

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT5919252

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
XIN LIN	12/16/2019
YUN WANG	12/16/2019
CHIN-WEI LIN	12/16/2019
MAJID GHARGHI	12/16/2019
FAN GUI	12/16/2019
CHEN-MING CHEN	12/16/2019
JIE WON RYU	12/16/2019
HYUNWOO NHO	12/12/2019
ALEX H. PAI	12/12/2019
KINGSUK BRAHMA	12/12/2019
JUNHUA TAN	12/19/2019
SZU HENG TSANG	12/17/2019

RECEIVING PARTY DATA

Name:	APPLE INC.
Street Address:	ONE APPLE PARK WAY
City:	CUPERTINO
State/Country:	CALIFORNIA
Postal Code:	95014

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	62822468
Application Number:	16746325

CORRESPONDENCE DATA

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PATENT

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ATTORNEY DOCKET NUMBER: P40839US1 (APPL:0984)

NAME OF SUBMITTER: MATTHEW G. OSTERHAUS

SIGNATURE: /Matthew G. Osterhaus/

DATE SIGNED: 01/20/2020

Total Attachments: 13

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ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, does hereby:

SELL, ASSIGN AND TRANSFER to **Apple Inc.** (the "Assignee"), a corporation of the State of California, having a place of business at **One Apple Park Way, Cupertino, CA 95014**, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, which is entitled "**SYSTEMS AND METHODS FOR PERFORMING IN-FRAME CLEANING**," and which may be further identified below, such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States, including all provisional and non-provisional applications, and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST that any attorney associated with PTO Customer No. 73576 may delete, insert, or alter any information identifying this application, or any related application, below after execution of this assignment;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will (1) execute all provisional, non-provisional, divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers; (3) communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; (4) cooperate with the Assignee in any interference, opposition, dispute, or litigation involving any of the applications or patents for such improvements; and (5) generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

Additional Application Information

U.S. Provisional Application Serial No. 62/822,468, filed on March 22, 2019.

U.S. Non-Provisional Application Serial No. 16/746,325, filed on January 17, 2020.

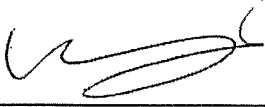
International Application Serial No. _____, filed on _____.

Inventor 1:

(Signature): 
Name: **Xin Lin**

Date: 12/16/2019

Inventor 2:

(Signature):  _____
Name: **Yun Wang**

Date: 12/16/2019

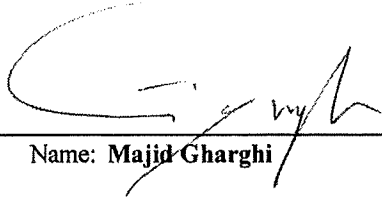
Inventor 3:

(Signature): Chin Wei Lin
Name: **Chin-Wei Lin**

Date: 12/16, 2019.

Inventor 4:

(Signature):



A handwritten signature in black ink, appearing to read 'Majid Gharghi', is written over a horizontal line. The signature is stylized and cursive.

Name: **Majid Gharghi**

Date:

12/16/2019

Inventor 5:

(Signature): Fan Gui
Name: **Fan Gui**

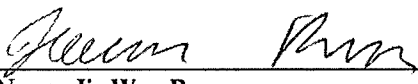
Date: 12/16/2019

Inventor 6:

(Signature): Chen-Ming Chen.
Name: **Chen-Ming Chen**

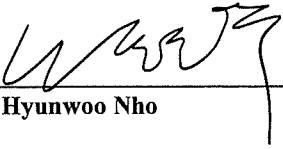
Date: 2019.12.16

Inventor 7:

(Signature): 
Name: **Jie Won Ryu**

Date: Dec. 16, 2019

Inventor 8:

(Signature):  _____
Name: **Hyunwoo Nho**

Date: 12/12/2019

Inventor 9:

(Signature): 
Name: Alex H. Pai

Date: 12/12/19

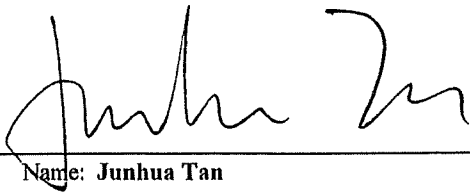
Inventor 10:

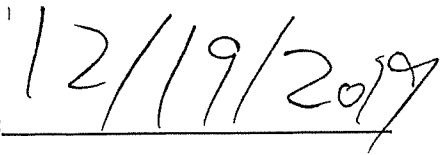
(Signature): 
Name: **Kingsuk Brahma**

Date: **12/12/2019**

12/12/2019

Inventor 11:

(Signature):  _____
Name: Junhua Tan

Date:  _____

Inventor 12:

(Signature): Szu Heng Tseng
Name: Szu Heng Tseng

Date: 12 / 17 / 2019