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APPLE INC./BROWNSTEIN c/o Brownstein Hyatt Farber Schreck, LLP 410 Seventeenth Street Suite 2200 Denver, CO 80202			EXAMINER GEDEON, BRIAN T	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment after non-final filed 29 March 2023.
Claims 21-49 are pending.

Double Patenting

2. The terminal disclaimer filed 29 March 2023 has been approved. In view of this, the non-statutory double patenting rejection has been withdrawn.

Information Disclosure Statement

3. The information disclosure statements filed 10 April 2023 and 29 March 2023 (3) have been considered.
4. Upon review, certain references disclosed by Applicant are considered pertinent to the present claim set. The references are deemed read on the present claims, thus the finality of the previous Office action has been withdrawn in view of newly discovered references disclosed by Applicant. A new grounds of rejection has been formulated utilizing Applicant's newly disclosed references to Honda et al. (US Patent no. 6,265,789) and Kotangi et al. (Seiko Instruments Inc. WO 2005/092182).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 45 is rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for applications subject to pre-AIA 35 U.S.C. 112, the inventor(s), at the time the application was filed, had possession of the claimed invention. The prior art fails to provide any description concerning the shape of the cover being a disk, nor for the relative diameters of the cover with respect to the second opening.

Claim Rejections - 35 USC § 103

7. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

8. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

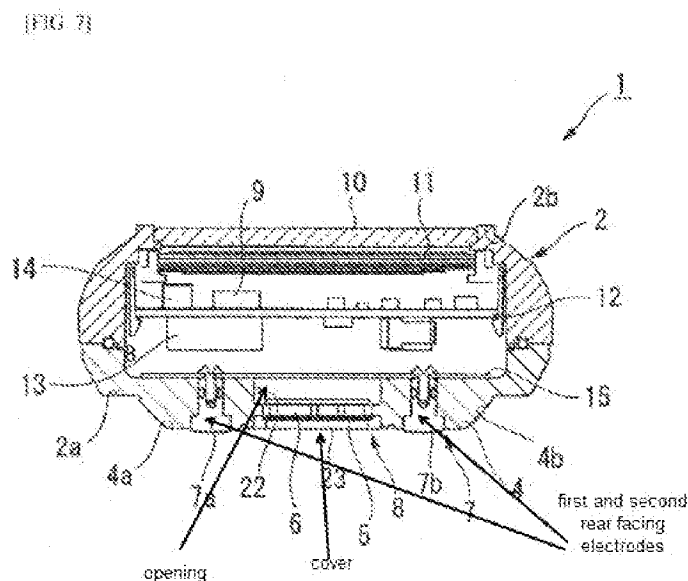
A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have

9. Claim(s) 21, 26, 27, 29, 32-34, 37, and 38 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant), further in view of Park et al. (US Publication no. 2015/0026647).

FIG. 2 is a cross-sectional view of a device. It shows a front cover (201) with a first opening (202) and a second opening (203). A wireless charging coil (100) is positioned below the front cover, with a rear cover (121) at the bottom. The device is shown in a cross-section with various layers and components labeled with reference numerals.

includes a first opening opposite to a second opening (shown annotated), wherein a display 204 is positioned in the first opening (col 6 lines 14-16). The second opening includes a cover glass 211 that forms a portion of the exterior surface 212, and a wireless charging receive coil 210 (i.e., referred to as watch side coil) aligned with the second opening and cover glass 211. The cover glass 211 is configured to pass

Kotangi et al. also describes a wearable electronic device in the form of a wrist watch. The device of Kotangi et al. is configured to be worn on a user and detect biological information from a biosensor disposed within an opening of the wearable housing and below a cover. Figure 1 of Kotangi et al. shows the wearable device comprising a sensor housing 2 and a band attached to the housing 2. Figure 7 of Kotangi et al. (reproduced below), shows that like Honda et al., the housing includes



an opening 22 located along the rear side of the housing similar the second opening in Honda et al., wherein the opening includes a cover 23 disposed within the opening and forming an exterior surface. Disposed about the opening and below the cover 23 is a biosensor consisting of a light source 5 and light detector 6. The cover is configured to pass optical signals generated by elements 5 and 6 of the biosensor 8 (see para 54 and 55). Located near elements 5 and 6 are first and second rear facing electrodes 7A and 7B. Electrodes detect contact with the user skin to ensure elements 5 and 6 are properly contacted.

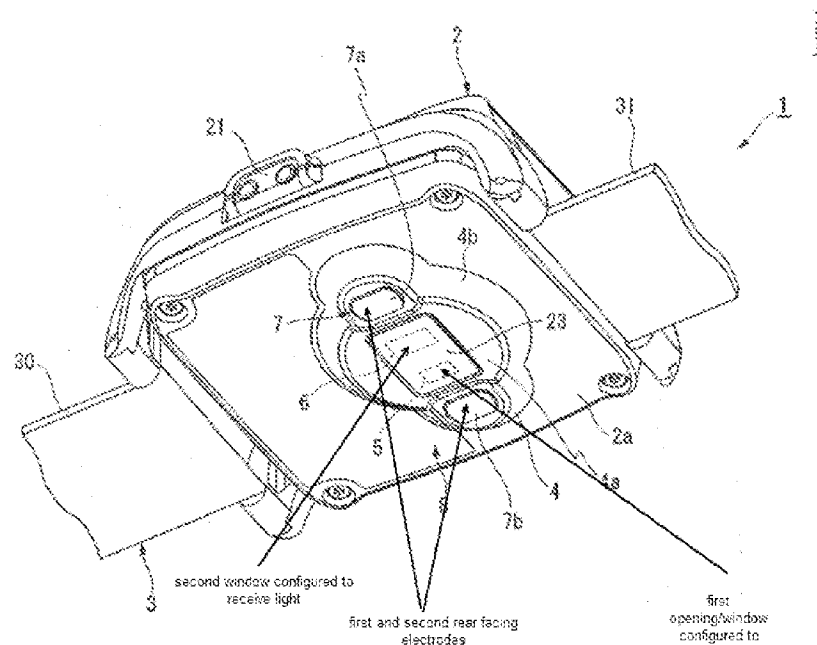
Honda et al. and Kotangi et al. are considered to constitute analogous prior art in the same field of endeavor pertaining to wrist wearable devices that include sensors to detect biological information. In view of this and of the disclosed features of each reference, modification of Honda et al. to include a light source 5 and light detector 6 of Kotangi et al. as a biosensor within the housing 201 is considered to have been obvious to one of ordinary skill in the art at the time of the invention since 1. Honda et al. explicitly suggests that a biosensor is incorporated therein and elements 5 and 6 constitute suitable structure for that element of Honda et al., and 2. Kotangi et al. demonstrates that is known in the art for a biosensor to be aligned with an opening and rear cover, and 3. the modification pertains to the substitution of a known element for another to yield predictable results (i.e., elements 5 and 6 of Kotangi et al.. for the biosensor of Honda et al.; elements 5 and 6 known in the art to measure pulse rate and heart rate). The modification would provide structure necessary for acquiring the pulse rate or heart rate obtained by Honda et al., wherein one of ordinary skill in the art is considered to have had a reasonable expectation of success substituting the elements.

Alternatively, it is considered that the rejection may be made in light of Kotangi et al. in view of Honda et al., wherein the modification would pertain to combining the wireless coil of Honda et al. into the housing of Kotangi et al. Such modification is considered to have been obvious to one of ordinary skill in the art at the time of the invention as it would permit wireless data transmission and recharging of the Kotangi et al. device.

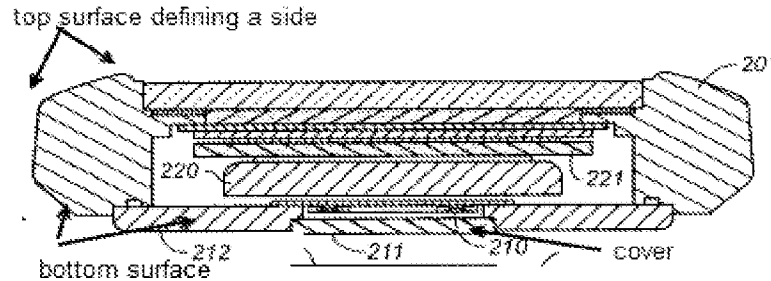
Further in regard to claims 21 and 32, Honda et al. in view of Kotangi et al., or alternatively Kotangi et al. in view of Honda et al., is considered to substantially describe the invention as claimed, however neither teach that the display of each respective device is a touch-sensitive display positioned below the front cover. Park et al. analogous to both Honda et al. and Kotangi et al., describes a wearable electronic device in the form of a wrist watch. The device of Park et al. is configured to be worn on a user and detect biological information from a biosensor disposed within an opening of the wearable housing and below a cover. Figures 4A and 4F show that the wearable electronic device comprises a touch sensor with the display and front cover so as to create a touch-sensitive display (para 85-95, 148-149, 162, and 170-171). The touch sensitive display allows for a user to provide input to the device via finger gesture. Modification to include a touch sensitive display is considered to have been obvious to one of ordinary skill in the art at the time of the invention since Park et al. demonstrates that touch displays are well known in the analogous art. The modification is considered to comprise the application of known element to a known device to yield a predictable improvement to the functioning of the device (the touch display could eliminate the buttons of Kotangi et al. for entering input, thus allowing for enlargement of the display).

In regard to claim 26, Honda et al. teaches that power transmission for charging happens through magnetic coupling of coil 210 located within the watch housing and coil 110 of station 100 of figure 2 (col 6 lines 36-39). This coupling is considered to occur through the cover 211.

In regard to claims 27 and 34, figure 5 of Kotangi et al. (below) shows that the light source 5 and photodetector 6 appear to have separate openings/windows within the cover 23 for emitting and receiving light.



In regard to claim 29, figure 2 of Honda et al. shows a picture of the housing with a rear cover 211 defining a rear surface. Additionally, the shape of the top portion is considered to define at least a portion of a side surface of the housing and a bottom portion is considered to define a second portion of the rear exterior surface.



In regard to claim 33, Honda et al. includes rear cover 211 is made from a glass material which is considered to be transparent (col 6 lines 23-25). Additionally, cover glass 23 of Kotangi et al. is considered optically transparent (para 55)

In regard to claims 37 and 38, the external biosensor 8 of Kotangi et al. configured for passing optical signals generated by the biosensor is shown and described to have a protruding convex shape (see figures 5 and 7 element 4 referred to as protruding part, para 54). The convex shape serves a different intended use as claimed, namely that of ensuring intimate contact with the user's wrist. The convex nature of the device to serve a different intended use is considered to comprise a matter of choice in design.

10. Claim(s) 22-25, 35, and 36 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant) and Park et al. (US Publication no. 2015/0026647), further in view of Lo et al. (US Patent no. 5,738,104 – disclosed by Applicant).

In regard to claims 22-25, 35, and 36, Honda et al., Kotangi et al., and Park et al. when viewed in combination are considered to substantially suggest the invention as claimed. Honda et al., and Kotangi et al. suggest the use of a biosensor to detect

health metrics such as heart rate or pulse rate, wherein the biosensor of Kotangi et al. is an optical device comprised of a light source 5 and light detector 6. Kotangi et al. also includes two electrodes 7a,7b adjacent the optical biosensor for sensing electrical signals from a user. However, the electrical signals obtained by the sensors only determine proper contact with the skin for the biosensor to correctly work. They are not used for obtained ECG signals. Park et al., in the wearable device, contemplate obtaining an ECG signal as a physiological signal (para 256), but falls short in enabling the measurement. Lo et al., describes a similar wearable wrist watch electronic device analogous to the cited references in structure, function, and solution to stated problem. The wristwatch obtains heart rate measurements which also includes at least three electrodes for measuring ECG signals (col 5 lines 17-28 and col 7 lines 25-27). The ECG signals are obtained by electrodes 14, 16, and 18, wherein the electrodes are located on the exterior surface of the watch, and at least one electrode (e.g., either 14 or 16) is mounted along the top portion of the watch (col 7 lines 25-42). Lo et al. also includes processing circuitry for determining the ECG signal from the first 14, second 16, and third 18 electrodes. In the least, Lo et al. demonstrates that ECG sensors may be part of a wearable electronic watch. In view of this, it is considered that modification of the devices described by Honda et al., Kotangi et al., and Park et al. to include ECG electrodes in combination with the optical biosensors since the combination is demonstrated by Lo et al. (col 1 line 51 – col 2 line 12), as it is considered known from Lo et al. to incorporate an ECG sensor into a heart rate monitoring watch. Such ECG collection may be implemented via electrodes 7a and 7B of Kotangi et al. This combination is considered to comprise the acquisition of a first physiological signal and

a second physiological signal (i.e., both ECG and optical heart rate). Additionally, Lo et al. teaches that the three electrode arrangement helps eliminate noise (col 7 lines 33-34) thus providing motivation for a third electrode. Further, Lo et al. demonstrates that the location of the ECG electrodes is not critical to the acquisition of the ECG signal.

13. Claim(s) 28, 30, 31, 39, and 40 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant) and Park et al. (US Publication no. 2015/0026647), further in view of Hong et al. (US Publication no. 2014/0275852).

In regard to claims 28, 30, 31, 39, and 40, Honda et al., Kotangi et al., and Park et al. when viewed in combination are considered to substantially suggest the invention as claimed. Honda et al., and Kotangi et al. suggest the use of a biosensor to detect health metrics such as heart rate or pulse rate, wherein the biosensor of Kotangi et al. is an optical device comprised of a light source 5 and light detector 6. The optical sensor of Kotangi et al. is considered to represent what was known about optical biosensor at the time of invention. Hong et al. describes a similar wearable wrist watch electronic device analogous to the cited references in structure, function, and solution to stated problem. Figure 2b illustrates an exemplary embodiment. Figure 3C shows a cross section of a biosensor located therein. The biosensor is considered to comprise a current state of the art equivalent to Kotangi et al. The biosensor of Hong et al. includes a first light source and a second light source (light source LEDS), and a photodetector. This is similarly shown in figure 11D with light source 1 and light source 2. Figure 11D also shows two photodetectors (i.e., light detectors 1 and 2). The use of two light

source enable the device to emit two different wavelengths of light (e.g., red and infrared) which is useful for sensing blood oxygen saturation levels (para 142). Each light detector of figure 11D detects light from each light source. Additionally, the light sources may emit green light which is useful for cool skin or ambient temperatures (para 142 and 143). Therefore it is considered to have been obvious to one of ordinary skill in the art at the time of the invention to modify the light source and light detector of Kotangi et al. to include an additional light source and light detector since Hong et al. shows that it is known in the art to incorporate additional light sources so that both red and infrared light for detecting blood oxygen saturation levels in optical sensors. Additionally, it is considered obvious to one of ordinary skill in the art at the time of the invention to modify the light source of Kotangi et al. to emit green light since Hong et al. teach that green light is known for detecting heart rate in optical sensors.

In regard to claim 28, Hong et al. shows the use of green light (para 142-143).

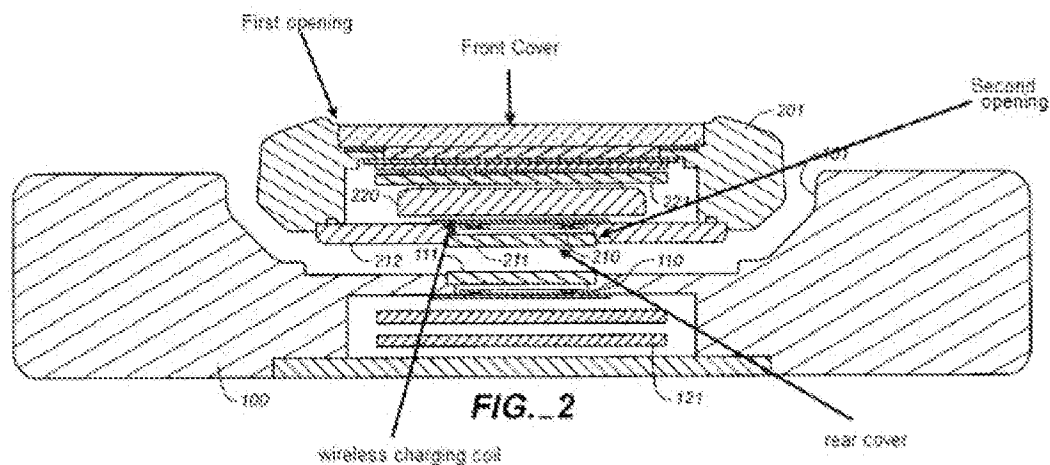
In regard to claims 30 and 39, figures 11D and 3C of Hong et al. show first and second light sources (para 142). At least one light detector/photodiode is included to detect reflected light.

In regard to claim 31, Hong et al. teaches the use of a first light source to emit red light and a second light source to emit infrared light to detect blood oxygen saturation levels (para 142).

In regard to claim 40, figure 11d shows a first light detector 1 and a second light detector 2.

11. Claim(s) 41, 43-45, and 47 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant), further in view of Lo et al. (US Patent no. 5,738,104 – disclosed by Applicant).

In regard to claim 41, Honda et al. and Kotangi et al. when viewed in combination are considered to substantially suggest the invention as claimed. Honda et al. describes a wearable electronic apparatus that may be embodied as an electronic wrist watch (fig. 1, col 6 lines 4-6). Figure 1 shows that the wearable device includes a housing 201 and band 202 attached to housing 201. Figure 2 (reproduced below) shows that the housing 201

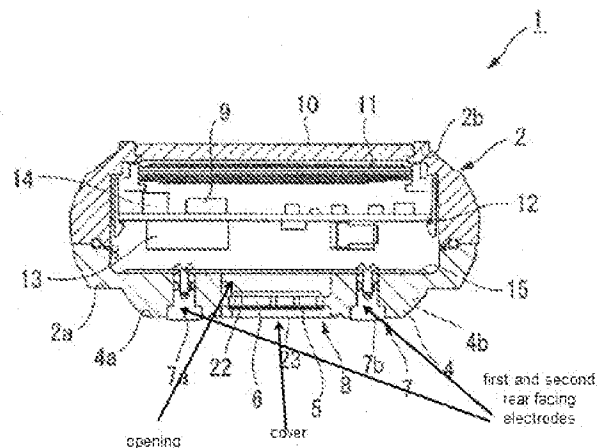


includes a first opening opposite to a second opening (shown annotated), wherein a display 204 is positioned in the first opening (col 6 lines 14-16). The second opening includes a cover glass 211 that forms a portion of the exterior surface 212, and a wireless charging receive coil 210 (i.e., referred to as watch side coil) aligned with the

second opening and cover glass 211. The cover glass 211 is configured to pass wireless power from an external wireless charging device 100 (i.e., figure 2 shows the wearable device mated with a charging station 100) supplied by charging coil 110 of the charging station (col 6 lines 21-49). Additionally, coil 210 is configured to provide wireless transmission of data to and from the wearable device. Figure 2 of Honda et al. also shows a picture of the housing with a rear cover 211 defining a rear surface. Additionally, the shape of the top portion is considered to define at least a portion of a side surface of the housing and a bottom portion is considered to define a second portion of the rear exterior surface. Lastly, Honda et al. teaches that the wearable electronic wrist watch is configured to detect biological information such as a pulse rate or a heart rate, however, Honda et al. does not describe the structure, operation, nor location of the sensor for detecting biological information with respect to the second opening of the housing (col 6 lines 17-20).

Kotangi et al. also describes a wearable electronic device in the form of a wrist watch. The device of Kotangi et al. is configured to be worn on a user and detect biological information from a biosensor disposed within an opening of the wearable housing and below a cover. Figure 1 of Kotangi et al. shows the wearable device comprising a sensor housing 2 and a band attached to the housing 2. Figure 7 of Kotangi et al. (reproduced below), shows that like Honda et al., the housing includes

[FIG. 7]



an opening 22 located along the rear side of the housing similar the second opening in Honda et al., wherein the opening includes a cover 23 disposed within the opening and forming an exterior surface. Disposed about the opening and below the cover 23 is a biosensor consisting of a light source 5 and light detector 6. The cover is configured to pass optical signals generated by elements 5 and 6 of the biosensor 8 (see para 54 and 55). Located near elements 5 and 6 are first and second rear facing electrodes 7A and 7B. Electrodes detect contact with the user skin to ensure elements 5 and 6 are properly contacted.

Honda et al. and Kotangi et al. are considered to constitute analogous prior art in the same field of endeavor pertaining to wrist wearable devices that include sensors to detect biological information. In view of this and of the disclosed features of each reference, modification of Honda et al. to include a light source 5 and light detector 6 of Kotangi et al. as a biosensor within the housing 201 is considered to have been obvious to one of ordinary skill in the art at the time of the invention since 1. Honda et al. explicitly suggests that a biosensor is incorporated therein and elements 5 and 6 constitute suitable structure for that element of Honda et al., and 2. Kotangi et al.

demonstrates that is known in the art for a biosensor to be aligned with an opening and rear cover, and 3. the modification pertains to the substitution of a known element for another to yield predictable results (i.e., elements 5 and 6 of Kotangi et al. for the biosensor of Honda et al.; elements 5 and 6 known in the art to measure pulse rate and heart rate). The modification would provide structure necessary for acquiring the pulse rate or heart rate obtained by Honda et al., wherein one of ordinary skill in the art is considered to have had a reasonable expectation of success substituting the elements.

Alternatively, it is considered that the rejection may be made in light of Kotangi et al. in view of Honda et al., wherein the modification would pertain to combining the wireless coil of Honda et al. into the housing of Kotangi et al. Such modification is considered to have been obvious to one of ordinary skill in the art at the time of the invention as it would permit wireless data transmission and recharging of the Kotangi et al. device.

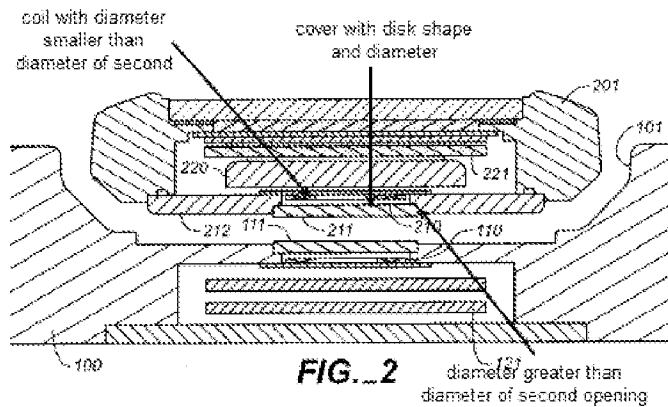
Honda et al., and Kotangi et al. suggest the use of a biosensor to detect health metrics such as heart rate or pulse rate, wherein the biosensor of Kotangi et al. is an optical device comprised of a light source 5 and light detector 6. Kotangi et al. also includes two electrodes 7a,7b adjacent the optical biosensor for sensing electrical signals from a user. However, the electrical signals obtained by the sensors only determine proper contact with the skin for the biosensor to correctly work. They are not used for obtained ECG signals. Lo et al., describes a similar wearable wrist watch electronic device analogous to the cited references in structure, function, and solution to stated problem. The wristwatch obtains heart rate measurements which also includes at least three electrodes for measuring ECG signals (col 5 lines 17-28 and col 7 lines

25-27). The ECG signals are obtained by electrodes 14, 16, and 18, wherein the electrodes are located on the exterior surface of the watch, and at least one electrode (e.g., either 14 or 16) is mounted along the top portion of the watch (col 7 lines 25-42). Lo et al. also includes processing circuitry for determining the ECG signal from the first 14, second 16, and third 18 electrodes. In the least, Lo et al. demonstrates that ECG sensors may be part of a wearable electronic watch. In view of this, it is considered that modification of the devices described by Honda et al., Kotangi et al., and Park et al. to include ECG electrodes in combination with the optical biosensors since the combination is demonstrated by Lo et al. (col 1 line 51 – col 2 line 12), as it is considered known from Lo et al. to incorporate an ECG sensor into a heart rate monitoring watch. Such ECG collection may be implemented via electrodes 7a and 7B of Kotangi et al. This combination is considered to comprise the acquisition of a first physiological signal and a second physiological signal (i.e., both ECG and optical heart rate). Additionally, Lo et al. teaches that the three electrode arrangement helps eliminate noise (col 7 lines 33-34) thus providing motivation for a third electrode. Further, Lo et al. demonstrates that the location of the ECG electrodes is not critical to the acquisition of the ECG signal.

In regard to claim 43, the sensors taught and suggested by Honda et al. and Kotangi et al. are considered to be recognized by one of ordinary skill in the art as equivalents to a photoplethysmogram sensor.

In regard to claims 44 and 45, from figure 2 of Honda et al., as best as can be interpreted from this illustration, the cover 211 is a disk with a disk diameter that is greater than the diameter of the second opening. Additionally, the seal formed by the

disk and housing is considered water-tight, wherein seal is considered to have been obvious in order to protect interior electronics and circuits from ingress of sweat and other fluid.



In regard to claim 47, in Kotangi et al. the biosensor include a light source 5 (i.e., configured to emit light toward skin of the user) and a light detector 6 (i.e., configured to receive reflected light from the skin of the user) (para 56 and 65).

12. Claim(s) 42 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant) and Lo et al. (US Patent no. 5,738,104 – disclosed by Applicant), further in view of Park et al. (US Publication no. 2015/0026647).

In regard to claim 42, Honda et al. in view of Kotangi et al., or alternatively Kotangi et al. in view of Honda et al., is considered to substantially describe the invention as claimed, however neither teach that the display of each respective device is a touch-sensitive display positioned below the front cover. Park et al. analogous to both Honda et al. and Kotangi et al., describes a wearable electronic device in the form

of a wrist watch. The device of Park et al. is configured to be worn on a user and detect biological information from a biosensor disposed within an opening of the wearable housing and below a cover. Figures 4A and 4F show that the wearable electronic device comprises a touch sensor with the display and front cover so as to create a touch-sensitive display (para 85-95, 148-149, 162, and 170-171). The touch sensitive display allows for a user to provide input to the device via finger gesture. Modification to include a touch sensitive display is considered to have been obvious to one of ordinary skill in the art at the time of the invention since Park et al. demonstrates that touch displays are well known in the analogous art. The modification is considered to comprise the application of known element to a known device to yield a predictable improvement to the functioning of the device (the touch display could eliminate the buttons of Kotangi et al. for entering input, thus allowing for enlargement of the display).

13. Claim(s) 46, 48, and 49 is/are rejected under 35 U.S.C. 103 as being unpatentable over Honda et al. (US Patent no. 6,265,789 – disclosed by Applicant) in view of Kotangi et al. (Seiko Instruments Inc. WO 2005/092182 – disclosed by Applicant) and Lo et al. (US Patent no. 5,738,104 – disclosed by Applicant), further in view of Hong et al. (US Publication no. 2014/0275852).

In regard to claims 46, 48, and 49, Honda et al., Kotangi et al., and Park et al. when viewed in combination are considered to substantially suggest the invention as claimed. Honda et al., and Kotangi et al. suggest the use of a biosensor to detect health metrics such as heart rate or pulse rate, wherein the biosensor of Kotangi et al. is an optical device comprised of a light source 5 and light detector 6. The optical sensor

of Kotangi et al. is considered to represent what was known about optical biosensor at the time of invention. Hong et al. describes a similar wearable wrist watch electronic device analogous to the cited references in structure, function, and solution to stated problem. Figures 2a and 2b illustrates an exemplary embodiment of the device with a unibody housing. Figure 3C shows a cross section of a biosensor located therein. The biosensor is considered to comprise a current state of the art equivalent to Kotangi et al. The biosensor of Hong et al. includes a first light source and a second light source (light source LEDS), and a photodetector. This is similarly shown in figure 11D with light source 1 and light source 2. Figure 11D also shows two photodetectors (i.e., light detectors 1 and 2). The use of two light source enable the device to emit two different wavelengths of light (e.g., red and infrared) which is useful for sensing blood oxygen saturation levels (para 142). Each light detector of figure 11D detects light from each light source. Additionally, the light sources may emit green light which is useful for cool skin or ambient temperatures (para 142 and 143). Therefore it is considered to have been obvious to one of ordinary skill in the art at the time of the invention to modify the light source and light detector of Kotangi et al. to include an additional light source and light detector since Hong et al. shows that it is known in the art to incorporate additional light sources so that both red and infrared light for detecting blood oxygen saturation levels in optical sensors. Additionally, it is considered obvious to one of ordinary skill in the art at the time of the invention to modify the light source of Kotangi et al. to emit green light since Hong et al. teach that green light is known for detecting heart rate in optical sensors.

In regard to claims 48 and 49, figures 11D and 3C of Hong et al. show first and second light sources (para 142). At least one light detector/photodiode is included to detect reflected light. Hong et al. teaches the use of a first light source to emit red light and a second light source to emit infrared light to detect blood oxygen saturation levels (para 142). Last, figure 11d shows a first light detector 1 and a second light detector 2.

Conclusion

14. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 29 March 2023 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN T GEDEON whose telephone number is (571)272-3447. The examiner can normally be reached M-F 8:00 am to 5:30 PM ET.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David E. Hamaoui can be reached on 571-270-5625. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN T GEDEON/
Primary Examiner, Art Unit 3792
20 April 2023