PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5155900

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PETER M. PAVLOV	09/19/2018
JOHN R. BRUSS	09/19/2018
DUY P. LE	09/24/2018

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16140350

CORRESPONDENCE DATA

Fax Number:

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.

Email:docketing@ganzlaw.comCorrespondent Name:LLOYD L POLLARD II

Address Line 1: P.O. BOX 2200

Address Line 4: HILLSBORO, OREGON 97123

ATTORNEY DOCKET NUMBER:	P38598US1/APP2018US
NAME OF SUBMITTER:	RACHEL A. TOWNSEND
SIGNATURE:	/Rachel A. Townsend/
DATE SIGNED:	09/24/2018

Total Attachments: 6

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source=P38598US1_APP2018US_Executed Assignments#page6.tif

For good and valuable consideration, receipt of which is hereby acknowledged, I/we, the undersigned, as inventor(s) and Assignor(s) of certain inventions, (hereafter, the "Inventions") for which I/we are making application, as follows:

United States Non-Provisional Patent Application

Entitled: ACOUSTIC CHAMBERS DAMPED WITH SIDE-BRANCH RESONATORS, AND RELATED

SYSTEMS AND METHODS Filed on September 24, 2018

Assigned Application Serial Number <u>16/140,350</u>

Identified by Attorney Docket No P38598US1/APP2018US of GANZ POLLARD, LLC

P.O. Box 2200, Hillsboro, OR 97123

(Hereinafter referred to as the "Patent Applications")

hereby sell, assign, and transfer unto

Apple Inc.

of One Apple Park Way, Cupertino, CA 95014 a corporation,

for its own use and benefit, and for its successors and assigns, or such nominee(s) as it may designate (hereinafter individually and collectively referred to as the "Assignee"), the entire right, title and interest, for all countries, in and to: (a) the Inventions; (b) the Patent Applications and all related patent rights; (c) all other provisional, non-provisional, and design patent applications pertaining to said Inventions or the Patent Applications (the "Other Applications"); (d) all patent or registration applications claiming priority to the Patent Applications and/or to the Other Applications, or from which the Patent Applications or the Other Applications claim priority, including international and foreign applications (collectively, the "Priority Applications"); (e) all continuation, continuation-in-part, and divisional applications of the Patent Applications, the Other Applications and the Priority Applications (the "Continuing Applications"); (f) all reissues, re-examinations and/or extensions relating to or of the Patent Applications, the Other Applications or the Priority Applications, including, without limitation, all renewals of and/or substitutes thereof (collectively, the "Extensions"); and (g) all rights and privileges that may be issued, granted, registered, or otherwise arise from, in any country, all said Inventions (such rights and privileges including, without limitation, all patent rights, other protections arising from patent applications, and other proprietary rights). Hereinafter, all the Patent Applications, Other Applications, Priority Applications, Continuing Applications and rights arising therefrom are collectively referred to as "Patent Family Rights."

If the U.S. Serial Number, the filing date, or both, are unknown at the time of execution of this Assignment, Assignor authorizes any attorney listed with GANZ POLLARD, LLC, or otherwise listed with USPTO Customer Number 130224, to insert where indicated above, the serial number, the filing date, or both, when known, and to make changes to the Attorney Docket No. listed herein.

Without limiting the generality of the foregoing, Assignor(s) requests and agrees that all patents under Patent Family Rights shall issue to said Assignee, as the sole owner of the entire right, title and interest in and to any and all said patents and said inventions thereby patented. And Assignor(s) grants Assignee a limited power of attorney to execute documents on behalf of Assignor(s) to give effect to this provision in case Assignor(s) is unavailable, deceased, incapacitated, or otherwise unable or unwilling to cooperate in the process of effecting a transfer of ownership, or recordation of ownership right(s) in the name of the Assignee.

Assignor(s) agrees that, when requested, Assignor(s) will, without charge to said Assignee but at Assignee's expense, execute additional assignments and all other writings, make all declarations and take all oaths, and do all other acts which Assignee reasonably may deem necessary, desirable or convenient (i) for perfecting, securing, maintaining, asserting, and enforcing any and all Patent Family Rights in any and all countries and (ii) for vesting the entire right, title and interest therein and thereto solely in said Assignee.

Assignor(s) authorizes and empowers said Assignee, to invoke and claim in any application in the Patent Family Rights filed by or for it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any treaty or convention which may henceforth be substituted for or be an alternative to the Convention, and to invoke and claim such right of priority without further written or oral authorization from Assignor(s).

This Assignment grants said Assignee the sole right (a) to pursue in its own name any past, present, or future actions (including, without limitation, claims of infringement) based on any and all rights and privileges that may be issued, granted or otherwise arise from, or relate to, in any country, the Patent Family Rights; and (b) to exclusively retain any awards, settlements, or other remedies therefrom, as fully and as entirely as we would have had the right to pursue and to retain had this assignment and sale not been made.

A copy of this Assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file, or like document which may be required in any country for any purpose. More particularly, a copy of this Assignment shall prove Assignee's right to claim the aforesaid benefit of priority under the International Convention for the Protection of Industrial Property, as amended, or by any treaty or convention which may substitute for the Convention.

Assignor(s) acknowledges that Assignor(s) was obliged to assign all rights, title and interest in and to the Patent Family Rights to Assignee when the Inventions were conceived. Assignor(s) represents and warrants that the rights and property herein conveyed are free and clear of any encumbrance, and that Assignor(s) has full right to convey them as set forth herein.

Assignor(s) represents and warrants Assignor(s) will not execute any assignment, encumbrance or other writing, or do any other act, that conflicts (a) with this Assignment or (b) without limiting the generality of the foregoing, with any provision set forth herein.

If Assignor(s) previously executed an assignment of rights via another assignment agreement, e.g., an employment agreement, independent contractor agreement, consulting agreement, joint development agreement, etc., all grants of rights described herein shall be effective as of the date of the earliest grant of rights under any such agreement. Nothing herein shall supersede any non-conflicting provisions of any such agreement.

IN WITNESS WHEREOF, Assignor(s) signs on the day and year set forth below.

peter parlo	Sep-19-2018
PETER M. PAVLOV	DATE
JOHN R. BRUSS	DATE
DUY LE	DATE

Page 2 of 2– ASSIGNMENT Attorney Docket No. P38598US1/APP2018US Assignor(s) authorizes and empowers said Assignee, to invoke and claim in any application in the Patent Family Rights filed by or for it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any treaty or convention which may henceforth be substituted for or be an alternative to the Convention, and to invoke and claim such right of priority without further written or oral authorization from Assignor(s).

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IN WITNESS WHEREOF, Assignor(s) signs on the day and year set forth below.

PETER M. PAYLOY	DATE
()	
Jan Jan	Sept 19,2018
JOHN R. BRUSS	DATE ()
DUY LE	DATE

Page 2 of 2- ASSIGNMENT Attorney Docket No. P38598US1/APP2018US

For good and valuable consideration, receipt of which is hereby acknowledged, I/we, the undersigned, as inventor(s) and Assignor(s) of certain inventions, (hereafter, the "Inventions") for which I/we are making application, as follows:

United States Non-Provisional Patent Application Entitled: ACOUSTIC CHAMBERS DAMPED WITH SIDE-BRANCH RESONATORS, AND RELATED SYSTEMS AND METHODS Filed on September 24, 2018 Assigned Application Serial Number $\frac{16/140,350}{\text{Identified by Attorney Docket No P38598US1/APP2018US of GANZ POLLARD, LLC P.O. Box 2200, Hillsboro, OR 97123}$

(Hereinafter referred to as the "Patent Applications")

hereby sell, assign, and transfer unto
Apple Inc.
of One Apple Park Way, Cupertino, CA 95014 a corporation,

for its own use and benefit, and for its successors and assigns, or such nominee(s) as it may designate (hereinafter individually and collectively referred to as the "Assignee"), the entire right, title and interest, for all countries, in and to: (a) the Inventions; (b) the Patent Applications and all related patent rights; (c) all other provisional, non-provisional, and design patent applications pertaining to said Inventions or the Patent Applications (the "Other Applications"); (d) all patent or registration applications claiming priority to the Patent Applications and/or to the Other Applications, or from which the Patent Applications or the Other Applications claim priority. including international and foreign applications (collectively, the "Priority Applications"); (e) all continuation, continuation-in-part, and divisional applications of the Patent Applications, the Other Applications and the Priority Applications (the "Continuing Applications"); (f) all reissues. re-examinations and/or extensions relating to or of the Patent Applications, the Other Applications or the Priority Applications, including, without limitation, all renewals of and/or substitutes thereof (collectively, the "Extensions"); and (g) all rights and privileges that may be issued, granted, registered, or otherwise arise from, in any country, all said Inventions (such rights and privileges including, without limitation, all patent rights, other protections arising from patent applications, and other proprietary rights). Hereinafter, all the Patent Applications. Other Applications, Priority Applications, Continuing Applications and rights arising therefrom are collectively referred to as "Patent Family Rights."

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Page 1 of 3- ASSIGNMENT Attorney Docket No. P38598US1/APP2018US

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Page 2 of 3- ASSIGNMENT Attorney Docket No. P38598US1/APP2018US

IN WITNESS WHEREOF, Assignor(s) signs on the day and year set forth below.

PETER M. PAVLOV		DATE	
JOHN R. BRUSS	×	DATE	

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