

Alternatively, bezel 310 can include any other suitable number of leads, or any other suitable distribution of leads along bezel 310 and in other portions of electronic device 300. The leads can detect the user's cardiac activity through the contact with the user's thumb and fingers, and provide the detected activity to the electronic device processor for processing. The size of leads 322 and 324 can be selected based on any suitable consideration, including for example the different possible positions of a user's hands on the device, the amount of contact necessary to detect the user's cardiac activity, preventing or reducing short circuits and other cardiac signal detection errors, manufacturing considerations (e.g., the minimum or maximum size leads that can be integrated in the bezel), aesthetic considerations (e.g., sizing leads 322 and 324 to reduce the visibility of leads 322 and 324), or any other suitable consideration.

[0043] In some embodiments, electronic device 300 can include additional lead 326 embedded in or behind display 302. Lead 326 can be operative to detect a user's heart activity as the user moves a finger across display 302, for example in the vicinity of or directly over lead 326 (e.g., as the user drags a finger over lead 326 to move a slider when unlocking the electronic device). Using lead 326, the electronic device can detect an electrical signal from a different portion of the user's body (e.g., leads 322 and 324 detect signals through a first hand, and lead 326 detects signals through the second hand), which can provide the processor with additional information for determining characteristics of the user's cardiac activity.

[0044] Any suitable approach can be used to prevent leads 322, 324 and 326 from shorting. In particular, electronic device 300 can include at least one non-conductive component positioned between each of
5 leads 322, 324 and 326. For example, a rubber gasket can be positioned between leads 322 and 324 (in bezel 310) and lead 326 (in display 302). In some embodiments, the cardiac electrical signals detected by leads 322, 324 and 326 can be faint or have particular
10 characteristics that require materials having particular properties (e.g., silver-based compounds) to detect and transmit. In such cases, although the material used for bezel 310 or other electronic device components can be conductive, its conductivity can be
15 insufficient to transmit signals detected by lead 322 directly to lead 324 (e.g., shorting leads 322 and 324). This may allow leads 322 and 324 to be embedded directly in bezel 310 without the need for additional isolating material, which can add cost and complexity
20 to the manufacturing process.

[0045] To ensure that electronic device 300, and in particular bezel 310 remains aesthetically pleasing, leads 322 and 324 can be finished to resemble bezel 310. For example, leads 322 and 324 can be
25 polished or roughened to match the finish of bezel 310. As another example, a conductive coating can be applied to leads 322 and 324 to match the color, tone and reflectivity of bezel 310. In some embodiments, the texture or feel of leads 322 and 324 can also be
30 selected to render leads 322 and 324 visibly and haptically indistinguishable or nearly indistinguishable from bezel 310.

[0046] Leads 322 and 324 can be integrated in bezel 310 using any suitable approach. In some embodiments, leads 322 and 324 can be positioned on the exterior surface of bezel 310 and include an

5 electrically conductive path to the electronic device processor. FIG. 4A is a cross-sectional view of an illustrative electronic device having a bezel with an embedded heart sensor lead in accordance with one embodiment of the invention. Electronic device 400 can

10 include display 402 and bezel 410. Lead 422 can be embedded along the outer surface of bezel 410 such that lead 422 is exposed to the user during use. Connector 424 can be coupled to the inner surface of lead 422 and extend into electronic device 400 to be

15 coupled with a processor. In some embodiments, electronic device 400 can in addition include an isolating layer positioned between lead 422 and bezel 410 (not shown). The isolating layer can be constructed from any suitable material having non-

20 conductive properties, including for example a ceramic material, plastic, rubber, or any other suitable material. Alternatively, if the material of bezel 410 is not conductive, or insufficiently conductive to cause several distinct leads 422 positioned on

25 bezel 410 from shorting, no isolating layer may be necessary.

[0047] FIG. 4B is a cross-sectional view of another illustrative electronic device having a bezel with an embedded heart sensor lead in accordance with one

30 embodiment of the invention. Electronic device 450 can include display 452 and bezel 460. If the electrical conductivity and size of bezel 460, and the strength or characteristics of the cardiac signal provided by the

user and detected by the heart sensor are adapted such that the signal can be transmitted along short distances in bezel 460, lead 472 of the heart sensor can be positioned against the back surface of bezel 460. Alternatively, lead 472 can be placed within the thickness of bezel 460 (e.g., in a pocket within the bezel wall), but underneath the outer surface of the bezel. The short thickness of bezel 460 can allow electrical signals to propagate from the user to the outer surface of bezel 460, through bezel 460, and into lead 472, which may in turn transmit the signals to a processor using connector 474. In addition, if several leads are placed along different portions of bezel 460, the distance between adjacent leads can be sufficiently large (e.g., substantially larger than the thickness of bezel 460) that different leads of bezel 460 cannot detect the same electrical signal.

[0048] In some embodiments, entire portions of the bezel can be used as leads for the heart sensor. FIG. 5 is a schematic view of an illustrative electronic device using portions of the bezel as leads in accordance with one embodiment of the invention. Similar to electronic device 300 (FIG. 3), electronic device 500 can include display 502 and bezel 510. Bezel 510 can be separated into several electrically isolated segments, for example segments 522 and 524. The segments can be electrically isolated using isolating portions 530 and 532, which can be constructed from any suitable non-conductive material, such as for example a composite material, a plastic, rubber, or any other suitable material. Although FIG. 5 shows bezel 510 broken into two segments having

similar sizes, it will be understood that bezel 510 can be separated into any suitable number of electrically isolated segments, and each segment can have any suitable size. In particular, the sizes and
5 distribution of each segment can be selected based on physiological considerations (e.g., where a user's hand will be positioned on the device, or aligning the segments to contact particular portions of the user's body).

10 **[0049]** To ensure that electronic device 500 remains aesthetically pleasing, isolating portions 530 and 532 can be finished to resemble bezel 510. For example, isolating portions 530 and 532 can be polished or machined to create a reflective surface matching the
15 reflection of bezel 510. As another example, a reflective or finishing coating can be applied to the surfaces of isolating portions 530 and 532 to match the finish of bezel 510. In some embodiments, the texture of isolating portions 530 and 532 can also be selected
20 to render segments 522 and 524 visually and haptically indistinguishable or nearly indistinguishable from isolating portions 530 and 532.

[0050] Other heart sensor leads can be placed at any other suitable position on the electronic device
25 enclosure. For example, if the enclosure is constructed from a bezel supporting a display and a housing forming the exterior surface of the device behind the display, one or more leads can be embedded in or adjacent to the housing. For example, if the
30 housing includes a conductive section (e.g., a plastic housing with a metallic logo in the center of the housing), the lead can be coupled to or integrated in the conductive section.

[0051] The heart sensor and processor can detect and process the user's cardiac activity at any suitable time. For example, the processor can receive and process heart activity when the device is locked and held while in its locked state. As another example, the processor can receive and process heart activity as the user places a finger over lead 326 (e.g., when the user slides a finger across the display to unlock the device) or when an input mechanism detects a particular input. As still another example, the electronic device can receive and process heart activity data in response to a user instruction or request to access a particular application or data that for which access is restricted. Upon receiving the cardiac activity, the electronic device can extract one or more characteristics of the received activity and compare the extracted characteristics with the characteristics previously stored in memory that were associated with authorized users. If the extracted characteristics match those of an authorized user, the electronic device can authenticate the identified user.

[0052] The electronic device can perform any suitable operation in response to identifying and authenticating a user based on detected cardiac signals. In some embodiments, the electronic device can provide access to restricted applications, for example applications for which only particular users have licenses or that only particular users have purchased. In some embodiments, the electronic device can provide access to particular data or application settings associated with an authorized user. For example, the electronic device can provide access to the identified user's contact list, or to the

identified user's e-mail account or telephone history. As another example, the electronic device can allow the user to access private banking applications, or conduct financial transactions (e.g., transferring funds to
5 different accounts, or purchasing merchandise) using the electronic device. In some embodiments, the electronic device can load user settings and profiles for providing a customized display to the user. For example, the electronic device can display icons or
10 options in the manner set by the user, or provide displays using a color scheme, fonts, or other customizable display attribute that are associated with the identified user.

[0053] In some embodiments, the electronic device
15 can use the detected heart rate or heartbeat characteristics to determine the user's mood. In particular, because the allowable determined characteristics associated with each user can include a range of values, the electronic device can determine
20 the distribution of the detected characteristics in the allowable characteristic ranges. Using the determined distribution, the electronic device can establish a user's mood and provide electronic device operations or data (e.g., media) associated with the extrapolated
25 mood. Systems and methods for providing mood-based electronic device operations are discussed in more detail in commonly assigned U.S. Patent Application No. 12/218,203, filed July 10, 2008 and entitled "System and Method for Creating a Playlist Based on
30 Mood," which is incorporated by reference herein in its entirety.

[0054] In some embodiments, the electronic device can provide media playback based on the user's detected

cardiac signal. For example, the electronic device can identify media having beats per minute or other characteristics that are associated with or related to the user's cardiac signal or heart rate, and play back the identified media. As another example, the media provided can have beats per minute faster or slower than the user's current heart rate to direct the user to work harder (e.g., during a workout) or to cool or calm the user down (e.g., at the end of a workout).

10 **[0055]** FIG. 6 is a flowchart of an illustrative process for performing an electronic device operation based on a user's cardiac signal in accordance with one embodiment of the invention. Process 600 can begin at step 602. At step 604, the electronic device can
15 detect a user's cardiac signal. For example, the electronic device can detect a user's heart rate or heart beat using one or more leads connected to or placed on a housing, bezel, or other exterior surface of the electronic device. The electronic device can
20 process the received signal using any suitable approach, including for example to determine unique characteristics of the signal. Such characteristics can include, for example, durations between peaks in an EKG signal, peak values or ratios between peaks in the
25 EKG signal, or any other suitable characteristic. At step 606, the electronic device can determine whether the user detected at step 604 is an authorized user. For example, the electronic device can compare the determined characteristics of the detected cardiac
30 signals with a library of signals associate with known authorized users. If the electronic device determines that the user is not authorized (e.g., the characteristics of the detected cardiac signal do not

match characteristics of a cardiac signal stored in memory), process 600 can move to step 608.

[0056] At step 608, the electronic device can prevent access to restricted electronic device operations. For example, the electronic device can prevent the user from accessing personal or private information associated with other users. As another example, the electronic device can prevent the user from accessing applications or operations associated with particular users (e.g., applications purchased by particular users). As still another example, the electronic device can prevent the user from accessing any electronic device operation (e.g., no operation except for emergency calls). Process 600 can then end at step 610

[0057] If, at step 606, the electronic device instead determines that the user is authorized, process 600 can move to step 612. At step 612, the electronic device can determine the restricted operations that are associated with the user. For example, the electronic device can determine the particular private data associated with the authorized user (e.g., e-mail accounts, contact lists and banking information). As another example, the electronic device can determine the particular operations or applications associated with the authorized user (e.g., applications purchased by the user using an applications store, or system controlling operations associated with an administrative account). At step 614, the electronic device can provide access to the user's determined restricted operations. For example, the electronic device can load determined data. As another example, the electronic device can

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provide links for launching determined personal or private applications. Process 600 can then end at step 610.

[0058] The above-described embodiments of the
5 present invention are presented for purposes of illustration and not of limitation, and the present invention is limited only by the claims which follow.

P7276US1

What is Claimed is:

1. An electronic device operative to detect
a user's cardiac signal, comprising:
a housing;
a bezel coupled to the housing to form
5 an enclosure for the electronic device;
a heart sensor operative to detect the
user's cardiac signal, the heart sensor comprising at
least one lead placed in contact with an interior
surface of at least one of the bezel and the housing;
10 and
a processor operative to receive and
process the detected cardiac electrical signal.

2. The electronic device of claim 1,
wherein:
the bezel comprises a first section and
a second section, the first and second sections located
5 on opposite sides of the electronic device; and
the heart sensor comprising a first and
second lead, the first lead coupled to the first
section and the second lead coupled to the second
section.

3. The electronic device of claim 2,
wherein the first section is electrically isolated from
the second portion.

4. The electronic device of claim 1,
wherein:
the bezel is constructed from a material
having a first conductivity; and

5 the at least one lead is constructed
from a material having a second conductivity, the
second conductivity being substantially higher than the
first conductivity.

5. The electronic device of claim 4,
wherein the bezel is constructed from one of aluminum
and steel, and wherein the at least one lead is
constructed from a silver based compound.

6. The electronic device of claim 4,
wherein the conductivity of the first material is such
that the detected cardiac electrical signal is not
transmitted over a distance substantially larger than
5 the thickness of the bezel.

7. The electronic device of claim 6,
wherein the heart sensor comprises a first lead and a
second lead placed in contact with the bezel, the first
and second leads positioned apart at distances
5 substantially larger than the thickness of the bezel.

8. The electronic device of claim 1,
wherein:
 the bezel further comprises a pocket
underneath the outer surface of the bezel; and
5 the at least one lead is placed within
the pocket.

9. A bezel for use in an electronic device
operative to detect a user's cardiac signal, the bezel
operative to be coupled to a housing to form an
electronic device enclosure, the bezel comprising:
5 an outer surface operative to be
contacted by the user; and

a pad coupled to a heart sensor lead,
the pad embedded in the outer surface, wherein the pad
and outer surface are visibly indistinguishable to the
10 user.

10. The bezel of claim 9, wherein the bezel
is constructed from a conductive material.

11. The bezel of claim 10, further
comprising:

a second pad coupled to a second heart
sensor lead, the second pad embedded in the outer
5 surface of the bezel, wherein the conductivity of the
bezel is insufficient to transmit a cardiac electrical
signal detected by the pad to the second pad.

12. The bezel of claim 9, wherein:
a first finishing process is applied to
the bezel; and

a second finishing process, different
5 from the first finishing process, is applied to the pad
to render the outer surfaces of the bezel and pad
visibly indistinguishable.

13. The bezel of claim 9, further
comprising an isolating layer placed between the bezel
10 and the pad, such that a cardiac signal detected by pad
is not transmitted to the bezel.

14. The bezel of claim 9, wherein the bezel
is constructed from one of steel and aluminum.

15. The bezel of claim 9, wherein the pad is
constructed from a silver based compound.

16. An electronic device operative to detect a user's cardiac electrical signals, comprising:

- 5 a display;
 a housing;
 a bezel operative to retain the display
and couple to the housing;
 a sensor operative to process the user's
10 cardiac electrical signals;
 a first lead connected to the sensor,
the first lead coupled to an interior surface of the
bezel; and
 a second lead connected to the sensor,
15 the second lead coupled to an interior surface of the
housing, wherein the first and second leads are
operative to detect the user's cardiac electrical
signals from contacts of the bezel and housing with the
user's skin

17. The electronic device of claim 16,
wherein the first and second leads are electrically
isolated such that the user's cardiac electrical signal
is not propagated between the first and second leads
5 through the bezel and housing.

18. The electronic device of claim 16,
wherein the first lead further comprises a pad embedded
underneath the outer surface of the bezel.

19. The electronic device of claim 18,
wherein the pad is constructed from a silver based
compound, and the bezel is constructed from at least
one of aluminum and steel.

20. A method for authenticating a user,
comprising:

detecting a user's cardiac signal from
contacts between the user and at least one lead, the at
5 least one lead placed in contact with an inner surface
of at least one of a bezel and housing of an electronic
device;

processing the detected cardiac signal
to extract at least one unique characteristic of the
10 cardiac signal;

comparing the at least one unique
characteristic with a library of characteristics
associated with authorized users;

determining that the at least one unique
15 characteristic matches a characteristic in the library
of characteristics; and

providing access to a restricted
electronic device operation in response to determining.

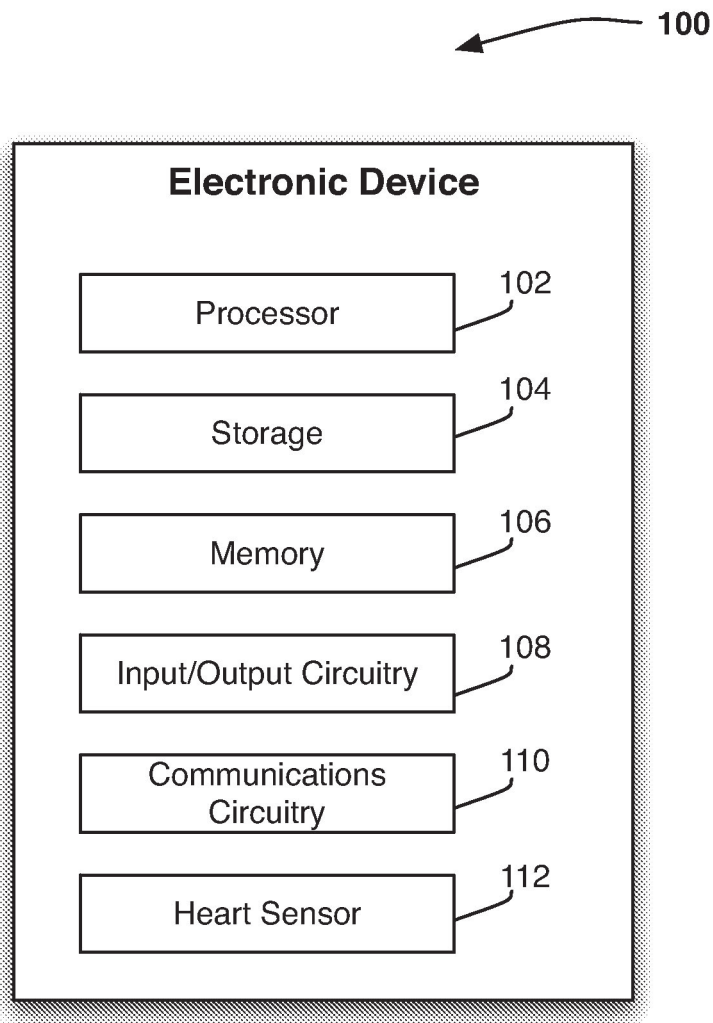
21. The method of claim 20, wherein
providing further comprises providing access to
restricted data.

22. The method of claim 20, wherein
providing further comprises providing access to at
least one restricted application.

23. The method of claim 20, wherein the at
least one unique characteristic further comprises at
least one of a duration, peak height, and ratio of peak
heights.

Abstract

[0059] This is directed to an electronic device having an integrated sensor for detecting a user's cardiac activity and cardiac electrical signals. The electronic device can include a heart sensor having several leads for detecting a user's cardiac signals. The leads can be coupled to interior surfaces of the electronic device housing to hide the sensor from view, such that electrical signals generated by the user can be transmitted from the user's skin through the electronic device housing to the leads. In some embodiments, the leads can be coupled to pads placed on the exterior of the housing. The pads and housing can be finished to ensure that the pads are not visibly or haptically distinguishable on the device, thus improving the aesthetic qualities of the device. Using the detected signals, the electronic device can identify or authenticate the user and perform an operation based on the identity of the user. In some embodiments, the electronic device can determine the user's mood from the cardiac signals and provide data related to the user's mood.

**FIG. 1**

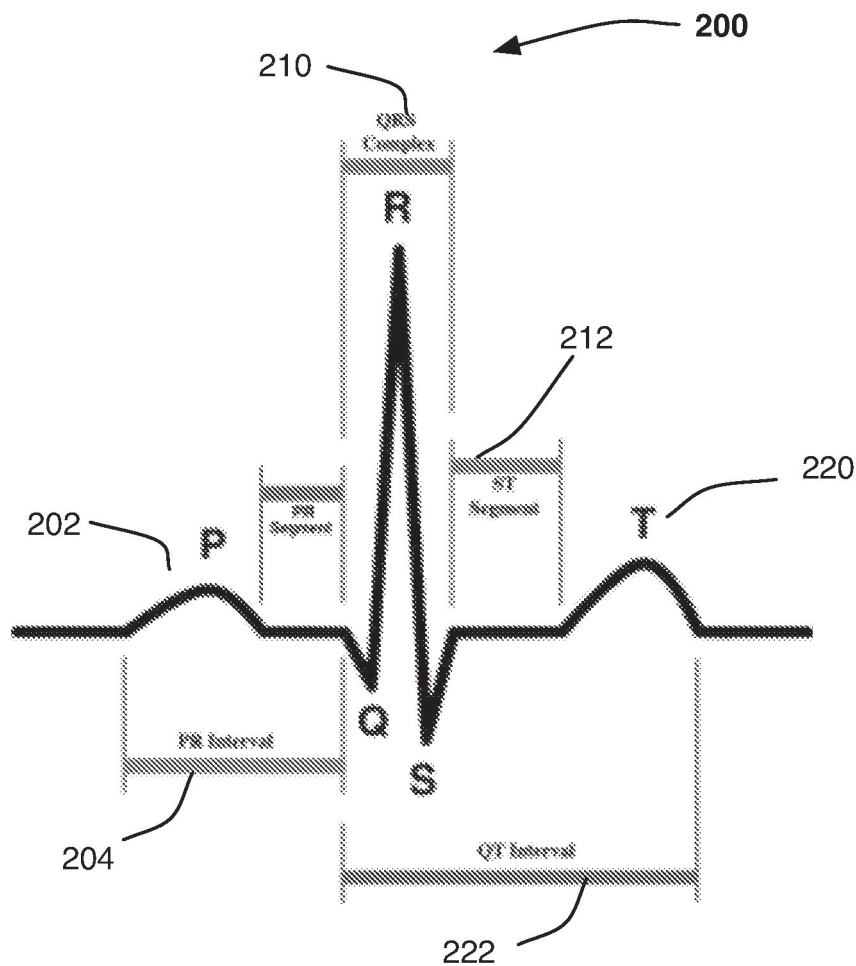


FIG. 2

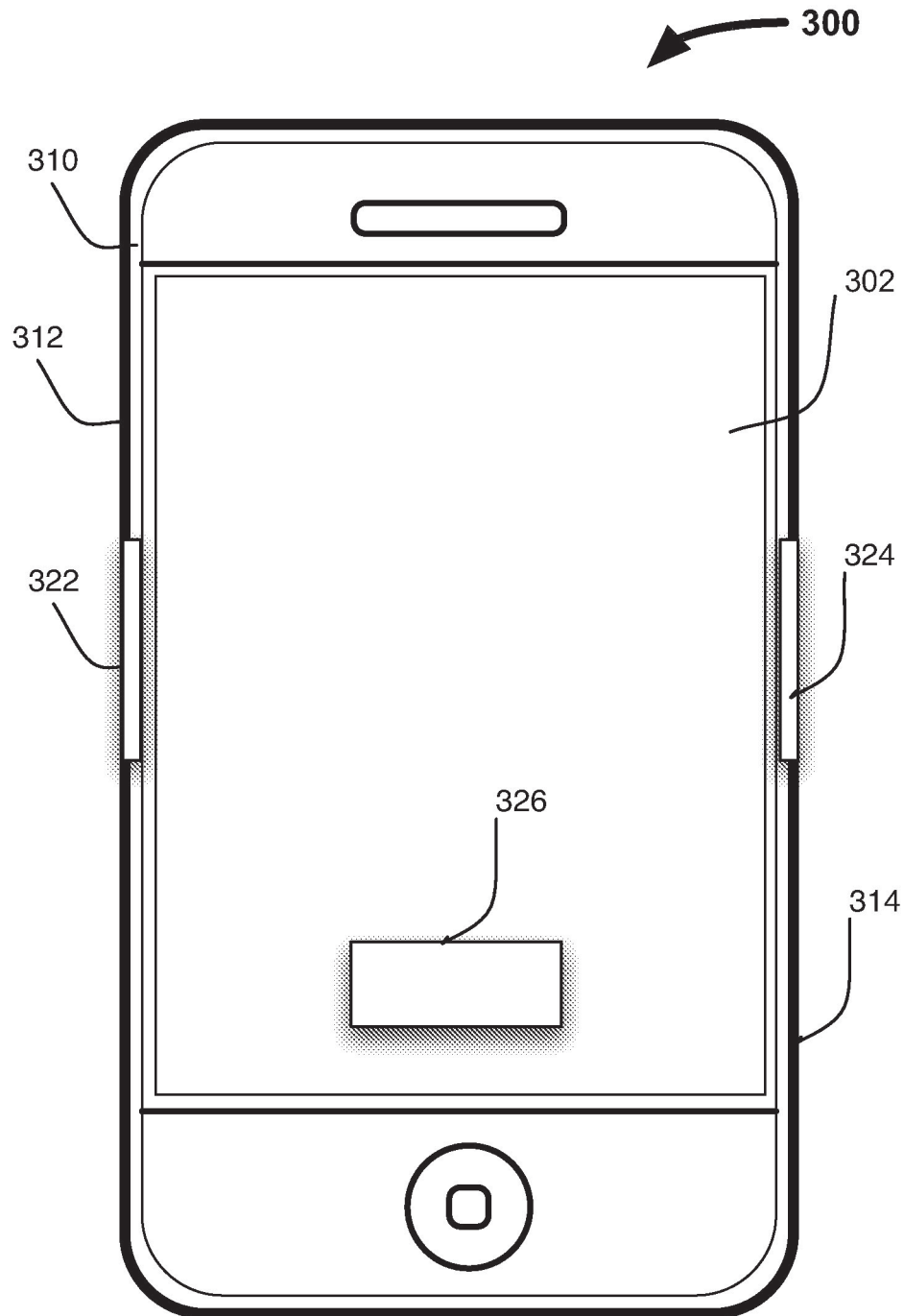


FIG. 3

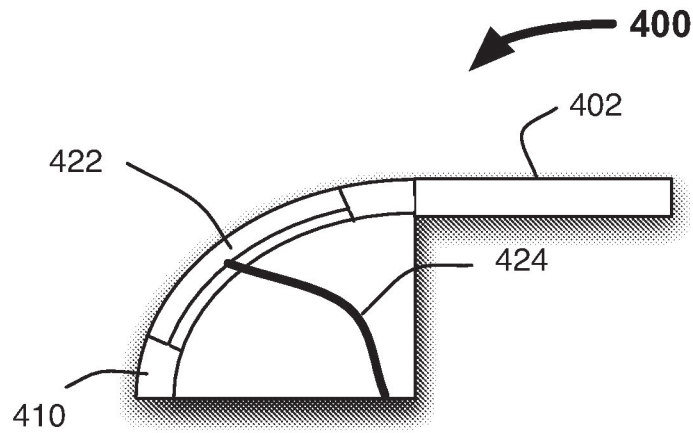


FIG. 4A

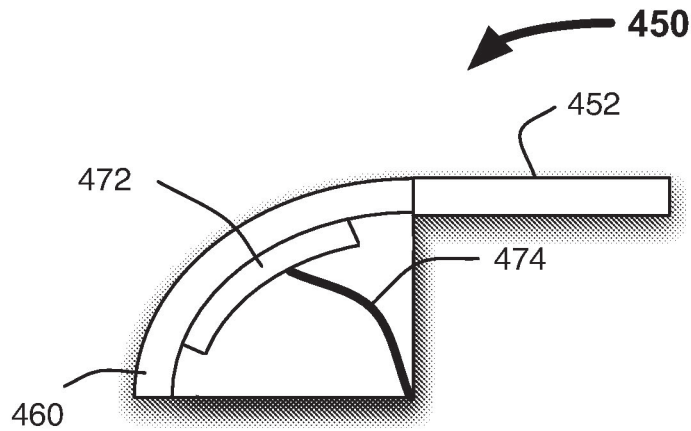


FIG. 4B

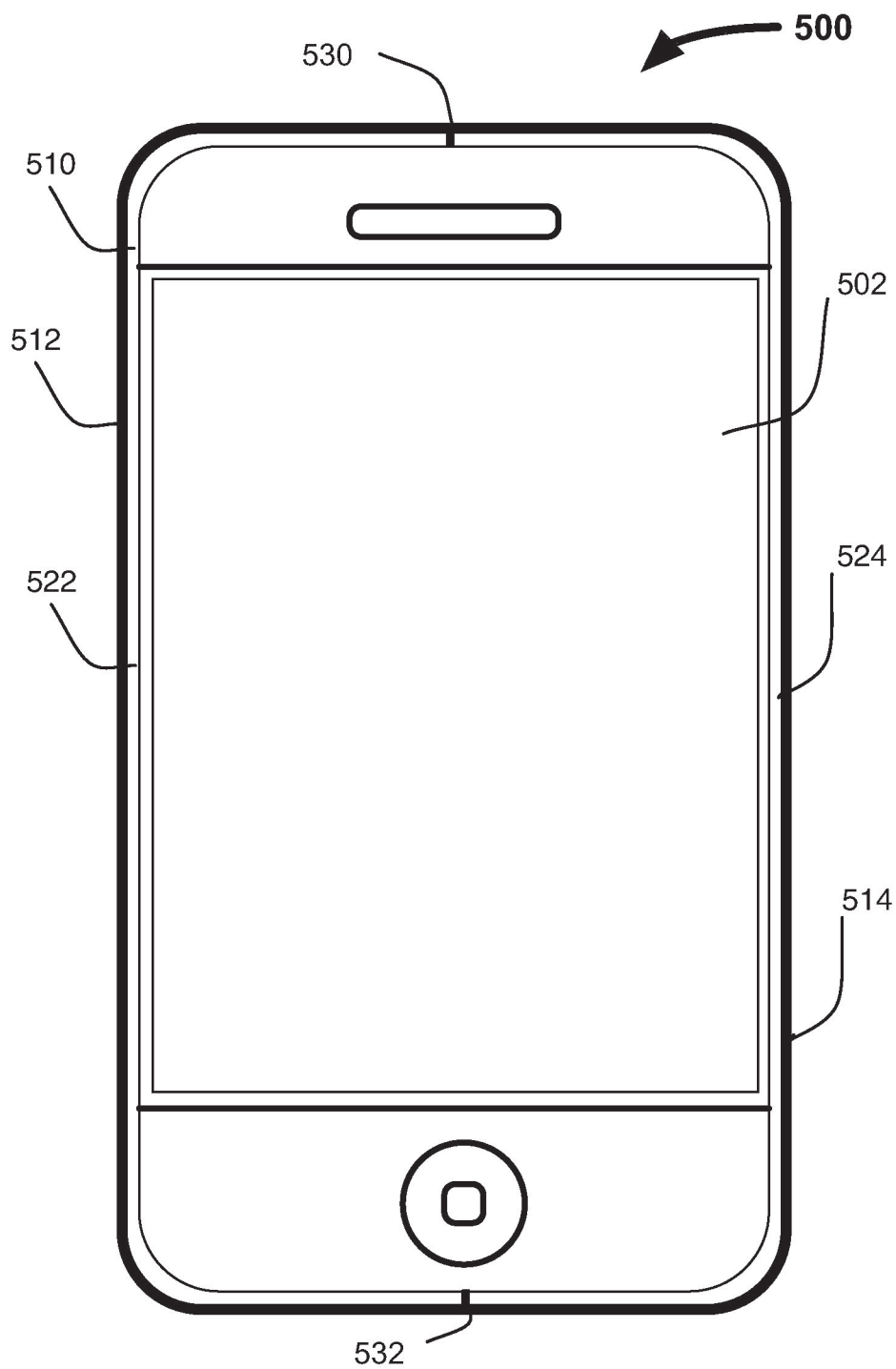


FIG. 5

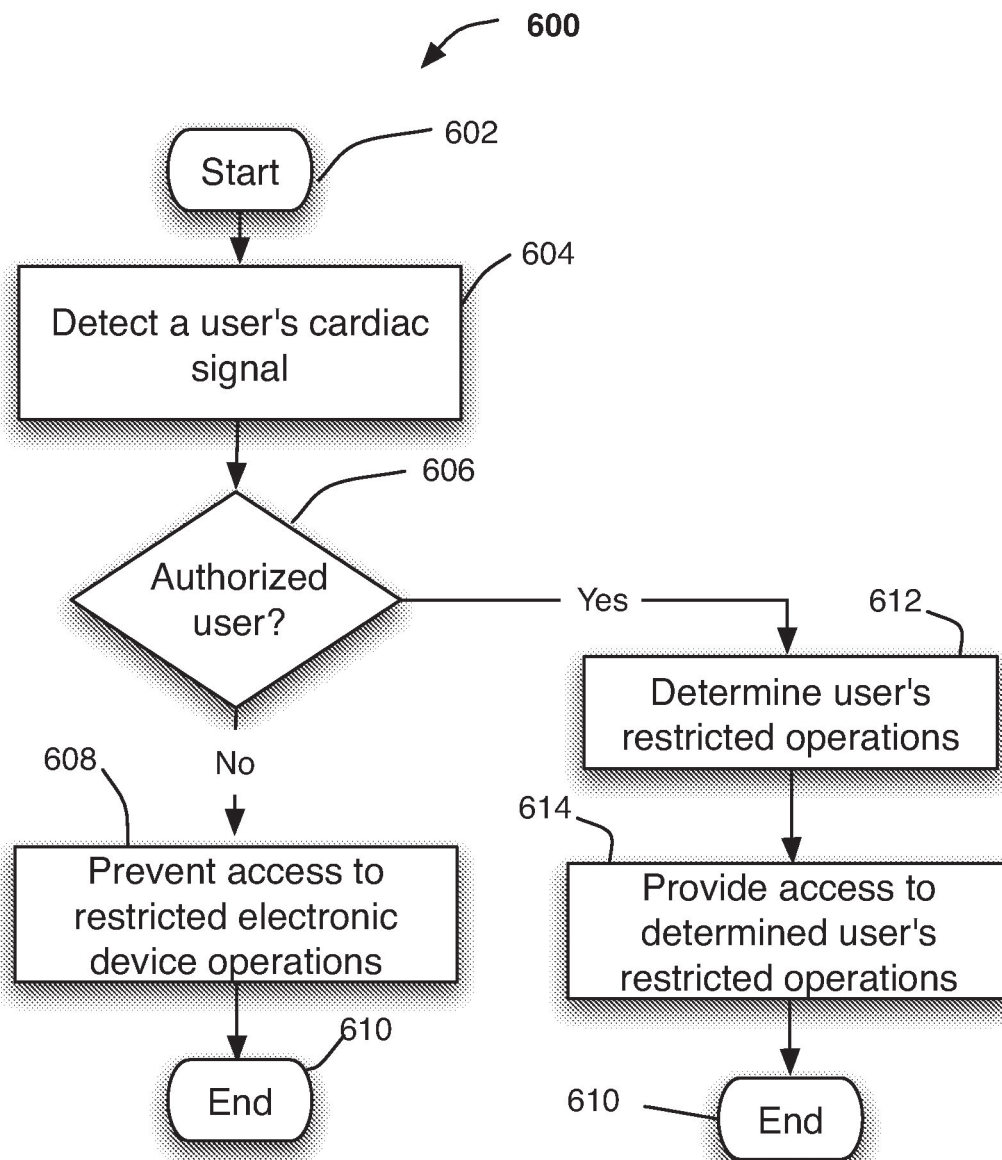


FIG. 6

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	Filing Date		
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	Art Unit		
	Examiner Name		
	Attorney Docket Number	P7276USC1	

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	2	6522915		2003-02-18	Ceballos et al.	
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	2	20060026535		2006-02-02	Hotelling et al.	
	3	20080076972		2008-03-27	Dorogusker et al.	

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	Attorney Docket Number	P7276USC1		

	4	20080113650		2008-05-15	Engstrom	
	5	20090070266		2009-03-12	Shah et al.	
	6	20100011388		2010-01-14	Bullet al.	

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey C. Aldridge/	Date (YYYY-MM-DD)	2013-12-20
Name/Print	Jeffrey C. Aldridge	Registration Number	51390

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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		SEAMLESSLY EMBEDDED HEART RATE MONITOR		
First Named Inventor/Applicant Name:		Gloria Lin		
Filer:		Jeffrey Charles Aldridge/Daniel Harris		
Attorney Docket Number:		P7276USC1		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	280	280
Utility Search Fee	1111	1	600	600
Utility Examination Fee	1311	1	720	720
Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	1051	1	140	140
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1740

Electronic Acknowledgement Receipt	
EFS ID:	17728288
Application Number:	14136658
International Application Number:	
Confirmation Number:	2657
Title of Invention:	SEAMLESSLY EMBEDDED HEART RATE MONITOR
First Named Inventor/Applicant Name:	Gloria Lin
Customer Number:	111349
Filer:	Jeffrey Charles Aldridge/Daniel Harris
Filer Authorized By:	Jeffrey Charles Aldridge
Attorney Docket Number:	P7276USC1
Receipt Date:	20-DEC-2013
Filing Date:	
Time Stamp:	15:45:37
Application Type:	Utility under 35 USC 111(a)

Payment information:	
Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1740
RAM confirmation Number	5503
Deposit Account	506007
Authorized User	ALDRIDGE, JEFFREY
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing and examination fees) \$10,076,257 Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) 345 of 363	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	2013-12-20_P7276USC1-ADS.pdf	1279626 096479d5d238d2013d4760b04c001de3713cc87c	no	7

Warnings:

Information:

2		2013-12-20_P7276USC1-new-CON-appln-docs.pdf	18503952 3db57de63a530649687eae0b658f8b9f9e7125bd	yes	113
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Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	1
Specification	2	5
Claims	6	10
Applicant Arguments/Remarks Made in an Amendment	11	11
Specification	12	38
Specification	39	65
Specification	66	92
Claims	93	97
Abstract	98	98
Drawings-only black and white line drawings	99	104
Power of Attorney	105	105
Assignee showing of ownership per 37 CFR 3.73.	106	111
Transmittal Letter	112	113

AliveCor Exhibit 1002
AliveCor, Inc. v. Apple Inc.
IPR2024-00169, U.S. Patent No. 10,076,257

Warnings:

Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	2013-12-20_P7276USC1-SB-08.pdf	612585 d8cc00423d4656309797da565ecdce7573c93c6	no	5
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	36456 94a5fb413dfd0ef431494a1e549441ecb22c6277	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			20432619		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	P7276USC1
		Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Gloria		Lin		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	San Ramon	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		1 Infinite Loop			
Address 2					
City	Cupertino	State/Province	CA		
Postal Code	95014	Country i	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Taido	L.	Nakajima		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Cupertino	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		1 Infinite Loop			
Address 2					
City	Cupertino	State/Province	CA		
Postal Code	95014	Country i	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Pareet		Rahul	AliveCor Exhibit 1002	
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					

AliveCor, Inc. v. Apple Inc.
IPR2024-00169, U.S. Patent No. 10,076,257
348 of 363

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	P7276USC1
		Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		

City	Markham, Ontario	Country of Residence i	CA
------	------------------	------------------------	----

Mailing Address of Inventor:

Address 1	1 Infinite Loop		
Address 2			
City	Cupertino	State/Province	CA
Postal Code	95014	Country i	US

Inventor 4

Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew	B.	Hodge	

Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service

City	Palo Alto	State/Province	CA	Country of Residence i	US
------	-----------	----------------	----	------------------------	----

Mailing Address of Inventor:

Address 1	1 Infinite Loop		
Address 2			
City	Cupertino	State/Province	CA
Postal Code	95014	Country i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.

Add

Correspondence Information:Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).☐ An Address is being provided for the correspondence Information of this application.

Customer Number	111349		
Email Address	docket@vcaiplaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		
Attorney Docket Number	P7276USC1	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	1002

IPR2024-00169, U.S. Patent No. 10,076,257

349 of 363

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	P7276USC1
		Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	111349		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
	Continuation of	12/358905	2009-01-23	8615290	2013-12-24
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
12/358905	Claims benefit of provisional	61/111498	2008-11-05		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	P7276USC1
		Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Remove Access Code ^j (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices
If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with 37 CFR 1.77 to have an assignment recorded by the Office.	AliveCor Exhibit 1002 AliveCor, Inc. v. Apple Inc. 1:14-cv-00769 Document 3 of 3 Filed 07/06/15 351 of 363
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	P7276USC1
	Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR	

Applicant 1				Remove	
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.					
Clear					
☒ Assignee		☐ Legal Representative under 35 U.S.C. 117		☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.			☐ Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:					
Name of the Deceased or Legally Incapacitated Inventor :					
If the Applicant is an Organization check here. ☒					
Organization Name		Apple Inc.			
Mailing Address Information:					
Address 1		1 Infinite Loop			
Address 2					
City		Cupertino	State/Province		CA
Country ⁱ		US	Postal Code		95014
Phone Number			Fax Number		
Email Address					
Additional Applicant Data may be generated within this form by selecting the Add button. Add					

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.	
Assignee 1	
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.	
AliveCor Exhibit 1002 Remove AliveCor, Inc. v. Apple Inc.	
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐	
IPR2024-00169, U.S. Patent No. 10,076,257	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	P7276USC1
		Application Number	
Title of Invention	SEAMLESSLY EMBEDDED HEART RATE MONITOR		

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications

Signature	/Jeffrey C. Aldridge/		Date (YYYY-MM-DD)	2013-12-20
First Name	Jeffrey	Last Name	Aldridge	Registration Number
			51390	

Additional Signature may be generated within this form by selecting the Add button.

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

111349

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

111349

OR

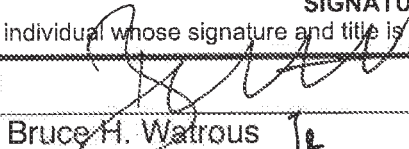
☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: **Apple Inc.**
1 Infinite Loop
Cupertino, CA 95014

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	April 10 2013
Name	Bruce H. Watrous Jr.	Telephone	408-974-5653
Title	Vice President and Chief IP Counsel		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual's comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND TO THE CHIEF INFORMATION OFFICER, U.S. PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE, P.O. Box 1450, Alexandria, VA 22313-1450. **Apple Inc.**

FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. **Apple Inc.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Gloria Lin, Taiko L. Nakajima, Pareet Rahul, and Andrew B. HodgeApplication No./Patent No.: not yet assigned Filed/Issue Date: herewithTitled: SEAMLESSLY EMBEDDED HEART RATE MONITOR

Apple Inc. a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 022149, Frame 0561, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

AliveCor Exhibit 1002

AliveCor, Inc. v. Apple Inc.

IPR2024-00169, U.S. Patent No. 10,076,257

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

356 of 363

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet(s).☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Jeffrey C. Aldridge/

December 20, 2013

Signature

Date

Jeffrey C. Aldridge

51,390

Printed or Typed Name

Title or Registration Number

[Page 2 of 2]

A S S I G N M E N T

WHEREAS, we, Gloria Lin, Taido Nakajima, Pareet Rahul, and Andrew Hodge, residing in San Ramon, California; Cupertino, California; Markham, Canada; and Palo Alto, California, respectively have made an invention in:

SEAMLESSLY EMBEDDED HEART RATE MONITOR

and are about to make application for United States Letters Patent therefor, the same having been executed by us on even date(s) herewith; and

WHEREAS, Apple Inc., a corporation organized and existing under the laws of California and having an office and place of business at 1 Infinite Loop, Cupertino, CA 95014 is desirous of acquiring the entire interest in said invention, said United States patent application and in any Letters Patent which may issue thereon;

NOW, THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) paid to us, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, we do hereby sell, assign and transfer unto the said Apple Inc., its successors, assigns and legal representatives, all right, title and interest in and to said invention and any improvements thereon for all countries of the world, and in and to said United States patent application, including any continuations, continuations-in-part, and divisions thereof, and any substitute applications therefor, and any patents which may issue thereon, and any reissues of the same, and including the right to claim priority under the International Convention based on said patent application; and all right, title and interest in and to every patent application filed or to be filed on said invention in any other country,

AliveCor Exhibit 1002

AliveCor, Inc. v. Apple Inc.

IPR2024-00169, U.S. Patent No. 10,076,257

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including renewals, revivals, continuations, continuations-in-part and divisions thereof, and any substitute applications therefor, and any and all patents which may issue thereon, and any reissues and extensions of the same; and we hereby authorize and request competent authorities to grant and issue any and all patents on said invention to the said Apple Inc., as the assignee of the entire interest therein; and we further agree to execute upon request of the assignee such additional documents, if any, as are necessary and proper to secure patent protection on said invention throughout all countries of the world, and to otherwise give full effect to and perfect the rights of the assignee under this Assignment.

IN TESTIMONY WHEREOF, we have hereunto signed our names on the date indicated hereinafter.

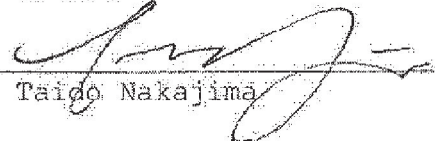
11/21/09
Date

11/21/2009
Date

Date

11/21/2009
Date


Gloria Lin


Taigo Nakajima

Preet Rahul


Andrew Hodge

A S S I G N M E N T

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IN TESTIMONY WHEREOF, we have hereunto signed our names on the date indicated hereinafter.

_____ Date	_____ Gloria Lin
_____ Date	_____ Taiko Nakajima
<u>Jan 14 / 09</u> Date	<u>Forest Rahul</u> Forest Rahul
_____ Date	_____ Andrew Hodge

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Gloria Lin et al.
Application No. : *not yet assigned*
(*continuation of US 12/358,905*)
Filed : *herewith*
For : SEAMLESSLY EMBEDDED HEART RATE MONITOR

Commissioner for Patents New York, New York 10003
P.O. Box 1450 December 20, 2013
Alexandria, Virginia 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. § 1.56, 1.97 and 1.98, applicants wish to call the attention of the Examiner to the documents listed on the accompanying Form PTO/SB/08a.

Pursuant to 37 C.F.R. § 1.98(a)(2)(ii), applicants have not submitted copies of the US patent and publication documents.

Copies of the listed Foreign Patent Documents were originally submitted in parent US 12/358,905, so applicants have not provided additional copies herewith.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

It is respectfully requested that the aforementioned documents be: (1) fully considered by the Patent and Trademark Office during the examination of this application; and (2)

printed on any patent which may issue on this application. Applicants request that a copy of the Form PTO/SB/08a, as considered and initialed by the Examiner, be returned with the next communication.

This Information Disclosure Statement is being filed concurrently with the application. The Director is hereby authorized to charge any fee(s) deemed necessary to Deposit Account No. 50-6007.

Respectfully submitted,

Date: December 20, 2013 /Jeffrey C. Aldridge/
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