and assigns, to the full end of the term for which said Letters Patent may be granted:

I hereby grant the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document:

I hereby covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment; and

Further, I hereby further covenant and agree that I will, without further consideration, communicate with the ASSIGNEE, and its lawful successors and assigns, any facts known to me respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said ASSIGNEE, and its lawful successors or assigns, execute all divisional, continuation, continuation-in-part, and reissne applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, and its lawful successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the ASSIGNEE, and its lawful successors and assigns.

IN TESTIMONY WHEREOF, I have hereunto set my hands.

NAME OF INVENTOR (Full Legal Name): Gennuk KIM	
Signature:	Ďate:
NAME OF INVENTOR (Full Legal Name): WonTae KIM	
Signature: 23 FE FU	Date: 2019 . 11.18
NAME OF INVENTOR (Full Legal Name): JinHyeok CHO	
Signature:	Date:
NAME OF INVENTOR (Full Legal Name): Jongseok CHA	
Signature:	Date:

COMBINED DECLARATION (37 CFR 1.63) FOR U.S. PATENT APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT OF INVENTION

Title of Invention	Displ	iay Device
DECLARATION As the below named	and une	dersigned inventor, I hereby declare that:
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 believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

Thereby 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.

Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.

ASSIGNMENT

WHEREAS, I have made an invention described and/or claimed in the above-identified application; and

WHEREAS, LG Display Co., l.td., a corporation of the Republic of Korea, having a place of business at 128, Yeoni-daero, Yeongdeungpo-gu, Seoni, 07336, Republic of Korea, (hereinafter referred to as "ASSIGNEE") desires to acquire the entire right, title, and interest in and to said invention in all countries throughout the world and the above-identified United States patent application;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to the ASSIGNEE, and its lawful successors and assigns, the entire right, title, and interest in and to said invention, the above-identified United States patent application and all divisions, continuations, and continuations-in-part of said application, and reissues, extensions, and renewals of Letters Patent granted thereon, and all corresponding patent applications filed in countries foreign to the United States ("foreign countries") and corresponding international patent applications, and all Letters Patents issuing on any such patent applications in the United States and foreign countries;

I hereby assign to the ASSIGNEE, and its lawful successors and assigns, the right to file patent applications in foreign countries on said invention in its own name and the right to claim priority to the above-identified United States patent application under the terms of the International Convention and any other relevant treaties:

I hereby authorize and request the United States Patent and Trademark Office and officials in patent offices in foreign countries to issue any and all of said Letters Patent to the ASSIGNEE as the assignee of my entire right, title, and interest in and to the same, for the sole use and benefit of the ASSIGNEE, and its lawful successors and assigns, to the full end of the term for which said Letters Patent may be granted;

I hereby grant the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document;

I hereby covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment; and

Further, I hereby further covenant and agree that I will, without further consideration, communicate with the ASSIGNEE, and its lawful successors and assigns, any facts known to me respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said ASSIGNEE, and its lawful successors or assigns, execute all divisional, continuation, continuation-in-part, and reissue applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, and its lawful successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the ASSIGNEE, and its lawful successors and assigns.

IN TESTIMONY WHEREOF, I have bereunto set my hands.

NAME OF INVENTOR (Full Legal Name): Geunuk KIM	
Signature:	Date:
NAME OF INVENTOR (Full Legal Name): WonTae KIM	***************************************
Signature:	Date:
NAME OF INVENTOR (Full Legal Name): JinHyeok CHO	
Signature: 17 2) Ell	Date: Nov. 1941, 2019
NAME OF INVENTOR (Full Legal Name): Jongscok CHA	
Signature:	Date:

COMBINED DECLARATION (37 CFR 1.63) FOR U.S. PATENT APPLICATION USING AN

Title of Invention	Displ	ay Device
DECLARATION As the below named and undersigned inventor, I hereby declare that:		
This declaration is directed to:		The attached application, or United States application or PCT international application numberfiled on

APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT OF INVENTION

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.

Thereby 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.

Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.

ASSIGNMENT

WHEREAS, I have made an invention described and/or claimed in the above-identified application; and

WHEREAS, LG Display Co., l.td., a corporation of the Republic of Korea, having a place of business at 128, Yeoni-daero, Yeongdeungpo-gu, Seoni, 07336, Republic of Korea, (hereinafter referred to as "ASSIGNEE") desires to acquire the entire right, title, and interest in and to said invention in all countries throughout the world and the above-identified United States patent application;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to the ASSIGNEE, and its lawful successors and assigns, the entire right, title, and interest in and to said invention, the above-identified United States patent application and all divisions, continuations, and continuations-in-part of said application, and reissues, extensions, and renewals of Letters Patent granted thereon, and all corresponding patent applications filed in countries foreign to the United States ("foreign countries") and corresponding international patent applications, and all Letters Patents issuing on any such patent applications in the United States and foreign countries;

I hereby assign to the ASSIGNEE, and its lawful successors and assigns, the right to file patent applications in foreign countries on said invention in its own name and the right to claim priority to the above-identified United States patent application under the terms of the International Convention and any other relevant treaties:

Attorney Docket No. 34504-44167/US Assignee Ref. No. F19-0202US(0)1; OPD192255US Page 2/2

I hereby authorize and request the United States Patent and Trademark Office and officials in patent offices in foreign countries to issue any and all of said Letters Patent to the ASSIGNEE as the assignee of my entire right, title, and interest in and to the same, for the sole use and benefit of the ASSIGNEE, and its lawful successors and assigns, to the full end of the term for which said Letters Patent may be granted;

I hereby grant the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document;

I hereby covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment; and

Further, I hereby further covenant and agree that I will, without further consideration, communicate with the ASSIGNEE, and its lawful successors and assigns, any facts known to me respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said ASSIGNEE, and its lawful successors or assigns, execute all divisional, continuation, continuation-in-part, and reissue applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, and its lawful successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the ASSIGNEE, and its lawful successors and assigns.

IN TESTIMONY WHEREOF, I have bereunto set my hands.

NAME OF INVENTOR (Full Legal Name): Gennuk KIM	
Signature:	Date:
NAME OF INVENTOR (Full Legal Name): WooTae KIM	
Signature:	Date:
NAME OF INVENTOR (Full Legal Name); JinHyeok CHO	
Signature:	Date:
NAME OF INVENTOR (Full Legal Name): Jongseok C	HA
Signature:	Date: (0, 19, 43)